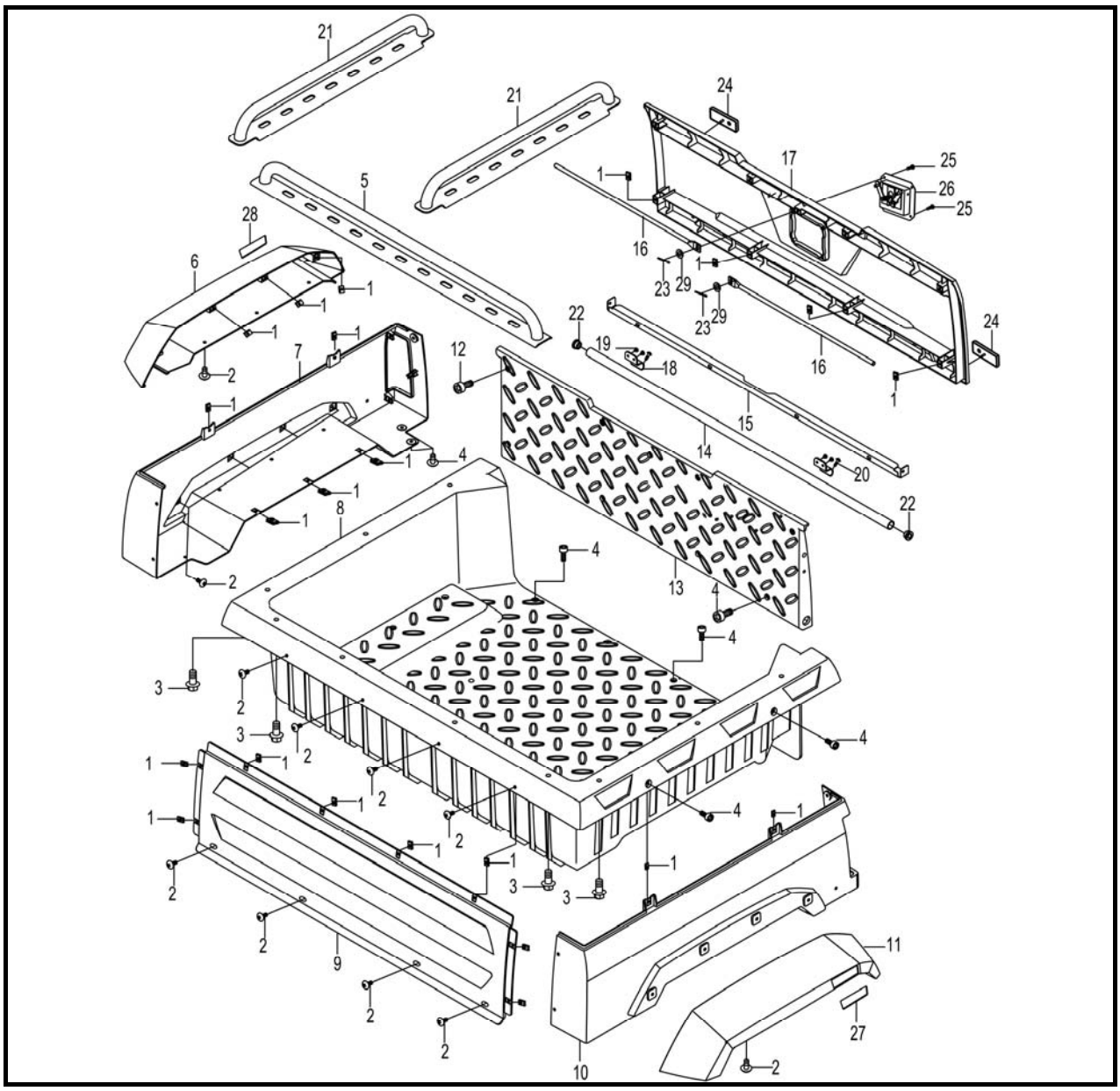
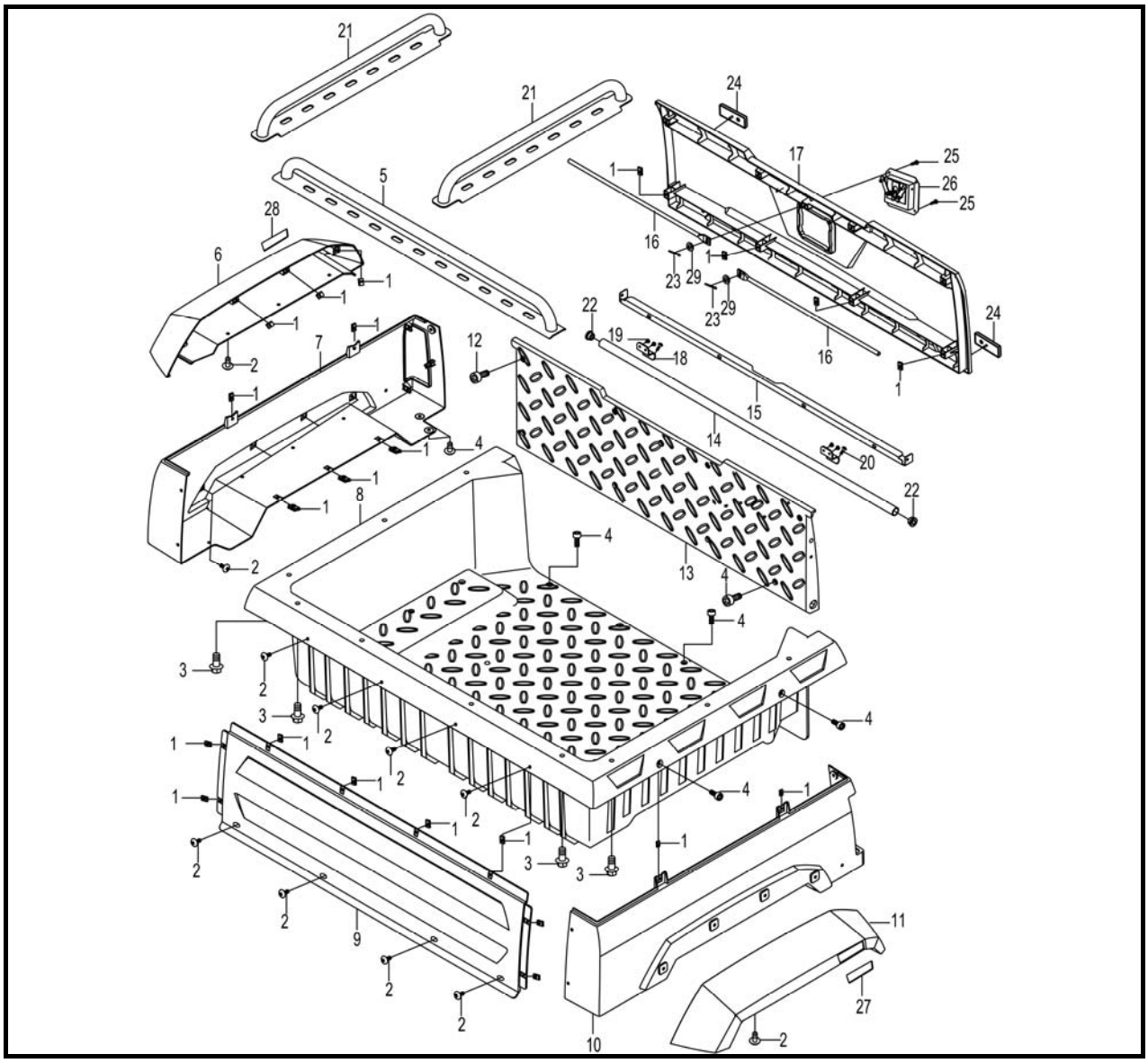


No.	Part Name	Qty	Remarks
9	Front bed plate	1	
10	Front panel, l	1	
11	Rear left wheel regula Ⅱ	1	
12	Hex tapping screws ST5.3×16	2	
13	Liner panel, cargo bed	1	
14	Tube	1	
15	Supporting plate, cargo bed	1	
16	Bed door lock axis	2	
17	Bed door sheet	1	
18	Rotating liner plate	2	



No.	Part Name	Qty	Remarks
19	Cross big plate head tapping screw ST4.8×13	4	
20	Screw M6×12	2	
21	Side bed guardrail assy	2	
22	Nylon flange bushing Φ10×Φ18×Φ22.5×13	2	
23	Split pin 2×25	2	
24	Rear reflector assy	2	
25	Screws ST4.2×13	4	
26	Back door panel switch assy	1	
27	Rear left side reflector	1	
28	Rear right side reflector	1	
29	Washer Φ6×Φ18×1.6	2	

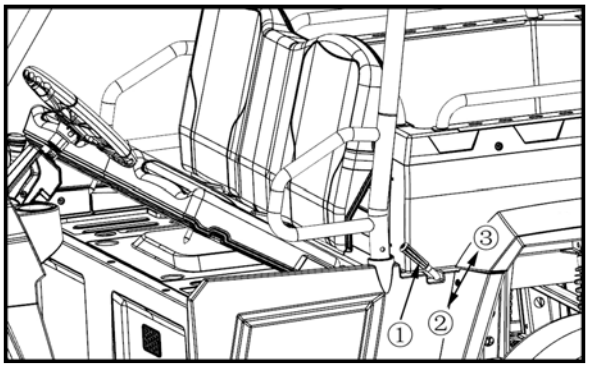
Raising and Lowering the Cargo Bed

To raise the cargo bed

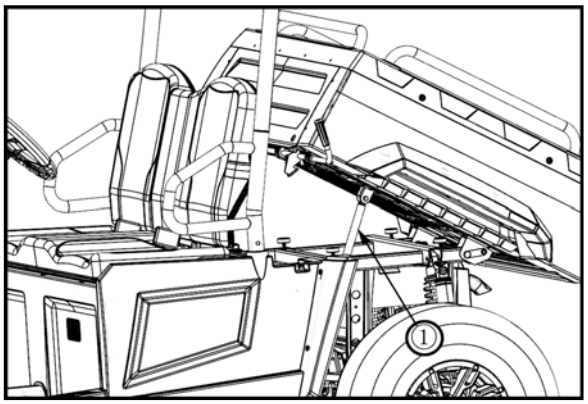
- Apply the parking brake with the engine off.
- Pull up the cargo bed handle.

To lower the cargo bed

Press down the cargo bed hard to make the gas spring contractive till it is locked.



