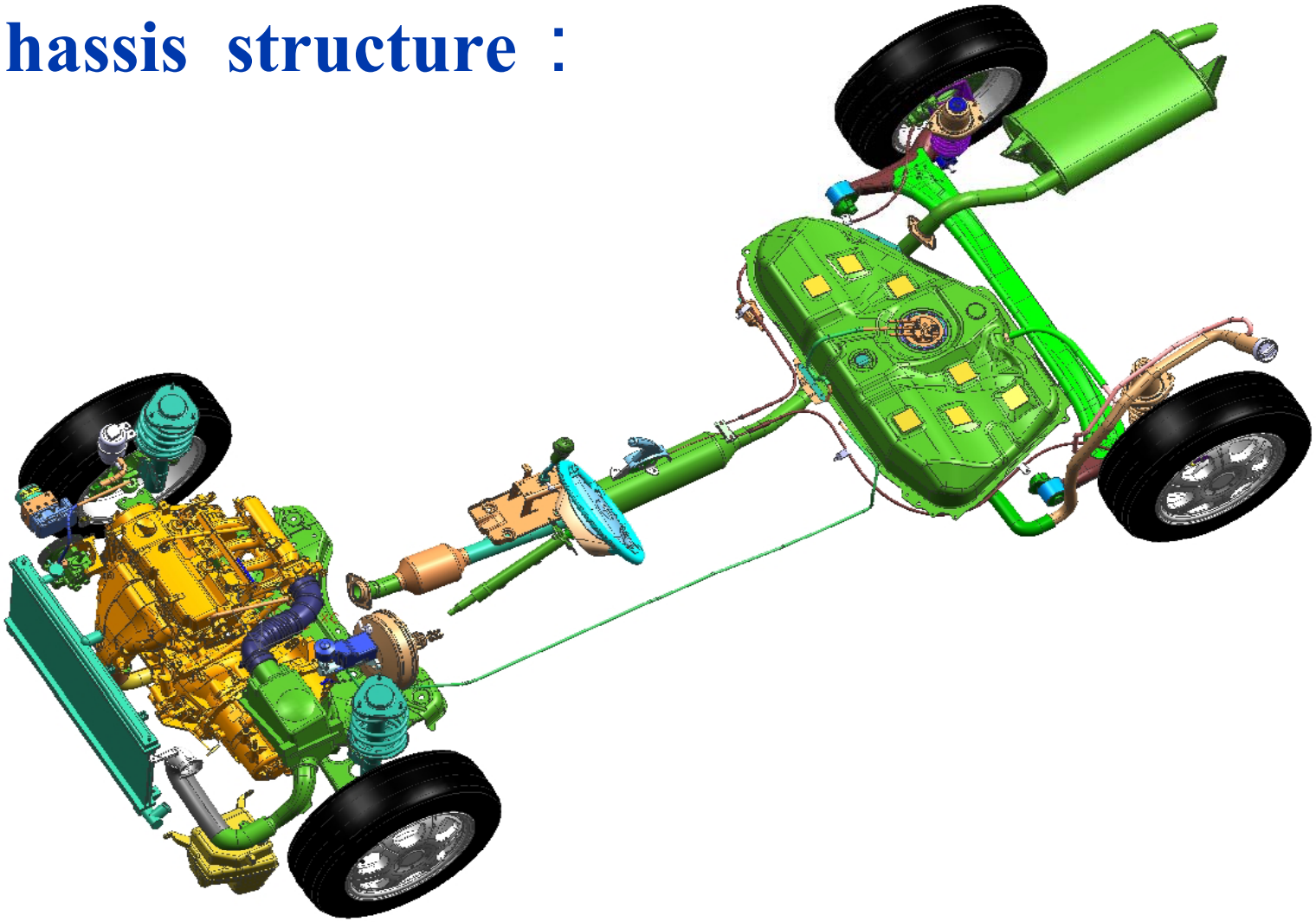
Chassis

Catalog

1 General：

the layout of the vehicle is FF type. The engine is Mitsubishi 4G18. Steering gear is rack and pinion type, and has the hydraulic booster system. The steering column is tilt one with mechanism can absorb the energy. The front suspension is MacPherson suspension, rear suspension is torsion beam one. The brake system adopts the disc brake, and has the vacuum booster. Abs can provide the stable brake. The parking system is manual drum brake.

Chassis structure：



2. Feature:

2.1 driving system:

The transmission, clutch, differential and final gear are compact single unit. And this unit is at the front of the vehicle. The driving wheel is front wheel. This structure can improve the steering stability at high speed. At same time, this structure can reduce the size and weight of the driving shaft.

