Service Manual For CHERY QQ6

(Chassis)

After Sales Service Department of Chery Automobile Sales Co., Ltd

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Chapter 1 Brake System

I. System Maintenance Parameters

1. Brake disc check:

The friction surface of brake disc should be flat and has no apparent grooves; otherwise, replace it.

2. Thickness check

The standard thickness of front disc (ventilation disc) is 17 mm with service limit of 15 mm; when exceeding the service limit, replace it.

3. Brake lining thickness check

Standard thickness of front brake lining shall be 10 mm, service limit shall be 3 mm, and the remaining thickness of limit of brake pad thickness shall be not less than 3mm.

Standard thickness of rear brake lining shall be 5 mm, service limit shall be 1 mm, and the remaining thickness of limit of brake pad thickness shall be not less than 1 mm.

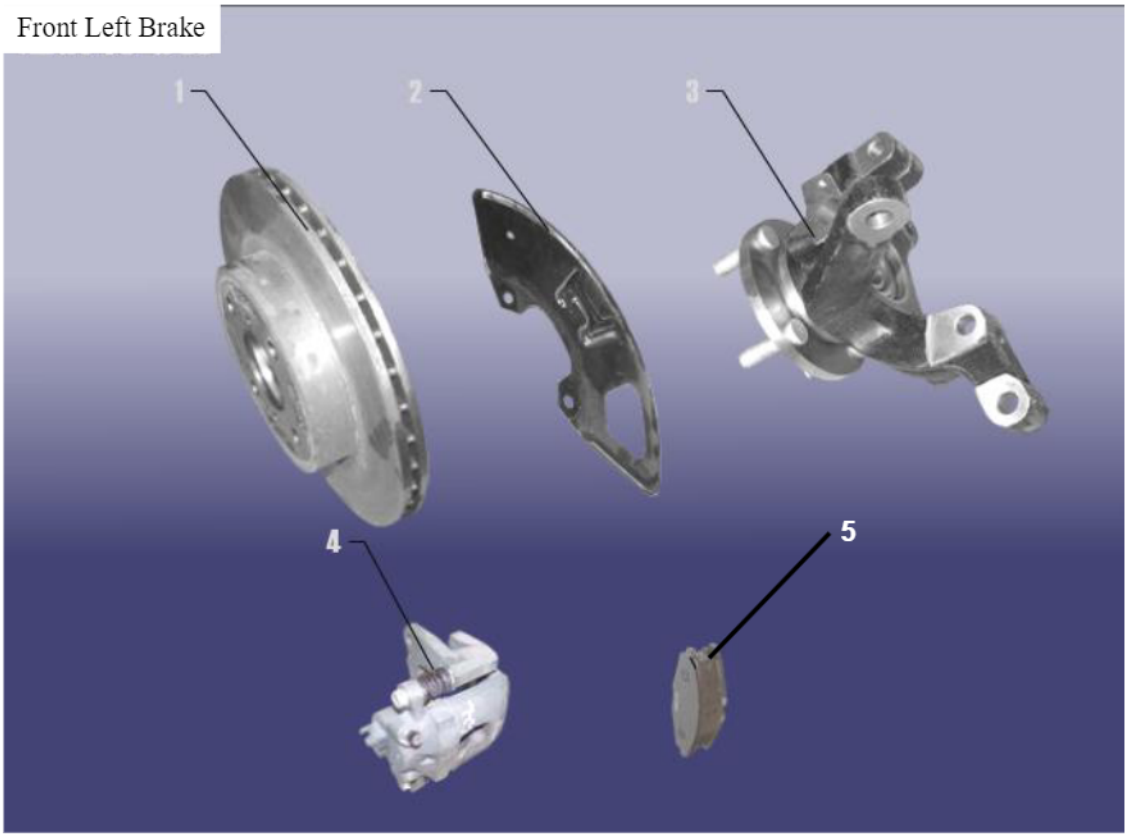
4. Brake disc runout check

Check the brake disc side face runout with a dial gauge. The service limit of front disc is 0**.03**mm, and, if exceeding the limit, replace the disc.

Important notice:
After completion of replacing friction lining or brake disc, stop down brake for several times to enable breaking-in between brake lining and brake disc. Make sure safety!
After replacing brake lining, check brake fluid level if is between MIN and MAX.

Disassembly/Reassembly and Maintenance of Front Brake and Brake Caliper

1. Structural Diagram of System



Structural Diagram of Front Brake Assy

(1) Brake Disc
(2) Dust Cover
(3) Wheel Hub Bearing Unit
(4) Caliper Assy
(5) Friction Lining
(6) Steering Knuckle

2. Preparation

Tools: ratchet wheel, lug bar, 13#, 14#, 16#, 18#, 19#, 32# sleeves, 10#, 13#, 14#, 16# box wrenches, vice, torque spanner, surveying rod.
Accessories: brake fluid

3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 The brake fluid is noxious. If it contacts your skin or eye(s) by careless, please use a lot of clean water to wash the skin or eye(s), and go to see a doctor in time, if necessary.
3.3 Waste brake fluid shall be put in vessels. DO NOT pour the fluid into the sewage system or store the fluid together with the domestic wastes.
3.4 DO NOT step on the brake pedal and move the vehicle during the disassembly/reassembly operation.
3.5 DO NOT make the friction lining or friction disc stained with the oil/fluid which may reduce the braking effeciency.

4. Removal and Maintenance

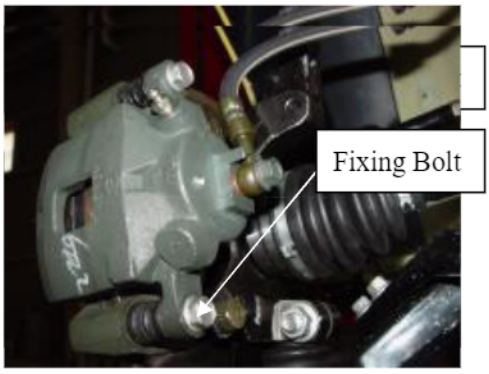
4.1 Remove the tightening nuts from tire with a 19# torque spanner or attached wrench, and the take off the tire.
Torque: 110±10N.m.



4.2 **(Check the thickness of friction lining)** Unscrew the fixing bolt as shown in the picture with a 14# torque spanner and a sleeve.
Torque: 22-23N.m.



4.3 Unscew the fixing bolt as shown in the picture with a 14# torque spanner and a sleeve.



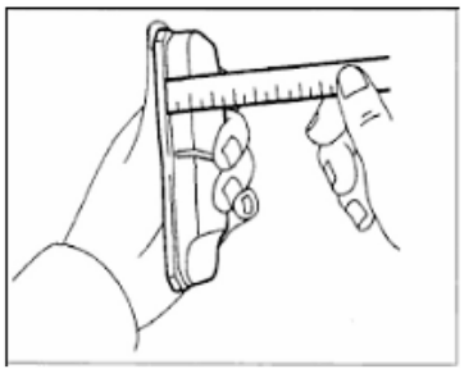
4.4 Unscrew the brake caliper housing.



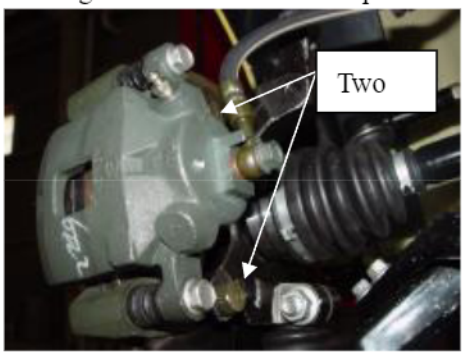
4.5 Take off two friction linings.



4.6 Measure the thickness of friction lining. If the thickness is below 3 mm, **please replace it in time, and the lining shall be replaced in pairs.**

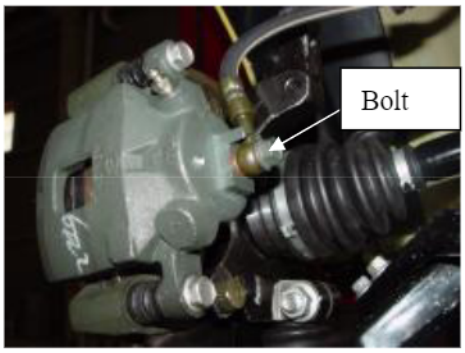


4.7 **(Maintenance of brake wheel cylinder)** Unscrew two fixing bolts as shown in the picture below with a 18# torque spanner and a sleeve.
Torque: 74-91 N.m



4.8 Unscrew the bolt as shown in the picture below with a 13# torque spanner, and then take off the caliper assy.

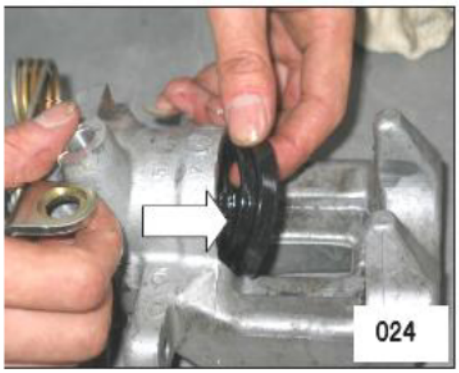
CAUTION: The brake fluid is noxious. DO NOT splash the brake fluid to your cloth or skin when the brake hose was removed



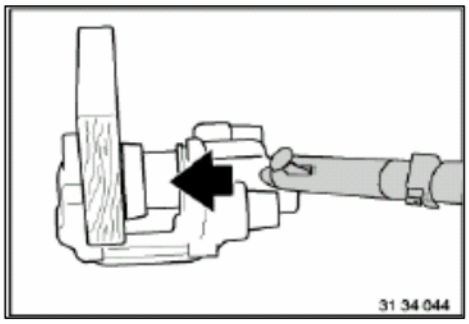
4.9 Detach the caliper assy with a 14# spanner.



