

FRONT AXLE & FRONT SUSPENSION

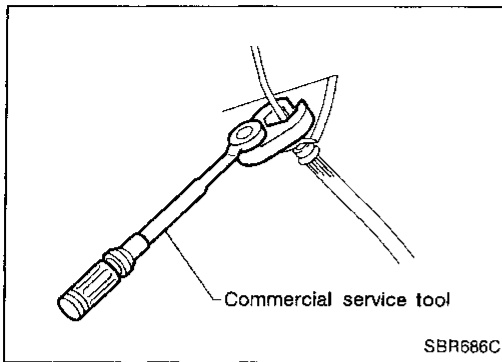
SECTION **FA**

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PRECAUTIONS AND PREPARATION



Precautions

- When installing rubber parts, 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.
- After installing removed suspension parts, check wheel alignment and adjust if necessary.
- Use flare nut wrench when removing or installing brake tubes.
- Always torque brake lines when installing.

Special Service Tools

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description	
HT72520000 (J25730-B) Ball joint remover	 NT146	Removing tie-rod outer end and lower ball joint
HT71780000 (—) Spring compressor	 NT144	Removing and installing coil spring
ST35652000 (—) Shock absorber attachment	 NT145	Fixing strut assembly
KV38106700 (J34296) KV38106800 (J34297) Differential side oil seal protector	 NT147	Installing drive shaft LH: KV38106700 RH: KV38106800
IM23600800 (—) Attachment Wheel alignment	 NT148	Measure wheel alignment a: Screw M24 x 1.5 pitch b: 35 mm (1.38 in) dia. c: 65 mm (2.56 in) dia. d: 56 mm (2.20 in) e: 12 mm (0.47 in)

Commercial Service Tools

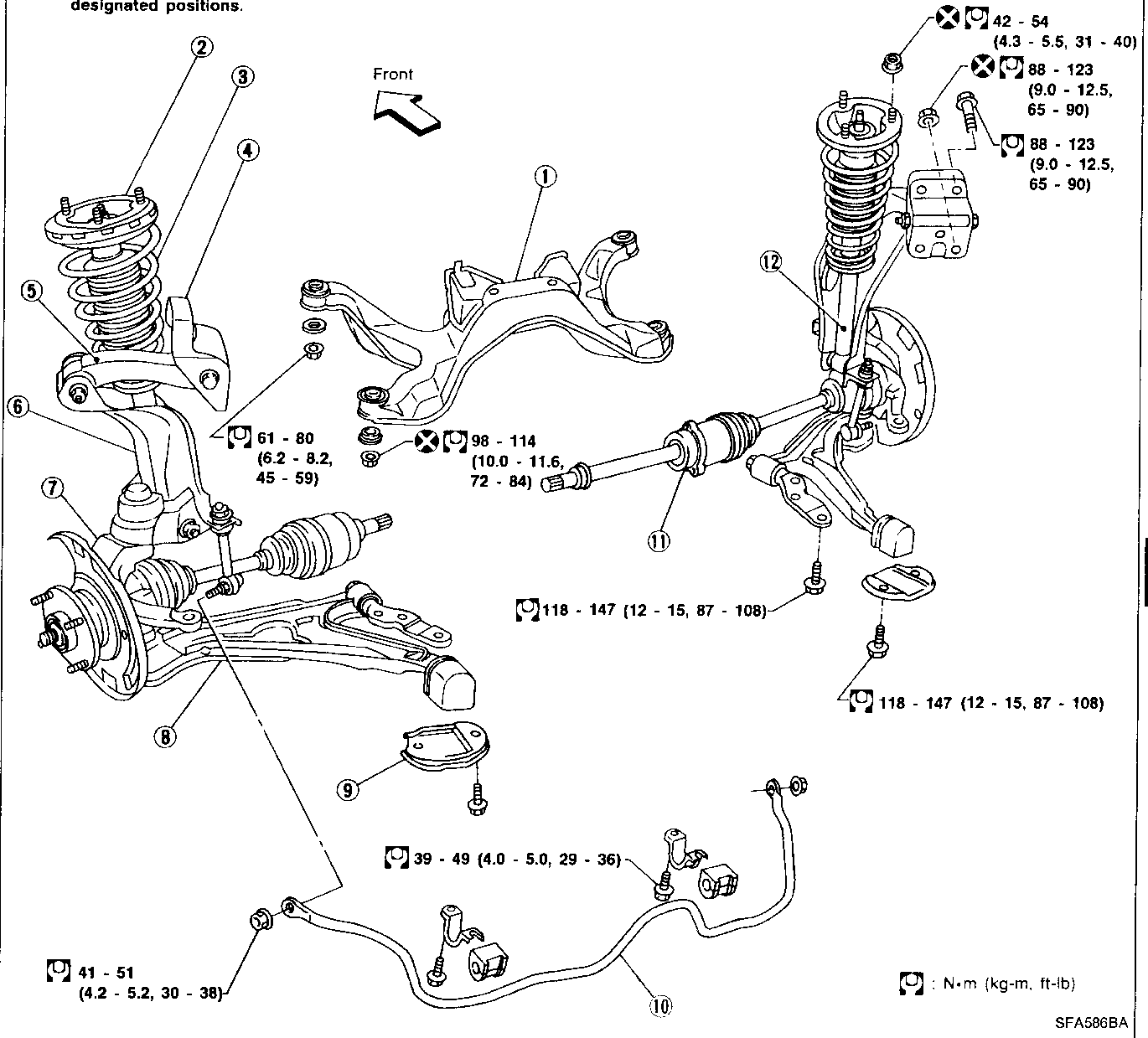
Tool name	Description	
① Flare nut crows foot ② Torque wrench	 NT360	Removing and installing each brake piping a: 10 mm (0.39 in)

FRONT AXLE AND FRONT SUSPENSION

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When installing rubber parts, 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.

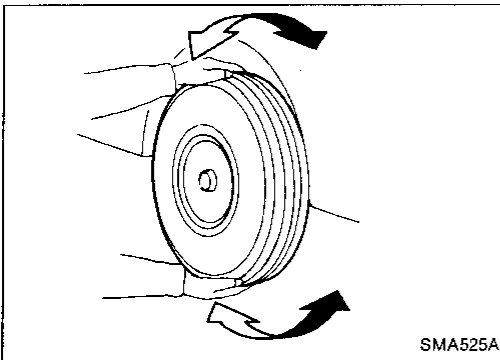


- ① Front suspension member
- ② Shock absorber mounting insulator
- ③ Coil spring
- ④ Upper link bracket

- ⑤ Upper link
- ⑥ Third link
- ⑦ Knuckle
- ⑧ Transverse link

- ⑨ Clamp
- ⑩ Stabilizer bar
- ⑪ Drive shaft
- ⑫ Shock absorber

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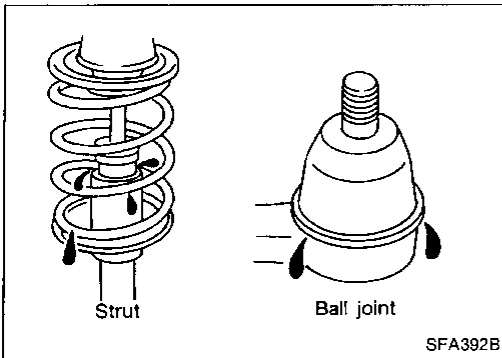
Front Axle and Front Suspension Parts

Check front axle and front suspension parts for excessive play, cracks, wear or other damage.

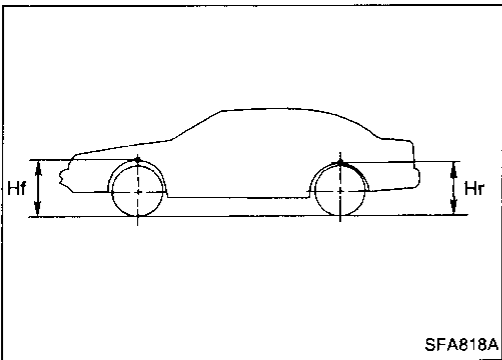
- Shake each front wheel to check for excessive play.
- Make sure that cotter pin is inserted.
- Retighten all axle and suspension nuts and bolts to the specified torque.

Tightening torque:

Refer to FRONT SUSPENSION (FA-22).



- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage. If ball joint dust cover is cracked or damaged, replace transverse link.



- Check spring height from top of wheelarch to ground using the following procedure.
 - (1) Park vehicle on a level surface with vehicle unladen* .
 - *: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
 - (2) Check tires for proper inflation and wear (tread wear indicator must not be showing).
 - (3) Bounce vehicle up and down several times and measure dimensions Hf and Hr. Refer to SDS (FA-28). Spring height is not adjustable. If out of specification, check for worn springs or suspension parts.

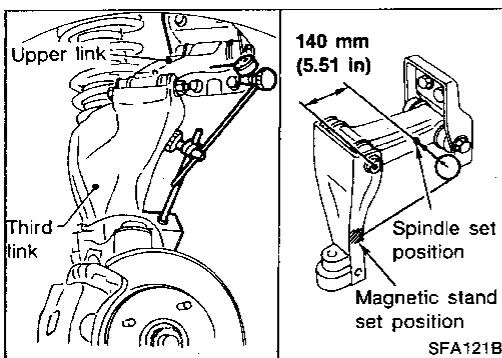
- Check upper link free play.

- (1) Jack up front of vehicle and set stands.
- (2) Set steering wheel in straight-forward direction and lock it using key lock.
- (3) Remove front wheels.

On axle side

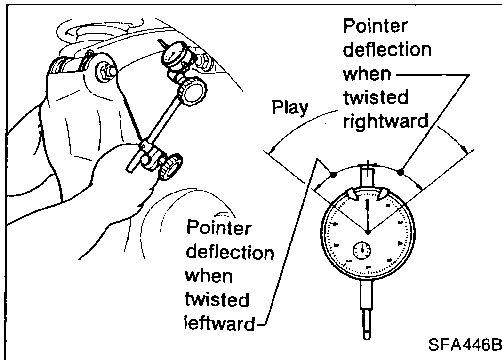
- (4) Install dial gauge.
 - a. Install magnet stand on third link.
 - b. Set dial gauge in position.

Set dial gauge spindle in contact with flat surface of upper link. Set at 140 mm (5.51 in) from center of upper link retaining bolt on the third link side. (Reset dial gauge.)



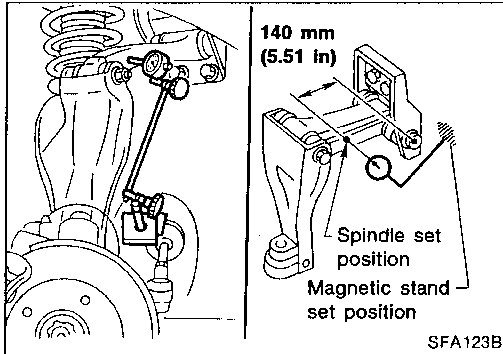
ON-VEHICLE SERVICE

Front Axle and Front Suspension Parts (Cont'd)



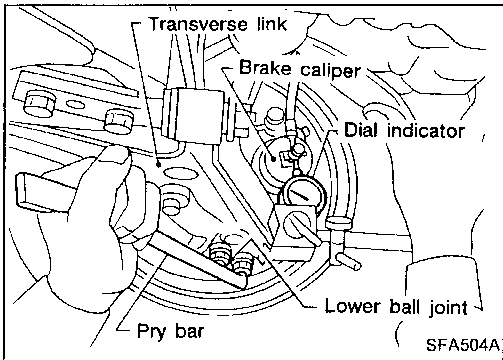
- (5) Hold flanges of third link with both hands. Twist third link fully to the right and read dial gauge indication. Similarly, twist third link to the left and read dial gauge indication. Free play = (Gauge indication when third link is fully twisted to the right) + (Gauge indication when third link is fully twisted to the left)

Allowable free play range:
7.0 mm (0.276 in), max.