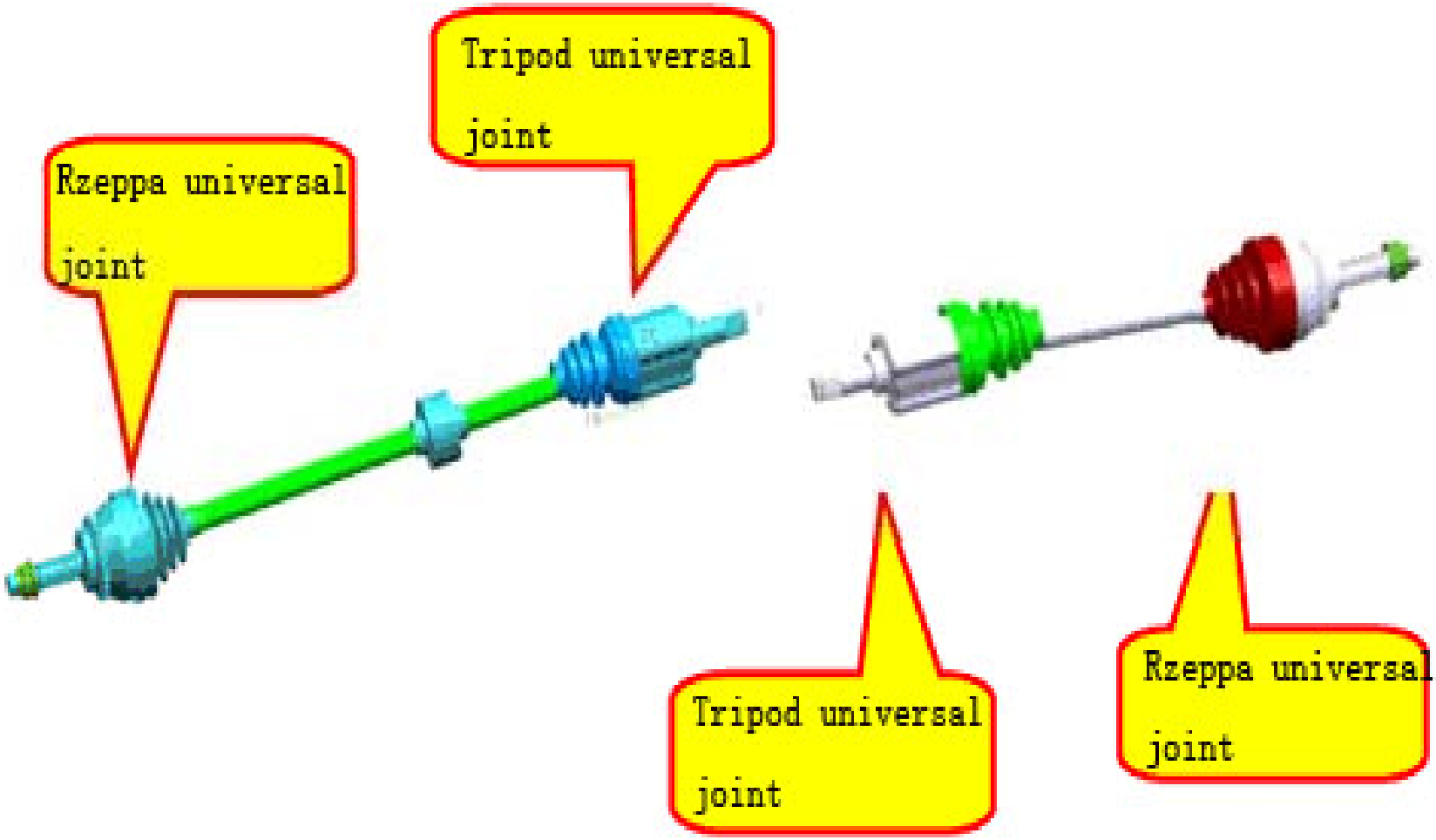
Clutch: Dry, Single Plate Diaphragm

Transmission: synchronizer, five speed

Driving shaft: it adopts the constant velocity universal joint.

The steering knuckle side is Rzeppa universal joint.

The differential side is tripod universal joint.


Tripod universal joint
Rzeppa universal joint
Tripod universal joint
Rzeppa universal joint

3. Request of the driving shaft：

Max. working angle：

Rzeppa universal joint: 45°

Tripod universal joint: 22.5°

Lubricating and dustproof: Filling volume of consistent grease in the universal joint

Rzeppa universal joint:

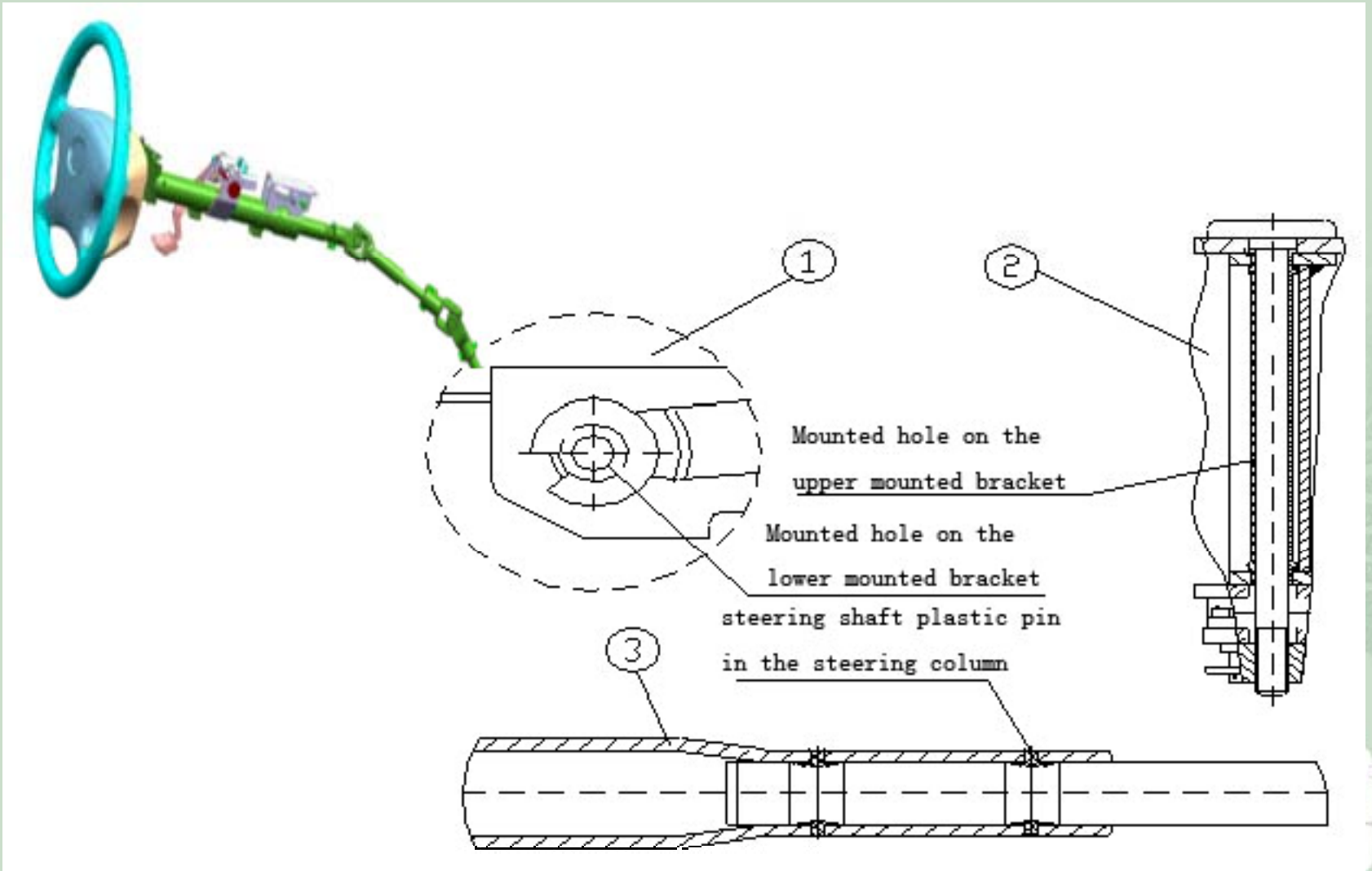
The filling volume of consistent grease is 110±10g.

