

FRONT AXLE & FRONT SUSPENSION

SECTION

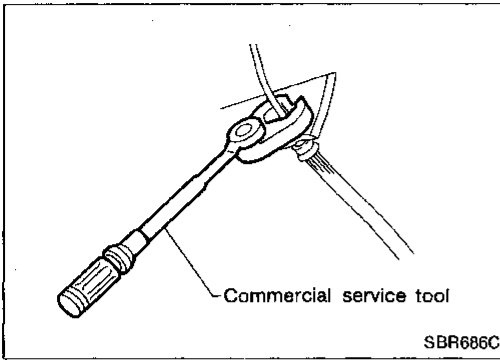
FA

GI
MA
EM
LC
EC
FE
CL
MT
AT
FA
RA
BR
ST
BF
HA
EL
IDX

CONTENTS

PRECAUTIONS AND PREPARATION	2		
Precautions.....	2	Wheel Hub and Knuckle	7
Special Service Tools	2	Drive Shaft.....	11
Commercial Service Tools	2	FRONT SUSPENSION	21
FRONT AXLE AND FRONT SUSPENSION	3	Coil Spring and Shock Absorber	22
ON-VEHICLE SERVICE	4	Third Link and Upper Link.....	23
Front Axle and Front Suspension Parts.....	4	Stabilizer Bar	25
Front Wheel Bearing.....	5	Transverse Link and Lower Ball Joint.....	26
Front Wheel Alignment	5	SERVICE DATA AND SPECIFICATIONS (SDS)	27
Drive Shaft.....	6	General Specifications.....	27
FRONT AXLE	7	Inspection and Adjustment.....	28

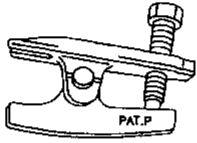
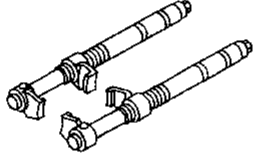
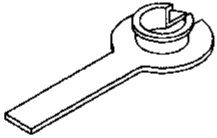
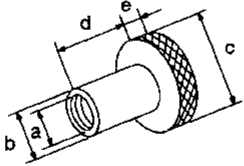
PRECAUTIONS AND PREPARATION



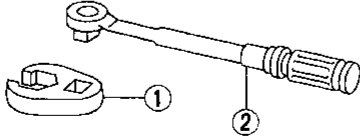
Precautions

- 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

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

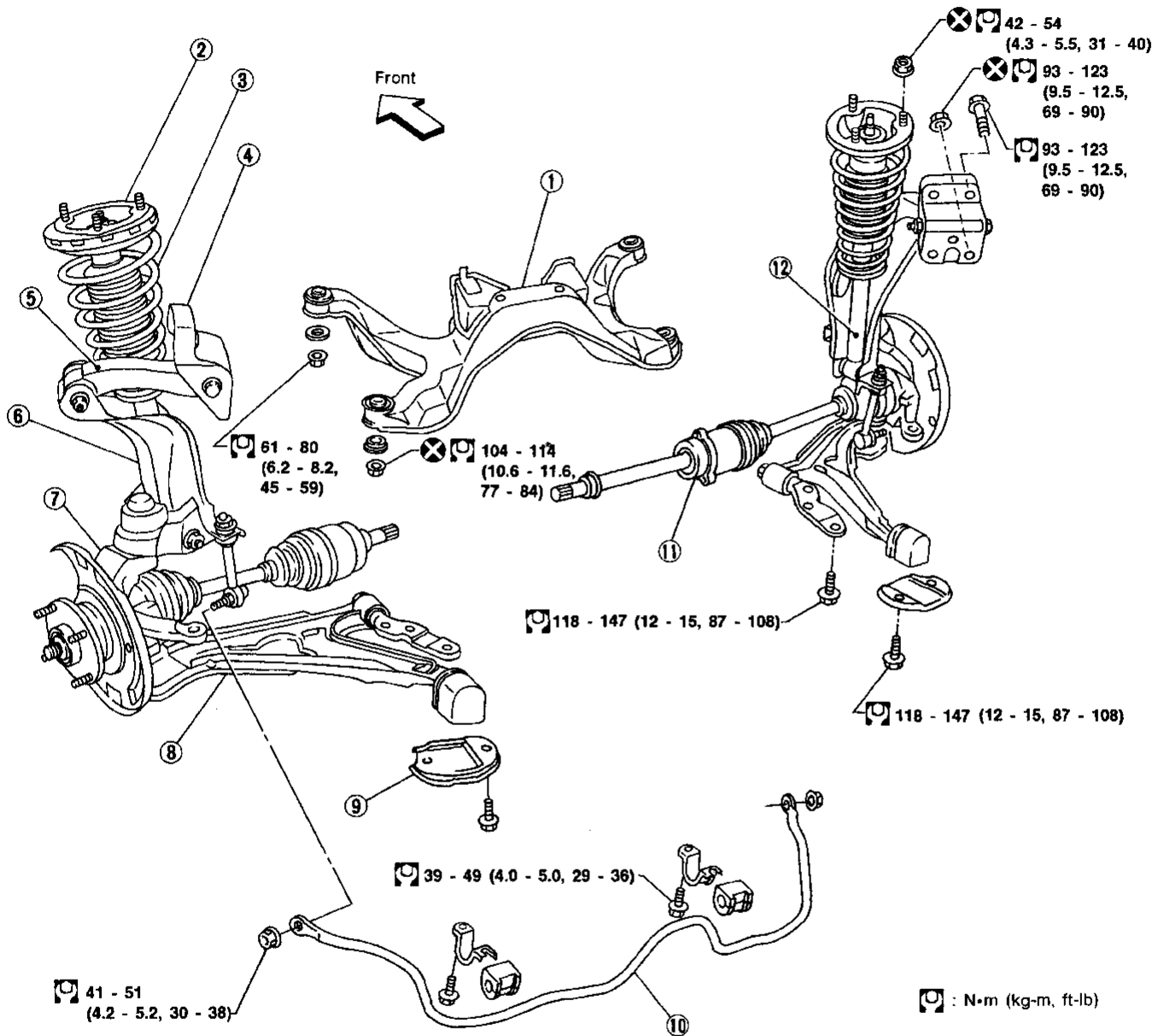
Commercial Service Tools

Tool name	Description
① Flare nut crows foot ② Torque wrench	 Removing and installing each brake piping NT223

FRONT AXLE AND FRONT SUSPENSION

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

GI
MA
EM
LC
EC
FE
CL
MT
AT
FA
RA
BR
ST
BF
HA
EL
IDX

SFA586B

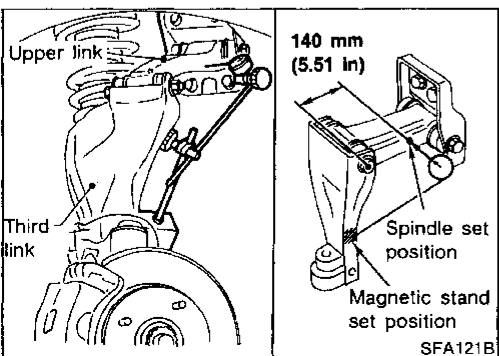
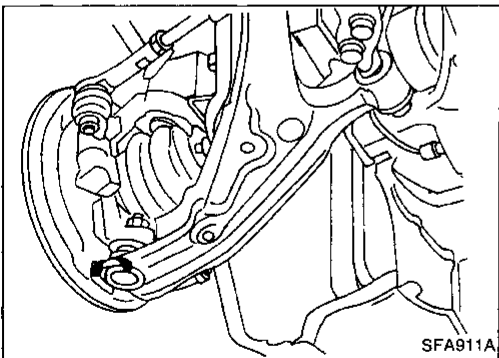
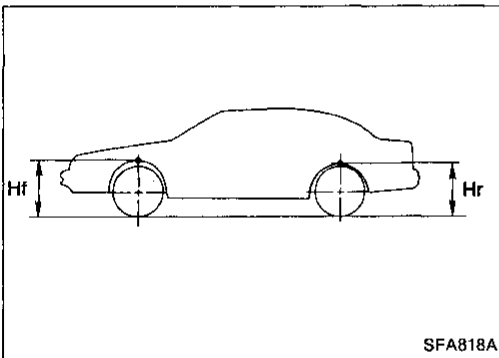
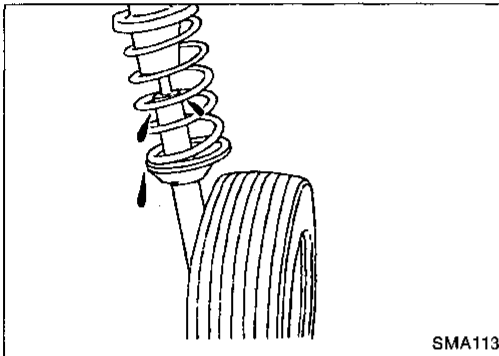
Front Axle and Front Suspension Parts

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

- Make sure that cotter pin is inserted.
- Retighten all nuts and bolts to the specified torque.

Tightening torque:

Refer to FRONT SUSPENSION (FA-21).



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

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

- (1) Vehicle must be unladen*, parked on a level surface, and tires checked for proper inflation and wear (tread wear indicator must not be showing).

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

- (2) Bounce the vehicle up and down several times before measuring.

Standard height:

Front (Hf): 658.5 mm (25.93 in)

Rear (Hr): 650.5 mm (25.61 in)

- (3) Spring height is not adjustable. If out of specification, check for worn springs or suspension parts.

- 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 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.