On body side

- (6) Install dial gauge.
- Install magnet stand on front suspension mount member.
 - Set dial gauge in position. Set dial gauge spindle in contact with flat surface of upper link. Set at 140 mm (5.51 in) from center of retaining bolt on bracket side. (Reset dial gauge.)
- (7) Measure free play in the same manner as on axle side.
- Allowable free play range: 5.0 mm (0.197 in), max.**
- (8) If free play exceeds specifications, replace upper link assembly.

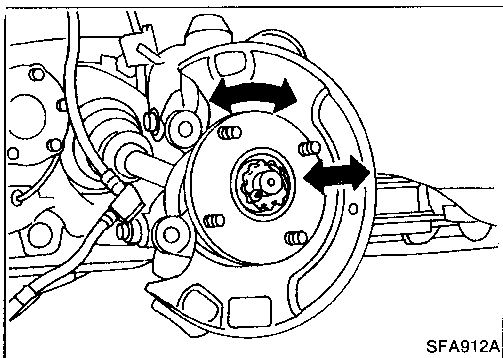


● Check suspension ball joint end play.

- Jack up front of vehicle and set the stands.
- Clamp dial indicator onto transverse link and place indicator tip on lower edge of brake caliper.
- Make sure front wheels are straight and brake pedal is depressed.
- Place a pry bar between transverse link and inner rim of road wheel.
- While raising and releasing pry bar, observe maximum dial indicator value.

Vertical end play:
0 mm (0 in)

If ball joint vertical end play exists, remove transverse link and recheck the ball joint. Refer to FA-27.



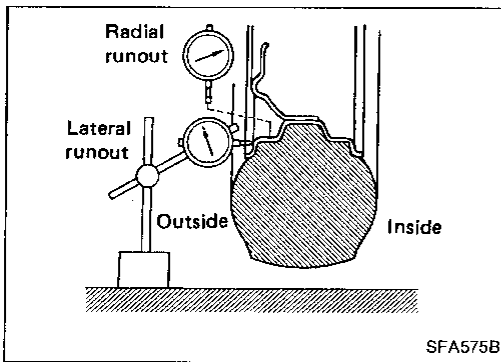
Front Wheel Bearing

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

Axial end play:
0.05 mm (0.0020 in) or less

If out of specification or wheel bearing does not turn smoothly, replace wheel bearing assembly.

Refer to FRONT AXLE — Wheel Hub and Knuckle (FA-8).



Front Wheel Alignment

Before checking front wheel alignment, be sure to make a preliminary inspection (Unladen*).

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

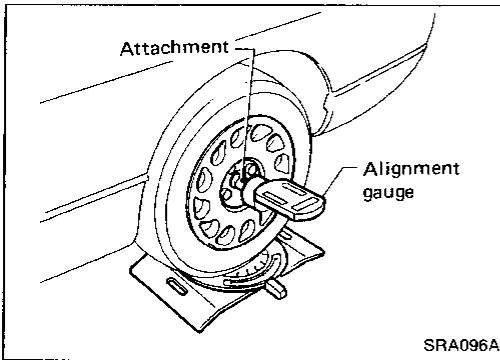
PRELIMINARY INSPECTION

- Check tires for wear and improper inflation.
- Check wheel runout.

Wheel runout:

Refer to SDS (FA-29).

- Check front wheel bearings for looseness.
- Check front suspension for looseness.
- Check steering linkage for looseness.
- Check that front shock absorbers work properly.
- Check vehicle posture (Unladen).



CAMBER, CASTER AND KINGPIN INCLINATION

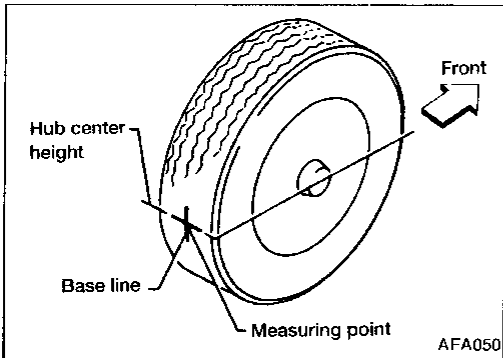
Camber, caster and kingpin inclination are preset at factory and cannot be adjusted.

1. Measure camber, caster and kingpin inclination of both right and left wheels with a suitable alignment gauge.

Camber, caster and kingpin inclination:

Refer to SDS (FA-29).

2. If camber, caster or kingpin inclination is not within specification, inspect front suspension parts. Replace damaged or worn out parts.



TOE-IN

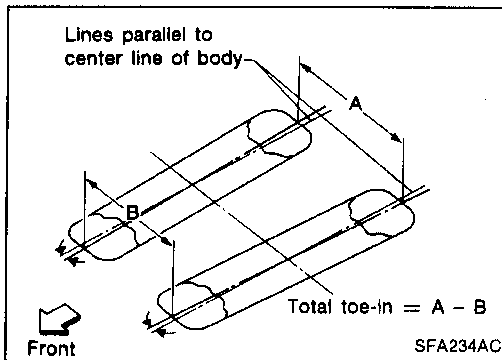
Measure toe-in using the following procedure.

WARNING:

- Always perform the following procedure on a flat surface.
 - Make sure that no person is in front of the vehicle before pushing it.
1. Bounce front of vehicle up and down to stabilize the posture.
 2. Push the vehicle straight ahead about 5 m (16 ft).
 3. Put a mark on base line of tread (rear side) of both tires at the same height as hub center. These are measuring points.

ON-VEHICLE SERVICE

Front Wheel Alignment (Cont'd)



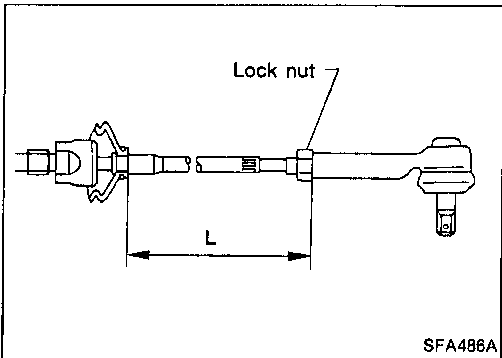
4. Measure distance "A" (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 180 degrees (1/2 turn).

If the wheels have rotated more than 180 degrees (1/2 turn), try the above procedure again from the beginning. Never push vehicle backward.

6. Measure distance "B" (front side).

Total toe-in :

Refer to SDS (FA-29).



7. Adjust toe-in by varying the length of steering tie-rods.

(1) Loosen lock nuts.

(2) Adjust toe-in by screwing tie-rods in and out.

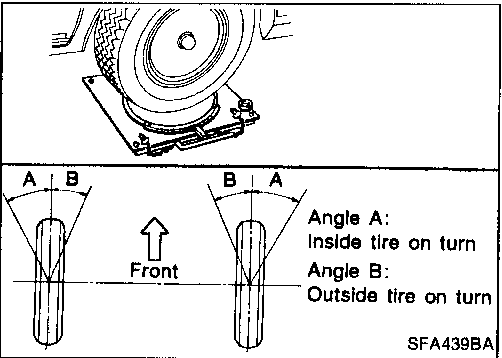
Standard length "L":

Refer to ST section ("Inspection and Adjustment", "SDS").

(3) Tighten lock nuts to specified torque.

Lock nut tightening torque:

Refer to ST section ("POWER STEERING GEAR AND LINKAGE").

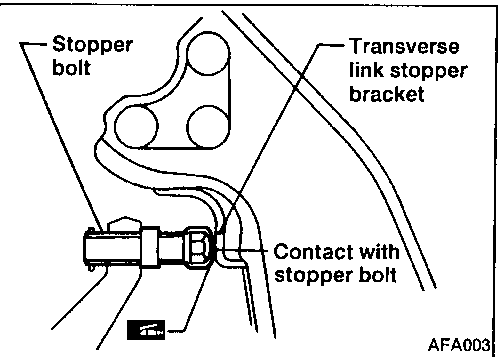


FRONT WHEEL TURNING ANGLE

1. Set wheels in straight-ahead position. Then move vehicle forward until front wheels rest on turning radius gauge properly.
2. Rotate steering wheel all the way right and left; measure turning angle.

Wheel turning angle (Full turn):

Refer to SDS (FA-29).

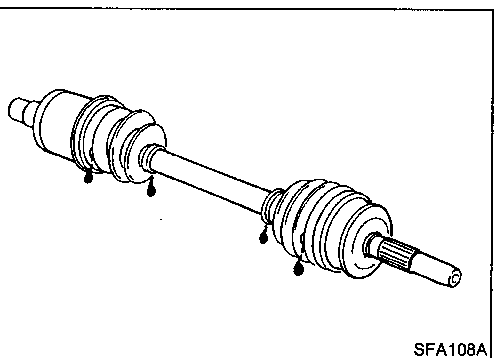


3. Check stopper bolt head to see whether it contacts stopper bracket at specified outside wheel angle. If not, adjust stopper bolt to contact stopper bracket at the correct angle. Adjust protrusion of stopper bolt before placing stopper bolt cap.

Apply grease to face of stopper bracket that bolt touches.

Tighten stopper bolt lock nut.

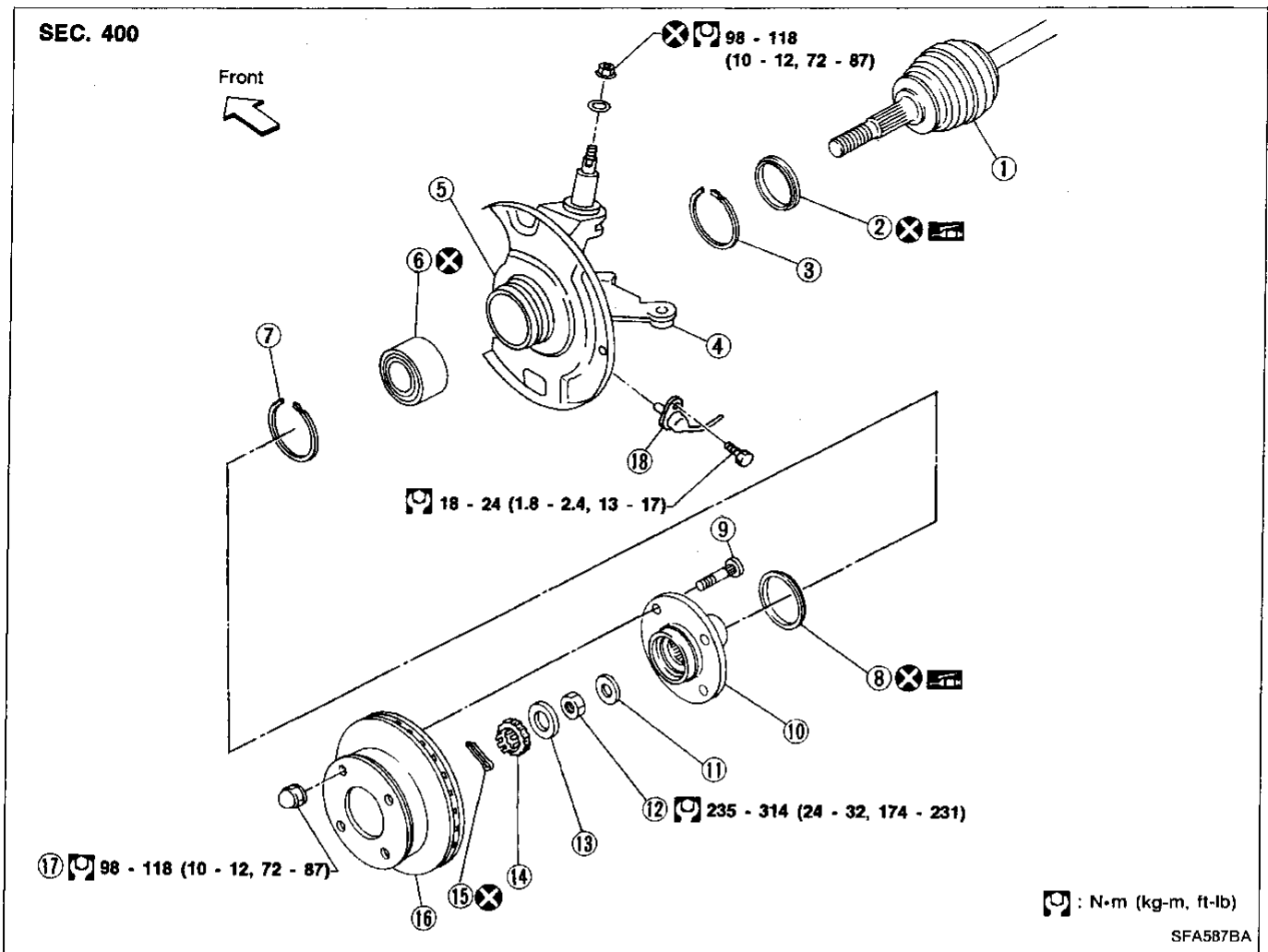
⚙️: 54 - 72 N·m (5.5 - 7.3 kg·m, 40 - 53 ft·lb)



Drive Shaft

Check for grease leakage or other damage.

