




FRONT SHOCK ABSORBER


INSTALLATION AND USER'S INSTRUCTIONS

Thank you for purchasing a MAZDASPEED accessory.
Before removal and installation, be sure to thoroughly read these instructions.
Please read the contents of this booklet in order to properly install and use the front shock absorber. Your safety depends on it.
Keep these instructions with your vehicle records for future reference.

WARNING

- There are several  **WARNING** and  **CAUTION** sections in this booklet concerning safety when installing or removing the front shock absorber. Always read and follow them in order to prevent injuries, accidents, and possible damage to the vehicle.

 **WARNING:** Indicates a situation in which serious injury or death could result if the warning is ignored.

 **CAUTION:** Indicates a situation in which bodily injury or damage to the vehicle could result if the caution is ignored.

- Do not modify the front shock absorber.
- Do not install the front shock absorber in any way other than described in the following instructions.
- If in any doubt, please ask your Mazda dealer to install the accessory in order to prevent errors in installation.
- If you have any questions about the use of the accessory, ask your Mazda dealer for proper advice before using it.
- Mazda and its suppliers are not responsible for injuries, accidents, and damage to persons and property that arise from the failure of the dealer or installer to follow these instructions.
- To ensure safety and reliability of the work, installation, removal and disposal work by an Authorized Mazda Dealership is recommended.
- Be careful not to lose removed parts, and be sure that they are kept free from scratches, grease or other dirt.

PART NAME: FRONT SHOCK ABSORBER
PART NUMBER: QNCA 34 700
VEHICLE: Mazda MX-5

NOTE

To the dealer

- Please turn over these instructions to the customer after installation.

To the customer

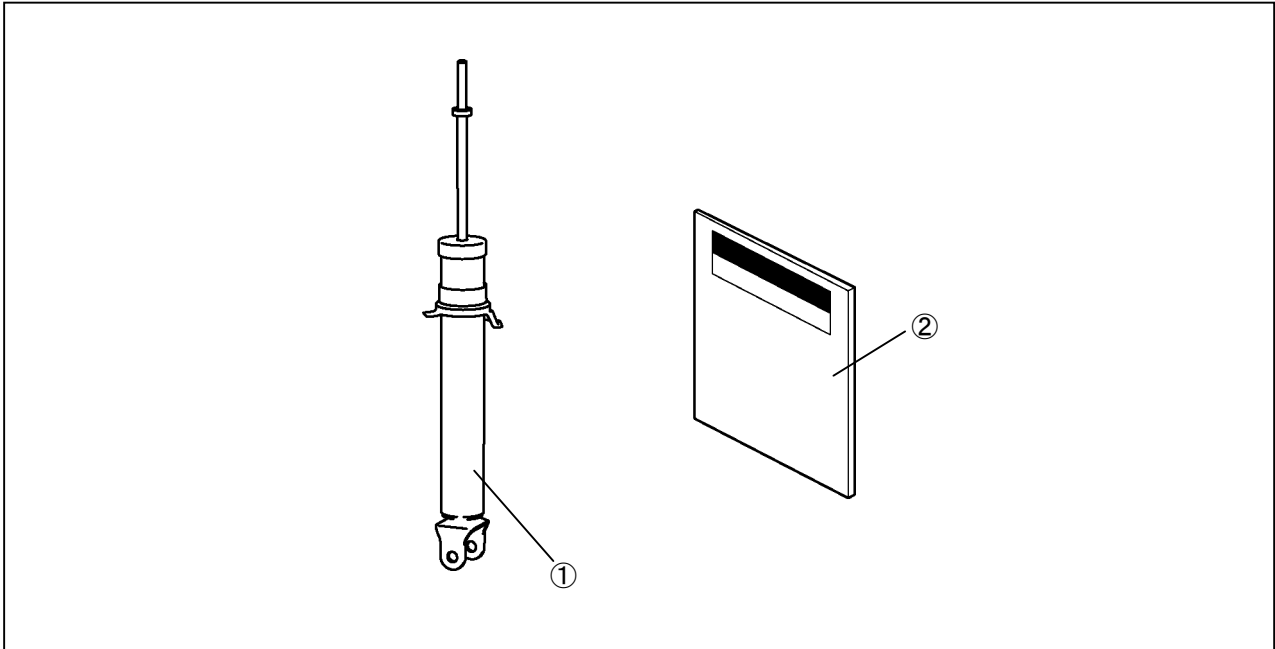
- Keep these instructions after installation. The instructions may be necessary for installing other optional parts or removal of this accessory.
- Should the vehicle or this accessory be resold, always leave these instructions with it for the next owner.