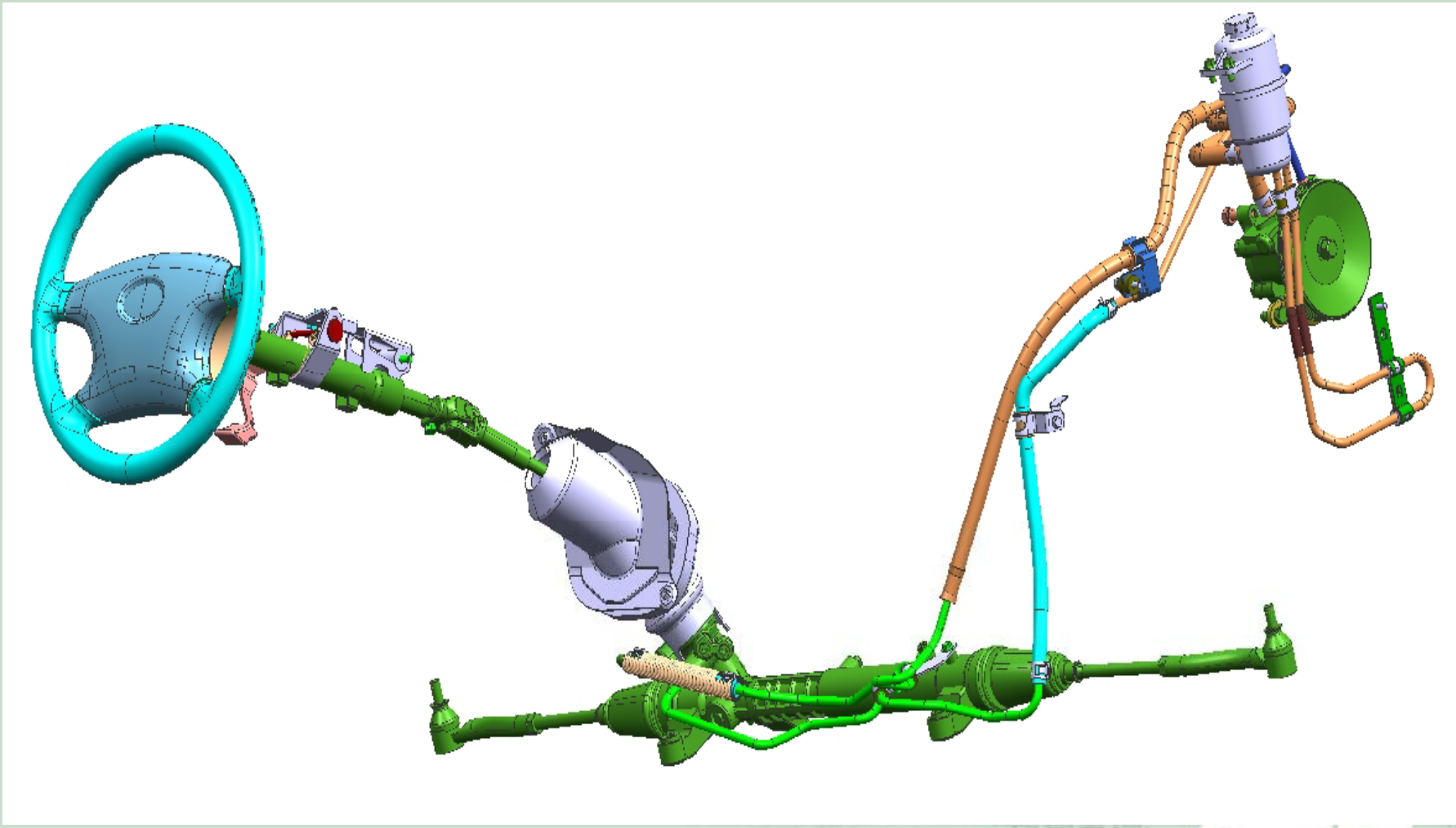
Tripod universal joint:

The filling volume of consistent grease is 100±10g.