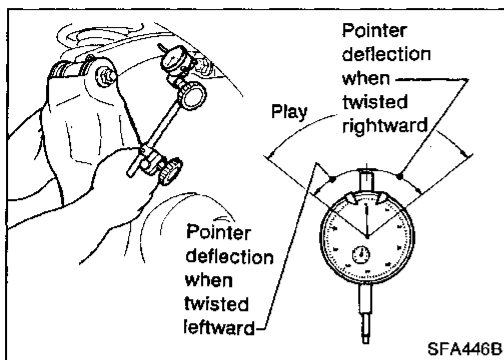
- a. Install magnet stand on third link.

- 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.)

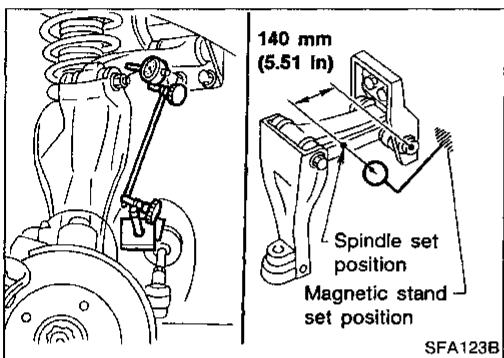
ON-VEHICLE SERVICE

Front Axle and Front Suspension Parts (Cont'd)



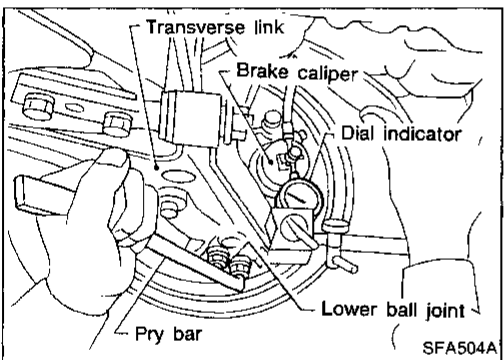
- (5) Hold flanges of third link with both hands. Twist third link fully to the right and read dial gauge indication. Similarly, twist third link to the left and read dial gauge indication. Free play = (Gauge indication when third link is fully twisted to the right) + (Gauge indication when third link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

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

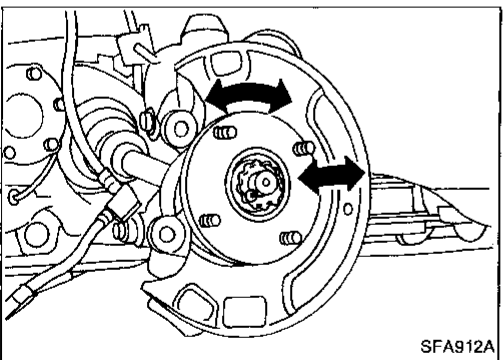


On body side

- (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)**
- (6) If ball joint movement is beyond specifications, remove and recheck it.



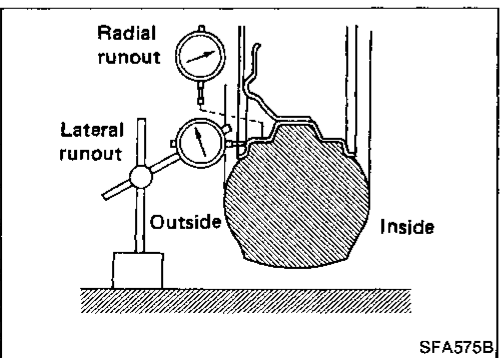
Front Wheel Bearing

- 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-7).



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.

ON-VEHICLE SERVICE

Front Wheel Alignment (Cont'd)

PRELIMINARY INSPECTION

1. Check tires for wear and improper inflation.
2. Check wheel runout.

Wheel runout:

Refer to SDS (FA-28).

3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that front shock absorbers work properly by using the standard bounce test.
7. Check vehicle posture (Unladen).

CAMBER, CASTER AND KINGPIN INCLINATION

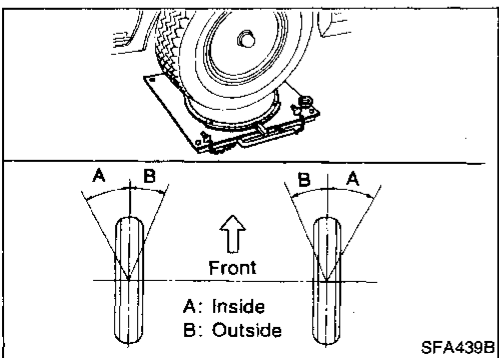
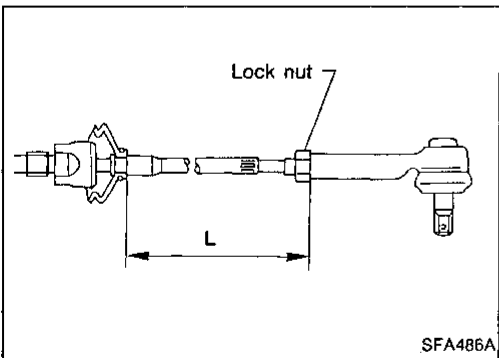
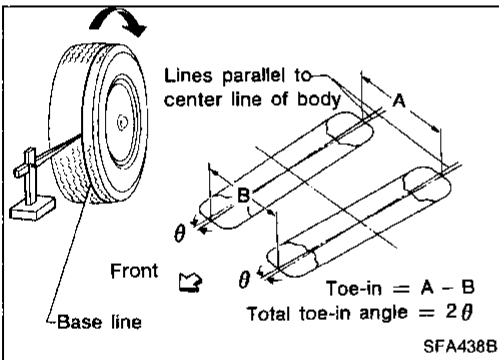
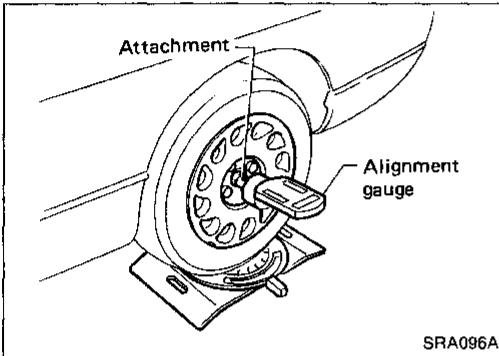
Camber, caster and kingpin inclination are preset at factory and cannot be adjusted.

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-28).

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



TOE-IN

1. Draw a base line across the tread.
 - After lowering front of vehicle, move it up and down to eliminate friction. Set steering wheel in straight-ahead position.
2. Measure toe-in.
 - Measure distance "A" and "B" at the same height as hub center.

Toe-in:

Refer to SDS (FA-28).

3. 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.

- (3) Tighten lock nuts to specified torque.

Lock nut tightening torque:

Refer to ST section.

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):

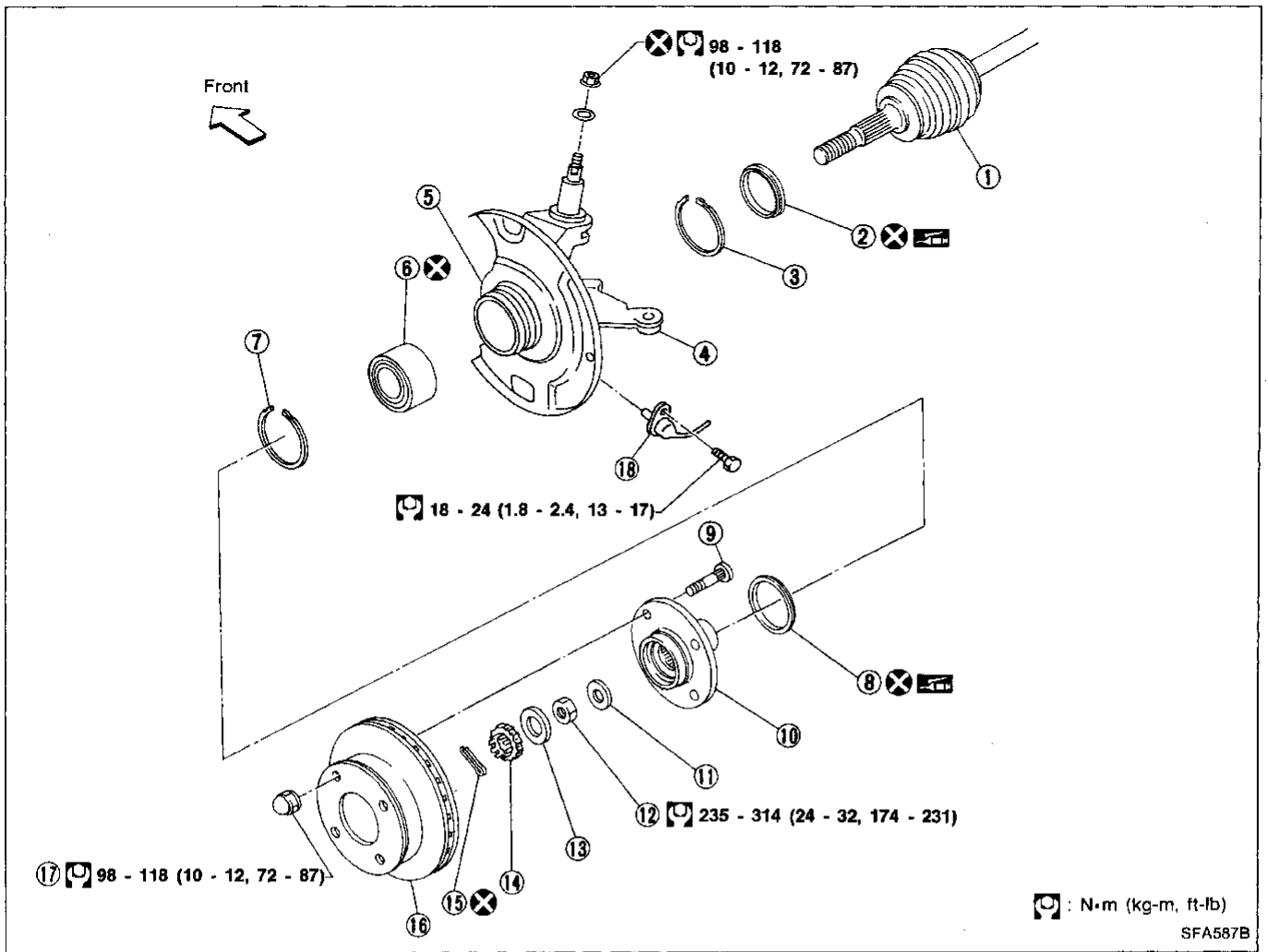
Inside wheel/Outside wheel

33° - 37°/28° - 32°

Drive Shaft

Check for grease leakage or other damage.

