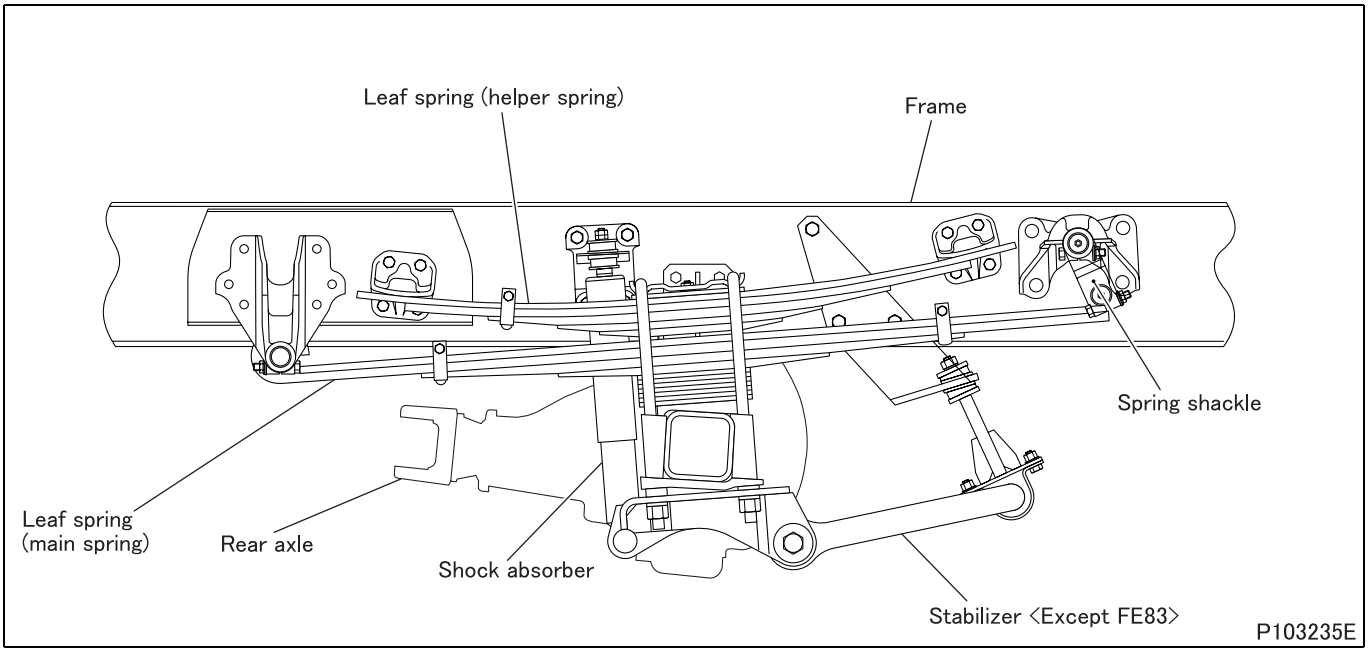
GROUP 34 INDEX

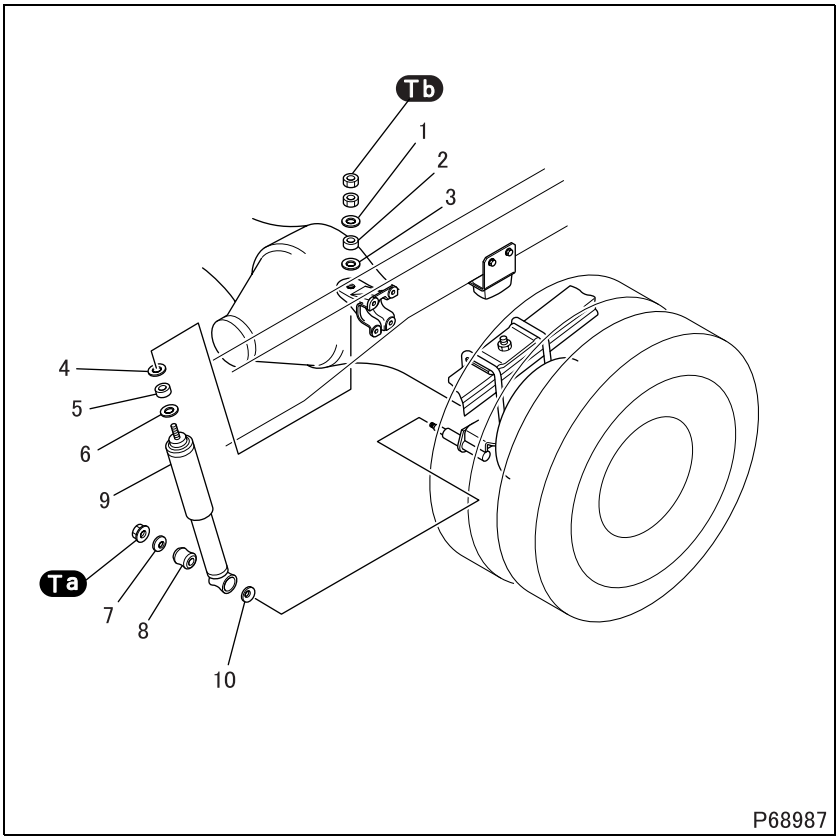
1. Rear Suspension Elements



- The rear suspensions shown above both use a spring shackle connected to the rear end of the leaf spring (shackle-link type suspension).
- The above schematics are only examples. Details may differ depending on vehicle models, including the number of spring leaves, the shape of spring shackle, and the location of the shock absorbers.