① Cargo bed handle
② Down
③ Up

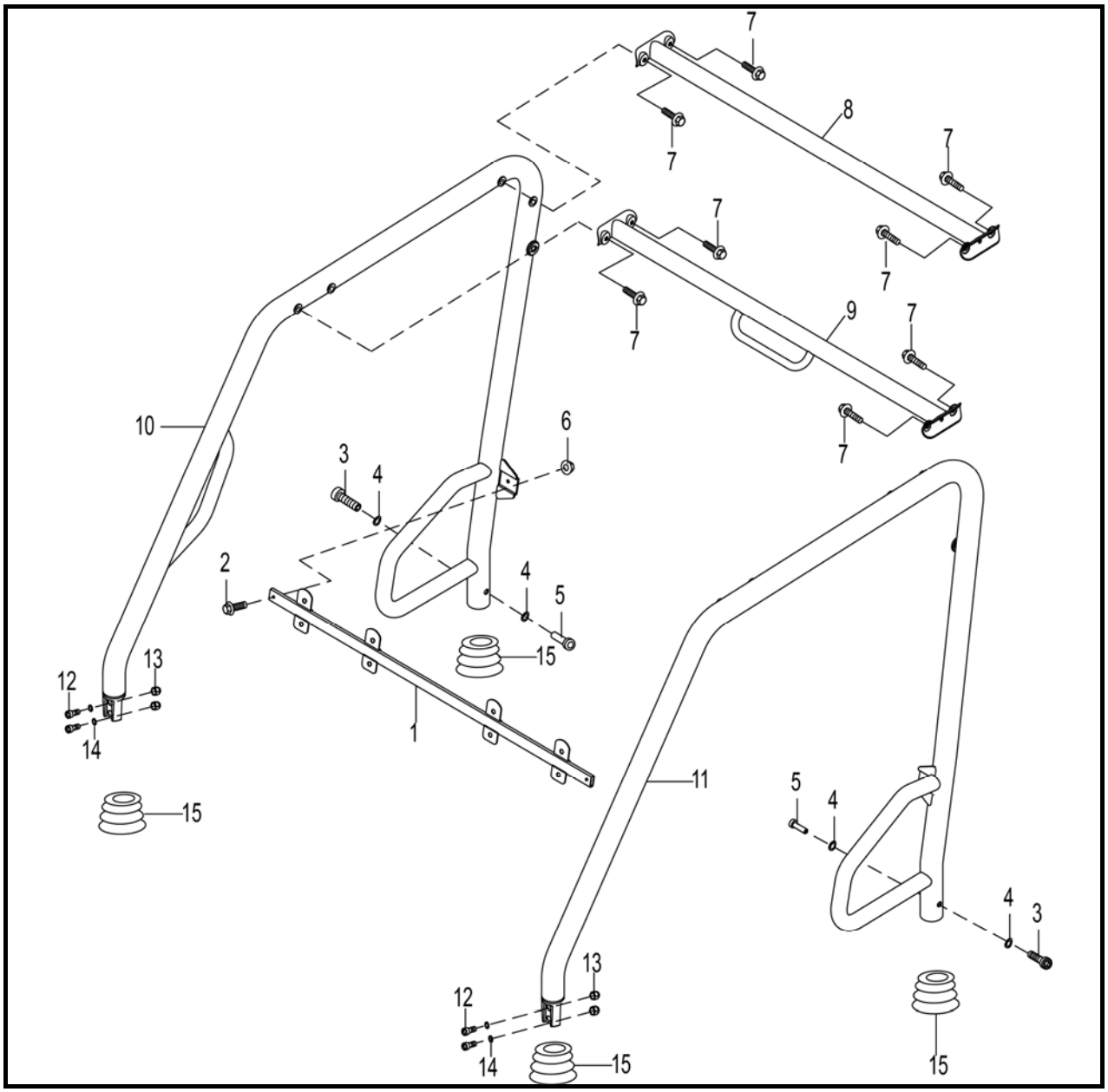


① Gas spring

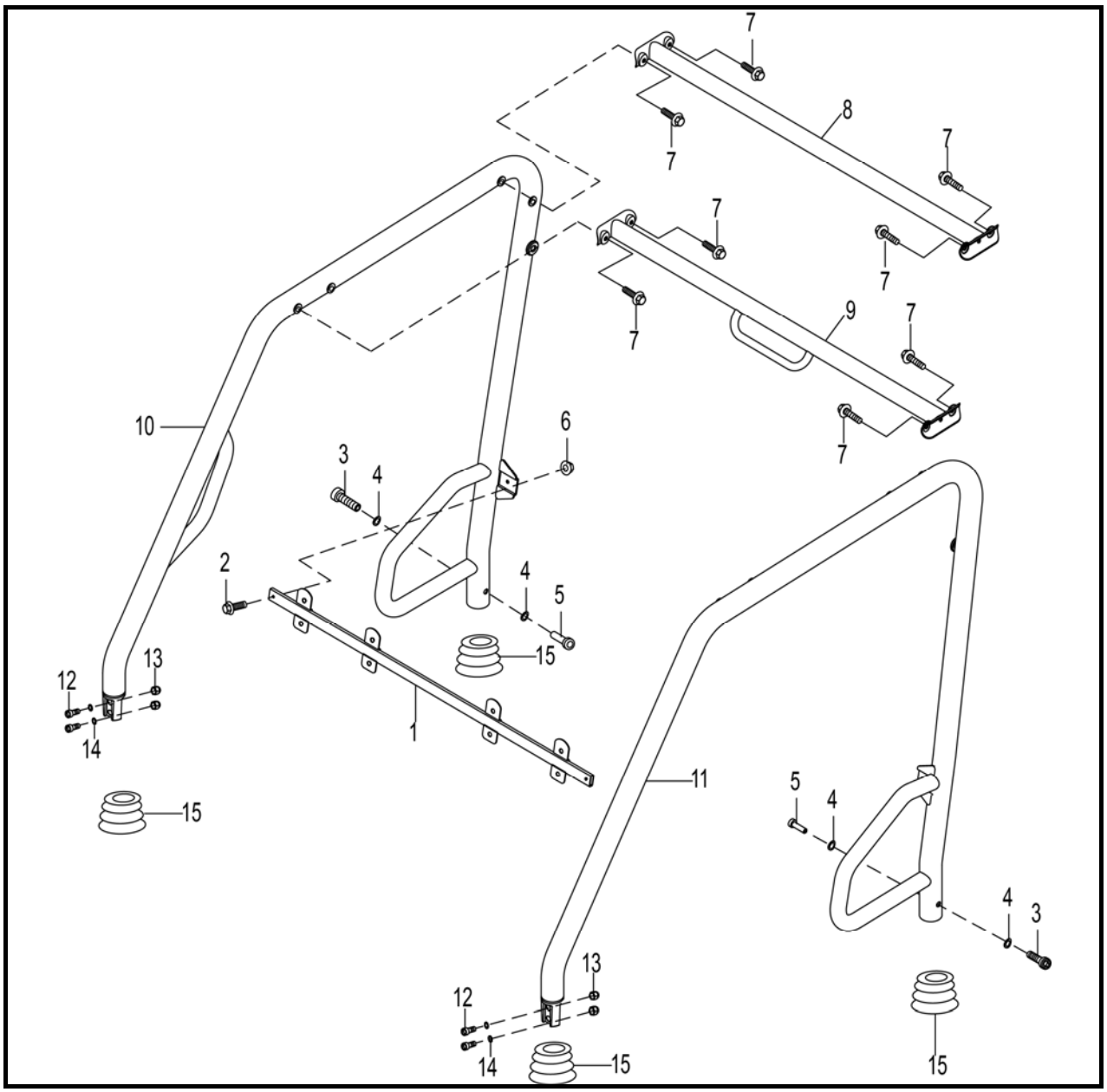
NOTE:

Pull up the cargo bed handle to raise the cargo bed with the gas spring elasticity.

Head Shed Frame



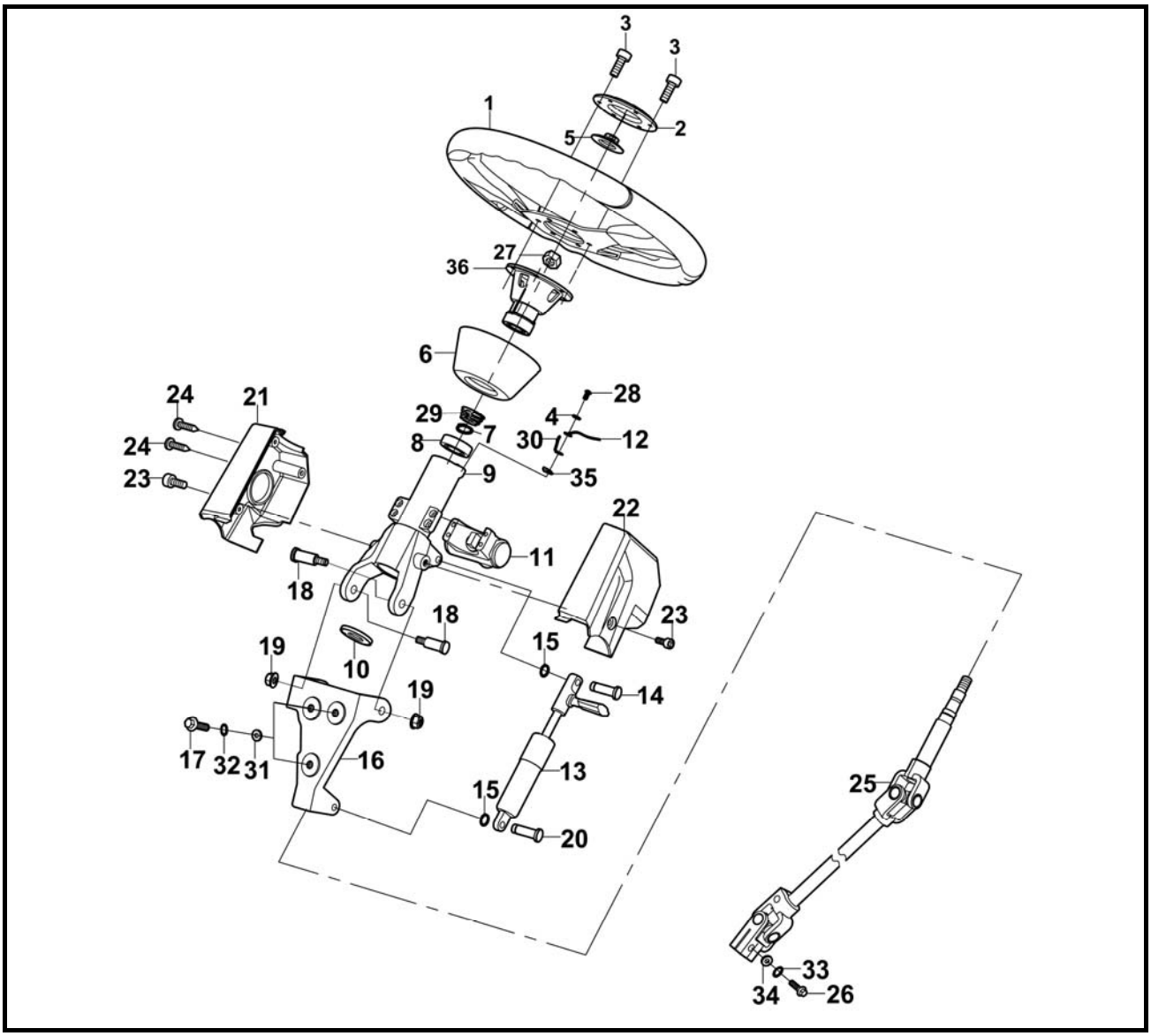
No.	Part Name	Qty	Remarks
	Removing the head shed frame		
1	Shed bar assy Ⅴ	1	
2	Hexagon flange bolt M6×25	2	
3	Swivel bolt M8×22-Φ10×16	2	
4	Curved washer	4	
5	Swivel nut M8×25	2	
6	Cap nut M6×14	2	
7	Bolt M10×1.25×20	8	
8	Shed bar assy Ⅳ	1	



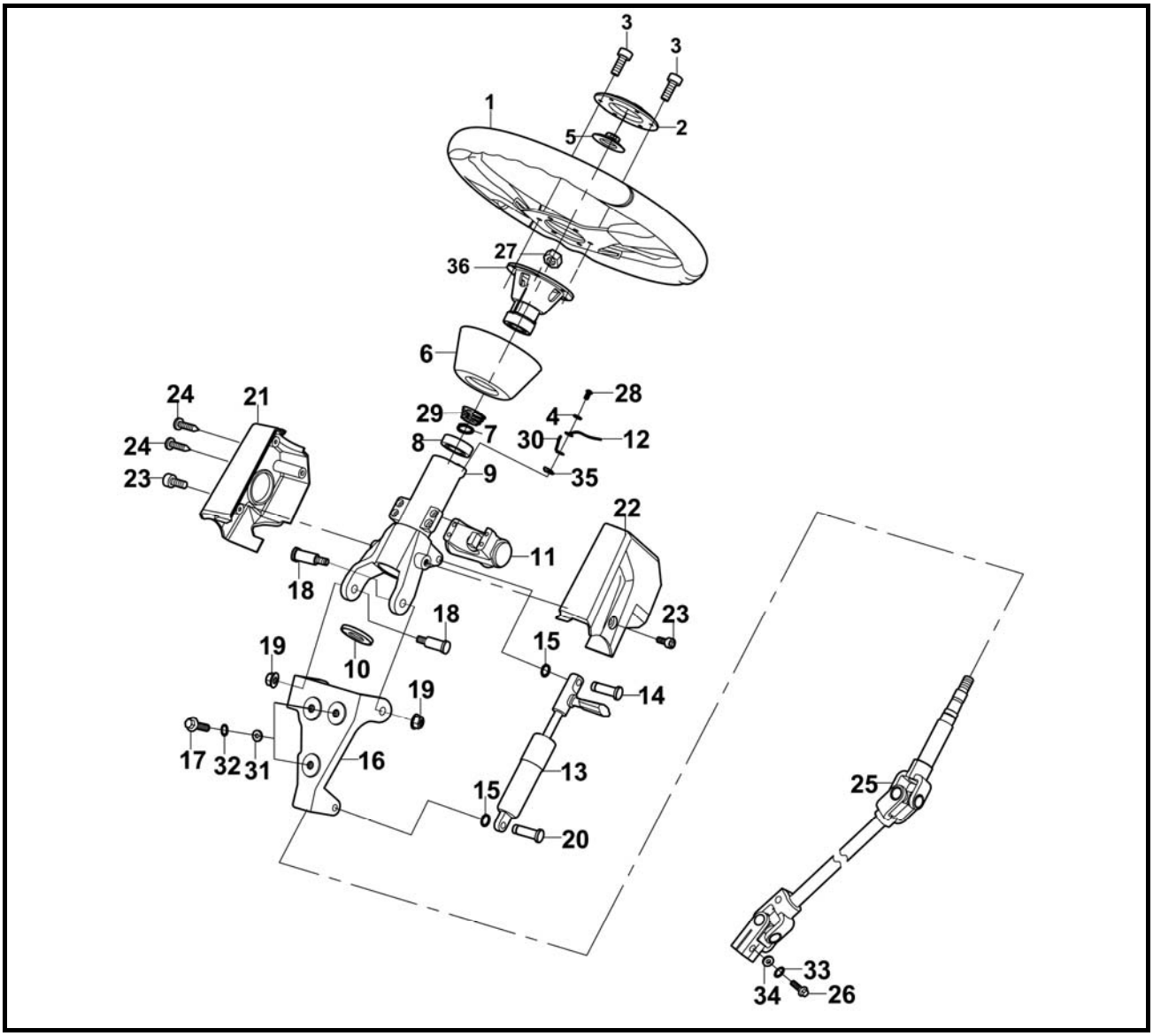
No.	Part Name	Qty	Remarks
9	Shed bar assy Ⅲ	1	
10	Shed bar assy Ⅱ	1	
11	Shed bar assy Ⅰ	1	
12	Hexagon socket head screw M10×1.25×45	4	
13	Cap nut M10×1.25	4	
14	Spring washer -10	4	
15	Roof shed joint rubber boot C	4	