1 PARTS

⚠ CAUTION

- Before installation, verify that the kit includes all the following parts and that they are free of dirt, scratches, or damage.

No.	Part name	Qty.	No.	Part name	Qty.
	Front shock absorber	1ea.		Installation and user's instructions	1



2 BEFORE INSTALLATION

REQUIRED TOOLS

Prepare the following tools or items before installation.

Special service tool (SST)

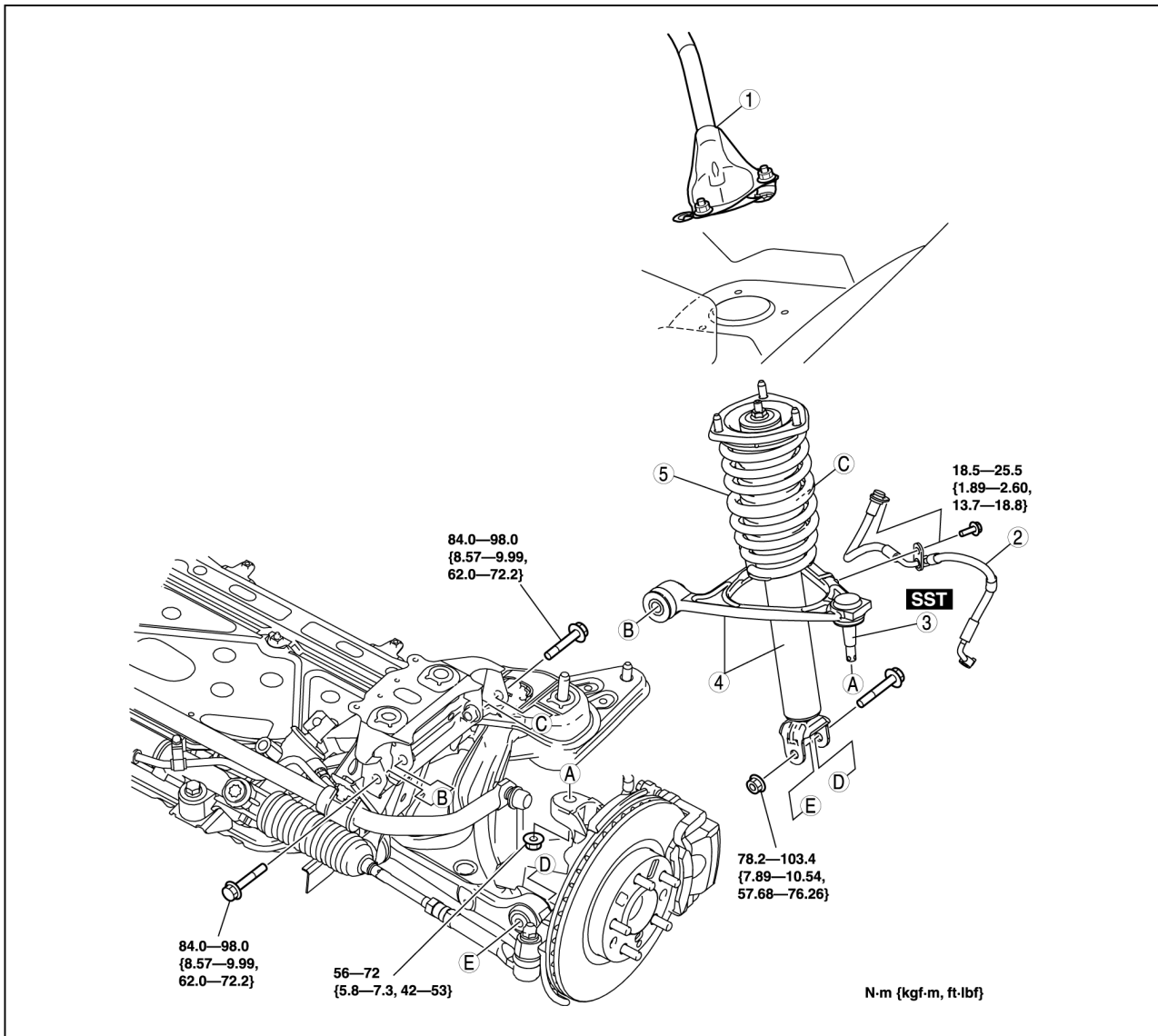
- ★Ball joint puller set (49 T028 3A0)
- ★Coil spring compressor set (49 T034 1A0)