FRONT AXLE



- | | | |
|--------------------------|--------------------------|-----------------|
| ① Drive shaft | ⑦ Snap ring | ⑬ Insulator |
| ② Inner grease seal | ⑧ Outer grease seal | ⑭ Adjusting cap |
| ③ Snap ring | ⑨ Hub bolt | ⑮ Cotter pin |
| ④ Knuckle | ⑩ Wheel hub | ⑯ Brake disc |
| ⑤ Baffle plate | ⑪ Plain washer | ⑰ Wheel nut |
| ⑥ Wheel bearing assembly | ⑫ Wheel bearing lock nut | ⑱ ABS sensor |

Wheel Hub and Knuckle

REMOVAL

CAUTION:

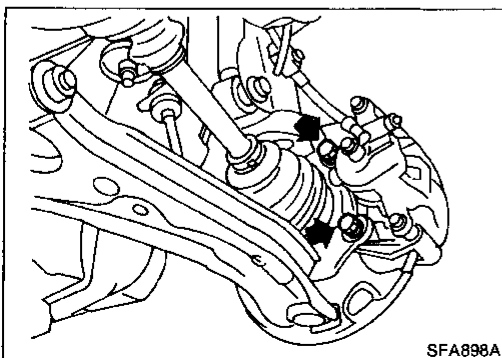
Before removing the front axle assembly, disconnect the ABS wheel sensor from the assembly. Then move it away from the front axle assembly area.

Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.

1. Remove wheel bearing lock nut.
2. Remove brake caliper assembly and rotor.

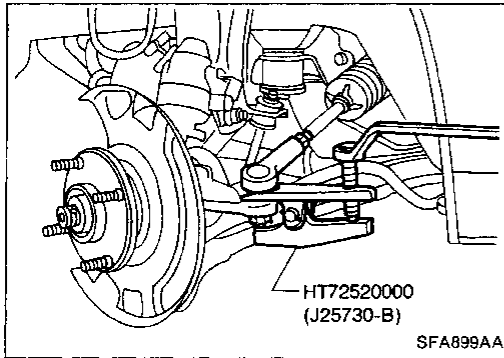
Brake hose need not be disconnected from brake caliper. In this case, suspend caliper assembly with wire so as not to stretch brake hose. Be careful not to depress brake pedal, or piston will pop out.

Make sure brake hose is not twisted.

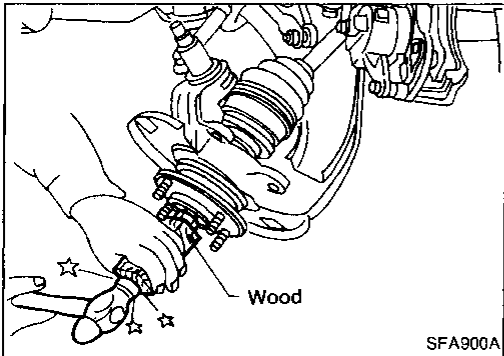


FRONT AXLE

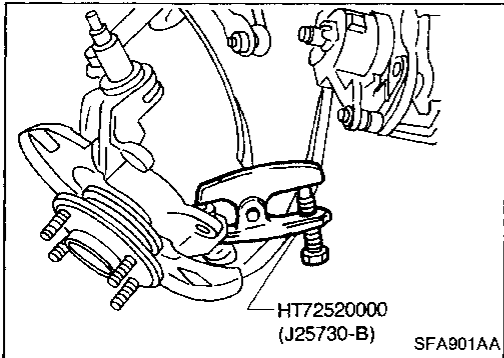
Wheel Hub and Knuckle (Cont'd)



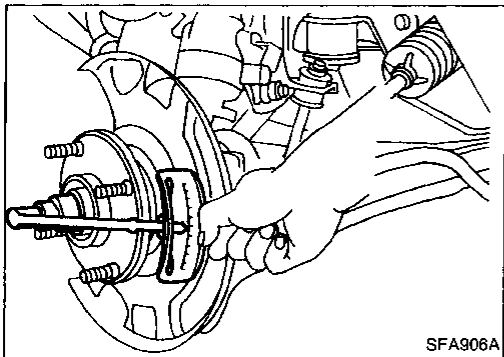
3. Separate tie-rod from knuckle with Tool.
Install stud nut on stud bolt to prevent damage to stud bolt.
4. Remove kingpin cap and securing nut. Separate kingpin from knuckle.



5. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.
Cover boots with shop towel so as not to damage them when removing drive shaft.

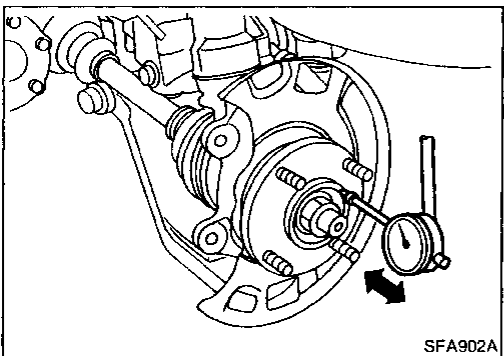


6. Loosen lower ball joint tightening nut.
7. Separate knuckle from lower ball joint stud with Tool.
8. Remove knuckle from transverse link.



INSTALLATION

1. Install knuckle with wheel hub.
2. Tighten wheel bearing lock nut.
**ⓘ: 235 - 314 N·m
(24 - 32 kg-m, 174 - 231 ft-lb)**
3. Check that wheel bearings operate smoothly.



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

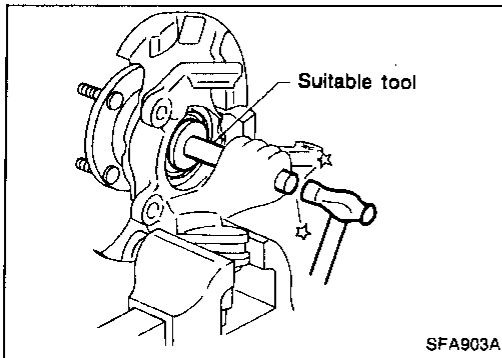
FRONT AXLE

Wheel Hub and Knuckle (Cont'd)

DISASSEMBLY

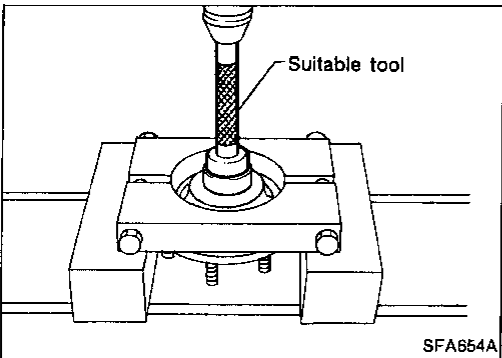
CAUTION:

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



Wheel hub

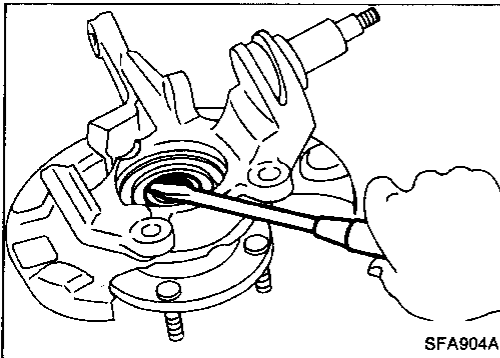
Drive out hub with inner race (outside) from knuckle with a suitable tool.



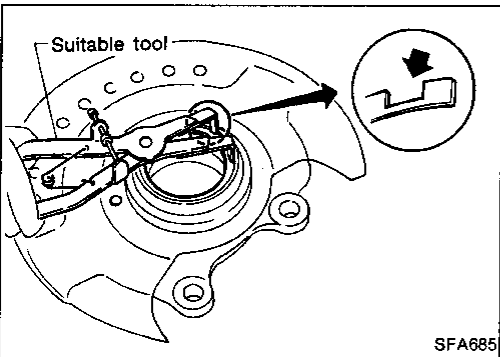
Wheel bearing

When replacing wheel bearing, replace complete wheel bearing assembly (Inner races and outer race).

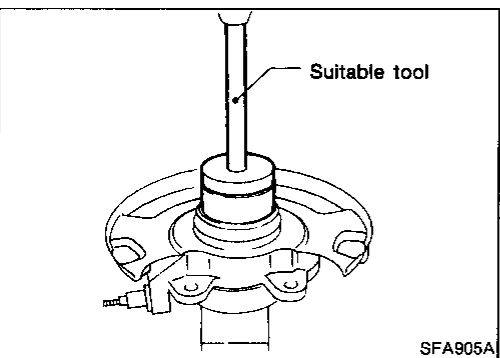
1. Remove bearing inner race (outside), then remove outer grease seal.



2. Remove inner grease seal from knuckle.



3. Remove snap rings.



4. Press out bearing outer race.

FRONT AXLE

Wheel Hub and Knuckle (Cont'd)

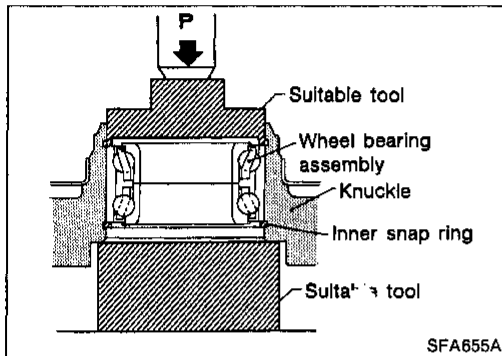
INSPECTION

Wheel hub and knuckle

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

Snap ring

Check snap ring for wear or cracks. Replace if necessary.



ASSEMBLY

1. Install inner snap ring into groove of knuckle.
2. Press new wheel bearing assembly into knuckle until it contacts snap ring.

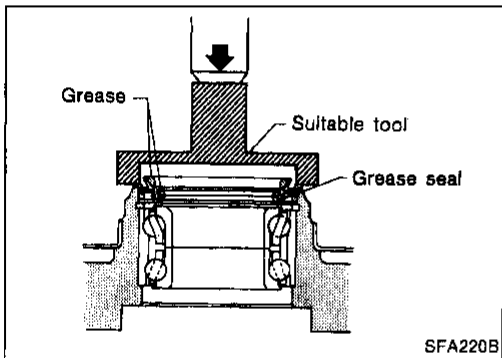
Maximum load P:

49 kN (5 ton, 5.5 US ton, 4.9 Imp ton)

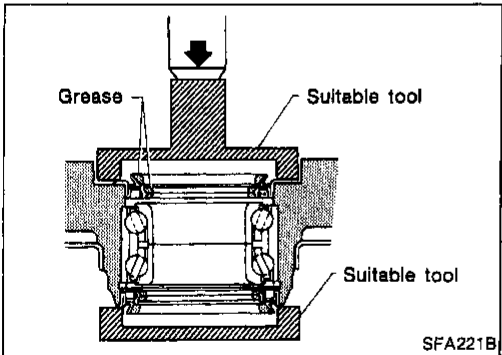
CAUTION:

- Do not press inner race of wheel bearing assembly.
- Do not apply oil or grease to mating surfaces of wheel bearing outer race and knuckle.