Possible causes \ Symptoms		Feels as if floating	Tends to be noisy	Road bumps/pits received as shocks	Heavy rolling	Cyclical shocks from underneath	Excessive rolling while cruising	Reference Gr
Shock absorber	Substantial loss of oil and damping capacity	O						
	Rubber bushing worn		O					
	Loose fitting		O					
Tire	Tire and wheel needs balancing					O		Gr31
	Excessive tire pressure			O				
Leaf spring	Cracks or other damage			O				
	Broken		O					
	Loose U-bolt		O					
	Spring bushing worn		O					
Thrust clearance of metal bushing-type spring pin or shackle pin			O					
Helper rubber or helper spring stopper damaged or broken			O					
Spring pin over-tightened			O					
Stabilizer deformed, bushing worn							O	

SHOCK ABSORBER



●Removal sequence

1 Washer
2 Rubber bushing
3 Washer
4 Washer
5 Rubber bushing
6 Washer
7 Washer
8 Rubber bushing
9 Shock absorber
10 Washer

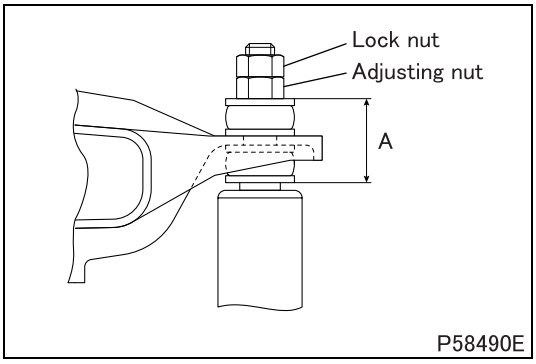
●Installation sequence

Follow the removal sequence in reverse.

Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (shock absorber mounting)	90 to 130 {66 to 96}	–
Tb	Lock nut (rubber bushing mounting)	34 to 50 {25 to 37}	–

◆Installation procedure◆



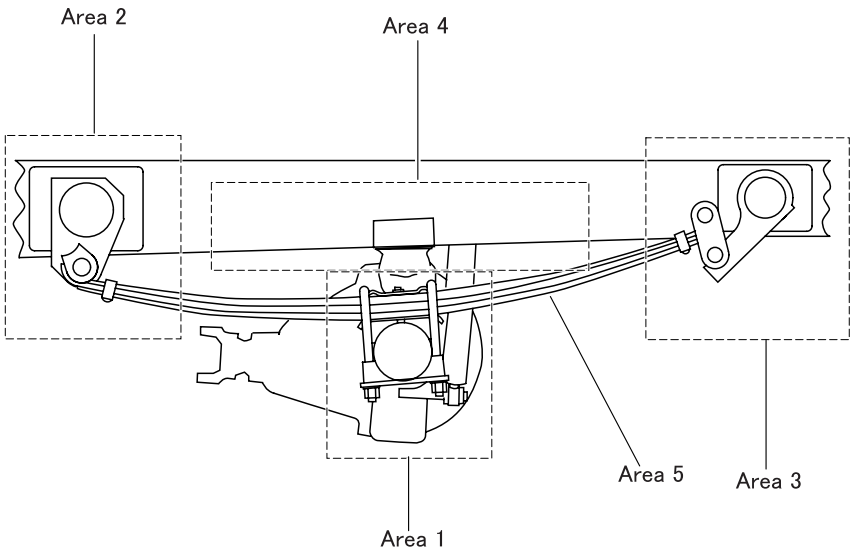
■ Installation: Shock absorber

- Tighten the adjusting nut until the part A in the illustration becomes the following dimension.
  A: 48 mm {1.89 in.}
- Tighten the lock nut to the specified torque.

M E M O

LEAF SPRING

Leaf Spring Assembly Layout

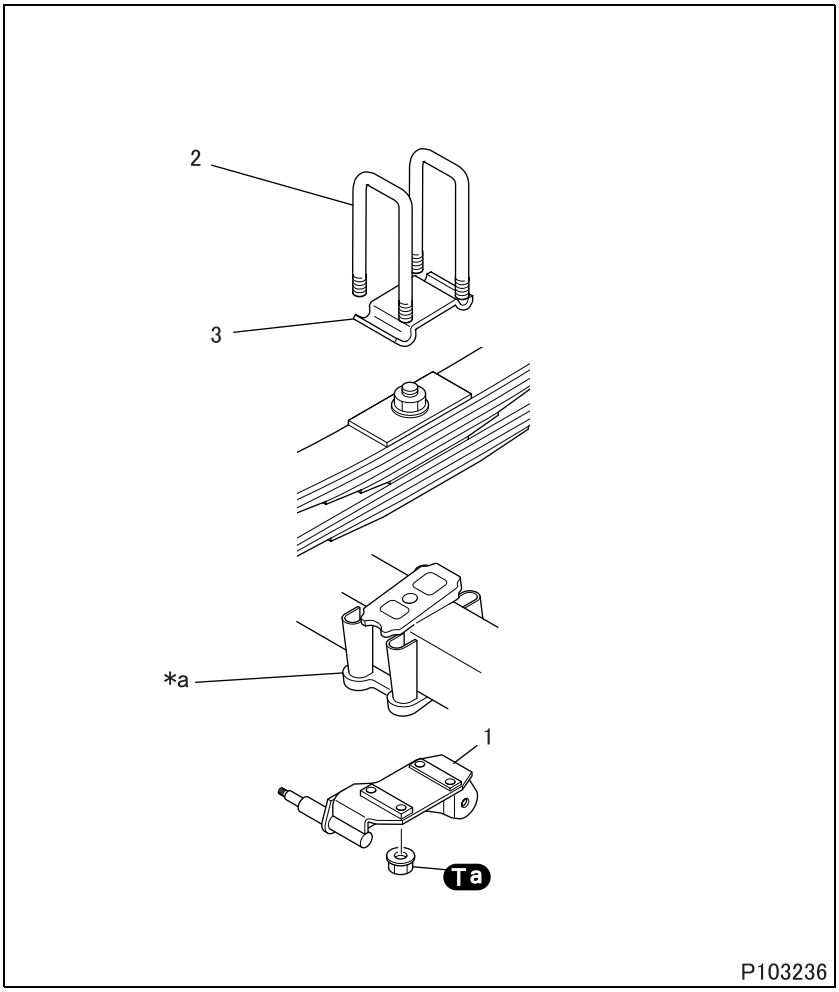


P49758E

- This section divides the leaf spring in 5 areas and describes removal and installation procedures for each area. For information on specific components, see the descriptions for the applicable area.

