SECTION RSU
REAR SUSPENSION

CONTENTS

PRECAUTIONS

PFP:00001

Caution

BES0001R

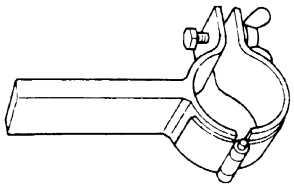
- Final tightening of bushings must be carried out under unladen condition with tyre on the ground. Oil will shorten life of bushings. Be sure to wipe off any spilled oil.
- “Unladen condition” means that fuel, coolant and lubricant are full and ready for drive. However, spare tyre, jack, and hand tools should be unloaded.
- After installing the removed suspension parts, always check wheel alignment and adjust if necessary.
- Replace the caulking nut with a new one. Install a new nut without wiping the oil off before tightening.

PREPARATION

PFP:00002

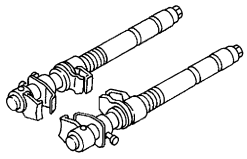
Special Service Tools(SST)

BES0001S

Tool number Tool name		Description
ST3565 2000 Strut attachment	 ZZA0807D	Disassembling and assembling strut

Commercial Service Tools

BES0001T

Tool name		Description
Spring compressor	 S-NT717	Removing and installing coil spring

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

BES0001U

Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page			RSU-5	RSU-8	—	—	—	RSU-5	RSU-6	RSU-5	NVH in PR section.	NVH in RFD section.	NVH in FAX and FSU sections.	NVH in WT section.	NVH in WT section.	NVH in RAX section.	NVH in BR section.	NVH in PS section.
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING
Symptom	REAR SUSPENSION	Noise	×	×	×	×	×	×			×	×	×	×	×	×	×	×
		Shake	×	×	×	×		×			×		×	×	×	×	×	×
		Vibration	×	×	×	×	×				×		×	×		×		×
		Shimmy	×	×	×	×			×				×	×	×		×	×
		Judder	×	×	×								×	×	×		×	×
		Poor quality ride or handling	×	×	×	×	×		×	×			×	×	×			