3. Install outer snap ring into groove of knuckle.
4. Pack grease seal lip with multi-purpose grease.
5. Install outer grease seal.



6. Install inner grease seal.

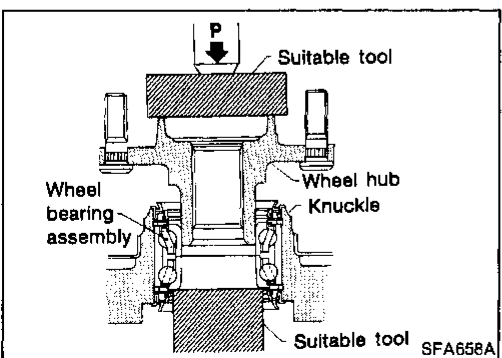


7. Press wheel hub into knuckle.

Maximum load P:

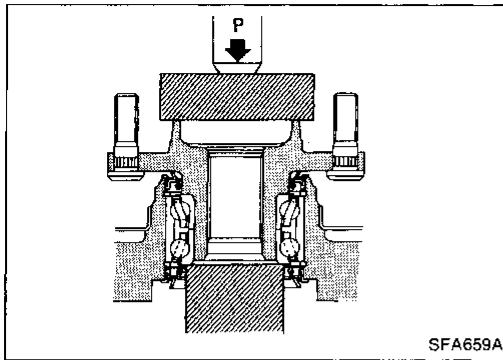
29 kN (3 ton, 3.3 US ton, 3.0 Imp ton)

Be careful not to damage grease seal.



FRONT AXLE

Wheel Hub and Knuckle (Cont'd)



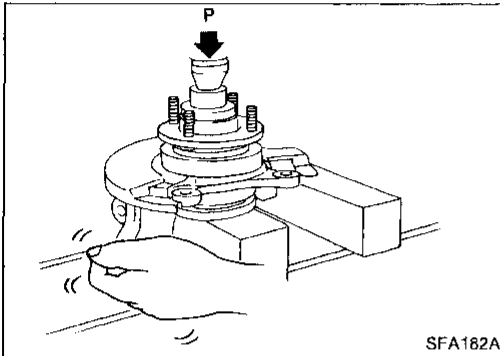
8. Check bearing operation.

(1) Add load P with press.

Load P:

34.3 - 49.0 kN

(3.5 - 5.0 ton, 3.9 - 5.5 US ton, 3.44 - 4.92 Imp ton)



(2) Spin knuckle several turns in both directions.

(3) Make sure that wheel bearings operate smoothly.

Drive Shaft

REMOVAL

1. Remove wheel bearing lock nut.

2. Remove brake caliper assembly and rotor.

Brake hose need not be disconnected from brake caliper.

In this case, suspend caliper assembly with wire so as not to stretch brake hose.

Be careful not to depress brake pedal, or piston will pop out.

Make sure brake hose is not twisted.

3. Remove tie-rod ball joint.

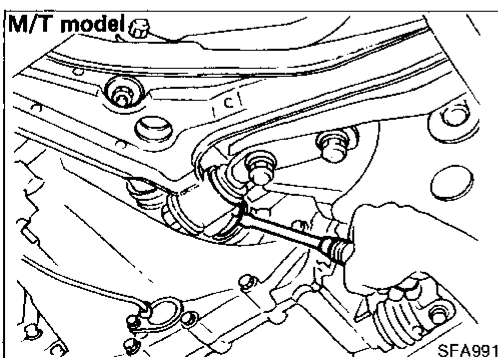
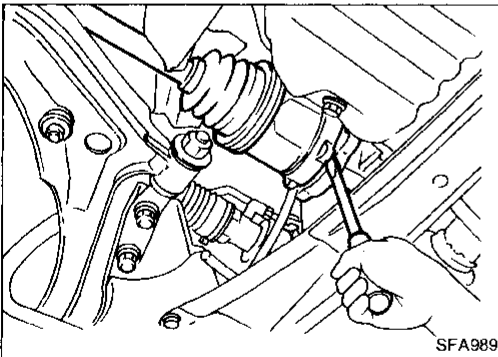
4. Remove upper knuckle nut.

5. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.

Cover boots with shop towel so as not to damage them when removing drive shaft.

Refer to FRONT AXLE — Wheel Hub and Knuckle (FA-8).

6. Remove right drive shaft from transaxle.



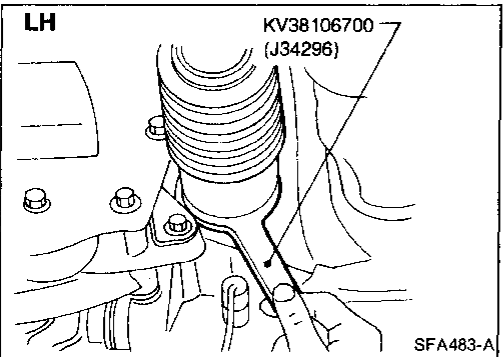
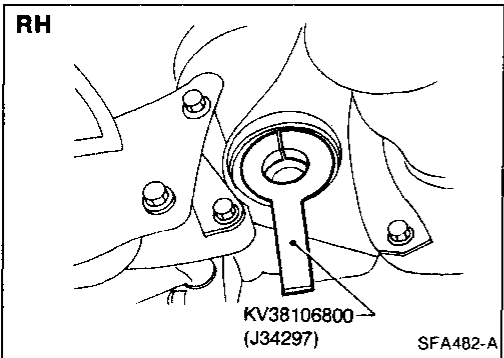
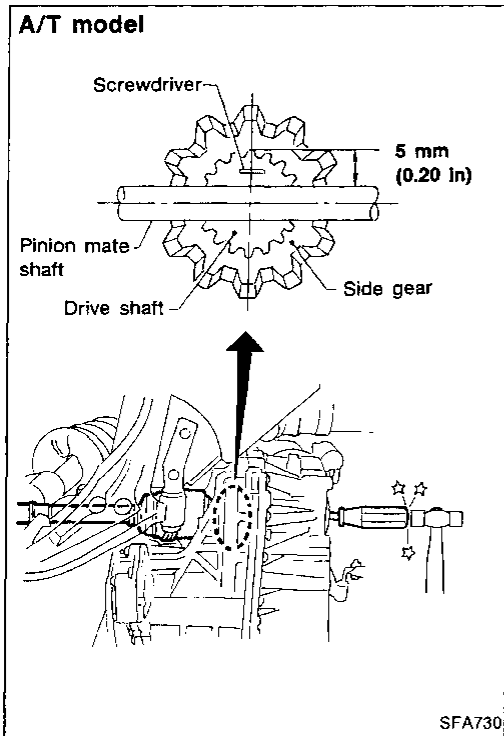
7. Remove left drive shaft from transaxle.

— For M/T models —

● Pry off drive shaft from transaxle as shown at left.

FRONT AXLE

Drive Shaft (Cont'd)



— For A/T models —

- Insert screwdriver into transaxle opening for right drive shaft and strike with a hammer.

Be careful not to damage pinion mate shaft and side gear.

INSTALLATION

Transaxle side

1. Drive a new oil seal to transaxle. Refer to MT or AT section ("Replacing Oil Seal" or "Differential Side Oil Seal Replacement", "ON-VEHICLE SERVICE").
2. Set Tool along the inner circumference of oil seal.

3. Insert drive shaft into transaxle. Be sure to properly align the serrations and then withdraw Tool.
4. Push drive shaft, then press-fit circular clip on the drive shaft into circular clip groove of side gear.
5. After its insertion, try to pull the flange out of the slide joint by hand. If it pulls out, the circular clip is not properly meshed with the side gear.

Wheel side

- Install drive shaft into knuckle.
- Tighten upper knuckle nut and wheel bearing lock nut. Refer to section Installation in FRONT AXLE — Wheel Hub and Knuckle (FA-8).

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FRONT AXLE

Drive Shaft (Cont'd)

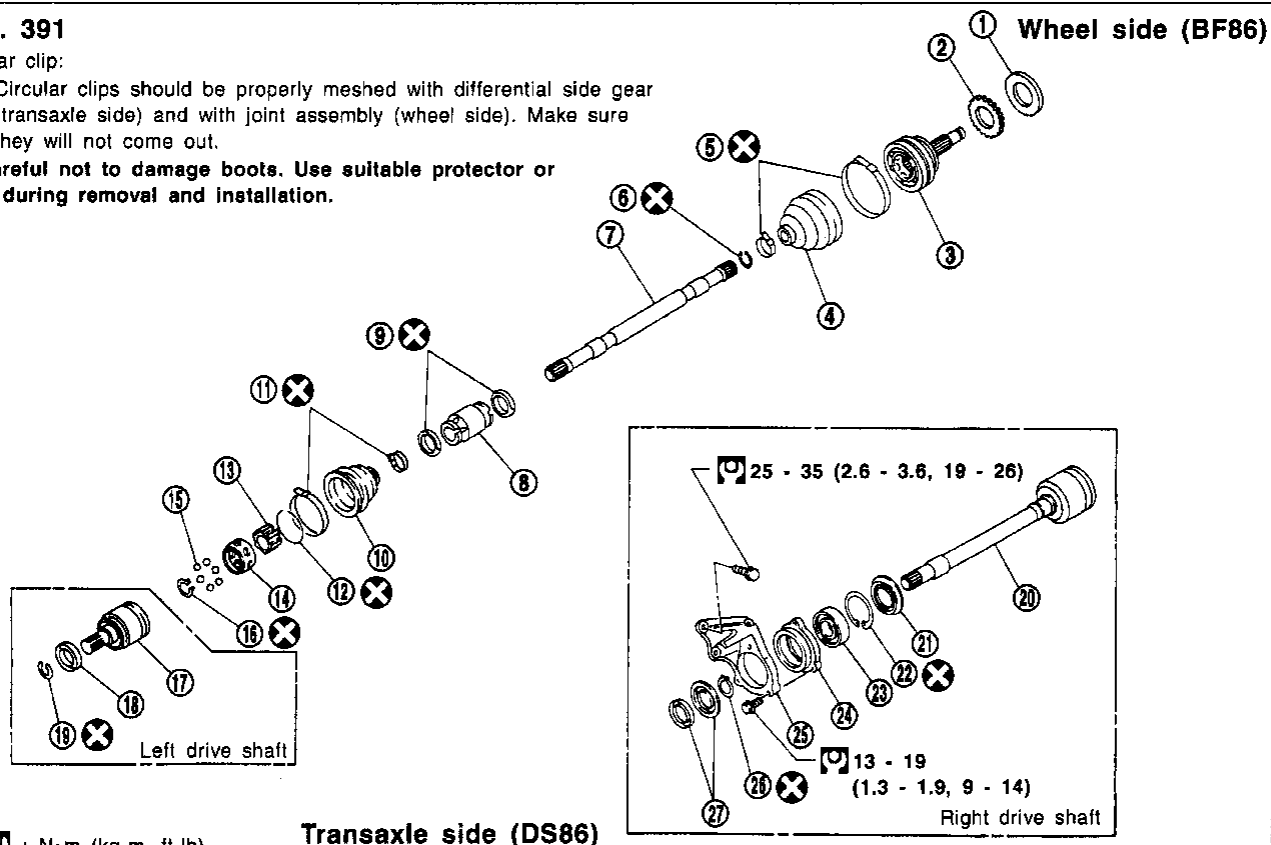
COMPONENTS

SEC. 391

Circular clip:

Circular clips should be properly meshed with differential side gear (transaxle side) and with joint assembly (wheel side). Make sure they will not come out.

Be careful not to damage boots. Use suitable protector or cloth during removal and installation.



