

FRONT AXLE & FRONT SUSPENSION

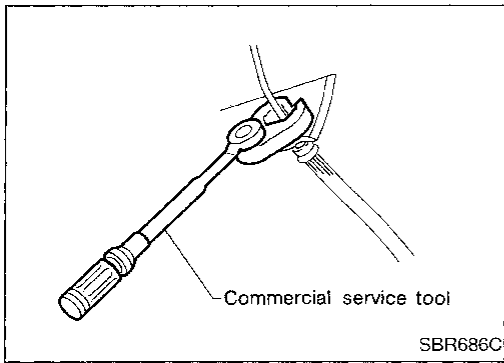
SECTION **FA**

CONTENTS

PRECAUTIONS AND PREPARATION2	FRONT AXLE (4WD)17	CL
Precautions.....2	Drive Shaft.....17	
Special Service Tools.....2	FRONT SUSPENSION22	MT
Commercial Service Tools.....2	Coil Spring and Strut Assembly.....24	
FRONT AXLE AND FRONT SUSPENSION4	Stabilizer Bar.....25	AT
ON-VEHICLE SERVICE6	Transverse Link and Lower Ball Joint.....26	
Front Axle and Front Suspension Parts.....6	ADJUSTABLE SHOCK ABSORBER28	TF
Front Wheel Bearing.....6	Description.....29	
Front Wheel Alignment.....8	Schematic.....29	PD
Drive Shaft.....10	Wiring Diagram.....30	
FRONT AXLE11	Trouble Diagnoses.....33	
Wheel Hub and Rotor Disc.....12	SERVICE DATA AND SPECIFICATIONS (SDS)35	
Knuckle Spindle.....15	General Specifications.....35	FA
	Inspection and Adjustment.....35	

GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
RA
BR
ST
RS
BT
HA
EL
LDX

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

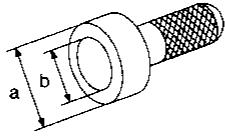
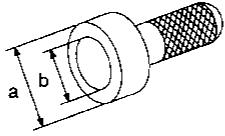
Tool number (Kent-Moore No.) Tool name	Description	
ST29020001 (J24319-01) Gear arm puller		Removing tie-rod outer end and lower ball joint NT143
HT71780000 (—) Spring compressor		Removing and installing coil spring NT144
KV401021S0 (—) Bearing race drift		Installing wheel bearing outer race NT153
KV40105400 (J36001) Wheel bearing lock nut wrench		Removing or installing wheel bearing lock nut NT154

Commercial Service Tools

Tool name	Description	Unit application		
		2WD	4WD	
<ol style="list-style-type: none"> ① Flare nut crowfoot ② Torque wrench 		Removing and installing each brake piping	X	X
	NT360	a: 10 mm (0.39 in)		

PRECAUTIONS AND PREPARATION

Commercial Service Tools (Cont'd)

Tool name	Description	Unit application	
		2WD	4WD
Hub cap drift	 <p>NT115</p> <p>a: 85 mm (3.35 in) dia. b: 72 mm (2.83 in) dia.</p>	X	—
Hub cap drift	 <p>NT115</p> <p>a: 57 mm (2.24 in) dia. b: 46 mm (1.81 in) dia.</p>	—	X

G1
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

FRONT AXLE AND FRONT SUSPENSION

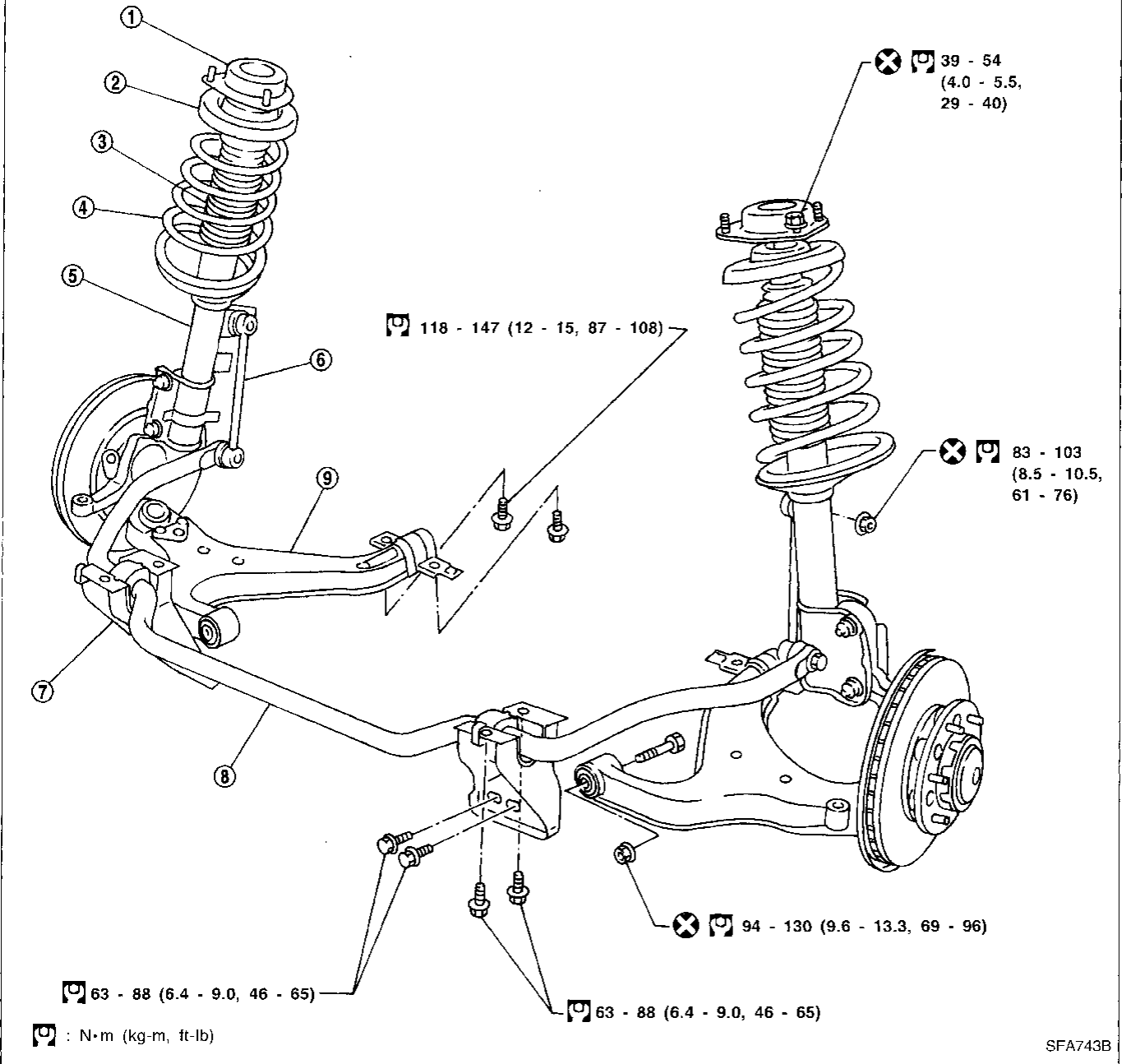
2WD model

SEC. 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 Strut mounting insulator
- ② Spring upper seat
- ③ Bound bumper

- ④ Coil spring
- ⑤ Strut assembly
- ⑥ Stabilizer connecting rod

- ⑦ Bracket
- ⑧ Stabilizer bar
- ⑨ Transverse link

FRONT AXLE AND FRONT SUSPENSION

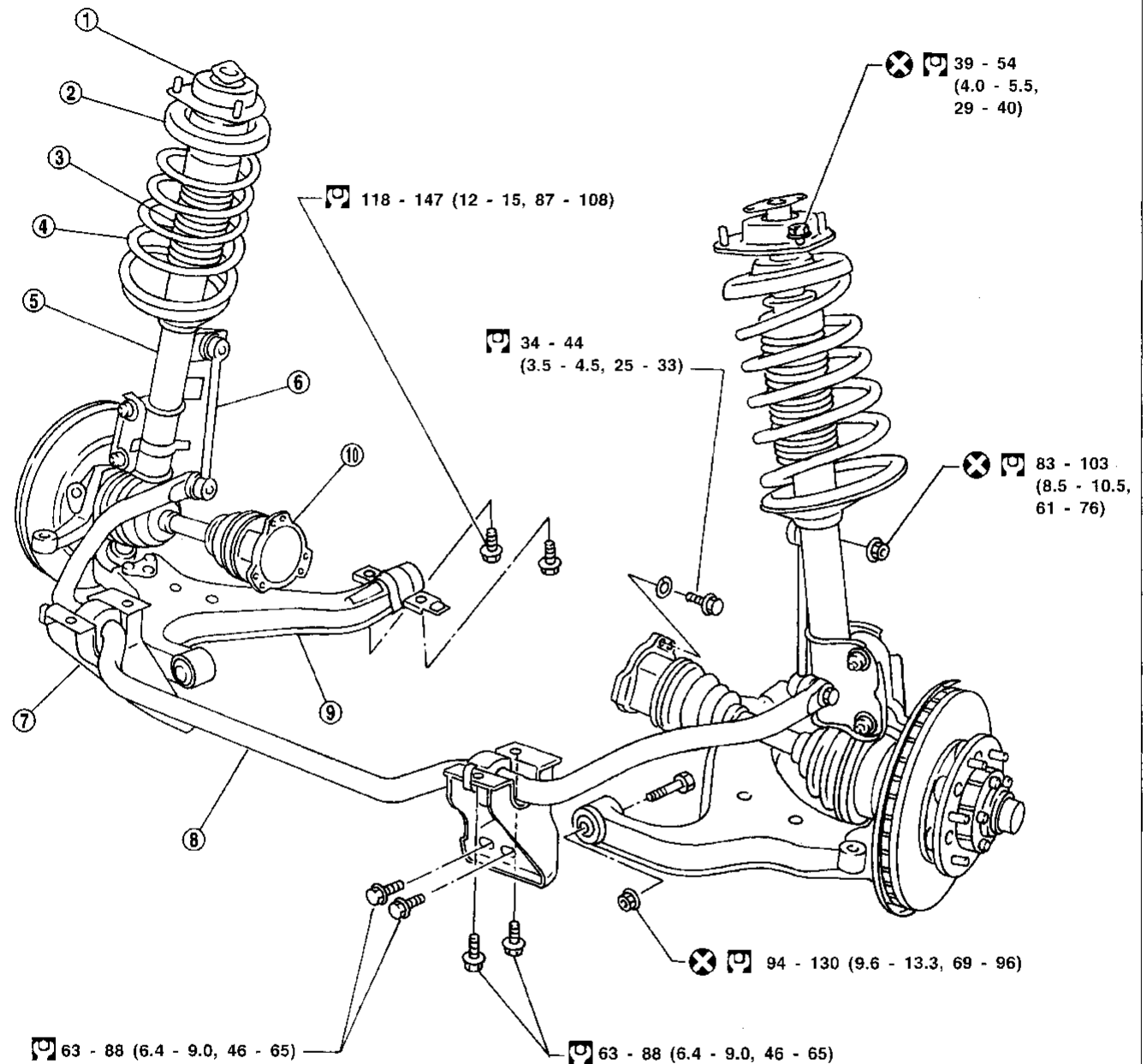
4WD model

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.

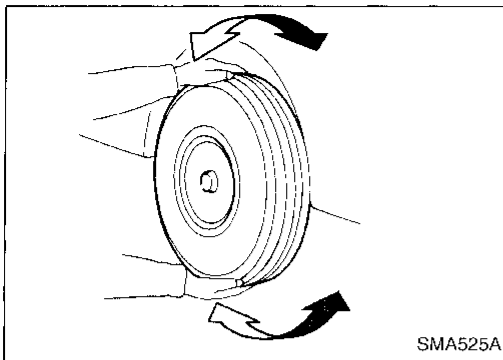


- ① Strut mounting insulator
- ② Spring upper seat
- ③ Bound bumper
- ④ Coil spring

- ⑤ Strut assembly
- ⑥ Stabilizer connecting rod
- ⑦ Bracket

- ⑧ Stabilizer bar
- ⑨ Transverse link
- ⑩ Drive shaft

SFA744B



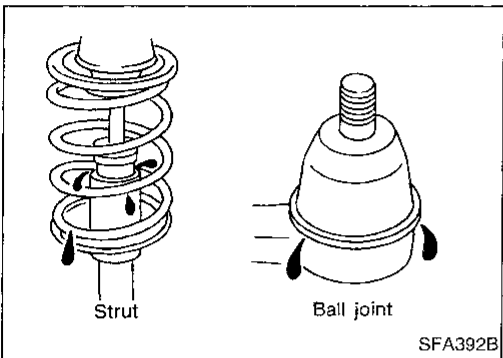
Front Axle and Front Suspension Parts

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

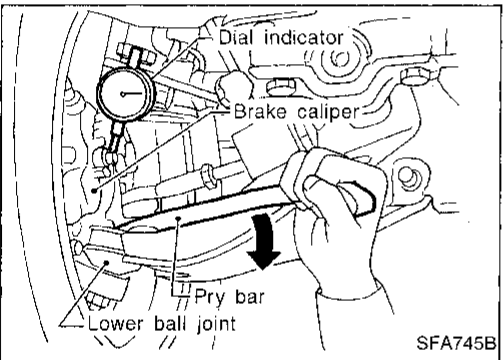
- Shake each front wheel to check for excessive play.
- Retighten all axle and suspensions nuts and bolts to the specified torque.

Tightening torque:

Refer to FRONT SUSPENSION (FA-22).



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

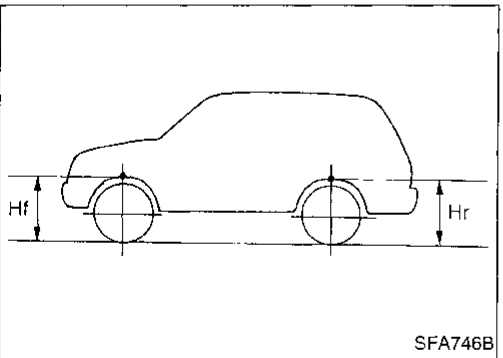


- Check suspension ball joint end play.
- (1) Jack up front of vehicle and set the stands.
 - (2) Clamp dial indicator onto transverse link and place indicator tip on lower edge of brake caliper.
 - (3) Make sure front wheels are straight and brake pedal is depressed.
 - (4) Place a pry bar between transverse link and knuckle.
 - (5) While raising and releasing pry bar, observe maximum dial indicator value.

Vertical end play:

0 mm (0 in)

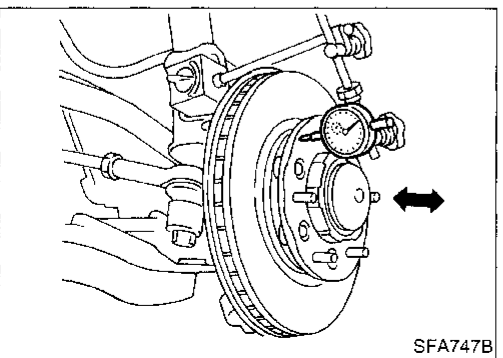
If ball joint vertical end play exists, remove lower ball joint assembly and recheck the ball joint. Refer to FA-26.



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

- (1) Park vehicle on a level surface with vehicle unladen* .
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- (2) Check tires for proper inflation and wear (tread wear indicator must not be showing).
- (3) Bounce vehicle up and down several times and measure dimensions Hf and Hr. Refer to SDS (FA-36).