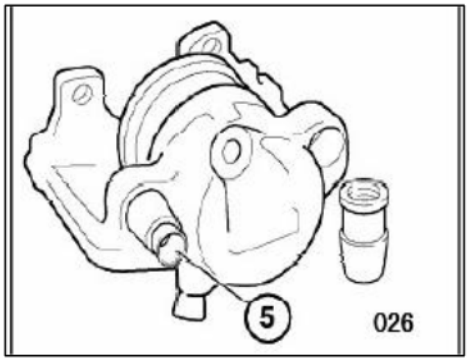
4.10 Remove the dustproof seal and check the damage of dustproof seal. If necessary, replace it. Clean the contact surface of brake piston and apply a thin layer of muffler paste. Attention that the dustproof seal is NOT allowable to contact the muffler paste because it may make the seal swell.



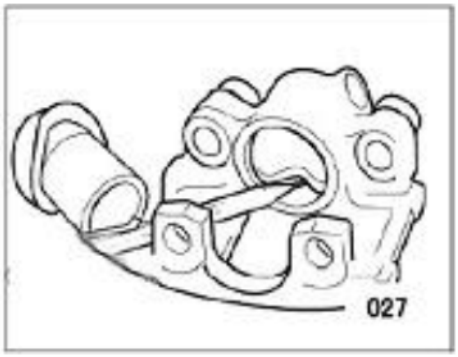
4.11 Remove the piston. Prepare a wood plate applicable to block the piston, and place the plate into the position between the piston and caliper wall. Carefully press out the piston via the connecting hole with the compressed air. Place a protective plate (hard wood, etc) into the notch of brake caliper to protect the piston.
CAUTION: DO NOT hole the piston with your fingers—Clamped Hazard! It is unallowable to remove the caliper piston as desired. It can be removed and reinstalled only by profeesionals or under the dirctions of professionals.



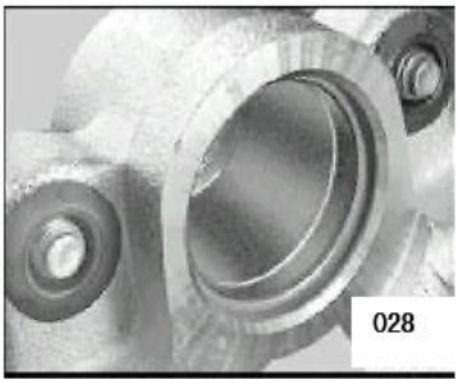
4.12 Check the guide sleeve. Push the guide sleeve by hand, and the sleeve shall move flexibly and freely. If clamped or inflexible, replace it. Attention that lubricating grease shall be applied on the guide sleeve when reassembling.



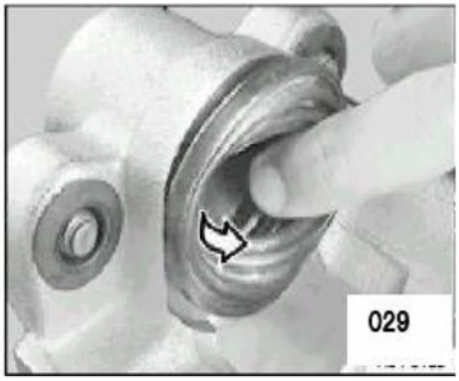
4.13 Carefully remove the seal ring with a plastic needle, and clean the brake cylinder and parts with alcohol. And dry them with the compressed air. Carefully check the brake cylinder, piston and flange surface. It is unallowable to machine the brake cylinder and piston.



4.14 **(Installation of brake wheel cylinder)** Apply a thin layer of brake cyliner paste on the cylinder body, plunger and seal collar. Install the seal ring into the ring groove at the rear of brake cyliner. Install the dustproof seal into the front ring groove, and press it completely into the groove.

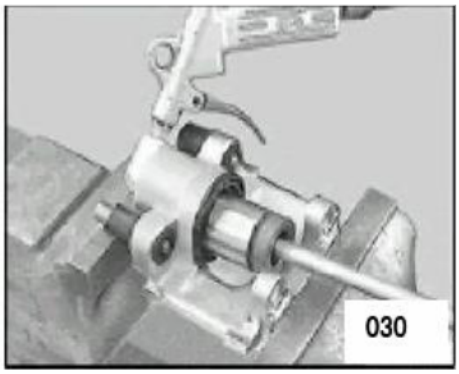


4.15 Keep the area between dustproof seal and caliper housing dry. DO NOT contact the brake cylinder paste or brake fluid in order to ensure the proper position of dustproof seal.

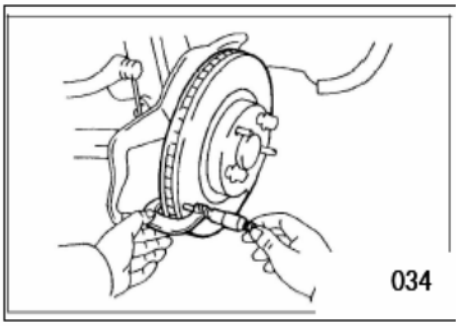


4.16 Secure the brake piston with the reinforcement parts which is sold in market, and slightly press it to the dustproof seal. Apply the compressed air (max. 3.0Bar) to blow the dustproof seal, and then cover the piston with a ring.

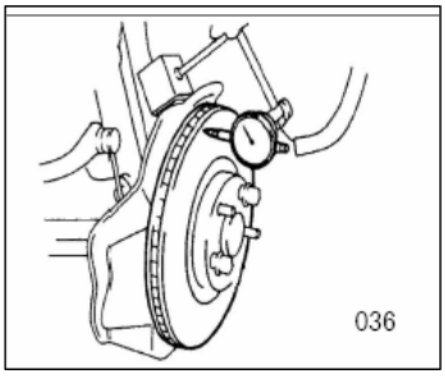
CAUTION: IMMERSE THE DUSTPROOF SEAL AND PISTON WITH THE BRAKE FLUID TO MAKE THE SEAL MORE EASILY THROUGH.



4.17**(Brake disc check)** Check the thickness of brake disc. If below the min. thickness, replace it. CAUTION: Replace two brake discs on the same axle at the same time. Replace the friction lining at the same time when replacing it with a new brake disc.



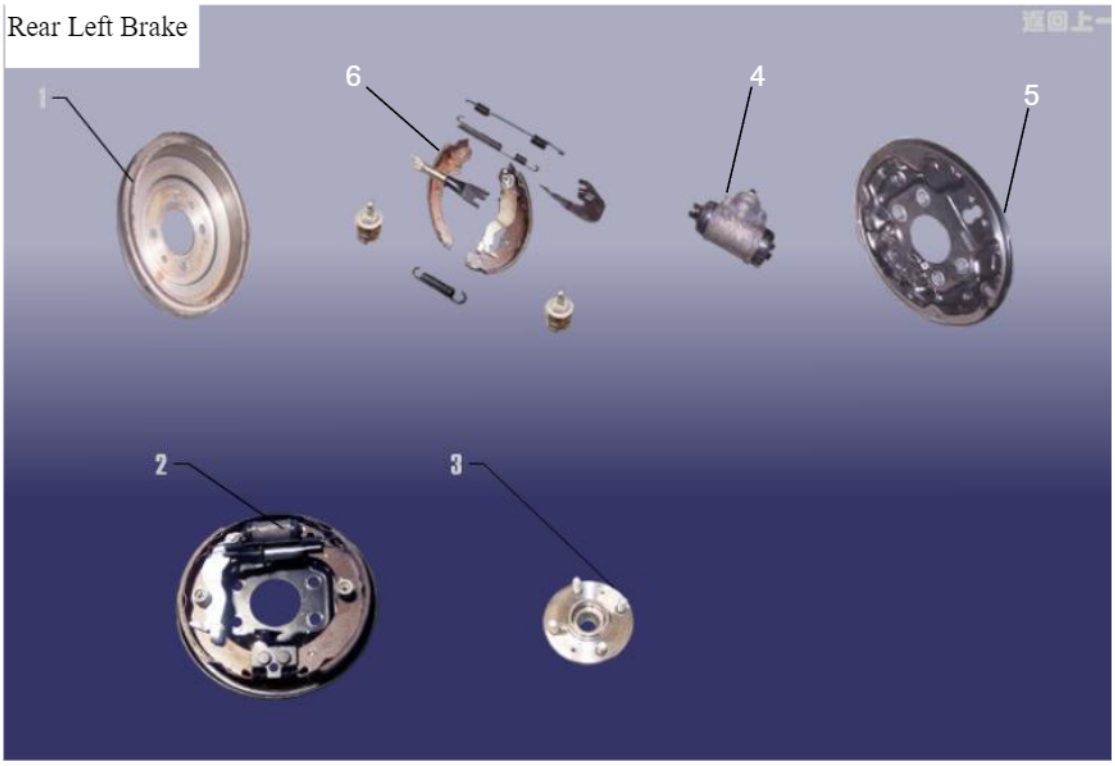
4.18 Check the max brake disc face circular runout with a dial gauge. If the runout exceeds 0.03 mm, please replace it. (Also machine the disc to satisfy the max circular runout under the premise of ensurance of brake disc thickness.)