×: Applicable

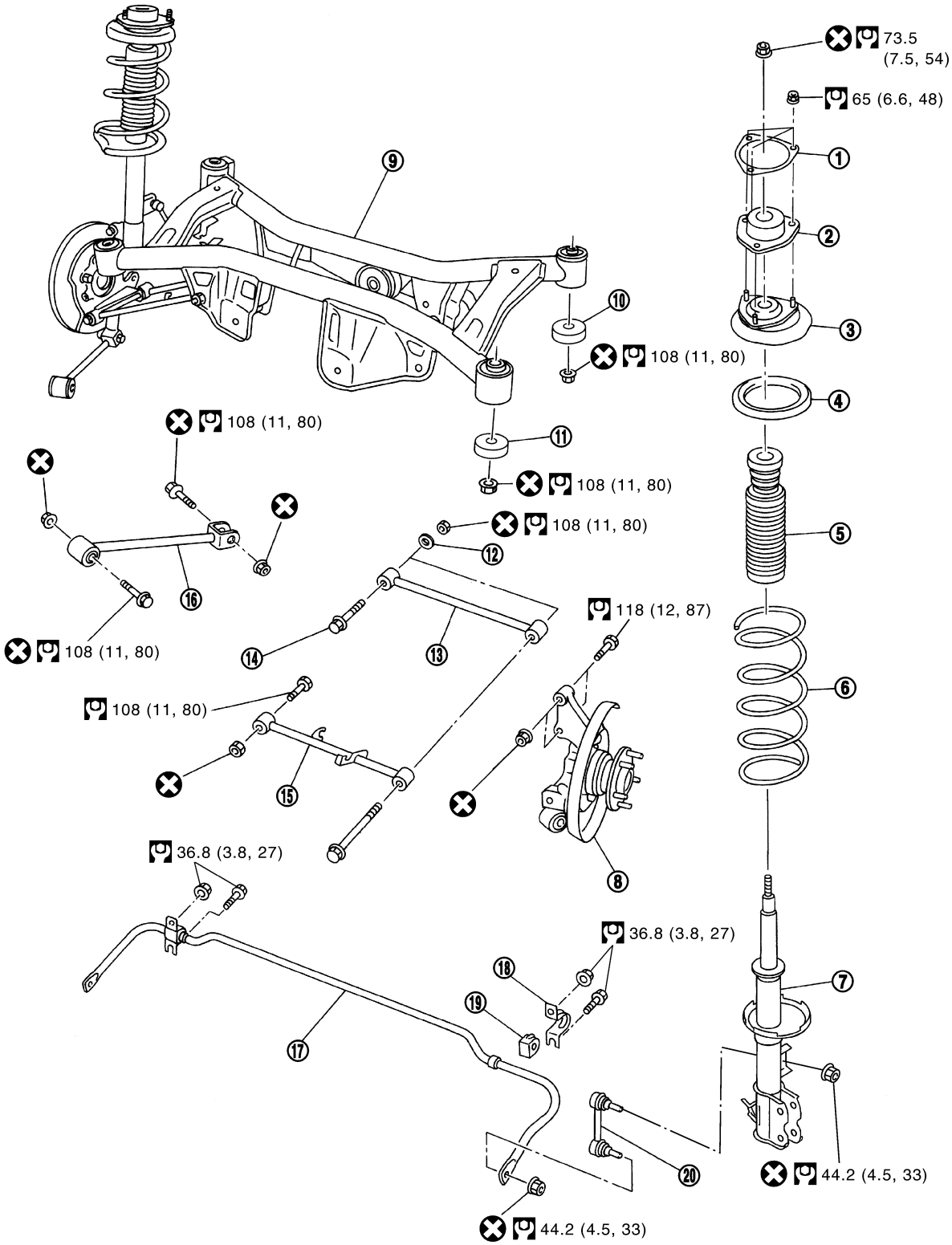
REAR SUSPENSION ASSEMBLY

PFP:55020

Components

BES0001V

SEC. 430•431



1. Strut spacer
2. Strut mounting insulator
3. Strut mounting insulator bracket
4. Upper rubber seat
5. Bound bumper
6. Coil spring
7. Strut
8. Rear axle assembly
9. Rear suspension member
10. Member stopper
11. member stopper
12. Washer
13. Rear parallel link
14. Toe-in adjusting bolt
15. Front parallel link
16. Radius rod
17. Stabilizer bar
18. Clamp
19. Bushing
20. Connecting rod

Refer to GI-9, "Components" , for the symbols in the figure

On-Vehicle Inspection and Service

BES0001W

Check axle and suspension parts for excessive play, wear, and damage.

- Move rear wheels (RH/LH) to check abnormal free play.
- Retighten all nuts and bolts to the specified torque.
- Check strut for oil leakage and damage.

Wheel Alignment

BES0001X

DESCRIPTION

- Measure wheel alignment under unladen conditions. “Unladen conditions” means that fuel, coolant, and lubricant are full. However, spare tyre, jack, and hand tools should be unloaded.

PRELIMINARY INSPECTION

1. Check the tyre for improper air pressure and wear.
2. Check road wheels for runout.
3. Check wheel bearing axial endplay.
4. Check strut operation.
5. Check each mounting point of axle and suspension for looseness and deformation.
6. Check each link and arm for cracks, deformation, and other damage.
7. Check the vehicle posture.

CAMBER

Camber is preset at factory and cannot be adjusted.