U-bolt U-bolt nut	Area 1 (center section of leaf spring)
Spring pin Bushing	Area 2 (front section of leaf spring)
Spring shackle Bushing	Area 3 (rear section of leaf spring)
Helper rubber Helper spring stopper	Area 4 (stoppers)
Leaf spring	Area 5 (leaf springs)

Area 1 (center section of leaf spring)



●Removal sequence

1 Stabilizer bracket lower
2 U-bolt
3 Spring pad

***a**: Rear axle

●Installation sequence

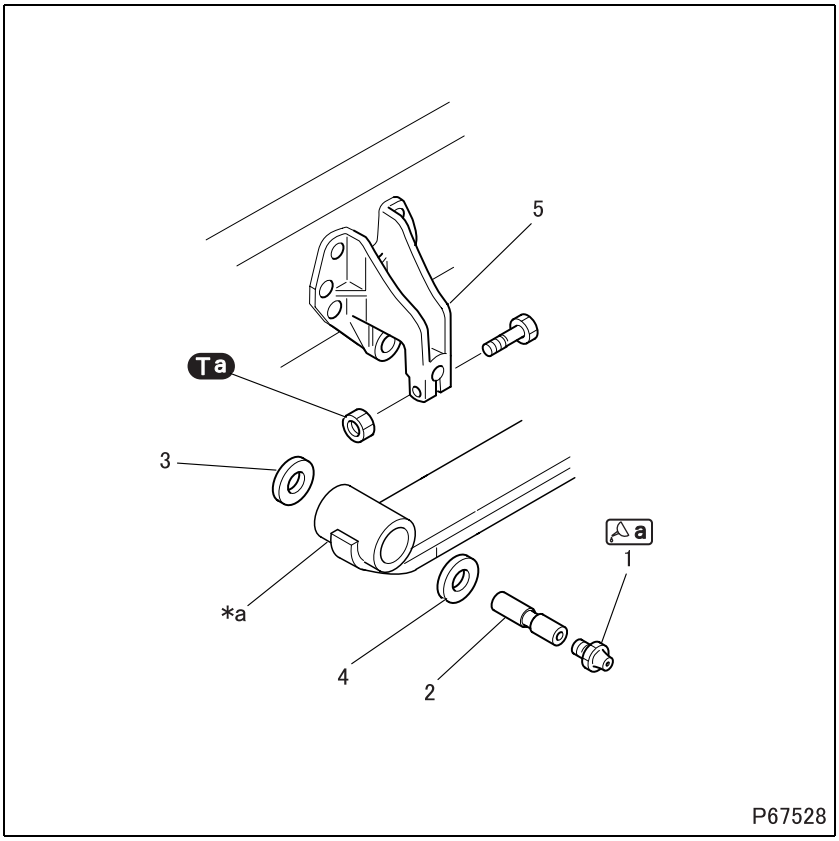
Follow the removal sequence in reverse.

Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (U-bolt mounting)	292 to 394 {215 to 290}	–

LEAF SPRING

Area 2 (front section of leaf spring)



●Removal sequence

1 Grease fitting
2 Spring pin
3 Inboard adjustment washer
4 Outboard adjustment washer
5 Rear spring hanger

***a**: Leaf spring

●Installation sequence

Follow the removal sequence in reverse.

Service standards: mm {in}

Location	Maintenance item	Standard value	Limit	Remedy
2, 5	Clearance between spring pin and rear spring hanger	0 to 0.04 {0.0016}	0.3 {0.012}	Replace
2, *a	Clearance between spring pin and leaf spring bushing	0 to 0.12 {0.0047}	0.3 {0.012}	Replace
5, *a	Clearance between rear spring hanger and leaf spring	0.07 to 1.03 {0.0028 to 0.041}	1.3 {0.051}	Adjust or replace

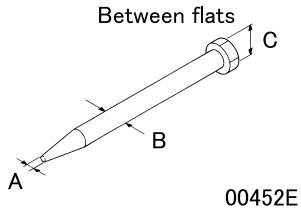
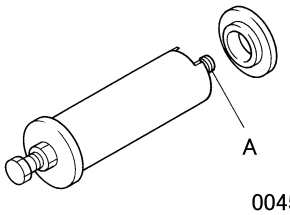
Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (spring pin mounting)	80 to 110 {59 to 81}	–

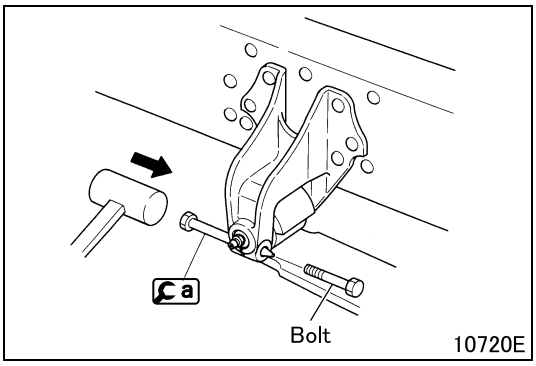
Lubricant and/or sealant

Mark	Points of application	Specified lubricant and/or sealant	Quantity
a	Supply from grease nipple	Chassis grease [NLGI No. 1 (Li soap)]	As required

Special tools (Unit: mm {in})

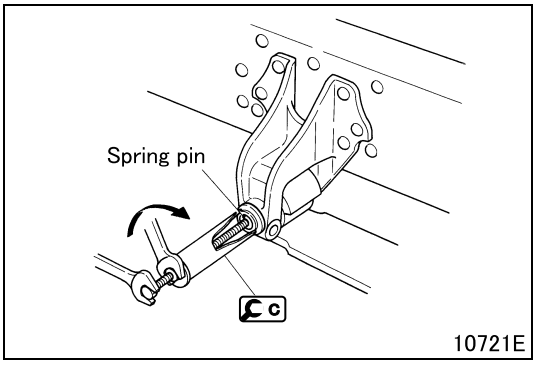
Mark	Tool name and shape	Part No.	Application
a	Shackle pin setting bar A: φ4 {0.16}, B: φ12 {0.47}, C: 17 {0.67}  00452E	MC023419	Removal and installation of spring pin mounting bolt
c	Spring pin remover A: PT 1/8  00453	MH061452	Removal of spring pin