4.19 Install the other parts according to *Removal Step*.

III. Disassembly, Reassembly and Maintenance of Rear Brake

1. Structural Diagram of System



Structural Diagram of Rear Brake Assy

(1) Brake Drum
(2) Rear Brake Assy
(3) Wheel Hub Bearing Unit
(4) Brake Wheel Cylinder
(5) Dust Cover
(6) Rear Brake Shoe

2. Preparation

Tools:
ratchet wheel, lug bar, 10#, 19#, 32# sleeve, 10# box wrench,
vice, torque spanner, right-angled screwdriver.
Accessories: brake fluid

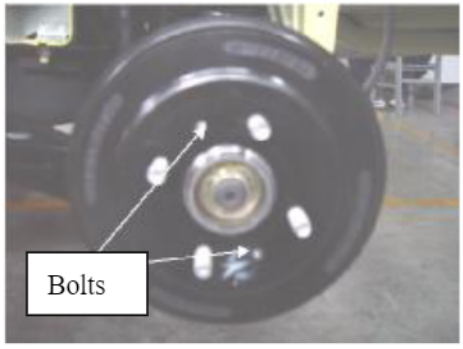
3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 The brake fluid is noxious. If it contacts your skin or eye(s) by careless, please use a lot of clean water to wash the skin or eye(s), and go to see a doctor in time, if necessary.
3.3 Waste brake fluid shall be put in vessels. DO NOT pour the fluid into the sewage system or store the fluid together with the domestic wastes.

3.4 DO NOT step on the brake pedal and move the vehicle during the disassembly/reassembly operation.
3.5 DO NOT make the friction lining or friction disc stained with the oil/fluid which may reduce the braking effeciency.

4. Removal Step

4.1 Remove the rear wheel (refer to the Removal Step for front wheel).
4.2 Remove two brake drum locating bolts with a cross screwdriver.



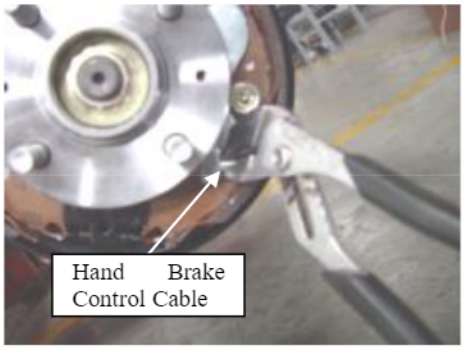
4.3 Swing the brake drum, and take off it.



4.4 Observe the structure of rear brake.



4.5 Remove the hand brake control cable with a caliper.



4.6 Remove the upper return spring with a caliper.



4.7 Remove the lower return spring with a caliper.



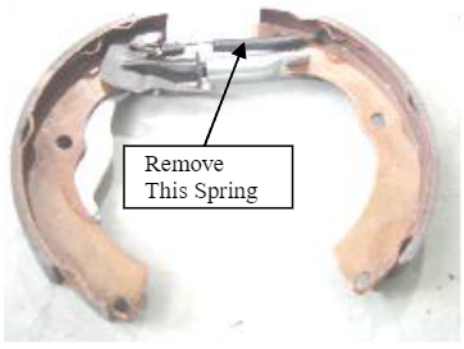
4.8 Press down the brake shoe locating bar spring leaf by both hands (with glove) and turn it 90° in clockwise or anticlockwise direction, and then remove two brake shoe locating bars.



4.8 Take off two brake shoes.



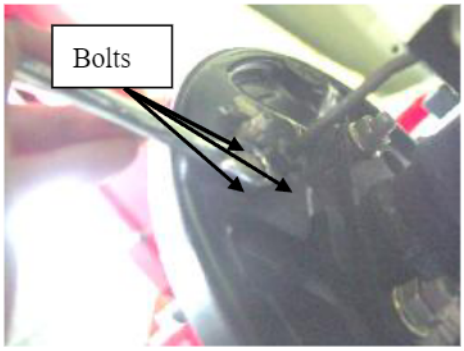
4.9 Detach the spring and disassemble the brake shoes.



4.10 If the rear brake is found too tight during driving, adjust the length of push rod: Turn it in the cloclwise direction to eliminate the friction.



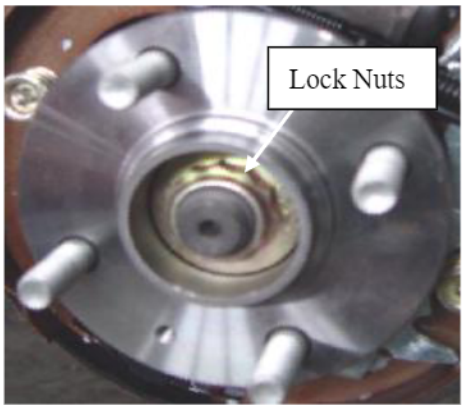
4.11 Remove three bolts as shown in the picture wit a 10# box wrench.



1.12 Take off the brake wheel cylinder, and detach and check whether it is in good condition.



4.13 If it is necessary to check the brake drum bearing, remove the lock nuts as shown in the picture with a 32# sleeve and a torque spanner, and take off the brake drum bearing.
Torque: 250±10 N.m

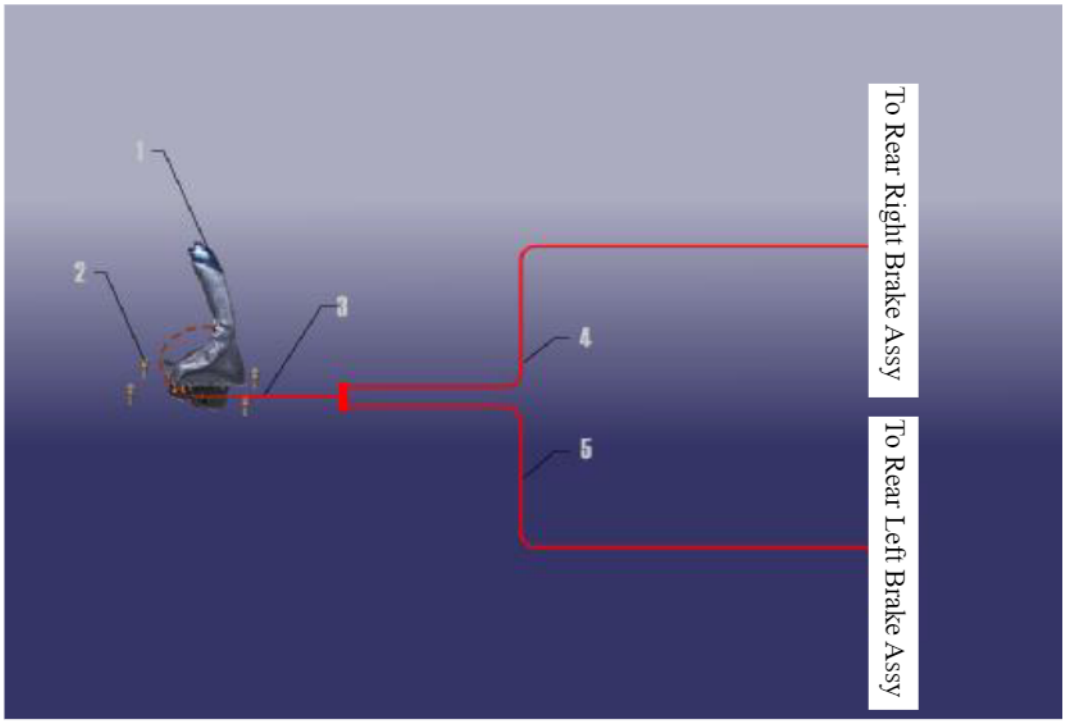


5. Installation Step

Refer to *Removal Step*.