DIRECTION SYSTEM

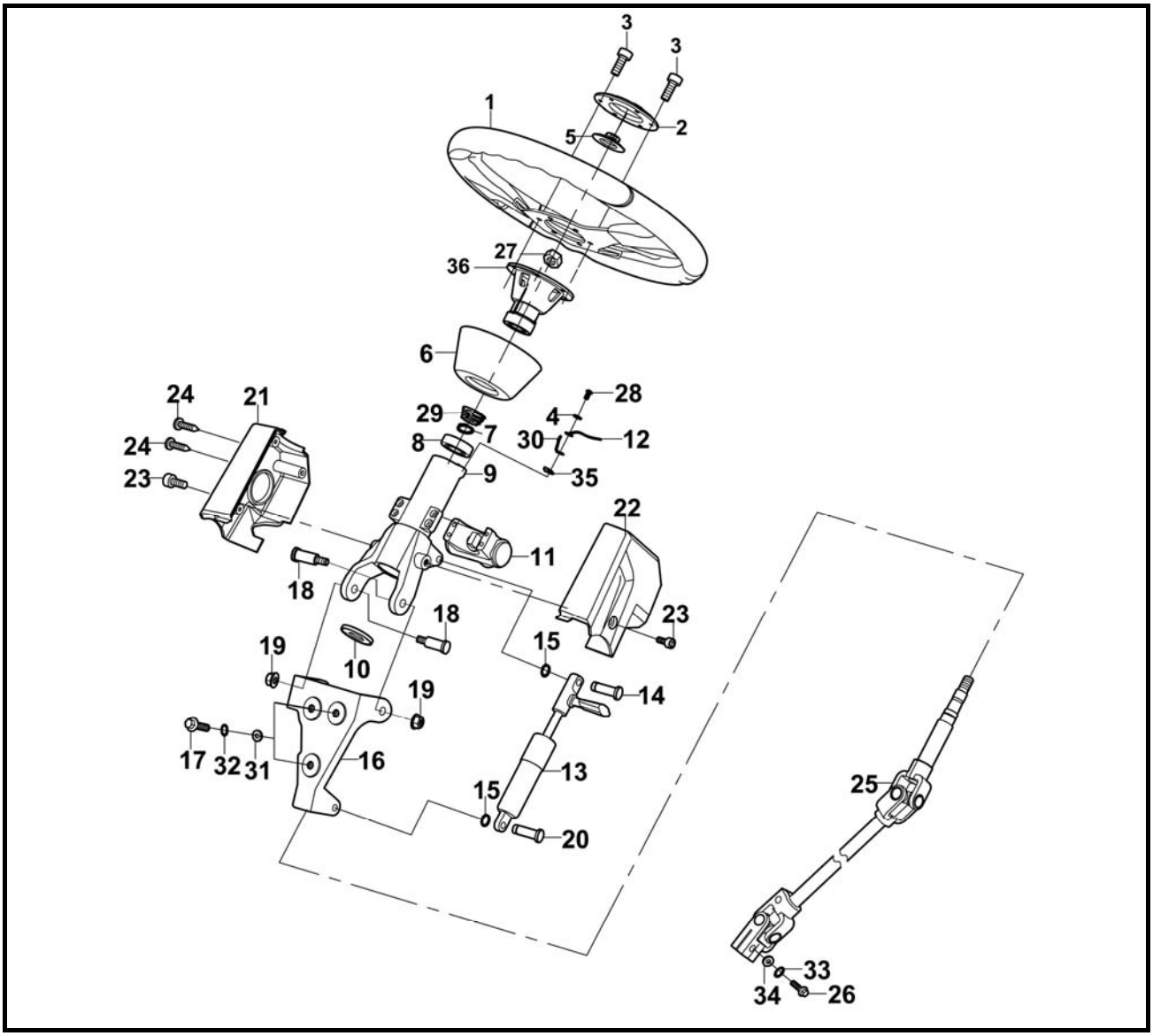
Steering Wheel part



No.	Part Name	Qty	Remarks
	Removing the steering wheel		
1	Steering wheel comp	1	
2	Fixed cap, steering wheel	1	
3	Screw M5×20	6	
4	Horn insulation pad 1	1	
5	Horn switch	1	
6	Steering column cover Ⅰ	1	
7	circlip for shaft d0=17	1	
8	Deep groove ball bearing 6003-2RZ	1	
9	Adjustable steering wheel swivel seat	1	
10	Deep groove ball bearing 6805	1	

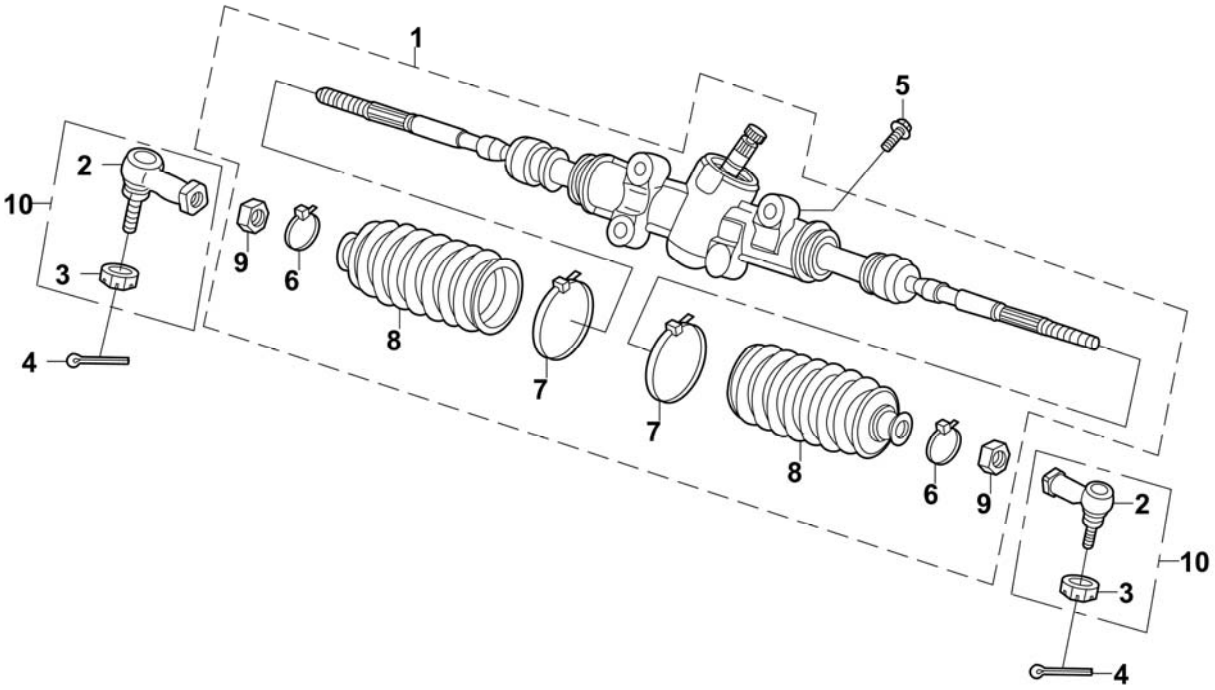


No.	Part Name	Qty	Remarks
11	Ignition switch assy.	1	
12	Horn earth wire	1	
13	Direction gas spring assembly	1	
14	Step slotting pin Φ8×34	1	
15	Cotter pin Φ5×1	2	
16	Direction of the seat	1	
17	Hexagon flange bolt M10×1.25×16	3	
18	Bolts M6×Φ10×2.5×30.5	2	
19	Metal insert hexagon lock nut with flange M6×1.25	2	
20	Step slotting pin Φ8×45	1	
21	Steering column cover Ⅲ	1	
22	Steering column cover Ⅱ	1	
23	With disc six angle bolts M6×12	2	

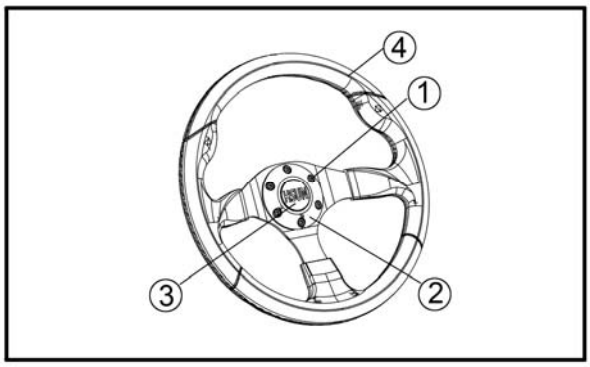


No.	Part Name	Qty	Remarks
24	Cross small plate head tapping screw ST3.9×13	3	
25	Direction drive shaft assembly	1	
26	Hexagon bolt with flange M8×30	1	
27	Metal insert hexagon locknut with flange M12×1.25	1	
28	Round head screw with cross M4×8	1	
29	Horn spring	1	
30	Connection strap for horn	1	
31	Washer Φ10×Φ20×2	3	
32	Spring washer Φ10	3	
33	Split washer Φ8	1	
34	Washer Φ8	1	
35	Insulation spacer for horn 2	1	
36	Adapter sleeve , steering wheel	1	

Steering mechanism part



No.	Part Name	Qty	Remarks
	Removing the steering mechanism		
1	Steering comp	1	
2	Diverter bulb assembly	2	
3	Hexagon nut M12	2	
4	Split pin 2×30	2	
5	Hexagon bolt with flange M10×1.25×35	4	
6	Elasticity anchor ear H	2	
7	Dustproof cover clamp	2	
8	Dustproof cover1	2	
9	Hex nut M14×1.25	2	
10	Steering ball head components	2	



THE STRUCTURE OF STEERING WHEEL PART DIASSEMBLING THE PARTS OF THE STEERING WHEEL

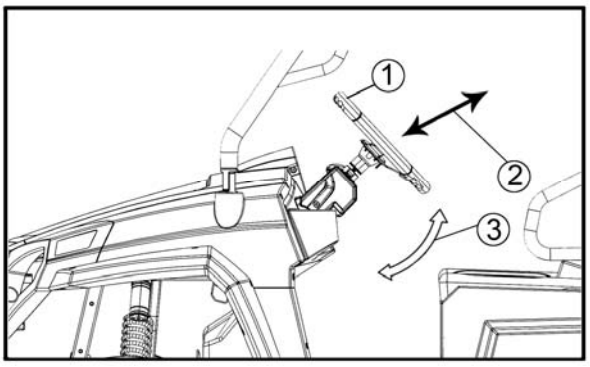
Remove:

- screw M5×20 ①
- Decoration cover for steering wheel ②
- Horn assembly ③

a. Takes down the screw ①

b. Takes down the decoration cover for steering wheel ② and horn assembly ③

c. Use the special tools pull out the steering wheel ④.



CHECKING THE PARTS OF THE STEERING WHEEL

Check:

- steering wheel ①
- rocky ledge ②
- reverse turning clearance ③

crack/ break → Replace.

loose/play → Adjust.

the steering wheel to rotate whether nimble, do not have stagnation. → Adjust the torque of the steering wheel whether obviously increase → Adjust.

NOTE:

The steering force cutting which exerts to transfers in steering wheel outflow boundary is smaller than 245N.

The reverse running clearance whether does surpass the limited stipulation → Adjust

NOTE:

The reverse running clearance is less than 30mm.

The grip part which is covered by the foam whether has damaged, if it is, must replace a new steering wheel.

Inspect fastens nut of the steering wheel whether does have flaw and fissure , if it is, must replace.

Check the internal spline between the steering wheel and steering column whether have damaged, if the attrition is serious, must replace the steering wheel.

NOTE:

The tolerance clearance between the internal spline on the steering wheel and outer spline on the steering column is smaller than 0.1mm.

WARNING:

If find some problems in the check, it should be service immediately to ensure the normal work of the steering system.

DIASSEMBLING THE STEERING COLUMN PARTS

Remove:

- Front cover
- connection covers part
- steering wheel cover
- display board
- steering wheel

a. Takes down the parts of the front panel and the connection covers part and the display board and the steering wheel center covers

b. Take down the steering wheel

- bolt
- steering shaft

c. Loose the bolt which is on the steering drive axle, the top of spline, draws out the cross gimbal.

d. Loose the fastening two pieces M8×13.5 bolt on the steering shaft, take down the steering shaft from the frame.

CHECKING AND SERVICE THE STEERING COLUMN PARTS

1. Check:
   - steering column tube ①
   - bearing ②
   - central axis of the steering shaft ③
   - spline ④
   - loosening ⑤

The central axis of the steering shaft whether flexible and moves. If does, dismantle and check the axis, bearing and retaining ring whether ware or damaged, according to the inspection situation to instead the parts.

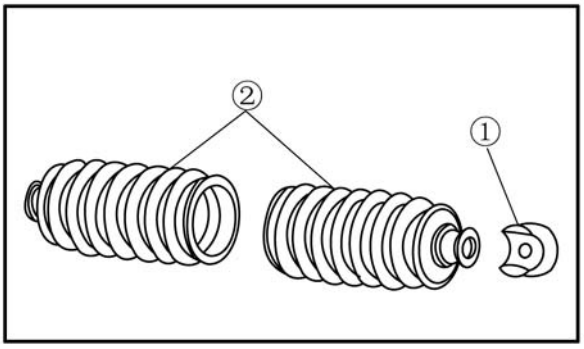
2. Check:
   The two ends of the spline on the central axis whether is wear out, if so, instead the central axis.
3. Check:
   The spline in the two ends of the central axis whether have wear, if dose, instead the central axis.
4. Check:
   The steering shaft tube and welding line of the branch whether have crack and corrosion, if it does, instead the steering shaft tube.

DIASSEMBLING THE STEERING DRIVE AXLE

1. Loose the clamp one piece flange bolt in the cross gimbal, internal spline on the top of the steering drive axle, pull out the top of the steering drive axle.
2. Loose the clamp one piece flange bolt in the cross gimbal, spline on the bottom of the steering drive axle, pull out the lower of the steering drive axle.