FRONT AXLE



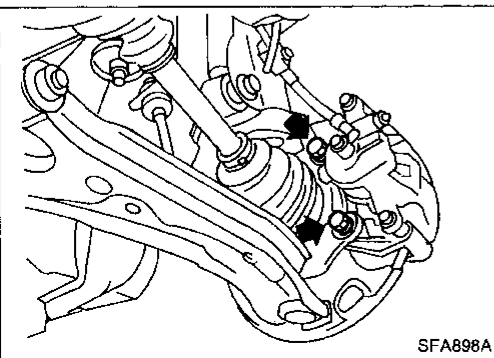
- ① Drive shaft
- ② Inner grease seal
- ③ Snap ring
- ④ Knuckle
- ⑤ Baffle plate
- ⑥ Wheel bearing assembly

- ⑦ Snap ring
- ⑧ Outer grease seal
- ⑨ Hub bolt
- ⑩ Wheel hub
- ⑪ Plain washer
- ⑫ Wheel bearing lock nut

- ⑬ Insulator
- ⑭ Adjusting cap
- ⑮ Cotter pin
- ⑯ Brake disc
- ⑰ Wheel nut
- ⑱ ABS sensor

Ⓜ : N·m (kg-m, ft-lb)

SFA587B



Wheel Hub and Knuckle

REMOVAL

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 sensor wires being damaged and the sensor becoming inoperative.

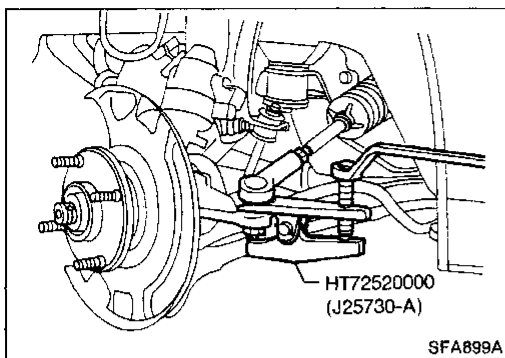
- Remove wheel bearing lock nut.
- Remove brake caliper assembly and rotor.

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

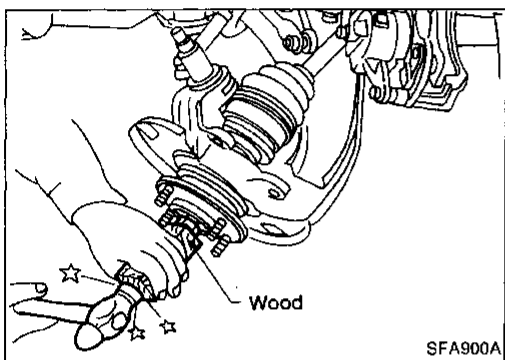
Make sure brake hose is not twisted.

FRONT AXLE

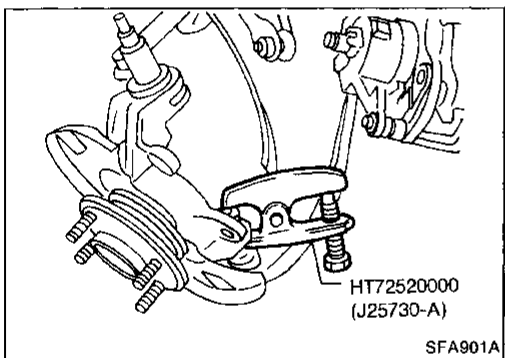
Wheel Hub and Knuckle (Cont'd)



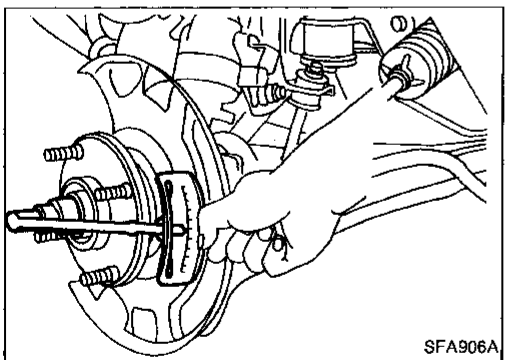
- Separate tie-rod from knuckle with Tool.
Install stud nut inverted on stud bolt to prevent damage to stud bolt.
- Remove kingpin cap and securing nut. Separate kingpin from knuckle.



- Separate drive shaft from knuckle with drift.
When removing drive shaft, cover boots with shop towel to prevent damage to them.

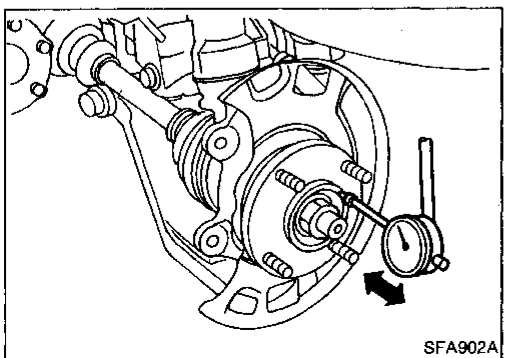


- Remove ball joint securing nut. Separate from knuckle using Tool (as for tie-rod).



INSTALLATION

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



- 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.

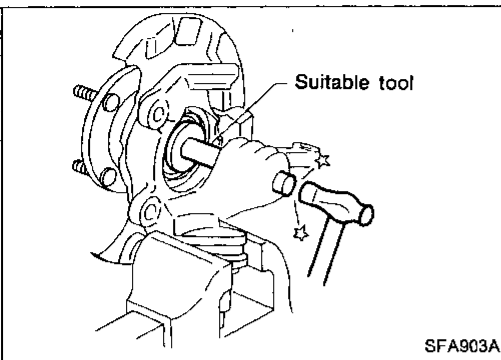
GI

Wheel hub

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

MA

EM



Wheel bearing

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

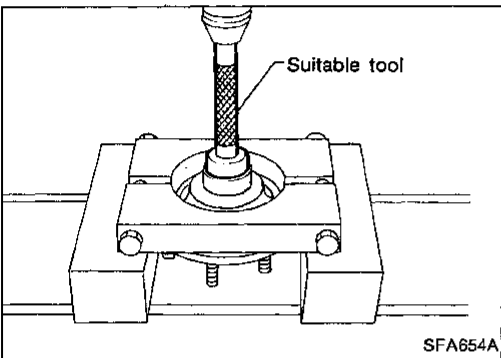
LC

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

EC

FE

CL



- Remove inner grease seal from knuckle.

MT

AT

FA

RA

BR

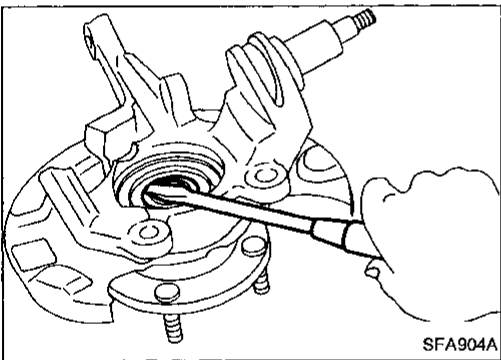
ST

BF

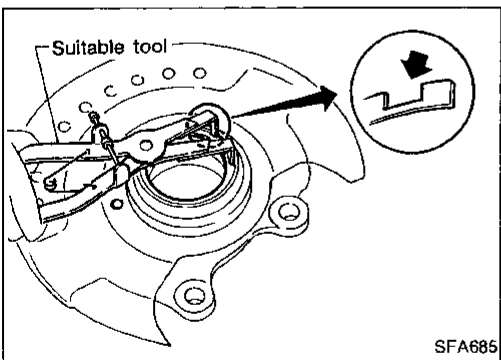
HA

EL

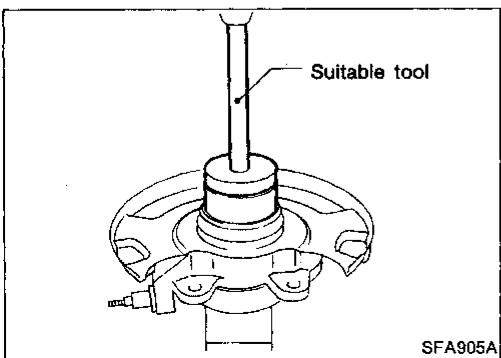
IDX



- Remove inner and outer snap rings.



- Press out bearing outer race.



