

SECTION **RSU**
 REAR SUSPENSION

A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 K
 L
 M
 N
 O
 P

RSU

CONTENTS

SYMPTOM DIAGNOSIS	2	RADIUS ROD	9
NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING	2	Exploded View	9
NVH Troubleshooting Chart	2	FRONT LOWER LINK	10
PRECAUTION	3	Exploded View	10
PRECAUTIONS	3	REAR LOWER LINK	11
Caution for Working Range at a Regular Dealership	3	Exploded View	11
Aluminum Die-Casting Parts Handling	3	REAR STABILIZER	12
General Precautions	3	Exploded View	12
PERIODIC MAINTENANCE	4	UNIT REMOVAL AND INSTALLATION	13
REAR SUSPENSION ASSEMBLY	4	REAR SUSPENSION MEMBER	13
Inspection	4	Exploded View	13
WHEEL ALIGNMENT	5	SERVICE DATA AND SPECIFICATIONS (SDS)	14
Inspection	5	SERVICE DATA AND SPECIFICATIONS (SDS)	14
Adjustment	5	EXCEPT TRACK PACK-SPECIFIC SUSPENSION ...	14
REMOVAL AND INSTALLATION	7	EXCEPT TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment	14
REAR COIL SPRING AND SHOCK ABSORBER	7	TRACK PACK-SPECIFIC SUSPENSION	14
Exploded View	7	TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment	15
Disposal	7		
SUSPENSION ARM	8		
Exploded View	8		

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:000000009163924

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

Symptom		Possible cause and SUSPECTED PARTS	Reference															
			Improper installation or 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	REAR AXLE AND REAR SUSPENSION	TIRE	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING
REAR SUSPENSION	Noise		x	x	x	x	x	x			x	x	x	x	x	x	x	x
	Shake		x	x	x	x		x			x		x	x	x	x	x	x
	Vibration		x	x	x	x	x				x		x	x		x		x
	Shimmy		x	x	x	x			x				x	x	x		x	x
	Judder		x	x	x								x	x	x		x	x
	Poor quality ride or handling		x	x	x	x	x		x	x				x	x	x		

x: Applicable

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Working Range at a Regular Dealership

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CAUTION:

The service items unmentioned on this manual are recommended to be performed by a GT-R certified NISSAN dealer. Because those service items require special equipment and a GT-R certified technical staff who completed special training.

Aluminum Die-Casting Parts Handling

INFOID:000000009163925

PROHIBITION OF WELDING OR BEATING REPAIR

- Material made of aluminum die-casting parts is heat-treated and loses strength when being exposed to welding heat. Do not perform welding repair for cracks, damage or others.
- For aluminum die-casting parts deformation, do not perform repair by beating. Always repair by replacement as an assembly.

CRACK CHECK

When the vehicle is damaged, always perform a visual deformation check and a crack check.

Crack Check Procedures

For a crack check, use dye penetrant inspection fluid (pre-cleaning fluid, penetrant fluid and developer fluid).

CAUTION:

Always perform a crack check in accordance with the procedures specified by the manufacturer of the dye penetrant inspection fluid.

1. Spray pre-cleaning fluid on the checking surface for cleaning.
2. Spray penetrant fluid on the checking surface and wait until the penetrant fluid soaks into any cracks.
3. Wipe off excessive penetrant fluid, and then also lightly wipe off penetrant fluid using a wet cloth.
4. Spray developer fluid on the checking surface.
5. Cracks, if any, are dyed red in color.

STRAY CURRENT CORROSION

- Corrosion occurs to aluminum die-casting parts by the stray current corrosion phenomenon, when directly contacting other parts made of steel. Always apply anti-stray current corrosion paint (primer) on the mounting surface.
- Clean mounting surface to prevent any foreign matter, steel powder or others from being mixed in. Always apply the specified adhesive when installing.
- Corrosion by stray current corrosion may occur when installing with any other bolts than the specified bolt. Always use the specified bolt that is surface treated.
- When loosening the specified bolt that is tightened, the treated surface may peel. Never reuse the specified bolt that is tightened once.

TIGHTENING TORQUE CONTROL

Material made of aluminum die-casting parts is soft in term of hardness. Tightening torque must be controlled exactly as specified. Always use a torque wrench to install any part to the specified tightening torque.

WARNING:

Never use a power tool to remove or tighten bolts for aluminum die-casting part to prevent damage to aluminum die-casting parts.

General Precautions

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CAUTION:

After finishing servicing, check that all the tools and waste are stored in a customary place.

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REAR SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

REAR SUSPENSION ASSEMBLY

Inspection

INFOID:000000009163930

MOUNTING INSPECTION

Check the mounting conditions (looseness, backlash) of each component and component conditions (wear, damage) are normal.

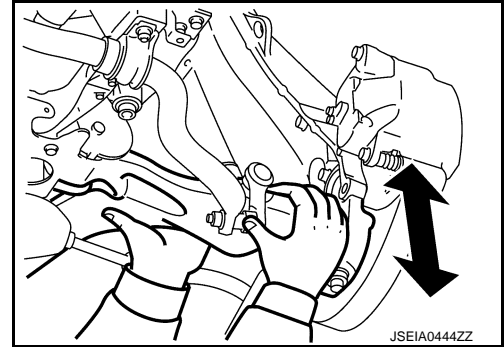
Ball Joint Axial End Play

Move axle side of suspension arm in the axial direction by hand. Check there is no end play.

Axial end play : 0 mm (0 in)

CAUTION:

- Never depress brake pedal when measuring.
- Never perform with tires on level ground.
- Be careful not to damage ball joint boot. Never damage the installation position by applying excessive force.



SHOCK ABSORBER

Check for oil leakage and damage. Replace it if necessary.

WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

WHEEL ALIGNMENT

Inspection

INFOID:000000009163931

DESCRIPTION

Measure wheel alignment under unladen conditions.

NOTE:

"Unladen conditions" means that fuel, engine coolant, and lubricant are full. Jack, hand tools and mats are in designated positions.

PRELIMINARY CHECK

Check the following:

- Tires for improper pressure and wear.
- Wheel bearing axial end play. Refer to [RAX-4, "Inspection"](#).
- Ball joint axial end play of suspension arm.
- Shock absorber operation.
- Each mounting point of axle and suspension for looseness and deformation.
- Each of front lower link, rear lower link, radius rod, rear suspension member, suspension arm and shock absorber for cracks, deformation, and other damage.
- Vehicle height (posture).

GENERAL INFORMATION AND RECOMMENDATIONS

- A four-wheel thrust alignment should be performed.
- This type of alignment is recommended for any NISSAN/INFINITI vehicle.
- The four-wheel "thrust" process helps ensure that the vehicle is properly aligned and the steering wheel is centered.
- The alignment rack itself should be capable of accepting any NISSAN/INFINITI vehicle.
- The rack should be checked to ensure that it is level.
- Make sure the machine is properly calibrated.
- Your alignment equipment should be regularly calibrated in order to give correct information.
- Check with the manufacturer of your specific equipment for their recommended Service/Calibration Schedule.

ALIGNMENT PROCESS

IMPORTANT:

Use only the alignment specifications listed in this Service Manual.

- When displaying the alignment settings, many alignment machines use "indicators": (Green/red, plus or minus, Go/No Go). **Do not use these indicators.**
- The alignment specifications programmed into your machine that operate these indicators may not be correct.
- This may result in an ERROR.
- See instructions in the alignment machine.

Adjustment

INFOID:000000009163932

CAUTION:

- **This work is recommended to be performed by GT-R certified NISSAN dealer.**
- **Adjust wheel alignment with the vehicle in customer's regular use condition (e.g. normal stock items), with the fuel in full-tank condition, and with no one in the vehicle.**
- **To adjust wheel alignment, set tire pressure at 250 kPa (2.5 kg/cm², 36 psi). After adjusting wheel alignment, adjust tire pressure to the specified value. Refer to [WT-13, "Tire"](#).**

TOE-IN

1. Remove rear diffuser. Refer to [EXT-41, "REAR DIFFUSER : Exploded View"](#).

WHEEL ALIGNMENT

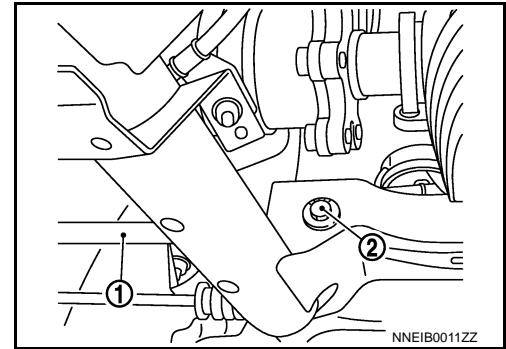
< PERIODIC MAINTENANCE >

- Adjust using the adjust bolt (2) of rear lower link (1).

Toe-in : Refer to [RSU-14. "EXCEPT TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment"](#) (Except track pack-specific suspension), [RSU-15. "TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment"](#) (Track pack-specific suspension).

CAUTION:

- Always evenly adjust both toe-in alternately and adjust the difference between the left and right to the standard.
- Always hold the adjust bolt firmly when tightening nut.
- Always adjust to toe-in. The toe changes, depending on an attitude change or a permanent set of bush. Accordingly, the state of the front wheels change to toe-out and the rear wheels, toe-in. If the wheels change to toe-out, tire partial wear is accelerated and local heating may be accelerated in the inner side of tires.
- Engaging in performance driving on a racetrack and ultra-high-speed driving, be sure to adjust toe-in to 2.0 mm (0.079 in) or less. If used beyond this range, it is not covered by the warranty.



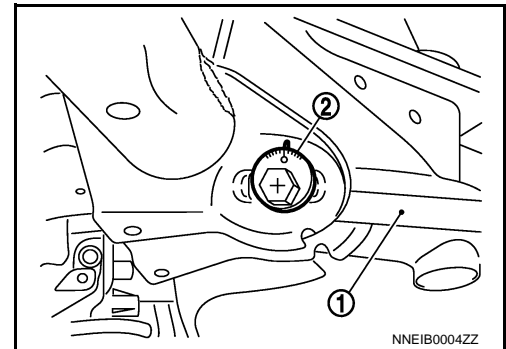
CAMBER

- Remove rear diffuser. Refer to [EXT-41. "REAR DIFFUSER : Exploded View"](#).
- Adjust using the adjust bolt (2) of front lower link (1).

Camber : Refer to [RSU-14. "EXCEPT TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment"](#) (Except track pack-specific suspension), [RSU-15. "TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment"](#) (Track pack-specific suspension).

CAUTION:

- Always hold the adjust bolt firmly when tightening nut.
- Always check toe-in after adjusting camber.



