SECTION RSU
REAR SUSPENSION

CONTENTS

PRECAUTIONS

PFP:00001

Caution

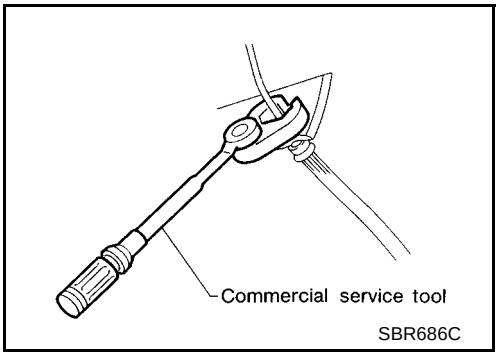
EES000L9

- Final tightening of bushings must be carried out under unladen condition with tires 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 tire, 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.

Precautions for Brake System

EES000LA

- 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.



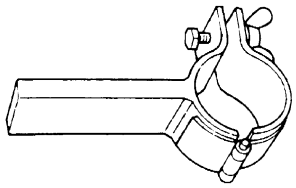
SBR686C

PREPARATION

PFP:00002

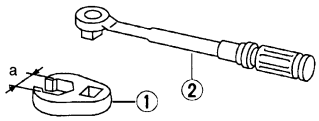
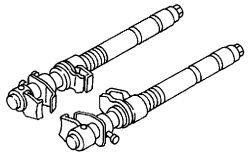
Special Service Tool

EES000LB

Tool name Tool number		Description
Strut attachment ST35652000	 ZZA0807D	Disassembling and assembling strut

Commercial Service Tools

EES000LC

Tool name		Description
1. Flare nut crowfoot 2. Torque wrench a: 10 mm (0.39 in)	 S-NT360	Removing and installing brake piping
Spring compressor	 S-NT717	Removing and installing coil spring

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

EES000LD

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

			Refer to RSU-5	Refer to RSU-8	—	—	—	Refer to RSU-5	Refer to RSU-5	Refer to RSU-5	NVH in FAX and FSU sections.	NVH in WT section.	NVH in WT section.	NVH in FAX section.	NVH in BR section.	NVH in PS section.
Reference page																
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 fatigue	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	×	×	×	×	×		×	×	×	×	×			