◆Removal procedure◆



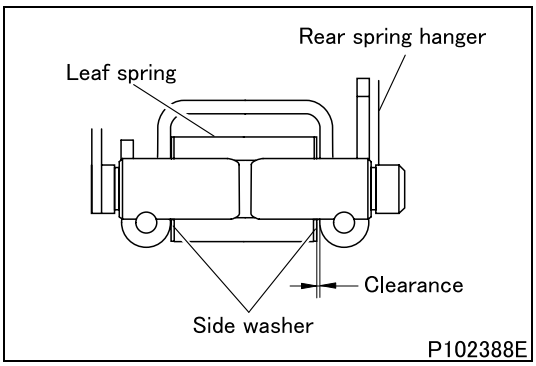
10720E

■ **Removal: Spring pin**



10721E

◆Inspection procedure◆



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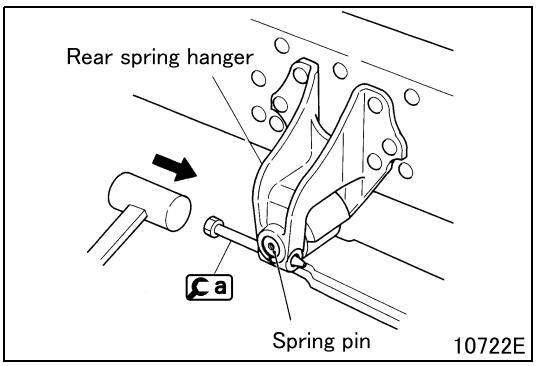
■ **Inspection: Clearance between rear spring hanger and leaf spring**

- Measure the spring-to-hanger clearance using feeler gauge. If the measured value is equal to or exceeds the limit, adjust by means of side washers.

Side washer sizes available (mm {in})

2.8, 3.2, 3.5, 3.8, 4.0 {0.11, 0.13, 0.14, 0.15, 0.16}

◆Installation procedure◆



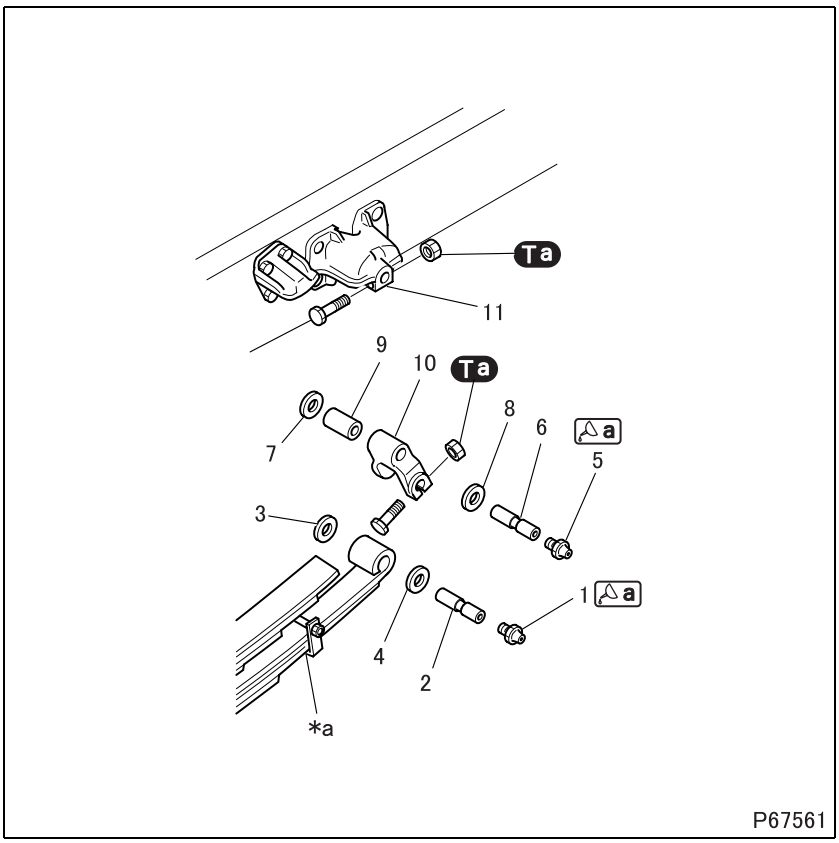
■ **Installation: Spring pin**

- Using a, align the bolt hole in the rear spring hanger with the bolt groove in the spring pin.

M E M O

LEAF SPRING

Area 3 (rear section of leaf spring)



●Removal sequence

1 Grease fitting
2 Spring pin
3 Side washer (for adjustment)
4 Side washer (for adjustment)
5 Grease nipple
6 Spring pin
7 Side washer (for adjustment)
8 Side washer (for adjustment)
9 Bushing
10 Spring shackle
11 Rear shackle hanger

***a**: Leaf spring

●Installation sequence

Follow the disassembly sequence in reverse.

Service standards: mm {in}

Location	Maintenance item	Standard value	Limit	Remedy
2, 10	Clearance between spring pin and spring shackle	0 to 0.04 {0.0016}	0.3 {0.012}	Replace
2, *a	Clearance between spring pin and leaf spring	0 to 0.12 {0.0047}	0.3 {0.012}	Replace
6, 9	Clearance between spring pin and bushing	0.02 to 0.14 {0.00079 to 0.0055}	0.3 {0.012}	Replace
6, 11	Clearance between spring pin and rear shackle hanger	0 to 0.04 {0.0016}	0.3 {0.012}	Replace
10, 11	Clearance between spring shackle and rear shackle hanger	0.07 to 0.73 {0.0028 to 0.029}	1.0 {0.039}	Adjust or replace
10, *a	Clearance between spring shackle and leaf spring	0.07 to 1.03 {0.0028 to 0.041}	1.3 {0.051}	Adjust or replace

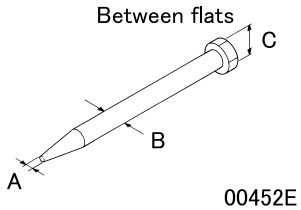
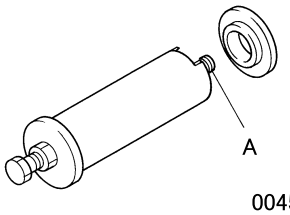
Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (spring pin mounting)	80 to 112 {59 to 83}	–

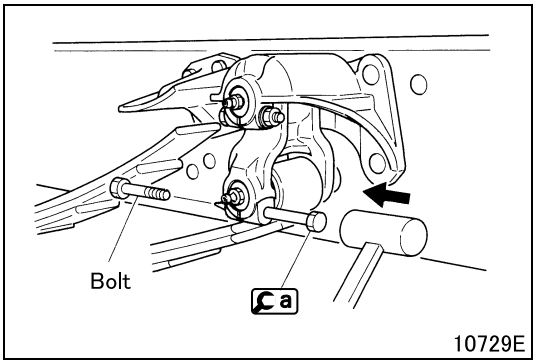
Lubricant and/or sealant

Mark	Points of application	Specified lubricant and/or sealant	Quantity
a	Supply from grease nipple	Chassis grease [NLGI No. 1 (Li soap)]	As required