SFA712B

- | | | |
|-----------------------|-----------------------|--|
| ① Dust shield | ⑩ Boot | ⑲ Circular clip |
| ② ABS ring | ⑪ Boot band | ⑳ Slide joint housing with extension shaft |
| ③ Joint assembly | ⑫ Stopper ring | ㉑ Dust shield |
| ④ Boot | ⑬ Inner race | ㉒ Snap ring |
| ⑤ Boot band | ⑭ Cage | ㉓ Support bearing |
| ⑥ Circular clip | ⑮ Ball | ㉔ Support bearing retainer |
| ⑦ Drive shaft | ⑯ Snap ring | ㉕ Bracket |
| ⑧ Dynamic damper | ⑰ Slide joint housing | ㉖ Snap ring |
| ⑨ Dynamic damper band | ⑱ Dust shield | ㉗ Dust shield |

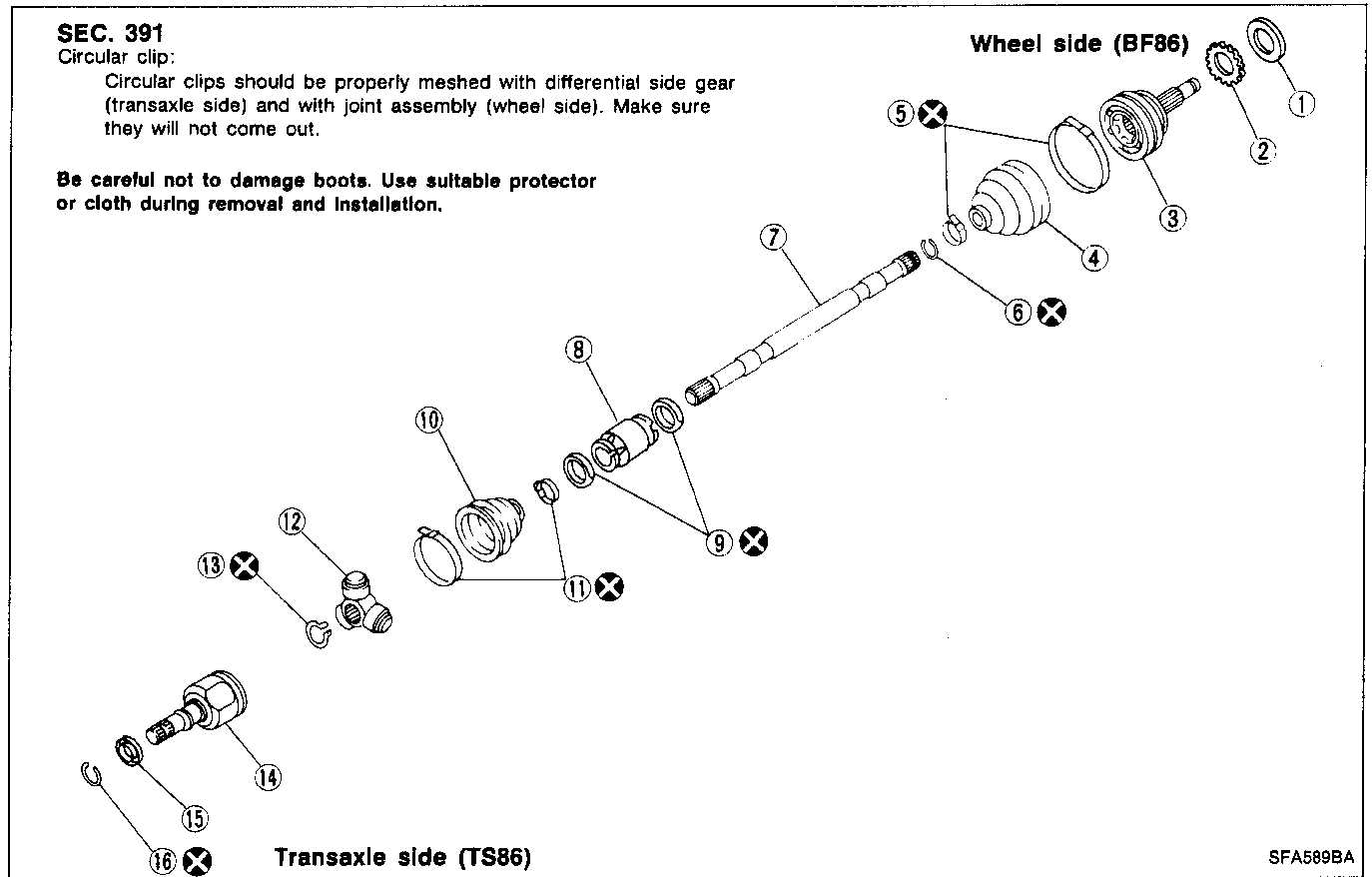
FRONT AXLE Drive Shaft (Cont'd)

SEC. 391

Circular clip:

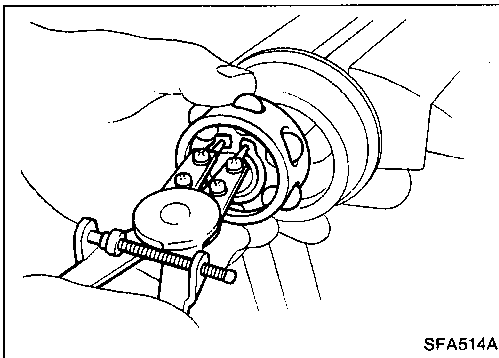
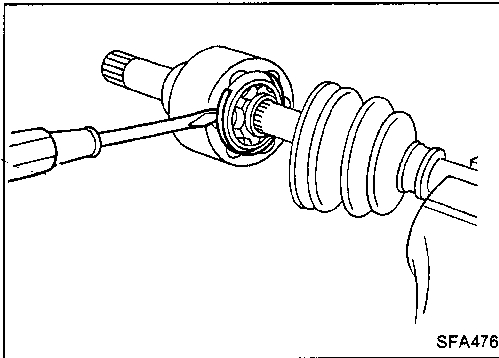
Circular clips should be properly meshed with differential side gear (transaxle side) and with joint assembly (wheel side). Make sure they will not come out.

Be careful not to damage boots. Use suitable protector or cloth during removal and installation.



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|------------------|-----------------------|-----------------------|
| ① Dust shield | ⑦ Drive shaft | ⑫ Spider assembly |
| ② ABS ring | ⑧ Dynamic damper | ⑬ Snap ring |
| ③ Joint assembly | ⑨ Dynamic damper band | ⑭ Slide joint housing |
| ④ Boot | ⑩ Boot | ⑮ Dust shield |
| ⑤ Boot band | ⑪ Boot band | ⑯ Circular clip |
| ⑥ Circular clip | | |



DISASSEMBLY

Transaxle side

(DS86 type)

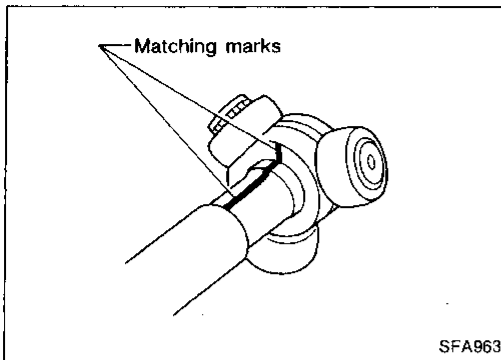
1. Remove boot bands.
2. Put matching marks on slide joint housing and inner race, before separating joint assembly.
3. Remove stopper ring with a screwdriver, and pull out slide joint housing.
4. Put matching marks on inner race and drive shaft.
5. Remove snap ring, then remove ball cage, inner race and balls as a unit.
6. Draw out boot.

Cover drive shaft serrations with tape so as not to damage the boot.

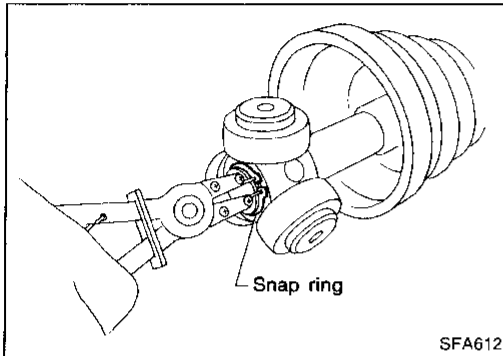
FRONT AXLE

Drive Shaft (Cont'd)

(TS86 type)



1. Remove boot bands.
2. Put matching marks on slide joint housing and drive shaft before separating joint assembly.
3. Put matching marks on spider assembly and drive shaft.



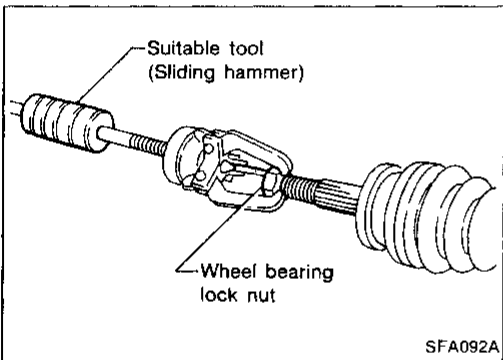
4. Remove snap ring, then remove spider assembly.

CAUTION:

Do not disassemble spider assembly.

5. Draw out boot.

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



Wheel side (BF86 type)

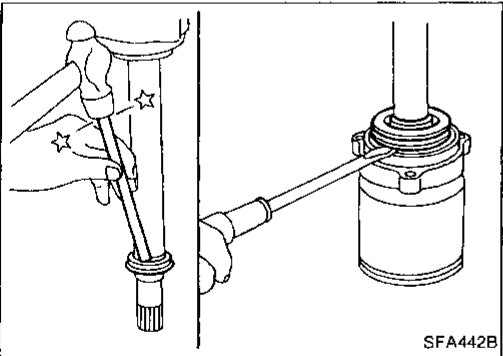
CAUTION:

The joint on the wheel side cannot be disassembled.

1. Before separating joint assembly, put matching marks on drive shaft and joint assembly.
2. Separate joint assembly with a suitable tool.

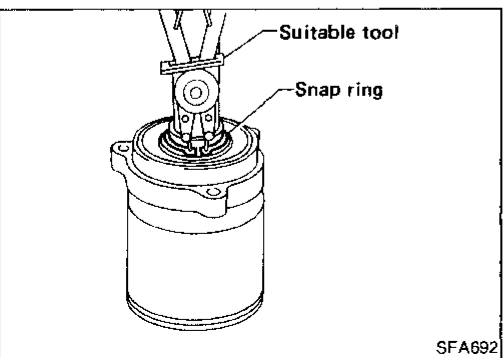
Be careful not to damage threads on drive shaft.

3. Remove boot bands.
4. Draw out boot.



Support bearing

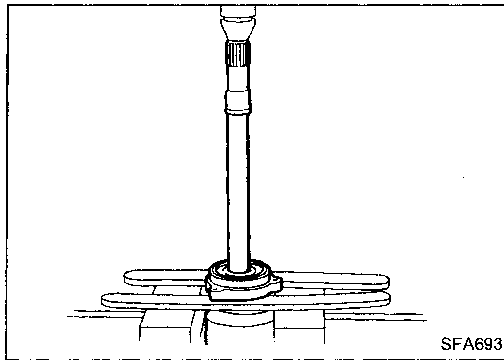
1. Remove dust shield.



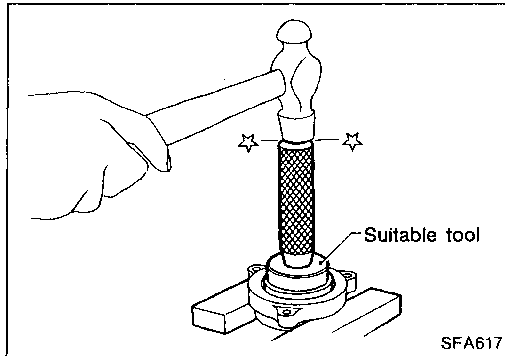
2. Remove snap ring.

FRONT AXLE

Drive Shaft (Cont'd)



3. Press support bearing assembly off of drive shaft.



4. Separate support bearing from retainer.

INSPECTION

Thoroughly clean all parts in cleaning solvent, and dry with compressed air. Check parts for evidence of 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.

Joint assembly (Transaxle side)

- Check spider assembly for needle bearing and washer damage. Replace if necessary. (TS86 type)
- Check roller surfaces for scratches, wear or other damage. Replace if necessary. (TS86 type)
- Replace any parts of double offset joint which show signs of scorching, rust, wear or excessive play. (DS86 type)
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.