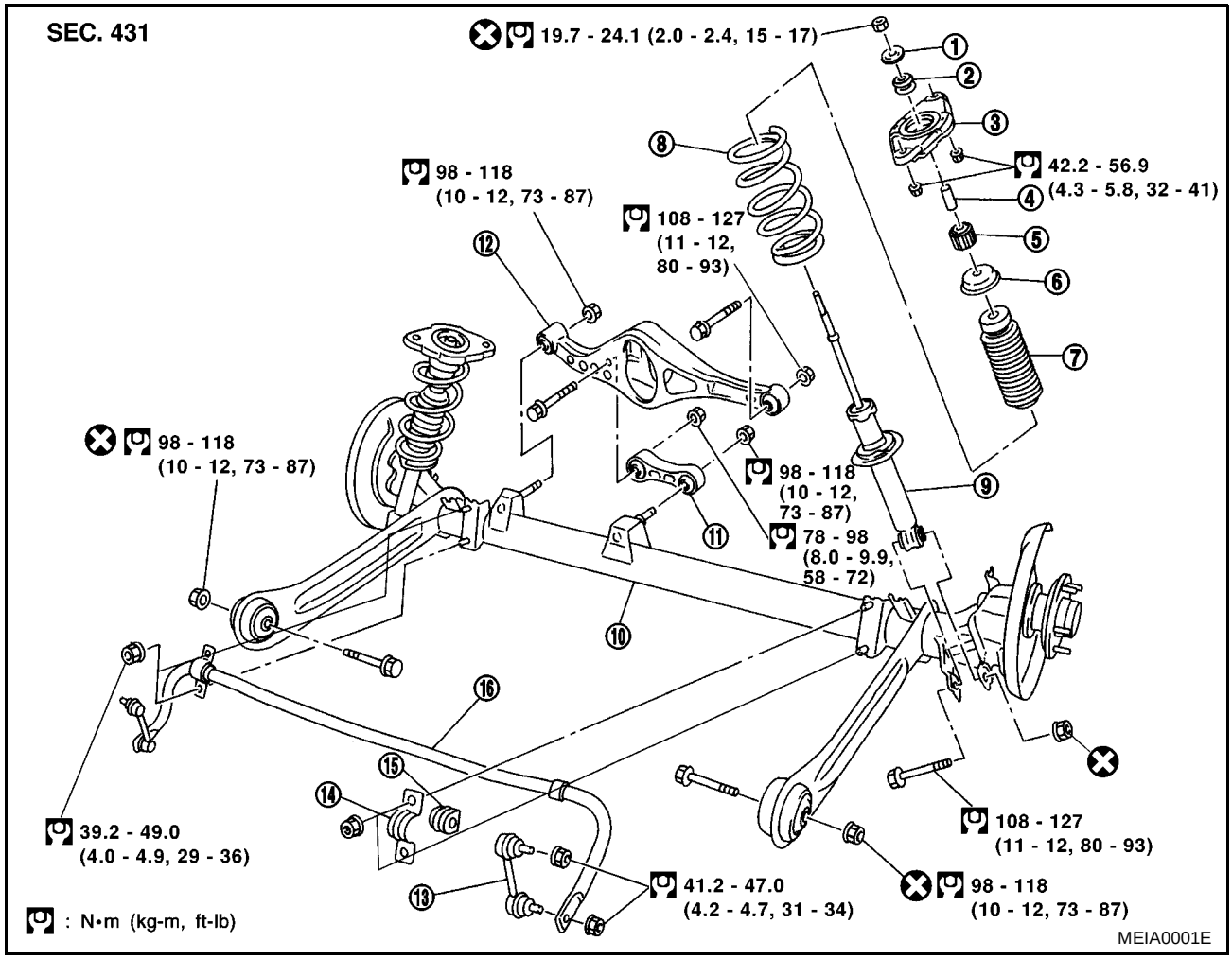
×: Applicable

REAR SUSPENSION ASSEMBLY

PFP:55020

Components

EES000LE



1. Washer
2. Bushing
3. Mounting bracket
4. Collar
5. Bushing
6. Bound bumper cover
7. Bound bumper
8. Coil spring
9. Shock absorber
10. Torsion beam
11. Control rod
12. Lateral link
13. Connecting rod
14. Clamp
15. Bushing
16. Stabilizer bar

On-Vehicle Inspection and Service

EES000LF

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 shock absorber for oil leakage and damage.

Wheel Alignment

EES000LG

DESCRIPTION

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

PRELIMINARY INSPECTION

1. Check the tires for improper air pressure and wear.
2. Check road wheels for runout.
3. Check wheel bearing axial end play.

4. Check shock absorber 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

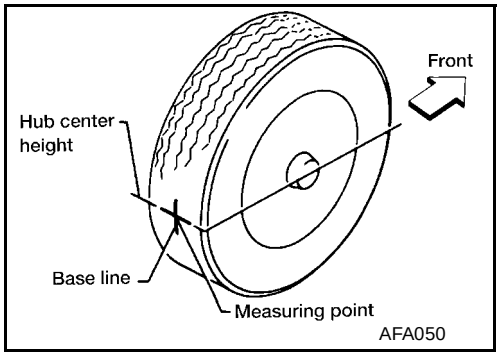
Camber is preset at factory and cannot be adjusted.

Camber : RSU-12, "SERVICE DATA AND SPECIFICATIONS (SDS)"

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

TOE-IN

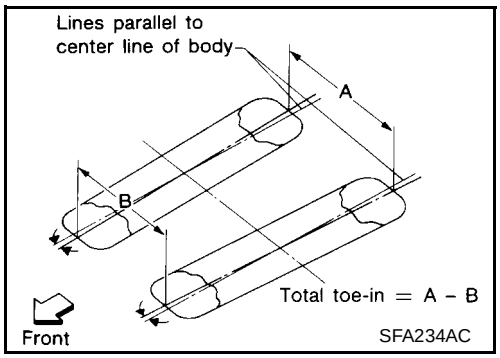
Toe-in is preset at factory and cannot be adjusted. Measure toe-in using following procedure. If out of specification, inspect and replace any damaged or worn rear suspension parts.



WARNING:

- **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 tires 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 tires).