REAR COIL SPRING AND SHOCK ABSORBER

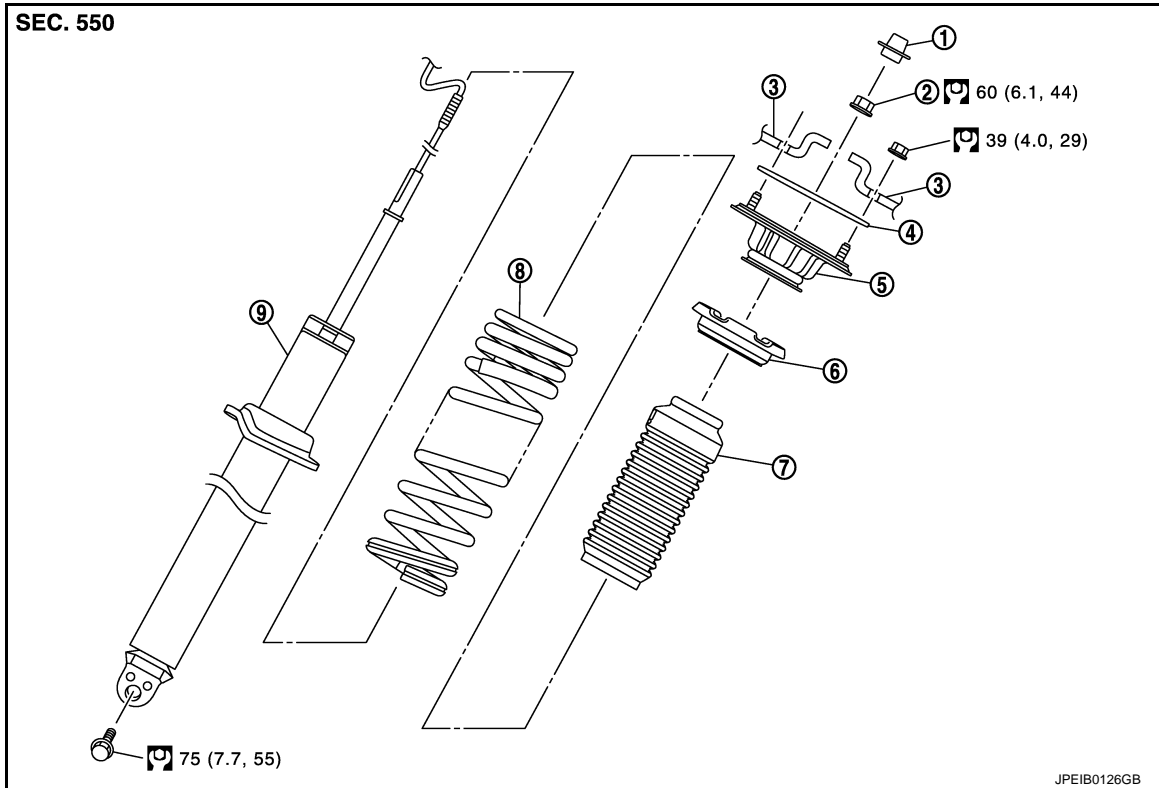
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

REAR COIL SPRING AND SHOCK ABSORBER

Exploded View

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- | | | |
|------------------|------------------------|-------------------|
| 1. Cap | 2. Piston rod lock nut | 3. Vehicle body |
| 4. Mounting seal | 5. Mount insulator | 6. Rubber seat |
| 7. Bound bumper | 8. Coil spring* | 9. Shock absorber |

*: To replace, all of four coil springs must be replaced together as a set. (Vehicles with track pack-specific suspension)

Refer to [GI-4, "Components"](#) for the symbols in the figure.

Disposal

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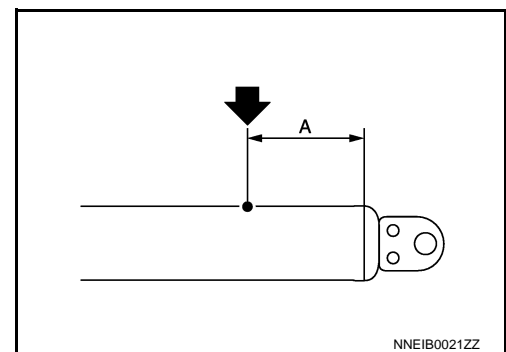
- Set shock absorber horizontally with the piston rod fully extended.
- Drill 2 – 3 mm (0.08 – 0.12 in) hole at the position (●) from top as shown in the figure to release gas gradually.

CAUTION:

- Wear eye protection (safety glasses).
- Wear gloves.
- Be careful with metal chips or oil blown out by the compressed gas.

NOTE:

- Drill vertically in this direction (←).
- Directly to the outer tube avoiding brackets.
- The gas is clear, colorless, odorless, and harmless.



A : 20 – 30 mm (0.79 – 1.18 in)

- Position the drilled hole downward and drain oil by moving the piston rod several times.

CAUTION:

Dispose of drained oil according to the law and local regulations.

