

Chapter Three Suspension System

Section One Specifications

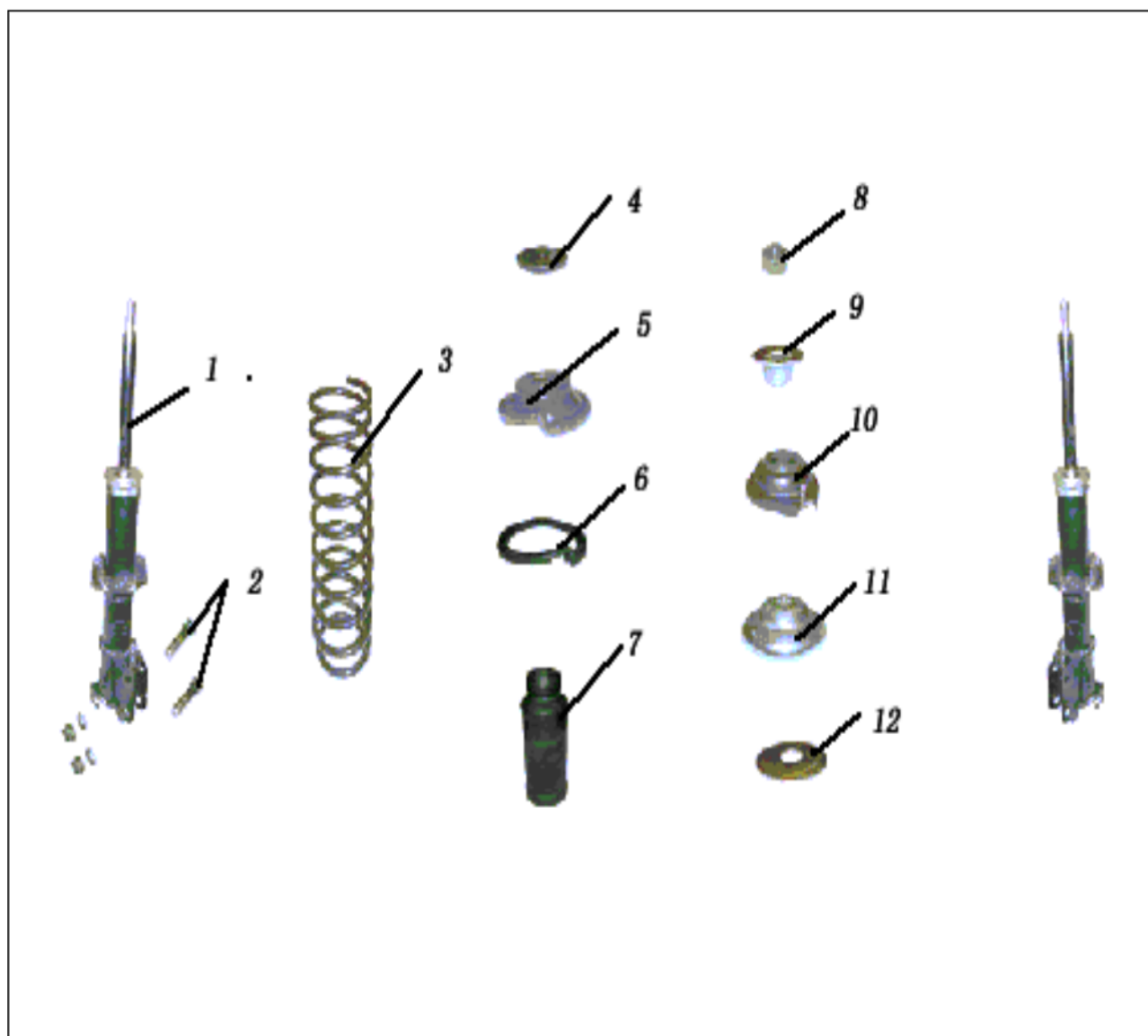
Tautness for Various Fasteners

Part No.	Description	Quantity	Installation position	Torque (N·m)
Q150B1010	Connecting bolts	2	Braking tube and clamp	13-17
Q151B1255	Bolts	3	Rear absorber and rear shaft M12×1.25, rear shaft horizontal supporting rod and car body	70-80
Q151B1285	Bolts	4	Rear towing arm and rear shaft	76-90
Q151B1290	Bolts	2	Lower swing arm and car body M12×1.25	76-90
Q151C1040	Bolts	2	Lower swing arm and knuckle M10×1.25	55-65
Q151C1080	Bolts	2	Lower swing arm and car body M10×1.25	60-70
Q151C1255	Bolts	4	Front sliding column and knuckle M12×1.25	78-90
Q1421030	Hexagon head bolts and spring washer assembly	2	Supporting frame and car body M10×1.25	35-45
Q1421035	Hexagon head bolts and spring washer assembly	4	Supporting frame fixing stabilizing rod M10×1.25	40-50
Q1440616	Screws	2	Supporting frame and car body	7-9
CQ32608	Screw nuts	6	Front sliding column and car body	22.5-27.5
CQ32610	Locking screw nuts	4	Suspended supporting frame and rear transit supporting frame M10×1.25	55-65
CQ32612	Screw nuts	2	Stabilizing rod and lower swing arm M12×1.25	60-70
Q1420820	Hexagon head bolts and spring washer assembly	8	Brake and rear shaft	22-26
Q361B12	Screw nuts	10	Rear absorber and car body; rear towing arm and car body; rear shaft horizontal supporting rod and car body; rear shaft horizontal supporting rod and rear shaft	70-80
S11-3301201	Screw nuts with washers	4	Rear towing arm and rear shaft	75-85

Section Two Front Suspension Frame

Maintenance of the front suspension frame

I. Configuration Diagram of Front Suspension Frame



1、 Dampener; 2、 Joining bolt; 3、 Spiral spring; 4、 Thrust bearing; 5、 Spring upper stand washer; 6、 Spring lower stand washer; 7、 Spacing block; 8、 Screw nut; 9、 Washer; 10、 External connection sleeve; 11、 Dampening washer; 12、 Thrust bearing stand

II. Removal and installation of the front balanced beam and the rubber sleeves for the balanced beam

Removal

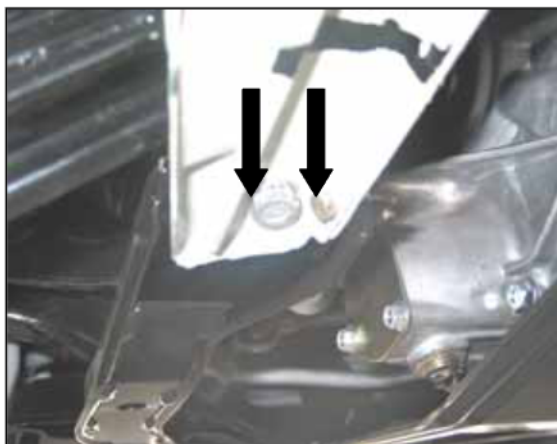
1、Loosen the two fastening screw nuts of the supporting frame and car body. There is one supporting frame on either side.