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



Front Wheel Bearing

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

Axial end play: 0 mm (0 in)

- Adjust wheel bearing preload if there is any axial end play or wheel bearing does not turn smoothly.

ON-VEHICLE SERVICE

Front Wheel Bearing (Cont'd)

PRELOAD ADJUSTMENT

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

Adjust wheel bearing preload as follows:

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

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

FA

RA

BR

ST

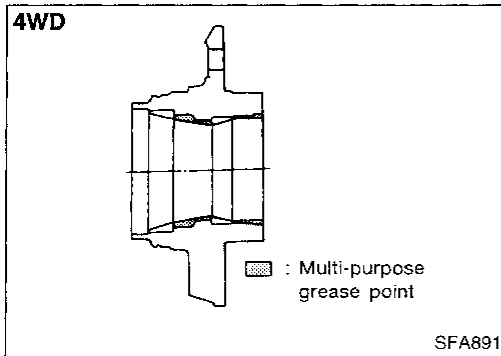
RS

BT

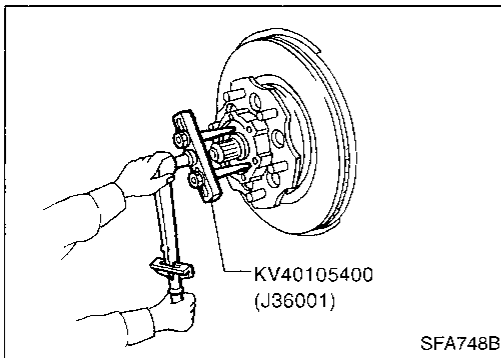
HA

EL

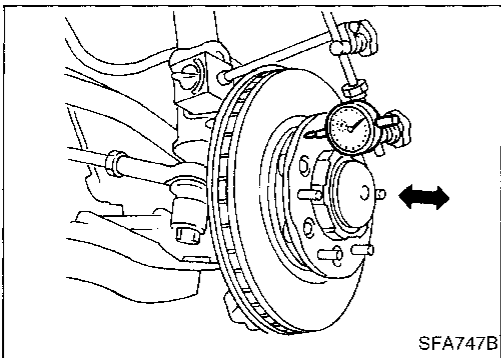
IDX



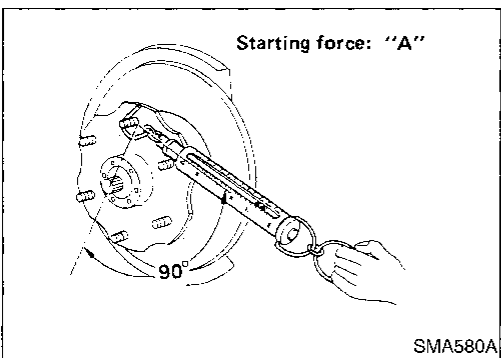
2. Apply multi-purpose grease sparingly to the following parts:
 - Threaded portion of spindle
 - Contact surface between wheel bearing lock washer (chamfered side) and outer wheel bearing
 - Grease seal lip
 - Wheel hub (as shown at left) — 4WD —



3. Tighten wheel bearing lock nut with Tool.
⚙️: **78 - 98 N·m (8 - 10 kg-m, 58 - 72 ft-lb)**
4. Turn wheel hub several times in both directions.
5. Loosen wheel bearing lock nut so that torque becomes 0 N·m (0 kg-m, 0 ft-lb).
6. Retighten wheel bearing lock nut with Tool.
⚙️: **0.5 - 1.5 N·m (0.05 - 0.15 kg-m, 4.3 - 13.0 in-lb)**



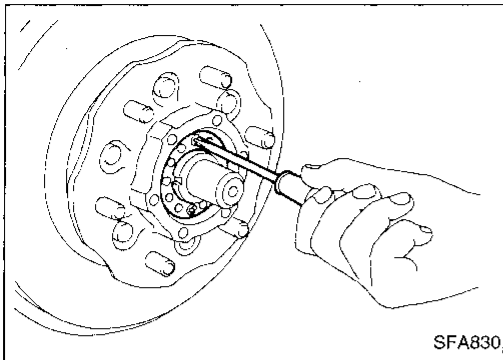
7. Turn wheel hub several times in both directions.
8. Retighten wheel bearing lock nut with Tool.
⚙️: **0.5 - 1.5 N·m (0.05 - 0.15 kg-m, 4.3 - 13.0 in-lb)**
9. Measure wheel bearing axial end play.
Axial end play: 0 mm (0 in)



10. Measure starting force "A" at wheel hub bolt.

ON-VEHICLE SERVICE

Front Wheel Bearing (Cont'd)



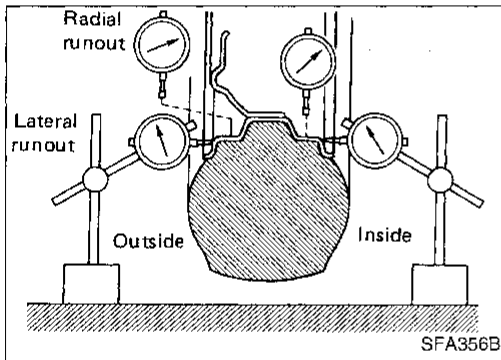
11. Install lock washer by tightening the lock nut within 15 to 30 degrees.
12. Turn wheel hub several times in both directions to seat wheel bearing correctly.
13. Measure starting force "B" at wheel hub bolt. Refer to procedure 10.
14. Wheel bearing preload "C" can be calculated as shown below.

$$C = B - A$$

Wheel bearing preload "C":

7.06 - 20.99 N (0.72 - 2.14 kg, 1.59 - 4.72 lb)

15. If wheel bearing preload "C" is outside specifications, remove lock washer. Tighten or loosen lock nut within ± 15 degrees (Refer to step 11 above). Install lock washer, then repeat steps 12, 13 and 14.
16. Repeat above procedures until correct axial end play and wheel bearing preload are obtained.
17. Install drive flange (4WD models) and wheel hub cap.



Front Wheel Alignment

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

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

PRELIMINARY INSPECTION

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

Wheel runout average

$[(\text{Outside runout value} + \text{Inside runout value}) \times 0.5]:$

Refer to SDS (FA-36).

3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that struts work properly.
7. Check vehicle posture (Unladen).

CAMBER, CASTER AND KINGPIN INCLINATION

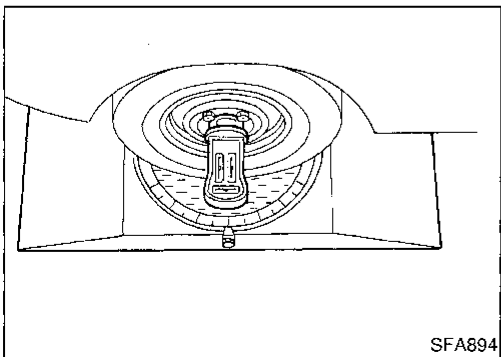
Camber, caster and kingpin inclination are preset at factory and cannot be adjusted.

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-35).

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



ON-VEHICLE SERVICE

Front Wheel Alignment (Cont'd)

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 the tread (rear side) of both tires at the same height of hub center. This mark is a measuring point.
4. Measure distance "A" (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 180 degrees (1/2 turn).

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

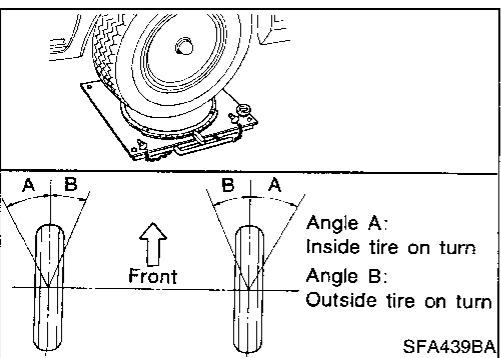
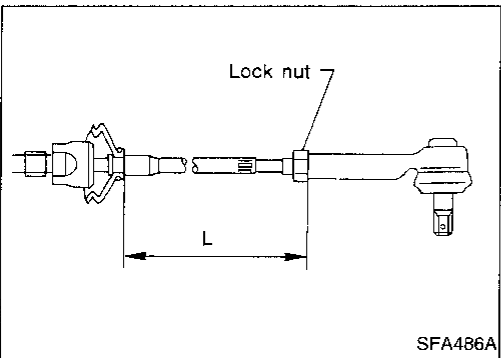
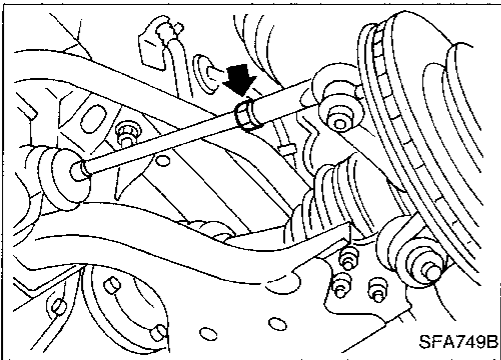
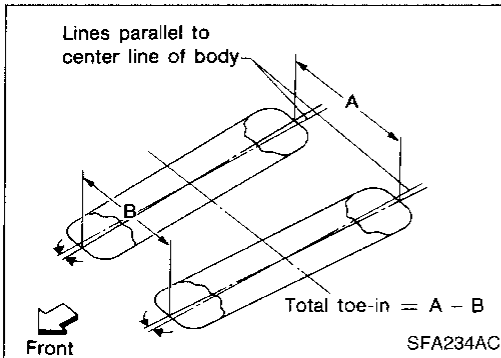
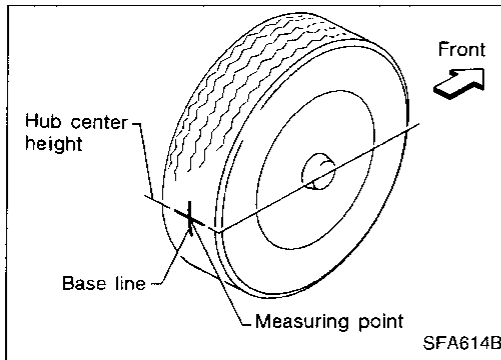
6. Measure distance "B" (front side).

Total toe-in:

Refer to SDS (FA-35).

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

- (1) Loosen lock nuts.
- (2) Adjust toe-in by screwing tie-rods in and out.



FRONT WHEEL TURNING ANGLE

Turning angle is set by stroke length of steering gear rack and cannot be adjusted.

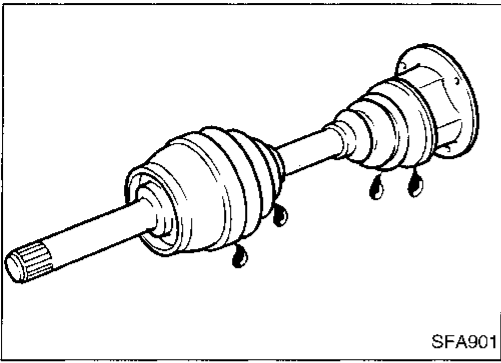
1. Set wheels in straight-ahead position. Then move vehicle forward until front wheels rest on turning radius gauge properly.
2. Rotate steering wheel all the way right and left; measure turning angle.

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

Wheel turning angle (Full turn):

Refer to SDS (FA-35).

GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

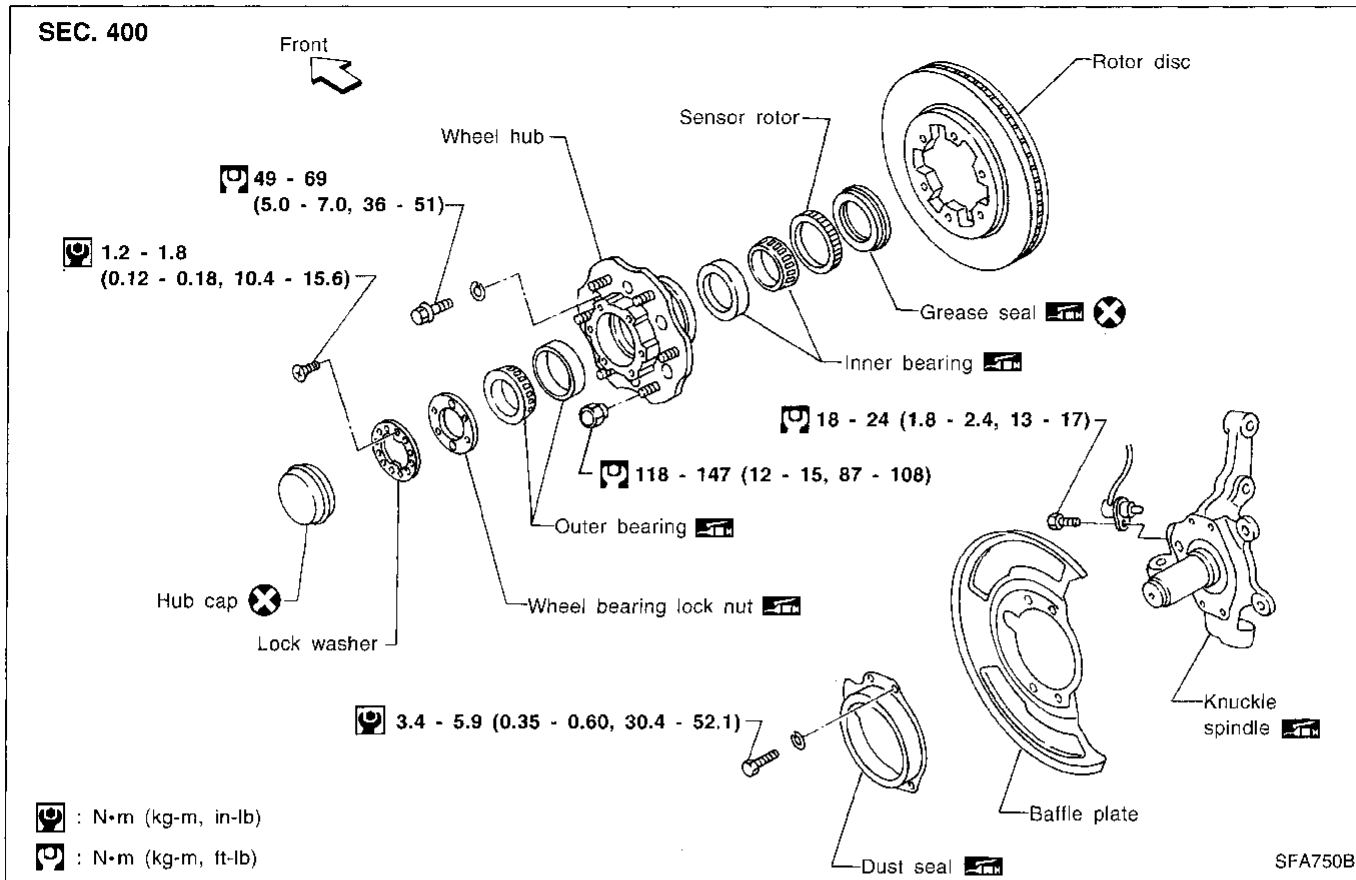


Drive Shaft

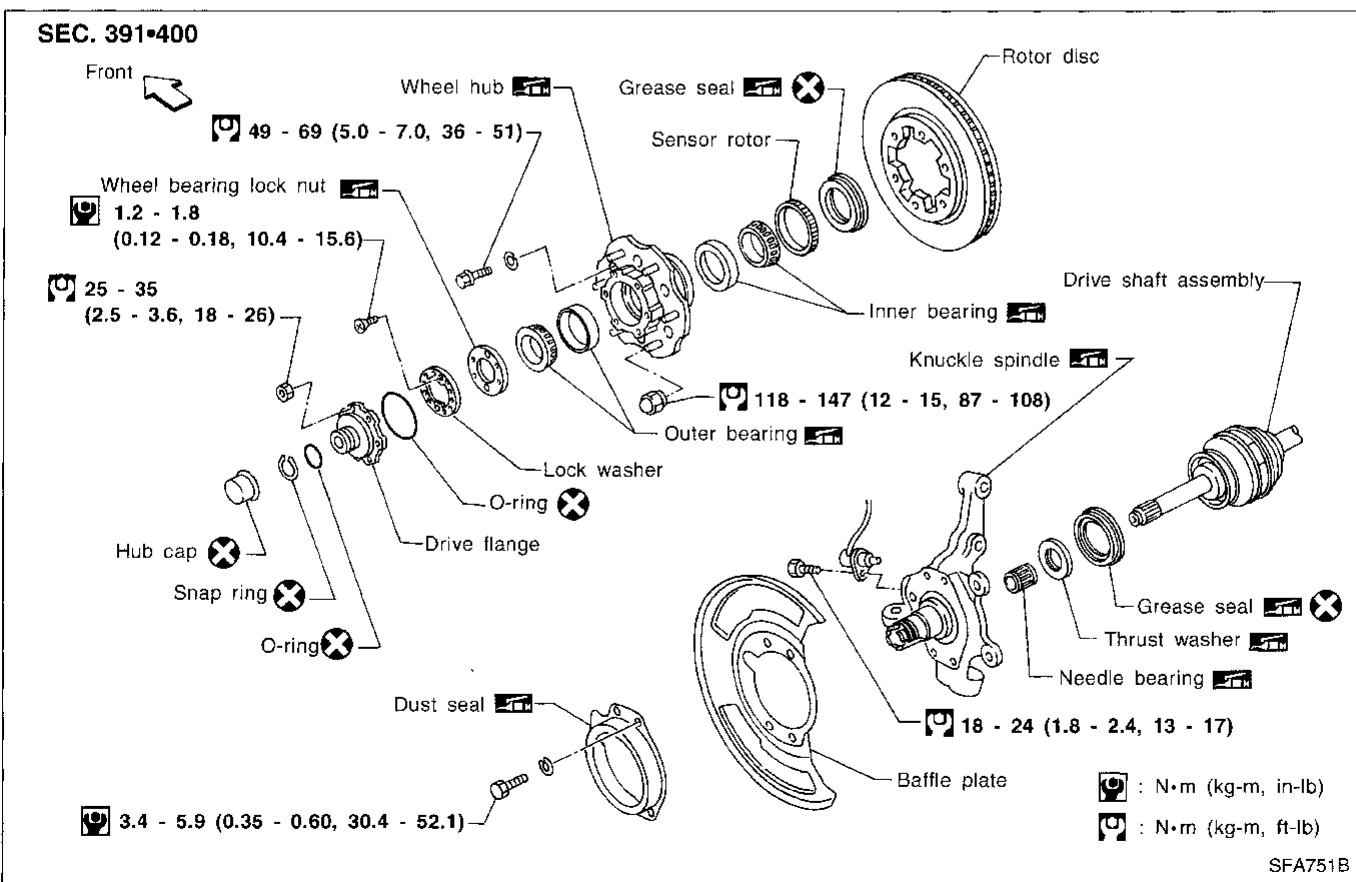
- Check boot and drive shaft for cracks, wear, damage or grease leakage.

FRONT AXLE

2WD model



4WD model



FRONT AXLE

Wheel Hub and Rotor Disc

REMOVAL

CAUTION:

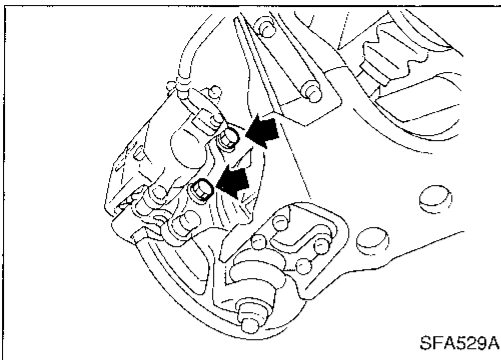
Before removing the front axle assembly, disconnect the ABS wheel sensor from the assembly. Then move it away from the front axle assembly area. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.

1. Remove brake caliper assembly.

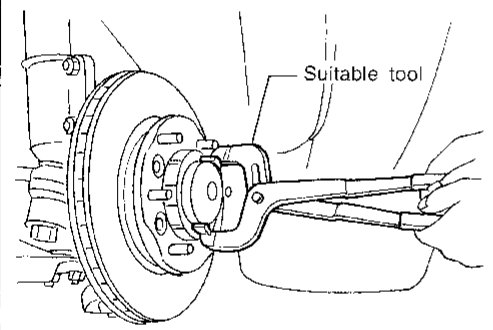
Brake hose need not be disconnected from brake caliper.

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

Be careful not to depress brake pedal, or piston will pop out. Make sure brake hose is not twisted.

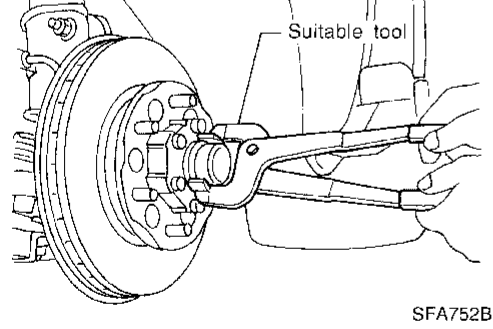


2WD



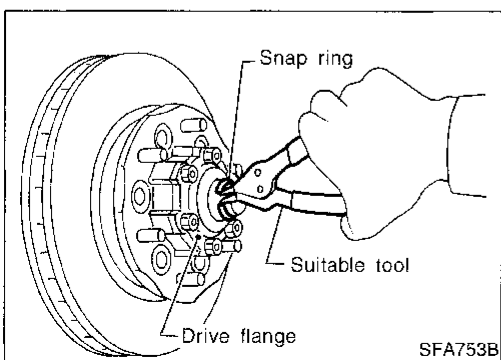
2. Remove hub cap with suitable tool.

4WD



SFA752B

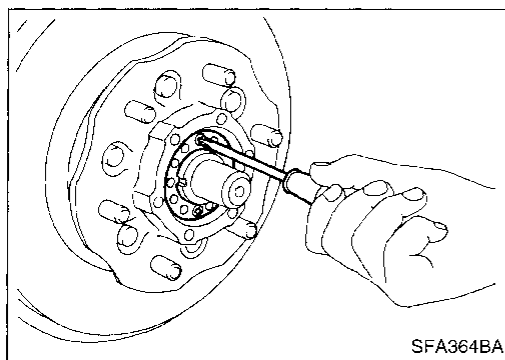
3. Remove snap ring with suitable tool. — 4WD —
4. Remove drive flange. — 4WD —



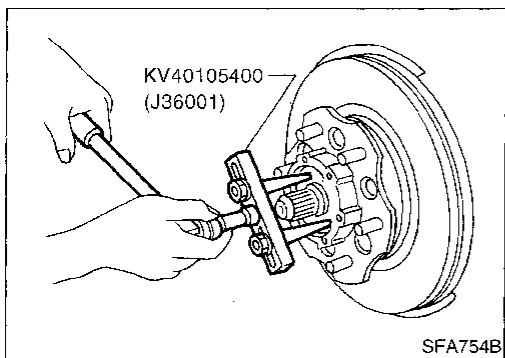
SFA753B

FRONT AXLE

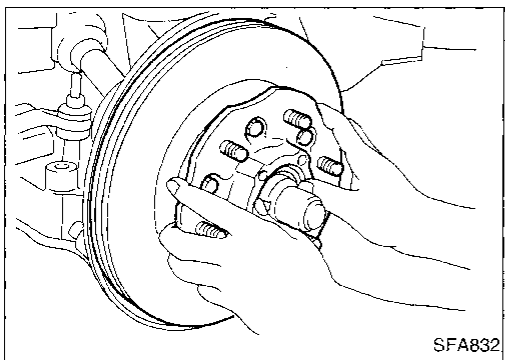
Wheel Hub and Rotor Disc (Cont'd)



5. Remove lock washer.



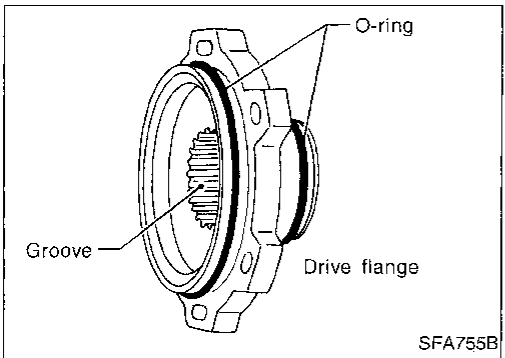
6. Remove wheel bearing lock nut.



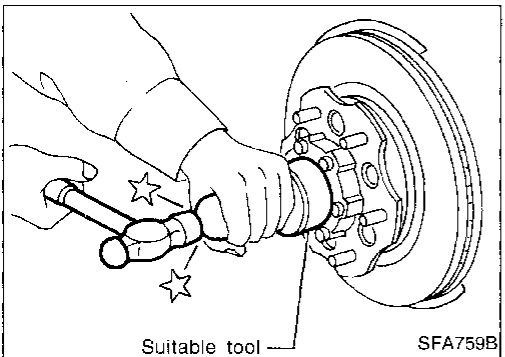
7. Remove wheel hub and wheel bearing.
Be careful not to drop outer bearing.

INSTALLATION

1. After installing wheel hub and wheel bearing, adjust wheel bearing preload.
Refer to PRELOAD ADJUSTMENT of Front Wheel Bearing in ON-VEHICLE SERVICE (FA-7).



2. Pack drive flange groove with grease, apply grease to O-ring (two places) and mating surface of drive flange. — 4WD —
3. Install snap ring. — 4WD —



4. Install hub cap using a suitable tool.
Do not reuse hub cap. When installing, replace it with a new one.

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

FA

RA

BR

ST

RS

BT

HA

EL

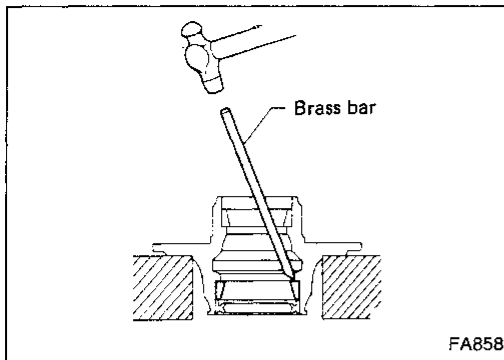
IDX

FRONT AXLE

Wheel Hub and Rotor Disc (Cont'd)

DISASSEMBLY

- Remove grease seal and bearing outer races with suitable brass bar.



INSPECTION

Thoroughly clean wheel bearings and wheel hub.

Wheel bearing

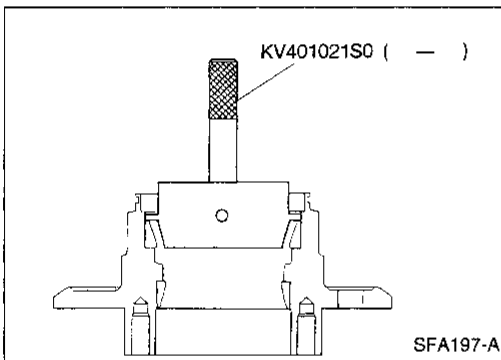
- Make sure wheel bearing rolls freely and is free from noise, crack, pitting or wear.

Wheel hub

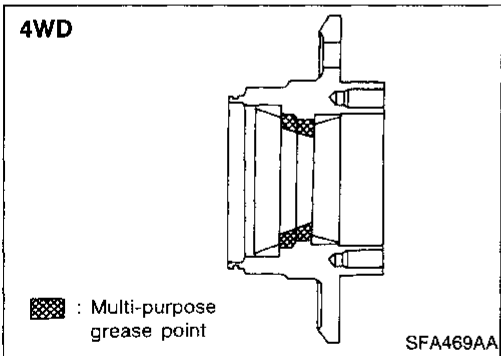
- Check wheel hub for crack by using a magnetic exploration or dyeing test.

ASSEMBLY

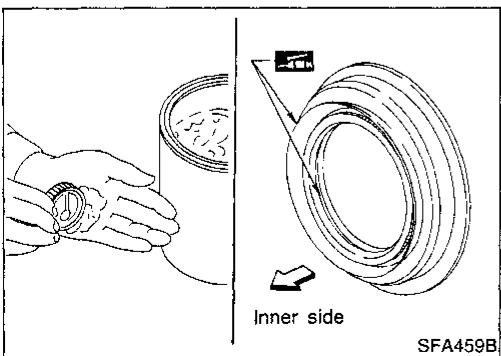
1. Install bearing outer race with Tool until it seats in hub.



2. Pack multi-purpose grease into wheel hub. — 4WD —



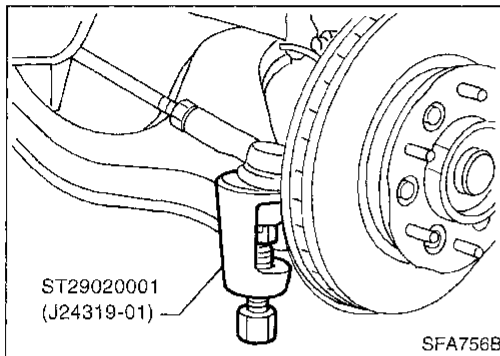
3. Apply multi-purpose grease to each bearing cone.
4. Pack grease seal lip with multi-purpose grease, then install it into wheel hub with suitable drift.



Knuckle Spindle

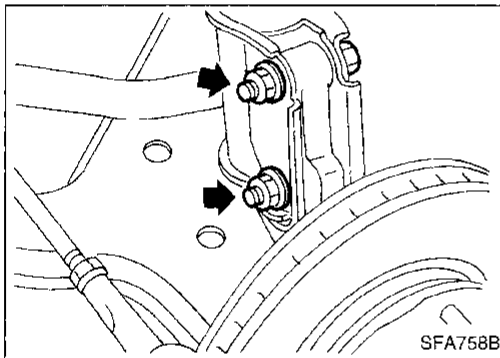
REMOVAL

1. Remove drive shaft. — 4WD —
Refer to FRONT AXLE (4WD) — Drive Shaft (FA-17).



2. Separate tie-rod end and lower ball joint from knuckle with Tool.

Install stud nut conversely on stud bolt so as not to damage stud bolt.



3. Separate knuckle from strut.

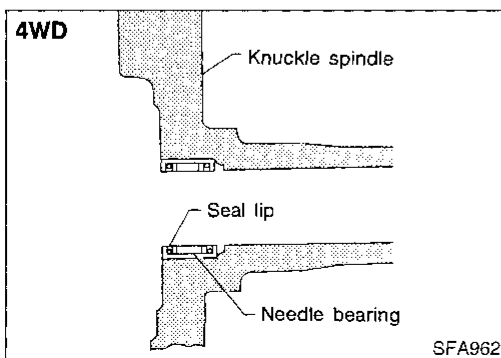
INSPECTION

Knuckle spindle

- Check knuckle spindle for deformation, cracks or other damage by using a magnetic exploration or dyeing test.