Special tools (Unit: mm {in})

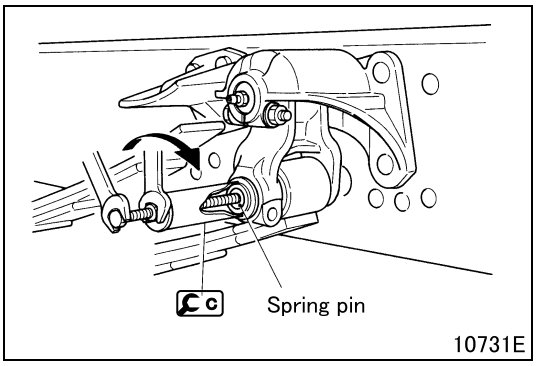
Mark	Tool name and shape	Part No.	Application
a	Shackle pin setting bar A: φ4 {0.16}, B: φ12 {0.47}, C: 17 {0.67}  00452E	MC023419	Removal and installation of spring pin mounting bolt
c	Spring pin remover A: PT 1/8  00453	MH061452	Removal of spring pin

◆Removal procedure◆

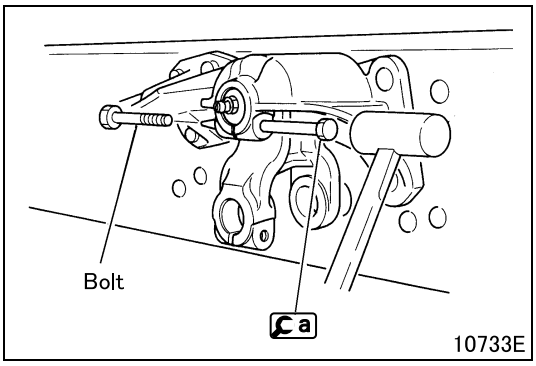


10729E

■ **Removal: Spring pin**

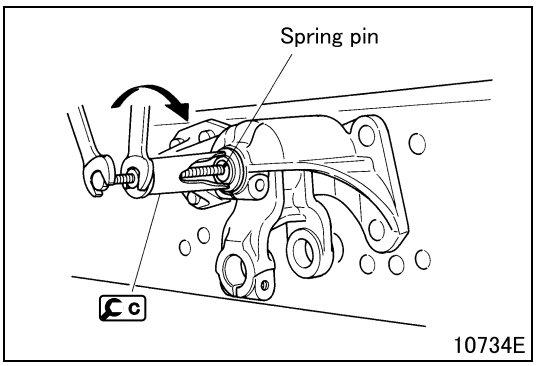


10731E

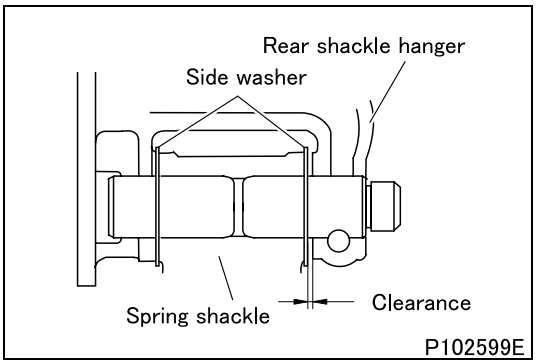


10733E

■ **Removal: Spring pin**



◆Inspection procedure◆

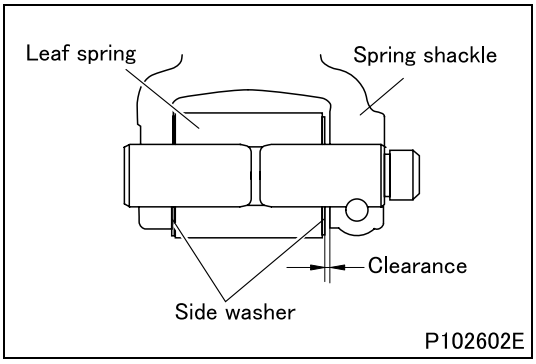


■Inspection: Clearance between spring shackle and rear shackle hanger

- Measure the spring-to-hanger clearance using feeler gauge. If the measured value is equal to or exceeds the limit, adjust by means of side washers.

Side washer sizes available (mm {in})

2.8, 3.2, 3.5, 3.8, 4.0 {0.11, 0.13, 0.14, 0.15, 0.16}



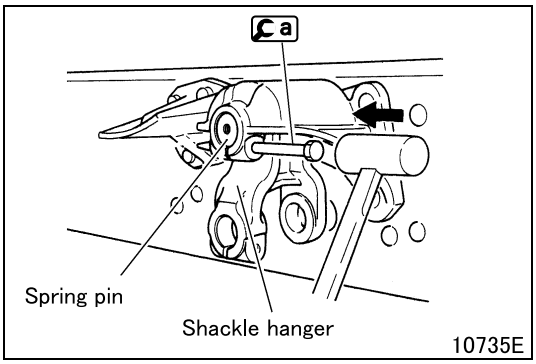
■Inspection: Clearance between spring shackle and leaf spring

- Measure the spring-to-shackle clearance using feeler gauge. If the measured value is equal to or exceeds the limit, adjust by means of side washers.