Camber : **RSU-14, "SERVICE DATA AND SPECIFICATIONS (SDS)"**

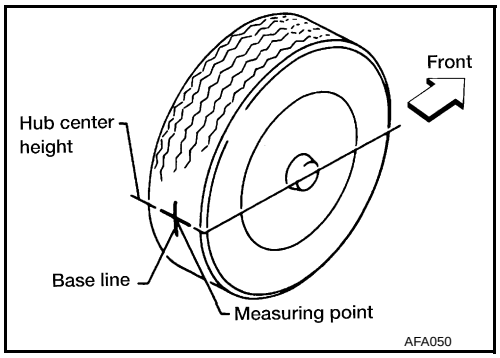
- If the camber is not within specification, inspect and replace any damaged or worn rear suspension parts.

TOE-IN

Measure toe-in using the following procedure.

- Always perform following procedure on a flat surface.
- Make sure that no person is in front of the vehicle before pushing it.

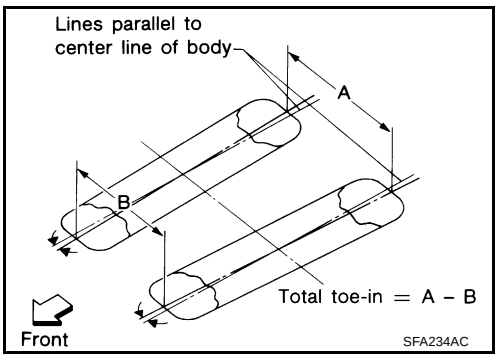
1. Bounce rear of vehicle up and down to stabilize the posture.
2. Push the vehicle straight ahead about 5 m (16 ft).
3. Put a mark on base line of tread (rear side) of both tyre at the same height as hub center. This mark is a measuring points.



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 tyre).

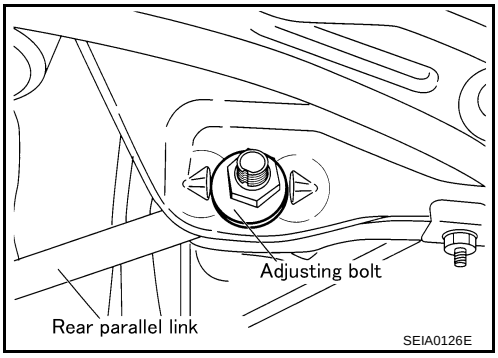
   Total toe-in:

   Refer to RSU-14, "SERVICE DATA AND SPECIFICATIONS (SDS)" **.**



7. If measured value is outside standard, adjust it with adjusting bolt on rear parallel link.

   CAUTION:
   Be sure to adjust equally on RH and LH side with adjusting bolt.



COIL SPRING AND STRUT

PFP:55302

Removal and Installation

BES0001Y

REMOVAL

1. Remove tyre.
2. Remove brake hose lock plate and remove brake hose from strut.
3. Remove mounting nuts and washers on upper portion of stabilizer connecting rod.
4. Remove strut-to-axle housing mounting bolts and nuts.
5. Remove luggage side lower finisher in luggage compartment. Remove mounting nuts on strut spacer. Then remove strut from vehicle.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque. Install in the reverse order of removal.

Disassembly and Assembly

BES0001Z

DISASSEMBLY

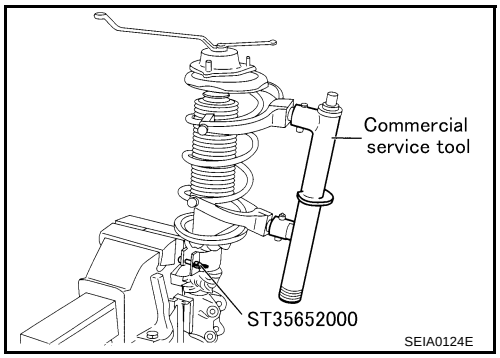
1. Install strut attachment (SST) to strut and fix it in a vise.

   CAUTION:
   When installing a strut attachment (SST), cover strut with shop cloth to avoid damage.

2. Remove cap and slightly loosen piston rod lock nut.

   CAUTION:
   Do not remove piston rod lock nut completely. If it is removed completely, coil spring jumps out and may cause serious damage or injury.