FRONT AXLE

Wheel Hub and Knuckle (Cont'd)

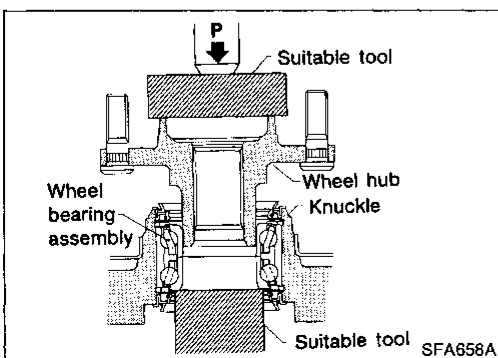
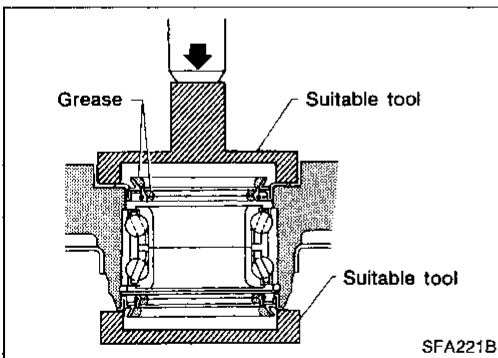
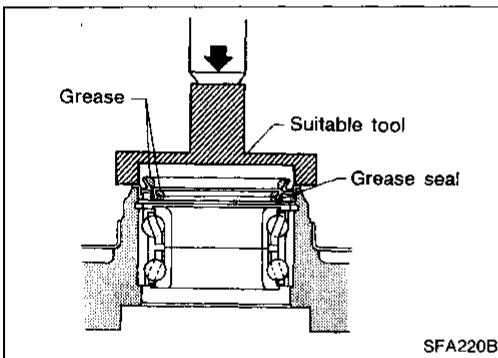
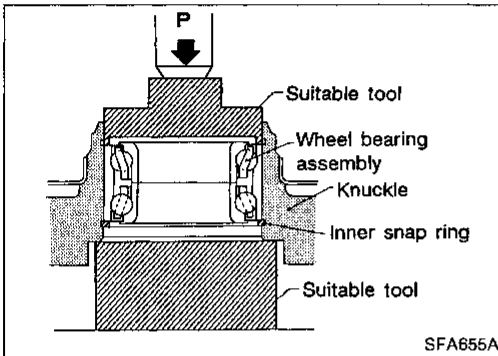
INSPECTION

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.

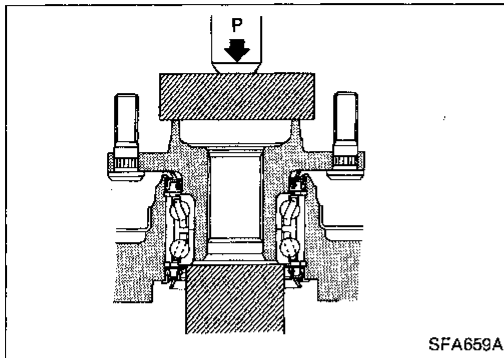
Maximum load P:

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)

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

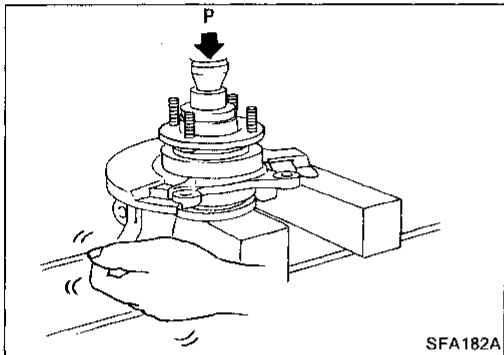
ST

BF

HA

EL

IDX



(2) Spin knuckle several turns in both directions.

(3) Make sure that wheel bearings operate smoothly.

Drive Shaft

REMOVAL

- Remove wheel bearing lock nut.
- Remove brake caliper assembly and rotor.

Brake hose need not be disconnected from brake caliper.

In this case, suspend brake caliper 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.

- Remove tie-rod ball joint.
- Remove upper knuckle nut.
- Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.

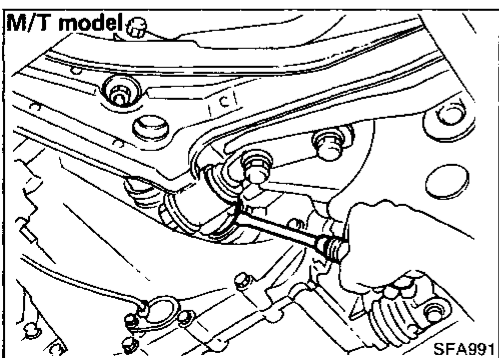
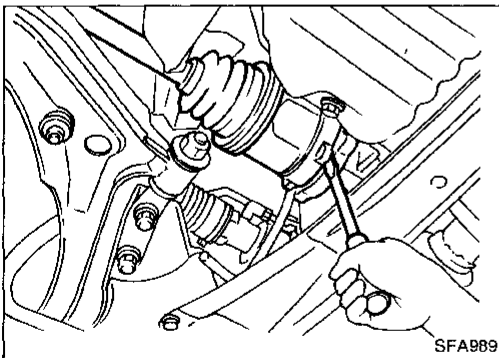
When removing drive shaft, cover boots with shop towel to prevent damage to them.

Refer to FRONT AXLE — Wheel Hub and Knuckle (FA-7).

1. Remove right drive shaft from transaxle.

2. Remove left drive shaft from transaxle.

— For M/T models —



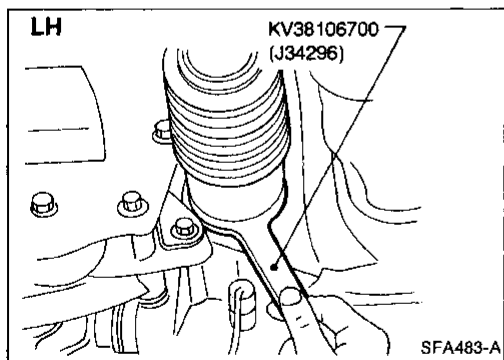
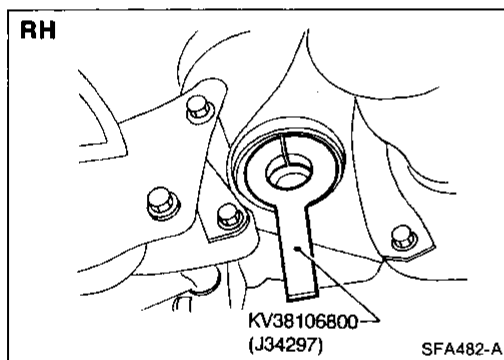
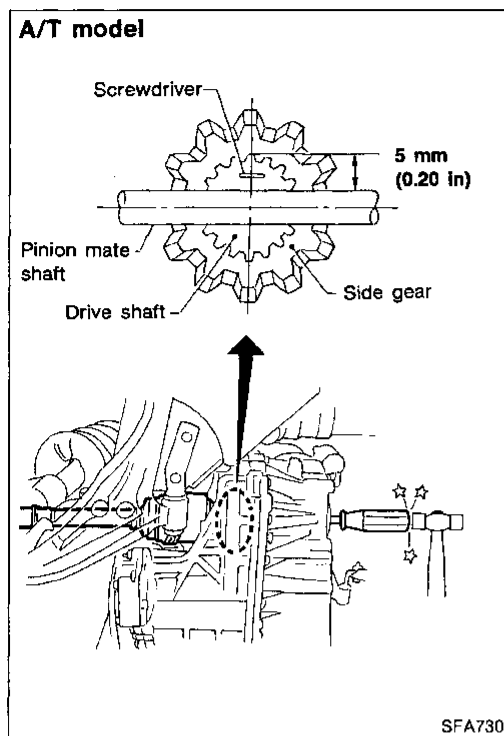
FRONT AXLE

Drive Shaft (Cont'd)

— For A/T models —

- Remove left drive shaft with a suitable tool.

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



INSTALLATION

Transaxle side

1. Drive a new oil seal to transaxle. Refer to section MT or AT.
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-7).

FRONT AXLE

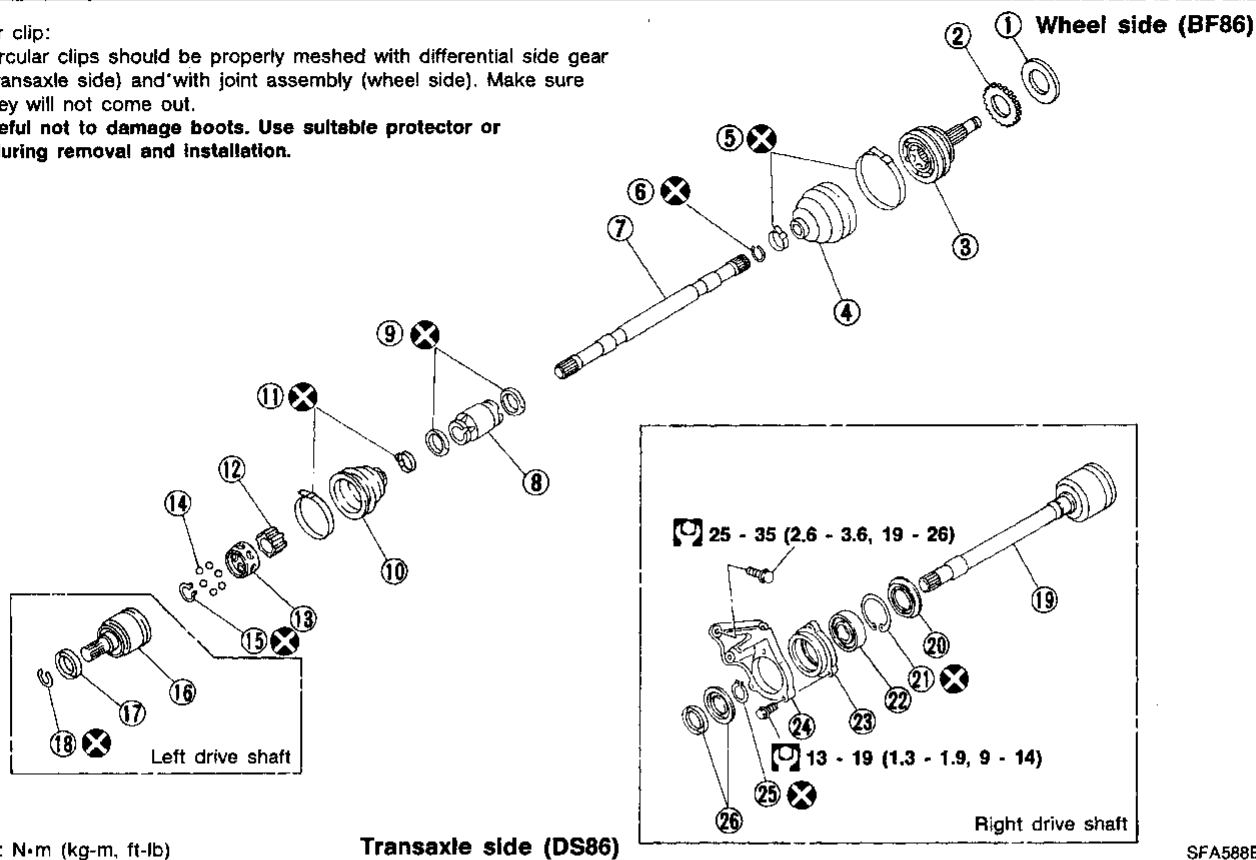
Drive Shaft (Cont'd)

COMPONENTS

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.