Side washer sizes available (mm {in})

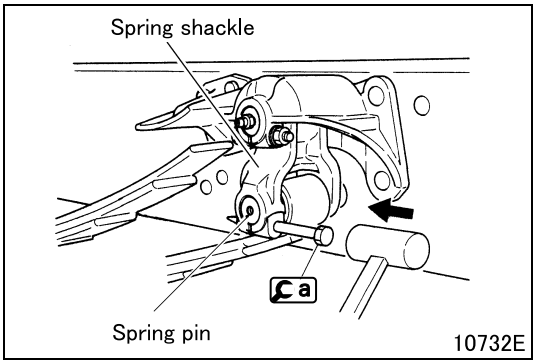
2.8, 3.2, 3.5, 3.8, 4.0 {0.11, 0.13, 0.14, 0.15, 0.16}

◆Installation procedure◆



■Installation: Spring pin

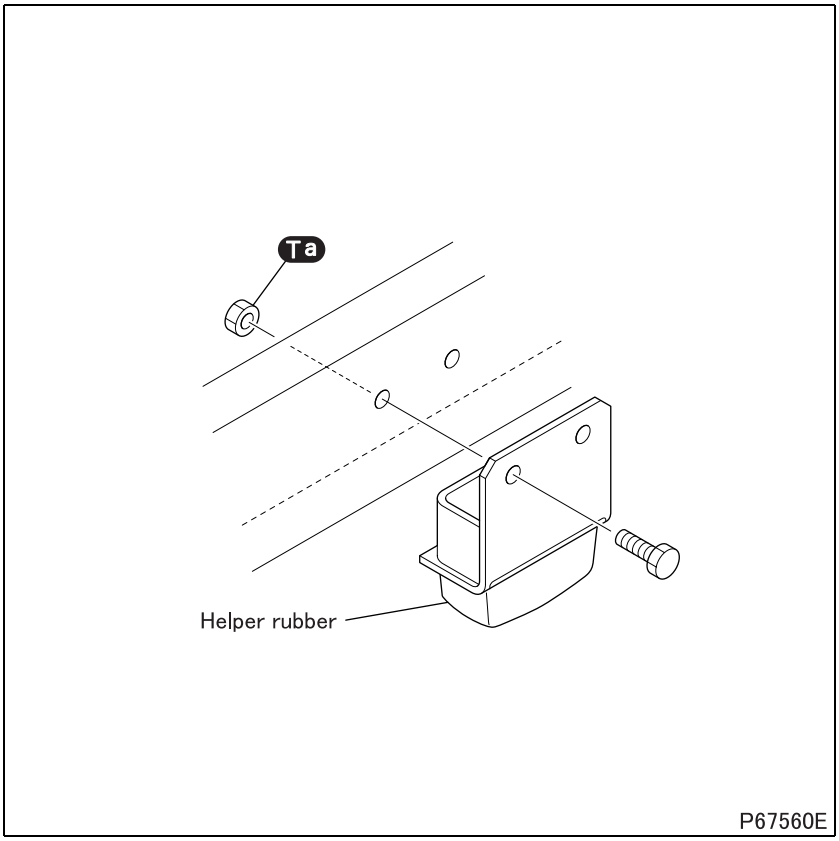
- Using the shackle pin setting bar a, align the bolt hole in the shackle hanger with the bolt groove in the spring pin.



■ **Installation: Spring pin**

- Using the shackle pin setting bar [a], align the bolt hole in the spring shackle with the bolt groove in the spring pin.

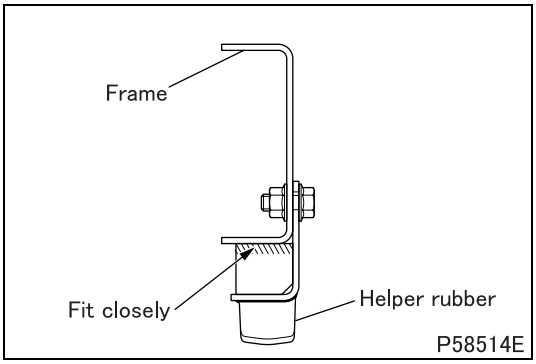
Area 4 (stoppers)



Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (helper rubber mounting)	12 to 15 {8.9 to 11}	–