Needle bearing — 4WD —

- Check needle bearing for wear, scratches, pitting, flaking and burn marks.

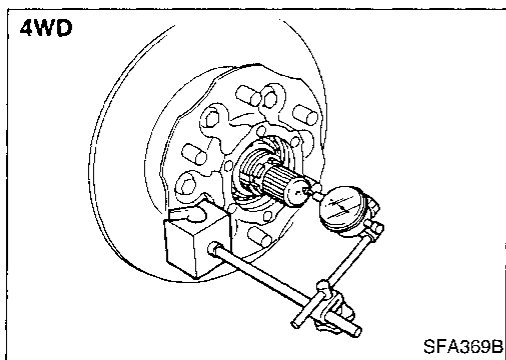


INSTALLATION

1. Install needle bearing into knuckle spindle. — 4WD —
Make sure that needle bearing is facing in proper direction. Apply multi-purpose grease.
2. Install knuckle with wheel hub.
3. Install tie-rod end and lower ball joint.

FRONT AXLE

Knuckle Spindle (Cont'd)



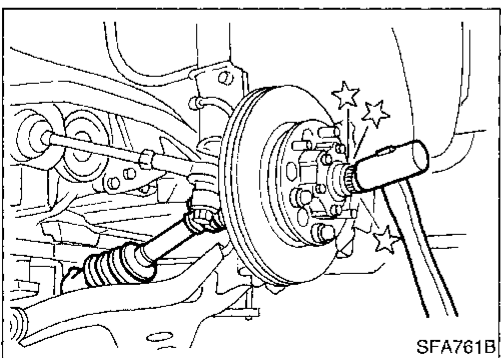
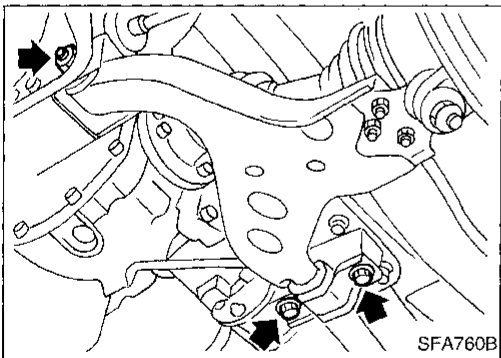
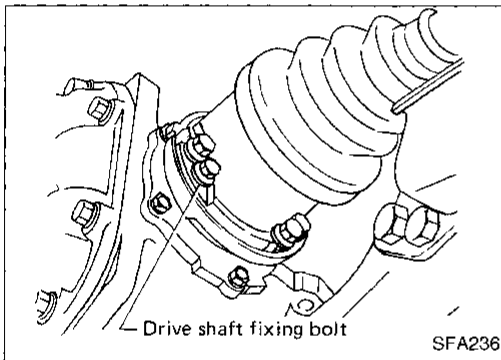
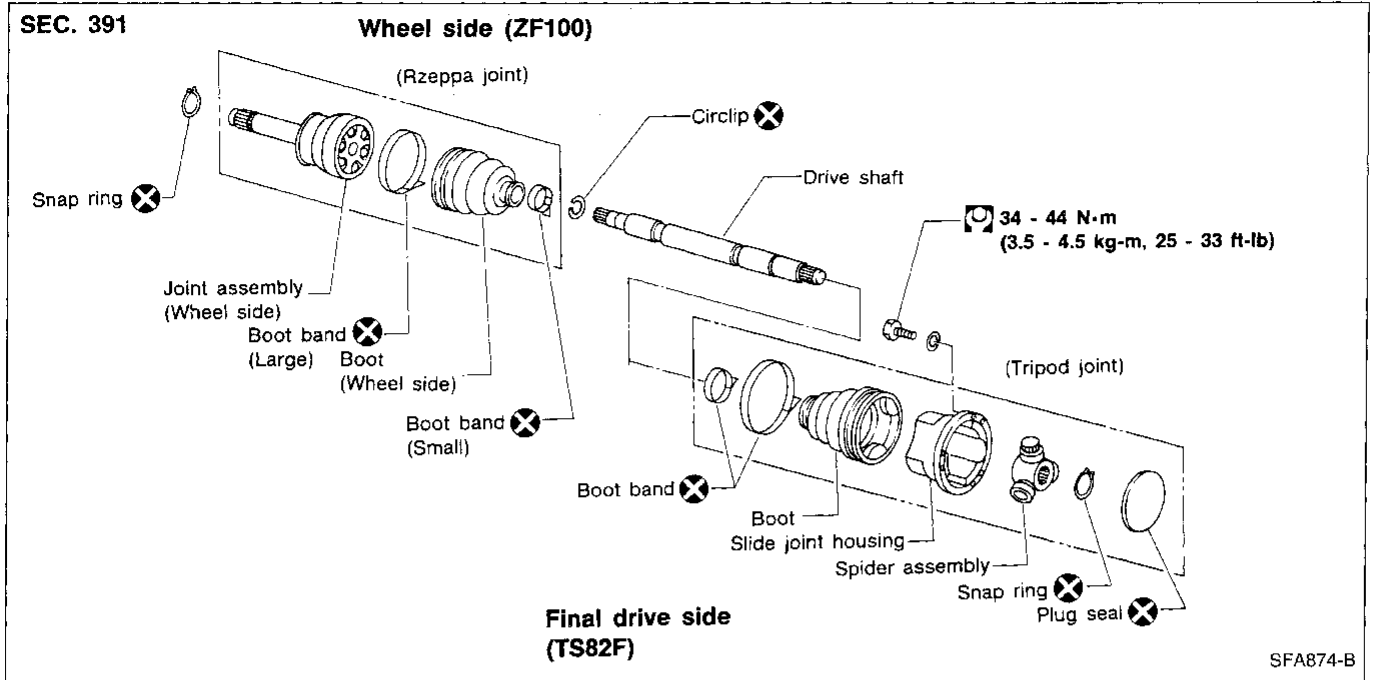
4. After installing knuckle spindle, adjust wheel bearing preload. Refer to PRELOAD ADJUSTMENT of Front Wheel Bearing in ON-VEHICLE SERVICE (FA-7).

5. After installing drive shaft, check drive shaft axial end play.

Do not reuse snap ring once it has been removed.

Refer to "Drive Shaft" of FRONT AXLE (4WD) (FA-17).

Drive Shaft



REMOVAL

1. Remove hub cap and snap ring.
Refer to REMOVAL of Wheel Hub and Rotor Disc in FRONT AXLE (FA-12).
2. Remove bolts fixing drive shaft to final drive.
3. Remove transverse link fixing nut and bolts.
4. Separate drive shaft from knuckle by lightly tapping it with a copper hammer.
Cover boots with shop towel so as not to damage them when removing drive shaft.

GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

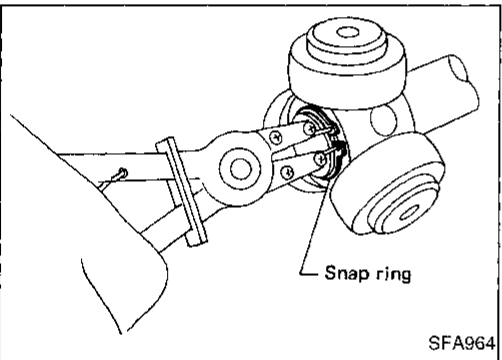
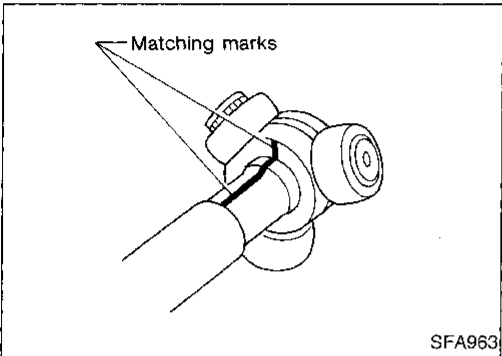
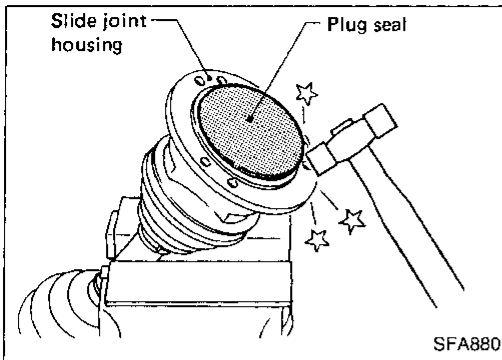
FRONT AXLE (4WD)

Drive Shaft (Cont'd)

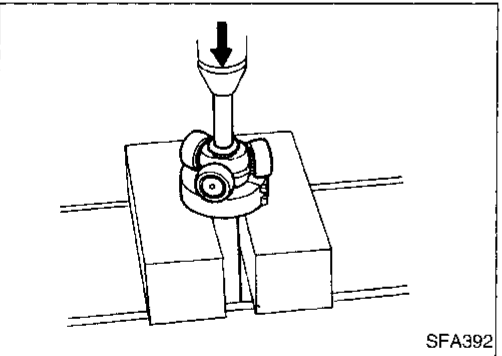
DISASSEMBLY

Final drive side (TS82F)

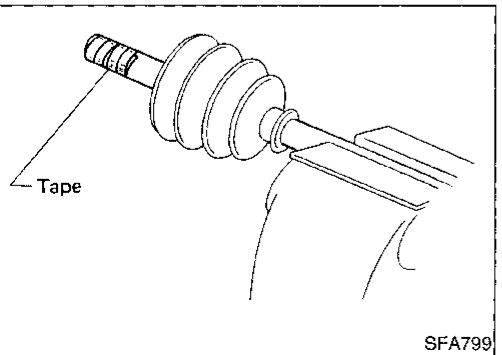
1. Remove plug seal from slide joint housing by lightly tapping around slide joint housing.
2. Remove boot bands.
3. Move boot and slide joint housing toward wheel side, and put matching marks.



4. Remove snap ring.



5. Detach spider assembly with press.



6. Draw out boot.
Cover drive shaft serration with tape so as not to damage the boot.

FRONT AXLE (4WD)

Drive Shaft (Cont'd)

Wheel side (ZF100)

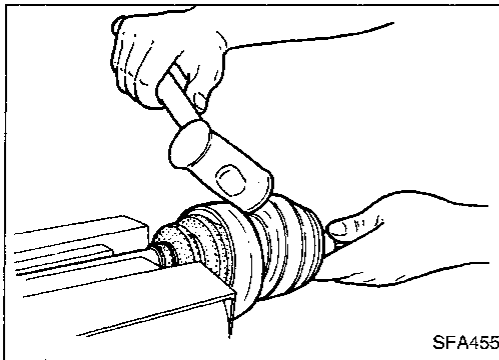
CAUTION:

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 suitable tool.

Be careful not to damage threads on drive shaft.

- Remove boot bands.



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 (Final drive side)

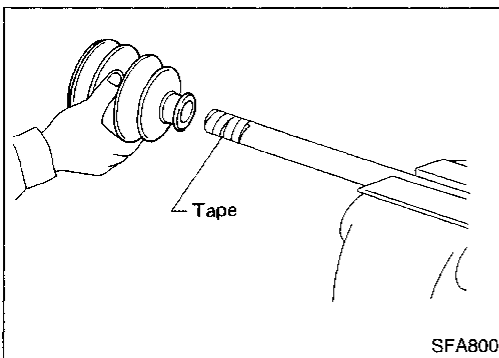
- Replace any parts of double offset joint which show signs of scorching, rust, wear or excessive play.
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.

Joint assembly (Wheel side)

Replace joint assembly if it is deformed or damaged.

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.



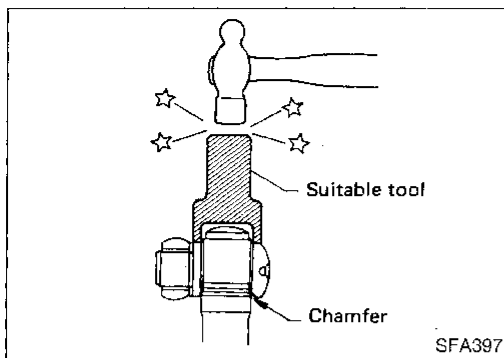
Final drive side (TS82F)

1. Install new small boot band, boot and side joint housing to drive shaft.

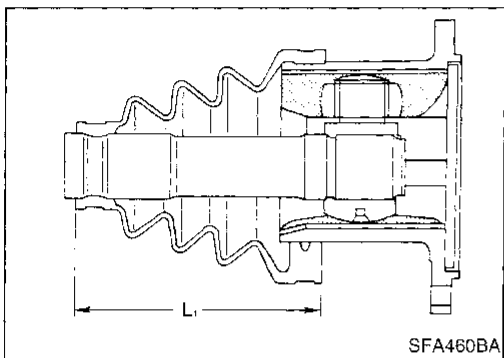
Cover drive shaft serration with tape so as not to damage boot during installation.

FRONT AXLE (4WD)

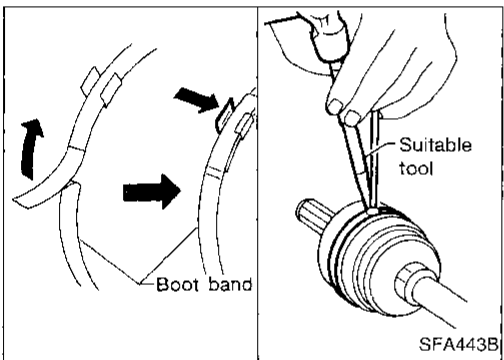
Drive Shaft (Cont'd)



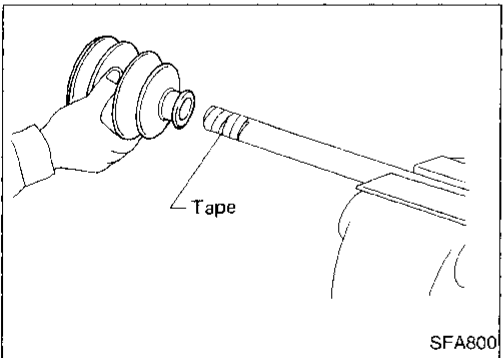
2. Install spider assembly securely, ensuring marks are properly aligned.
 - **Press-fit with spider assembly serration chamfer facing shaft.**
3. Install new snap ring.



4. Pack with grease.
 - Specified amount of grease:**
95 - 105 g (3.35 - 3.70 oz)
5. 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": 95 - 97 mm (3.74 - 3.82 in)**

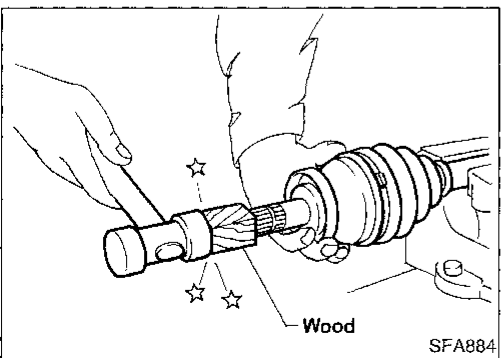


6. Lock new larger boot band securely with a suitable tool, then lock new smaller boot band.
7. Install new plug seal to slide joint housing by lightly tapping it.
 - Apply sealant to mating surface of plug seal.**



Wheel side (ZF100)

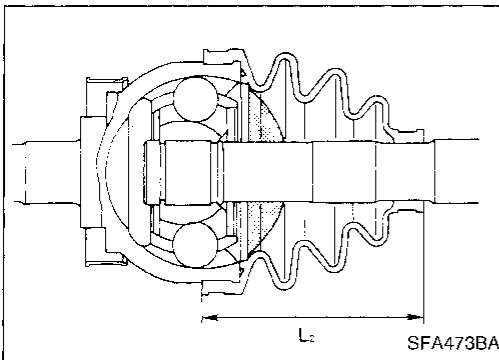
1. Install new small boot band and boot on drive shaft.
 - Cover drive shaft serration with tape so as not to damage boot during installation.**



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.

