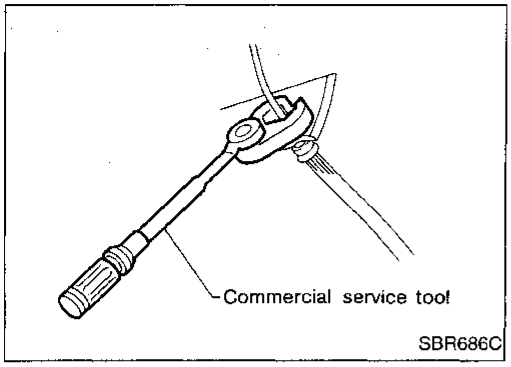
FRONT AXLE & FRONT SUSPENSION

SECTION FA

CONTENTS

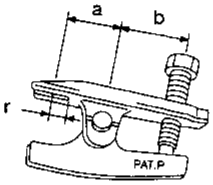
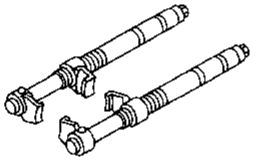
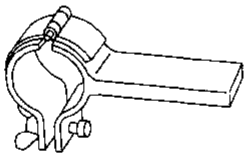
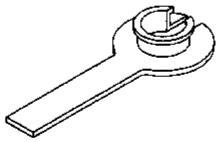


Precautions

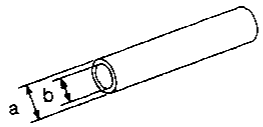
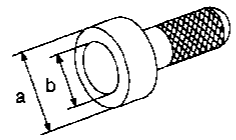
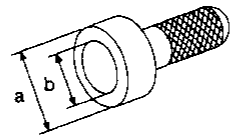
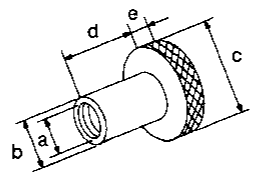
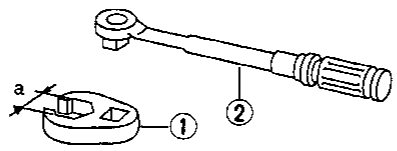
- **When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.**
  ***: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.**
- **When installing suspension components, check wheel alignment 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	 NT546	Removing tie-rod and lower ball joint a: 33 mm (1.30 in) b: 50 mm (1.97 in) r: R11.5 mm (0.453 in)
HT71780000 (—) Spring compressor	 NT144	Removing and installing coil spring
ST35652000 (—) Strut attachment	 NT145	Fixing strut assembly
KV38106700 (J34296-1) KV38106800 (J34297-1) Differential side oil seal protector	 NT147	Installing drive shaft LH: KV38106700 RH: KV38106800

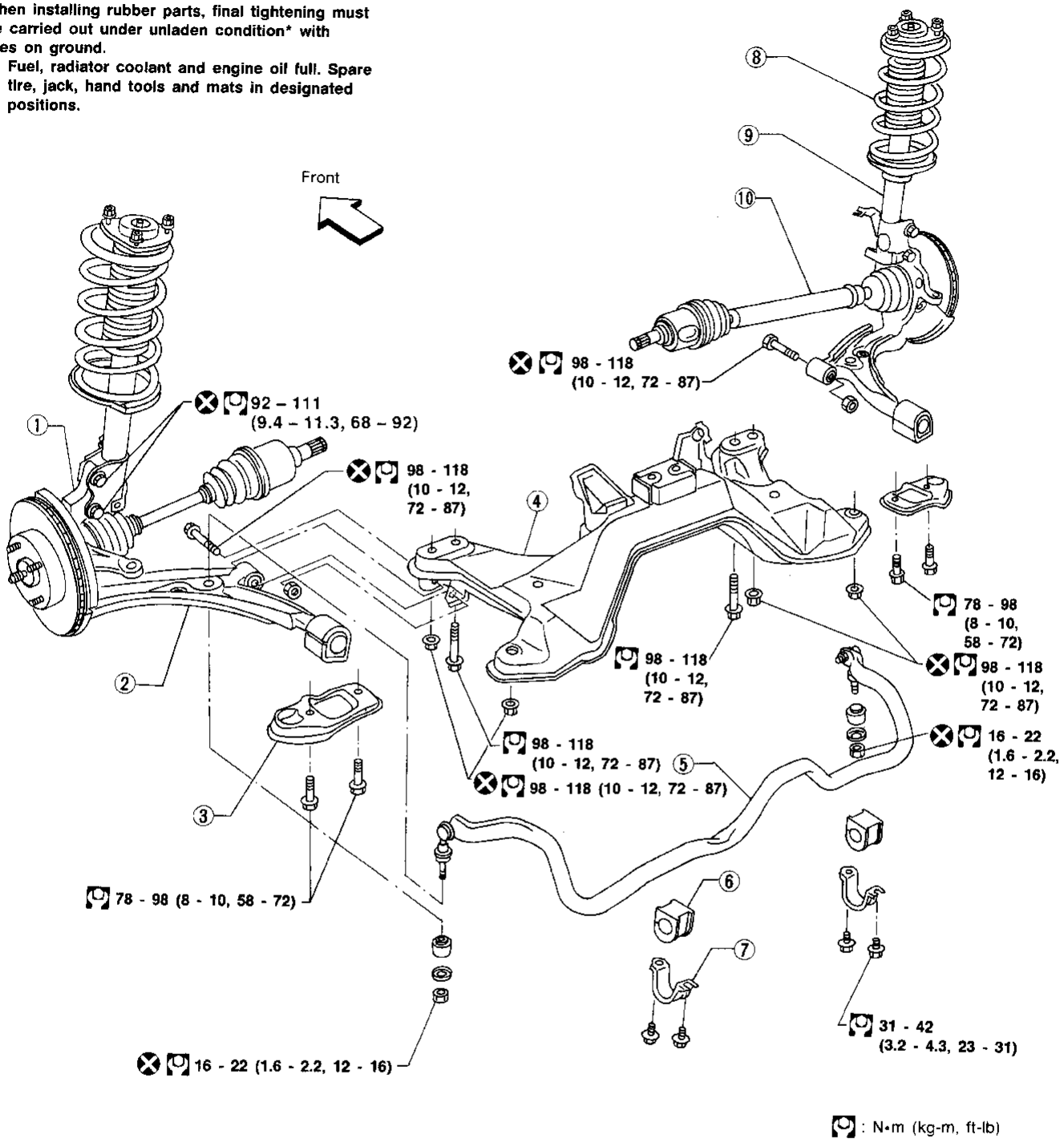
Commercial Service Tools

Tool name	Description	
Front wheel hub drift	 NT065	Removing wheel hub **a: 42 mm (1.65 in) dia.** **b: 33 mm (1.30 in) dia.**
Front wheel bearing outer race drift	 NT115	Removing and installing wheel bearing outer race **a: 76 mm (2.99 in) dia.** **b: 72 mm (2.83 in) dia.**
Grease seal drift	 NT115	Installing outer grease seal **a: 81 mm (3.19 in) dia.** **b: 76 mm (2.99 in) dia.**
Attachment Wheel alignment	 NT148	Measuring wheel alignment **a: Screw M22 x 1.5** **b: 35 (1.38) dia.** **c: 65 (2.56) dia.** **d: 56 (2.20)** **e: 12 (0.47)** Unit: mm (in)
① Flare nut crowfoot ② Torque wrench	 NT360	Removing and installing brake tubes **a: 10 mm (0.39 in)**

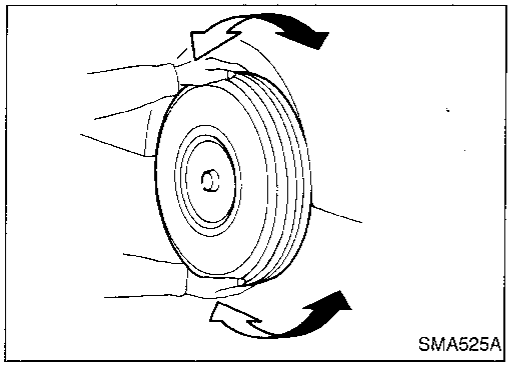
SEC. 391 • 400 • 401

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.**



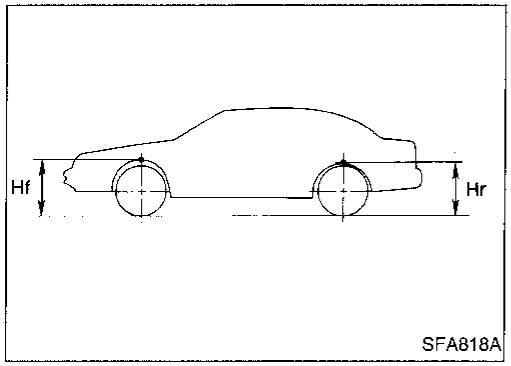
① Knuckle assembly
② Transverse link
③ Compression rod clamp
④ Front suspension member
⑤ Stabilizer bar
⑥ Bushing
⑦ Bracket
⑧ Coil spring
⑨ Strut assembly
⑩ Drive shaft


SMA525A

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 nuts and bolts to the specified torque.
  : Refer to FA-24.



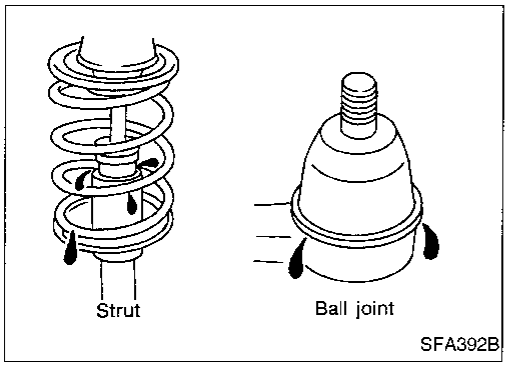
SFA818A

- Check spring height from top of wheelarch to ground using the following procedure.

a. 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.

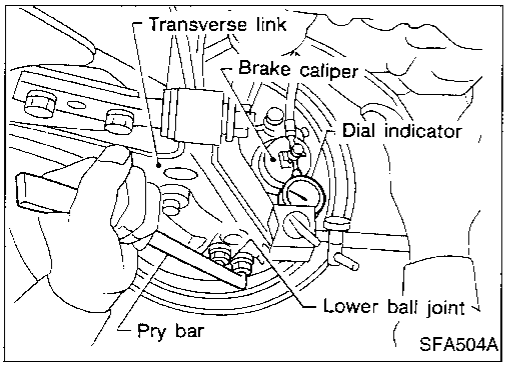
b. Check tires for proper inflation and wear (tread wear indicator must not be showing).

c. Bounce vehicle up and down several times and measure dimensions Hf and Hr. Refer to SDS, FA-30.
   Spring height is not adjustable. If out of specification, check for worn springs or suspension parts.



SFA392B

- Check strut 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.



SFA504A

- Check suspension ball joint end play.

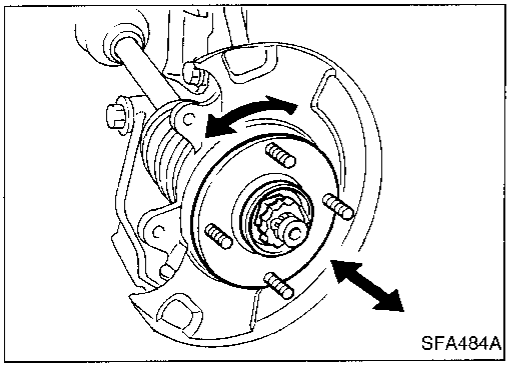
a. Jack up front of vehicle and set the stands.

b. Clamp dial indicator onto transverse link and place indicator tip on lower edge of brake caliper.

c. Make sure front wheels are straight and brake pedal is depressed.