◆Installation procedure◆



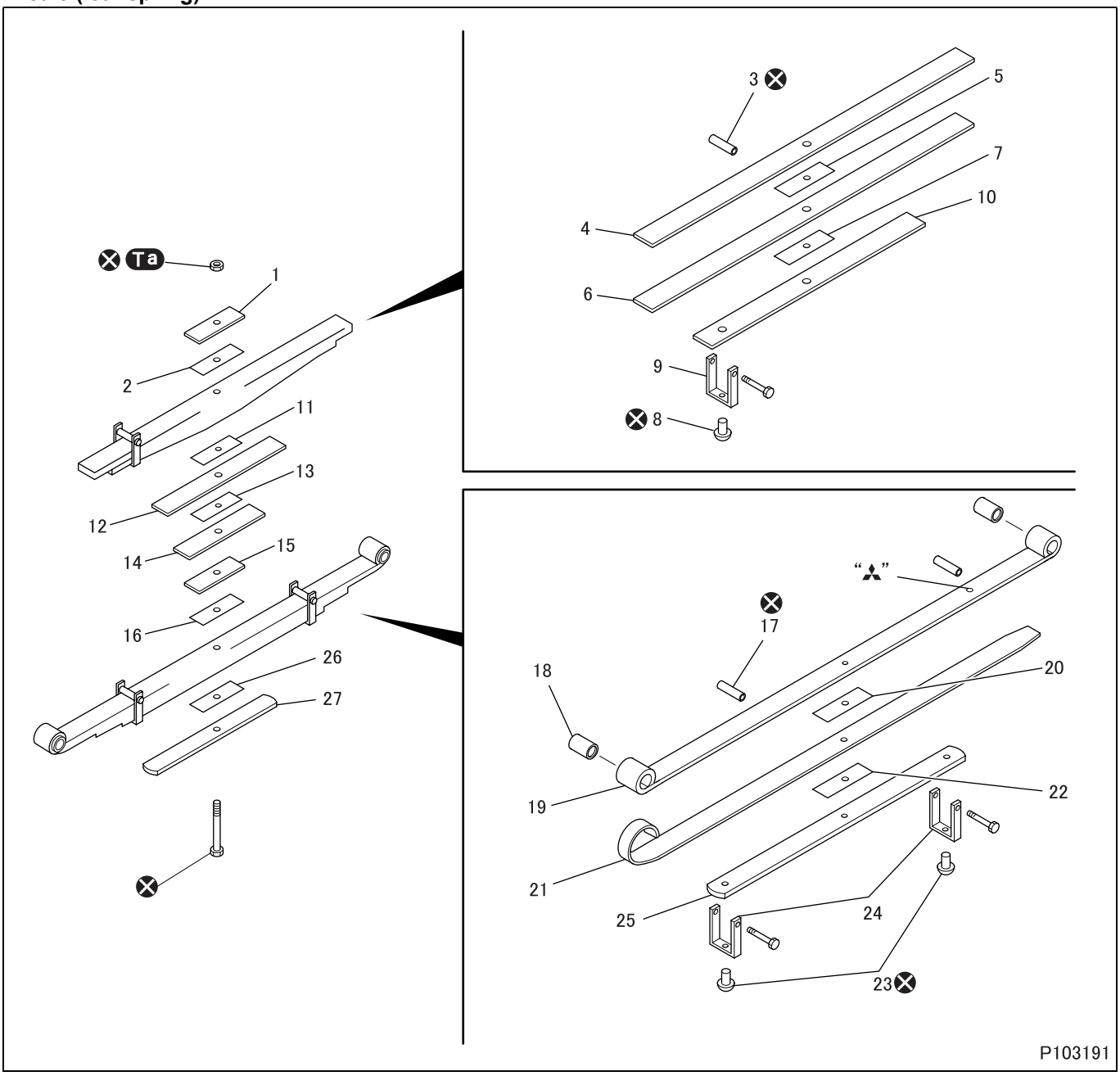
■ Installation: Helper rubber

- Fit helper rubber to the lower face of frame closely as illustrated, then tighten installation bolt and nut.

M E M O

LEAF SPRING

Area 5 (leaf spring)



NOTE

- **The above schematic is only an example. Details may differ depending on vehicle models, such as the number of spring leaves, spacers, and the parts used.**

●Disassembly sequence

1 Spacer
2 Center spacer
3 Pipe
4 Leaf spring (helper)
5 Center spacer
6 Leaf spring (helper)
7 Center spacer
8 Rivet
9 Clip
10 Leaf spring (helper)
11 Center spacer
12 Leaf spring (helper)
13 Center spacer
14 Leaf spring (helper)
15 Spacer
16 Pipe
17 Metal bushing
18 Leaf spring (main)
19 Center spacer
20 Leaf spring (main)
21 Center spacer
22 Rivet
23 Clip
24 Leaf spring (main)
25 Center spacer
26 Leaf spring (main)

⊗: Non-reusable parts

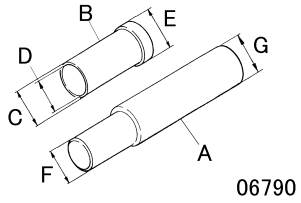
●Assembly sequence

Follow the disassembly sequence in reverse.

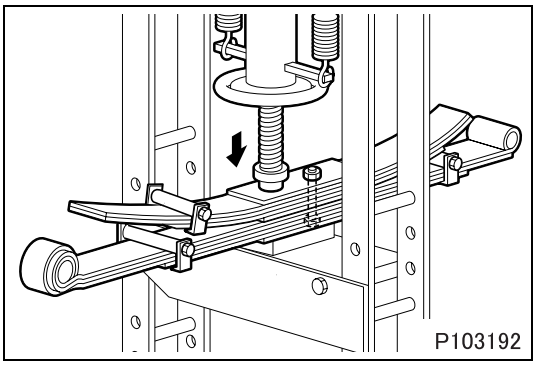
Torque: N·m {lbf·ft}

Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (assembly of leaf spring)	69 to 93 {51 to 69}	–

Special tools (Unit: mm {in})

Mark	Tool name and shape	Part No.	Application
Ca	Bushing installer **A:** Bushing installer A **B:** Bushing installer B  06790 **C**: φ28 {1.10}; **D**: φ25 {0.98}; **E**: φ32.8 {1.29}; **F**: φ25 {0.98}; **G**: φ30 {1.18}	MB999066 A: MB999067 B: MB999068	Removal and installation of metal bushing

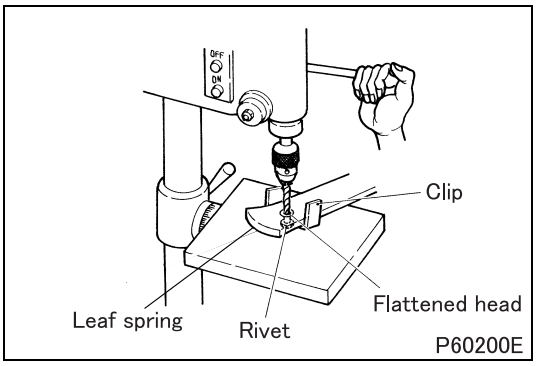
◆Work before removal◆



■ Compression: Leaf spring

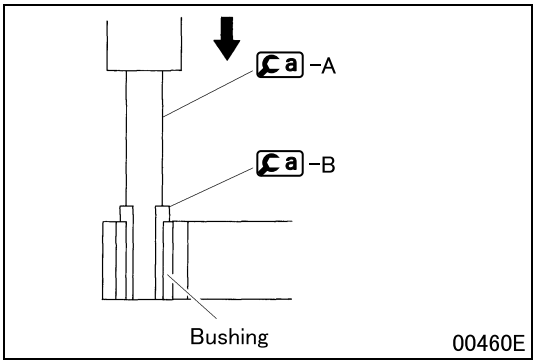
- Using a press, compress the leaf spring as illustrated for subsequent operations.

◆Removal procedure◆



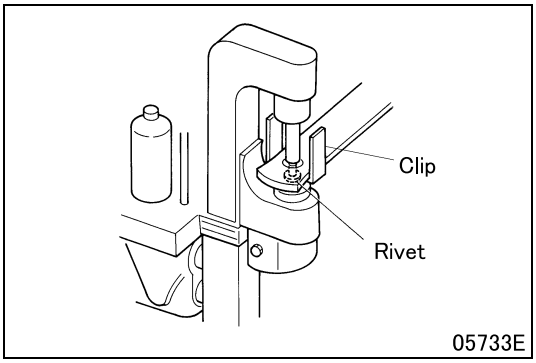
■ Removal: Clip

- Using a drill press, break the flattened head of the rivet and remove the clip from the leaf spring.