3 FRONT SHOCK ABSORBER INSTALLATION

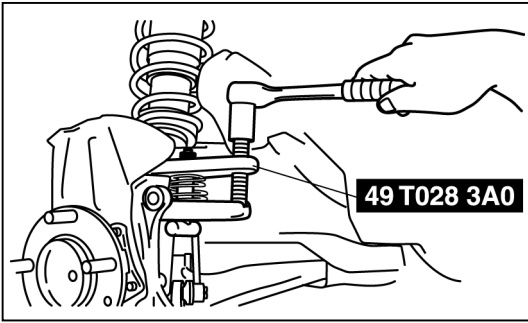
⚠ CAUTION

- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before performing the following procedures, remove the ABS wheel-speed sensor (axle side), and fix it to an appropriate place where the sensor will not be pulled while servicing the vehicle.

1. Remove the battery cover.
2. Disconnect the negative battery cable. (See Negative Battery Cable Installation.)
3. Remove parts in the order indicated in the table.
4. Replacing the removed front shock absorber with the accessory kit front shock absorber, reinstall the removed parts in the reverse order of removal
5. Inspect the front wheel alignment, and adjust it if necessary. (See 6 FRONT WHEEL ALIGNMENT.)

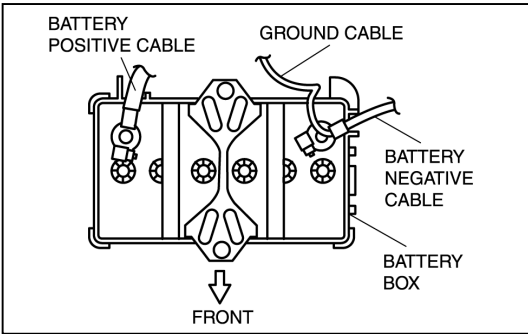


1	Front suspension tower bar (See 5 FRONT SUSPENSION TOWER BAR REMOVAL/INSTALLATION.)	4	Front shock absorber, coil spring and front upper arm
2	Brake hose bracket	5	Front shock absorber and coil spring (See 4 FRONT SHOCK ABSORBER AND COIL SPRING DISASSEMBLY/ASSEMBLY.)
3	Front upper arm ball joint (See Front Upper Arm Ball Joint Removal.)		



Front Upper Arm Ball Joint Removal

1. Remove the front upper arm ball joint from the steering knuckle using the **SST**.



Negative Battery Cable Installation

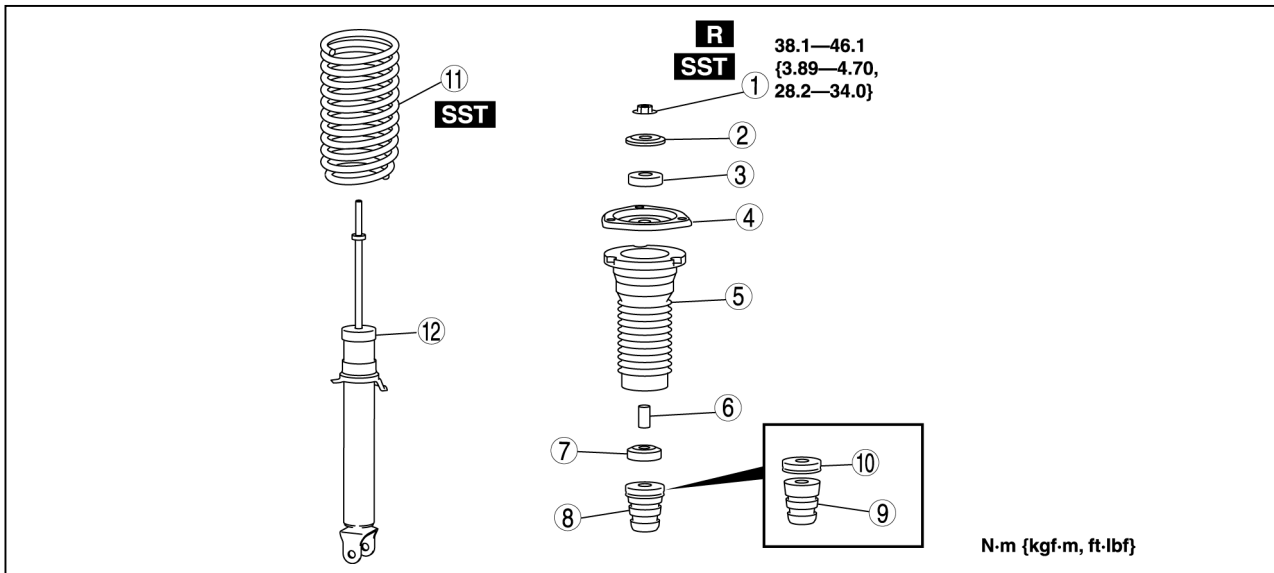
1. When connecting the negative battery cable to the battery, connect the negative battery cable and the ground cable as shown in the figure.