IV. Adjustment and Replacement of Hand Brake

1. System Composition Diagram



1. Handle 2. Fixing Bolt 3. Control Cable 4. 5. Rear Right/Left Wheel Control Cable

2. Preparation

Tools: ratchet wheel, lug bar, 10#, 13#, 14#, 16# sleeve, 10#,
13#, 14# box wrench, vice, torque spanner, right-angled screwdriver.

3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 When carrying out disassembly and assembly of elastic element, avoid the bounce that will cause injury.
3.3 If the hand brake is removed or reinstalled near the exhaust pipe, wait for a period of time until the temperature of exhaust pipe falls down to the normal value so as to avoid the injury.

4. Removal/Installation Step

4.1 Refer to the removal/installation step of rear brake, and loosen the hand brake control cable.

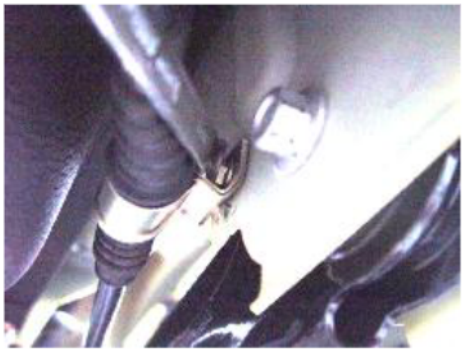


4.2 Remove the bolt here from the hand brake control cable fixed support with a 13# box wrench.



4.3 Remove the other bolts from the hand brake control cable fixed support with a 10# box wrench or a 10# socket wrench.









4.4 Remove the hand brake control cable at the other side with the same method.

4.5 Remove two fixing bolts from the driver's seat with a 16# socket wrench, and then take off the seat.



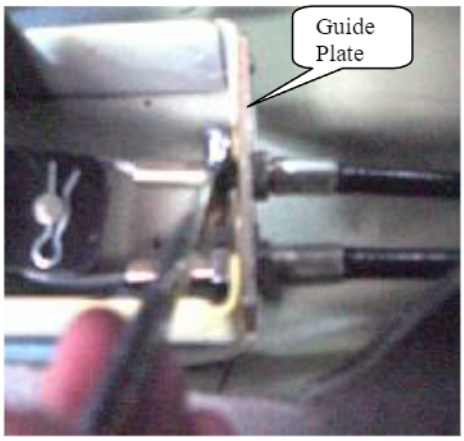
4. 6 Remove all fix screws from the auxiliary instrument panel assy with a cross screwdriver, and then take off the auxiliary instrument panel assy.



4.7 Remove two hand brake fixing bolts as shown in the picture with a 10# socket wrench.



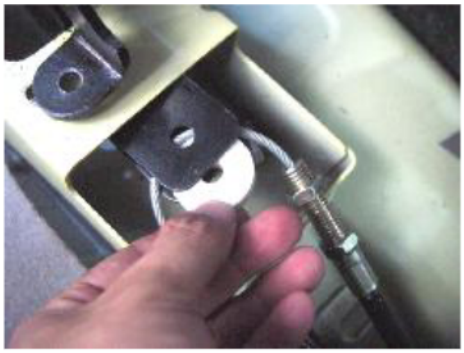
4.8 Loosen two control cable fixing screws with a 14# box Wrench, and then take off the guide plate.



4.9 Remove the pin clip with a screwdriver



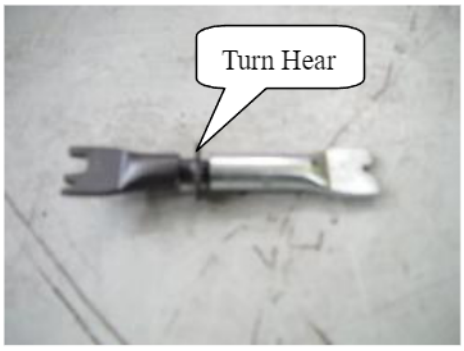
4.10 Take off the control cable take-up pulley.



4.11 Draw out the hand brake control cable from the bottom of vehicle body.



4.11 **(Adjustement of hand brake)** The design length of this vehicle's hand brake control cable is fixed. Refer to the rear brake removal step for the adjustment of hand brake. Adjusting the length of jogger (loosening it in clockwire direction; tightening it in anticlockwise direction) can implement the adjustment of hand brake.



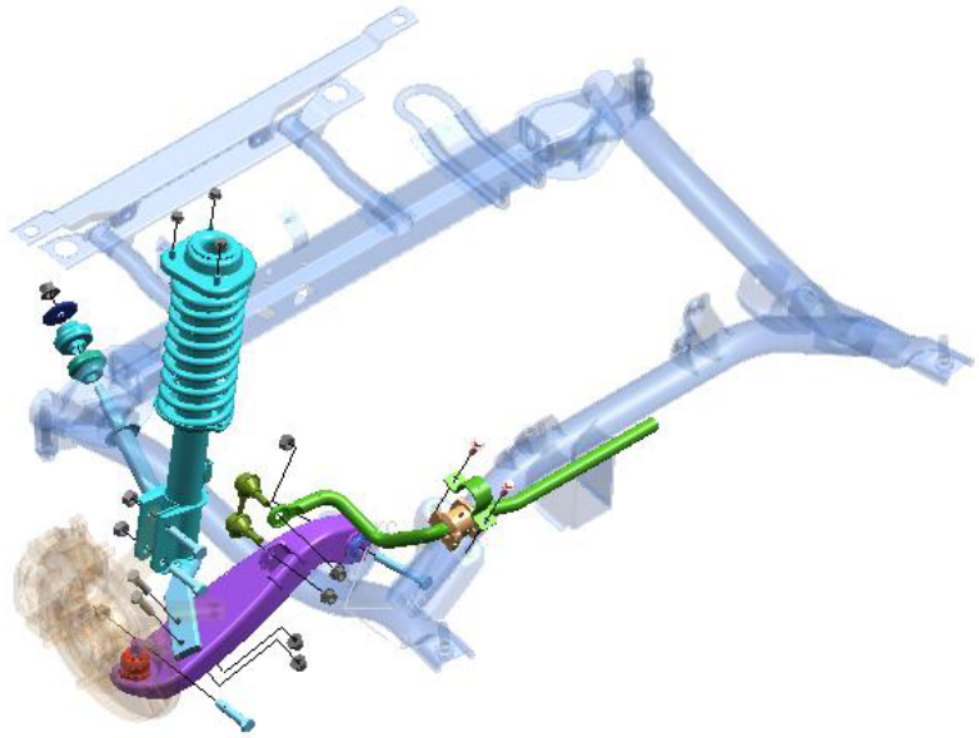
4.12 Refer to the removel step for the installation step.