Joint assembly (Wheel side)

Replace joint assembly if it is deformed or damaged.

Support bearing

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

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FRONT AXLE

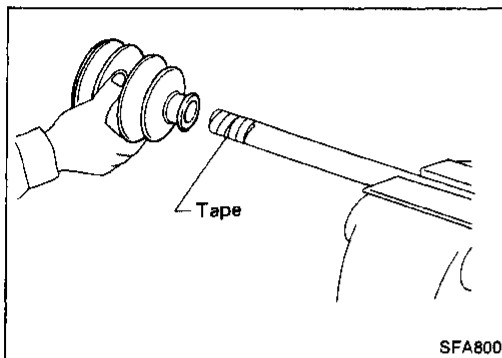
Drive Shaft (Cont'd)

Support bearing bracket

Check support bearing bracket for cracks with a magnetic exploration or dyeing test.

ASSEMBLY

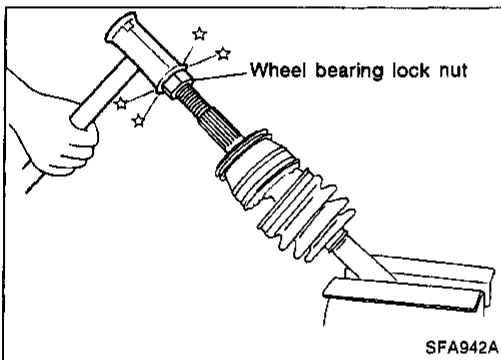
- After drive shaft has been assembled, ensure that it moves smoothly over its entire range without binding.
- Use **NISSAN GENUINE GREASE** or equivalent after every overhaul.



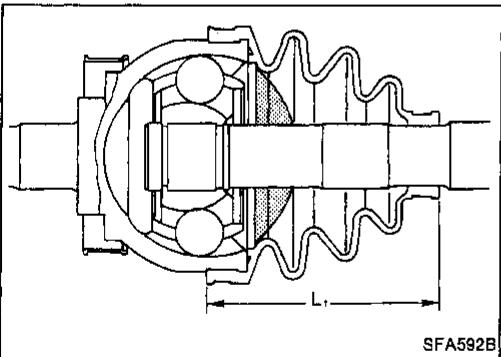
Wheel side (BF86 type)

1. Install boot and new small boot band on drive shaft.

Cover drive shaft serration with tape so as not to damage boot during installation.



2. Set joint assembly onto drive shaft by lightly tapping it. Install joint assembly securely, ensuring marks which were made during disassembly are properly aligned.



3. Pack drive shaft with specified amount of grease.

Specified amount of grease:

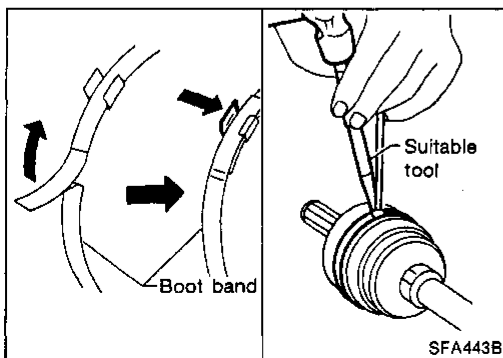
105 - 125 g (3.70 - 4.41 oz)

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

Set boot so that it does not swell and deform when its length is "L₁".

Length "L₁":

100.5 mm (3.96 in)



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

FRONT AXLE

Drive Shaft (Cont'd)

Dynamic damper

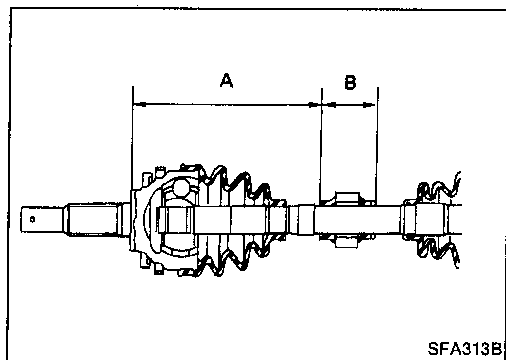
1. Use new damper bands when installing.
2. Install dynamic damper from stationary-joint side while holding it securely.

Length:

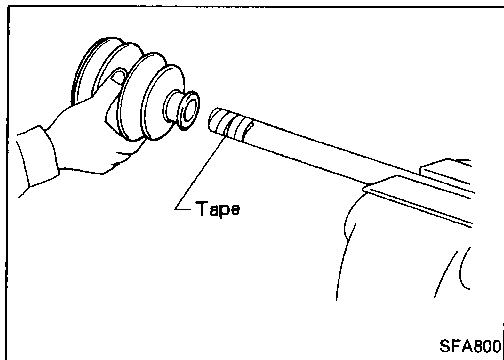
Unit: mm (in)

	RH	LH	
	BF86/DS86	BF86/TS86*	
		M/T	A/T
"A"	201.0 (7.91) 176.0 (6.93)*	—	163.5 (6.44) 157.8 (6.21)
"B"	70 (2.76)	—	70 (2.76) 70 (2.76)

* Models equipped with viscous coupling



SFA313B

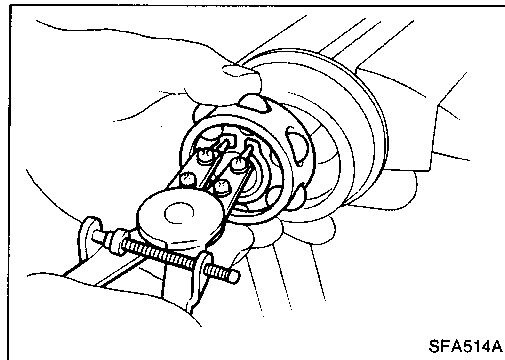


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Transaxle side

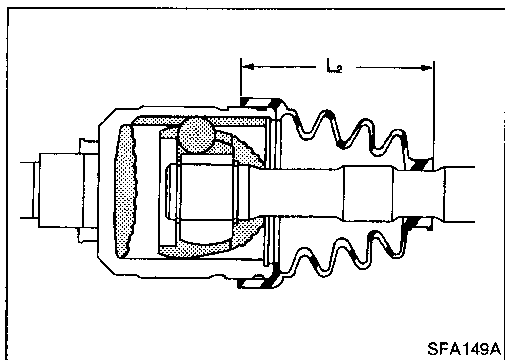
(DS86 type)

1. Install boot and new small boot band on drive shaft.
Cover drive shaft serration with tape so as not to damage boot during installation.



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2. Install ball cage, inner race and balls as a unit, making sure the marks which were made during disassembly are properly aligned.
3. Install new snap ring.



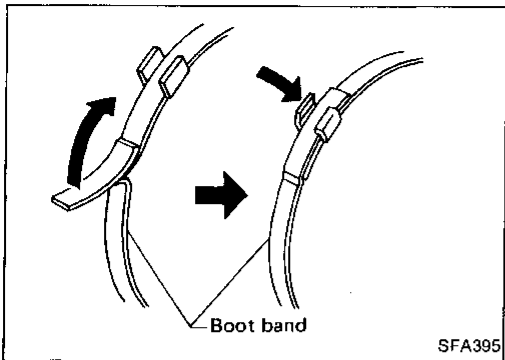
SFA149A

4. Pack drive shaft with specified amount of grease.
Specified amount of grease:
140 - 160 g (4.94 - 5.64 oz)
5. Install slide joint housing, then install new snap ring.
6. Make sure that boot is properly installed on the drive shaft groove.
Set boot so that it does not swell and deform when its length is "L₂".
Length "L₂":
98 mm (3.86 in)

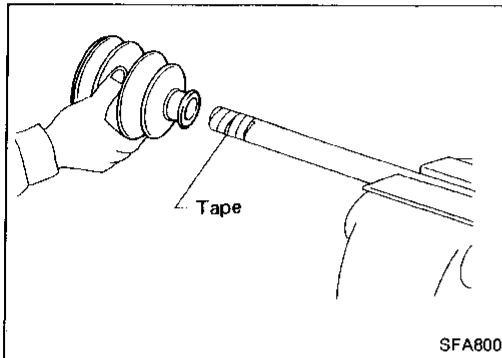
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FRONT AXLE

Drive Shaft (Cont'd)

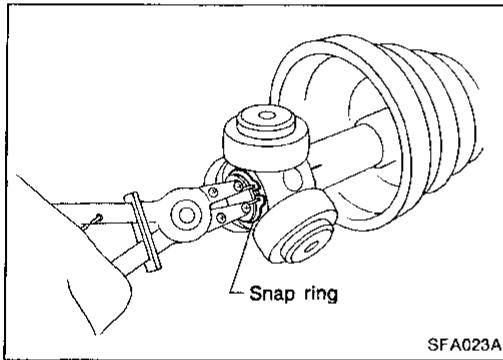


7. Lock new larger and smaller boot bands securely with a suitable tool.

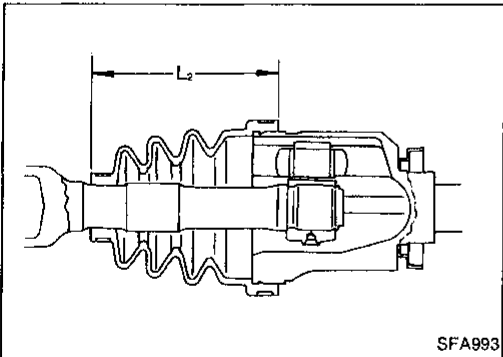


(TS86 type)

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

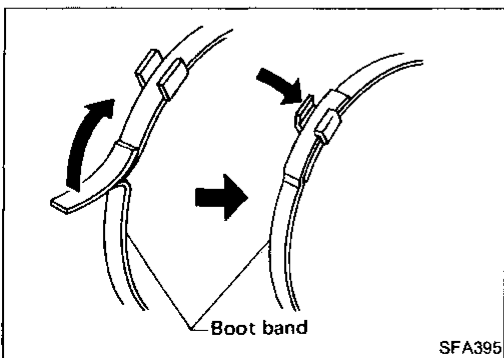


2. Install spider assembly securely, making sure the marks which were made during disassembly are properly aligned.
3. Install new snap ring.



4. Pack drive shaft with specified amount of grease.
Specified amount of grease:
150 - 170 g (5.29 - 6.00 oz)
5. Install slide joint housing.
6. Set boot so that it does not swell and deform when its length is " L_2 ".
Length " L_2 ":
98.5 mm (3.878 in)

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



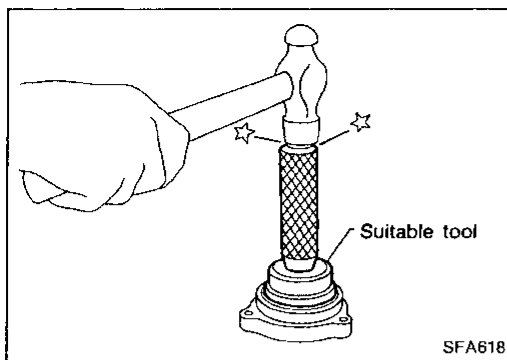
7. Lock new larger and smaller boot bands securely with a suitable tool.

FRONT AXLE

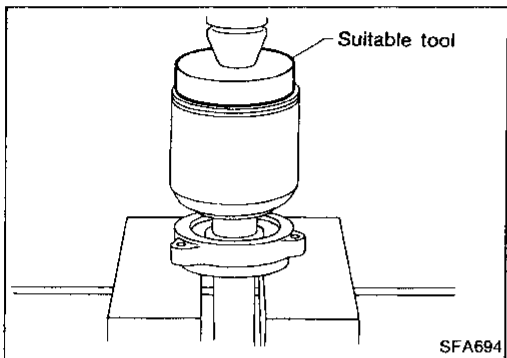
Drive Shaft (Cont'd)

Support bearing

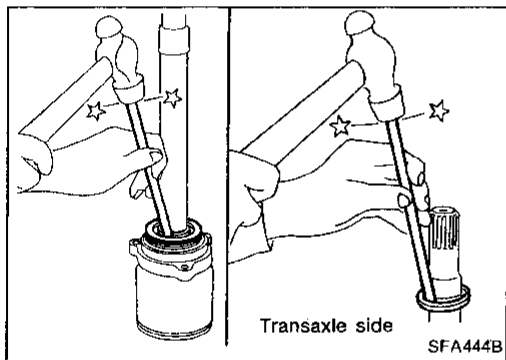
- Press bearing into retainer.