FRONT AXLE (4WD)

Drive Shaft (Cont'd)



3. Pack drive shaft with specified amount of grease.
Specified amount of grease:
135 - 145 g (4.76 - 5.11 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 "L₂".
Length "L₂": 96 - 98 mm (3.78 - 3.86 in)
5. Lock new larger boot band securely with a suitable tool.
6. Lock new smaller boot band.

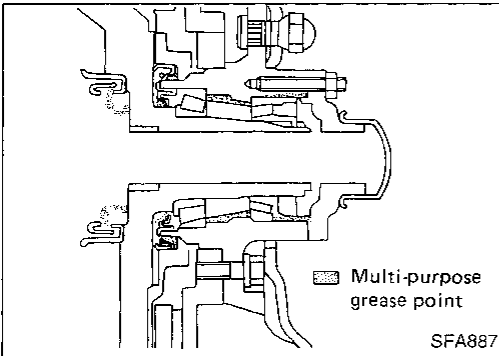
GI

MA

EM

LC

INSTALLATION



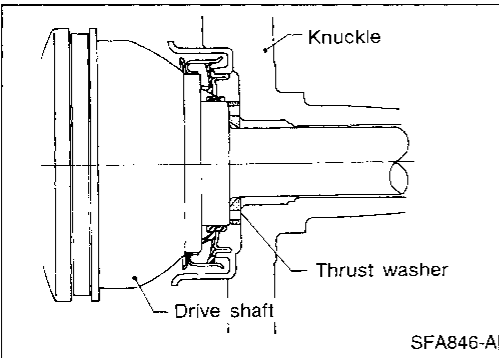
- Apply multi-purpose grease.

EC

FE

CL

MT



- Install thrust washer onto drive shaft.

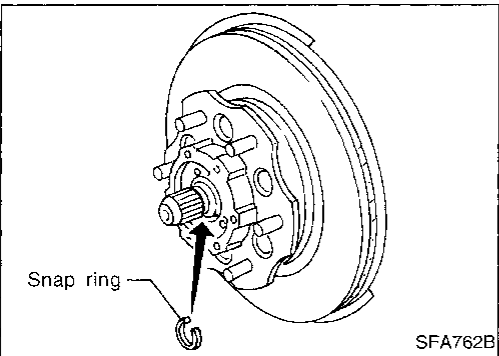
Make sure that thrust washer is facing in proper direction, apply multi-purpose grease.

AT

TF

PD

FA



- When installing drive shaft, adjust drive shaft axial end play by selecting a suitable snap ring.

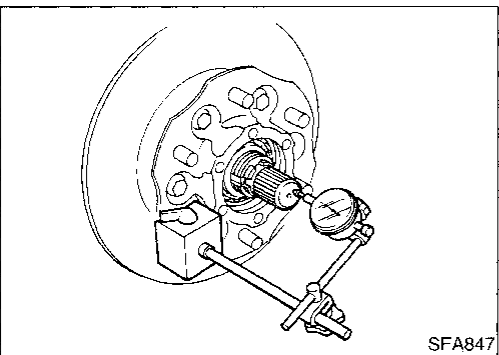
- (1) Temporarily install new snap ring on drive shaft in the same thickness as it was installed before removal.

RA

BR

ST

RS



- (2) Set dial gauge on drive shaft end.

- (3) Measure axial end play of drive shaft.

Axial end play: 0.45 mm (0.0177 in) or less

- (4) If axial end play is not within the specified limit, select another snap ring.

BT

HA

1.1 mm (0.043 in)

1.3 mm (0.051 in)

EL

1.5 mm (0.059 in)

1.7 mm (0.067 in)

1.9 mm (0.075 in)

2.1 mm (0.083 in)

IDX

2.3 mm (0.091 in)

FRONT SUSPENSION

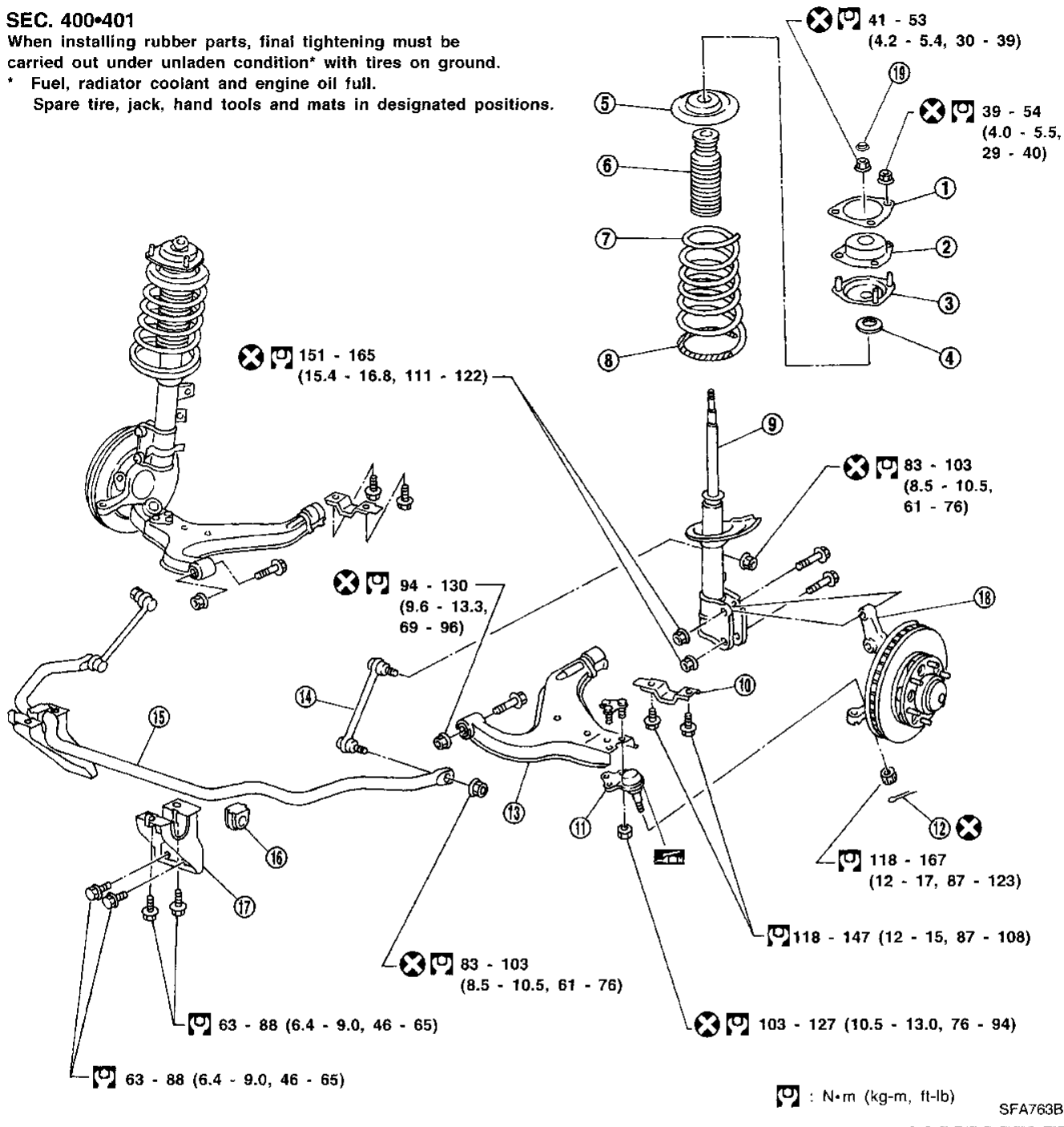
2WD model

SEC. 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.



SFA763B

- | | | |
|----------------------------|-----------------------------|-----------------------------|
| ① Spacer | ⑧ (Polyurethane tube) | ⑭ Stabilizer connecting rod |
| ② Strut mounting insulator | ⑨ Strut assembly | ⑮ Stabilizer bar |
| ③ Bracket | ⑩ Bracket | ⑯ Bushing |
| ④ Strut mounting bearing | ⑪ Lower ball joint assembly | ⑰ Bracket |
| ⑤ Spring upper seat | ⑫ Cotter pin | ⑱ Knuckle spindle |
| ⑥ Bound bumper | ⑬ Transverse link | ⑲ Cap |
| ⑦ Coil spring | | |

FRONT SUSPENSION

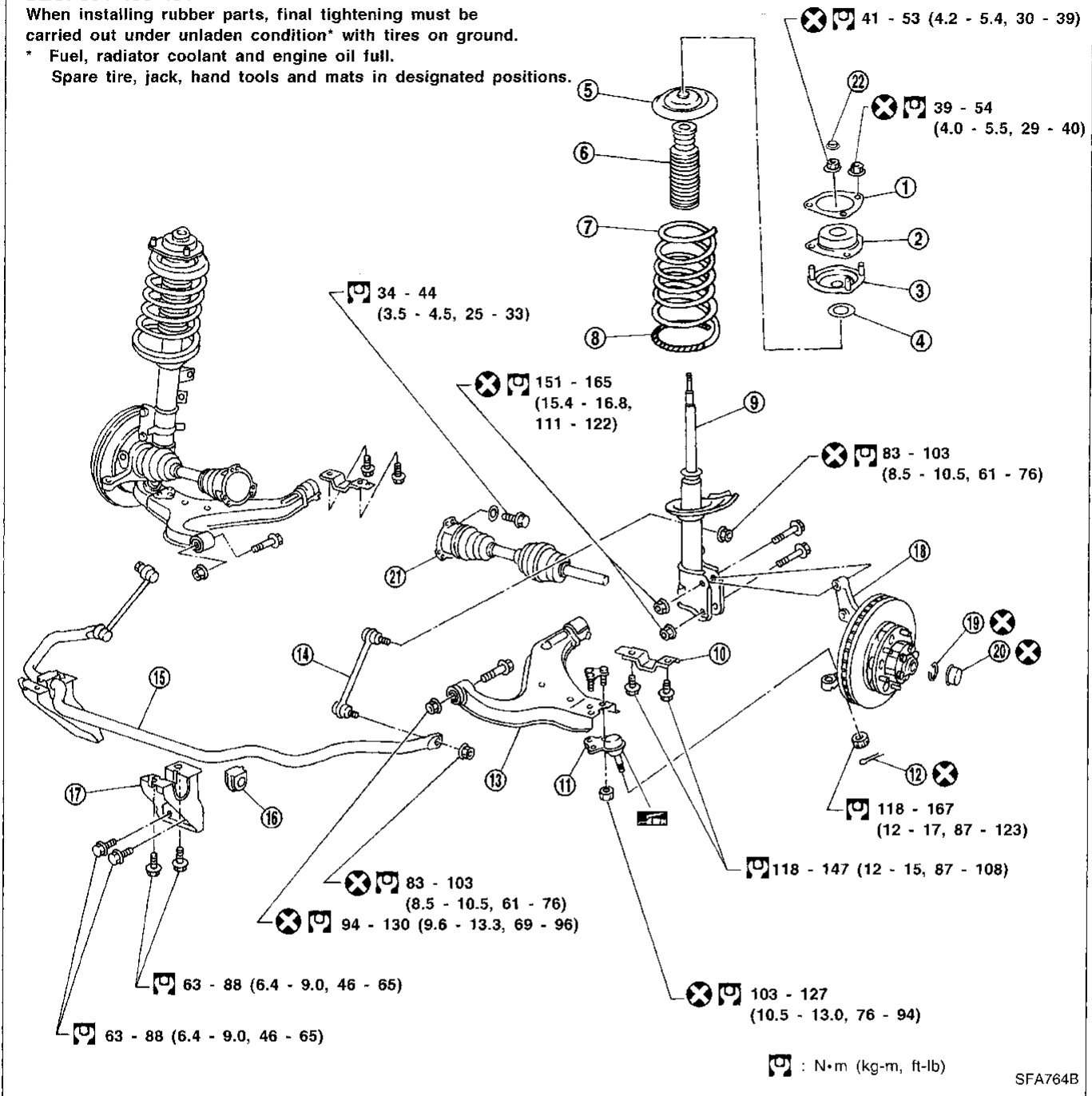
4WD model

SEC. 391•400•401

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

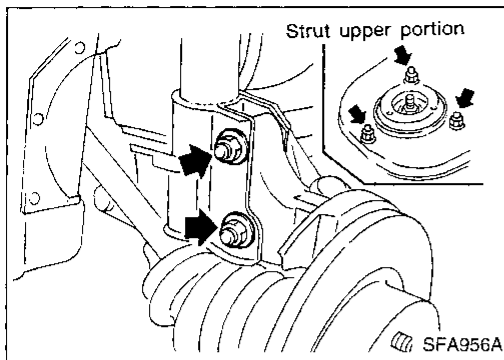
* Fuel, radiator coolant and engine oil full.

Spare tire, jack, hand tools and mats in designated positions.



- | | | |
|----------------------------|-----------------------------|-------------------|
| ① Spacer | ⑨ Strut assembly | ⑯ Bushing |
| ② Strut mounting insulator | ⑩ Bracket | ⑰ Bracket |
| ③ Bracket | ⑪ Lower ball joint assembly | ⑱ Knuckle spindle |
| ④ Strut mounting bearing | ⑫ Cotter pin | ⑳ Snap ring |
| ⑤ Spring upper seat | ⑬ Transverse link | ㉑ Hub cap |
| ⑥ Bound bumper | ⑭ Stabilizer connecting rod | ㉒ Drive shaft |
| ⑦ Coil spring | ⑮ Stabilizer bar | ㉓ Cap |
| ⑧ (Polyurethane tube) | | |

SFA764B

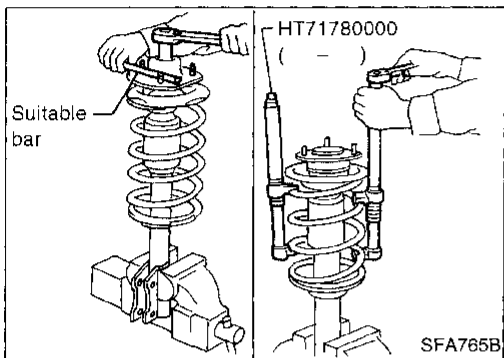


Coil Spring and Strut Assembly

REMOVAL

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

Do not remove piston rod lock nut on vehicle.



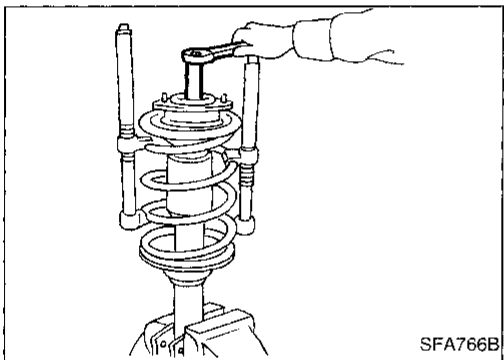
DISASSEMBLY

1. Set strut assembly on vise, 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 on welded or gland packing portion.
- Check piston rod for cracks, deformation or other damage.
- Replace if necessary.