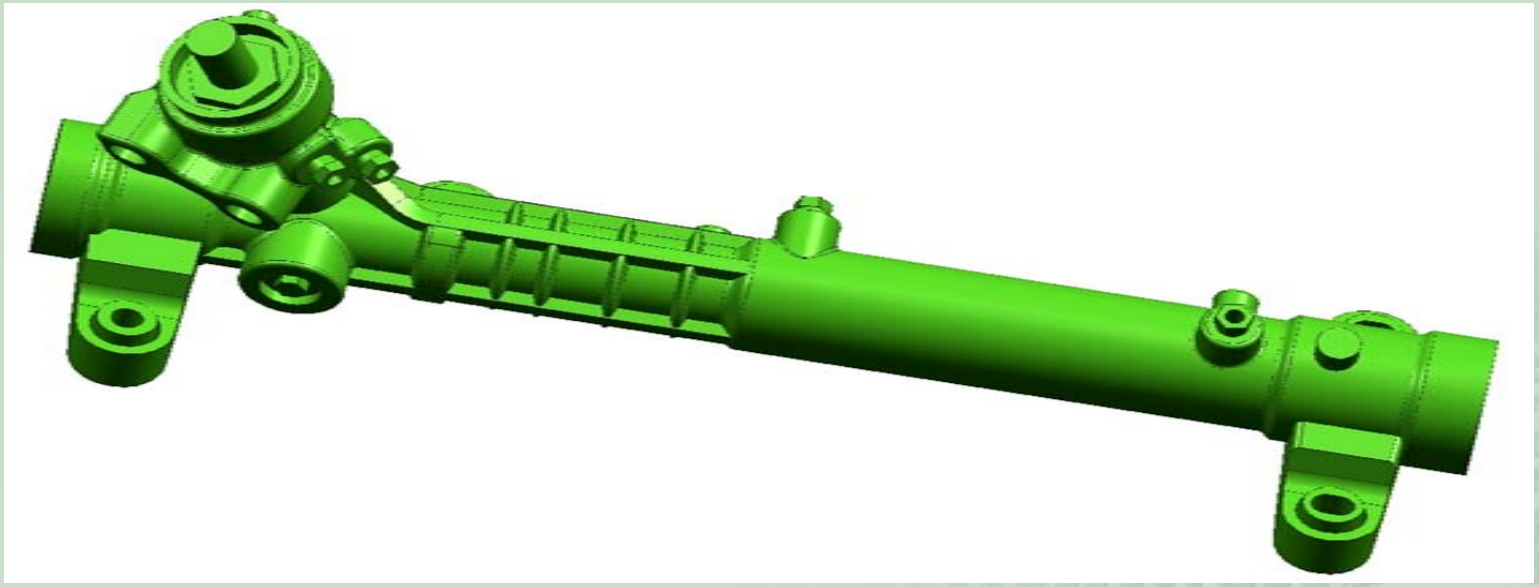
2.2 Steering system：

The energy absorbed area is showed in the following:


1
2
Mounted hole on the
upper mounted bracket
Mounted hole on the
lower mounted bracket
steering shaft plastic pin
in the steering column
3



4. Steering gear:



5. Power steering system：

Specification:

Max. front shaft load (Kg)	1000	Rack diameter(mm)	25
Max. output load (N)	6500	Rack stroke (mm)	138
Max. working pressure (MPa)	7.84	Gear radio	40.84
Recommended flowing quantity of the oil pump (L/min)	7	Total cycles	3.38
Working temperature area (℃)	- 40 ~ +135	Steering gear centre distance	16.25
Inner diameter of the cylinder(mm)	41	Type of the oil	DEXRON-Ⅲ(0.8L)

(3)Specification of the steering pump：

A.Feature of the pressure switch:

1). Control power: 1.5-2.0 MPa

2). Max. Resistance: open—150 mΩ

close---1MΩ

B. Displacement：7.2ml/r

C.P-Q Feature：**Rotate speed：600 r/min Pressure：40 kgf/cm**

Oil temperature：55±5 ℃ flux：3.5 L/min (MIN)