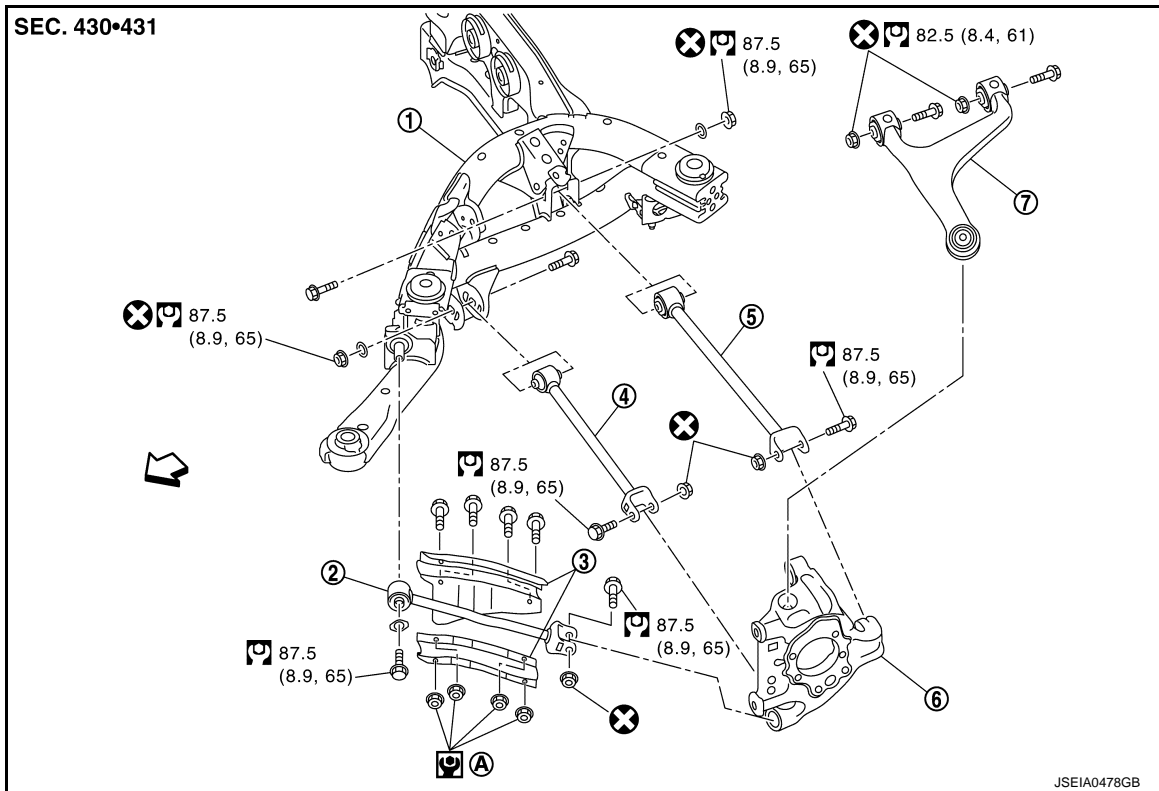
SUSPENSION ARM

< REMOVAL AND INSTALLATION >

SUSPENSION ARM

Exploded View

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- | | | |
|---------------------------|--------------------|---------------------|
| 1. Rear suspension member | 2. Radius rod | 3. Brake air guide* |
| 4. Front lower link | 5. Rear lower link | 6. Axle housing |
| 7. Suspension arm | | |

A. Tightening is recommended to be performed by GT-R certified NISSAN dealer.

↶: Vehicle front

*: With brake air guide

Refer to [GI-4. "Components"](#) for the symbols in the figure.

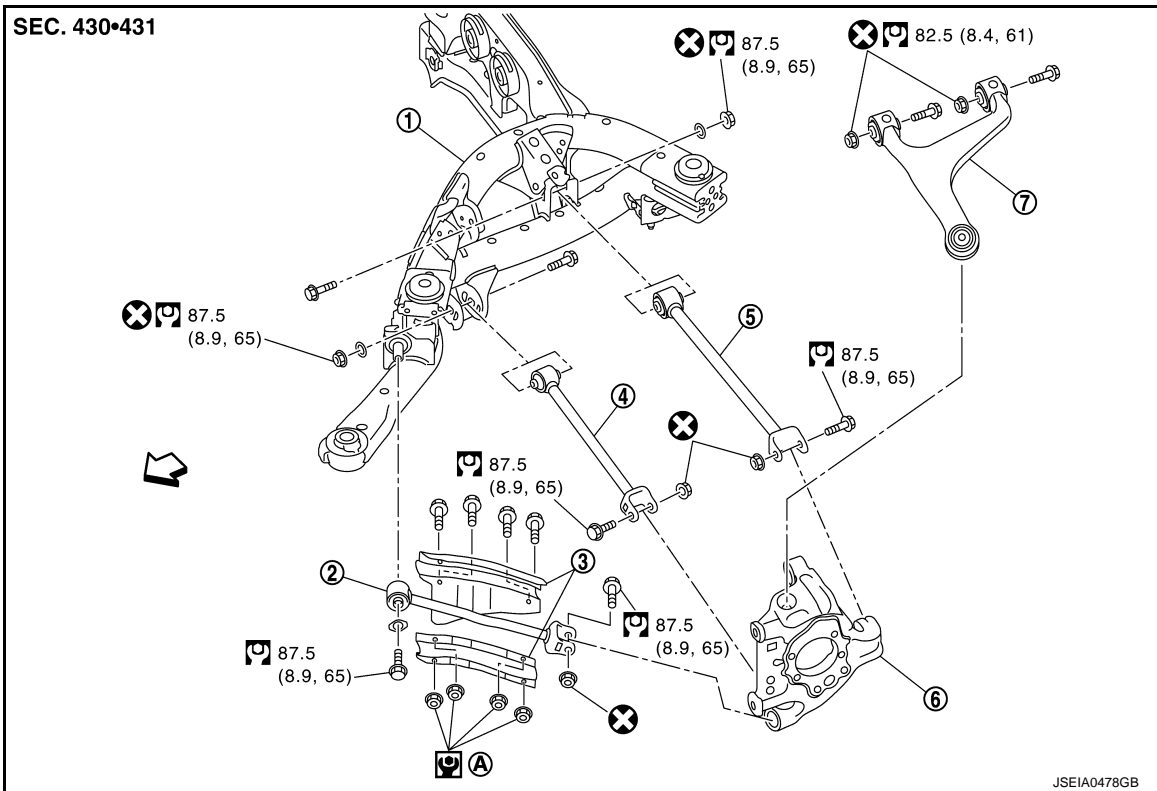
RADIUS ROD

< REMOVAL AND INSTALLATION >

RADIUS ROD

Exploded View

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- | | | |
|---------------------------|--------------------|---------------------|
| 1. Rear suspension member | 2. Radius rod | 3. Brake air guide* |
| 4. Front lower link | 5. Rear lower link | 6. Axle housing |
| 7. Suspension arm | | |

A. Tightening is recommended to be performed by GT-R certified NISSAN dealer.

↔: Vehicle front

*: With brake air guide

Refer to [GI-4. "Components"](#) for the symbols in the figure.