STEERING MACHINE PARTS

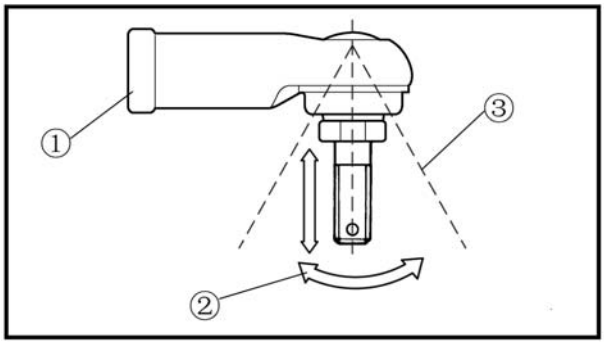
THE STRUCTURE OF THE STEERING



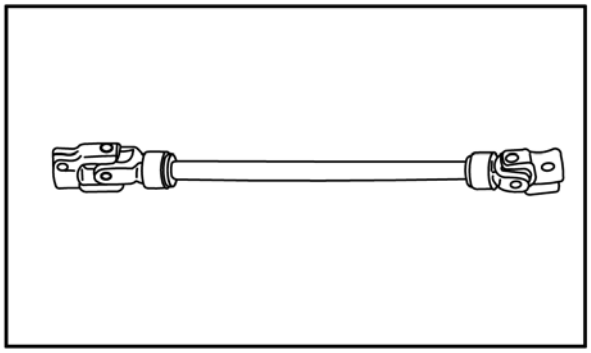
1. Check:
   • pressure pad ①
   • Rubber dust cover ②
   Wear/damage → Replace.
   Damage/degradation → Replace

NOTE:

When replace the dust boots of the ball , must enter 1/2 volume in lithium grease in to the dust boots.

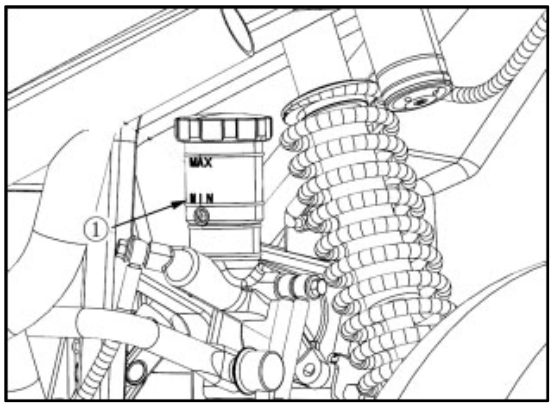


2. Check:
   • Ball joint steering mechanism ①
   • turning ②
   • rocky ledge ③
   Free play → Replace the tie-rod end.
   Turns roughly → Replace the tie-rod end.



3. Check:
   • tie-rods
   Bends/damage → Replace.
4. Check:
   • steering joint
   Crack/distortion → Replace.

BRAKE SYSTEM



PREPARATION FOR CHECKING BEFORE THE MAINTENANCE OF THE BRAKE SYSTEM.

Brake system is crucial to the life safety of the operator and therefore must be periodically inspected and maintained.

This vehicle uses the single return route hydraulic pressure disc brake system. Please follow the tips of inspection as below.

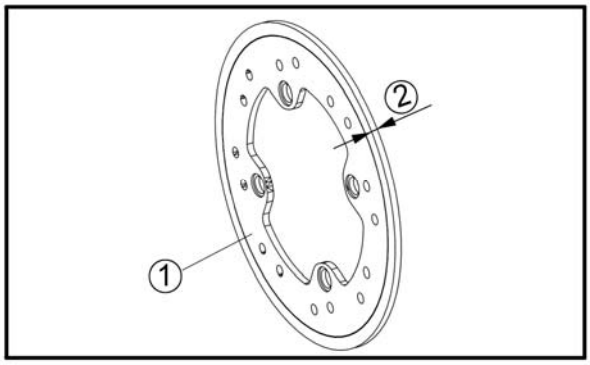
①. To check the amount of liquid in the oil cup. If it is min than the minimum mark, refill the box with the same type of fluid as was recommended by the manufacturer, to ensure to fluid level is higher than the minimum mark.

②. The brake should be kept between 3mm-5mm, Otherwise, please adjust the screw to meet required travel distance.

1. Inspect the brake pedal does maintain the certain counter-tension

When checks disk brake plate, the saved liquid in the oil cup will pour automatically into the pressure pipe and the liquid level along with it to reduce, the periodic inspection the disk brake plate liquid volume will be an important project.

Must use DOT3 Brake Fluid



2.

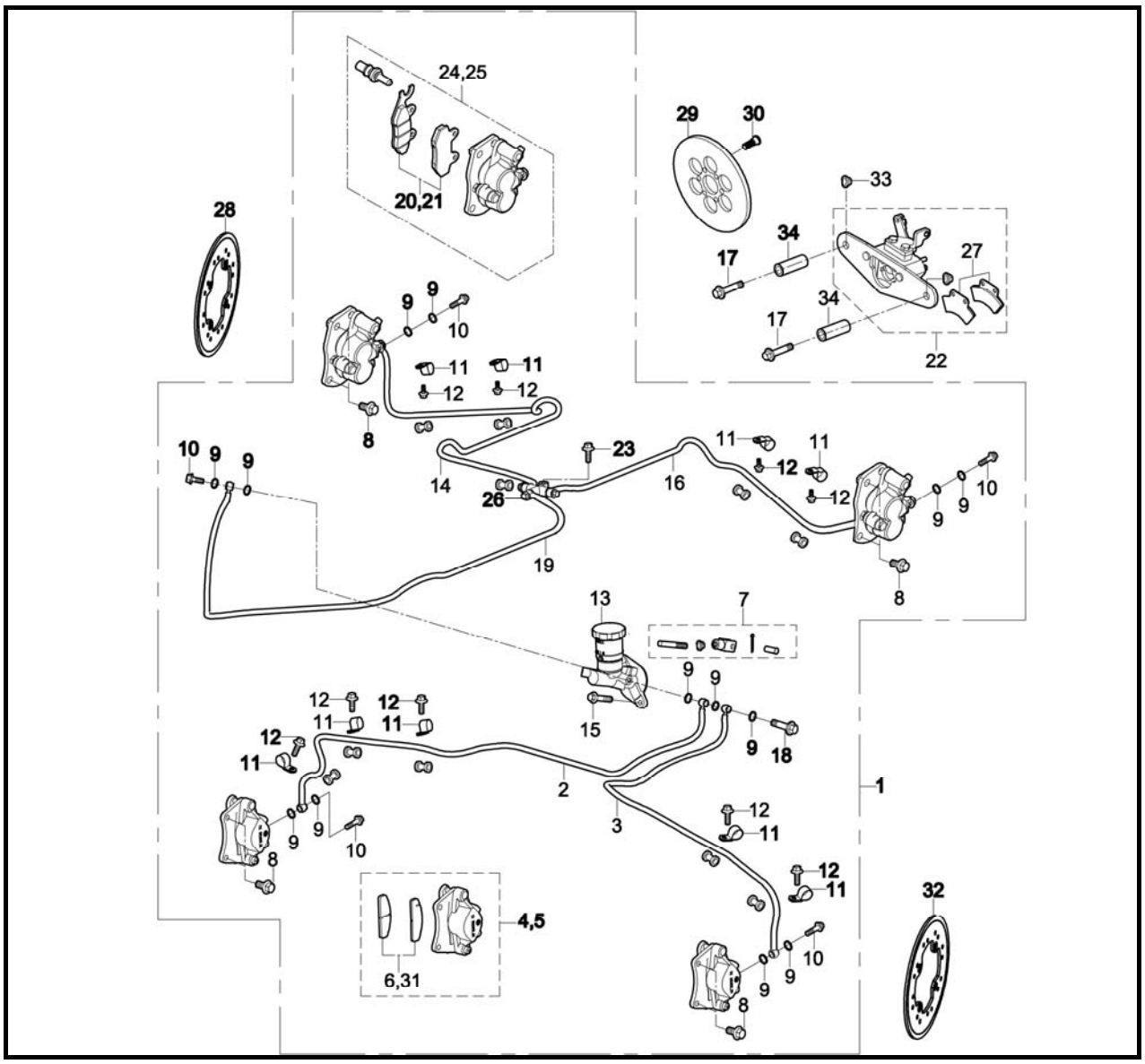
- rear disk brake plate ①
- thickness ②

Periodical inspection of the wear condition of rear disk brake plate is also necessary. Disk brake plate must be replaced depending on its wear condition.

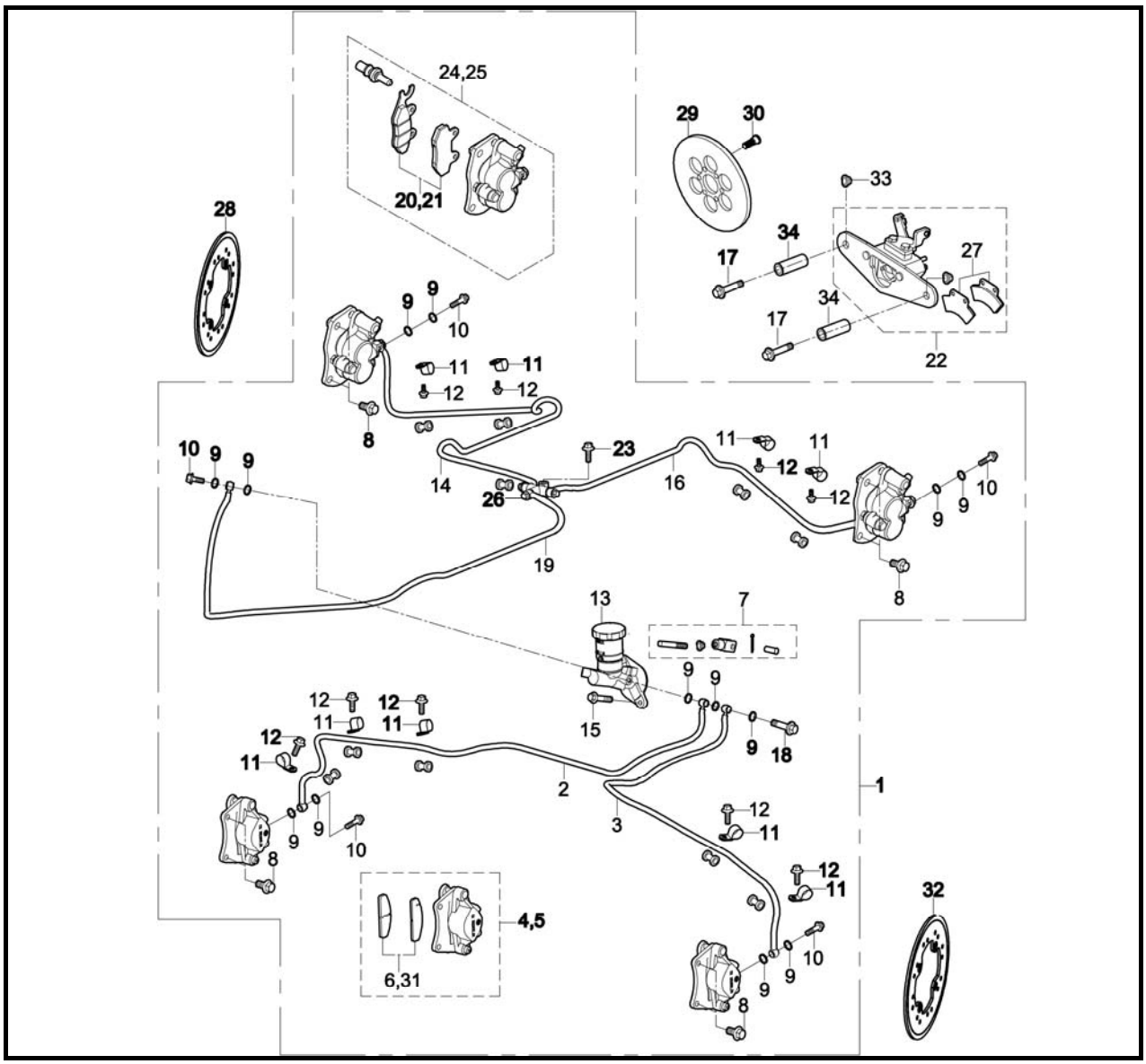
3. Disk brake plate uses hydraulic pressure of the brake fluid. Therefore, fuel pipe must be periodically inspected and replaced.

Inspection method: If the oil tubing has the aging, crack or distortion, must replace the oil tubing.