: N·m (kg-m, ft-lb)

Transaxle side (DS86)

Right drive shaft

SFA588B

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

GI
MA
EM
LC
EC
FE
CL
MT
AT

FA

RA

BR

ST

BF

HA

EL

IDX

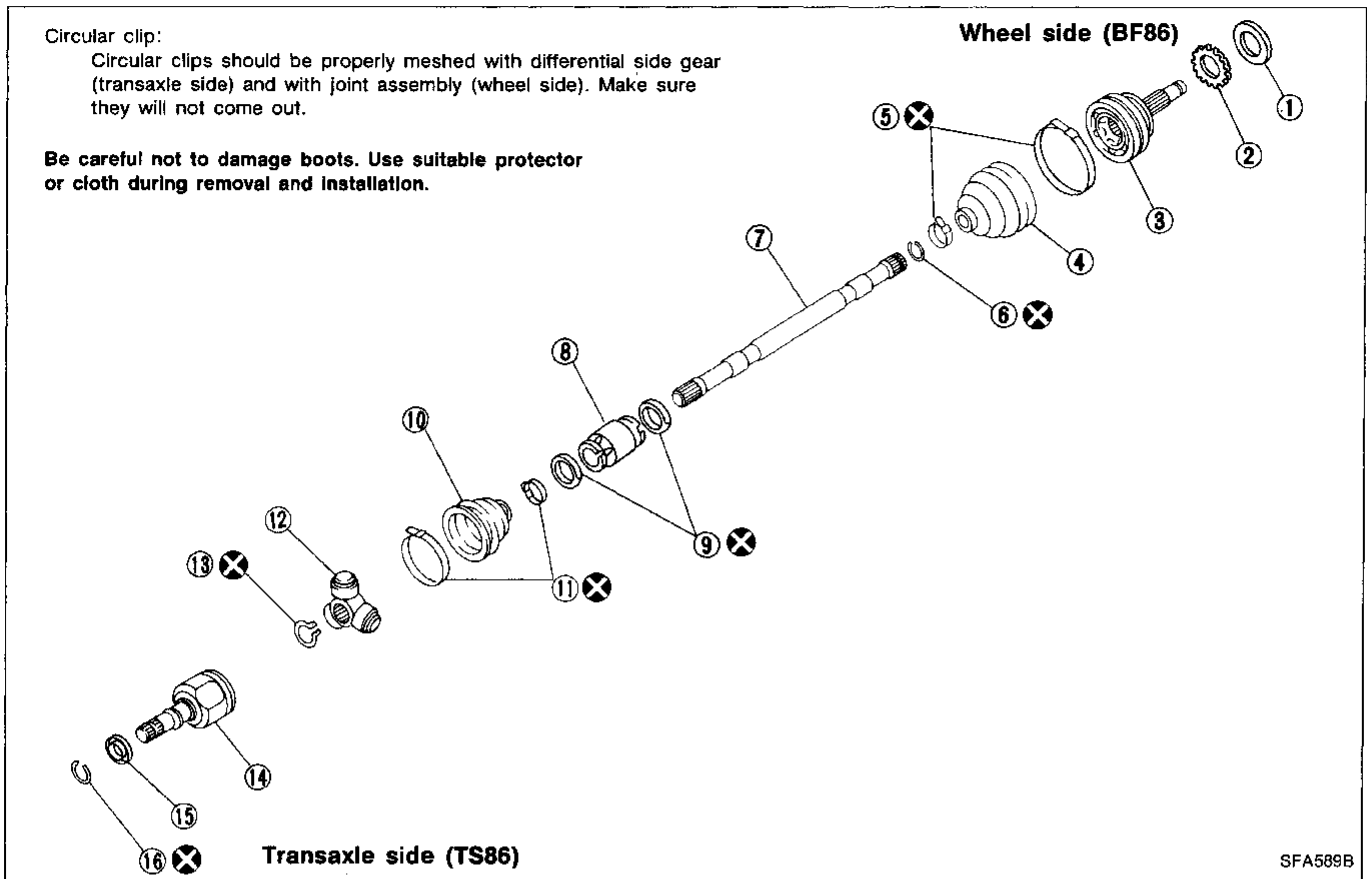
FRONT AXLE

Drive Shaft (Cont'd)

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.



SFA589B

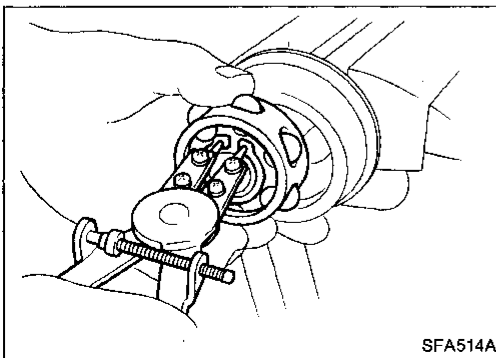
- | | | |
|-------------------|-----------------------|-----------------------|
| ① Dust shield | ⑦ Drive shaft | ⑫ Spider assembly |
| ② ABS ring | ⑧ Dynamic damper | ⑬ Snap ring C |
| ③ Joint assembly | ⑨ Dynamic damper band | ⑭ Slide joint housing |
| ④ Boot | ⑩ Boot | ⑮ Dust shield |
| ⑤ Boot band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

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. Pull out slide joint housing.



SFA514A

4. Put matching marks on inner race and drive shaft.
5. Pry off 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.

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.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

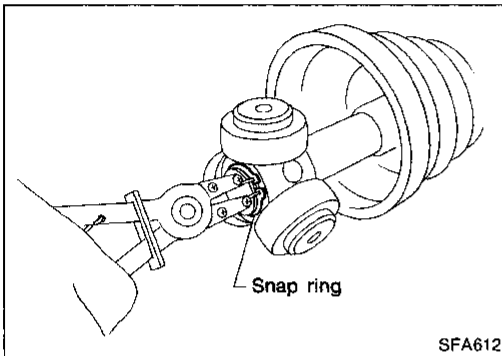
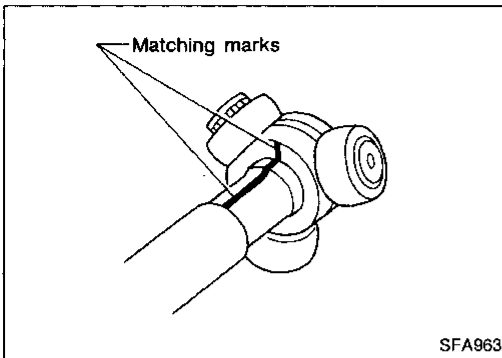
ST

BF

HA

EL

IDX



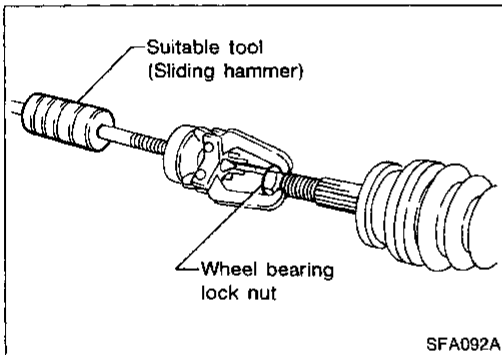
4. Pry off snap ring, then remove spider assembly.

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)

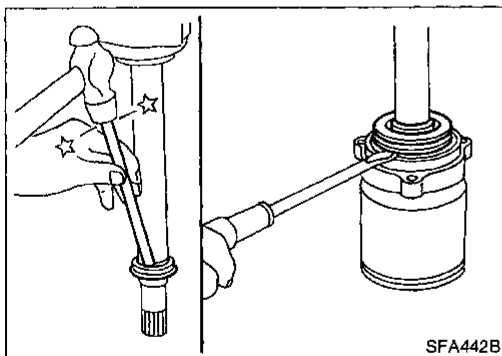
CAUTION:

The joint on the wheel side cannot be disassembled.

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

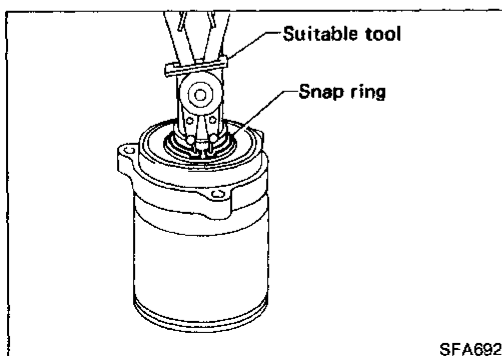
Be careful not to damage threads on drive shaft.

- Draw out boot.