Attention: The fastening screws of the supporting frames and guard plates should be removed.

2、Loosen the two fastening screw nuts linking the balanced beam supporting frame with the car body.

3、Remove the joining bolts of the balanced beam and the lower swinging arm.

4、Remove the balanced beam and the rubber sleeve.



Steps for installation:

1. Do the installation by referring to the dismantling steps.

2. Points of attention:

① In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening.

② The screws should be tightened to the specified torques after the installation.

III. Spiral spring and dampener (supporting column)

(I) Before removing the supporting column, check the performances of the supporting column

Check and adjust the tire air pressure as specified; push sidewise and shake the front part of the car for 3—4 times with equal forces applied to each pushing. When the action of pushing and bouncing back takes place, pay attention to the resistance of the supporting column and the frequencies of the back bouncing of the car body. Compare the resistances as well as the frequencies of bounces for the columns (dampeners) on the left and right sides, which should be identical. If the supporting column (dampener) works normally, the car will stop immediately as soon as the hand-push forces are released or after the back bounces for 1—2 times.

(II) Removal and installation of the front absorber assembly

Removal

1. Remove the wheels.
2. Remove the E-shaped ring for fastening the brake soft tube, and take off the tube from the

supporting frame.

3. Remove the two fastening bolts for the absorber and car frame.

4. Remove the joining bolts for the absorber and the steering knuckle.

5. Remove the absorber assembly.



Steps for installation:

1. Do the installation by referring to the dismounting steps.

2. Points of attention:

①. In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening.

②. The screws should be tightened to the specified torques after the installation.

(III) Inspections**1、Checking the dampener**

Check to see if there is any oil leakage on the dampener. If any, replace the dampener. Check the dampening force of the dampener. If not qualified, replace the dampener.