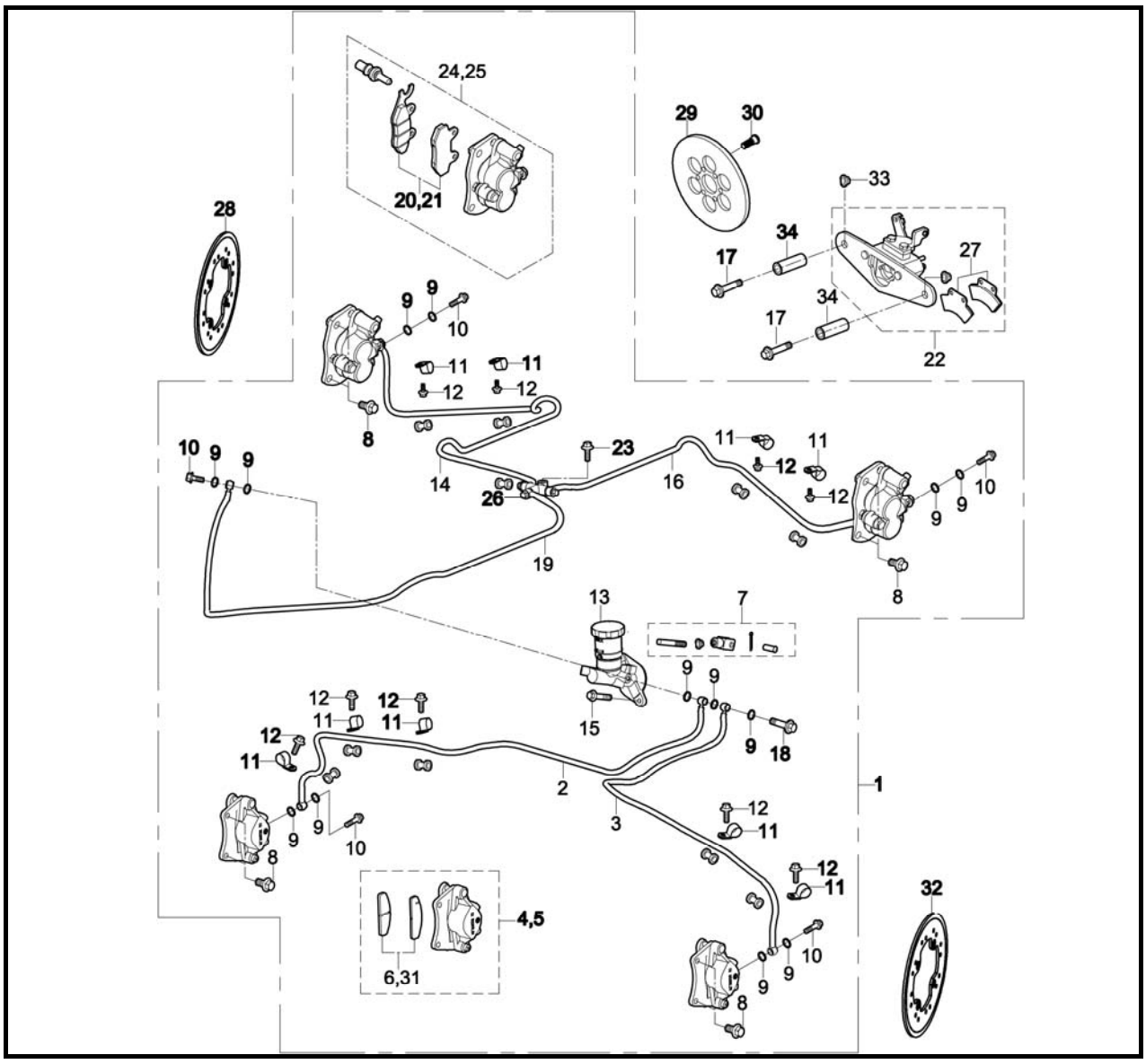
DISK BRAKE COMPONENTS



No.	Part Name	Qty	Remarks
	Removing brake components		
1	Hydraulic brake subassembly Ⅰ	1	
2	Right front hydraulic tubing	1	
3	Left front hydraulic tubing	1	
4	Front right disc brake clamp combination	1	
5	Front left disc brake clamp combination	1	
6	Front Left Brake Pad	2	
7	Brake rod combination	1	
8	Hexagon flange bolt M10×1.25×22	8	
9	Hydraulic tubing gasket	19	



No.	Part Name	Qty	Remarks
10	Strainer bolt Ⅰ	7	
11	Hydraulic tubing retaining clip	9	
12	Hexagon flange bolt M6×16	9	
13	Main Brake Pump	1	
14	Right rear hydraulic tubing	1	
15	Hexagon flange bolt M10×1.25×25	2	
16	Left rear hydraulic tubing	1	
17	Hexagon Flange Bolt M12×1.25×155	2	
18	Strainer bolt Ⅱ	1	
19	Middle hydraulic tubing	1	
20	Left rear brake sheet	2	
21	Right rear brake sheet	2	

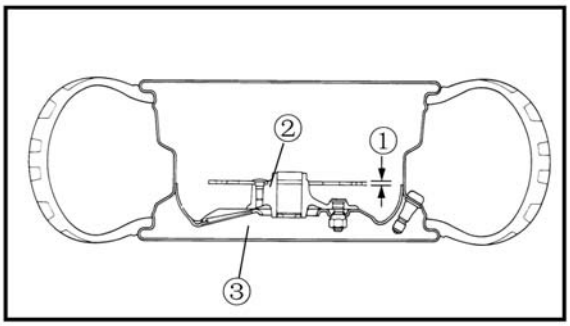


No.	Part Name	Qty	Remarks
22	Middle brake assy	1	
23	Hexagon flange bolt M6×30	1	
24	Rear right disc brake clamp combination	1	
25	Rear left disc brake clamp combination	1	
26	Hydraulic line three	2	
27	Brake pad assy	1	
28	Rear brake disc	1	
29	Parking disc brake plate	1	
30	Hexagon Bolt M8×1×20	4	
31	Front Right Brake Pad	2	
32	Front disc brake plate	2	
33	Hexagon Flange Bolt M12×1.25	2	
34	Cylindrical Bush φ12.5× φ22×55	2	

CHECKING THE FRONT BRAKE DISC

1. Check:
   • brake disc
   Galling/damage → Replace.
2. Measure:
   • brake disc deflection
   Out of specification → Check the wheel runout.
   If wheel runout is within the limits, replace the brake disc.

Brake disc maximum deflection
0.10 mm (0.004 in)



• brake disc thickness ①
• wheel hub ②
• wheel tyre ③
Out of specification → Replace.

Brake disc minimum thickness
3.0 mm (0.12 in)

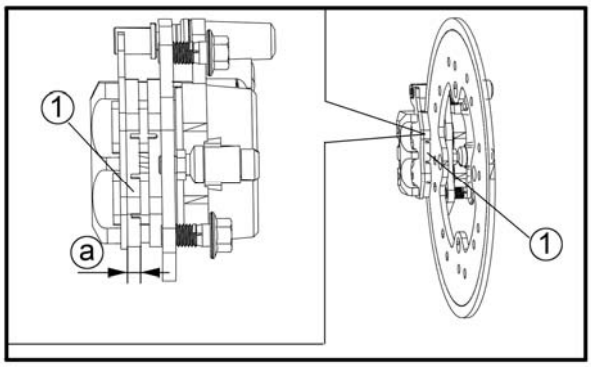
NOTE:

Apply the locking agent to the 30Nm bolt with screw down.

REPLACING THE FRONT BRAKE PADS

NOTE:

It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.



1.Check:
- brake pad ①

  Damage/wear → Replace

2.Measure:
- brake pad thickness ⓐ

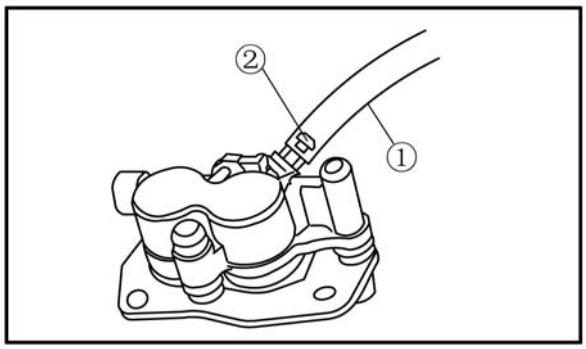
  Out of specification → Replace the brake pads as a set.

Brake pad wear limit
1.5 mm (0.06 in)

3. Install:
- brake pads
- brake pad spring

NOTE:

Always install new brake pads and brake pad spring as a set.



a. Connect a suitable hose ① tightly to the brake caliper bleed nozzle ②. Put the other end of this hose into an open container.

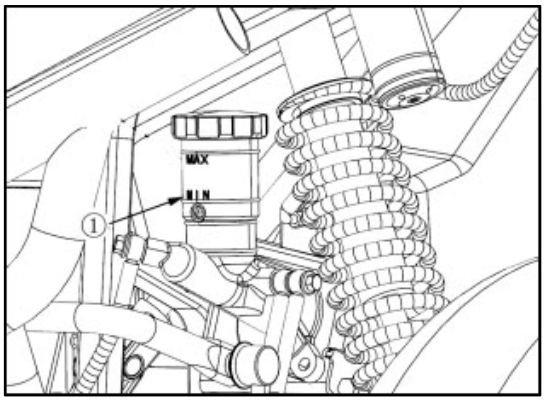
b. Loosen the brake caliper bleed screw and, using a finger, push the caliper piston into the brake caliper.

c. Tighten the brake caliper bleed screw.

Brake caliper bleed screw
6 Nm (0.6 m · kg, 4.3 ft · lb)

d. Install the retaining bolts and brake caliper.

Brake pad holding bolt
18Nm (1.8 m · kg, 13 ft · lb)



4. Check:
  • brake fluid level
  • minimum level mark ①

Must use DOT3 Brake Fluid

5. Check:
  •brake pedal operation
  Soft or spongy feeling → Bleed the brake system.

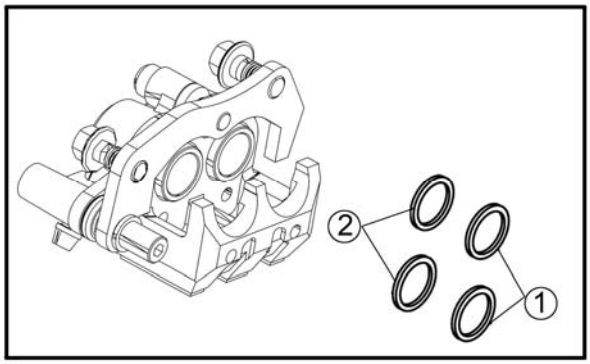
DISASSEMBLING THE FRONT BRAKE CALIPERS

WARNING:

• Brake caliper is one of the most important security components. Disassembly and maintenance must have a rich experience in technology and complete tool.

•Wrong disassembly and reassembly may cause serious injury and even death. Replace damaged brake caliper.

•If only replace the brake caliper of one side, please check carefully whether the braking force of right and left are balance and equal.



1. Remove:
  • brake caliper pistons
  • dust seals ①
  • caliper piston seals ②

a. Blow compressed air into the hose joint opening to force out the caliper piston from the brake caliper body.

WARNING:

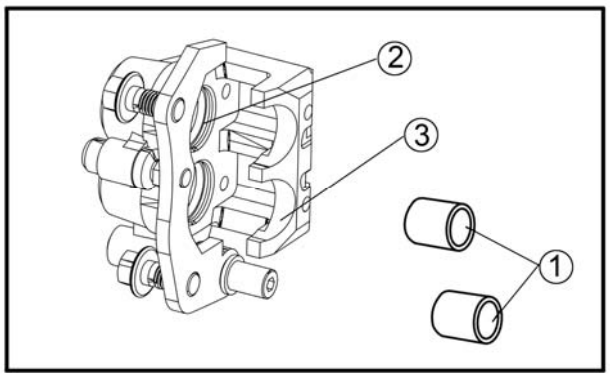
• Never try to pry out a caliper piston.

• Cover the caliper piston with a rag. Be careful not to get injured when the piston is expelled from the caliper cylinder.

b. Remove the dust seals and caliper piston seals.

WARNING:

All internal brake components should be cleaned in new brake fluid only. Do not use solvents as they will cause seals to swell and distort.



2. Check:
- brake caliper pistons ①
  Scratches/rust/wear → Replace the brake caliper assembly.
- brake caliper cylinders ②
  Wear/scratches → Replace the brake caliper assembly.
- brake caliper body ③
  Cracks/damage → Replace.
- brake fluid delivery passage (brake caliper body)
  Blockage → Blow out with compressed air.

WARNING:

Replace the caliper piston seals and dust seals whenever the brake caliper is disassembled.

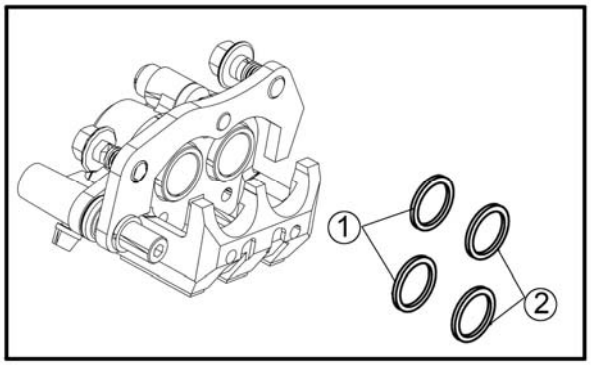
ASSEMBLING THE FRONT BRAKE CALIPERS

WARNING:

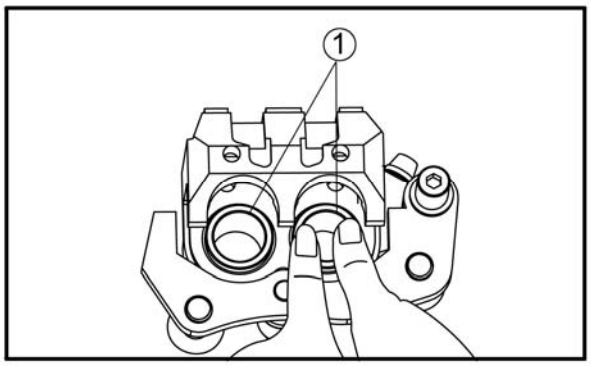
• All internal brake components should be cleaned and lubricated with new brake fluid only before installation.

Must use DOT3 Brake Fluid

• Replace the caliper piston seals and dust seal whenever a brake caliper is disassembled.



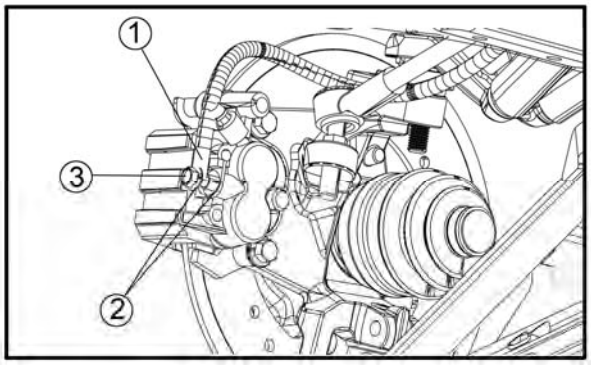
1. Install:
   • caliper piston seals ①
   • dust seals ②



2. Install:
   • brake caliper pistons ①

INSTALLING THE FRONT BRAKE CALIPERS

The following procedure applies to both of the front brake calipers.