Chapter 2 Adjustment of Suspension System and Four-Wheel Alignment System

I. Disassembly, Reassembly and Maintenance of Front Axle and Suspension System

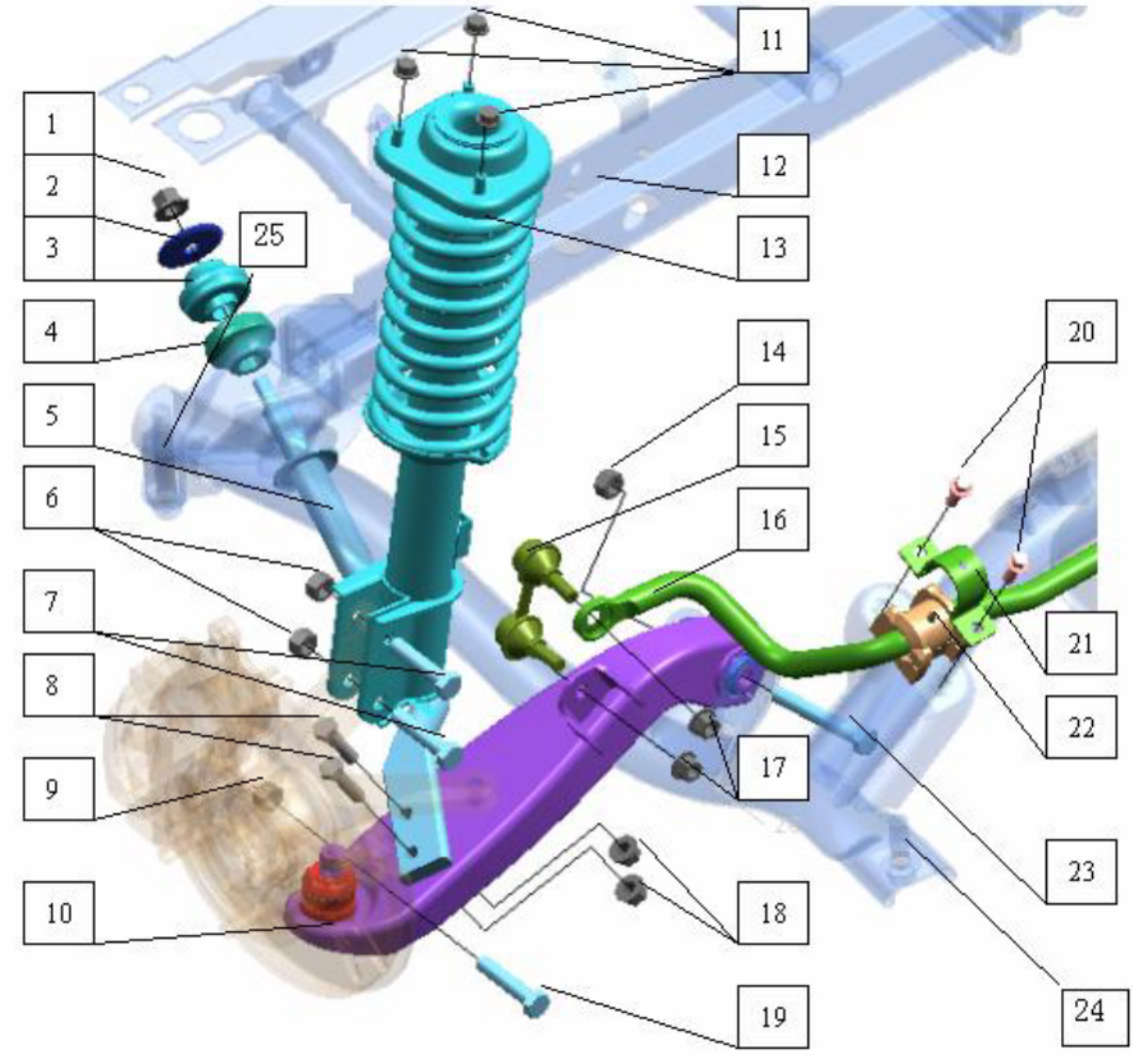
1. Structural Diagram of System

The CHERY S21 car adopts the divided steering drive axle, with a McPherson independent suspension. The upper of the suspension connects to the body while the lower to the subframe. The McPherson independent suspension bears the drive and steering functions. Subframe connects with vehicle body via elastic element, which improves diving stability and ride comfortability.



Structural diagram of Front Axle and Suspension System

Details of Front Axle and Suspension System Composition Diagram



1	Nut	9	Nut	17	Nut
2	Gasket	10	Left Control Arm	18	Nut
3	Rubber joint I	10	Right Control Arm	19	Bolt
4	Rubber joint II	11	Nut	20	Bolt
5	Left Push Rod Welding Assy	12	Subframe	21	Clamp
5	Right Push Rod Welding Assy	13	Front Strut Assy.	22	Rubber Bush
6	Nut	14	Nut	23	Bolt
7	Bolt	15	Front Connecting Rod Assy.	24	Bolt
8	Bolt	16	Front Stabilizer Bar	25	Bolt

2. Preparation

Tools: 8#, 15#, 18#, 19# sleeves; 10#, 13#, 15# wrenches.

3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 Please attention whether the safety lock of lifter is locked when maintaining the chassis.
3.3 When carry out disassembly and assembly to shock absorber spring, prevent spring ejection from being injured.
3.4 It is unallowable to weld and correct the load-carrying parts of wheel suspension and the guide parts of wheel.
3.5 Update the locknut and rusty nuts when the chassis parts are removed, which the objective is to ensure the safety.

4. Removal/Installation Step

4.1. Removal of shock absorber assy

4.1.1 Remove the tightening nuts from the tires with a 19# sleeve or attached wrench, and then remove the tires (Left side as an example).
Torque: 110±10N.m



4.1.2 Take off the ABS harness from the fixed seat by hand.



4.1.3 Remove the fixing bolts from the steering knuckle and shock absorber with a 18# sleeve.
Torque: 110±10 N.m



4.1.4 Remove three fixing bolts to the frame from the shock absorber assy with a 15# sleeve.
Torque: 60±5N.m



4.1.5 Remove the shock absorber assy.

4.2. Removal of control arm assy



4.2.1 Remove the fixing bolts to the control arm from the front connecting rod assy with a 15# sleeve.
Torque: 100±10 N.m

4.2.2 Remove the connecting bolts of front push bar and control arm with a 15# wrench.
Torque: 75±5 N.m



4.2.3 Remove the ball bolts from the control arm and steering universal joint assy with a 18# sleeve.
Torque: 100±10N.m



4.2.4 Remove the connecting bolts from the control arm and front axle with a 18# sleeve, and then take off the control arm assy.
Torque: 150±10 N.m

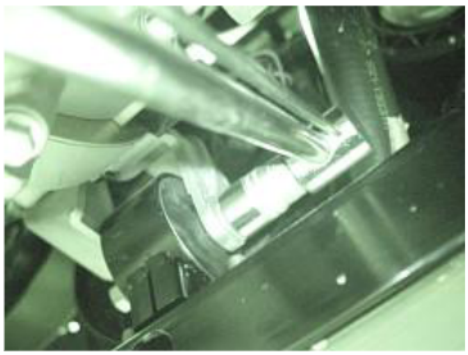


4.3. Removal of front axle

4.3.1 Remove the fixing bolts from the mud guard of chassis with a 8# sleeve, and then take off the mud guard assy.
Torque: 3±0.5 N.m



4.3.2 Remove the front bracket bolts to the subframe from the transmission with a 19# sleeve.
Torque: 110±10N.m



4.3.3 Remove the rear bracket bolts to the subframe from the transmission with a 19# sleeve.
Torque: 110±10N.m



4.3.4 Remove two connecting bolts from the exhaust manifold with a 15# sleeve.
Torque: 50±5Nm.



4.3.5 Remove two connecting bolts used to connect the exhaust manifold and rear muffler with a 15# sleeve.
Torque: 50±5Nm.



4.3.6 Remove the fixing bolts from the right side of power assist steering wheel with a 15# wrench.
Torque: 75±5 N.m



4.3.7 Remove the fixing bolts from the left side of power assist steering wheel with a 15# wrench.
Torque: 75±5 N.m



4.3.8 Remove the fixing bolts used to connect the push bar and subframe with a 19# sleeve.
Torque: 105±10 N.m



4.3.9 Remove the fixed support from A/C pipeline on the subframe with a 10# wrench.
Torque: 25±2.5 N.m



4.3.10 Remove the fixed support from the condenser and subframe with a 13# wrench.
Torque: 45±5 N.m



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4.3.11 Remove four nuts used to connect the subframe and body with a 18# sleeve, and then take off the front axle assy.
Torque: 150±10 N.m



4.3.12 Remove the fixing bolts and nuts from gum cover of stabilizer rod with a 13# sleeve.
Torque: 50±5Nm.

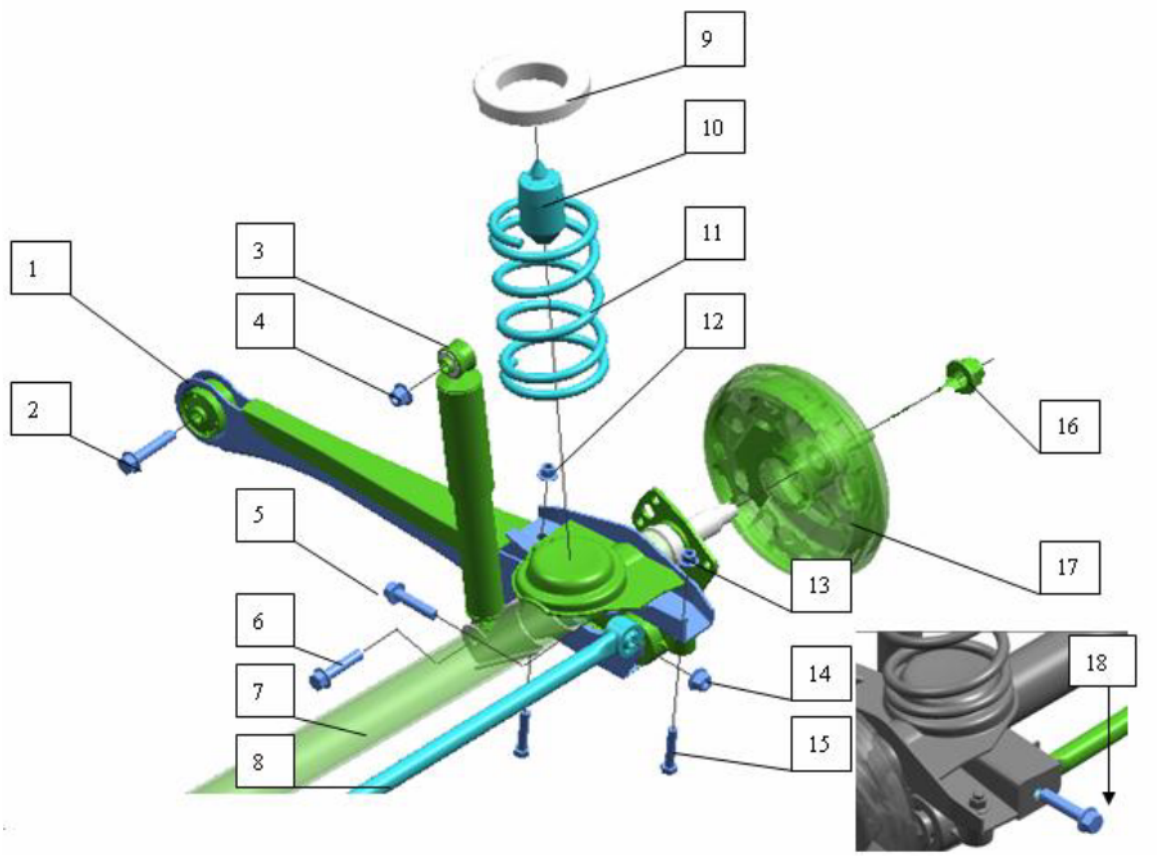


5. Installation Step

Refer to *Removal Step of Front Axle and Front Suspension System*.