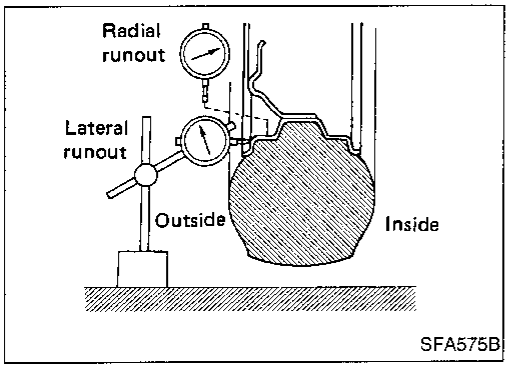
d. Place a pry bar between transverse link and inner rim of road wheel.

e. 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.


SFA484A

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 axial end play is not within specification or wheel bearing does not turn smoothly, replace wheel bearing assembly. Refer to FA-8.



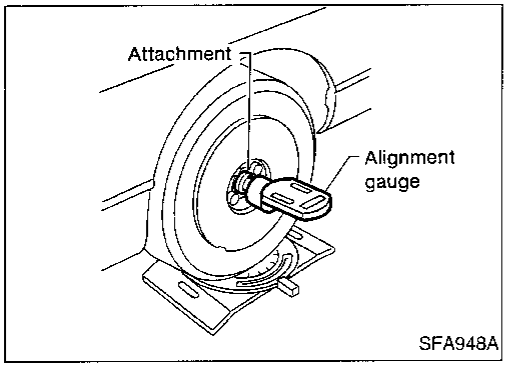
SFA575B

Front Wheel Alignment

Before checking front wheel alignment, be sure to make a preliminary inspection with vehicle unladen*.
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

PRELIMINARY INSPECTION

1. Check tires for wear and improper inflation.
2. Check wheel runout.
   Wheel runout:
   Refer to SDS, FA-31.
3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that front struts work properly by using the standard bounce test.
7. Check vehicle posture (unladen).

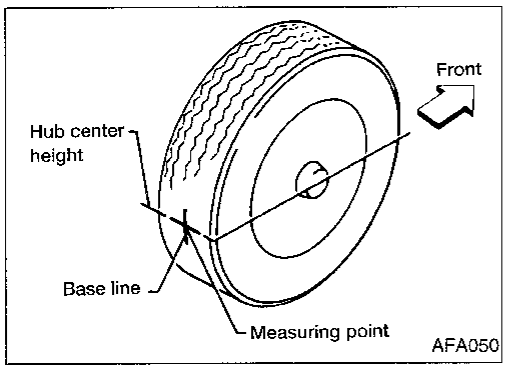


SFA948A

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-31.
2. If camber, caster and kingpin inclination are not within specification, inspect front suspension parts. Replace any damaged or worn out parts.



AFA050

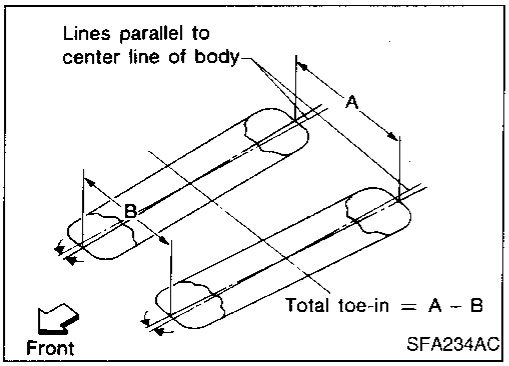
TOE-IN

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.

Front Wheel Alignment (Cont'd)

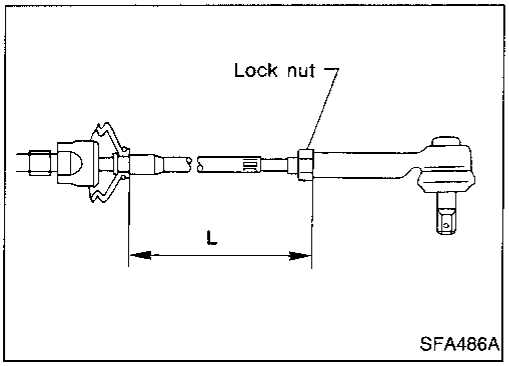


4. Measure distance "A" (rear tires).
5. Push the vehicle slowly ahead to rotate the wheels 180 degrees (1/2 turn).

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 tires).

Total toe-in:
Refer to SDS, FA-31.



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

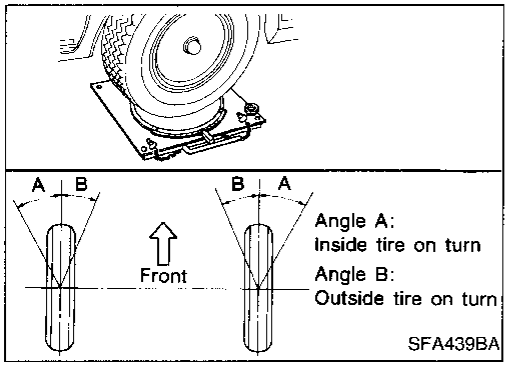
a. Loosen lock nuts.

b. Adjust toe-in by screwing tie-rods in and out.

Standard length "L":
Refer to ST section ("General Specifications", "SDS").

c. Tighten lock nuts to specified torque.

: 37 - 46 N·m (3.8 - 4.7 kg-m, 27 - 34 ft-lb)



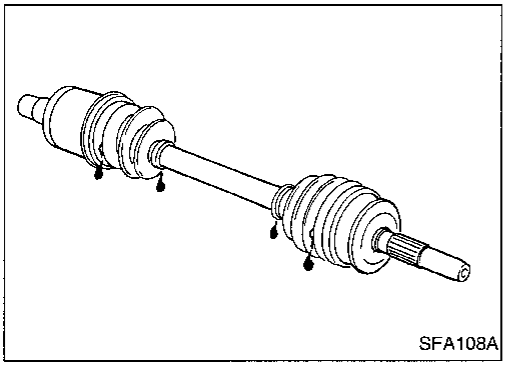
FRONT WHEEL TURNING ANGLE

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.

- On power steering models, turn steering wheel to full lock and apply force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine at idle.

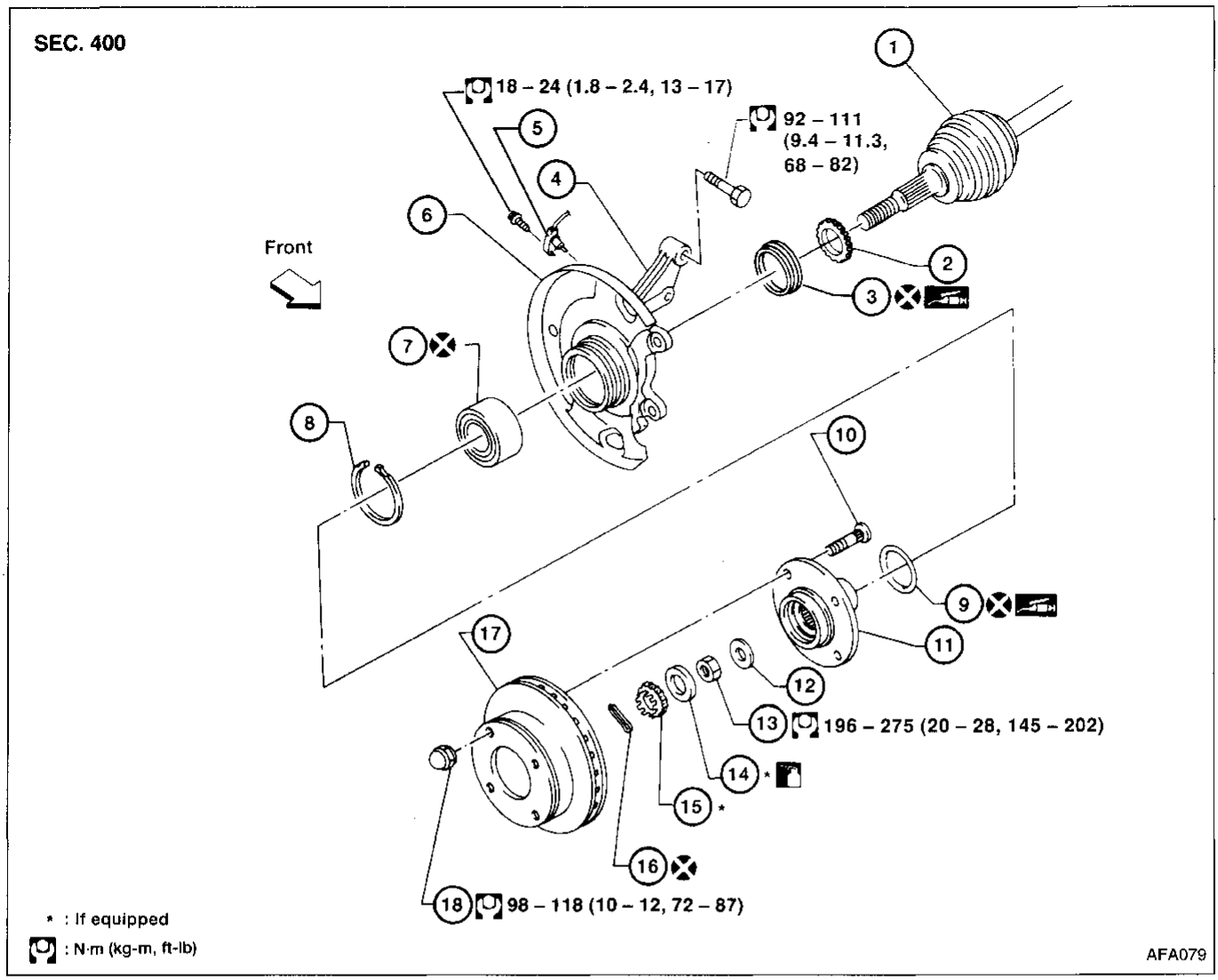
Do not hold the steering wheel at full lock for more than 15 seconds.

Wheel turning angle (Full turn):
Refer to SDS, FA-31.



Drive Shaft

Check for grease leakage or other damage.



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

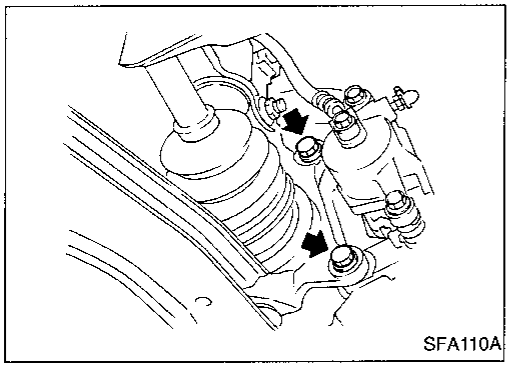
Wheel Hub and Knuckle

REMOVAL

CAUTION:
Before removing front axle assembly, disconnect ABS wheel sensor from assembly and move it from front axle assembly area.
Failure to do so may result in damage to sensor wires and the sensor becoming inoperative.

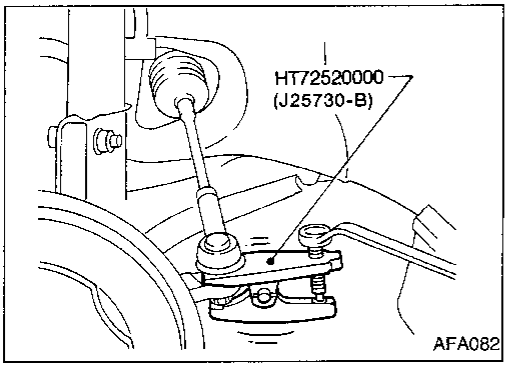
1. Remove wheel bearing lock nut.

Wheel Hub and Knuckle (Cont'd)


SFA110A

2. Remove brake caliper assembly and rotor.

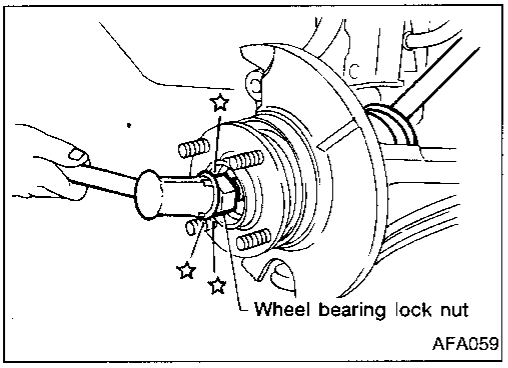
Brake hose need not be disconnected from brake caliper.
Suspend brake caliper with wire so as not to stretch brake hose.
Be careful not to depress brake pedal, or caliper piston will pop out.
Make sure brake hose is not twisted.