Total toe-in:

Refer to RSU-12, "SERVICE DATA AND SPECIFICATIONS (SDS)" **.**

Removal and Installation

EES000MB

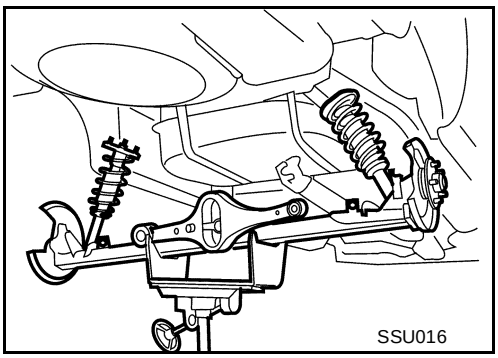
REMOVAL

1. Remove tire.
2. Remove brake-related parts. Refer to BR-28, "Caliper Removal and Installation" .
3. Remove parking brake cable and brake hose from trailing arm and torsion beam. Refer to BR-12, "Removal and Installation of Rear Brake Piping and Brake Hose" .

   CAUTION:
   - **Avoid smearing brake fluid on coated surfaces while removing brake hose.**
   - **Never depress brake pedal while removing brake hose.**
4. Remove ABS sensor rotors from torsion beam as well as trailing arm.

5. Raise vehicle. Set transmission jack to center of torsion beam.

   CAUTION:
   Do not remove it with any load applied to shock absorber.
6. Remove mounting bolts under shock absorber.
7. Remove bolts and nuts mounting lateral link to vehicle.
8. Remove bolts and nuts mounting trailing arm to vehicle. Lower transmission jack carefully, and remove rear suspension assembly from vehicle.



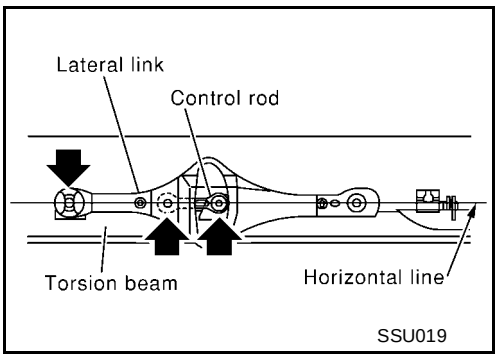
INSTALLATION

- Refer to RSU-5, "Components" for tightening torque.

CAUTION:

- **Brake fluid is not reusable. Always use a new one.**
- **After installation, bleed air.**

1. Install control rod on lateral link.
   - Do not fully tighten each mounting bolt and nut. Just tighten them temporarily.
2. Install lateral link and control rod on torsion beam.
   - Do not fully tighten each mounting bolt and nut. Just tighten them temporarily.
3. Set transmission jack to center of torsion beam. Raise vehicle with jack. Install trailing arm and lateral link to vehicle.
   - Do not fully tighten each mounting bolt and nut. Just tighten them temporarily.
4. Install shock absorber to vehicle and rear suspension assembly.
5. Remove transmission jack from torsion beam.
6. As shown in figure, position torsion beam and lateral link (line A) in parallel with the vehicle in unladen condition and tires on ground. Tighten each mounting bolt and nut to specified torque.



COIL SPRING AND SHOCK ABSORBER

PFP:54302

Removal and Installation

EES000MC

REMOVAL

CAUTION:

Do not remove piston rod lock nut on vehicle.

1. Remove tires.
2. Using a transmission jack, raise torsion beam a little, and remove nuts and bolts from the shock absorber assembly.

   CAUTION:

   Do not remove rear tire while a load is applied to shock absorber.
3. Remove shock absorber from vehicle.

INSTALLATION

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

Disassembly and Assembly

EES000LJ

DISASSEMBLY

1. Install strut attachment to shock absorber and fix it in a vise.

   CAUTION:

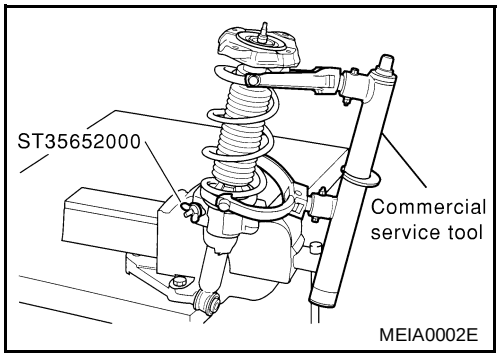
   When installing a strut attachment, cover shock absorber with shop cloth to avoid damage.
2. Remove cap and slightly loosen piston rod lock nut.