II. Disassembly, Reassembly and Maintenance of Rear Axle and Suspension System

1. Structural Diagram of System



1	Rear Trailing Arm Assy	7	Rear Shaft Welding Assy	13	Nut
2	Bolt	8	Lateral Support Bar Assy	14	Nut
3	Rear Shock Absorber Assy	9	Rear Spring Cushion	15	Bolt
4	Nut	10	Rear Bumper Block	16	Lock Nut
5	Bolt	11	Rear Coil Spring	17	Rear Brake With Drum Assy
6	Bolt	12	Nut	18	Bolt

Structural diagram of Rear Axle and Suspension System

2. Preparation

Tools: 11#, 13#, 15#, 18#, 19#, 30# sleeve; right-angled screwdriver; pincers.

3. Precautions.

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 Please attention whether the safety lock of lifter is locked when maintaining the chassis.
3.3 When carry out disassembly and assembly to shock absorber spring, prevent spring ejection from being injured.

4. Removal/Installation Step

4.1. Removal of shock absorber assy and absorber spring

4.1.1 Remove the tightening nuts from the tires with a 19# torque spanner or attached wrench, and then take off the tires (left side as an example).
Torque: 110±10N.m



4.1.2 Remove the connecting bolts from the shock absorber assy and rear axle with a 15# sleeve.
Torque: 100±10 N.m



4.1.3 Remove the connecting bolts of the shock absorber assy and body with a 18# non-adjustable wrench, and then take off the shock absorber assy.
Torque: 100±10 N.m



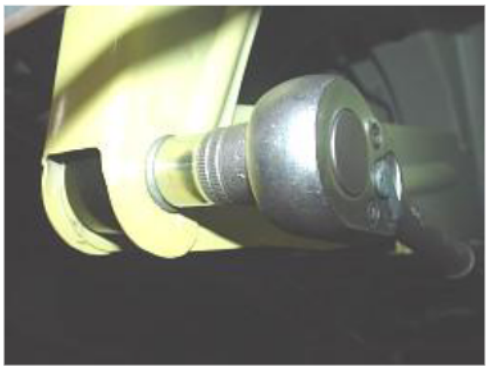
4.1.4 Unclench the rear helical spring with a screwdriver.



4.1.5 Forcefully swing leftwards and rightwards the rear bumper block by hand and then take off the block.



4.2. Removal of lateral support bar assy



4.2.1 Remove the connecting bolts from the left side of body and lateral support bar with a 15# sleeve.
Torque: 100±10N.m

4.2.2 Remove the connecting bolts from the right side of body and lateral support bar with a 15# sleeve, and then take off the lateral support bar assy.
Torque: 100±10N.m



4.3. Removal of rear trailing arm assy



4.3.1 Remove the connecting bolts from the rear of rear axle and trailing arm assy with a 13# sleeve.
Torque: 100±10N.m

4.3.2 Remove the connecting bolts from the intermediate of rear axle and trailing arm assy with a 13# sleeve.
Torque: 100±10N.m



4.3.3 Remove the connecting bolts from the trailing arm and body with a 15# wrench, and then take off the rear trailing arm assy.
Torque: 100±10N.m



4.4. Removal of rear axle assy

4.4.1 Remove the connecting bolts from the brake pipeline and rear axle with a 11# wrench. Attention to storage of brake fluid.
Torque: 45±5 N.m



4.4.2 Remove the rear brake with drum assy by hand.



4.4.3 Remove the hand brake control cable with a plier.



4.4.4 Remove the lock nuts from the rear brake with drum assywith a 30# combination sleeve, and then take off the rear brake with drum assy.
Torque: 180±10N.m



4.4.5 Remove the rear axle assy.

5. Installation Step

The installation step is reverse to that of removal.

III. Adjustment of Four-Wheel Alignment System

Please check and adjust the parameters with the help of the four-wheel alignment system recommended by the CHERY Automobile Co.. Ltd.

S21 standard four-wheel alignment system parameters:

Item		Parameter	
Model		SQR7130S21	SQR7110S21
Front Wheel	Front Wheel Camber Angle	0.87°±50′	0.87°±50′
	Kingpin Caster Angle	3.4°±30′	3.4°±30′
	Kingpin Inclination Angle	12.7°	12.7°
	Front Wheel Toe-In	6′±6′	6′±6′
Rear Wheel	Rear Wheel Camber Angle	0°±30′	0°±30′
	Rear Wheel Toe-In	0°±10′	0°±10′
Sideslip		≤ 3m/km	≤ 3m/km

1. Adjustment of Front Wheel Toe-In

The toe-in can be adjusted using an optical tester or a mechanical toe-in regulator.

1.1 On the basis of requirement of the tester, position the wheels and conduct the preparation work before adjusting.

1.2 Loosen the lock nut and of the elastic protective sleeve snap ring right steering tie bar. Turn the toe-in regulator lever as required to regulate the length until it reaches the specified value; and the toe-in value: 6′±6′.

1.3 Tighten the lock nut, reinstall the elastic snap ring of protective sleeve, and then check whether the lock nut is tightened and whether the position of protective sleeve is proper;

Torque: 35±3Nm

1.4 After adjusting toe-in of front wheel, check whether the steering wheel is horizontal.

Otherwise, loosen the lock nut of steering wheel, regulate the steering wheel to the horizontal position, and then tighten the steering wheel lock nut to the specified torque.

2. Adjustment of Front Wheel Camber Angle



2.1 In the normal case, after the independent suspension and wheel steering knuckle are assembled, it is unnecessary to adjust the camber angle. If the wheel camber angle is found deviated from the tolerance range due to the other causes, apply the connecting bolts of independent suspension and steering knuckle to correct the camber angle.:

Front wheel camber angle: 0.87°±50′

2.2 Before correction, check (visually) whether the parts of running system is damaged, and repalce the damaged parts;

2.3 If the front wheel camber angle is found out of the tolerance range, loosen the connecting bolts of front shock absorber and steering knuckle, and move the wheel to correct the angle.

3. Adjustment of Kingpin caster and inclination angles

The Kingpin caster and inclination angles are guaranteed by the design structure, without adjustment in service. The Kingpin caster angle: 3.4°±30′, Kingpin inclination angle: 12.7°. If any parameter exceeds the specified range, replace thesteering knuckle only.

4. Adjustment of rear wheel positional parameters

All of the rear wheel alignment parameters shall be guaranteed through design process.
4.1 Rear wheel camber angle: 0°±30′
4.2 Rear wheel toe-in: 0°±10′
4.3 If the rear wheel alignment parameters change due to the deformation of rear axle which is subject to the very big impact force, and these parameters exceed the specified range, correct or replace the rear axle only.

IV. Installation of Tire and Regulation of Air Pressure

1. Assembly of Tire Valve

Prior to the assembly of tire valve, firstly check the valve port to ensure whether it is smooth and free from burr, and then apply glycerol on the rubber body surface, or soak the tire valve into glycerol. Pull or press using special tools with 200 - 400N to make the locating ring of the valve can go through the wheel holes, to this point, the assembly is completed (soap water is allowed to substitute glycerol).

2. Assembly of Tire

Before assembly of the tire, apply glycerol or soap water along the cycle of tire bead, meanwhile, note that:
2.1 If the wheel rim has the dot marks, align the uniformity testing marks with the dot marks of the wheel rim.
2.2 When without dot marks on the wheel rim, align the dynamic balance testing mark of tire to valve position.
2.3 When without dot marks on the wheel rim, additionally, there is no dynamic balance testing mark, however, static balance testing mark is available, align the valve to the static balance testing mark.
2.4 The description concerning the uniformity, dynamic balance and static balance testing marks

for tires will be additionally provided in written forms by product division of Chery Company or suppliers, and indicated on process sheet.