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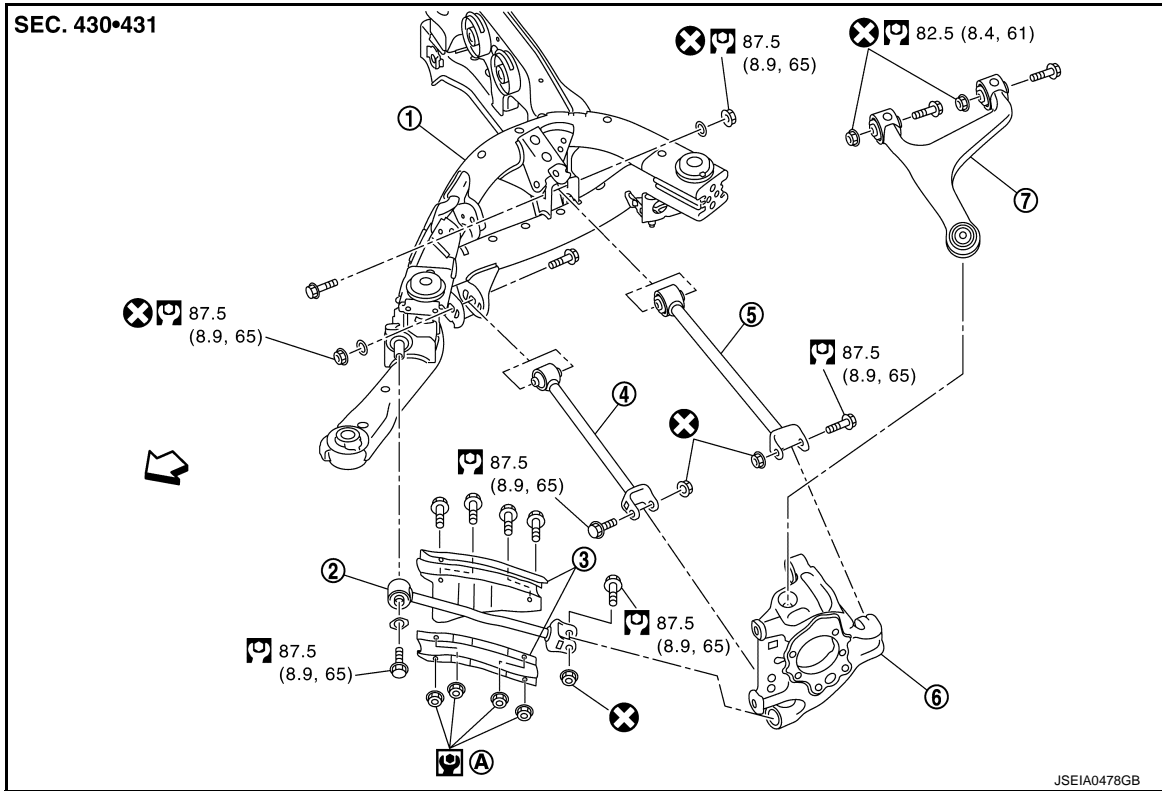
FRONT LOWER LINK

< REMOVAL AND INSTALLATION >

FRONT LOWER LINK

Exploded View

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- | | | |
|---------------------------|--------------------|---------------------|
| 1. Rear suspension member | 2. Radius rod | 3. Brake air guide* |
| 4. Front lower link | 5. Rear lower link | 6. Axle housing |
| 7. Suspension arm | | |

A. Tightening is recommended to be performed by GT-R certified NISSAN dealer.

← Vehicle front

*: With brake air guide

Refer to [GI-4. "Components"](#) for the symbols in the figure.