AFA082

3. Separate tie-rod from knuckle with Tool.

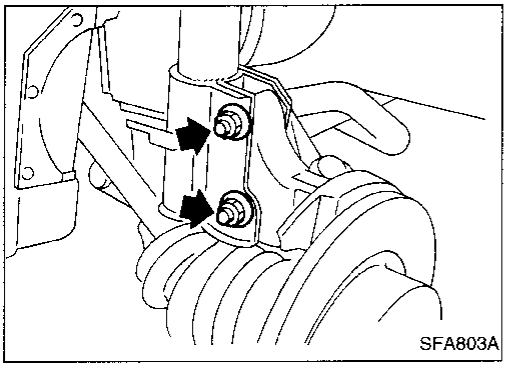
Install stud nut on stud bolt to prevent damage to stud bolt.



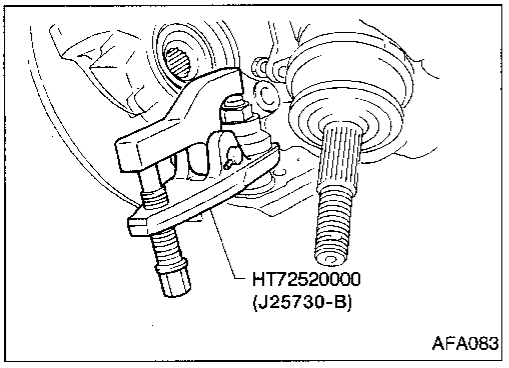
AFA059

4. 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.


SFA803A

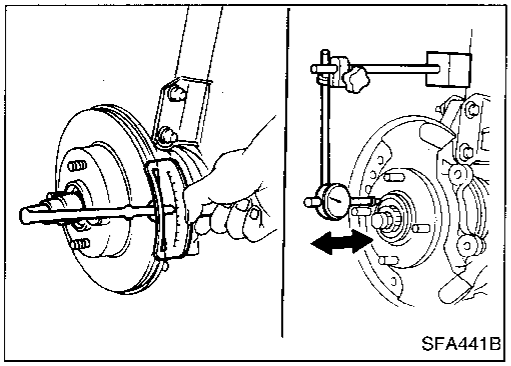
5. Remove strut lower mounting bolts.



AFA083

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

Wheel Hub and Knuckle (Cont'd)



INSTALLATION

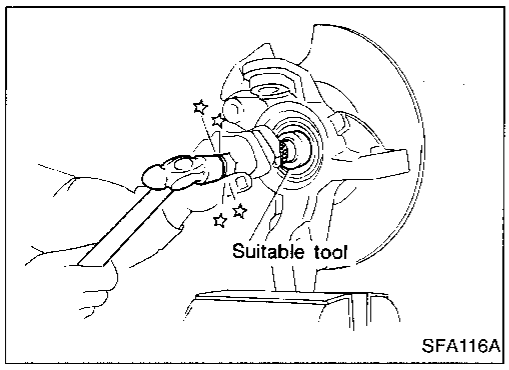
1. Install knuckle with wheel hub.
- Replace strut lower mounting nuts.

When installing knuckle to strut, be sure to hold bolts while tightening nuts.

[O]: 92 - 111 N·m
(9.4 - 11.3 kg-m, 68 - 82 ft-lb)

Apply oil to threaded portion of drive shaft and both sides of plain washer.

2. Tighten wheel bearing lock nut.
   [O]: 196 - 275 N·m
   (20 - 28 kg-m, 145 - 202 ft-lb)
3. Check wheel bearing axial end play.
   Axial end play:
   0.05 mm (0.0020 in) or less



DISASSEMBLY

CAUTION:

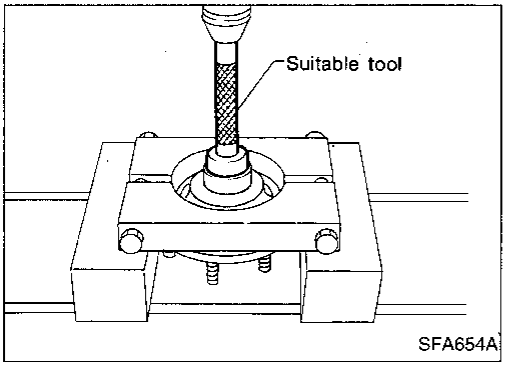
When removing wheel hub or wheel bearing from knuckle, replace wheel bearing assembly (outer race, inner races and grease seals) with a new one.

Wheel bearing 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. This occurs when turning hub by hand after bearing lock nut is tightened to specified torque.

Wheel hub

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

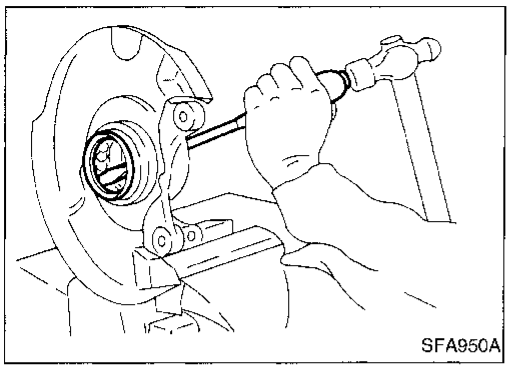


Wheel bearing

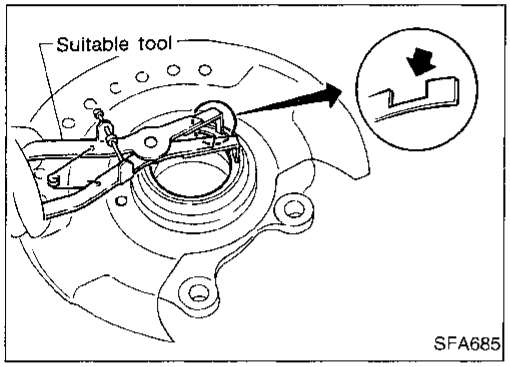
When replacing wheel bearing, replace wheel bearing assembly (including inner and outer races).

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

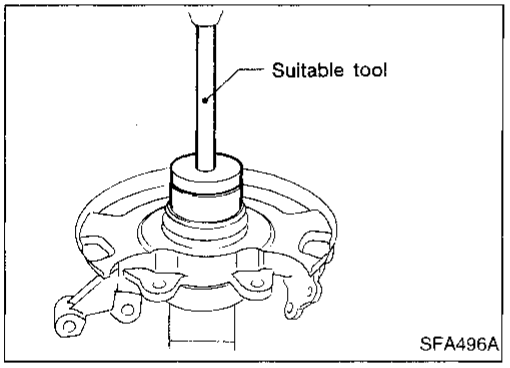
Wheel Hub and Knuckle (Cont'd)



2. Remove inner and outer grease seals from knuckle.



3. Remove snap ring.



4. Press out bearing outer race.

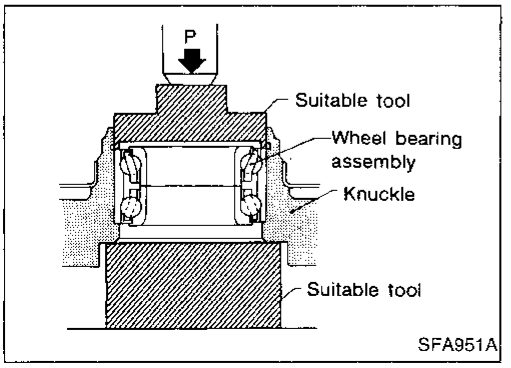
INSPECTION

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

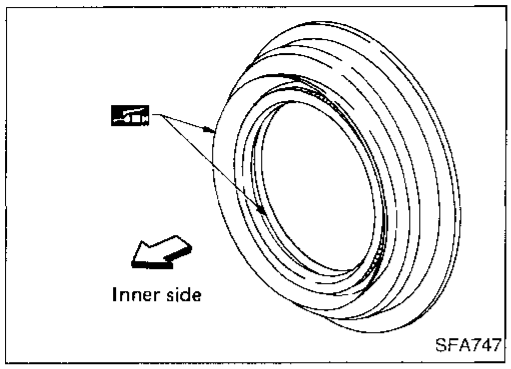
1. Press new wheel bearing assembly into knuckle.
   Maximum load P:
   29 kN (3 ton, 3.3 US ton, 3.0 Imp ton)

CAUTION:

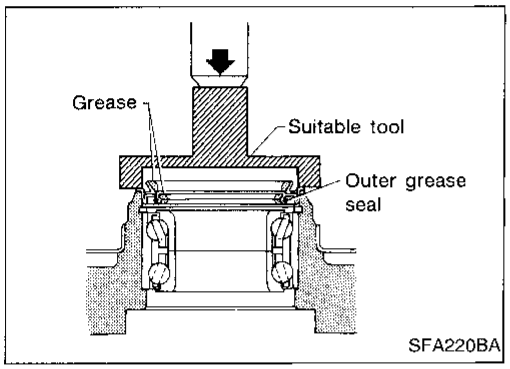
- **Do not press on inner race of wheel bearing assembly.**
- **Do not apply oil or grease to mating surfaces of wheel bearing outer race and knuckle.**

2. Install snap ring into groove of knuckle.

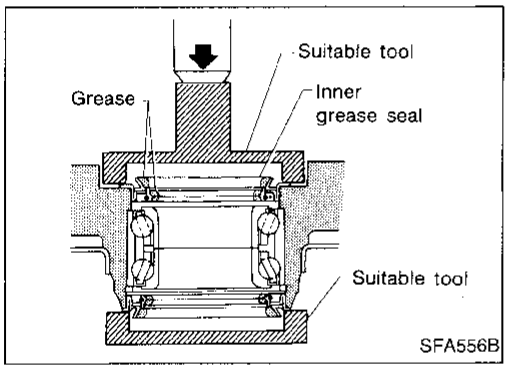
Wheel Hub and Knuckle (Cont'd)



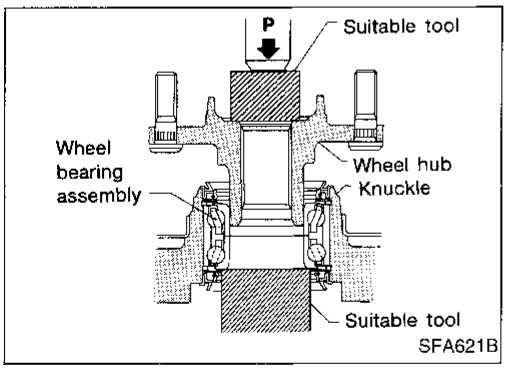
3. Pack grease seal lip with multi-purpose grease.



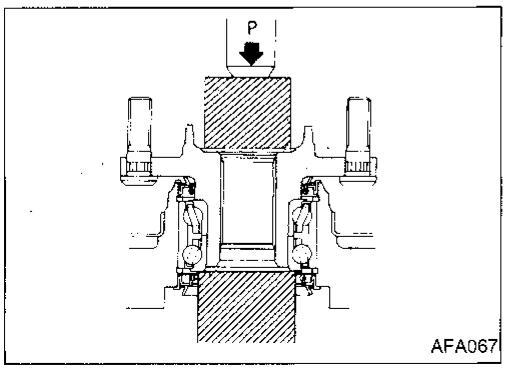
4. Install outer grease seal.
   Maximum load P:
   10 kN (1 ton, 1.1 US ton, 1.0 Imp ton)



5. Install inner grease seal.
   Maximum load P:
   10 kN (1 ton, 1.1 US ton, 1.0 Imp ton)

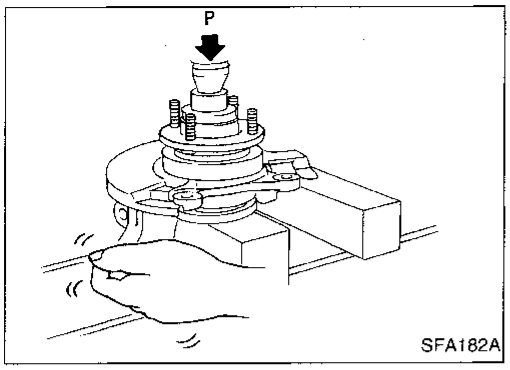


6. Press wheel hub into knuckle.
   Maximum load P:
   29 kN (3 ton, 3.3 US ton, 3.0 Imp ton)
   Be careful not to damage grease seal.