Strut mounting insulator and rubber parts

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

Strut mounting bearing

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

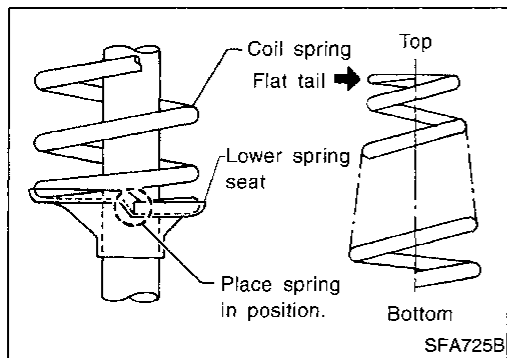
Coil spring

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

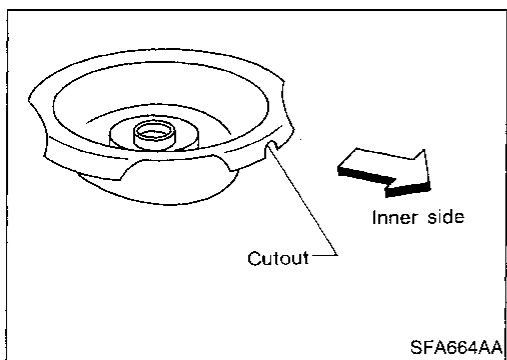
FRONT SUSPENSION

Coil Spring and Strut Assembly (Cont'd)

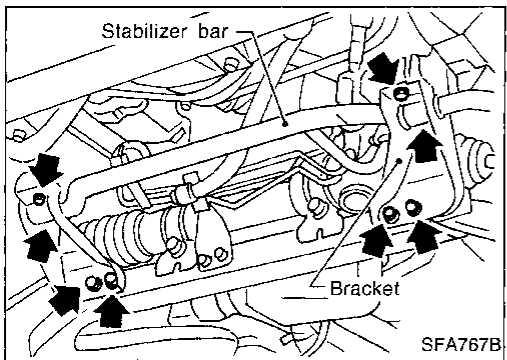
ASSEMBLY



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



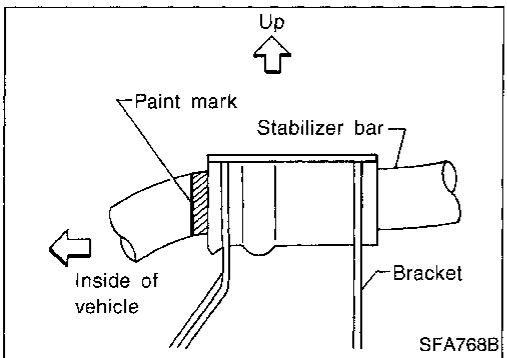
- Install upper spring seat with its cutout facing the inner side of vehicle.



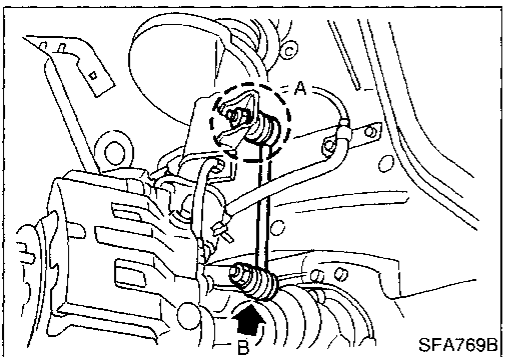
Stabilizer Bar

REMOVAL AND INSTALLATION

- Remove stabilizer bar and connecting rod.



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



- When removing and installing stabilizer bar fix portion A.

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

FA

RA

BR

ST

RS

BT

HA

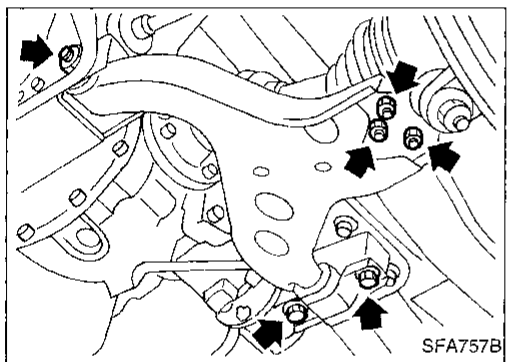
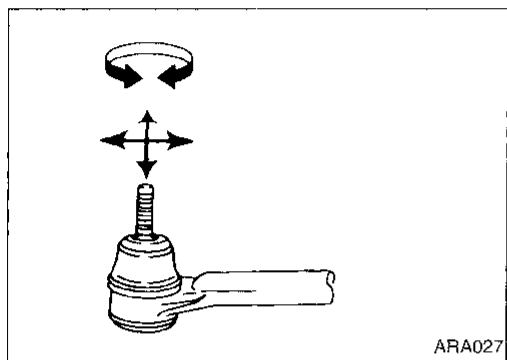
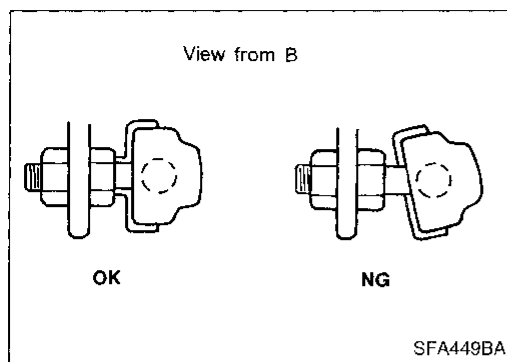
EL

IDX

FRONT SUSPENSION

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 connecting rod.

Transverse Link and Lower Ball Joint

REMOVAL AND INSTALLATION

- Separate drive shaft from knuckle. — 4WD — Refer to “Drive Shaft” of FRONT AXLE (4WD) (FA-17).
- Separate lower ball joint stud from knuckle.
- Remove lower ball joint assembly from transverse link.
- Remove transverse link.
- During installation, final tightening must be carried out at curb weight with tires on ground.
- After installation, check wheel alignment. Refer to “Front Wheel Alignment” of ON-VEHICLE SERVICE (FA-8).

INSPECTION

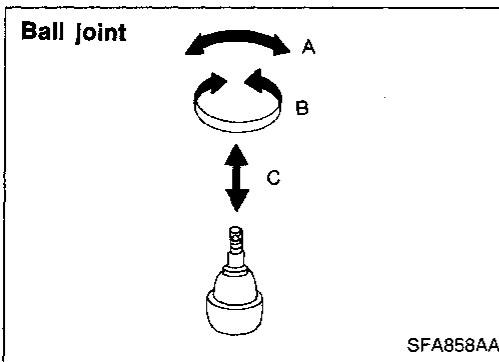
Transverse link

- 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.

FRONT SUSPENSION

Transverse Link and Lower Ball Joint (Cont'd)

Lower ball joint



- Check ball joint for excessive play. Replace lower ball joint 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)

Refer to SDS (FA-36).

Turning torque "B":

Refer to SDS (FA-36).

Vertical end play "C":

Refer to SDS (FA-36).

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

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

FA

RA

BR

ST

RS

BT

HA

EL

IDX

ADJUSTABLE SHOCK ABSORBER

SEC. 401

4.3 - 5.9
(0.44 - 0.60, 38.2 - 52.1)

41 - 53 (4.2 - 5.4, 30 - 39)

59 - 78 (6 - 8, 43 - 58)

39 - 54 (4.0 - 5.5, 29 - 40)

151 - 165 (15.4 - 16.8, 111 - 122)

: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

Shock absorber actuator

Actuator plate

Spacer

Strut mounting insulator

Insulator bracket

Strut mounting bearing

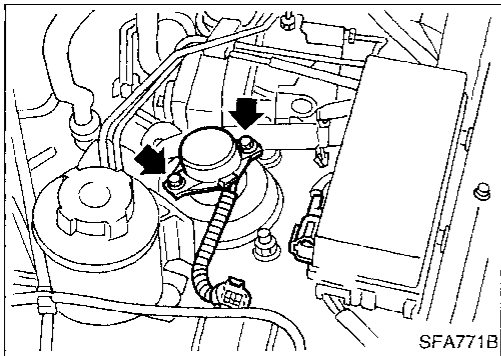
Spring upper seat

Bound bumper

Coil spring

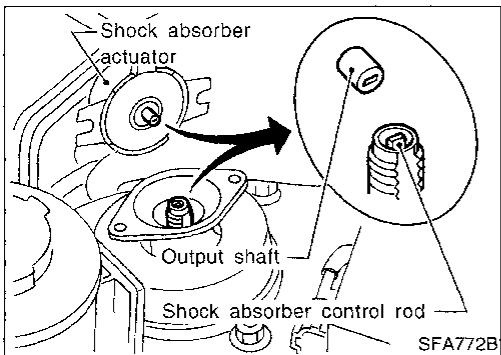
Strut assembly

SFA770B



REMOVAL AND INSTALLATION

1. Disconnect sub-harness connector.
2. Remove shock absorber actuator fixing bolts.



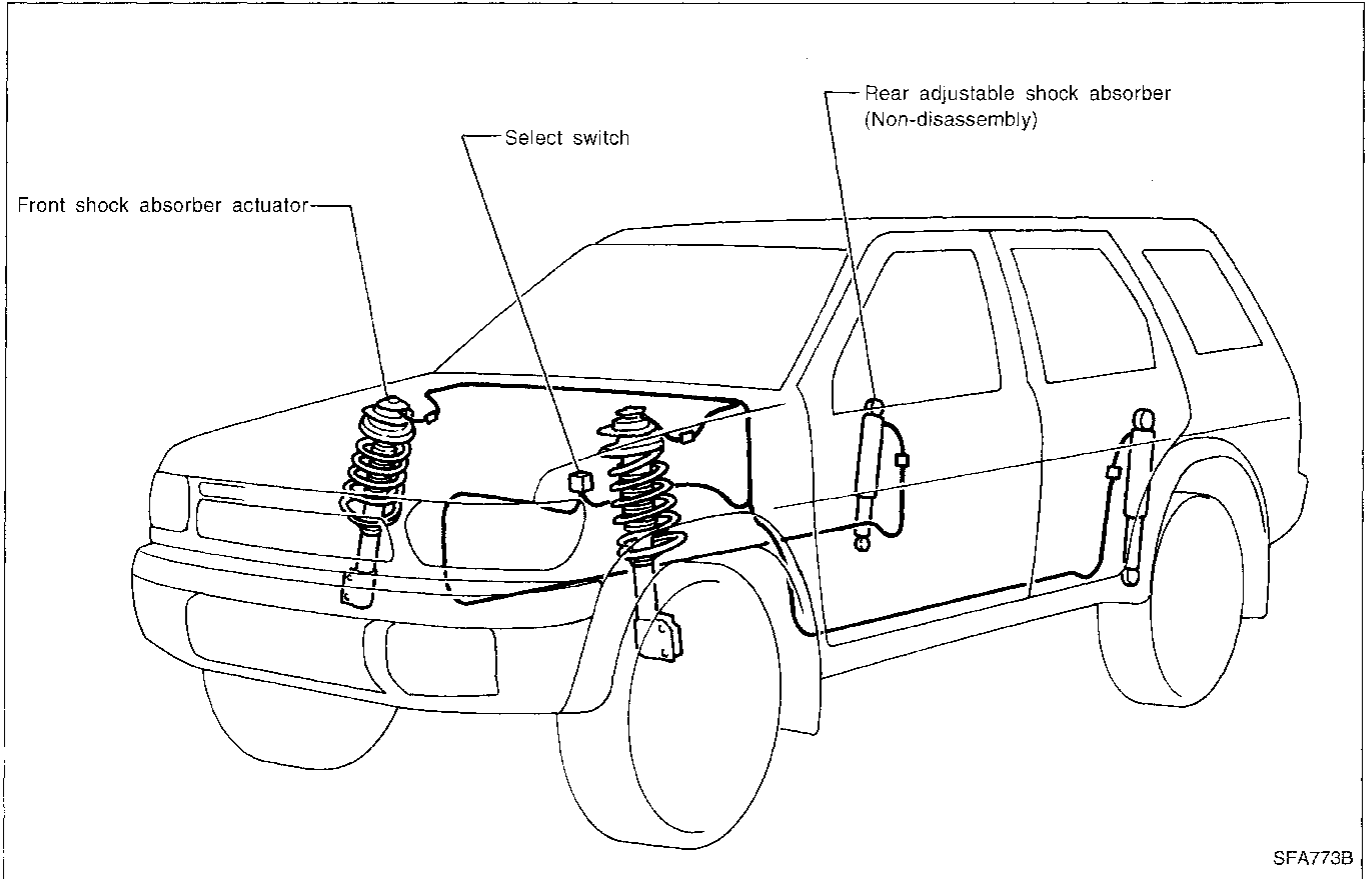
- Before installing actuator, ensure shock absorber control rod is aligned with actuator output shaft. Otherwise, actuator may be damaged.
- Refer to FRONT SUSPENSION for other procedures.

INSPECTION

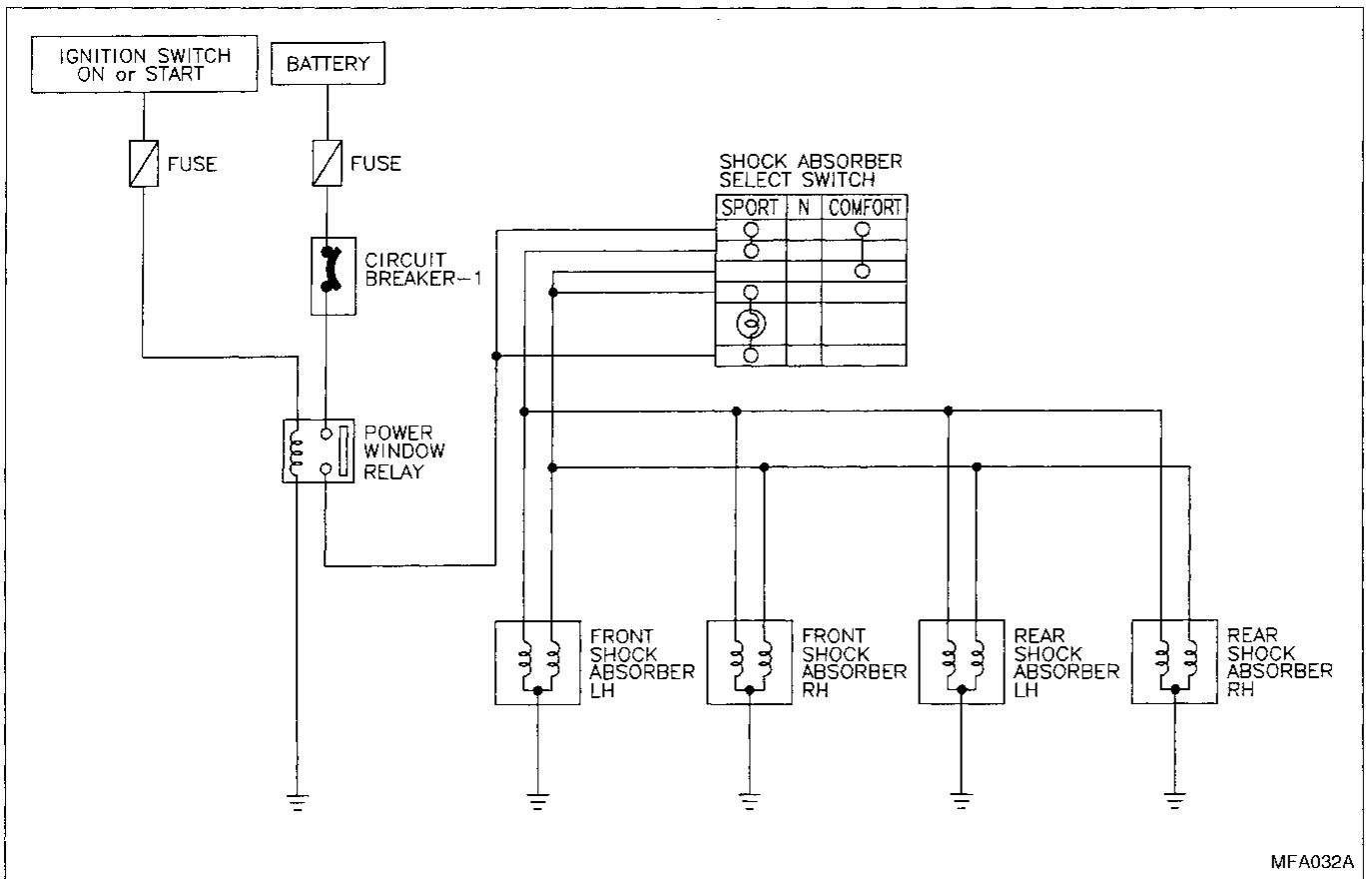
- Replace strut assembly if it is damaged. Refer to FRONT SUSPENSION — Coil Spring and Strut Assembly (FA-24).