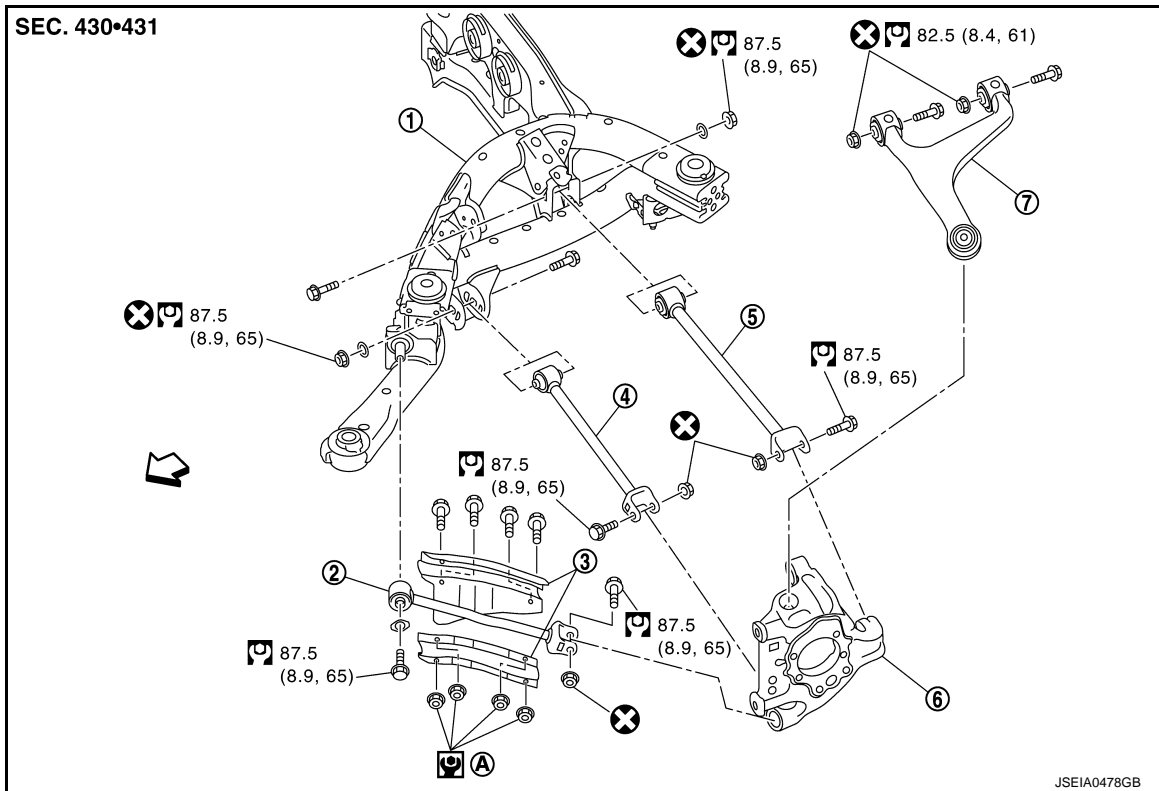
REAR LOWER LINK

< REMOVAL AND INSTALLATION >

REAR LOWER LINK

Exploded View

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- 1. Rear suspension member
- 2. Radius rod
- 3. Brake air guide*
- 4. Front lower link
- 5. Rear lower link
- 6. Axle housing
- 7. Suspension arm

A. Tightening is recommended to be performed by GT-R certified NISSAN dealer.

↔: Vehicle front

*: With brake air guide

Refer to [GI-4. "Components"](#) for the symbols in the figure.

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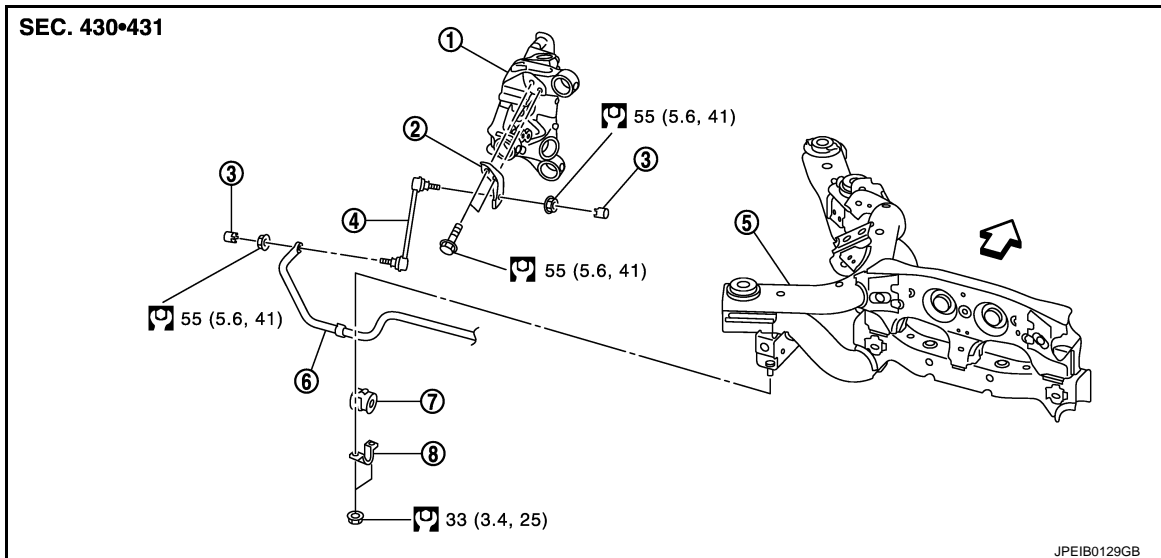
REAR STABILIZER

< REMOVAL AND INSTALLATION >

REAR STABILIZER

Exploded View

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- | | | |
|------------------------------|---|-------------------|
| 1. Axle housing | 2. Stabilizer connecting rod mounting bracket | 3. Cap |
| 4. Stabilizer connecting rod | 5. Rear suspension member | 6. Stabilizer bar |
| 7. Stabilizer bushing | 8. Stabilizer clamp | |

← Vehicle front

Refer to [GI-4, "Components"](#) for the symbols in the figure.