7. Check bearing operation.
a. 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)

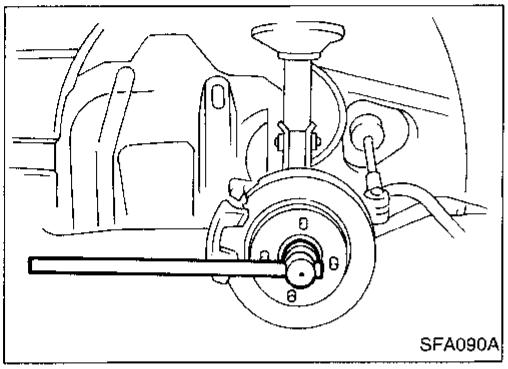
Wheel Hub and Knuckle (Cont'd)



b. Spin knuckle several turns in both directions.
c. Make sure that wheel bearings operate smoothly.

Drive Shaft

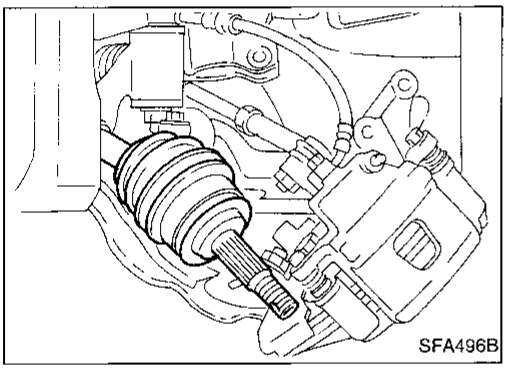
REMOVAL



1. Remove wheel bearing lock nut.

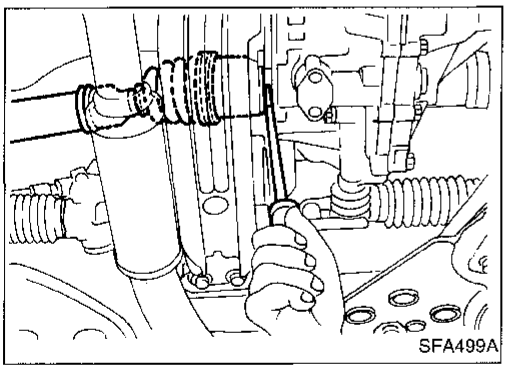
Tie-rod does not need to be disconnected from knuckle.
Suspend knuckle with wire so as not to stretch brake hose.
Do not pull or twist brake hose.

2. Remove clip and separate brake hose from strut.
3. Remove strut lower mounting bolts.



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

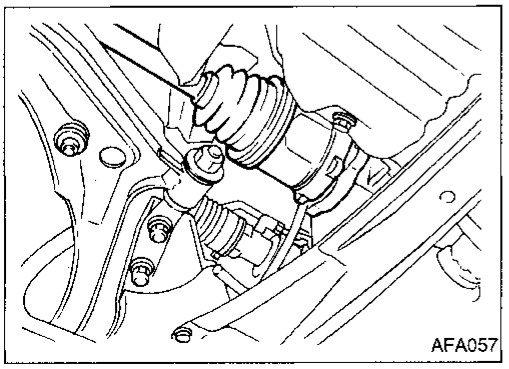
When removing drive shaft, cover boots with shop towel to prevent damage to them.



5. Remove right drive shaft from transaxle.

— Models without support bearing —

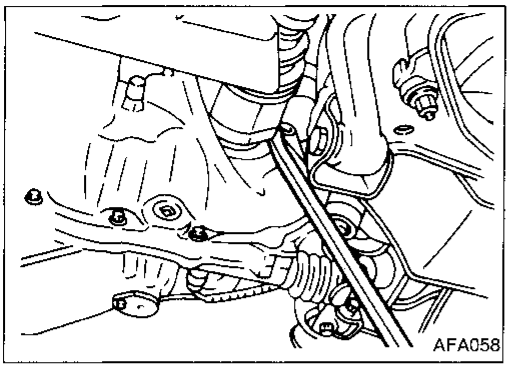
- Pry drive shaft from transaxle as shown.



— Models with support bearing —

- Remove support bearing bolts and pull drive shaft from transaxle.

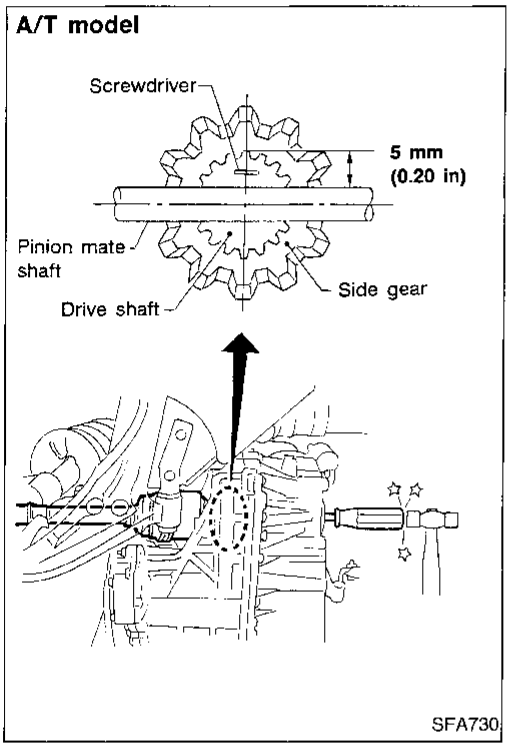
Drive Shaft (Cont'd)



6. Remove left drive shaft from transaxle.

— For M/T models —

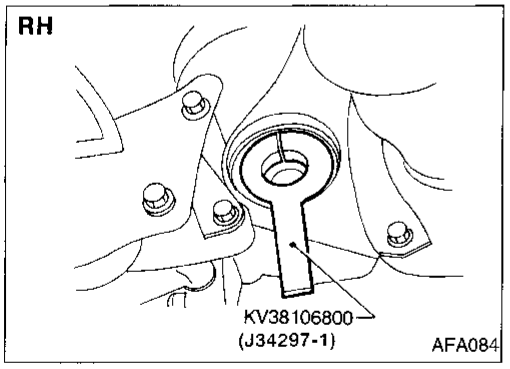
- Pry drive shaft from transaxle as shown.



— For A/T models —

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

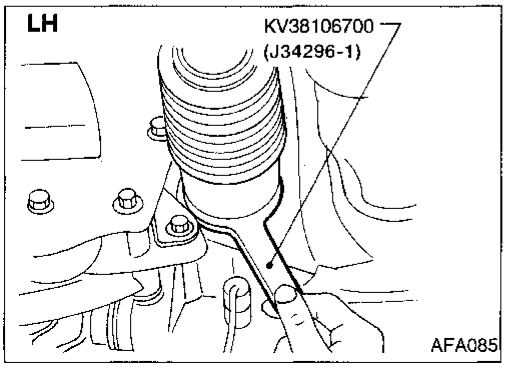
Be careful not to damage pinion mate shaft and side gear.



INSTALLATION

Transaxle side

1. Drive a new oil seal to transaxle. Refer to MT or AT section ("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

1. Install drive shaft into knuckle.
2. Tighten wheel bearing lock nut. Refer to FA-8.

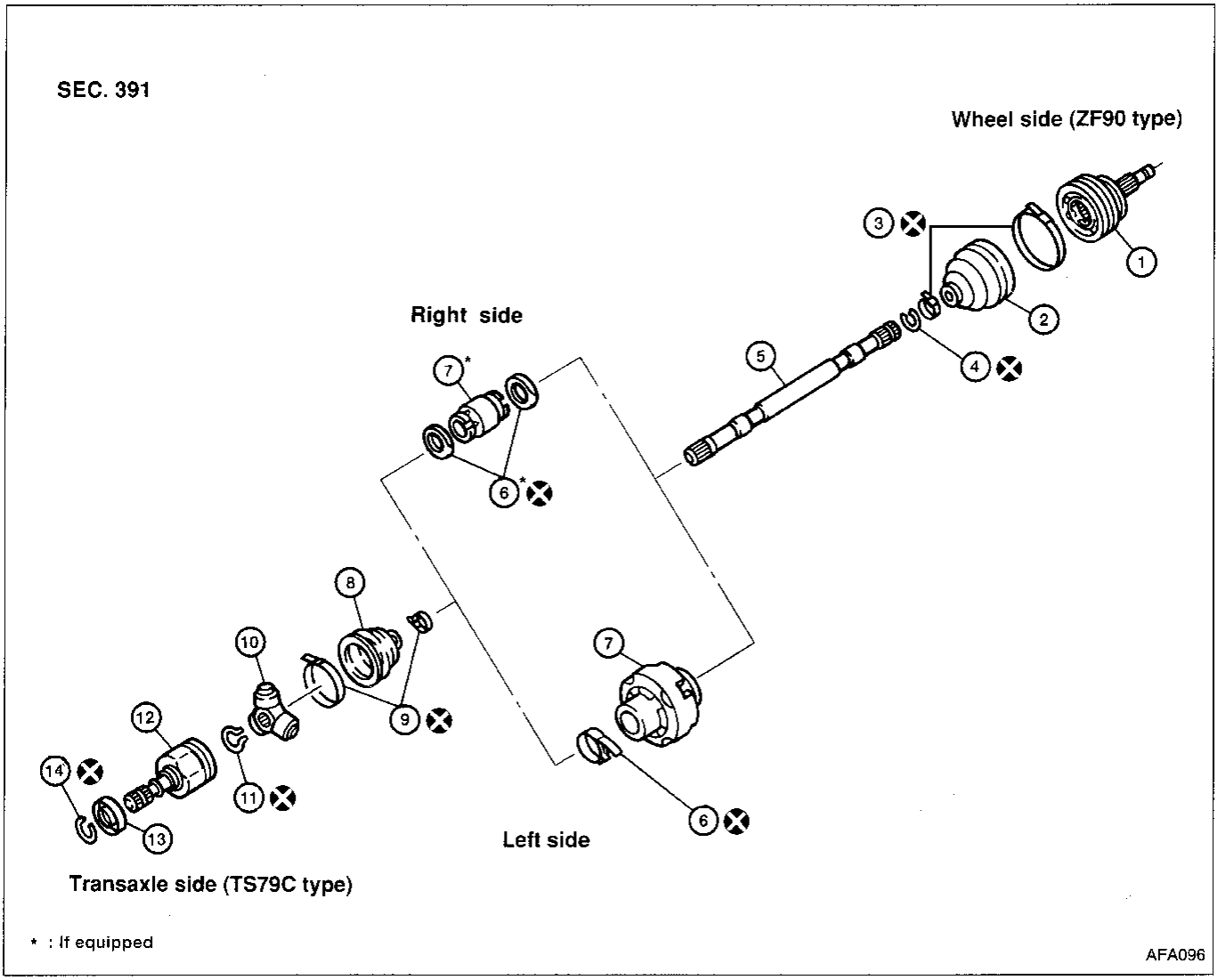
Drive Shaft (Cont'd)

COMPONENTS

CAUTION:

- **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.**

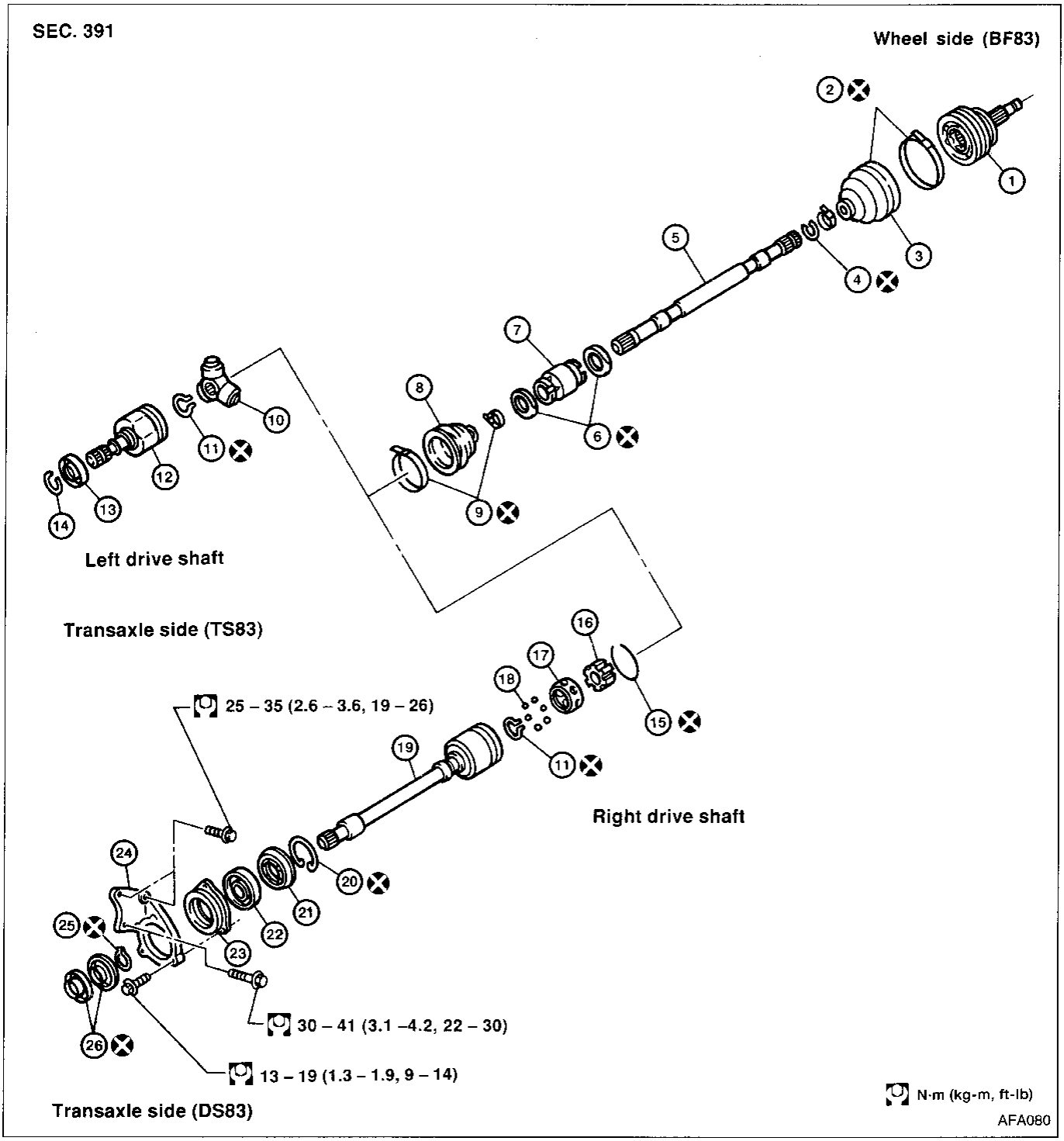
GA16DE model



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

Drive Shaft (Cont'd)

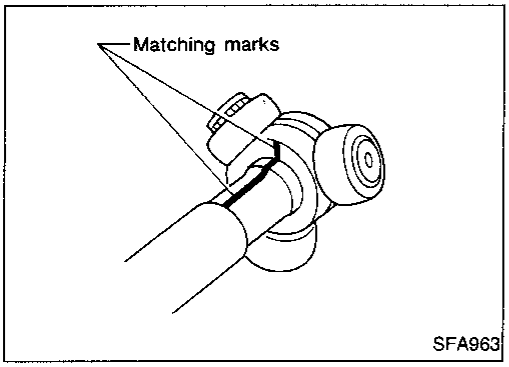
SR20DE model



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

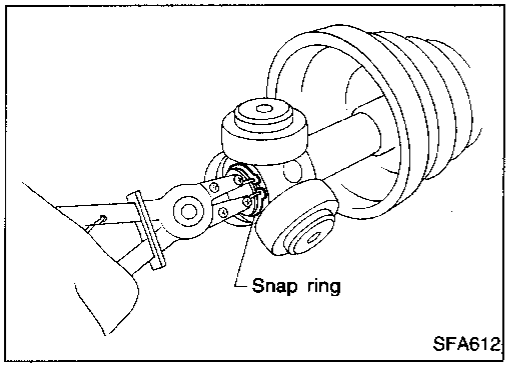
Drive Shaft (Cont'd)

DISASSEMBLY



Transaxle side (TS79C, TS83 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.

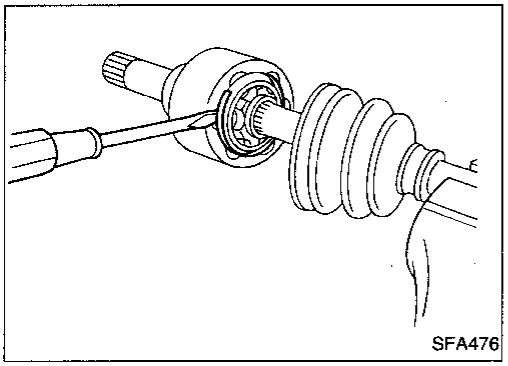


4. Remove snap ring, then remove spider assembly.

CAUTION:
Do not disassemble spider assembly.

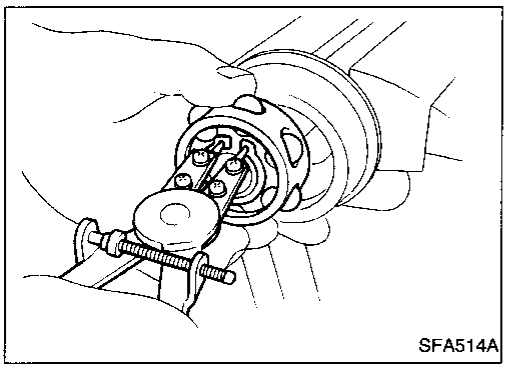
5. Draw out boot.

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



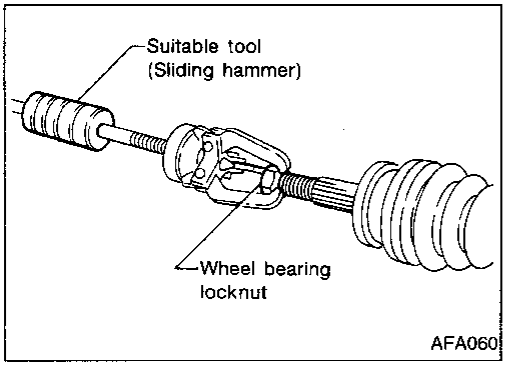
Transaxle side (DS83 type)

1. Remove boot bands.
2. Put matching marks on slide joint housing and inner race, before separating joint assembly.
3. Pry off snap ring "A" with a screwdriver, and pull out slide joint housing.



4. Put matching marks on inner race and drive shaft.
5. Remove snap ring "C", 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.



Wheel side

CAUTION:
The joint on the wheel side cannot be disassembled.

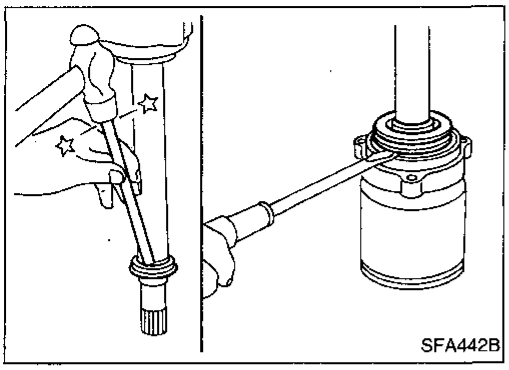
1. Before separating joint assembly, put matching marks on drive shaft and joint assembly.
2. Separate joint assembly with a suitable tool.

Be careful not to damage threads on drive shaft.

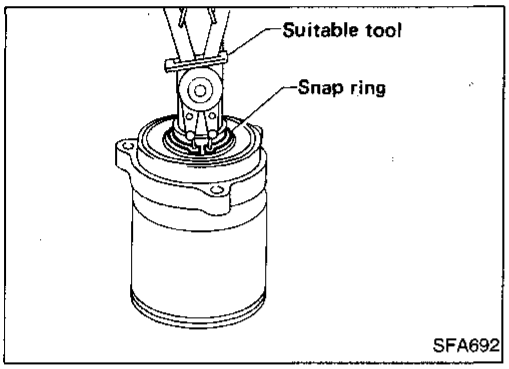
3. Remove boot bands.

Drive Shaft (Cont'd)

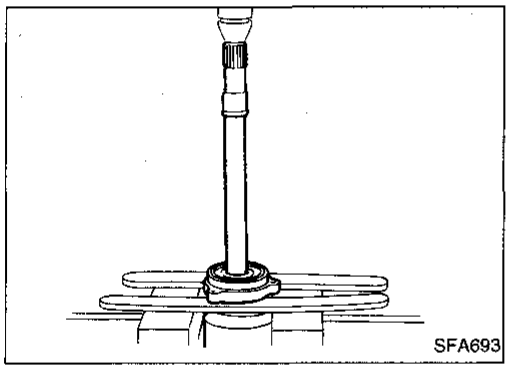
Support bearing



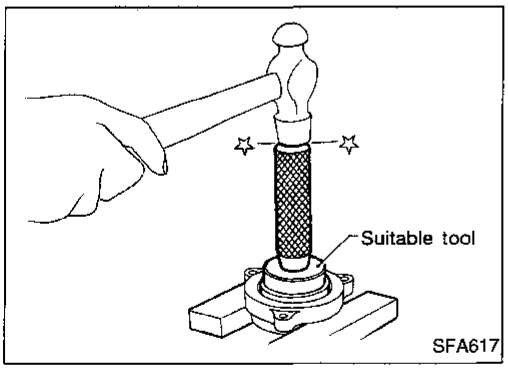
1. Remove dust shield.



2. Remove snap ring.



3. Press support bearing assembly off of drive shaft.



4. Separate support bearing from retainer.

Drive Shaft (Cont'd)

INSPECTION

Thoroughly clean all parts in cleaning solvent, then 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. (TS79C, TS83 type)
- Check roller surfaces for scratches, wear or other damage. Replace if necessary. (TS79C, TS83 type)
- Replace any parts of double offset joint which show signs of scorching, rust, wear or excessive play. (DS83 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

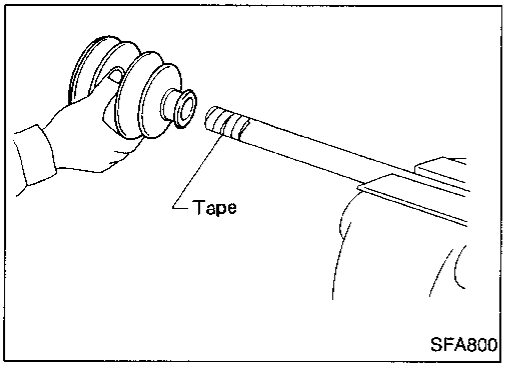
Make sure wheel bearing rolls freely and is free from noise, cracks, pitting or wear.