- Press drive shaft into bearing.



- Install snap ring.
- Install new dust shield.



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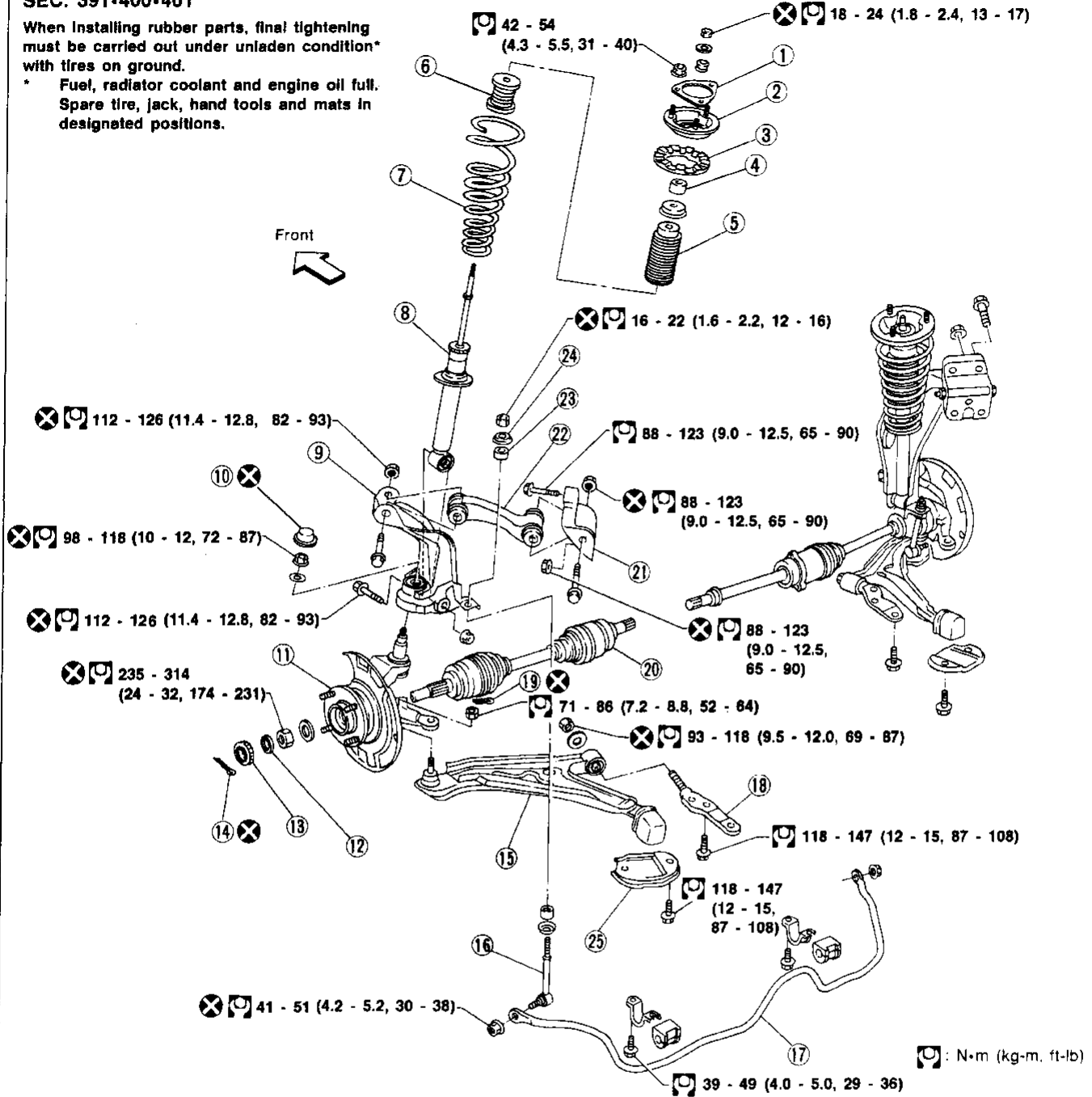
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FRONT SUSPENSION

SEC. 391-400-401

When installing rubber parts, 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.



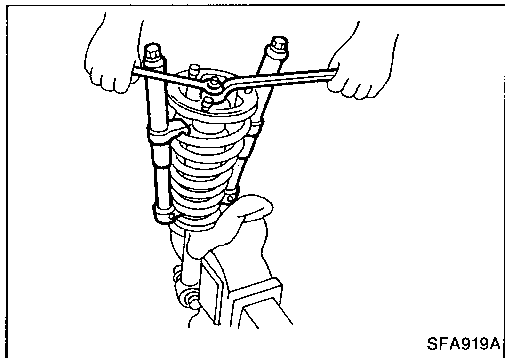
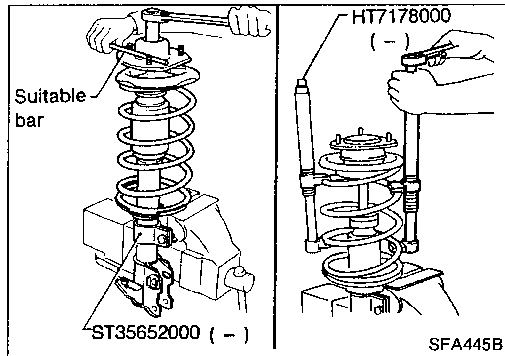
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- | | | |
|-------------------------------------|---|----------------------|
| ① Gasket | ⑨ Third link | ⑰ Stabilizer bar |
| ② Shock absorber mounting insulator | ⑩ Cap | ⑱ Gusset pin |
| ③ Upper rubber seat | ⑪ Wheel hub and steering knuckle assembly | ⑲ Cotter pin |
| ④ Shock absorber bushing | ⑫ Insulator | ⑳ Drive shaft |
| ⑤ Dust cover | ⑬ Adjusting cap | ㉑ Upper link bracket |
| ⑥ Bound bumper rubber | ⑭ Cotter pin | ㉒ Upper link |
| ⑦ Coil spring | ⑮ Transverse link | ㉓ Bushing |
| ⑧ Shock absorber | ⑯ Connecting rod | ㉔ Washer |
| | | ㉕ Clamp |

Coil Spring and Shock Absorber

REMOVAL

- Remove shock absorber fixing bolt and nut (to hoodledge).
- **Do not remove piston rod lock nut on vehicle.**



DISASSEMBLY

1. Set shock absorber on vise with attachment, then **loosen** piston rod lock nut.
- **Do not remove piston rod lock nut at this time.**
2. Compress spring with Tool so that shock absorber mounting insulator can be turned by hand.
3. Remove piston rod lock nut.

INSPECTION

Shock absorber assembly

- Check for smooth operation through a full stroke, both compression and extension.
- Check for oil leakage on welded or gland packing portions.
- Check piston rod for cracks, deformation or other damage. Replace if necessary.

Mounting insulator and rubber parts

- Check cemented rubber-to-metal portion for separation or cracks. Check rubber parts for deterioration. Replace if necessary.

Coil spring

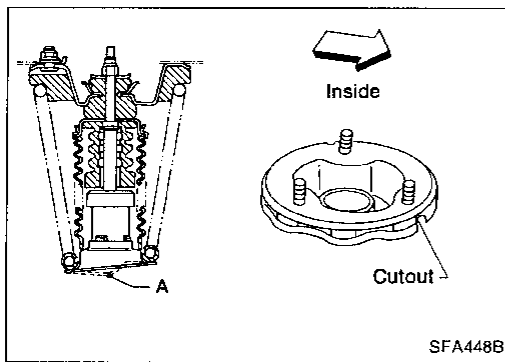
- Check for cracks, deformation or other damage. Replace if necessary.

FRONT SUSPENSION

Coil Spring and Shock Absorber (Cont'd)

ASSEMBLY

- Install shock absorber so that arrow A faces rearward on LH and forward on RH sides.
- Install upper mounting insulator with its cutout facing the inside of the vehicle.



Third Link and Upper Link

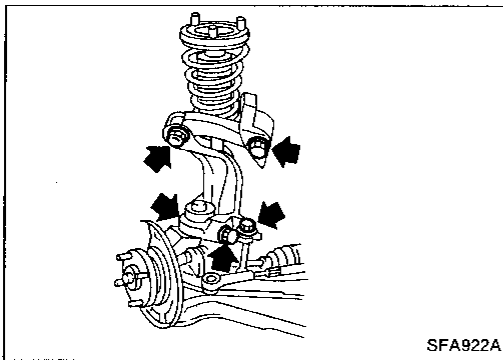
REMOVAL

CAUTION:

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

- Growling noise is emitted from kingpin bearing during operation.
- Kingpin bearing drags or turns roughly when steering knuckle is turned by hand.

1. Remove cap and kingpin nut.
2. Remove shock absorber fixing nut and upper link fixing bolts.
3. Remove stabilizer connecting rod.
4. Remove third link and upper link.



INSTALLATION

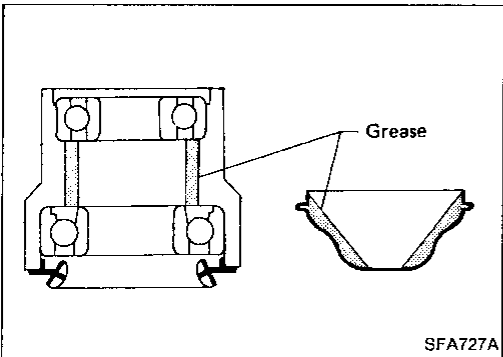
Third link

- Pack kingpin housing and cap with multi-purpose grease before installing third link and cap.

Grease capacity:

Kingpin housing 4 g (0.14 oz)

Cap 10 g (0.35 oz)

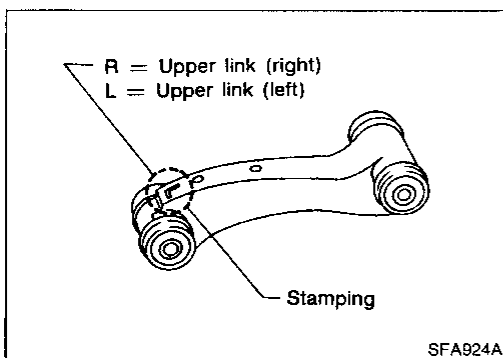


Upper link

- Upper link has "L" or "R" stamped on it as shown.

Upper link bushings cannot be disassembled.

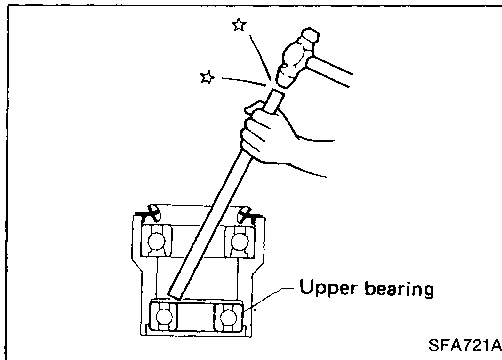
- When installing upper link, make sure that parts are in their correct positions.