1. Install:
   • brake caliper assembly
   • bolt flange

48Nm (4.8m · kg,35 ft · lb)

   • brake hose ①
   • copper washers ②
   • union bolt ③

NOTE:

When installing the brake hose on the brake caliper, make sure that the brake pipe touches the projection a on the brake caliper.

WARNING:

Proper brake hose routing is essential to insure safe vehicle operation.

2. Fill:
   • brake reservoir

Must use DOT3 Brake Fluid

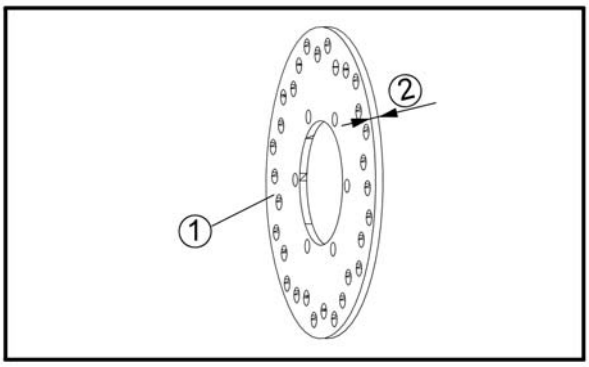
NOTE:

Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled brake fluid immediately.

3. Air bleed:
   • brake system

4. Check:
   • brake fluid level
   Brake fluid level is below the “MIN” level line
   → Add the recommended brake fluid to the proper level.

(The service method of the rear brake caliper is as the same as the front brake caliper, please refer to the before-mentioned to operate.)



CHECKING THE PARKING BRAKE DISC

1. Check:

• parking disc ①

Galling/damage → Replace.

2. Measure:

• parking disc deflection

Out of specification → Replace.

Parking disc maximum deflection
0.10 mm (0.004 in)

• parking disc thickness ②

Out of specification → Replace.

Parking disc minimum thickness
4.5 mm (0.18 in)

REPLACING THE PARKING BRAKE PADS

1. Check:
   - brake pad
   - brake pad plate

   Damage/wear → Replace
2. Measure:
   - brake pad thickness

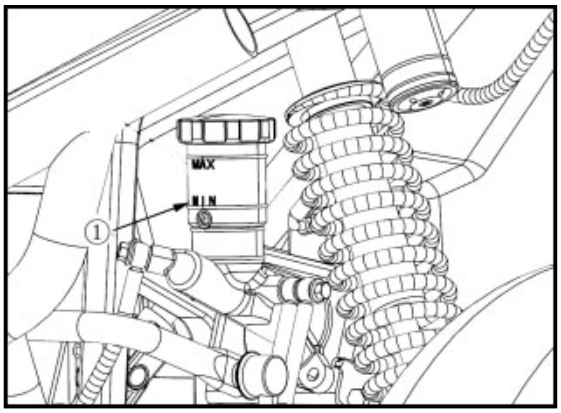
   Out of specification → Replace the brake pads as a set.

Brake pad wear limit
1.0 mm (0.04 in)

3. Install:
   - brake pads
   - pad spring

NOTE:

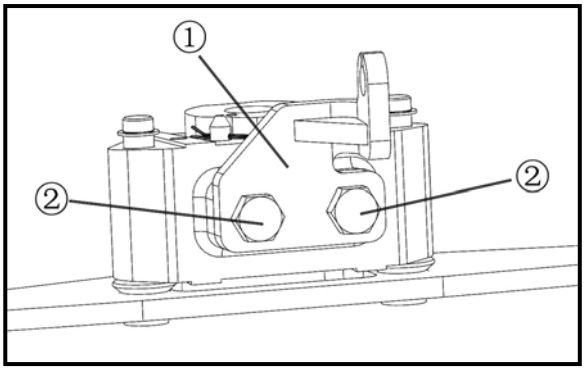
Always install new brake pads, new brake pad shims, new insulators, and a new brake pad spring as a set.

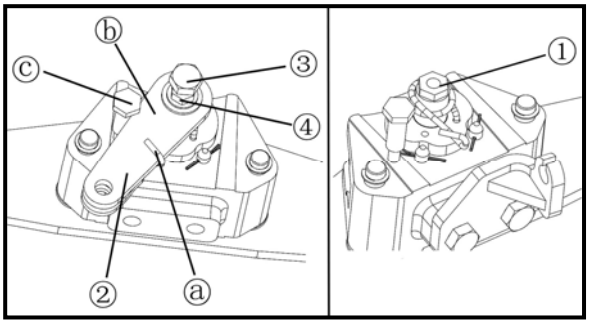


4. Check:
   - brake fluid level
   - minimum level mark ①

   Should the fluid level falls under the minimum mark, please refill the box with the same type of fluid as was recommended by the manufacturer to ensure the fluid level is higher than the minimum mark.

Must use DOT3 Brake Fluid





DISASSEMBLING THE PARKING BRAKE

1. Install:
   • parking brake case ①
   • parking brake case bolts ②

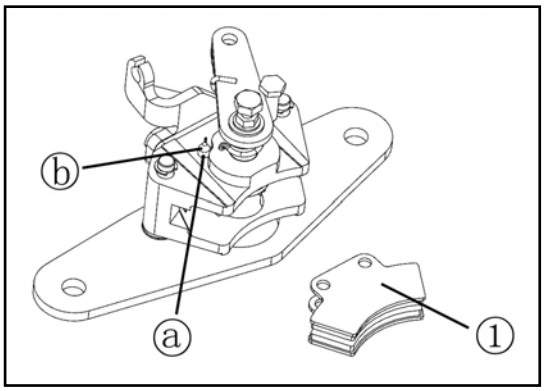
22Nm (2.2 m · kg,16 ft · lb)

2. Install:
   • parking brake arm shaft ①
   • parking brake arm ②
   • set bolt ③
   • parking brake arm nut ④

NOTE:

Apply lithium-soap-based grease to the parking brake arm shaft and set bolt.

a. Turn the parking brake arm shaft approximately 60° clockwise.
b. Install the parking brake arm shaft of the parking brake arm to align the parking brake arm markings □ with the parking return spring markingsⓐ.
c. Turn the parking brake arm until it contacts the pin ⓒ.
d. Finger tighten the set bolt.
e. Tighten the parking brake arm nut.



3. Install:
• brake pad ①

NOTE:

Remove the pin ⓐand ⓑ, then reassemble the parking brakes pads together.

4. Install:
• brake pad holding bolts

17Nm (1.7 m · kg,12 ft · lb)

CHECKING THE MASTER CYLINDER

1. Check:
   - brake master cylinder
     Wear/scratches → Replace the brake master cylinder assembly.
   - brake master cylinder body
     Cracks/damage → Replace.
   - brake fluid delivery passage
     (brake master cylinder body)
     Blockage → Blow out with compressed air.
2. Check:
   - brake master cylinder kit
     Scratches/wear/damage → Replace as a set.
3. Check:
   - brake fluid reservoir
   - brake fluid reservoir diaphragm
     Cracks/damage → Replace.

ASSEMBLING THE BRAKE MASTER CYLINDER

WARNING:

- ***All internal brake components should be cleaned and lubricated with new brake fluid only before installation.***

Must use DOT3 Brake Fluid

- ***Whenever a master cylinder is disassembled replace the piston seals and dust seals.***

INSTALLING THE BRAKE MASTER CYLINDER

1. Install:
   • brake master cylinder

16Nm (1.6 m · kg,11 ft · lb)

2. Install:
   • brake pipe

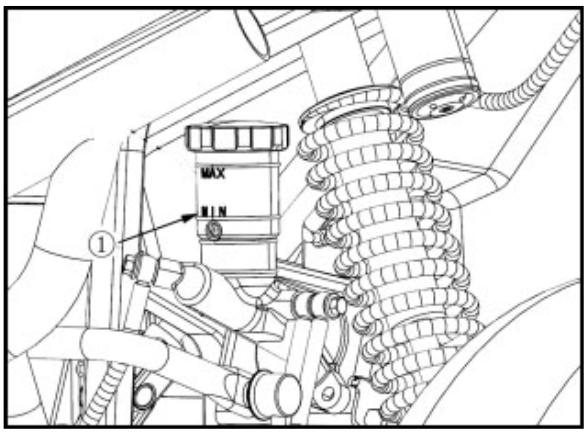
19Nm (1.9 m · kg,13 ft · lb)

   • washer plate
   • brake hose
   • union bolt

27Nm (2.7 m · kg,19 ft · lb)

3. Fill:
   • brake fluid reservoir

Must use DOT3 Brake Fluid



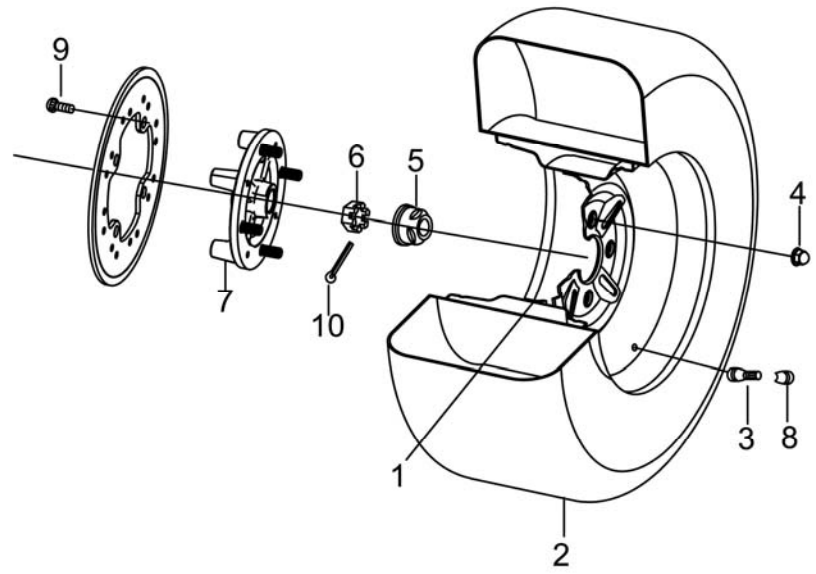
NOTE:

Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled brake fluid immediately.

4. Air bleed:
   • brake system
5. Check:
   • brake fluid level
   Brake fluid level is under the “MIN” level line
   Fill up.

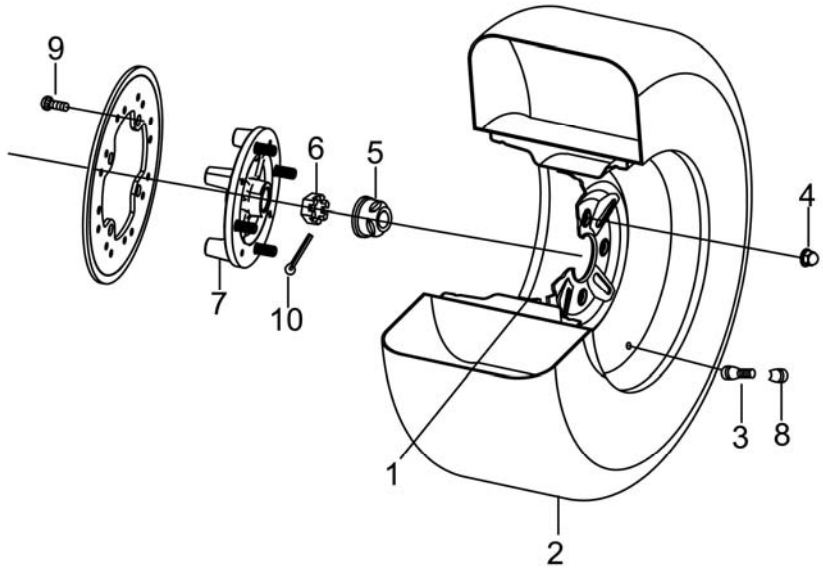
WHEEL AND TYRE PARTS

FRONT WHEELS

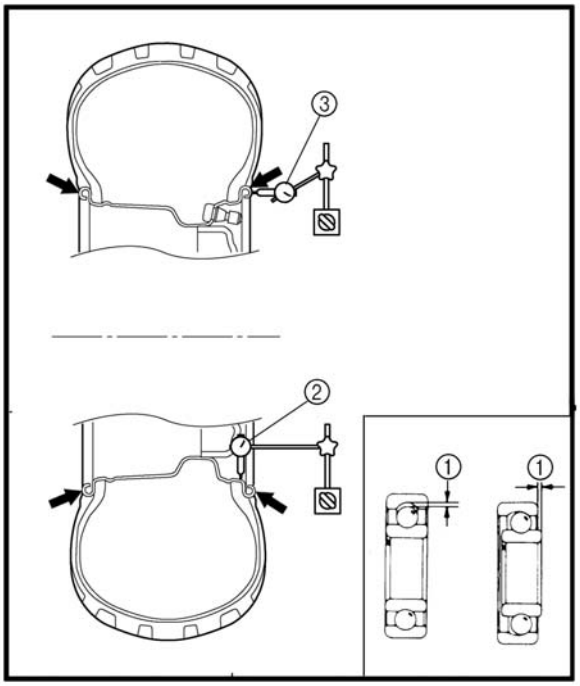


No.	Part Name	Qty	Remarks
	Removing the front wheel		
1	Front wheel rim	2	
2	Front tyre	2	
3	Cycle valve	2	
4	Nut M10×1.25	8	
5	Wheel decoration cover Ⅳ	2	
6	Nut M24×1.5	2	***WARNING:***
7	Front hub	2	***Securely support the vehicle so***
8	Valve spool cap	2	***There is no danger of it falling over.***
9	Bolt M8	4	
10	Cotter 3.2×50	2	

REAR WHEELS



No.	Part Name	Qty	Remarks
	Removing the rear wheel		
1	Rear wheel rim	2	
2	Rear tyre	2	
3	Cycle valve	2	
4	Nut M10×1.25	8	
5	Wheel decoration cover Ⅳ	2	***WARNING:***
6	Nut M24×1.5	2	***Securely support the vehicle so***
7	Rear hub	2	***There is no danger of it falling over.***
8	Valve spool cap	2	
9	Bolt M8	4	
10	Cotter 3.2×50	2	

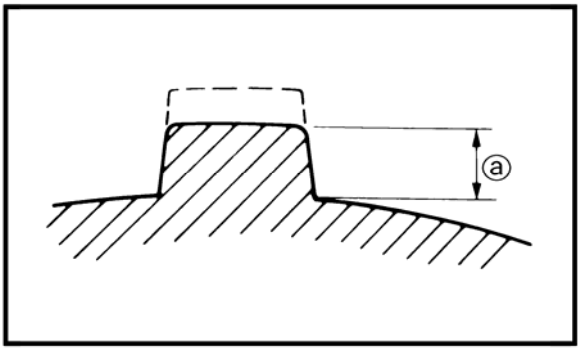


CHECKING THE WHEEL TYRE

1. Check:
   • wheel tyre
2. Measure:
   • wheel runout
   Over the specified limit → Replace the wheel or check the wheel bearing play ①.