D.N-Q Feature：

Pressure：3.5 kgf/cm Oil temperature：55±5 ℃

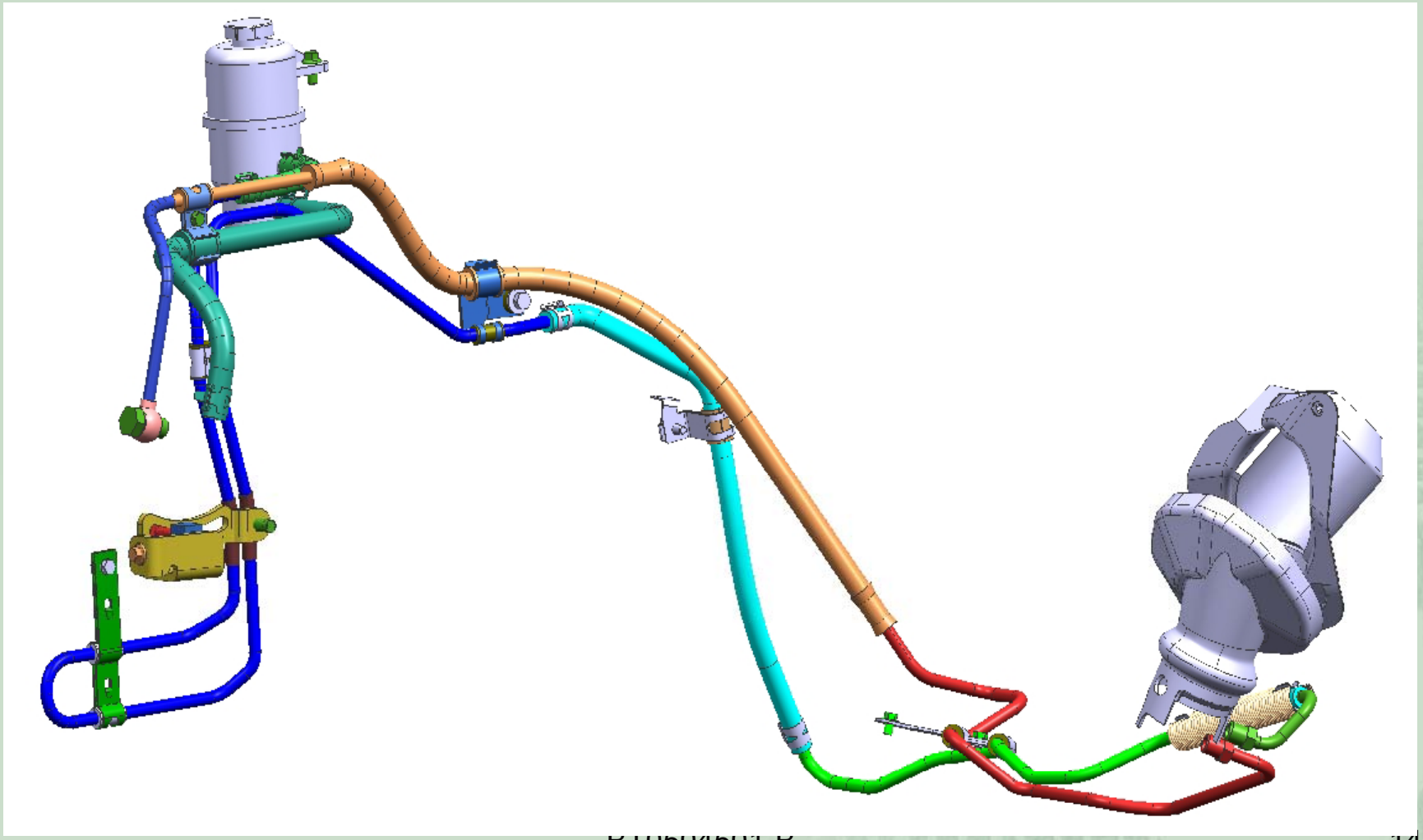
1500r/min：6.0 ~ 8.0 L/min

3000r/min：4.8 ~ 6.8 L/min

4000r/min： 3.0 ~ 5.0 L/min

E. Max Pressure：89 ~ 96 kgf/cm^2

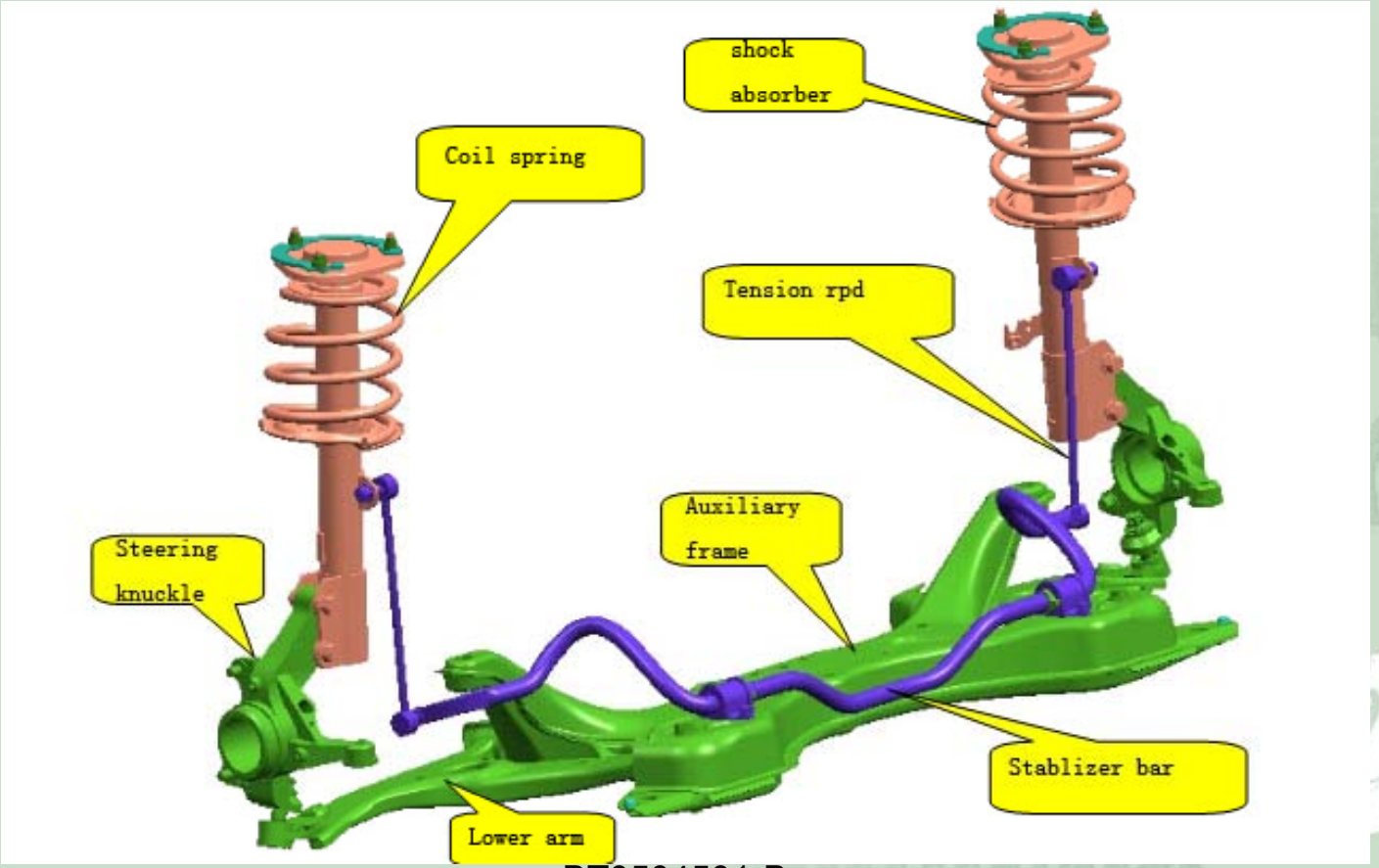
Steering pipe and accessories：



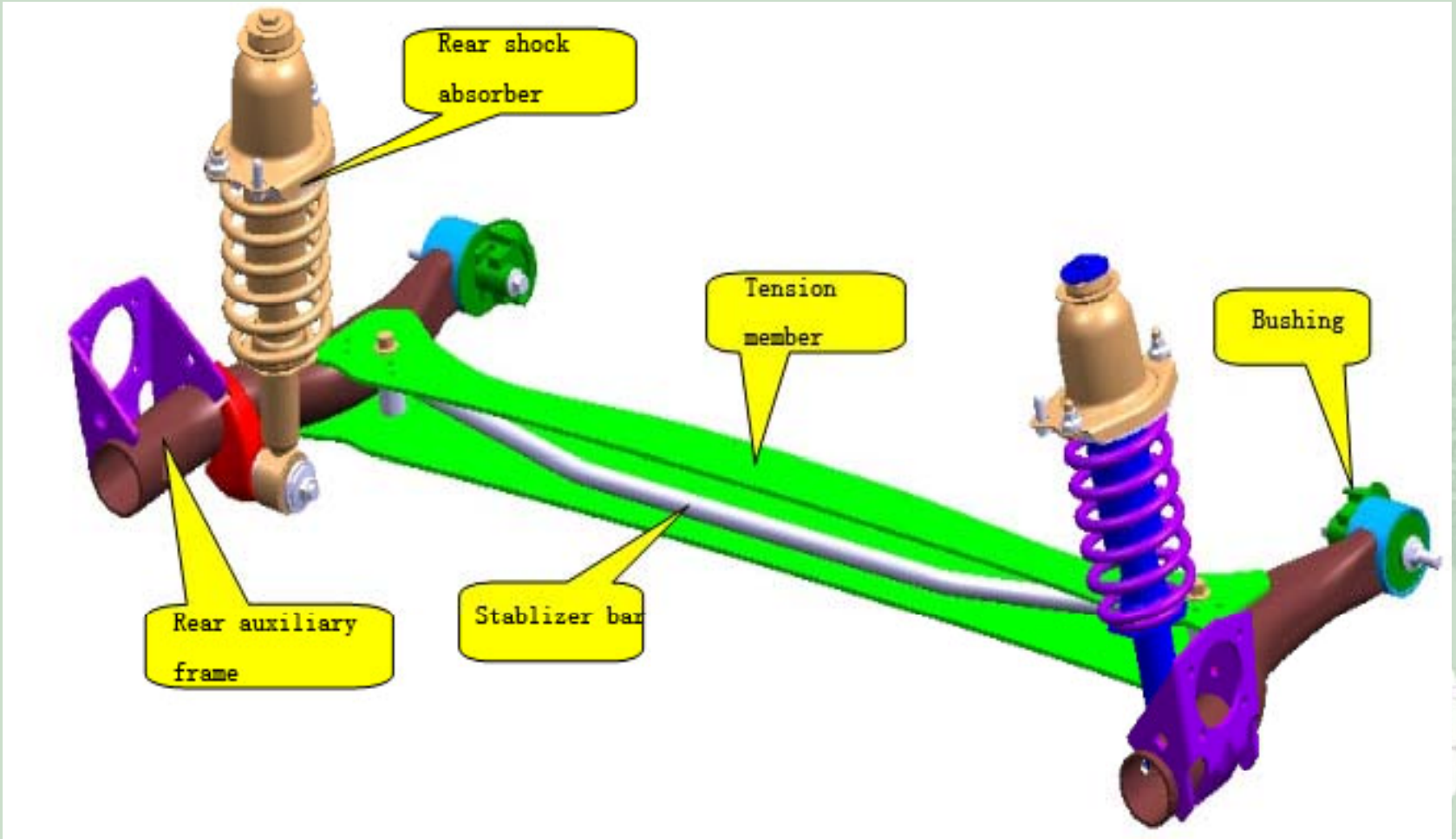
2.3 Suspension system

Suspension:

Front suspension adopts MacPherson suspension.



Rear suspension adopts tension beam suspension.



3. Shock absorber：

Specification of front shock absorber:

Stroke (mm)		100		
Speed (m/s)		0.1	0.3	0.6
Resistance	Pf (N)	400	750±150	1220
	Py (N)	450	800±180	1200

Specification of rear shock absorber :

Stroke (mm)	100		
Speed (m/s)	0.1	0.3	0.6
Returning resistance (N)	370	986±150	1563
Compressing resistance(N)	410	870±160	1278