   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.

   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 shock absorber.
   - Remove washer, bushing, mounting bracket, collar, bound bumper cover and bound bumper. Then remove coil spring from shock absorber.
6. Gradually release spring compressor, and remove coil spring.

INSPECTION AFTER DISASSEMBLY

Shock Absorber

- Check shock absorber 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.

Bushing

- Check bushing for cracks and damage, and replace if necessary.

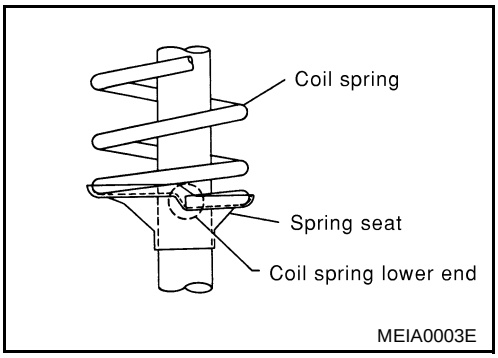
Coil Spring

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

ASSEMBLY

1. Compress coil spring using a spring compressor, and install it onto the shock absorber.

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

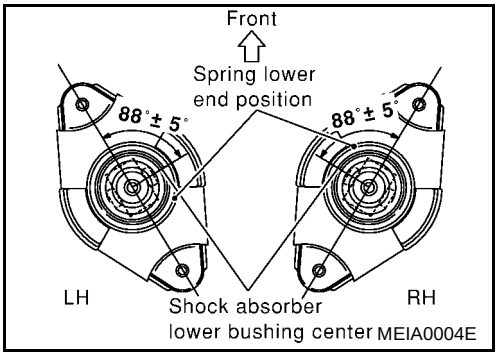


2. Install small parts to the shock absorber.
   - Attach bound bumper, bound bumper cover, bushing, collar, mounting bracket and washer. Position piston rod lock nut.

     CAUTION:
     Do not reuse piston rod lock nut.

3. As shown in the figure, set mounting bracket.
4. Be sure coil spring is properly set in upper and lower seats. Gradually release a spring compressor.

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



LATERAL LINK AND CONTROL ROD

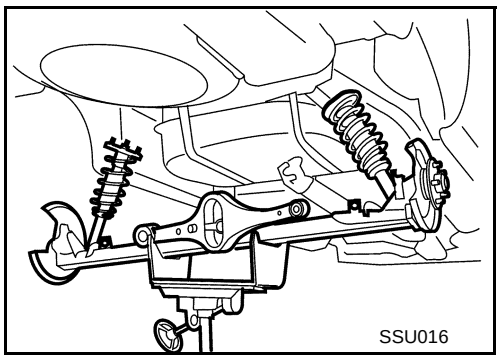
PFP:55130

Removal and Installation

EES000MD

REMOVAL

1. Using a transmission jack, raise torsion beam a little, and remove nuts and bolts from the lateral link and control rod.
2. Remove lateral link and control rod from torsion beam.



INSPECTION AFTER REMOVAL

Lateral Link

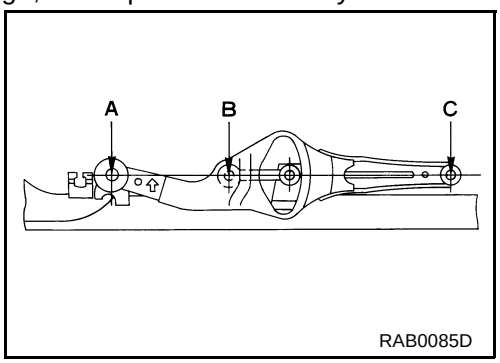
- Check lateral link and bushing for deformation, cracks, and damage, and replace if necessary.

Standard length:

A 206.5 - 208.5 mm (8.13 - 8.21 in)

B 393.5 - 395.5 mm (15.49 - 15.57 in)

C 600.5 - 603.5 mm (23.64 - 23.76 in)

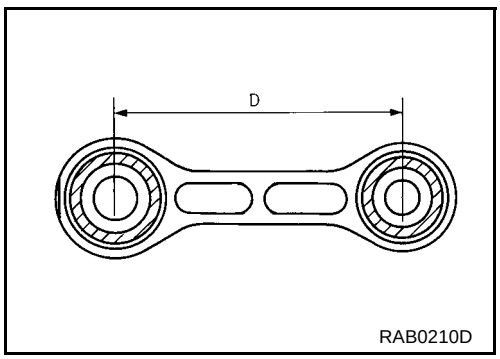


Control Rod

- Check lateral link and bushing for deformation, cracks, and damage, and replace if necessary.