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.**

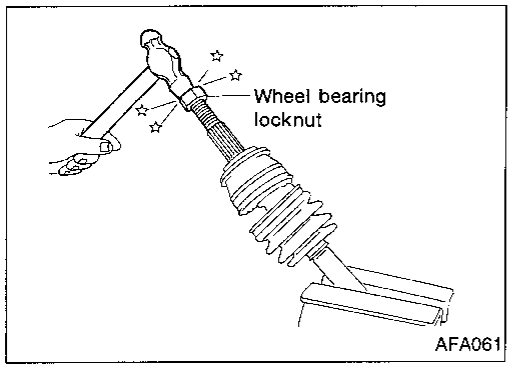


Wheel side

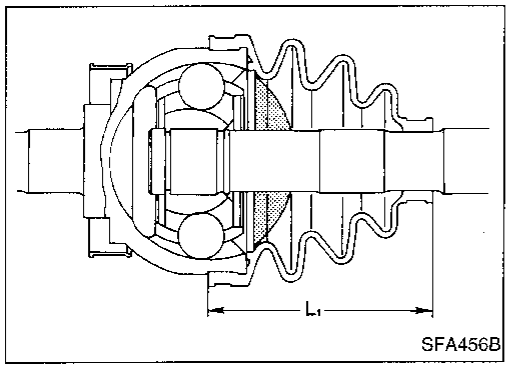
1. Install boot and new small boot band on drive shaft.

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

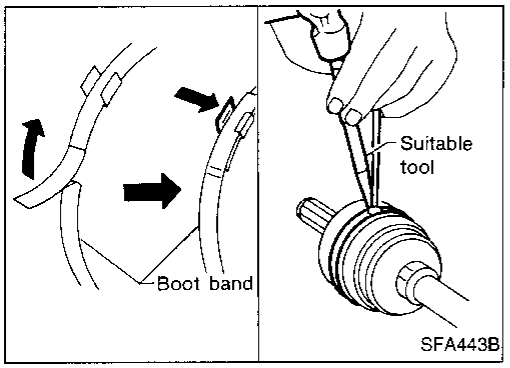
Drive Shaft (Cont'd)



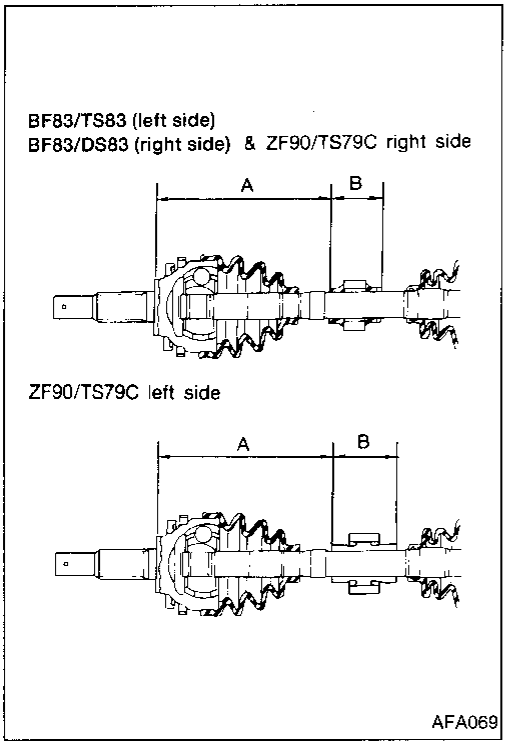
2. Set joint assembly onto drive shaft by lightly tapping it. Secure joint assembly ensuring marks which were made during disassembly are properly aligned.



3. Pack drive shaft with specified amount of grease.
   Specified amount of grease:
   ZF90 115 - 125 g (4.06 - 4.41 oz)
   BF83 85 - 105 g (3.00 - 3.70 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 "L_1".
   Length "L_1":
   ZF90 96 - 98 mm (3.78 - 3.86 in)
   BF83 95 mm (3.74 in)



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



Dynamic damper

1. Use a new damper band when reinstalling.
2. Install dynamic damper from stationary-joint side while holding it securely:

Length:

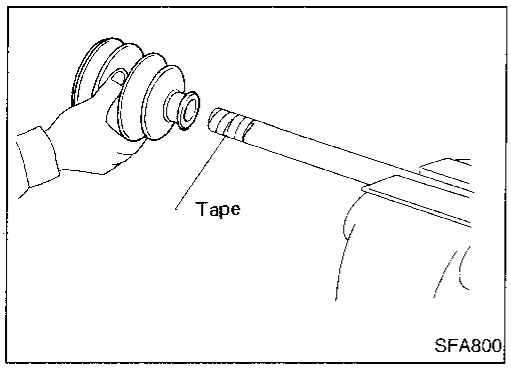
Unit: mm (in)

	ZF90/TS79C		BF83/TS83, DS83		
	RH*	LH	RH	LH	
				A/T	M/T
"A"	432 - 442 (17.01 - 17.40)	175.3 - 185.3 (6.90 - 7.30)	169 - 175 (6.65 - 6.89)	154.8 - 160.8 (6.09 - 6.33)	
"B"	66 (2.60)	58 (2.28)	70 (2.76)	50 (1.97)	70 (2.76)

*: If equipped

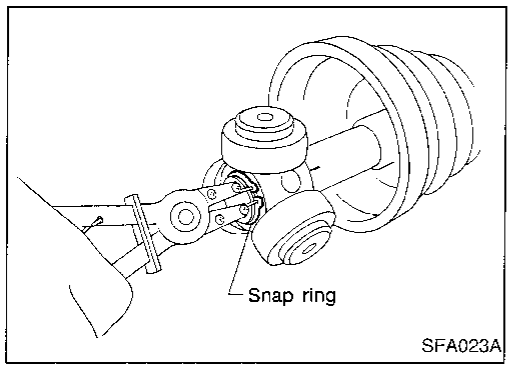
Drive Shaft (Cont'd)

Transaxle side (TS79C, TS83 type)

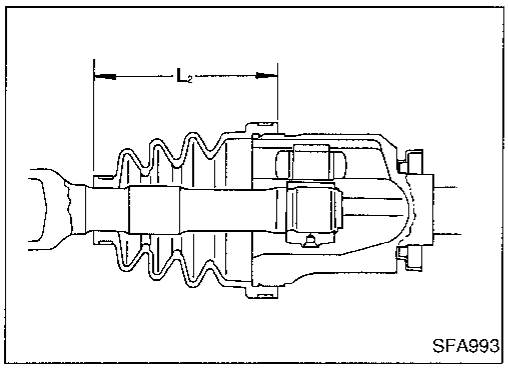


1. Install boot and new small boot band on drive shaft.

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

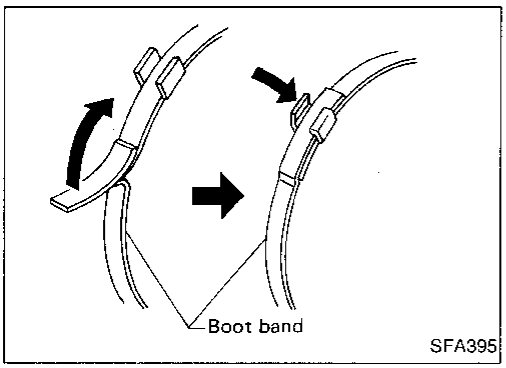


2. Install spider assembly securely, making sure the matching marks which were made during disassembly are properly aligned.
3. Install new snap ring.



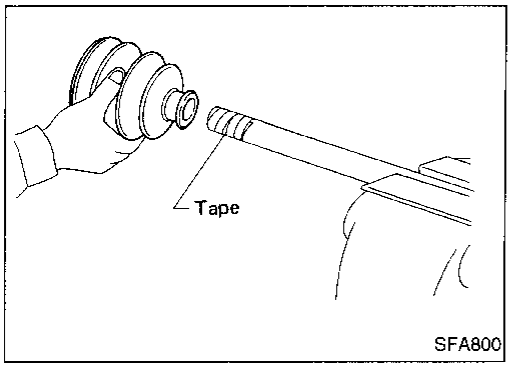
4. Pack drive shaft with specified amount of grease.
   Specified amount of grease:
   TS79C 155 - 165 g (5.47 - 5.82 oz)
   TS83 130 - 150 g (4.59 - 5.29 oz)
5. Install slide joint housing.
6. Set boot so that it does not swell and deform when its length is "L_2".
   Length "L_2":
   TS79C 101.5 - 103.5 mm (4.00 - 4.07 in)
   TS83 99 mm (3.90 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.

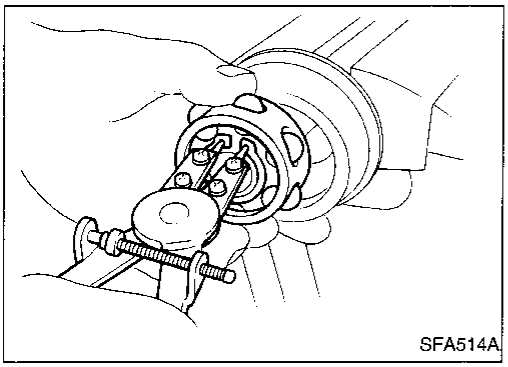
Drive Shaft (Cont'd)



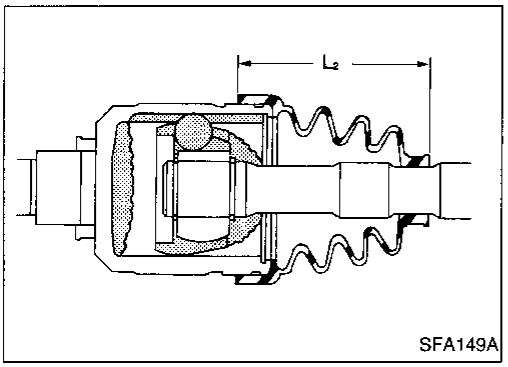
Transaxle side (DS83 type)

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

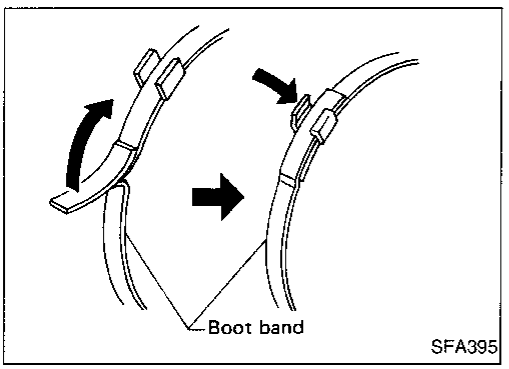
Cover drive shaft serration with tape to prevent damage boot during installation.



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

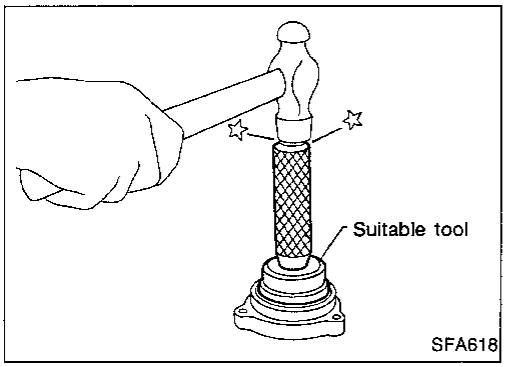


4. Pack drive shaft with specified amount of grease.
   Specified amount of grease:
   115 - 135 g (4.06 - 4.76 oz)
5. Install slide joint housing, then install new snap ring "A".
6. Make sure that boot is properly installed on the drive shaft groove.
   Set boot so that it does not swell and deform when its length is "L_2".
   Length "L_2":
   98 mm (3.86 in)



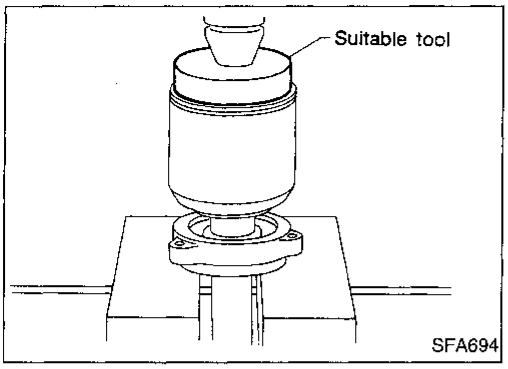
7. Lock new larger and smaller boot bands securely with a suitable tool.