■ **Removal: Metal bushing**

◆**Installation procedure**◆

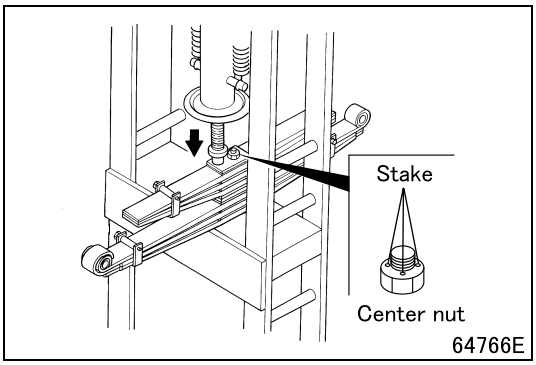


■ **Installation: Clip**

- Using a riveting machine, rivet a clip onto the leaf spring.

■ **Installation: Metal bushing**

- Install the metal bushing in a manner similar to that for removal. (See **"■Removal: Metal bushing"**.)

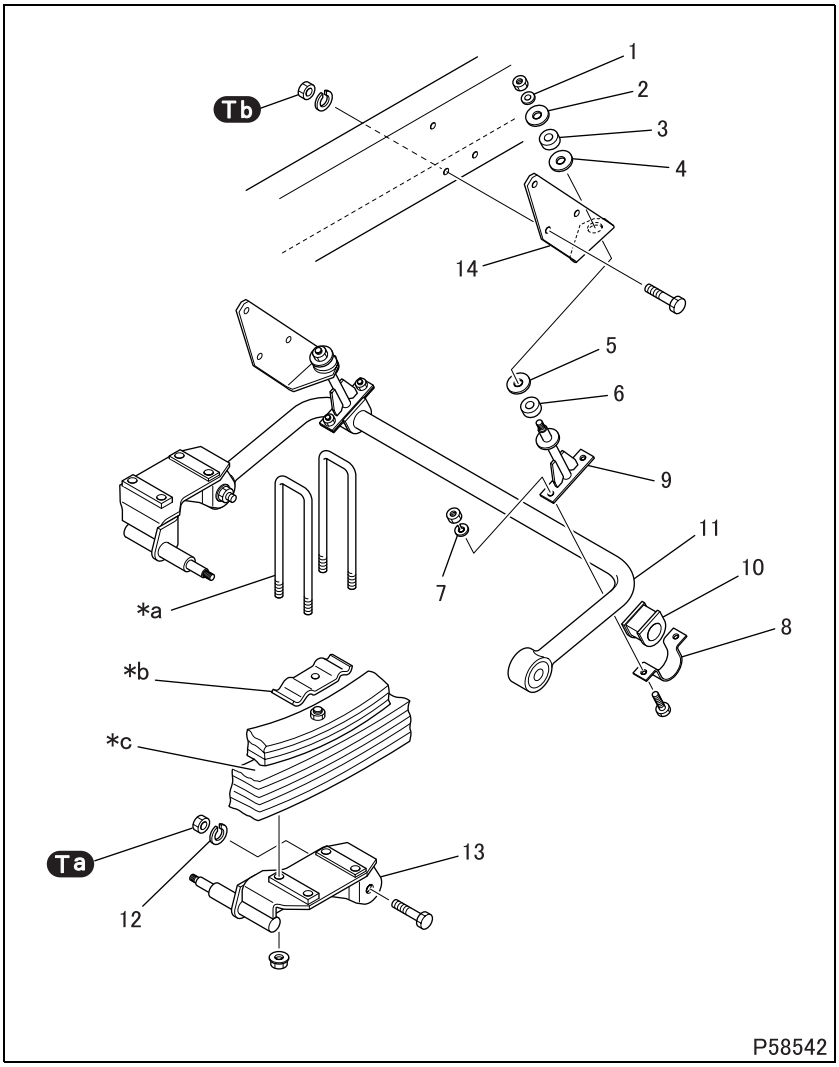


■ **Installation: Leaf spring**

- Pass the bolt to hold the leaf springs together.
- Stack the leaf springs tightly using a press and tighten the nut to the specified torque.
- After installing the nut, stake it at three locations.

M E M O

STABILIZER



●Removal sequence

1 Washer
2 Seat
3 Bushing
4 Seat
5 Seat
6 Bushing
7 Washer
8 Clamp
9 Stabilizer hanger
10 Stabilizer bushing
11 Stabilizer bar
12 Washer
13 Stabilizer bracket lower
14 Stabilizer bracket upper

***a**: U-bolt
***b**: Spring pad
***c**: Leaf spring

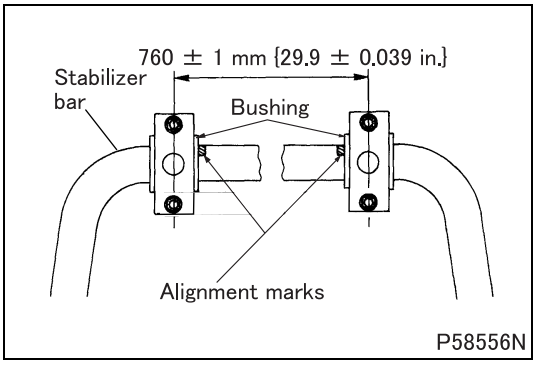
●Installation sequence

Follow the removal sequence in reverse.

Torque: N·m {lbf·ft}

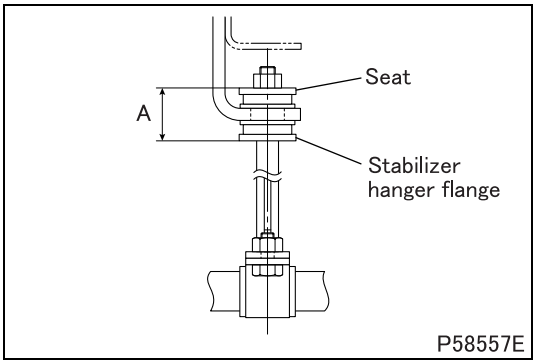
Mark	Parts to be tightened	Torque value	Remarks
Ta	Nut (stabilizer bracket mounting)	410 to 550 {300 to 405}	–
Tb	Nut (stabilizer bracket mounting)	130 to 180 {96 to 130}	–
Tc	Nut (stabilizer hanger mounting)	60 to 80 {44 to 59}	–

◆Installation procedure◆



■ Installation: Stabilizer bushing

- Mount stabilizer bushings with their end surfaces aligned with marks on stabilizer bar.



■ **Installation: Stabilizer hanger**

- Tighten the mounting nut until the part A in the illustration becomes the following dimension.
  A: 48.4 mm {1.89 in.}