Check to see if the thrust bearing is excessively worn, has any abnormal operational noise or is jammed one way or the other. Check to see if the lower stand of the spring has any cracks or deformation. Check to see if the spacing block is damaged. Check to see if the suspension reset spring spacing washer is worn, cracked or deformed. If so, replace the defective parts.

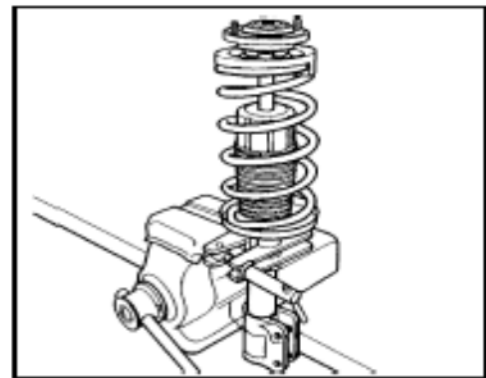
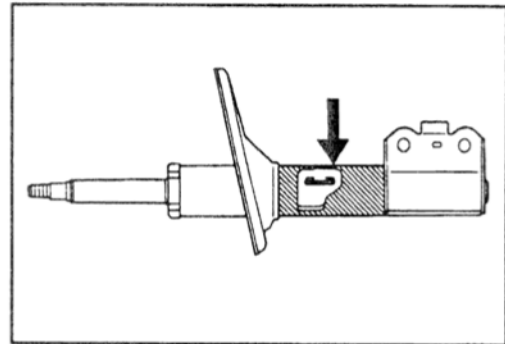
Attention: When disposing the dampener, please follow the procedures described below.

2、Disposal of the front dampener

(1) Stretch the dampener rod as much as possible.

(2) Drill hole to discharge the air inside the dampener cylinder.. Drill a hole on the cylinder

body as shown in the figure to discharge the air inside.



Attention: The discharged air is harmless. But iron dusts may fly all around when the hole is drilled.

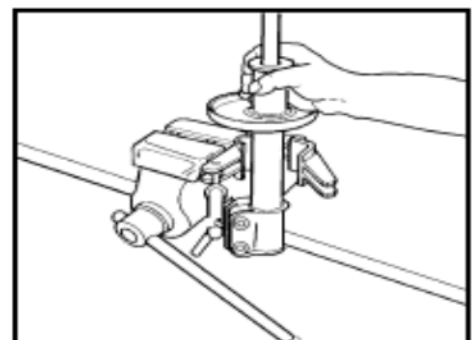
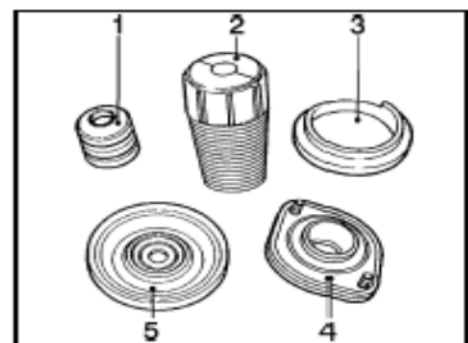
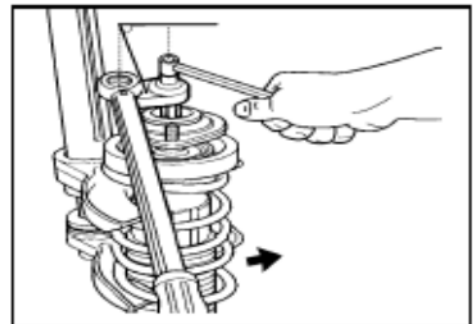
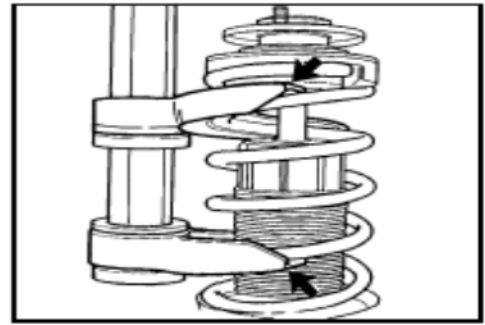
(IV) Dismounting and installation of absorption supporting columns, column parts and/or springs

1. If the installation fixtures are unable to be fastened onto the operation platform, they can be fastened in the bench vise.