Support bearing

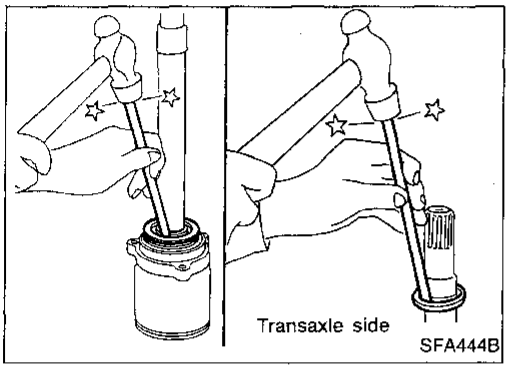


1. Install bearing into retainer.

Drive Shaft (Cont'd)



2. Press drive shaft into bearing.

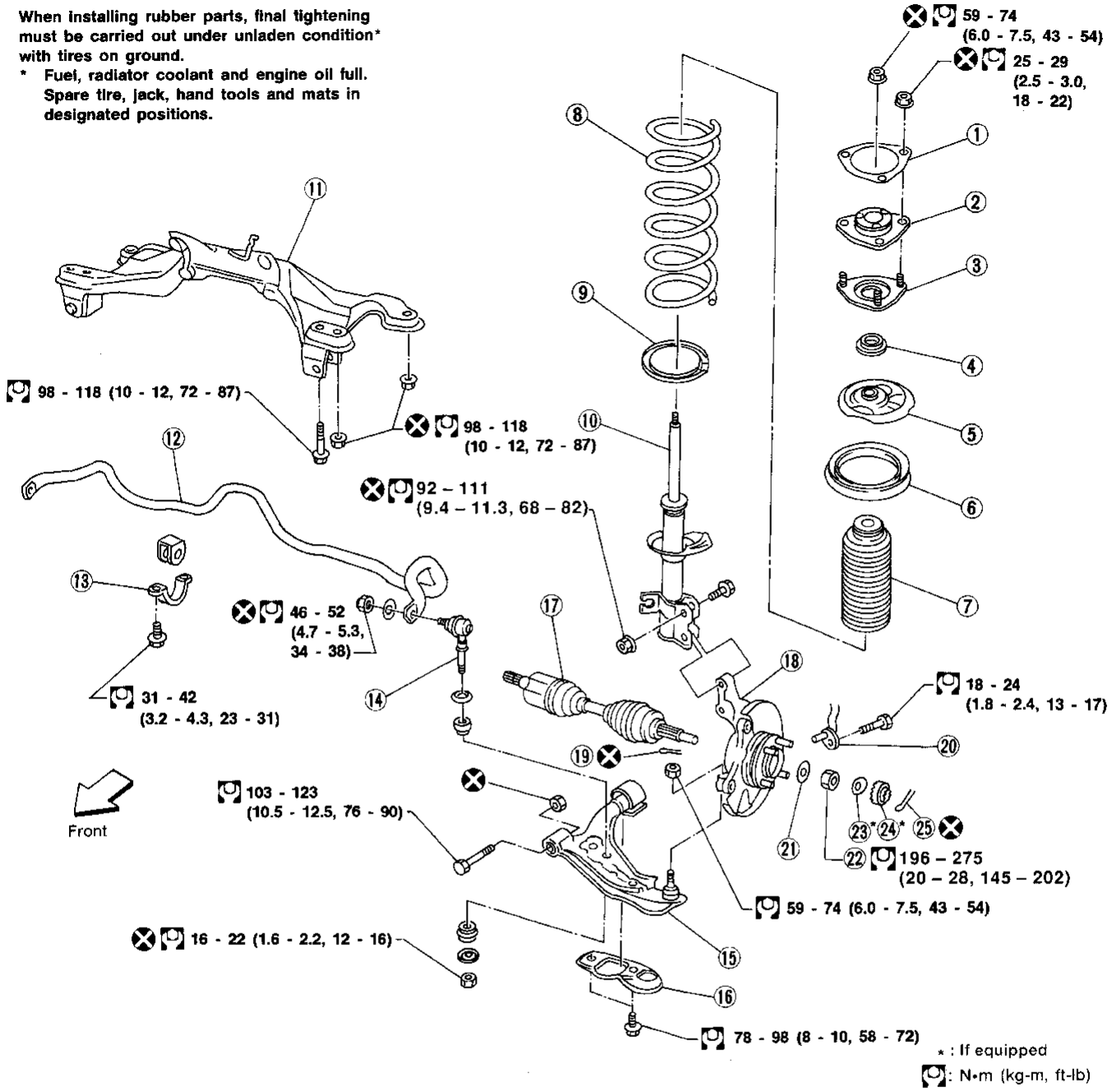


3. Install snap ring.
4. Install new dust shield.

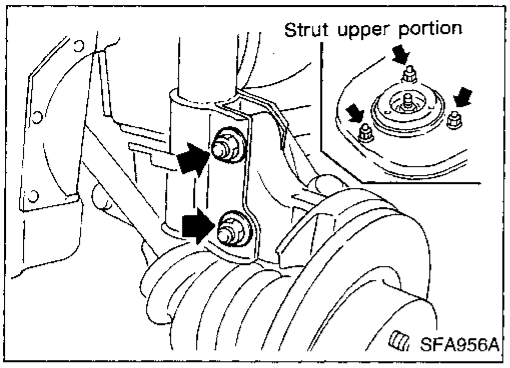
SEC. 391•400•401

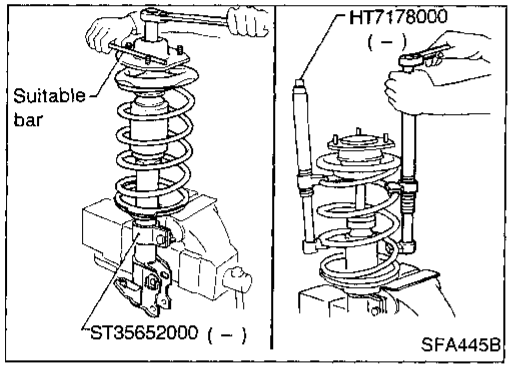
When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.

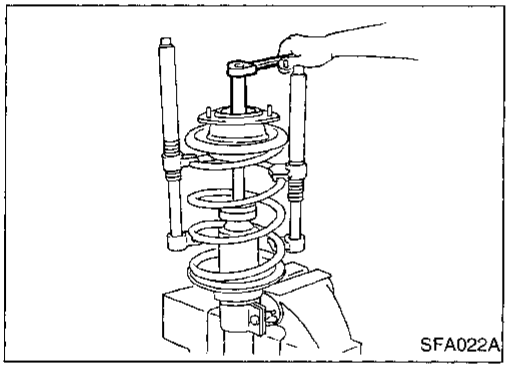
*** Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.**



① Spacer
② Strut mounting insulator
③ Strut mounting insulator bracket
④ Thrust bearing
⑤ Upper spring seat
⑥ Upper spring rubber seat
⑦ Bumper rubber
⑧ Coil spring
⑨ Lower spring rubber seat
⑩ Strut assembly
⑪ Suspension member
⑫ Stabilizer bar
⑬ Stabilizer clamp
⑭ Connecting rod
⑮ Transverse link
⑯ Compression rod clamp
⑰ Drive shaft
⑱ Knuckle
⑲ Cotter pin
⑳ ABS sensor
㉑ Plain washer
㉒ Wheel bearing lock nut
㉓ Insulator (if equipped)
㉔ Adjusting cap (if equipped)
㉕ Cotter pin







Coil Spring and Strut Assembly

REMOVAL AND INSTALLATION

- Remove strut assembly fixing bolts and nuts (to hood ledge).

Do not remove piston rod lock nut on vehicle.

DISASSEMBLY

1. Set strut assembly on vise with Tool, then **loosen** piston rod lock nut.

WARNING:

Do not remove piston rod lock nut at this time.

2. Compress spring with Tool so that the strut mounting insulator can be turned by hand.
3. Remove piston rod lock nut.

INSPECTION

Strut assembly

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

Strut mounting insulator

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

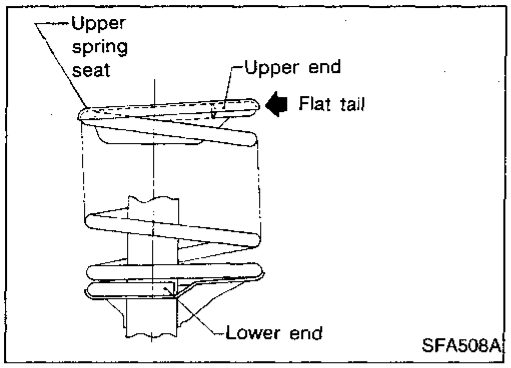
Thrust bearing

- Check thrust bearing parts for abnormal noise or excessive rattle in axial direction.
- Replace if necessary.

Coil spring and insulator

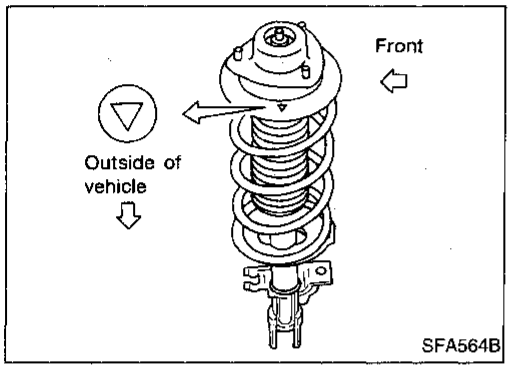
- Check for cracks, deformation or other damage. Replace if necessary.

Coil Spring and Strut Assembly (Cont'd)



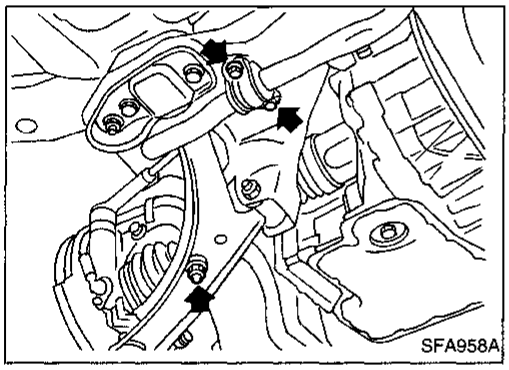
ASSEMBLY

- When installing coil spring on strut, it must be positioned as shown in the figure at left.



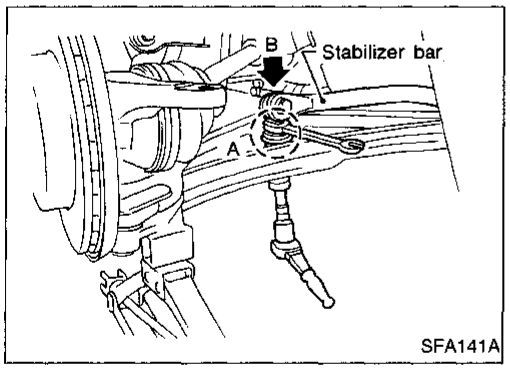
- Install upper spring seat with alignment mark facing outside of vehicle, in line with strut-to-knuckle attachment points.

Stabilizer Bar

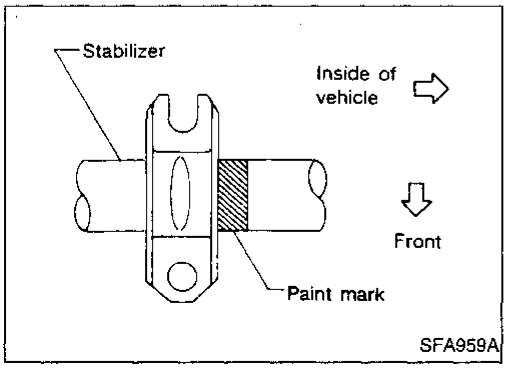


REMOVAL AND INSTALLATION

- Remove stabilizer bar.