2.5 Carry out tire inflation strictly in accordance with specified pressure. During inflating process, air pressure shall not exceed 10% of rated pressure. When performing separate packaging to spare wheel assembly, the rated inflation pressure shall be 3.0 bar, and the spare wheel assembly shall be stored separately from four wheels. Before the four-wheel alignment work, check the air pressure of tires of four wheels and regulate the pressure: 2.3 bar for front wheel, and 2.1bar for rear wheel.

3. Tire Inflation

After completion of tire inflation, screw up the protective cap of valve, and then carry out dynamic balancing test. Fit appropriate balance weight at the internal and external fringe of wheel rim as required. It is required that the unbalancedness of the final assembly shall be less than 100 g·cm, which is approximately equivalent to a 5g balance weight at the internal and external fringe of wheel rim. Note: each wheel and each side can use only one balance weight. Additionally, its maximum mass shall not be more than 70g. During assembling process, never hit the balance weight too heavy. Otherwise, replace balance weight in time. In addition, never use the replaced balance weight again.

4. Installation of Wheel and Tire Assy

When install wheel and tire assy, firstly, manually screw up the wheel bolt onto the hub for pretension, then use special tools for tightening in accordance with diagonal process. Tightening torque shall be 110±10N.m. It is prohibited to use impact wrench to cause wheel damage, over loose or over tight. It is not allowed to apply grease on wheel bolt. (For the newly-installed wheel and tire assy, after the initial mileage of 100 km, tighten the wheel bolts once to ensure the tightening torque. Checking the tightening torque of wheel bolts is one of routine maintenance.)

5. Method to Tighten the Wheel Nut

Tighten the fixing nut in a decussate way, the tightening force shall be approximately equal, then wheel shall be able to turn freely. When carry out final tightening, the wheel shall be on the ground.

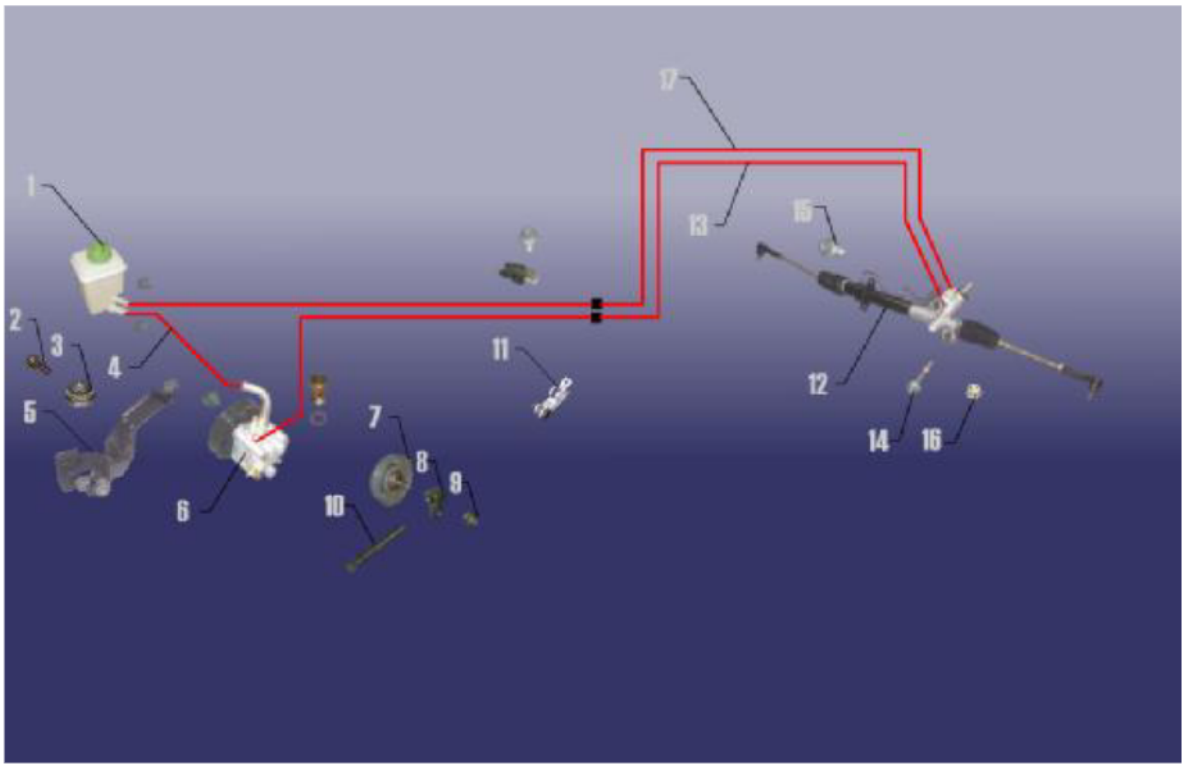
6. Installation of Trim Cover

Install trim cover or place trim cover as required. When fitting clip- type trim cover, place knock in position by hand or via rubber tools.

Chapter 3 Disassembly/Reassembly and Maintenance of Steering System

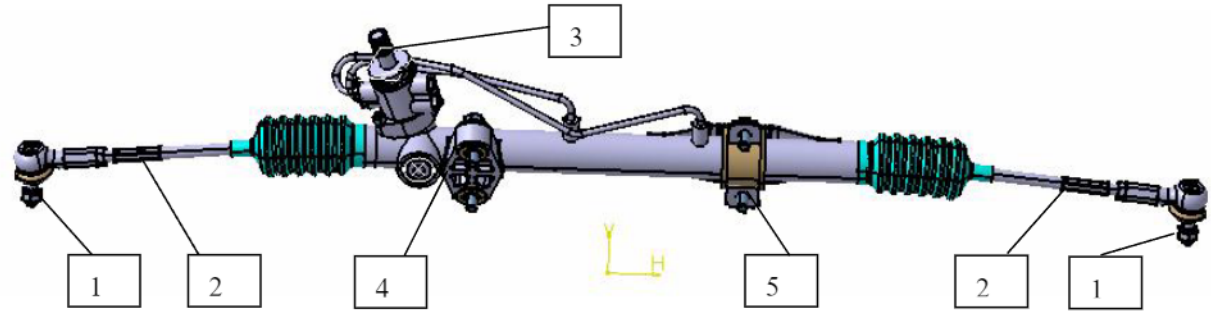
I. Removal/Installation of Steering Wheel

1. System Composition Diagram



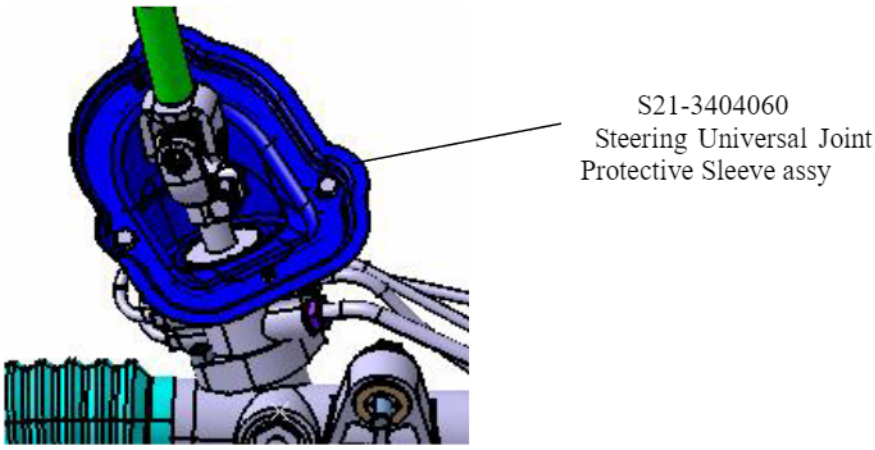
1. Power Assist Steering Fluid Reservoir
2. Support Fixing Bolt
3. Support Fixing Nut
4. Oil Output Pipeline
5. Fluid Reservoir Fixed Support
6. Steering Pump
7. Tensioner Pulley
8. Lock Nut
9. Adjusting Nut
10. Adjusting Bar
11. Pipe Clamp
12. Steering Wheel
13. Oil Output Pipe
14. 15. Fixing Bolt
16. Fixing Nut
17. Oil Return Pipe

2. Decomposition Diagram of Steering Wheel



1-Lock Nut 2-Lateral Tie Bar 3-Input Shaft 4-Left Installation Support
5--Right Installation Support

3. Schematic Diagram of Steering Universal Joint and Protective Sleeve



2. Preparation

Tools: 15#, 19# socket wrenches , 13#, 18# non-adjustable wrenches.
Accessories: power steering fluid

3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 Avoid steering fluid to contact with skin or eyes when disassembling steering system.