Support bearing

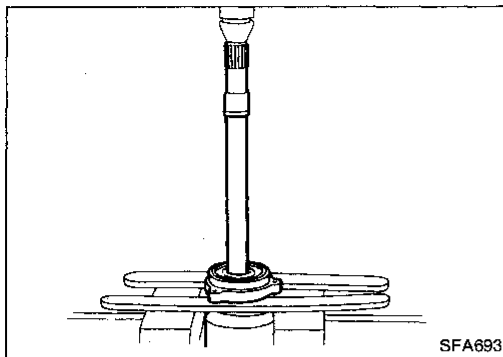
- Remove outer dust shield.
- Remove inner dust shield.



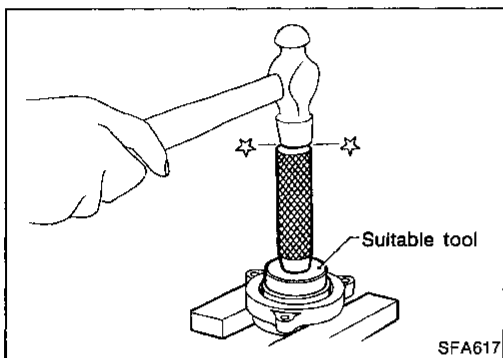
- Pry off snap ring.

FRONT AXLE

Drive Shaft (Cont'd)



- Press support bearing assembly out of drive shaft.



- Press support bearing out of 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.

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.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

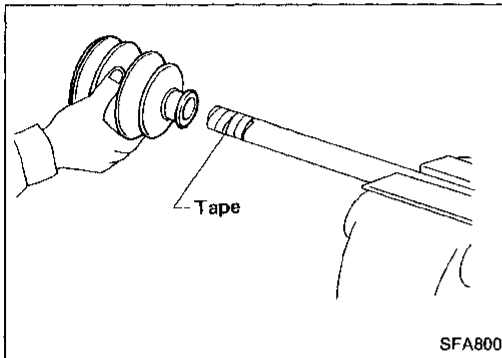
ST

BF

HA

EL

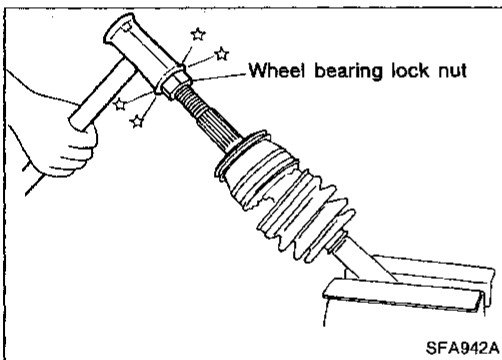
IDX



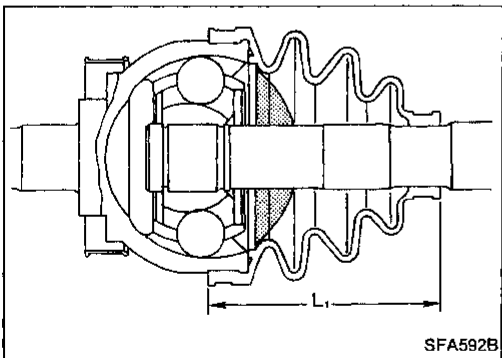
Wheel side (BF86 type)

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:

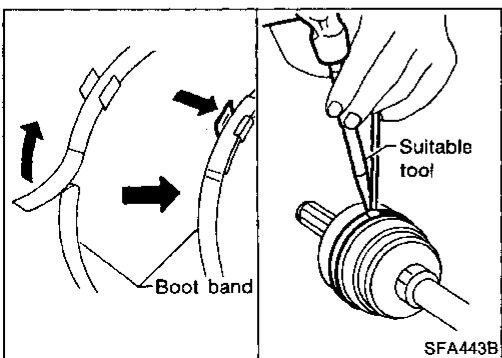
105 - 125 g (3.70 - 4.41 oz)

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

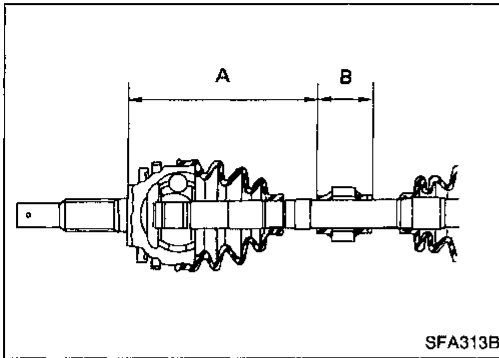
1. Use new damper bands when installing.
2. Install dynamic damper from stationary-joint side while holding it securely.

Length:

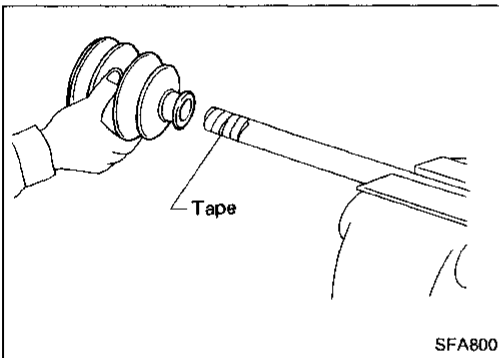
Unit: mm (in)

	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)

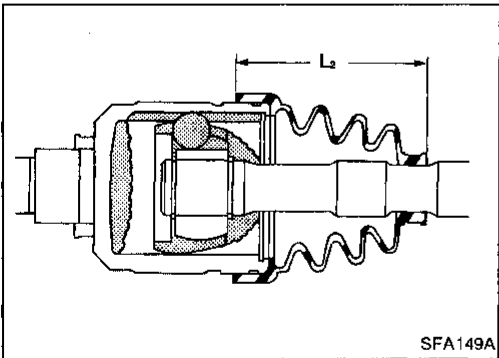
* Models equipped with viscous coupling



SFA313B



SFA800



SFA149A

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.

2. Pack drive shaft with specified amount of grease.

Specified amount of grease:

140 - 160 g (4.94 - 5.64 oz)

3. Install slide joint housing.
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 "L₂".

Length "L₂":

98 mm (3.86 in)

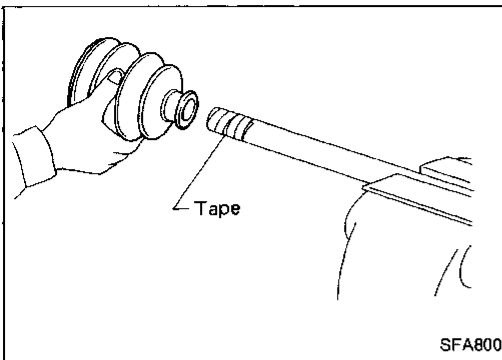
5. Lock new larger and smaller boot bands securely with a suitable tool.

FRONT AXLE

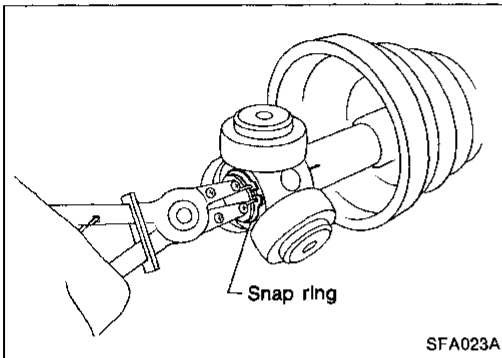
Drive Shaft (Cont'd)

(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:

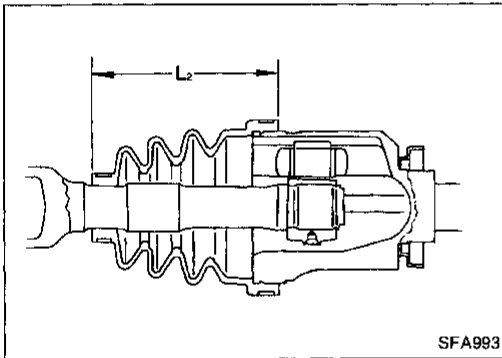
150 - 170 g (5.29 - 6.00 oz)

5. Install slide joint housing.
6. Set boot so that it does not swell and deform when its length is "L₂".

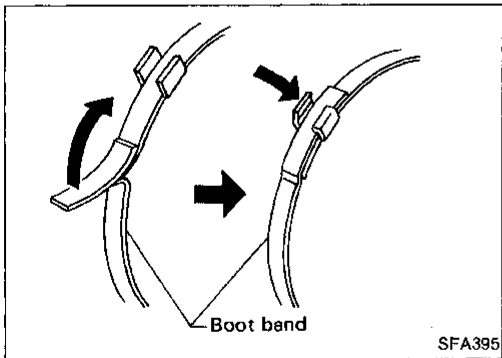
Length "L₂":

98.5 mm (3.878 in)

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

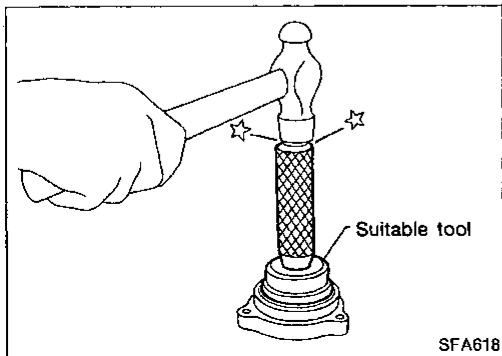


7. Lock new larger and smaller boot bands securely with a suitable tool.



Support bearing

- Press bearing into retainer.