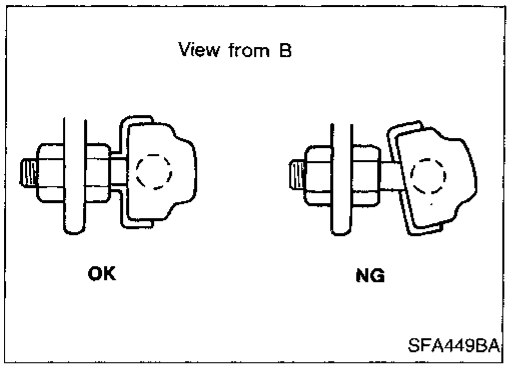


- When removing or installing stabilizer bar, secure portion A with wrench as shown.

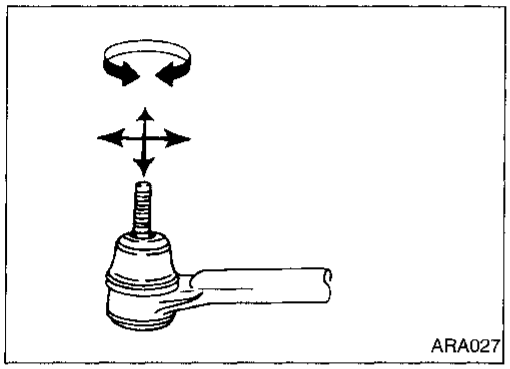


- When installing stabilizer, make sure the paint mark and clamp face in their correct directions.

Stabilizer Bar (Cont'd)



- Install stabilizer bar with ball joint socket properly placed.



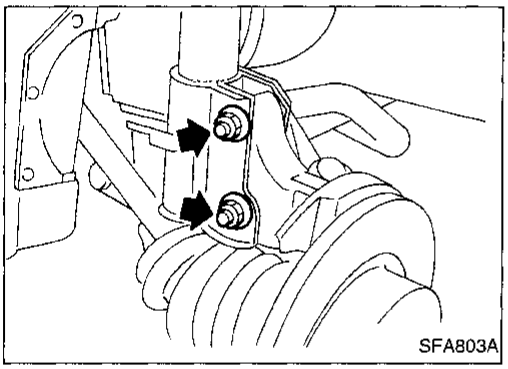
INSPECTION

- Check stabilizer for deformation or cracks. Replace if necessary.
- Check rubber bushings for deterioration or cracks. Replace if necessary.
- Check ball joint can rotate in all directions. If movement is not smooth and free, replace stabilizer bar link.

Transverse Link and Lower Ball Joint

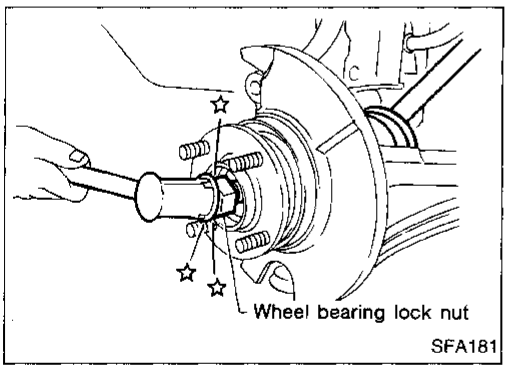
REMOVAL AND INSTALLATION

1. Remove wheel bearing lock nut.
2. Remove strut lower mounting bolts.

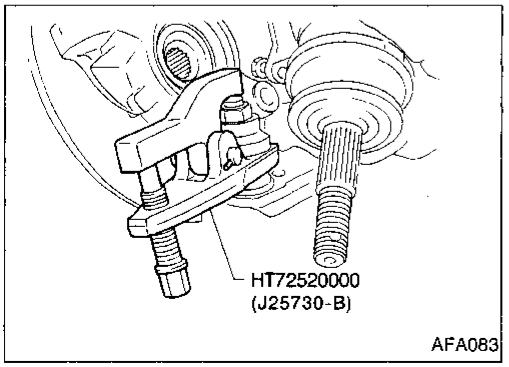


3. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.

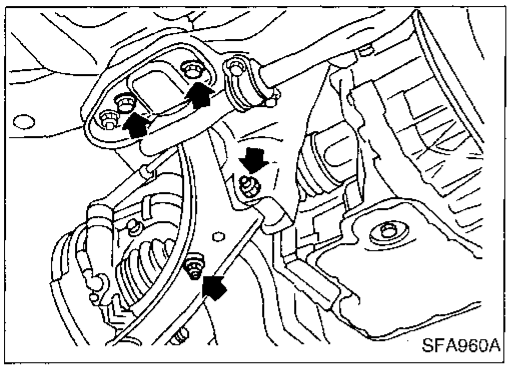
Cover boots with shop towel so as not to damage them when removing drive shaft.



4. Separate lower ball joint stud from knuckle with Tool.



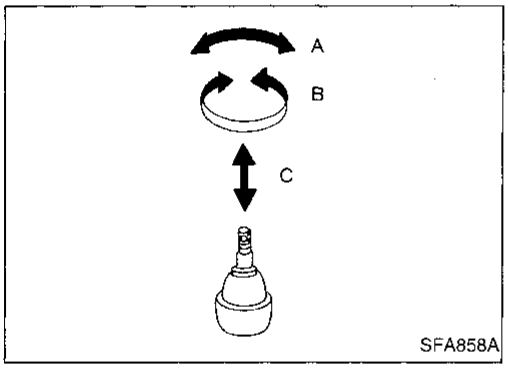
Transverse Link and Lower Ball Joint (Cont'd)


SFA960A

5. Remove bolts and nuts as shown at left.
6. During installation, final tightening must be carried out at curb weight with tires on the ground.
   : Refer to FA-24.
7. After installation, check wheel alignment. Refer to FA-6.

INSPECTION

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



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- 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 - 57.9 N (0.8 - 5.9 kg, 1.8 - 13.0 lb)
  Turning torque "B":
  0.5 - 3.4 N·m (5 - 35 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.

General Specifications

SUSPENSION

Suspension type	Strut type independent suspension

COIL SPRING

Applied model	4-door				2-door			
	GA16DE				GA16DE		SR20DE	
	Base·XE	E·XE·GXE	GLE·GXE	GLE	Base·SE*		SE-R	
	M/T	A/T	M/T	A/T	M/T	A/T	M/T	A/T
Wire diameter mm (in)	12.0 (0.472)	12.1 (0.476)	12.0 (0.472)	12.3 (0.484)	12.0 (0.472)	12.1 (0.476)	12.3 (0.484)	12.4 (0.488)
Coil outer diameter mm (in)	142 (5.59)	142.2 (5.60)	142 (5.59)	142.6 (5.61)	142 (5.59)	142.2 (5.60)	142.6 (5.61)	142.8 (5.62)
Free length mm (in)	370.5 (14.59)	380 (14.96)	370.5 (14.59)	390 (15.35)	370.5 (14.59)	380 (14.96)	390 (15.35)	400 (15.75)
Identification color	White x 2	Yellow x 2	White x 2	Pink x 2	White x 2	Yellow x 2	Pink x 2	Light green x 2

*Canada SE models, coil spring specification for M/T same as A/T.

STRUT

Strut type	Double-acting hydraulic
Piston rod mm (in) Rod diameter	20 (0.79)

STABILIZER BAR

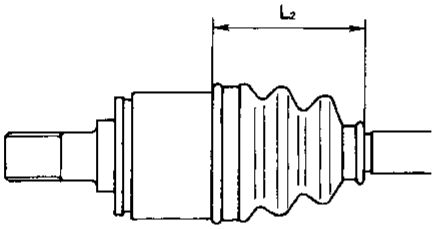
Applied model	2-door	
	GA16DE SE	SR20DE SE-R
	Optional with 14" tire	Standard
Stabilizer diameter mm (in)	25.4 (1.000)	
Identification color	Orange	

General Specifications (Cont'd)

DRIVE SHAFT

Applied model	GA16DE	SR20DE	
		RH	LH
Joint type			
Transaxle side	TS79C	DS83	TS83
Wheel side	ZF90	BF83	
Applied grease			
Quality	Nissan genuine grease or equivalent		
Capacity g (oz)			
Transaxle side	155 - 165 (5.47 - 5.82)	115 - 135 (4.06 - 4.76)	130 - 150 (4.59 - 5.29)
Wheel side	115 - 125 (4.06 - 4.41)	85 - 105 (3.00 - 3.70)	
Boot length mm (in)			
Transaxle side "L_2"	101.5 - 103.5 (4.00 - 4.07)	98 (3.86)	99 (3.90)
Wheel side "L_1"	96 - 98 (3.78 - 3.86)	95 (3.74)	

Transaxle side



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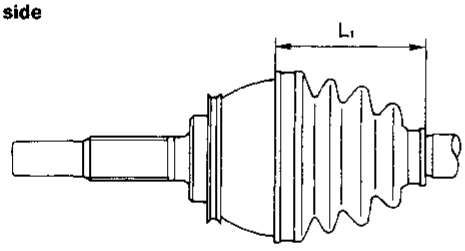
Wheel side



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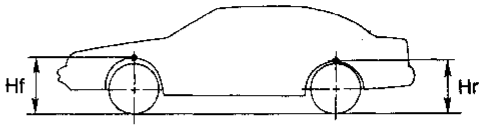
WHEELARCH HEIGHT (Unladen*)



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Applied model	155SR13	175/70R13	175/65/R14	195/55R15
Front (Hf) mm (in)	659 (25.94)		666 (26.22)	669 (26.34)
Rear (Hr) mm (in)	640 (25.20)	642 (25.28)	648 (25.51)	650 (25.59)

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

Inspection and Adjustment

WHEEL ALIGNMENT (Unladen*1)

Applied model			Manual steering	Power steering
Camber	Degree minute (Decimal degree)	Minimum	−1°20′ (−1.33°)	
		Nominal	−0°35′ (−0.58°)	
		Maximum	0°10′ (0.17°)	
		Left and right difference	1°00′ (1.00°)	
Caster	Degree minute (Decimal degree)	Minimum	0°40′ (0.67°)	
		Nominal	1°25′ (1.42°)	
		Maximum	2°10′ (2.17°)	
		Left and right difference	1°00′ (1.00°)	
Kingpin inclination	Degree minute (Decimal degree)	Minimum	14°00′ (14.00°)	
		Nominal	14°45′ (14.75°)	
		Maximum	15°30′ (15.50°)	
Total toe-in	Distance (A - B) mm (in)	Minimum	0 (0)	
		Nominal	2 (0.08)	
		Maximum	4 (0.16)	
	Angle (left plus right) Degree minute (Decimal degree)	Minimum	0′ (0°)	
		Nominal	12′ (0.20°)	
		Maximum	24′ (0.40°)	
Wheel turning angle Full turn*2	Inside Degree minute (Decimal degree)	Minimum	38°00′ (38.00°)	34°00′ (34.00°)
		Nominal	41°00′ (41.00°)	37°00′ (37.00°)
		Maximum	42°00′ (42.00°)	38°00′ (38.00°)
	Outside Degree minute (Decimal degree)	Nominal	34°00′ (34.00°)	31°00′ (31.00°)

*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

Axial end play	mm (in)	Less than 0.05 (0.0020)
Lock nut tightening torque	N·m (kg-m, ft-lb)	196 - 275 (20 - 28, 145 - 202)
Preload	N·m (kg-cm, in-lb)	1.4 (14.2, 12.3)
At hub bolt	N (kg, lb)	27.8 (2.8, 6.3)

LOWER BALL JOINT

Swinging force "A"	N (kg, lb)	
At cotter pin hole		8.2 - 57.3 (0.8 - 5.9, 1.8 - 12.9)
Turning torque "B"	N·m (kg-cm, in-lb)	0.5 - 3.4 (5 - 35, 4.3 - 30.4)
Vertical end play "C"	mm (in)	0 (0)

WHEEL RUNOUT

Unit: mm (in)

Wheel type	Aluminum	Steel wheel
Maximum radial runout limit	0.3 (0.012)	0.5 (0.020)
Maximum lateral runout limit	0.3 (0.012)	0.8 (0.031)