ADJUSTABLE SHOCK ABSORBER

Description



Schematic

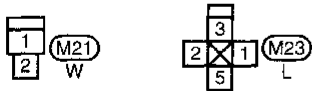
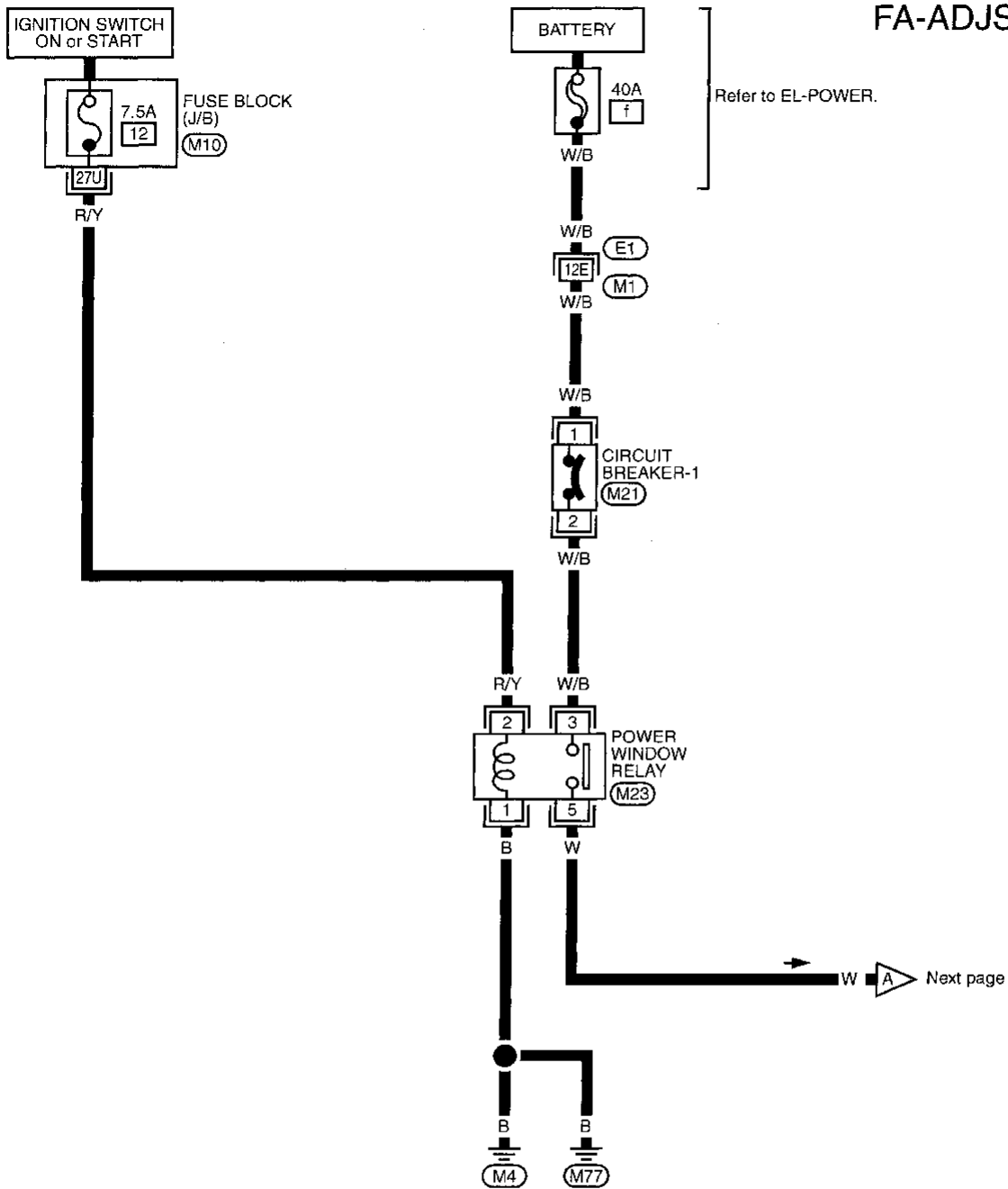


GI
MA
EM
LC
EC
PE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

ADJUSTABLE SHOCK ABSORBER

Wiring Diagram

FA-ADJSHO-01



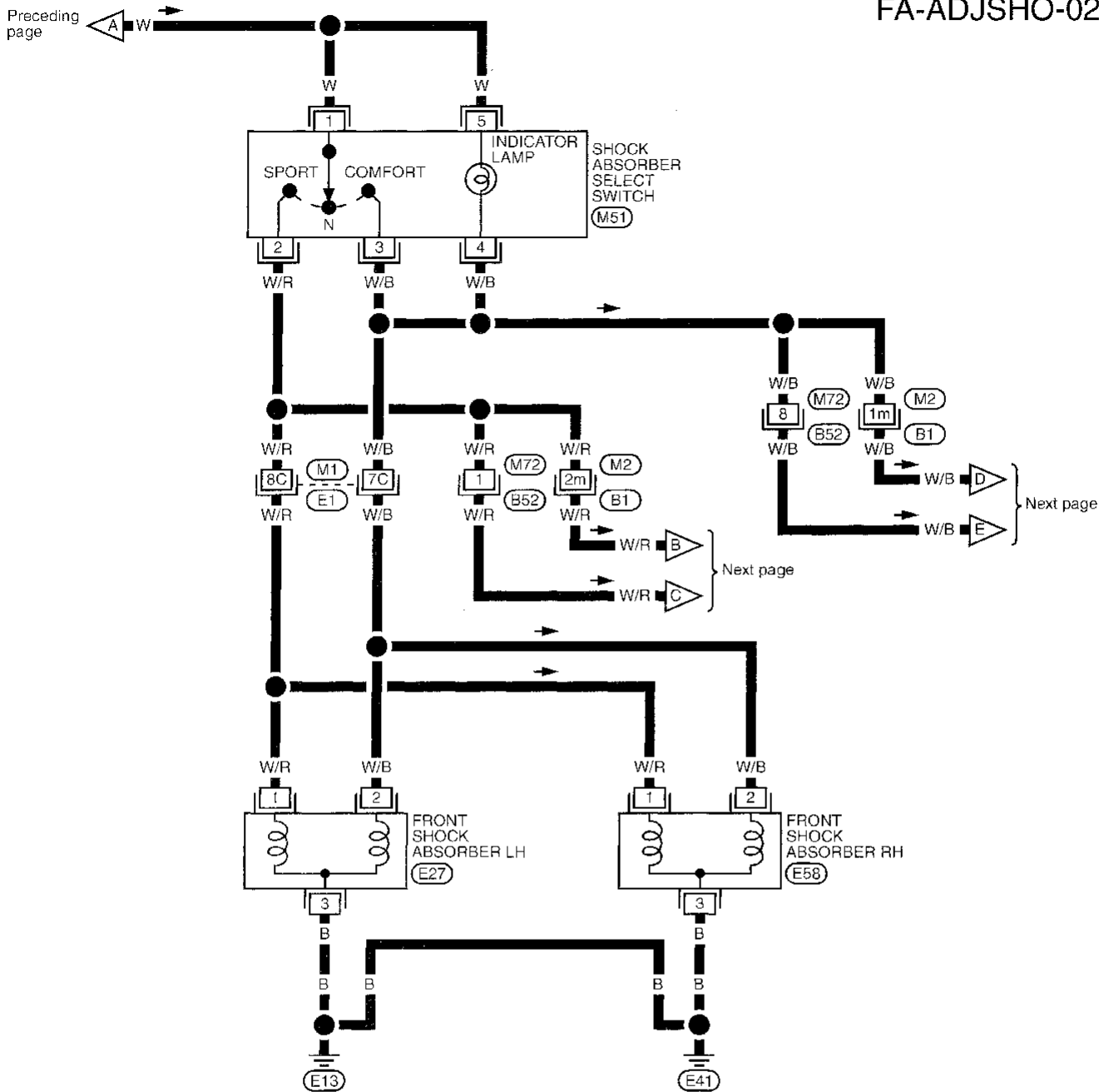
Refer to last page (Foldout page).

(E1) (M1)
(M10)

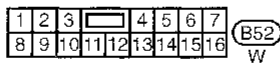
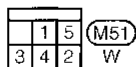
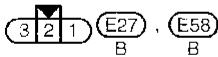
ADJUSTABLE SHOCK ABSORBER

Wiring Diagram (Cont'd)

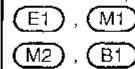
FA-ADJSHO-02



CI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX



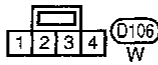
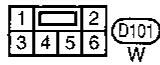
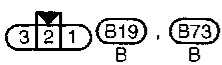
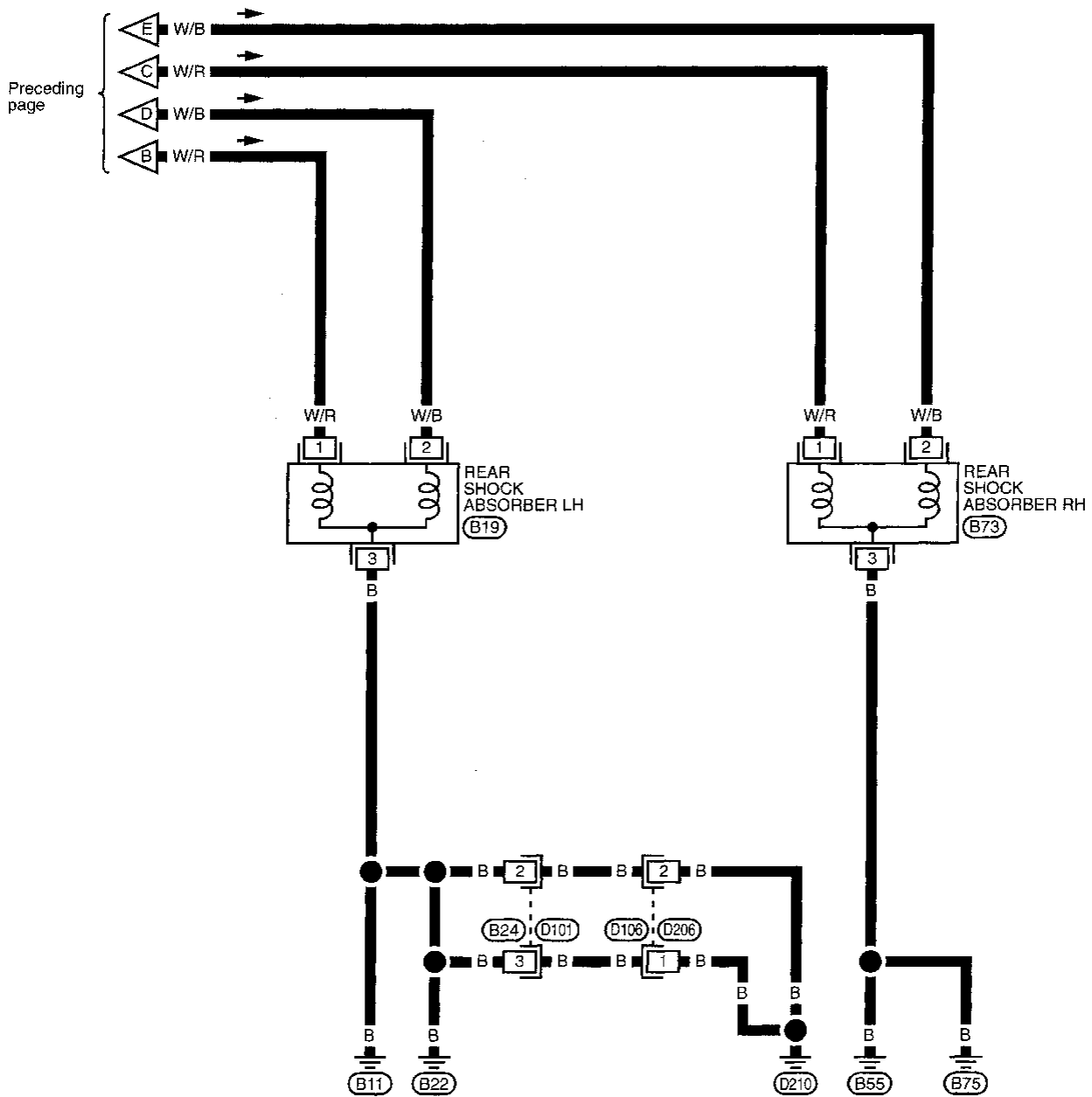
Refer to last page (Foldout page).