2.3.2 wheel

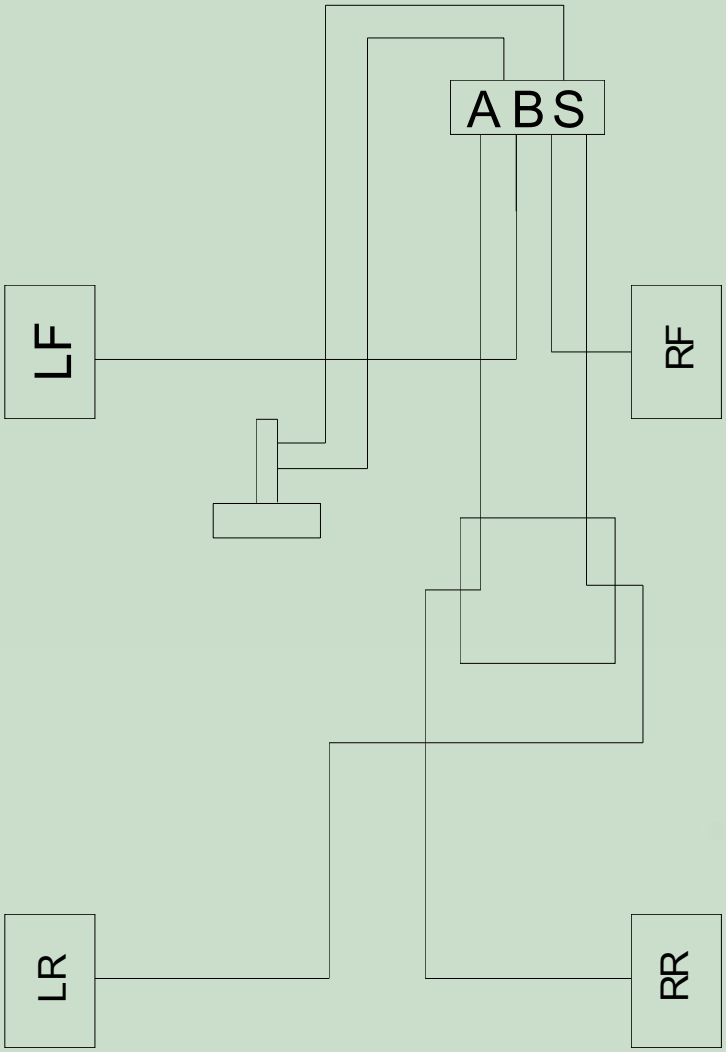
195/60R15 88V

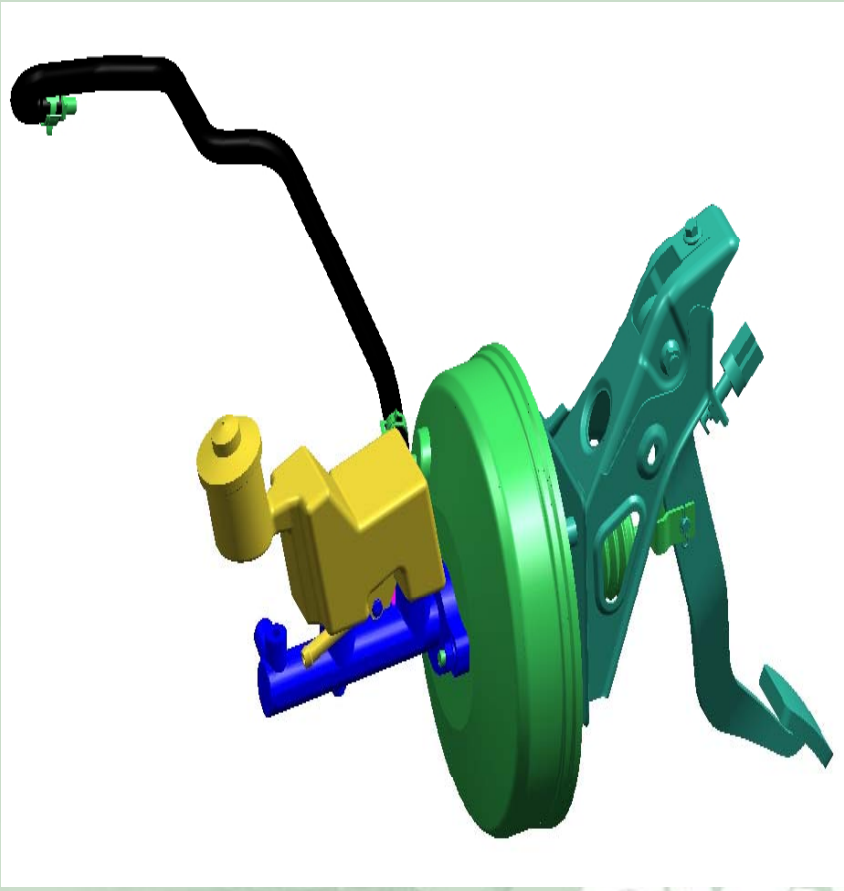
2.4 Brake system

it is composed by the vacuum booster, brake pump, ABS, brake, brake pipe and so on. The brake system adopts X-shape braking type. It mains that one side front wheel and another side rear wheel share the same loop. Its structure promise that while one loop is out of work, there is also another loop to provide the brake.

1.Brake pump and vacuum booster assy:

The brake pump, vacuum booster and brake reservoir is a whole unit.


ABS
LF
RF
LR
RR



Specification of brake pump and vacuum booster：

Booster	Side	9 in	Effective stroke	≥48 mm
	Effective diameter	230 mm	Boosting ratio	7
Brake pump	Structure type	Contral valve	Stroke（front）	21mm
	Bore（front）	20.64 mm	Stroke(rear)	24 mm
	Bore(rear)	20.64 mm	Displacement of front cavity	≥6.9ml

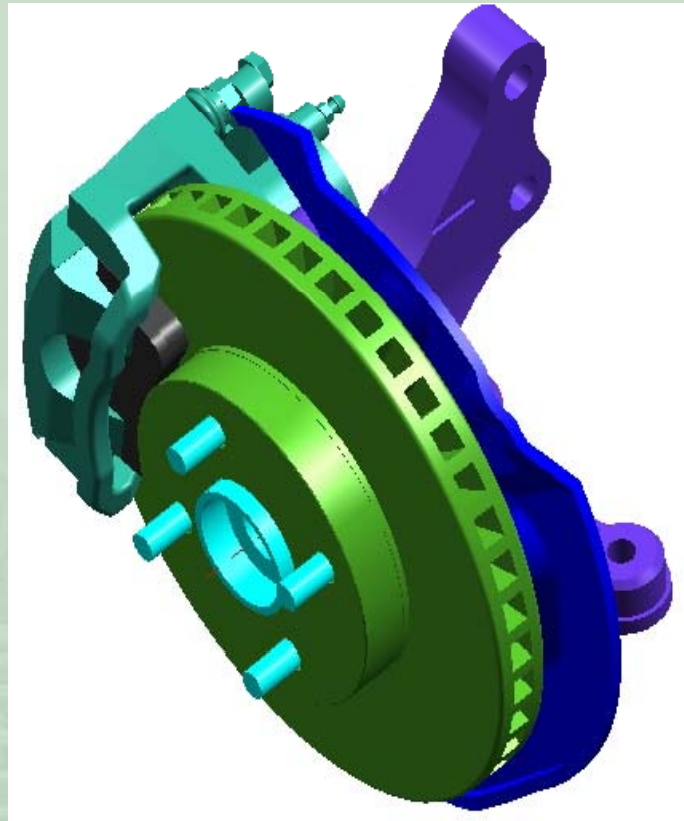
Type of brake liquid and capacity
DOT 4　1.3L

The contractive brake pedal can absorb the impacted energy.