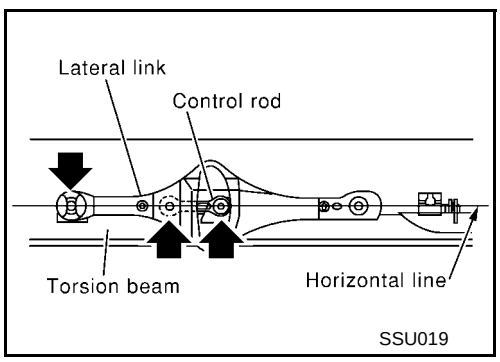
Standard length:

D 106.0 - 108.0 mm (4.17 - 4.25 in)



INSTALLATION

1. Refer to RSU-5, "Components" for tightening torque and reverse the removal procedure for installation.
2. Using a transmission jack to lift the torsion beam, place lateral link and control rod horizontally against torsion beam. Tighten bolts and nuts to specified torque.



STABILIZER BAR

PFP:54611

Removal and Installation

EES000ME

REMOVAL

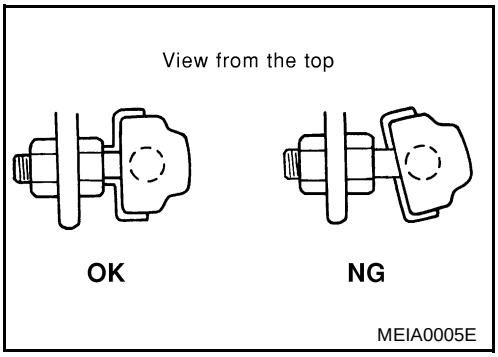
1. Remove mounting nuts on upper portion of the stabilizer connecting rod.
2. Remove stabilizer clamp mounting bolts.
3. Remove stabilizer from the vehicle.

INSPECTION AFTER REMOVAL

Check stabilizer, connecting rod, bushing and clamp for deformation, cracks and damage, and replace if necessary.

INSTALLATION

- Refer to RSU-5, "Components" for tightening torque. Install in the reverse order of removal.
- Because the stabilizer uses the pillow ball type connecting rod, position the ball joint with the case on the pillow ball head parallel to the stabilizer.



SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

General Specification

EES000LM

Suspension type	Multi-link beam suspension
Shock absorber type	Double-acting hydraulic

★Wheel Alignment (Unladen)

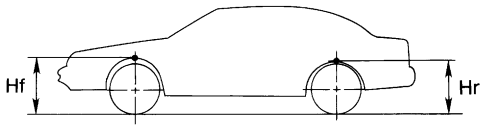
EES000LN

Camber Degree minute (Decimal degree)		Minimum	–2°12′ (–2.20°)	–2°13′ (–2.22°)
		Nominal	–1°27′ (–1.45°)	–1°28′ (–1.47°)
		Maximum	–0°42′ (–0.70°)	–0°43′ (–0.72°)
Total Toe-in	Distance (A - B)	Minimum	–1 mm (–0.04 in)	
		Nominal	3 mm (0.12 in)	
		Maximum	7 mm (0.28 in)	

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

★Wheelarch Height (Unladen)

EES000LO



SFA818A

Applied model		QG16, QG18, QR20 engine		YD22 engine	
		205/60R16	215/50R17	205/60R16	215/50R17
SEDAN	Front (Hf)	698 mm (27.48 in)	697 mm (27.44 in)	697 mm (27.44 in)	696 mm (27.40 in)
	Rear (Hr)	699 mm (27.52 in)	696 mm (27.40 in)	699 mm (27.52 in)	696 mm (27.40 in)
WAGON	Front (Hf)	699 mm (27.52 in)	699 mm (27.52 in)	698 mm (27.48 in)	698 mm (27.48 in)
	Rear (Hr)	695 mm (27.36 in)	692 mm (27.24 in)	695 mm (27.36 in)	692 mm (27.24 in)

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