2. Install a pair of jaws with diameter matching that of the springs onto the spring compressor.

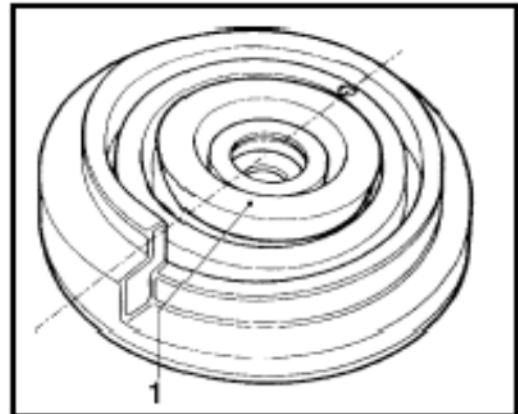
Removal

1. Loosen the spring compressor and place the jaws between the spring tops and bottoms (as shown by the arrow).
2. Press the spring till it is separated from the upper and lower spring stands.
3. Use the ratchet wrench (as shown in the Figure) to dismount the absorber supporting column stand restriction device and the washer from the piston connecting rod.
4. Remove the upper spring stand with absorption block.
5. Remove the spring compressor with the spring and the dustproof cover.
6. Dismount the baffle block.
7. Check the dismantled parts and components for the extent of tears and wears.
 - 1) The baffle block
 - 2) The dustproof cover
 - 3) The absorption block
 - 4) The absorber supporting column stand
 - 5) The upper spring stand with bearing and restriction device
8. In the case that the used absorber needs to be replaced, remove the absorber and then dismount the lower wheel speed sensor wire bundle frame from the used absorber and install it on the new absorber (if there is no wheel speed sensor wire bundle frame, the absorber can be replaced directly).



Steps of installation:

1. Install the new absorber in the installation fixture.
2. If the used spring needs to be replaced, loosen the spring and then take the used spring out from the spring compressor.
3. Insert the new spring into the spring compressor with a ring being left for the upper section and one and a half rings being left for the lower section.
4. Press the spring to make the spacing between the two jaws ≤ 120 mm.

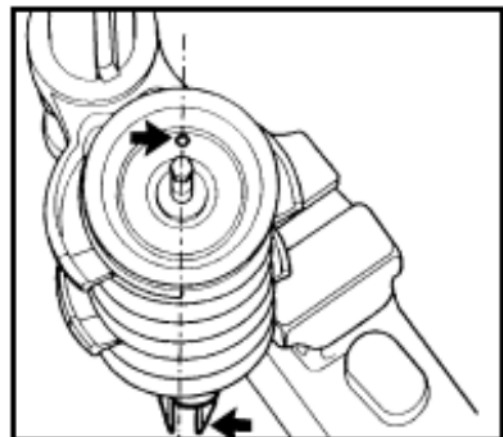
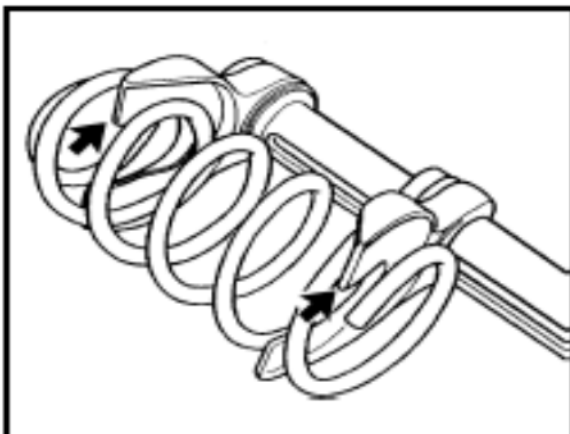
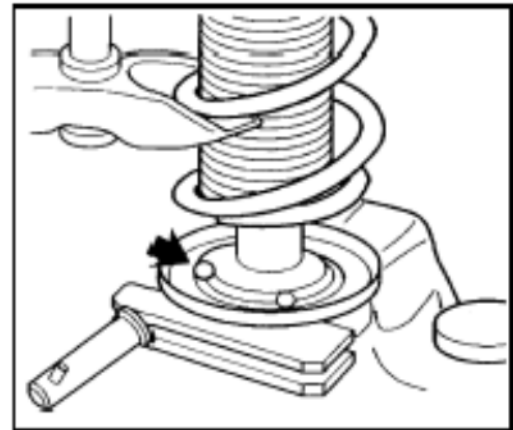


5. Make sure the position of the baffle block restriction device (1).
6. Install the baffle block and pull the piston rod to the bottom.
7. Place the spring onto the spring stand.