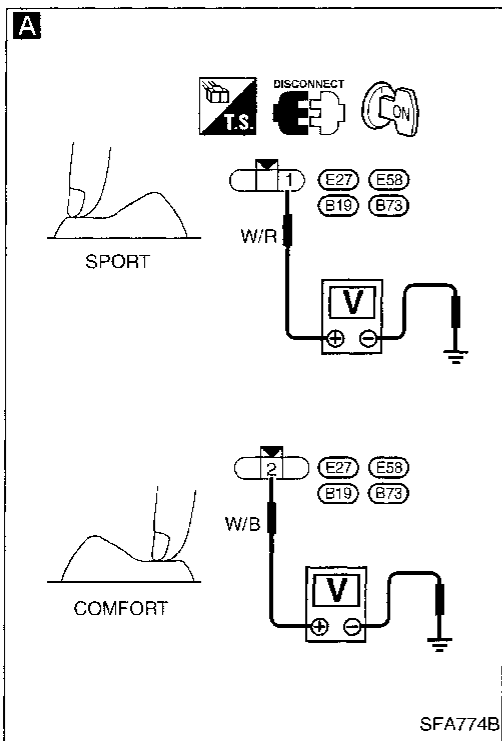
ADJUSTABLE SHOCK ABSORBER

Wiring Diagram (Cont'd)

FA-ADJSHO-03

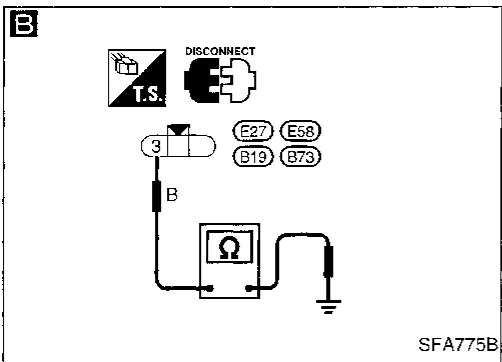
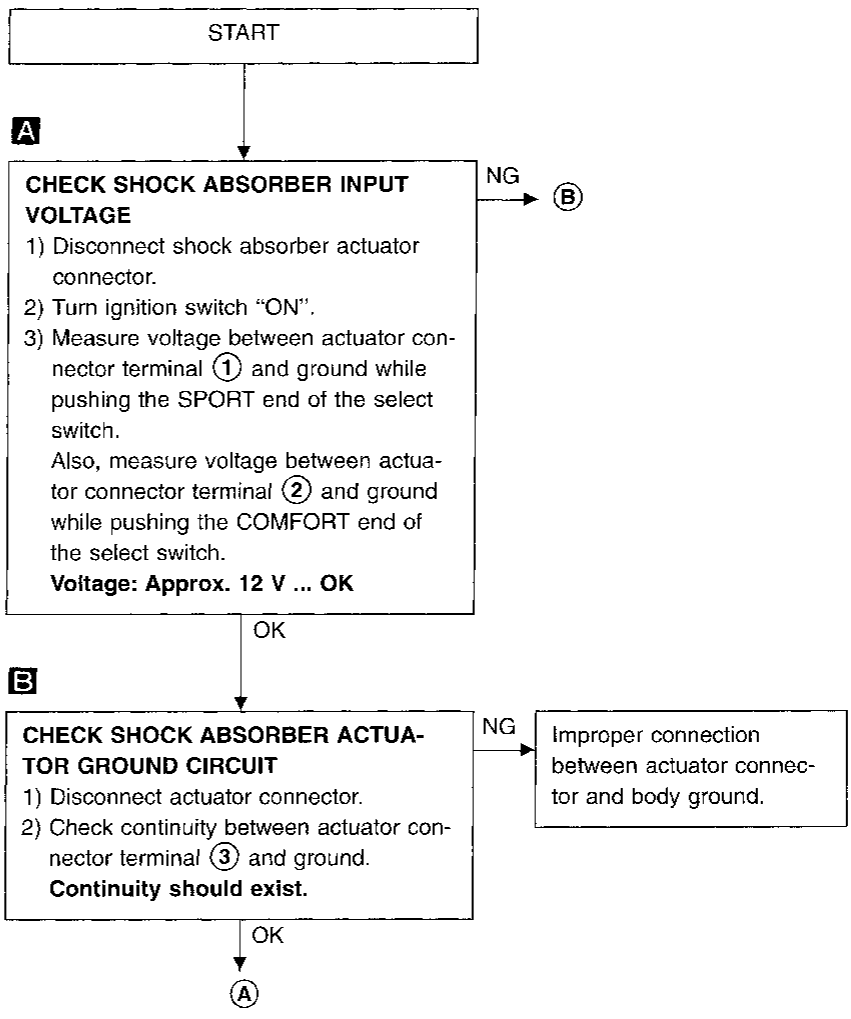


ADJUSTABLE SHOCK ABSORBER



Trouble Diagnoses

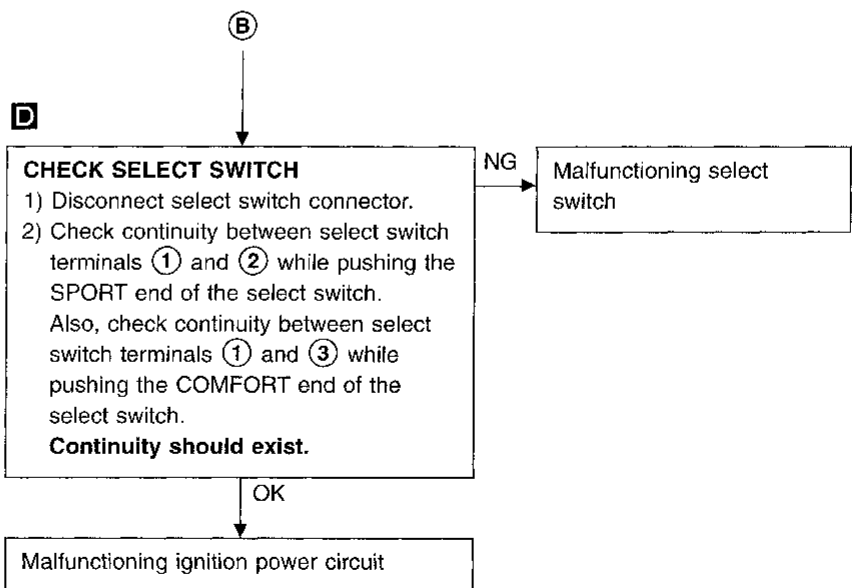
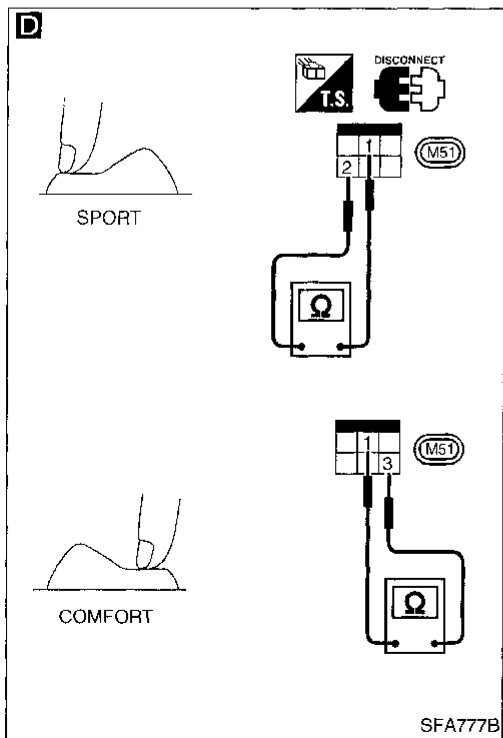
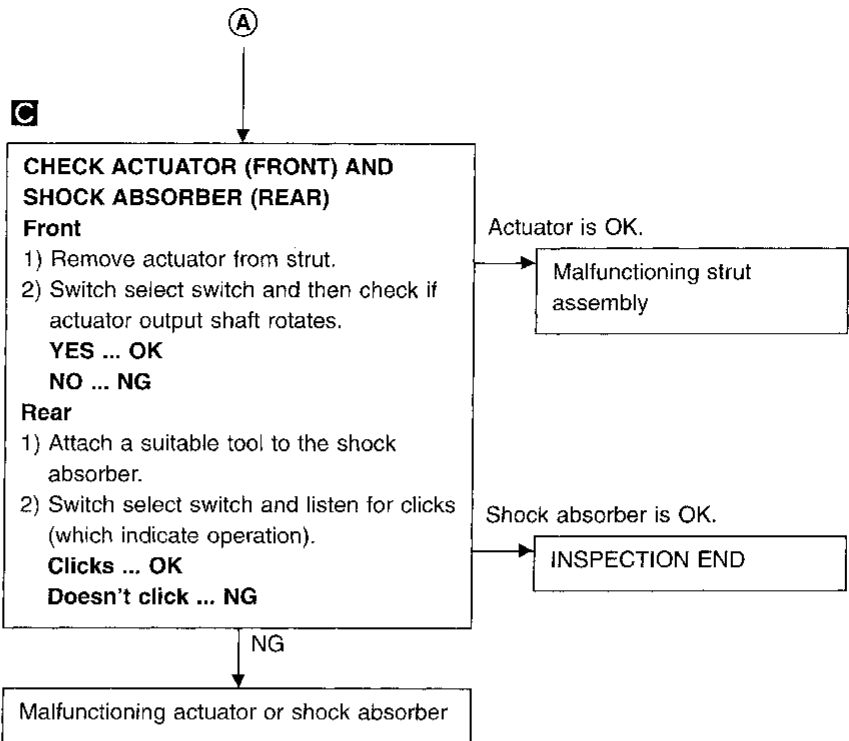
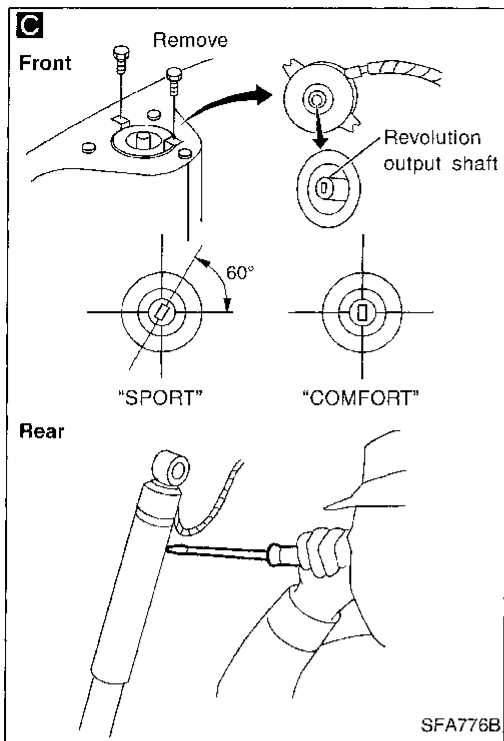
DIAGNOSTIC PROCEDURE



GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX

ADJUSTABLE SHOCK ABSORBER

Trouble Diagnoses (Cont'd)



SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

Vehicle grade	SE	Except SE
Suspension type	Independent macpherson strut with coil spring	
Strut type	Double-acting hydraulic	
	Adjustable	Non-adjustable
Stabilizer bar	Standard equipment	

Inspection and Adjustment

WHEEL ALIGNMENT (Unladen*1)

Applied model		265/70 R15 tire	235/70 R15 tire			
Camber	Degree minute (Decimal degree)	Minimum	-0°35' (-0.58°)			
		Nominal	0°10' (0.17°)			
		Maximum	0°55' (0.92°)			
		Left and right difference	45' (0.75°) or less			
Caster	Degree minute (Decimal degree)	Minimum	2°15' (2.25°)			
		Nominal	3°00' (3.00°)			
		Maximum	3°45' (3.75°)			
		Left and right difference	45' (0.75°) or less			
Kingpin inclination	Degree minute (Decimal degree)	Minimum	13°35' (13.58°)			
		Nominal	14°20' (14.33°)			
		Maximum	15°05' (15.08°)			
Total toe-in	Distance (A - B) mm (in)	Minimum	1 (0.04)			
		Nominal	2 (0.08)			
		Maximum	3 (0.12)			
	Angle (left plus right)	Degree minute (Decimal degree)	Minimum	5' (0.08°)		
			Nominal	10' (0.17°)		
			Maximum	15' (0.25°)		
Wheel turning angle	Inside	Degree minute (Decimal degree)	Minimum	30°00' (30.00°)	32°00' (32.00°)	
			Nominal	33°00' (33.00°)	35°00' (35.00°)	
			Maximum	34°00' (34.00°)	36°00' (36.00°)	
	Full turn*2	Outside	Degree minute (Decimal degree)	Minimum	28°00' (28.00°)	30°00' (30.00°)
				Nominal	31°00' (31.00°)	33°00' (33.00°)

*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.

SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment (Cont'd)

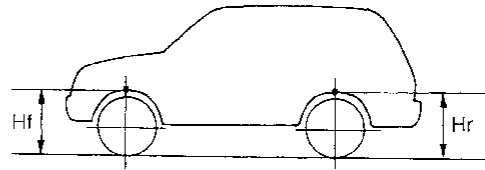
WHEEL BEARING

Wheel bearing lock nut	
Tightening torque N·m (kg-m, ft-lb)	78 - 98 (8 - 10, 58 - 72)
Retightening torque after loosening wheel bearing lock nut N·m (kg-m, in-lb)	0.5 - 1.5 (0.05 - 0.15, 4.3 - 13.0)
Axial end play mm (in)	0 (0)
Starting force at wheel hub bolt N (kg, lb)	A
Turning angle degree	15° - 30°
Starting force at wheel hub bolt N (kg, lb)	B
Wheel bearing preload at wheel hub bolt N (kg, lb)	
B - A	7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)

LOWER BALL JOINT

Swinging force "A" (Measuring point: cotter pin hole of ball stud) N (kg, lb)	7.8 - 76.5 (0.8 - 7.8, 1.8 - 17.2)
Turning torque "B" N·m (kg-cm, in-lb)	0.5 - 4.9 (5 - 50, 4.3 - 43.4)
Vertical end play "C" mm (in)	0 (0)

WHEELARCH HEIGHT (Unladen*)



SFA746B

Applied model	2WD	4WD	
		265/70 R15 tire (With over fender)	235/70 R15 tire
Front (Hf) mm (in)	818 (32.20)	815 (32.09)	815 (32.09)
Rear (Hr) mm (in)	856 (33.70)	846 (33.31)	855 (33.66)

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

WHEEL RUNOUT AVERAGE*

Wheel type	Aluminum	Steel
Radial runout limit mm (in)	0.3 (0.012)	0.8 (0.031)
Lateral runout limit mm (in)	0.3 (0.012)	0.8 (0.031)

*: Wheel runout average = (Outside runout value + Inside runout value) x 0.5

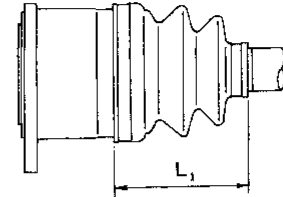
SERVICE DATA AND SPECIFICATIONS (SDS)

Inspection and Adjustment (Cont'd)

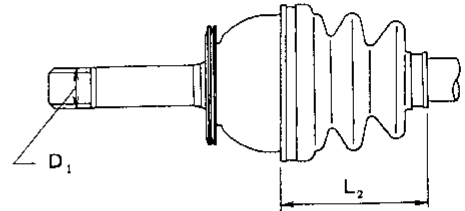
DRIVE SHAFT (4WD)

Drive shaft joint type	
Final drive side	TS82F
Wheel side	ZF100
Fixed joint axial end play limit mm (in)	1 (0.04)
Diameter mm (in)	
Wheel side (D ₁)	29.0 (1.142)
Grease	
Quality	Nissan genuine grease or equivalent
Specified amount of grease g (oz)	
Final drive side	95 - 105 (3.35 - 3.70)
Wheel side	135 - 145 (4.76 - 5.11)
Drive shaft axial end play mm (in)	0.45 (0.0177) or less
Boot length mm (in)	
Final drive side (L ₁)	95 - 97 (3.74 - 3.82)
Wheel side (L ₂)	96 - 98 (3.78 - 3.86)

Final drive side



Wheel side



SFA877A

Drive shaft end snap ring

Thickness mm (in)	Part No.
1.1 (0.043)	39253-88G10
1.3 (0.051)	39253-88G11
1.5 (0.059)	39253-88G12
1.7 (0.067)	39253-88G13
1.9 (0.075)	39253-88G14
2.1 (0.083)	39253-88G15
2.3 (0.091)	39253-88G16

GI
MA
EM
LC
EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
RS
BT
HA
EL
IDX