4 FRONT SHOCK ABSORBER AND COIL SPRING DISASSEMBLY/ASSEMBLY

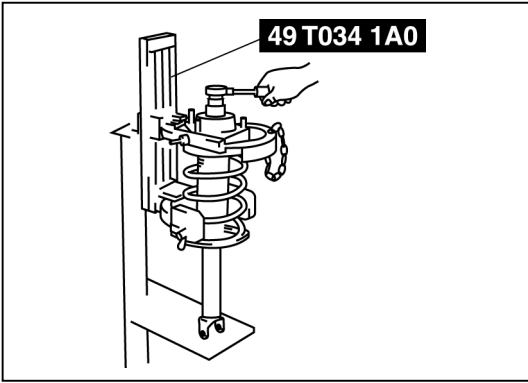
⚠ WARNING

- Removing/installing the shock absorber and coil spring is dangerous. The shock absorber and coil spring could fly off and cause serious injury or death, and damage the vehicle.

1. Remove the front shock absorber and coil spring.
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.



1	Piston rod nut (See Piston Rod Nut Removal.)	7	Bushing
2	Retainer	8	Stopper casing and bound stopper
3	Bushing	9	Bound stopper
4	Upper spring seat (See Upper Spring Seat Installation.)	10	Stopper casing
5	Dust boot	11	Coil spring (See Coil Spring Installation.)
6	Spacer	12	Front shock absorber

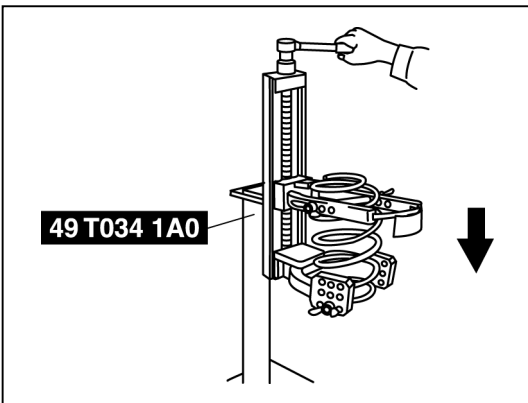


Piston Rod Nut Removal

⚠ WARNING

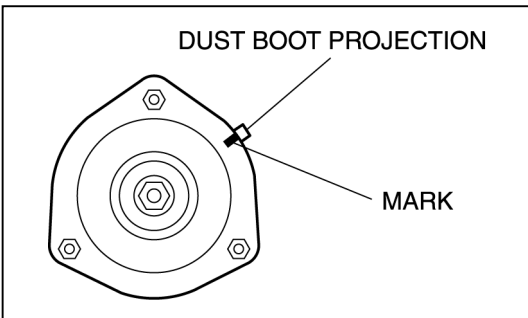
- Before removing the piston rod nut, secure the shock absorber and coil spring in the **SST**. Otherwise, the shock absorber and coil spring could fly off under tremendous pressure and cause serious injury or death, or damage to vehicle parts.

1. Protect the coil spring from scratches using a piece of cloth and install the **SST**.
2. Compress the coil spring using the **SST** remove the piston rod nut.