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

BF

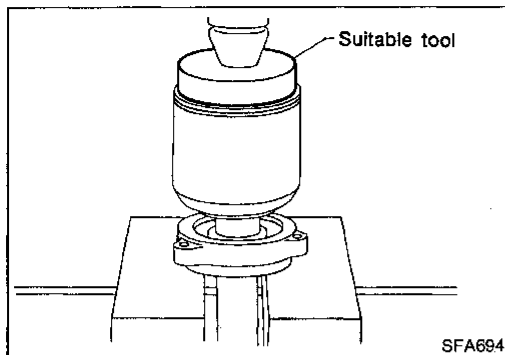
HA

EL

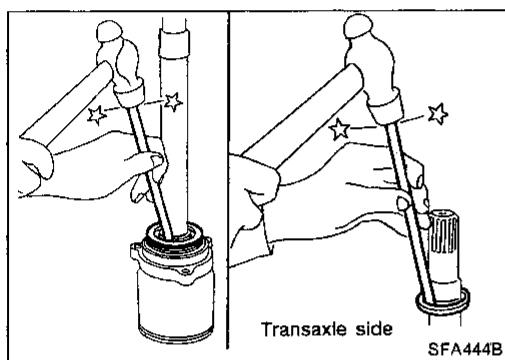
IDX

FRONT AXLE

Drive Shaft (Cont'd)



- Press drive shaft into bearing.

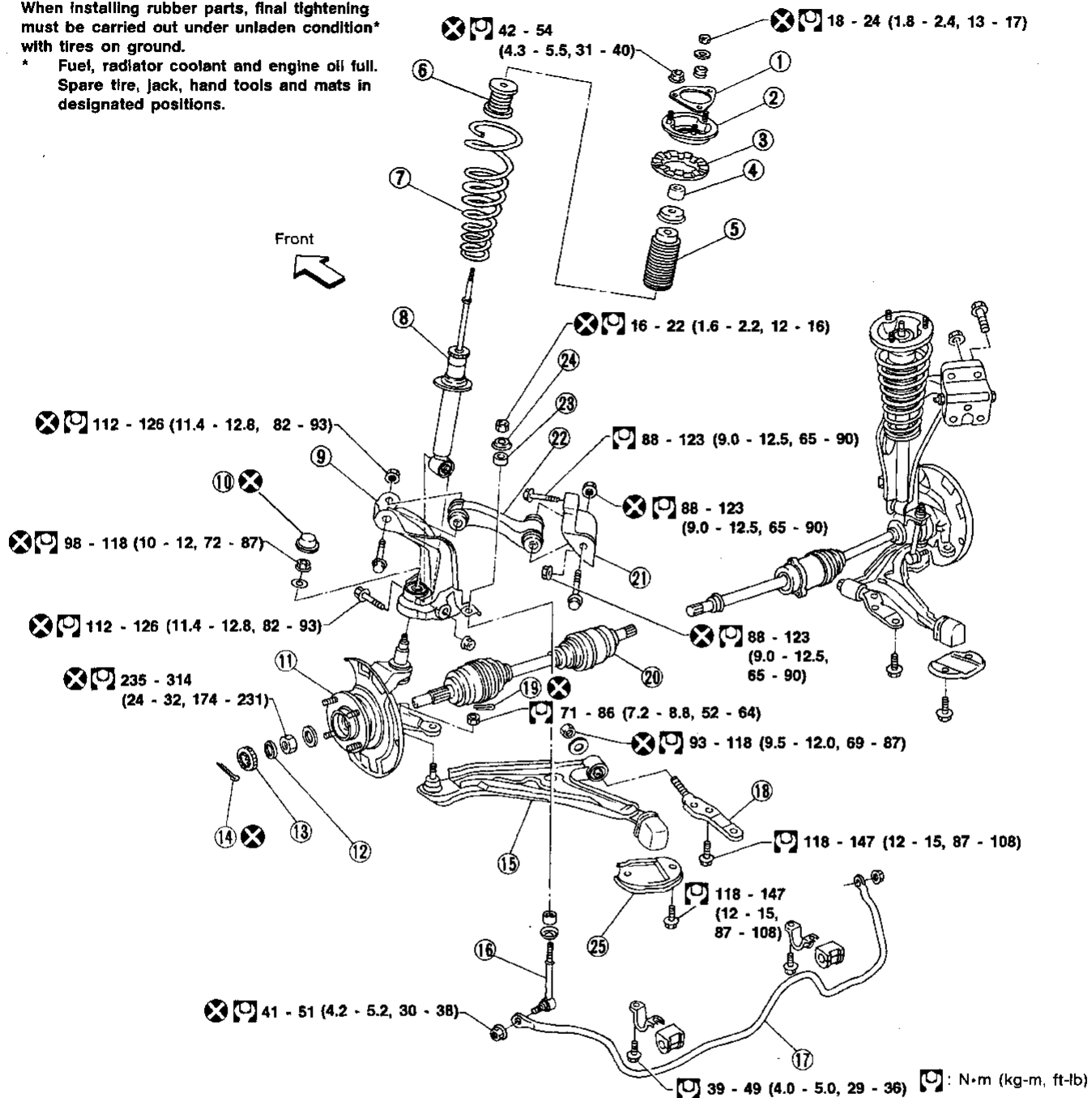


- Install snap ring.
- Install new dust shield.

FRONT SUSPENSION

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.



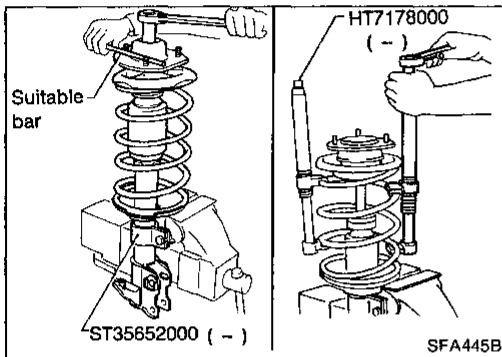
SFA590B

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

Coil Spring and Shock Absorber

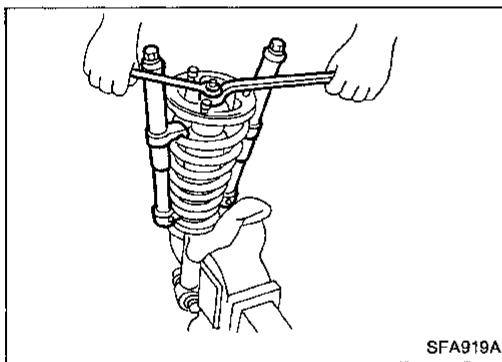
REMOVAL

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



DISASSEMBLY

1. Set shock absorber on vise, then loosen piston rod lock nut.
 - **Do not remove piston rod lock nut.**
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 occurring 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

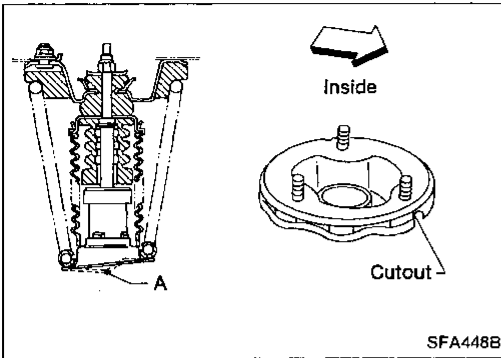
- Check for cracks, deformation or other damage. Replace if necessary.

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 spring seat with its cutout facing the inside of the vehicle.



Third Link and Upper Link

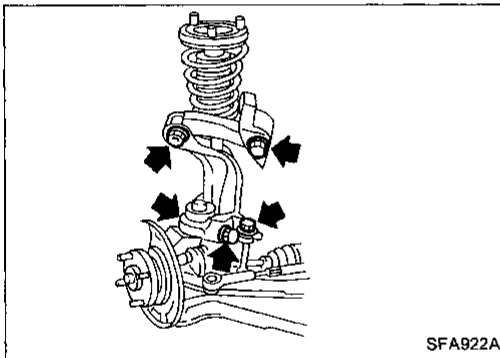
REMOVAL

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.



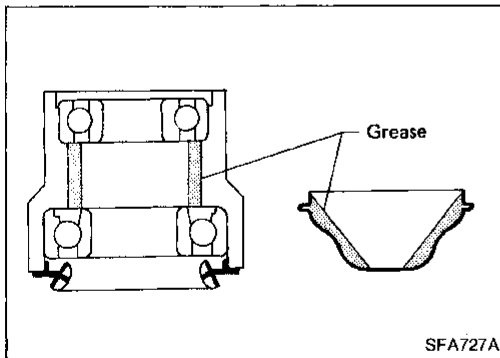
INSTALLATION

Third link

- Pack kingpin housing and cap with multi-purpose grease.

Grease capacity:

Kingpin housing	4 g (0.14 oz)
Cap	10 g (0.35 oz)

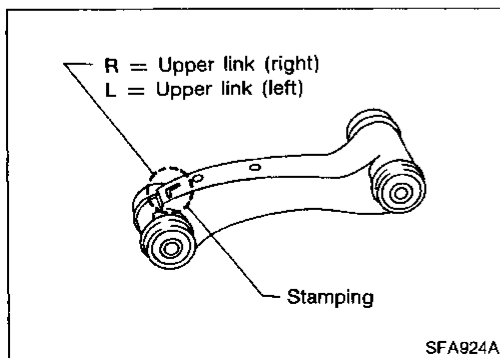


Upper link

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

Upper link bushings cannot be disassembled.

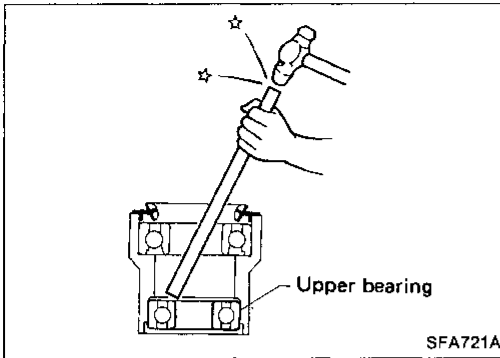
- When installing upper link, make sure that parts are in their correct positions.