REAR SUSPENSION MEMBER

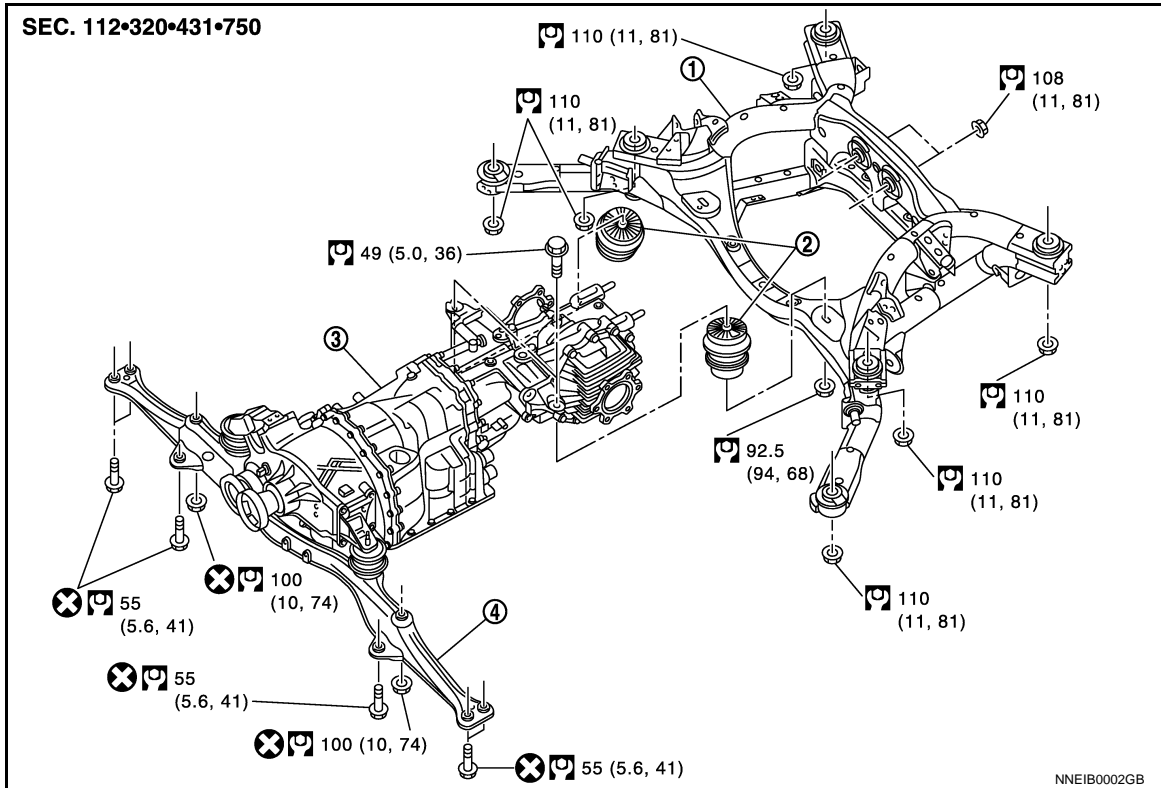
< UNIT REMOVAL AND INSTALLATION >

UNIT REMOVAL AND INSTALLATION

REAR SUSPENSION MEMBER

Exploded View

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1. Rear suspension member
2. Mount insulator
3. Transmission assembly
4. Transmission mount stay

Refer to [GI-4, "Components"](#) for the symbols in the figure.

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SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

EXCEPT TRACK PACK-SPECIFIC SUSPENSION

EXCEPT TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment

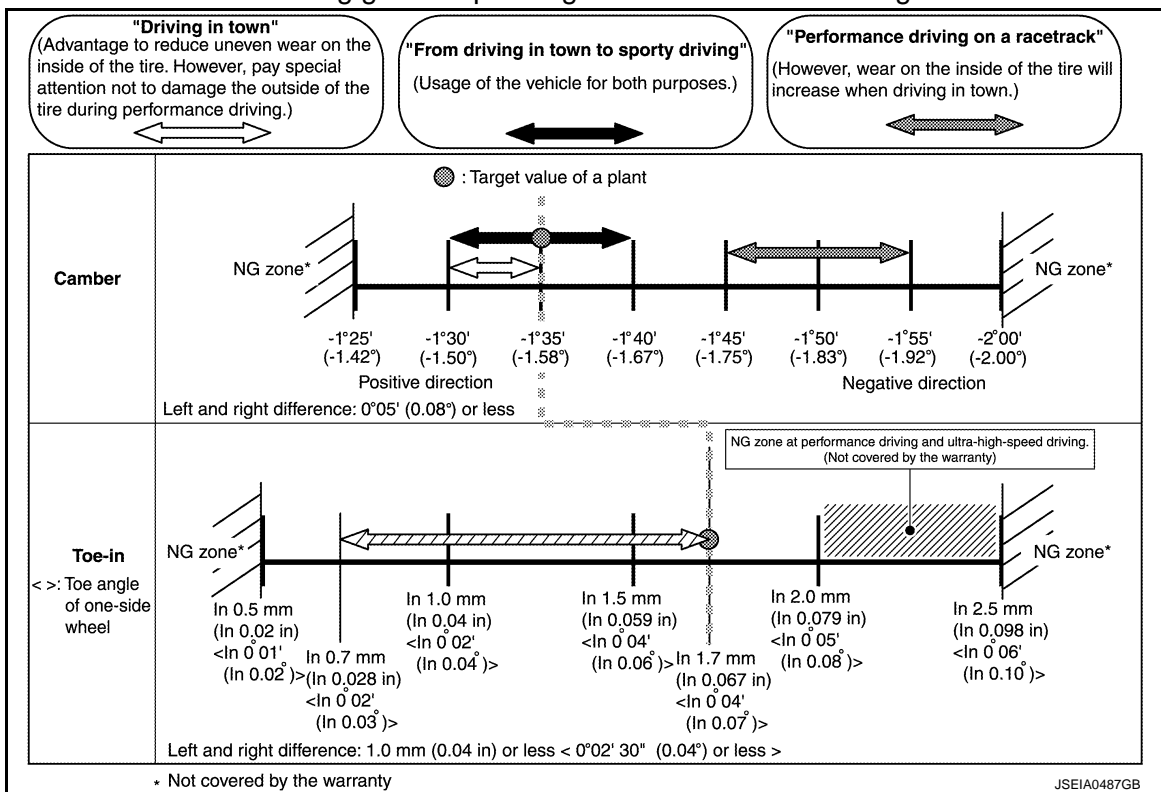
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CAUTION:

- This work is recommended to be performed by GT-R certified NISSAN dealer.
- Adjust wheel alignment with the vehicle in customer's regular use condition (e.g. normal stock items), with the fuel in full-tank condition, and with no one in the vehicle.
- To adjust wheel alignment, set tire pressure at 250 kPa (2.5 kg/cm², 36 psi). After adjusting wheel alignment, adjust tire pressure to the specified value. Refer to [WT-13, "Tire"](#).