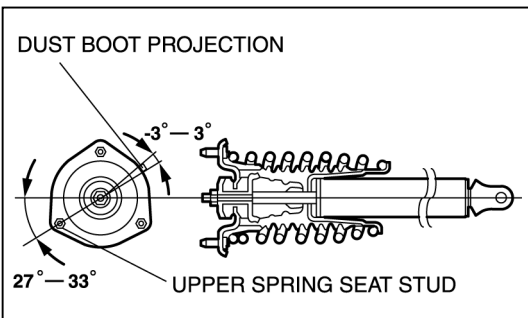
Coil Spring Installation

1. Protect the coil spring from scratches using a piece of cloth and install the **SST**.
2. Compress the coil spring using the **SST**.
3. Install the shock absorber so that the lower end of the coil spring is seated on the step of the lower spring seat.



Upper Spring Seat Installation

1. Align the mark on the upper spring seat with the dust boot projection.
2. Install the upper spring seat so that the upper spring seat stud is a 27° - 33° angle to the shock absorber installation shaft (lower side).



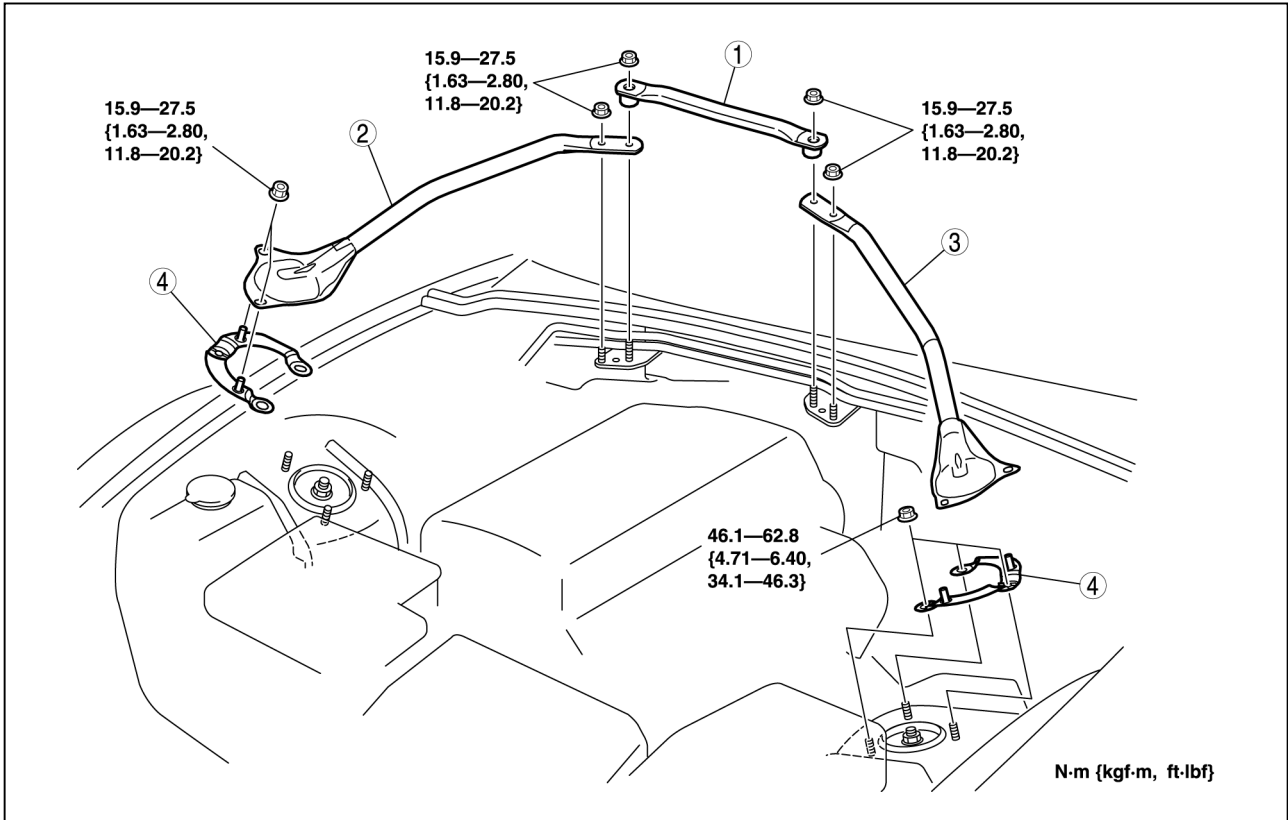
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FRONT SUSPENSION TOWER BAR REMOVAL/INSTALLATION