4. Removal/Installation Step

4.1 Remove the fixing bolts from the right and left sides of steering ball pin with a 19# sleeve.
Torque: 40±5 N.m



4.2 Loosen the fixing bolts from the lower of power assist steering oil pipe with a 18# non-adjustable wrench.
Torque: 25±5 N.m



4.3 Loosen the fixing bolts from the upper of power assist steering oil pipe with a 13# non-adjustable wrench.
Torque: 25±5 N.m



4.4 Remove the fixing bolts and nuts from the upper of right support of the power assist steering wheel with a 15# sleeve.
Torque: 100±10 N.m



4.5 Remove the fixing bolts and nuts from the lower of right support of the power assist steering wheel with a 15# sleeve.
Torque: 100±10 N.m



4.6 Remove the fixing bolts and nuts from the upper of left support of the power assist steering wheel with a 15# sleeve. Torque: 100±10 N.m



4.7 Remove the fixing bolts and nuts from the lower of left support of the power assist steering wheel with a 15# sleeve. Torque: 100±10 N.m



4.8 Remove the fixing bolts from the steering universal joint by hand. Then remove the steering wheel assy.

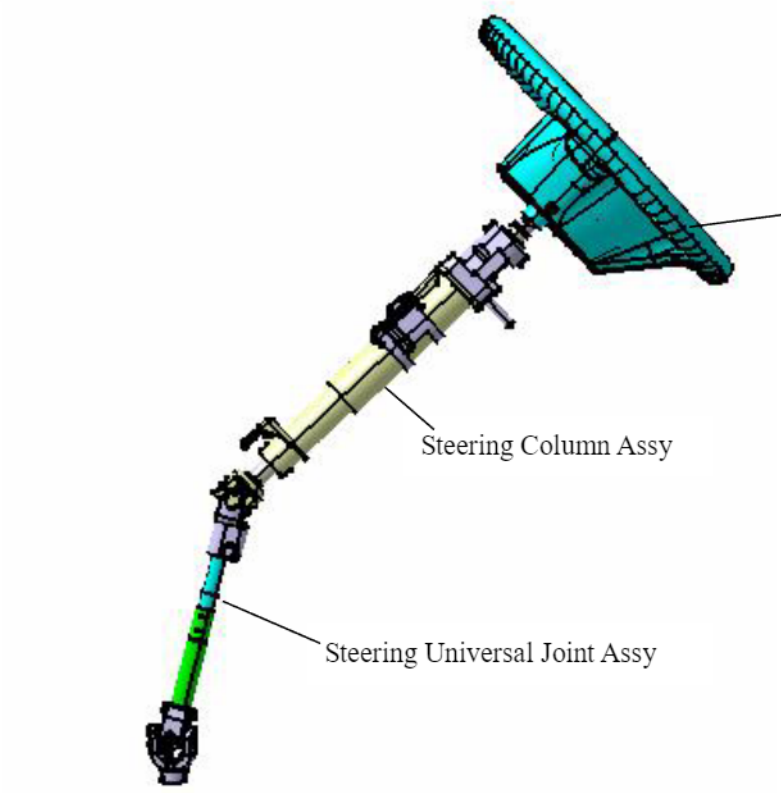


5. Installation Step

Refer to *Removal Step*.

II. Removal/Installation of Steering Column

1. System Composition Diagram



1- Steering Wheel 2- Steering Column Assy 3- Steering Universal Joint Assy

2. Preparation

Tools: Flat head screwdriver, cross screwdriver, 5# allen wrench, 8#, 10#, 13#, 22# socket wrenches.

3. Precautions

3.1 Please wear necessary labor protection supplies to avoid accidents.
3.2 Avoid steering fluid to contact with skin or eyes when disassembling steering system.
3.3 Before the removal of the steering wheel, disconnect the negative of battery first to avoid the explosion of air bag.

4. Removal Step

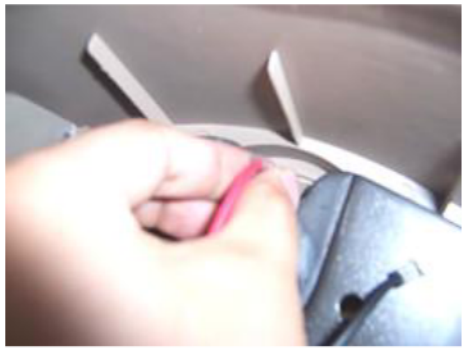
4.1 Take off the horn hood of steering wheel by hand.



4.2 Pull out the connector of horn wire behind the horn hood by hand.



4.3 Pull out the connectors of horn wire and steering wheel mount by hand.



4.4 Remove the fixing nut from the steering wheel with 21# sleeve.
Torque: 35±3 N.m



4.5 Take off the steering wheel by both hands.



4.6 Remove the five fixing bolts from the protective cover of combination switch with a cross screwdriver.
Torque: 1.5±0.5Nm



4.7 Remove the four fixing bolts from the combination switch with a cross screwdriver.
Torque: 1.5±0.5Nm



4.8 Pull out the connectors of ignition switch and combination switch.



4.9 Pull out the connector of combination switch.



4.10 Pull out the connector of combination switch.



4.11 Take off the combination switch by both hands.



4.12 Pull out the connector of ignition switch.



4.13 Remove the ignition lock body assy with an allen wrench.
Torque: 25±3 Nm



4.14 Remove the two upper fixing nuts from steering column with 13# sleeve.
Torque: 25±3 Nm



4.15 Remove the two lower fixing nuts from the steering column with a 13# sleeve.
Torque: 25±3 Nm



4.16 Remove the connecting nuts of the steering column and steering universal joint with a 13# sleeve, and then remove the steering column assy.
Torque: 25±3 Nm



4.17 Take off the connecting bolts from the steering universal joint and steering wheel. Take out the steering universal joint assy.

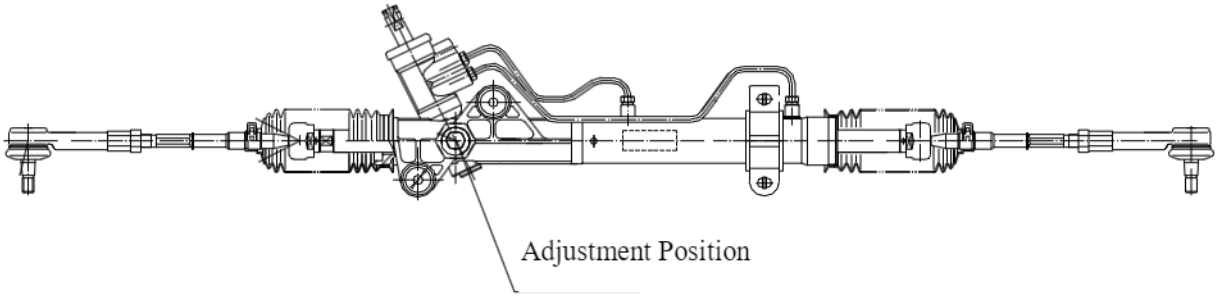


5. Installation Step

Refer to Removal Step.

III. Adjustment of Clearance of Steering System

1. Maintain vehicle wheel at straight line traveling position;
2. Turn the steering wheel towards the both sides;
3. If heard steering gear noise, adjust the bolt position as shown in the figure until no impinging noise is heard while turning steering wheel;
4. Tighten up the bolt for another 1/8 circle (about 45°);
5. Road test;
6. If the steering mechanism can not return to the central position by itself, then loosen the bolt for 15°;
7. Road test.



IV. Adjustment of Power Steering System

1. Correctly connect power steering oil pipe, where the tightening torque for the connector of steering gear with oil return pipe, high-pressure oil pipe should be 35±3N.m, and the tightening torque of hollow bolt connecting high-pressure oil pipe and power steering pump shall be 45± 3N.m. When filling power steering oil, it is recommended to use special purpose vacuum pumping oil. The specifications for filling power steering hydraulic fluid and exhaustion are shown as below:

Fill power steering hydraulic fluid into steering reservoir assy to the maximum level, start engine at low speed (idle speed) to drive the steering pump, the steering system will be quickly full of hydraulic fluid. In the oil filling process, only let engine run at idle speed to drive vane pump. Meanwhile, continuously add hydraulic fluid to prevent vane from sucking air due to oil level drops.

2. When hydraulic fluid in the oil tank presents emulsification state, or the pump emits excessive noise (under normal condition, max. noise shall be 80 db), it must carry out exhaustion process. The exhaustion procedure is described as below:

Jack the front part of the vehicle till two front wheels are hung up, start the engine, turn the steering wheel to right and left till reach limit position (caution: after come to the limit position, try not to stop, even if stop, never maintain over 2 seconds). Repeat above action for several times, until the air in the system is gradually exhausted from the oil reservoir. In this process, with the drop of oil level, continuously supplement hydraulic fluid until the oil comes to specified level.

3. Regularly check and adjust the tension of power steering belt: vertically apply a 100N force at the middle of the belt, the max. deflection of belt shall be less than 5 mm, otherwise adjust the belt tension until meet the above requirement via adjusting tension bolt.

4. When in operation, it is prohibited to turn the steering wheel to limit position, even if it has to do so, never maintain at this position over 10 seconds. It is strictly prohibited to use power steering pump without oil. If the driver suddenly feels the steering heavy in operation, immediately stop the vehicle to make removal and repair accordingly.