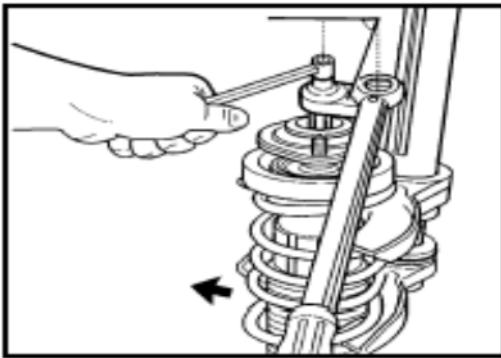
Cautions:

The end of the spring must be within the position restriction hole (as shown by the arrow).

8. Install the upper spring stand with absorption block so as to make the punched hole have a 180 degree bias from the lower spring supporting column position (as shown by the arrow).



9. Install the separation sheath bearing and the positioning device.
 10. Make use of new nuts for tightening against looseness.
 11. Tighten the new screw nuts.
- Cautions:**
The torque wrench should be used in the perpendicular manner (as shown in the figure).



IV. Removal and installation of the lower swinging arm assembly

Removal

- 1) Remove the wheels.



- 2) Remove the balanced beam and rubber sleeve assembly.

Attention: When removing the balanced beam, the assembly is to be removed, and the supporting frame of the balanced beam is to be removed.

- 3) Remove the joining bolt for the steering knuckle and the lower swinging arm.
- 4) Remove the joining bolt for the car body and the lower swinging arm.
- 5) Remove the car body lower swinging arm assembly.

Steps of installation:

1. Do the installation by referring to the steps of dismounting.

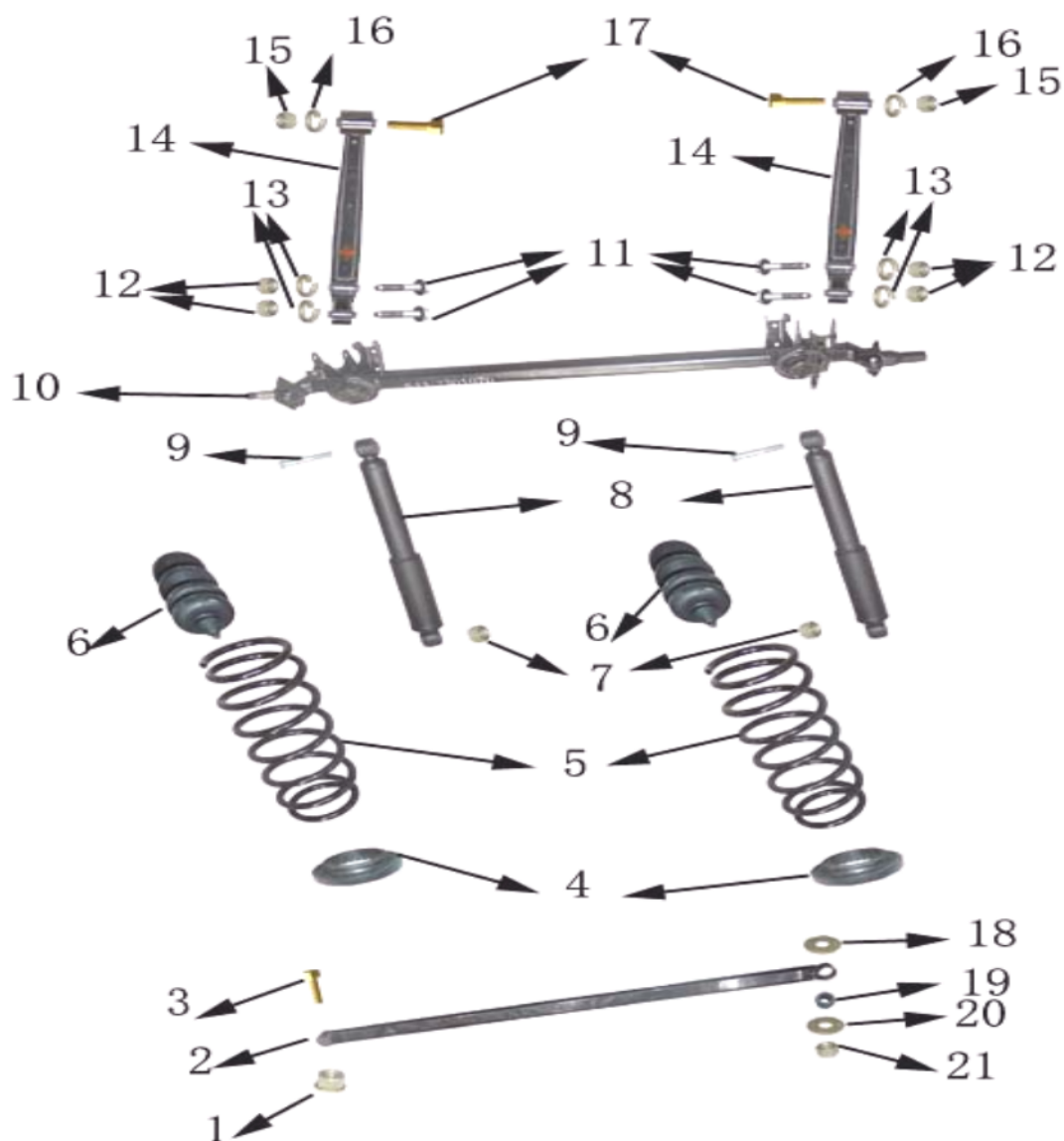
2、Points of attention:

- ① In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening
- ② The screws should be tightened to the specified torques after the installation.

Section Three Rear Suspension Frame

Rear Suspension service

I. Rear Suspension parts



1. 7. 12. 15. 21. Screw nuts; 2. Horizontal stabilizing bar; 3. 9. 11. 17. Bolts; 4. Lower supporting stand; 5. Spiral spring; 6. Spacing block; 8. Damper; 10. Rear bridge; 13.16. Spiral washer; 14. Left and right swinging arm; 18.20 Washers; 19 Sleeve

II. Dampener

Removal

- 1、Lift up the car and remove the bolts joining the dampener with the car bridge.
- 2、Remove the joining bolt for the dampener and the car body.
- 3、Remove the dampener assembly.



Steps of installation:

1. Do the installation by referring to the steps of dismantling.
2. Points of attention:

① In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening.

②The screws should be tightened to the specified torques after the installation.

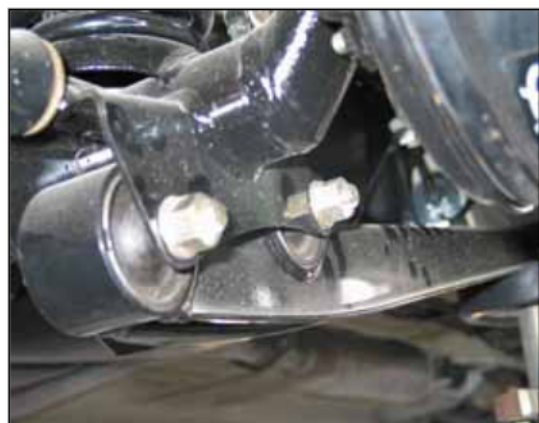
III. Vertical swinging arm and its sleeve

Removal

- 1、Remove the left and right rear wheels.



- 2、Remove the joining bolt for the vertical swinging arm and the rear bridge.



3、Remove the bolts fastening the vertical swinging arm and the car body.

4、Remove the rear swinging arm.

Steps of installation:

1. Do the installation by referring to the steps of dismounting.

2. Points of attention:

- ①In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening.
- ②The screws should be tightened to the specified torques after the installation.



Inspections

Check to see if the swinging arm is damaged or deformed; check if there are any cracks or serious wears on the swinging arm sleeve.

The sequence for the installation procedures is the opposite to those for removal. Tighten the related bolts with the specified torques. Attention: when the front sleeve is installed, the cut slots on the sleeve should face forward and rearward

IV、Removal and installation of the horizontal

stabilizing rod and rear bridge

Removal

1、Lift up the car and remove the rear wheels and the brake drums. Remove the E-shaped ring and brake soft tube from the rear bridge supporting frame. Remove the oil inlet pipe of the brake branch pump. Remove the rear brake base plate and the manual brake pulling wire. Use a jack lift to lift the center of the rear bridge.



2、Removal and installation of the rear bridge horizontal stabilizing rod

1) Remove the joining bolt for the horizontal stabilizing rod and the car body.



2) Remove the joining bolt for the horizontal stabilizing rod and the rear bridge.



Steps of installation:

1. Do the installation by referring to the steps of dismantling.

2. Points of attention:

① In the screw tightening process, the fastening bolts controlled by torque + corner tightening submission limits should be replaced after each action of loosening.

② The screws should be tightened to the specified torques after the installation.

3) Remove the dampener and the spiral spring.



4) Remove the rear bridge assembly.