⚠ CAUTION

- Perform the work after the engine compartment has completely cooled. If the work is performed while the engine compartment is hot, such as immediately after the vehicle has been driven, serious injuries such as burns could occur. Always wear protective gear while performing the work.
- Do not perform the installation with the vehicle lifted or jacked up. If the work is performed while the vehicle is lifted, the upper mounts could fall off, or damage to the vehicle could occur.

1. Remove in the order indicated in the table.



1	Front suspension tower bar (joint)	3	Front suspension tower bar (left side)
2	Front suspension tower bar (right side)	4	Plate

6 FRONT WHEEL ALIGNMENT

[16-inch wheel]

Item		Specification	
Total toe-in	Tire [Tolerance $\pm 4\text{mm}\{0.15\text{in}\}$] (mm {in})	2 {0.08}	
	Rim inner (mm {in})	$1.2 \pm 2.4\{0.05 \pm 0.09\}$	
	degree	$0^\circ 11' \pm 22'$	
Steering angle [Tolerance $\pm 3^\circ$]	Inner	$38^\circ 42'$	
	Outer	$32^\circ 54'$	
Steering axis inclination (Reference value)		$10^\circ 39'$	
Camber [Tolerance $\pm 1^\circ$]	Vehicle height: From the end of the front fender to the center of the wheel (mm{in})	356—365{14.1—14.3}	$-0^\circ 41'$
		366—375{14.5—14.7}	$-0^\circ 22'$
		376—385{14.8—15.1}	$-0^\circ 06'$
		386—395{15.2—15.5}	$-0^\circ 09'$
		396—405{15.6—15.9}	$-0^\circ 21'$
Caster [Tolerance $\pm 1^\circ$]	Vehicle height: From the end of the rear fender to the center of the wheel (mm{in})	354—363{14.0—14.2}	$6^\circ 27'$
		364—373{14.4—14.6}	$6^\circ 13'$
		374—383{14.8—15.0}	$5^\circ 59'$
		384—393{15.2—15.4}	$5^\circ 45'$
		394—403{15.6—15.8}	$5^\circ 31'$

NOTE

- Unloaded vehicle: Fuel tank is full. Engine coolant and engine oil are at specified level. Jack and tools are in designated position.
- Difference between the left and right dimension for camber and caster is within 1° .

[17-inch wheel]

Item		Specification	
Total toe-in	Tire [Tolerance $\pm 4\text{mm}\{0.15\text{in}\}$] (mm {in})	2 {0.08}	
	Rim inner (mm {in})	$1.4 \pm 2.8\{0.06 \pm 0.11\}$	
	degree	$0^\circ 11' \pm 22'$	
Steering angle [Tolerance $\pm 3^\circ$]	Inner	$38^\circ 42'$	
	Outer	$32^\circ 54'$	
Steering axis inclination (Reference value)		$10^\circ 47'$	
Camber [Tolerance $\pm 1^\circ$]	Vehicle height: From the end of the front fender to the center of the wheel (mm{in})	351—360{13.8—14.1}	$-0^\circ 51'$
		361—370{14.3—14.5}	$-0^\circ 31'$
		371—380{14.7—14.9}	$-0^\circ 14'$
		381—390{15.0—15.3}	$-0^\circ 02'$
		391—400{15.4—15.7}	$-0^\circ 15'$
Caster [Tolerance $\pm 1^\circ$]	Vehicle height: From the end of the rear fender to the center of the wheel (mm{in})	349—358{13.8—14.0}	$6^\circ 34'$
		359—368{14.2—14.4}	$6^\circ 20'$
		369—378{14.6—14.8}	$6^\circ 06'$
		379—388{15.0—15.2}	$5^\circ 53'$
		389—398{15.4—15.6}	$5^\circ 39'$

NOTE

- Unloaded vehicle: Fuel tank is full. Engine coolant and engine oil are at specified level. Jack and tools are in designated position.
- Difference between the left and right dimension for camber and caster is within 1° .