CAMBER, TOE-IN

Setting guide depending on the customer's driving



- Adjust wheel alignment to the customer's driving style.
- Never set to toe-out.
- Always adjust to toe-in. If the wheels change to toe-out, tire partial wear is accelerated and local heating may be accelerated in the inner side of tires.
- For the above reasons, always adjust to toe-in for the vehicle of a customer who drives on a racetrack.
- Engaging in performance driving on a racetrack and ultra-high-speed driving, be sure to adjust toe-in to 2.0 mm (0.079 in) or less. If used beyond this range, it is not covered by the warranty.
- When driving on a racetrack, recommend to adjust the alignment to the "Performance driving on a racetrack" setting. If the negative camber angle is insufficient driving on a technical course including many tight turns may result in wear on the outside of the tire and this can cause an accident. [To avoid uneven wear, servicing the vehicle after performance driving (at the customer's expense) is recommended to result the alignment to the original setting.]
- Wheel alignment can be changed in process of time and mileage, as suspension parts do not adjust to each other up to the mileage of about 1,000 miles or 2,000 km.
- Remarks for up to the mileage of 1,000 miles or 2,000 km
- Toe angle of one-side wheel: See reference value.

TRACK PACK-SPECIFIC SUSPENSION

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

TRACK PACK-SPECIFIC SUSPENSION : Wheel Alignment

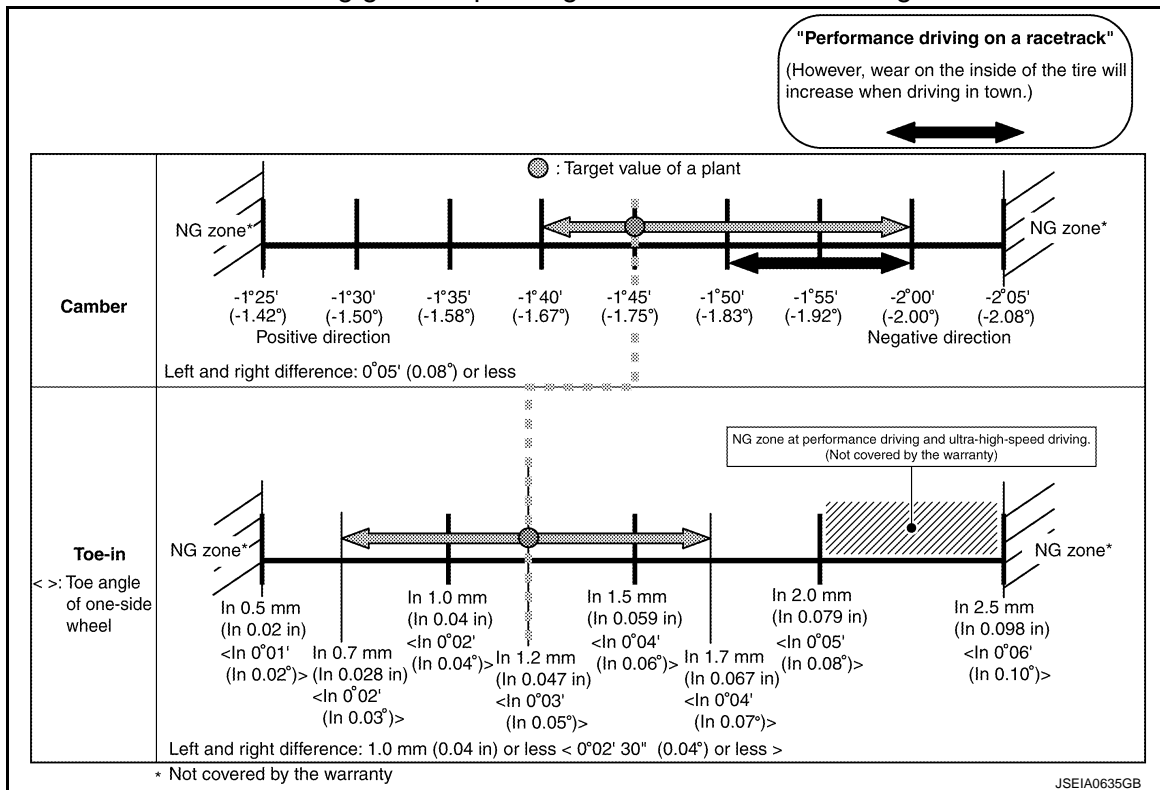
INFOID:000000009163957

CAUTION:

- This work is recommended to be performed by GT-R certified NISSAN dealer.
- Adjust wheel alignment with the vehicle in customer's regular use condition (e.g. normal stock items), with the fuel in full-tank condition, and with no one in the vehicle.
- To adjust wheel alignment, set tire pressure at 250 kPa (2.5 bar, 2.5 bar, 2.5 kg/cm², 36 psi). After adjusting wheel alignment, adjust tire pressure to the specified value. Refer to [WT-13, "Tire"](#).

CAMBER, TOE-IN

Setting guide depending on the customer's driving



- Adjust wheel alignment to the customer's driving style.
- Never set to toe-out.
- Always adjust to toe-in. If the wheels change to toe-out, tire partial wear is accelerated and local heating may be accelerated in the inner side of tires.
- For the above reasons, always adjust to toe-in for the vehicle of a customer who drives on a racetrack.
- Engaging in performance driving on a racetrack and ultra-high-speed driving, be sure to adjust toe-in to 2.0 mm (0.079 in) or less. If used beyond this range, it is not covered by the warranty.
- Insufficient negative camber during hard cornering on a racetrack may result in tire wear. Therefore, recommend the customer to adjust negative camber angle in the negative direction when driving on a racetrack. [To avoid uneven wear, recommend the customer to have the camber angle aligned in the positive direction at an inspection after performance driving (at customer's expense).]
- Wheel alignment can be changed in process of time and mileage, as suspension parts do not adjust to each other up to the mileage of about 1,000 miles or 2,000 km.
- Remarks for up to the mileage of 1,000 miles or 2,000 km
- Toe angle of one-side wheel: See reference value.
- Each part of the suspension may not conform during a normal driving because of the adoption of a hard rate coil spring and a high damping shock absorber.