2. Brake

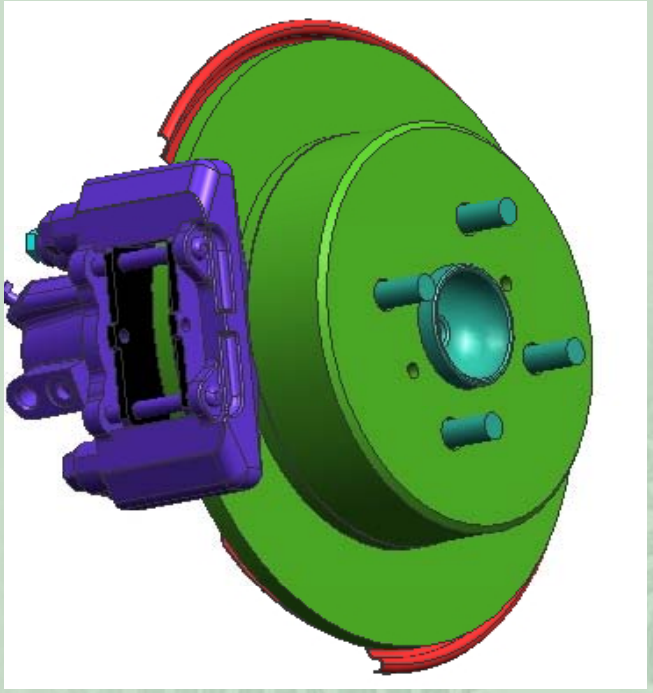
Front brake is ventilated disc brake.

Front brake	type		Ventilated
	Bore		57 mm
	Brake	Diameter	255 mm
		Thickness	25 mm
	material		Without asbestos
	Fiction coefficient		0.38
	Efficient working radius		103.1 mm



Rear brake is disc/drum brake. The running brake is disc brake. And the parking brake is drum brake.

Rear brake	Type	disk/drum
	Bore	36 mm
	Brake disc	269mm
	Material	Without asbestus
	Fiction coefficient	0.38
	Efficient fiction radius	114 mm



(3) Wear indicator of friction block

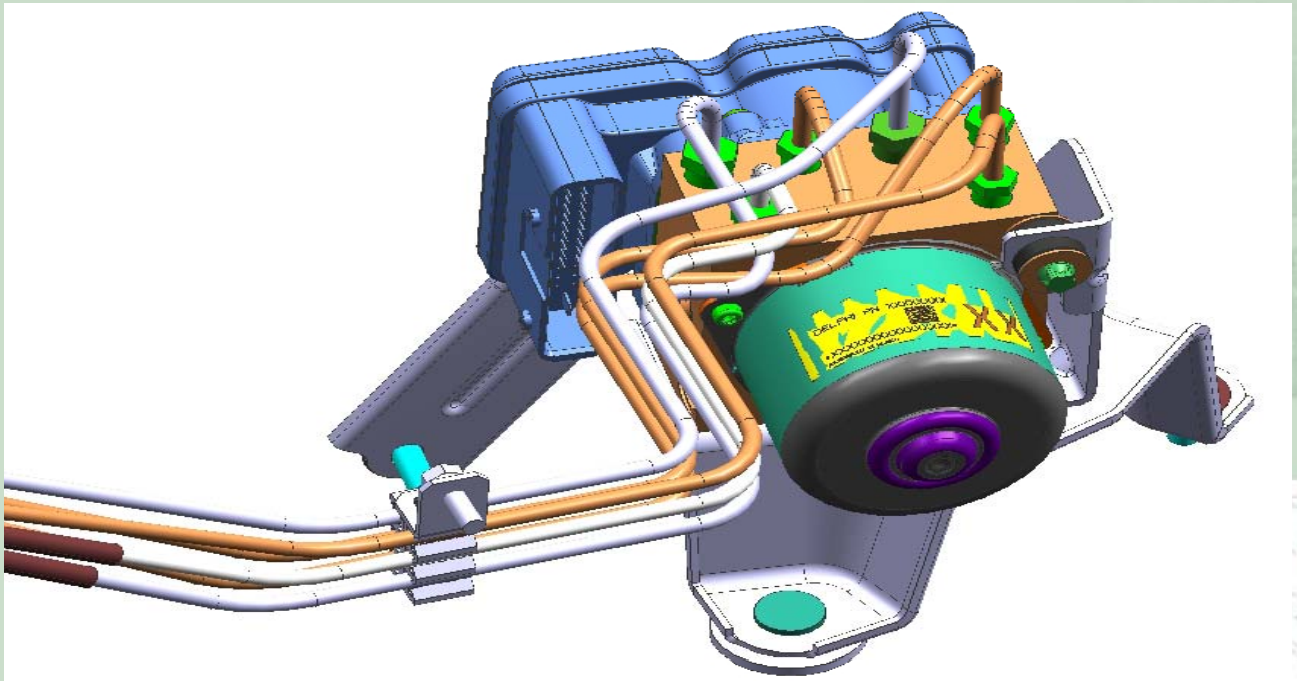
While the disc brake needs to be replaced, there will be a buzz form the wear indicator.

3. Parking brake

It is a manual drum brake.

3. ABS

ABS is at the FR of the vehicle. And it is composed by the wheel speed sensor, wire harness, ABS warning light, ECU, HCU (Hydraulic Control Unit) and so on.



A. Hydraulic closed loop with pump

▵ Diagonal hydraulic system

▵ ABS at 4 wheel

B. there are 2 electromagnetic valves of every wheel/ pipe.

▵ One is supercharging valve/inlet valve. Another is decompression valve/ outlet valve.

▵ Electromagnetic coil structure

▵ Pressure adjusting function

C. Small size, light weight ABS: 92×126×157.5 mm, 2.3 kg

D. It also use DOT4 brake liquid.

E. ECU is very durable.

F. the motor pump is connected to the ECU at the inner.

H. Max. working pressure: 275bar

byd auto

AUTO

BYD

Thank you