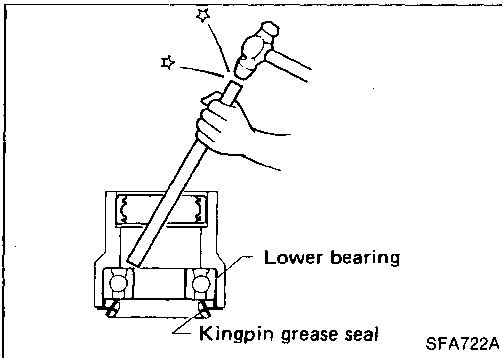
FRONT SUSPENSION

Third Link and Upper Link (Cont'd)

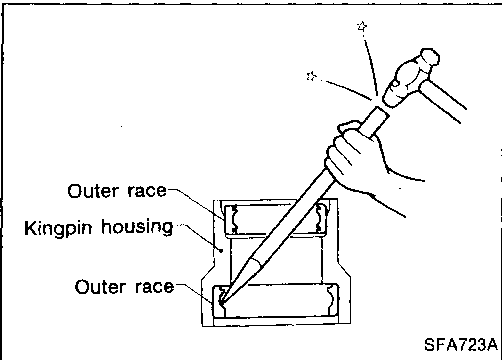
DISASSEMBLY



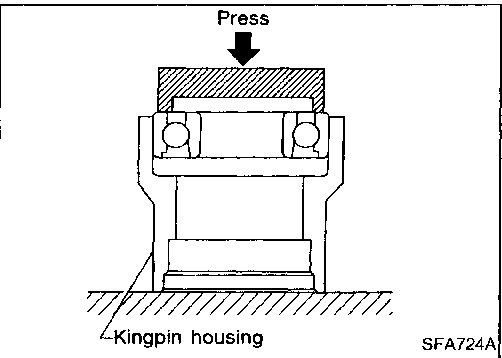
1. Remove upper bearing (inner race and ball).



2. Remove kingpin grease seal.
3. Remove lower bearing (inner race and ball).

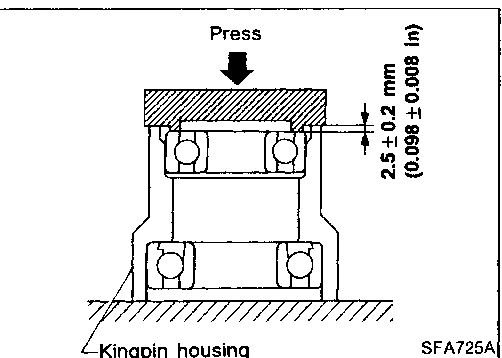


4. Remove upper and lower outer race.
 - Be careful not to damage kingpin housing.



ASSEMBLY

1. Install lower bearing.



2. Install upper bearing.

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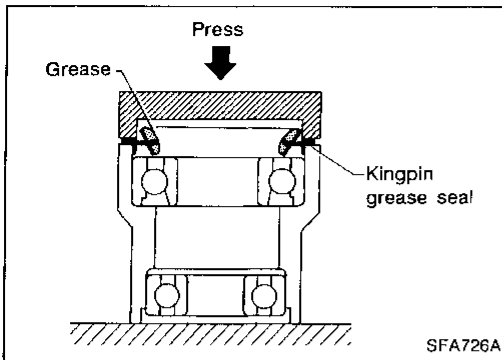
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FRONT SUSPENSION

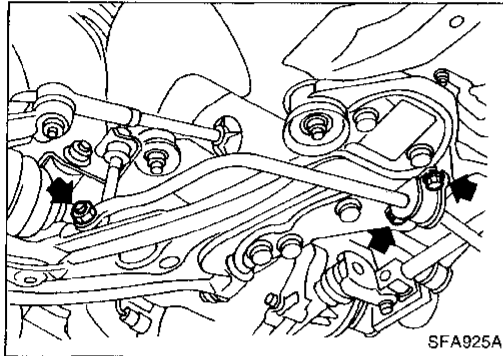
Third Link and Upper Link (Cont'd)



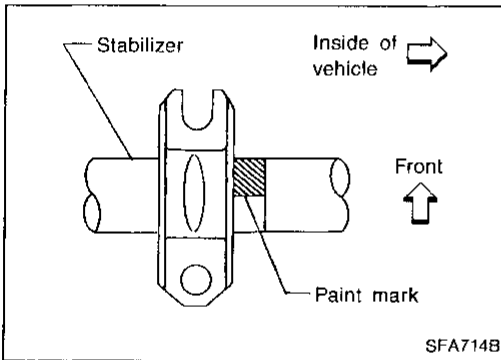
3. Install kingpin grease seal.
4. Apply multi-purpose grease to oil seal lip.

Stabilizer Bar

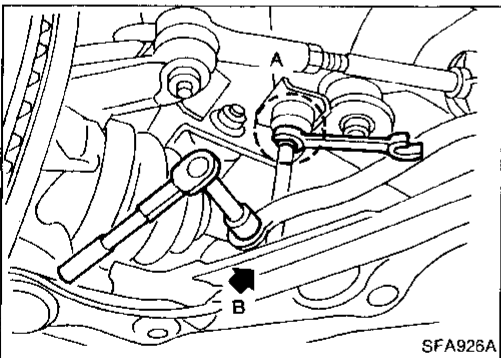
REMOVAL AND INSTALLATION



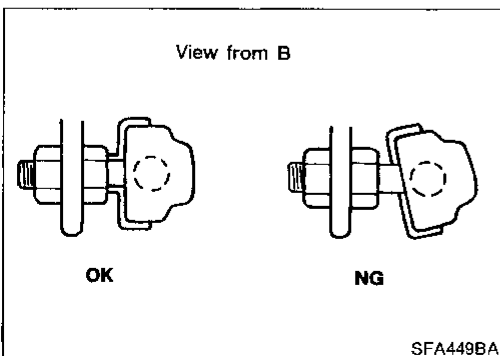
- Remove stabilizer bar.



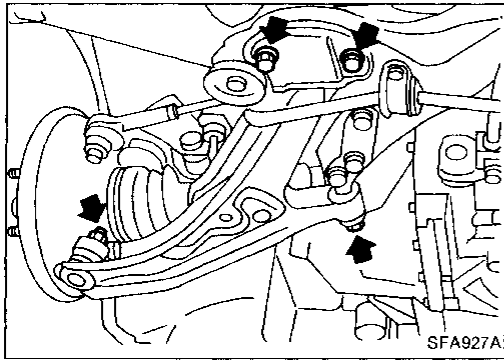
- When installing stabilizer, make sure that paint mark and clamp face in their correct directions.



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



- Install stabilizer bar with ball joint socket properly placed.



Transverse Link and Lower Ball Joint

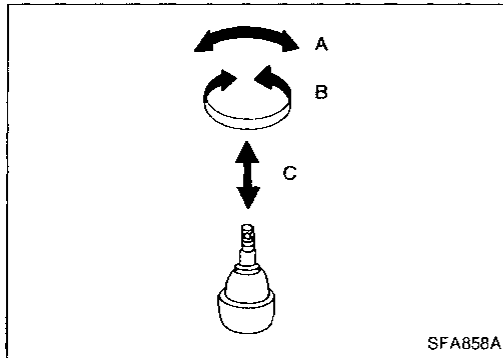
REMOVAL AND INSTALLATION

- Remove ball joint and transverse link assembly.
- During installation, final tightening must be carried out at curb weight with tires on ground.
- After installation, check wheel alignment. Refer to "Front Wheel Alignment" of ON-VEHICLE SERVICE (FA-6).

INSPECTION

Transverse link

- Check transverse link for damage, cracks or deformation. Replace it if necessary.
- Check rubber bushing for damage, cracks and deformation. Replace transverse link if necessary.



Lower ball joint

- Check ball joint for excessive play. Replace transverse link assembly if any of the following exists:
 - Ball stud is worn.
 - Joint is hard to swing.
 - Play in axial direction is excessive.
 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":

0.49 - 3.43 N·m (5.0 - 35.0 kg-cm, 4.3 - 30.4 in-lb)

Vertical end play "C":

0 mm (0 in)

- Check dust cover for damage. Replace it and cover clamp if necessary.

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

COIL SPRING

Applied model	M/T	A/T
Wire diameter mm (in)		
minor/major	10.2 (0.402)/ 12.1 (0.476)	10.3 (0.406)/ 12.2 (0.480)
Coil center diameter mm (in)		
minor/major	78.2 (3.079)/ 140.1 (5.52)	78.3 (3.083)/ 140.2 (5.52)
Free length mm (in)	411.0 (16.18)	417.0 (16.42)
Identification color	Orange x 2, Light green x 1	Light green x 2, Red x 1

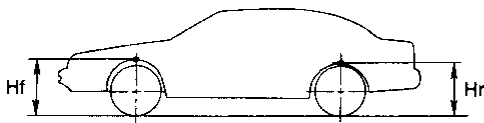
SHOCK ABSORBER

Applied model	All
Piston rod diameter mm (in)	12.5 (0.492)
Damping force [at 0.3 m (1.0 ft)/sec.] N (kg, lb)	
Expansion	745 - 1,020 (76 - 104, 168 - 229)
Compression	294 - 451 (30 - 46, 66 - 101)

STABILIZER BAR

Stabilizer bar diameter mm (in)	19 (0.75)

WHEELARCH HEIGHT (Unladen*)



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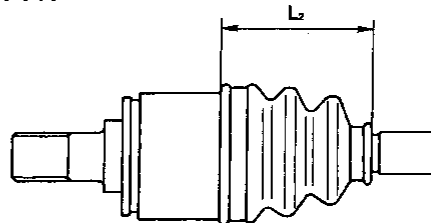
Applied model	All
Front (Hf) mm (in)	654.5 (25.77)
Rear (Hr) mm (in)	650.5 (25.61)

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

DRIVE SHAFT

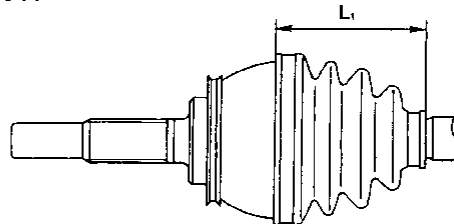
Applied model	Standard	Optional*	
	Both	RH	LH
Joint type	DS86		TS86
Transaxle side	DS86		TS86
Wheel side	BF86		
Grease	Nissan genuine grease or equivalent		
Quality	Nissan genuine grease or equivalent		
Capacity g (oz)			
Transaxle side	140 - 160 (4.94 - 5.64)	150 - 170 (5.29 - 6.00)	
Wheel side	105 - 125 (3.70 - 4.41)		
Boot length mm (in)			
Transaxle side "L ₂ "	98 (3.86)	98.5 (3.878)	
Wheel side "L ₁ "	100.5 (3.96)		

Transaxle side



SFA961A

Wheel side



SFA962A

*: Models equipped with viscous coupling

SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment

WHEEL ALIGNMENT (Unladen*1)

Camber	Degree minute (Decimal degree)	Minimum	-0°45' (-0.75°)	
		Nominal	0°00' (0.00°)	
		Maximum	0°45' (0.75°)	
		Left and right difference	45' (0.75°) or less	
Caster	Degree minute (Decimal degree)	Minimum	1°05' (1.08°)	
		Nominal	1°50' (1.83°)	
		Maximum	2°35' (2.58°)	
		Left and right difference	45' (0.75°) or less	
Kingpin inclination	Degree minute (Decimal degree)	Minimum	13°45' (13.75°)	
		Nominal	14°30' (14.50°)	
		Maximum	15°15' (15.25°)	
Total toe-in	Distance (A - B) mm (in)	Minimum	0 (0)	
		Nominal	1 (0.04)	
		Maximum	2 (0.08)	
	Angle (left plus right)	Degree minute (Decimal degree)	Minimum	0' (0.00°)
			Nominal	6' (0.10°)
			Maximum	12' (0.20°)
Wheel turning angle	Inside	Minimum	33°00' (33.00°)	
		Nominal	35°00' (35.00°)	
	Full turn*2 Outside	Minimum	37°00' (37.00°)	
		Nominal	30°00' (30.00°)	

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

*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

WHEEL BEARING

Wheel bearing axial end play limit mm (in)	0.05 (0.0020) or less
Wheel bearing lock nut tightening torque N·m (kg·m, ft·lb)	235 - 314 (24 - 32, 174 - 231)

WHEEL RUNOUT

Wheel type	Aluminum
Radial runout limit mm (in)	0.3 (0.012)
Lateral runout limit mm (in)	0.3 (0.012)

LOWER BALL JOINT

Swinging force "A" (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 "B" N·m (kg·cm, in·lb)	0.49 - 3.43 (5.0 - 35.0, 4.3 - 30.4)
Vertical end play "C" mm (in)	0 (0)