3. Check:
   • wheel balance
   Out of balance → Adjust.

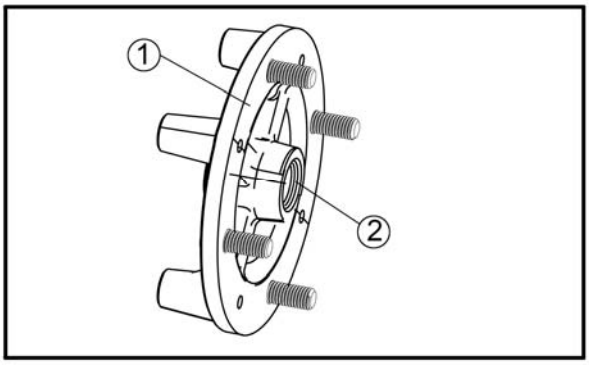
Wheel runout limit
Radial ②: 2.0 mm (0.08 in)
Lateral ③: 2.0 mm (0.08 in)



WARNING:

The profile depth falls below 3mm, Please replace the tyre immediately.

• tire wear limit ⓐ



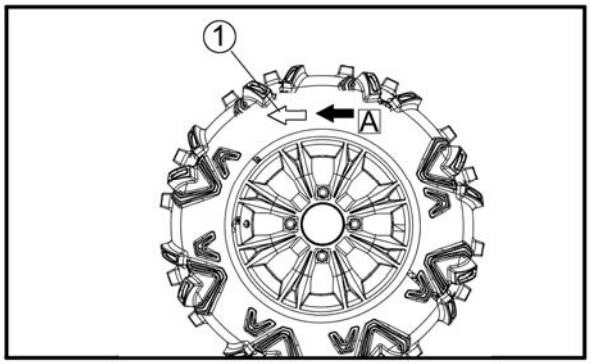
CHECKING THE WHEEL HUB

1. Check:
• wheel hub ①
Cracks/damage → Replace.
• splines (wheel hub) ②
Wear/damage → Replace.
·nuts (wheel hub)
loosen or distorted → Replace or tighten

INSTALLING THE WHEEL HUB

1. Install:
• axle nut

260 Nm (26.0 m · kg, 190 ft · lb)

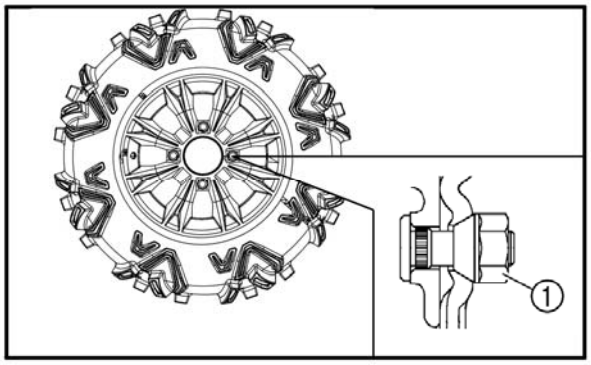


INSTALLING THE WHEEL TYRE

1. Install:
• wheel

NOTE:

The arrow mark ① on the tyre must point in the direction of rotation A of the wheel.



2. Tighten:
• wheel nuts ①

The angle of the conical bores is 60°

WARNING:

Tapered wheel nuts ① are used for both the front and rear wheels. Install each nut

SPECIFICATION OF WHEEL AND TYRE

	Wheel hub Dimension	Tyre Dimension	Tyre Pressure (Kpa /psi)
Front Wheel	12×6(min)	25×8-12(min)	138/20
	14×7(max)	26×9-14(max)	
Rear Wheel	12×8(min)	25×10-12(min)	138/20
	14×9(max)	26×11-14(max)	

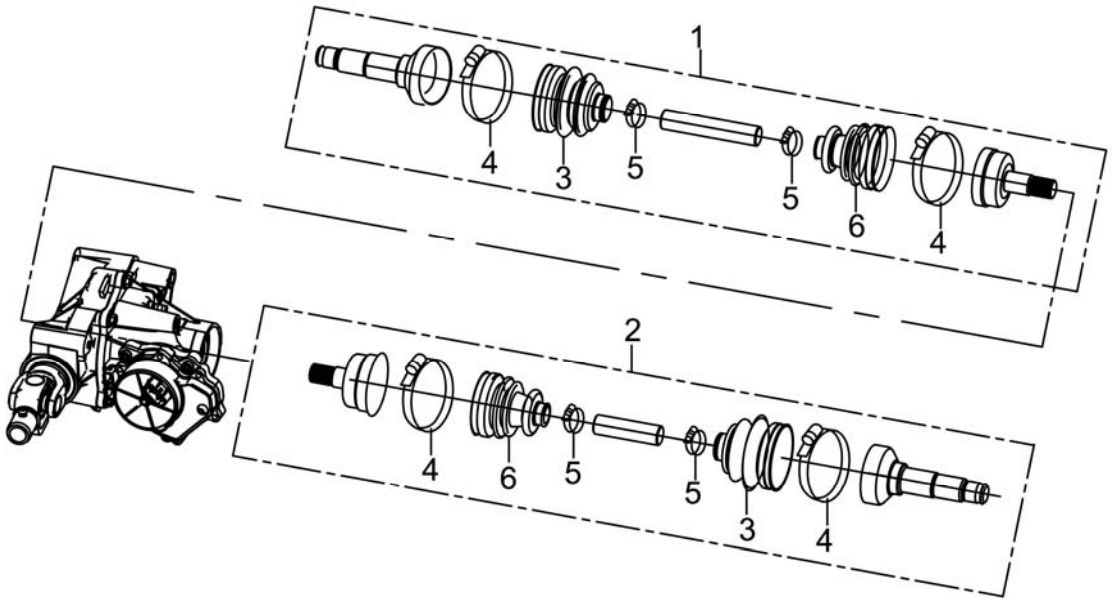
• Since wheels and tyres are crucial to the vehicle operation, inspection for tyre pressure and profile depth is necessary.

• To ensure maximum security and longer life expectancy of the wheel, please periodically inspect the tyre pressure and profile depth. Insufficient tyre pressure can result in not only intensified wearing of the tyre but also instability during the course of operating the vehicle (such as hard turning). Excessive tyre pressure can also reduce the friction force between the tyre and ground, causing spinning or lose of control. Therefore, please ensure the tyre pressure strictly complies with figures shown in the chart above.

• Before operating the vehicle each time, please check if profile depth of the tyre is over worn, which might result in spinning, instability, lose of control and other potential security risk of the vehicle.

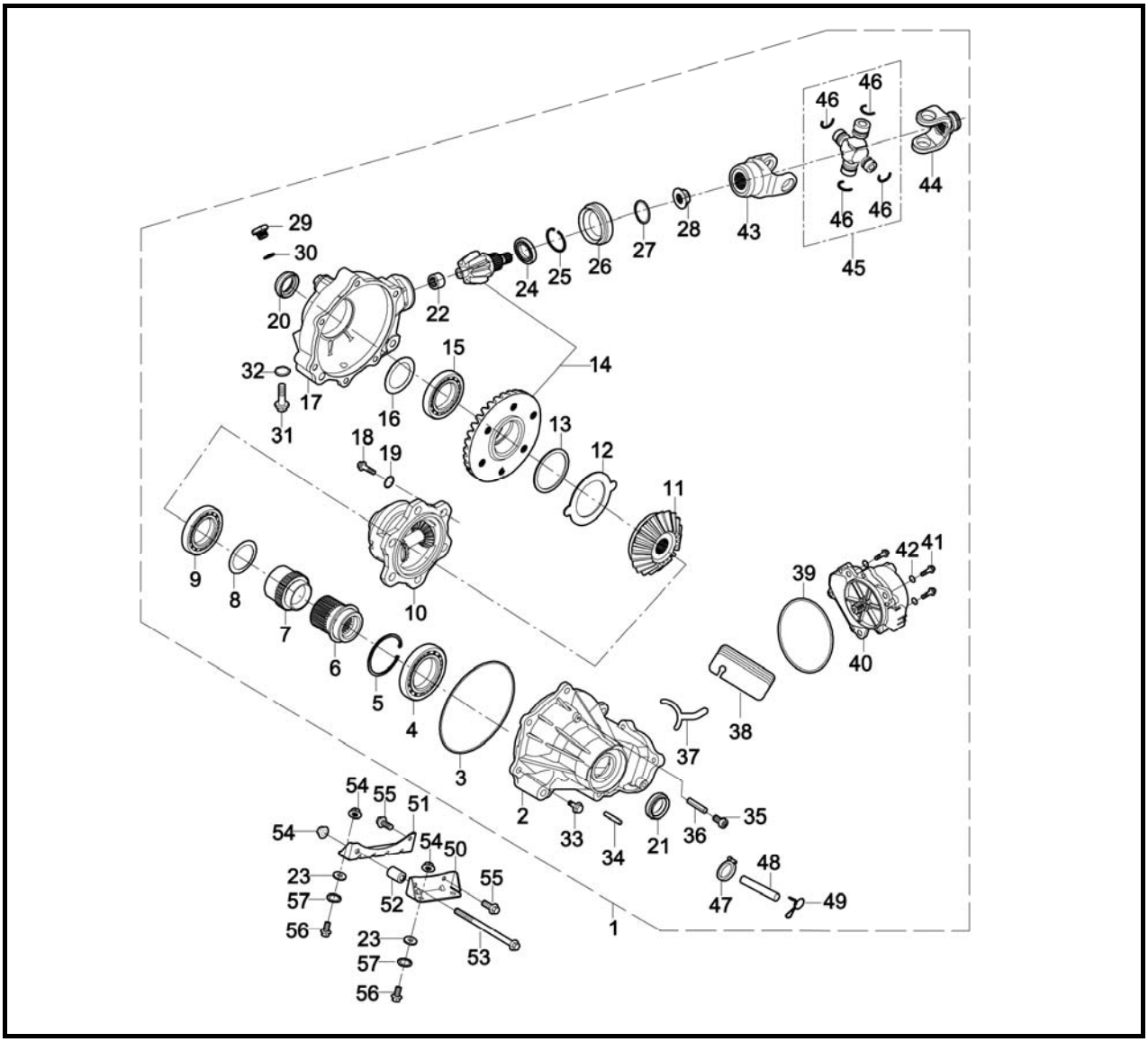
TRANSMISSION SYSTEM

C.V Axle, Front Axle

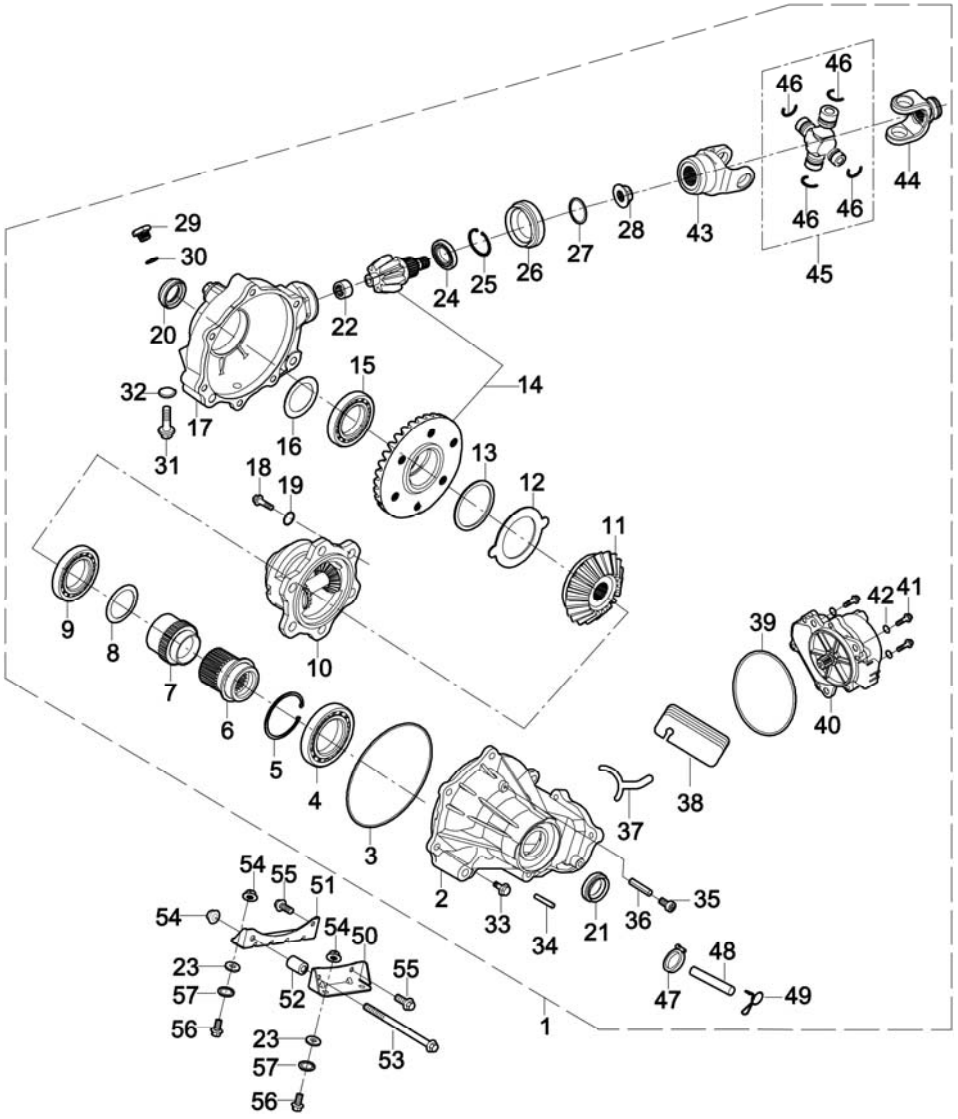


No.	Part Name	Qty	Remarks
	Removing the C.V axle, front axle (L.&R.)		
1	Front left axle shaft component C	1	
2	Front right axle shaft component B	1	
3	Rubber dust-p boot F	2	
4	Rubber dust-p boot clamp A	4	
5	Rubber dust-p boot clamp B	4	
6	Rubber dust-p boot B	2	