3. Compress coil spring using a spring compressor (commercial service tool).



   CAUTION:
   Be sure spring compressor is securely attached to coil spring. Compress coil spring.

4. After making sure coil spring is free between upper and lower seats after Step 3. Remove piston rod lock nut.
5. Remove small parts on strut.
   - Remove strut spacer, strut mounting insulator, strut mounting insulator bracket, spring upper seat, upper rubber seat, and bound bumper. Then remove coil spring from strut.
6. Gradually release spring compressor, and remove coil spring.

INSPECTION AFTER DISASSEMBLY

Strut

- Check strut for deformation, cracks, and damage, and replace if necessary.
- Check piston rod for damage, uneven wear, and distortion, and replace if necessary.
- Check welded and sealed areas for oil leakage, and replace if necessary.

Insulator and Rubber parts.

- Check strut mount insulator for cracks and rubber parts for wear. Replace them if necessary.

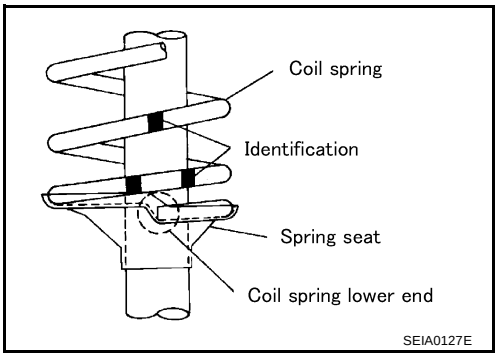
Coil Spring

- Check coil spring for cracks, deformation, and damage, and replace if necessary.

ASSEMBLY

1. Compress coil spring using a spring compressor (SST), and install it onto the strut.

   CAUTION:
   - **Install coil spring with its identification paint facing down. Align its lower end with spring seat on strut as shown at left.**
   - **Be sure spring compressor is securely attached to coil spring. Compress coil spring.**

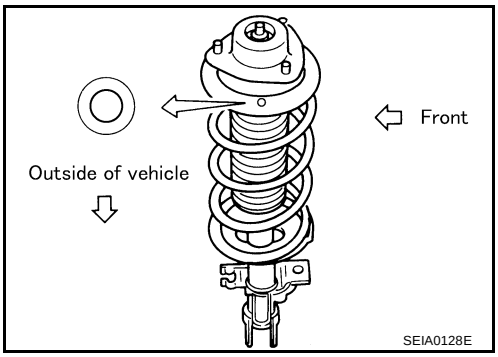


2. Install small parts to the strut.
   - Attach bound bumper, upper rubber seat, spring upper seat, strut mount insulator and strut spacer. Position piston rod lock nut.

   CAUTION:
   Do not reuse piston rod lock nut.

3. As shown in the figure, set spring upper seat. "○" Mark on it should face outside of vehicle.
4. Be sure coil spring is properly set in upper and lower rubber seats. Gradually release a spring compressor (SST).

   CAUTION:
   Be sure upper and lower rubber seats are properly aligned to strut, coil spring, and spring upper seat.
5. Tighten piston rod lock nut to the specified torque.
6. Remove strut attachment (SST).



FRONT PARALLEL LINK

PFP:55120

Removal and Installation

BES00020

REMOVAL

1. Remove tyre, Raise vehicle.
2. Remove wheel sensor wire.
3. Remove front parallel link mounting bolts and nuts. Remove front parallel link from vehicle.

INSPECTION AFTER REMOVAL

- Replace front parallel link assembly if it is in following condition: deformed, cracked, or damaged, or if the bushing was damaged.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque and reverse the removal procedure for installation.