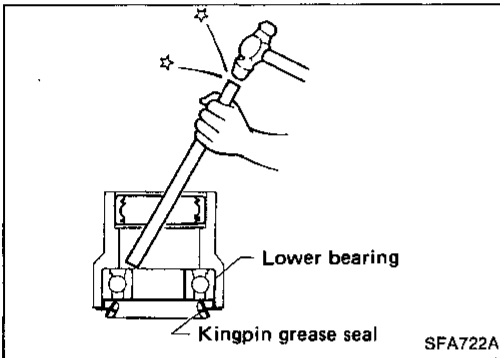
FRONT SUSPENSION

Third Link and Upper Link (Cont'd)

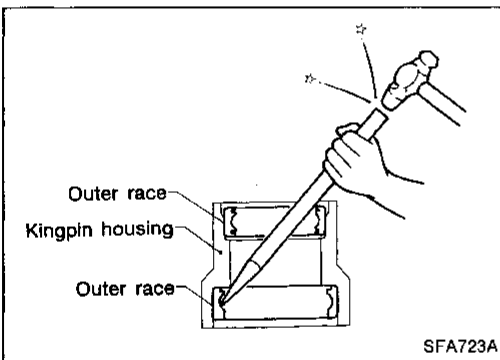
DISASSEMBLY



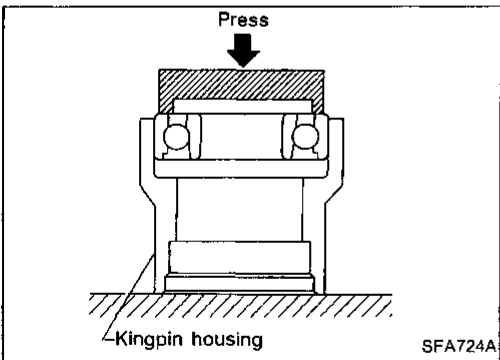
- Remove upper bearing (inner race and ball).



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

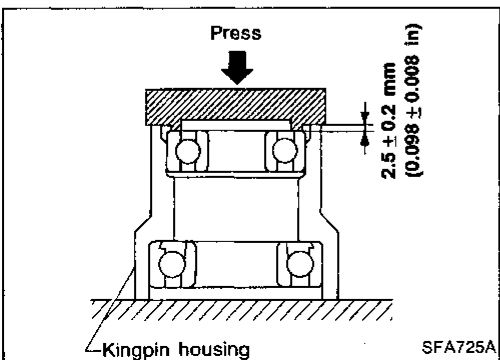


- Remove upper and lower outer race.
- **Be careful not to damage kingpin housing.**



ASSEMBLY

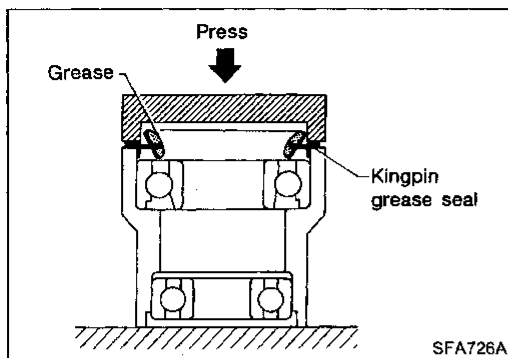
- Install lower bearing.



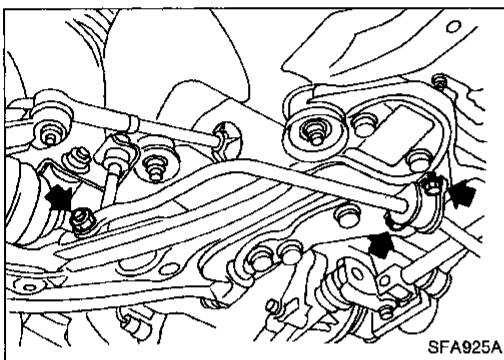
- Install upper bearing.

FRONT SUSPENSION

Third Link and Upper Link (Cont'd)



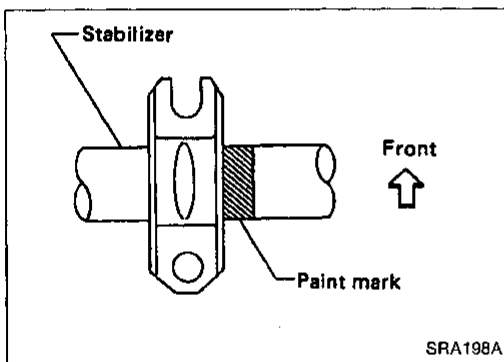
- Install lower oil seal.
- Apply multi-purpose grease to oil seal lip.



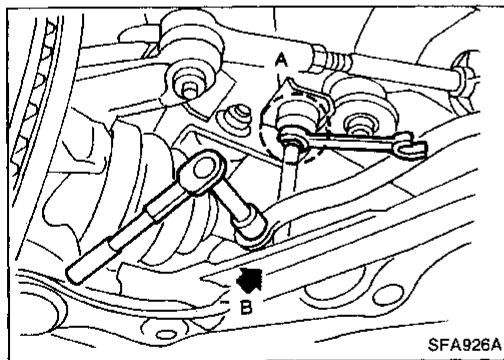
Stabilizer Bar

REMOVAL AND INSTALLATION

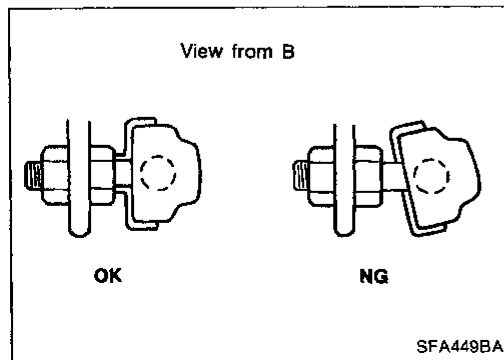
- Remove stabilizer bar.



- 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.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

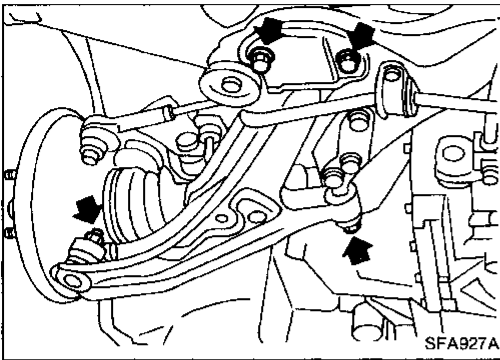
ST

BF

HA

EL

IDX



Transverse Link and Lower Ball Joint

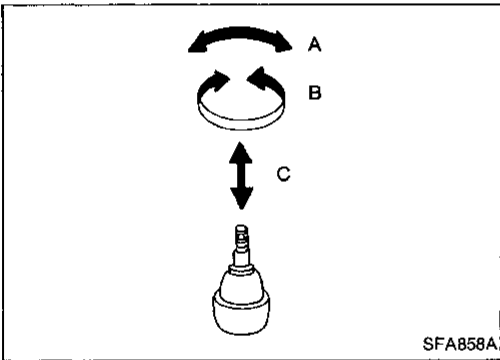
REMOVAL AND INSTALLATION

- Remove tension rod, ball joint and transverse link assembly.
- During installation, final tightening must be done at curb weight with tires on ground.
- After installation, check wheel alignment. Refer to "Front Wheel Alignment" of ON-VEHICLE SERVICE (FA-5).

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 play. Replace transverse link assembly if any of the following cases occur. Ball stud is worn, play in axial direction is excessive or joint is hard to swing.

Swing force and turning torque

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

Swing force "A":

(measuring point: cotter pin hole of ball stud)

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

Turning torque "B":

0.5 - 3.4 N·m (5 - 35 kg-cm, 4.3 - 30.4 in-lb)

Vertical end play "C":

0 mm (0 in)

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)/ 140.0 (5.51)	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

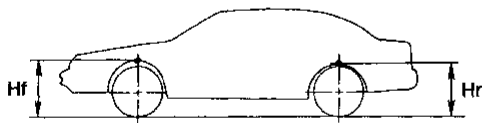
SHOCK ABSORBER

Applied model	M/T	A/T
Piston rod diameter mm (in)	12.5 (0.492)	

STABILIZER BAR

Stabilizer bar diameter mm (in)	19 (0.75)
---------------------------------	-----------

WHEELARCH HEIGHT (Unladen*)



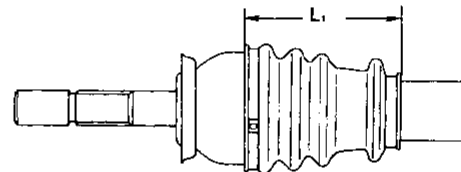
SFA818A

Applied model	All
Front (Hf) mm (in)	658.5 (25.93)
Rear (Hr) mm (in)	650.5 (25.61)

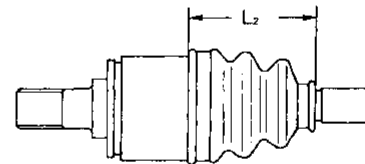
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

DRIVE SHAFT

Applied model	Standard	Optional*	
	Both	RH	LH
Joint type	DS86		TS86
Transaxle side			
Wheel side	BF86		
Grease	Nissan genuine grease or equivalent		
Quality			
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)		
Wheel side			



Transaxle side



SFA705B

*: Models equipped with viscous coupling

SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment

WHEEL ALIGNMENT (Unladen*1)

Camber	degree	-0°45' to 0°45'
Caster	degree	1°05' - 2°35'
Kingpin inclination	degree	13°45' - 15°15'
Toe-in		
A - B	mm (in)	0 - 2 (0 - 0.08)
Total angle 2θ	degree	0' - 12'
Front wheel turning angle		
Full turn*2		
Inside	degree	33° - 37°
Outside		28° - 32°

*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.

LOWER BALL JOINT

Swing 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, 4.3 - 30.4)
Vertical end play "C"	mm (in)	0 (0)

WHEEL RUNOUT

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

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)