REAR PARALLEL LINK

PFP:55121

Removal and Installation

BES00021

REMOVAL

1. Remove tyre, Raise vehicle.
2. Remove rear parallel link mounting bolts and nuts. Remove it from vehicle.

INSPECTION AFTER REMOVAL

- If rear parallel link has deformation, cracks, or damage, replace rear parallel link assembly. If its busing has damage, also replace rear parallel link assembly.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque and reverse the removal procedure for installation.
- Suspension member-side mounting bolt is also used as toe-in adjusting bolt. Tighten bolt with vehicle unladen and tires on the ground. After tightened, be sure to carry out toe-in adjustment. Refer to RSU-6, "TOE-IN" .

  CAUTION:
  Be sure to adjust equally on RH and LH side with adjusting bolt.

RADIUS ROD

PFP:55110

Removal and Installation

BES00022

REMOVAL

1. Remove tyre, Raise vehicle.
2. Remove radius rod mounting bolts and nuts and remove radius rod from vehicle.

INSPECTION AFTER REMOVAL

- Check radius rod and busing for deformation, cracks, and damage, and replace if necessary.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque and reverse the removal procedure for installation.

REAR SUSPENSION MEMBER

PFP:55501

Removal and Installation

BES00023

REMOVAL

1. Remove tyre. Raise vehicle.
2. Remove cotter pin. Remove wheel hub lock nut by using a wheel hub lock nut wrench.
3. Remove wheel sensor and wiring.
4. Remove brake caliper and brake hose lock plate, and hang them aside.
5. Remove mounting bolts and nuts on lower portion of strut.
6. Remove axle-side mounting bolts of parallel link and remove rear drive shaft from axle housing.
7. Remove suspension member-side mounting bolt of parallel link and remove parallel link from suspension member.
8. Remove mounting bolts and nuts on lower portion of strut.

   CAUTION:
   After removing drive shaft, position axle housing onto strut.
9. Remove propeller shaft.
10. Remove rear exhaust tube.
11. Remove electronically controlled coupling connector and air breather hose from final drive.
12. Set a jack under rear final drive.
13. Remove front and rear mounting bolts from rear final drive.
14. Remove rear final drive from suspension member.
15. Place jack onto rear suspension member. Remove rear suspension member mounting bolts. Lower jack slowly to remove rear suspension member from vehicle.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque. Install in the reverse order of removal.
- After installation, perform final tightening of each part under unladen conditions with tyre on ground. Check wheel alignment. RSU-6, "Wheel Alignment" .

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

General Specification

BES00024

Suspension type	Parallel link and strut
Shock absorber type	Double-acting hydraulic

★Wheel Alignment (Unladen)

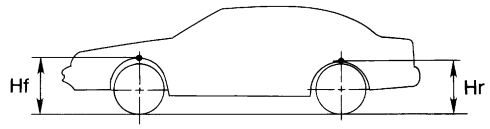
BES00025

Camber Degree minute (Decimal degree)		Minimum	– 1°25′ (– 1.42°)
		Nominal	– 0°40′ (– 0.67°)
		Maximum	0°05′ (0.08°)
Total Toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	1 mm (0.04 in)
		Maximum	2 mm (0.08 in)

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

★Wheelarch Height (Unladen)

BES0002D



SFA818A

Type of drive	2WD			
Engine type	QR20DE		YD22DDTi	
Tire	215/70R15	215/65R16 and 215/60R17	215/70R15	215/65R16 and 215/60R17
Front (Hf)	777 mm (30.59 in)	778 mm (30.63 in)	770 mm (30.31in)	771 mm (30.35 in)
Rear (Hr)	789 mm (31.06 in)	791 mm (31.14 in)	786 mm (30.94 in)	788 mm (31.02 in)

Type of drive	4WD				
Engine type	QR20DE	QR20DE and QR25DE	YD22DDTi		
Tire	215/70R15	215/65R16 and 215/60R17	215/70R15	215/65R16	215/60R17
Front (Hf)	772 mm (30.39 in)	773 mm (30.43 in)	770 mm (30.31 in)	771 mm (30.35 in)	
Rear (Hr)	784 mm (30.87 in)	786 mm (30.94 in)	784 mm (30.87 in)	786 mm (30.91 in)	

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