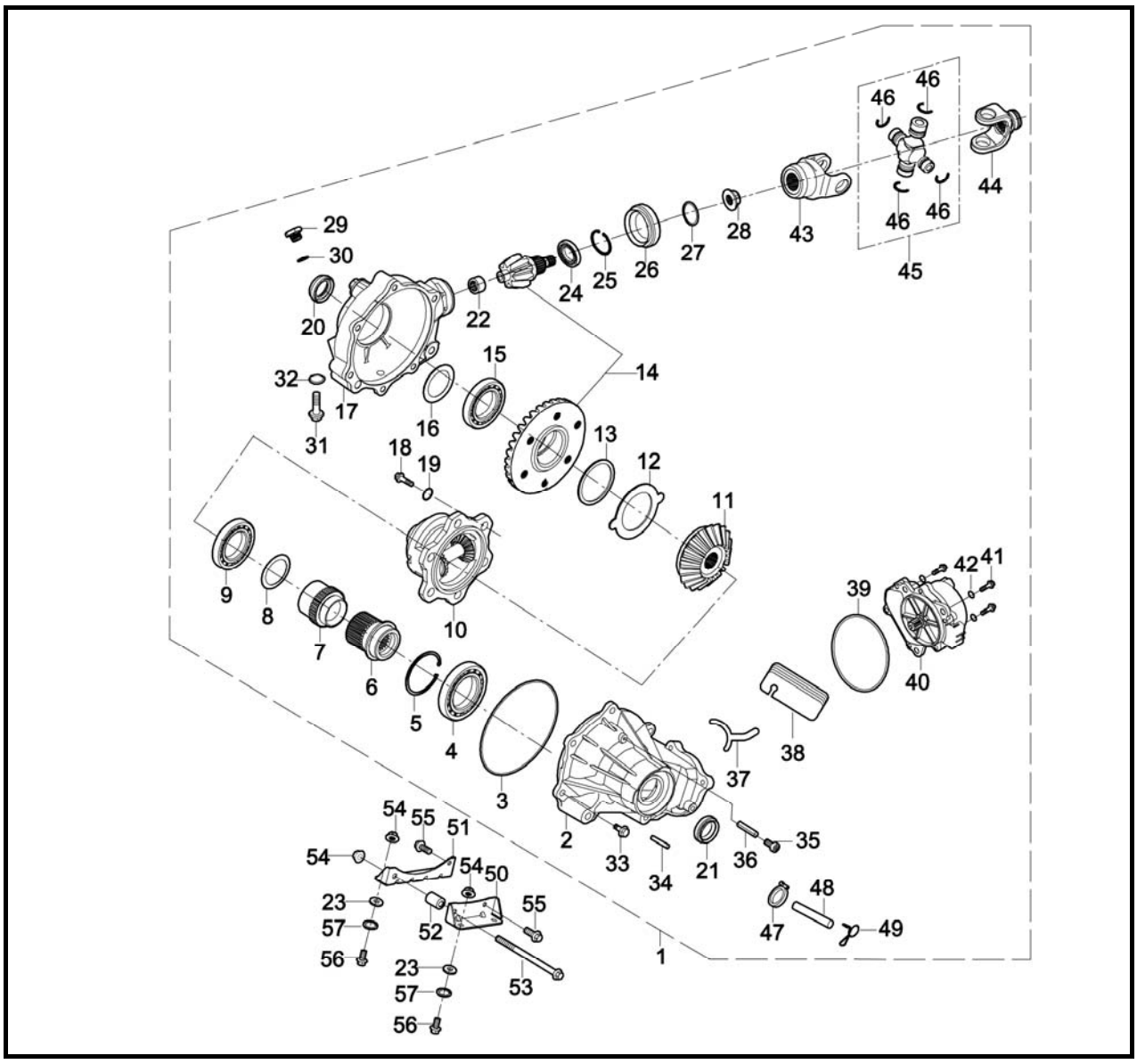
Front Bridge



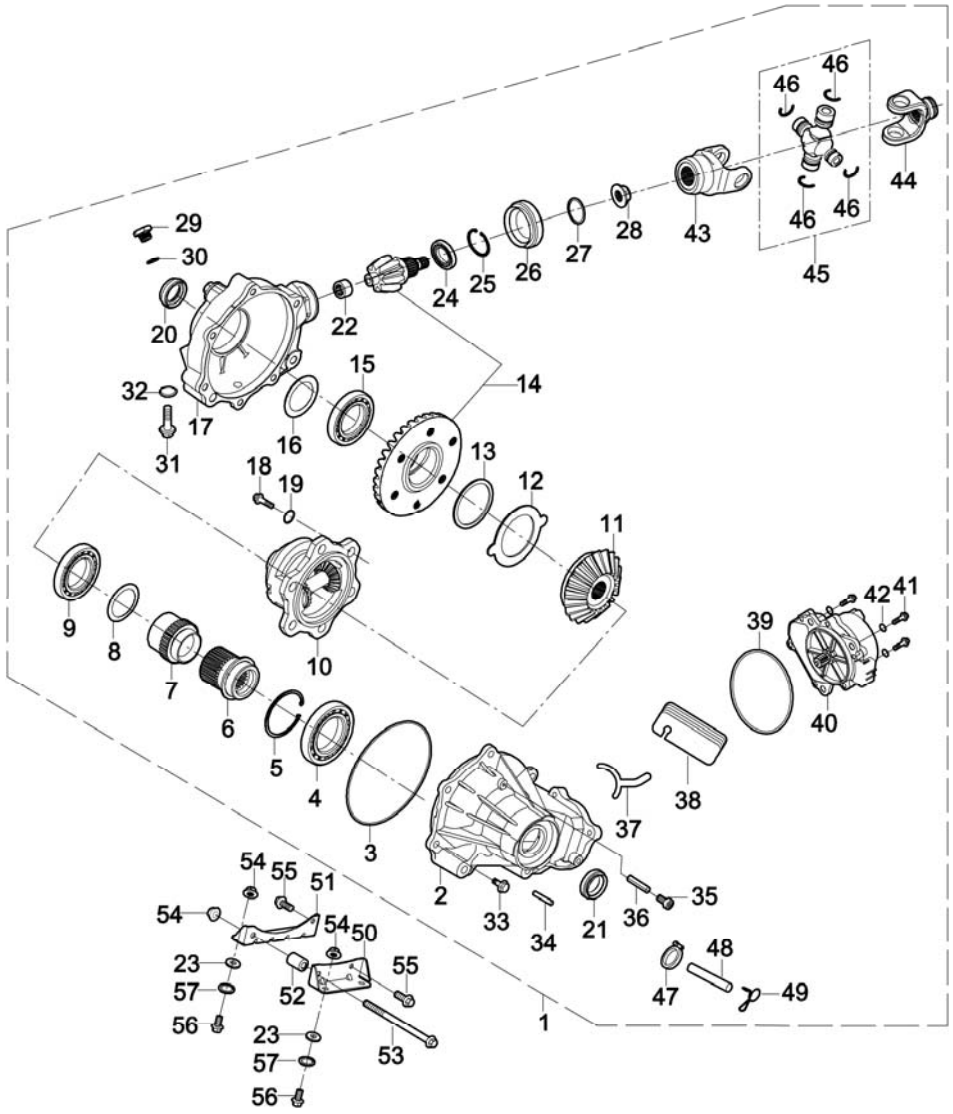
No.	Part Name	Qty	Remarks
	Removing the front bridge		
1	Front bridge assy	1	
2	Front Axle Gear Box Cover	1	
3	O-type ring Φ140×Φ2.65	1	
4	Bearing Φ35×Φ62×9	1	
5	Cir clip d0=62	1	
6	Shaft connector	1	
7	Shaft connecting sleeve	1	
8	Adjustment washer Φ71×Φ83×0.1	1	
9	Bearing 61912	1	
10	Transfer gear wheel	1	



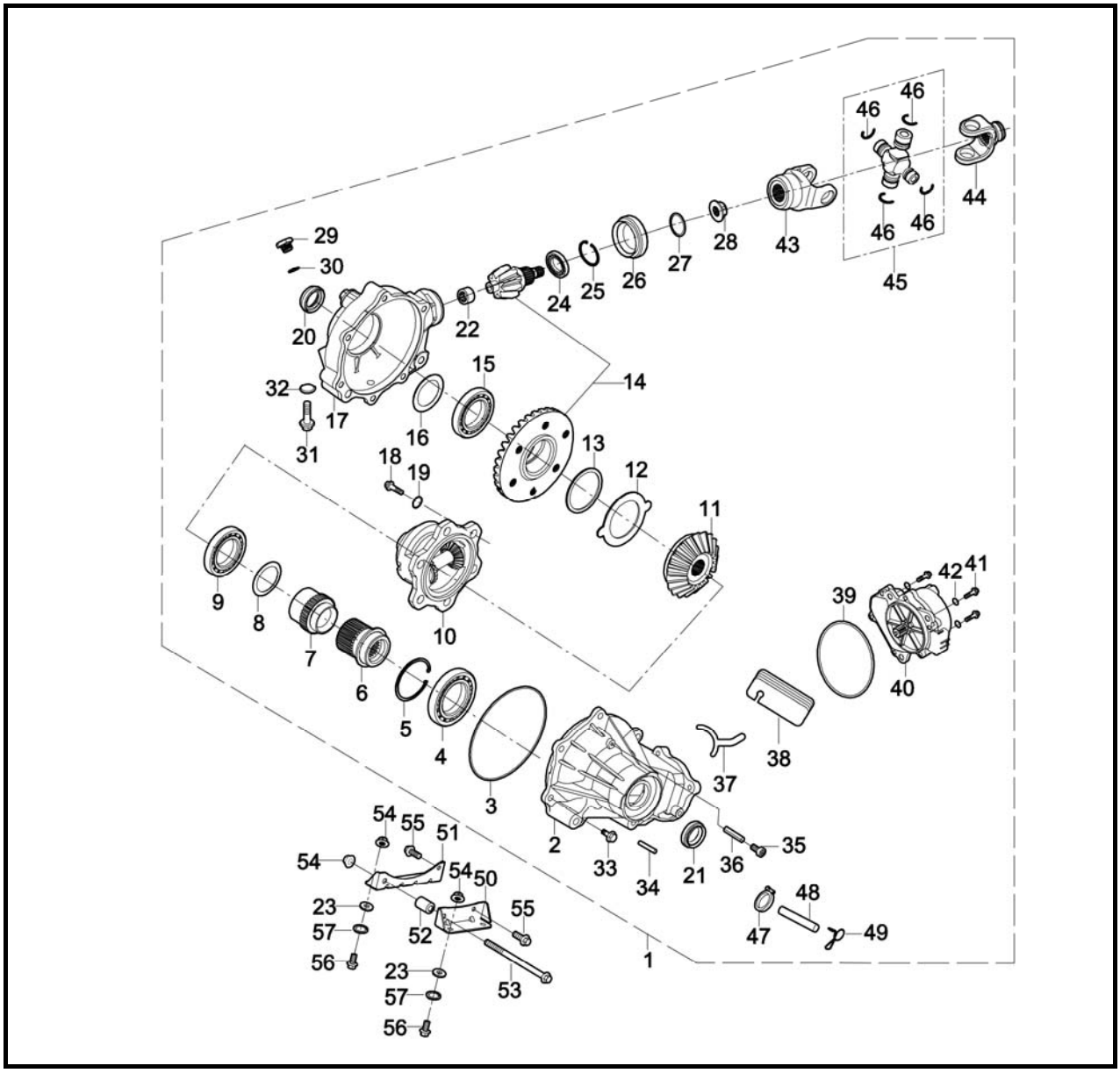
No.	Part Name	Qty	Remarks
11	Front bridge bevel gear	1	
12	Washer	1	
13	Adjustment washer Φ40×Φ57×0.1	1	
14	Drive gear wheel	1	
15	Bearing 6007	1	
16	Adjustment washer Φ50×Φ61.5×0.1	1	
17	Front axle body assy	1	
18	Hexagon screw M10×1.25×16	6	
19	Flat washer 10	6	
20	Oil seal, output shaft, front bridge Φ24×Φ38×8	2	
21	Oil seal, output shaft, front bridge Φ24×Φ38×8	2	



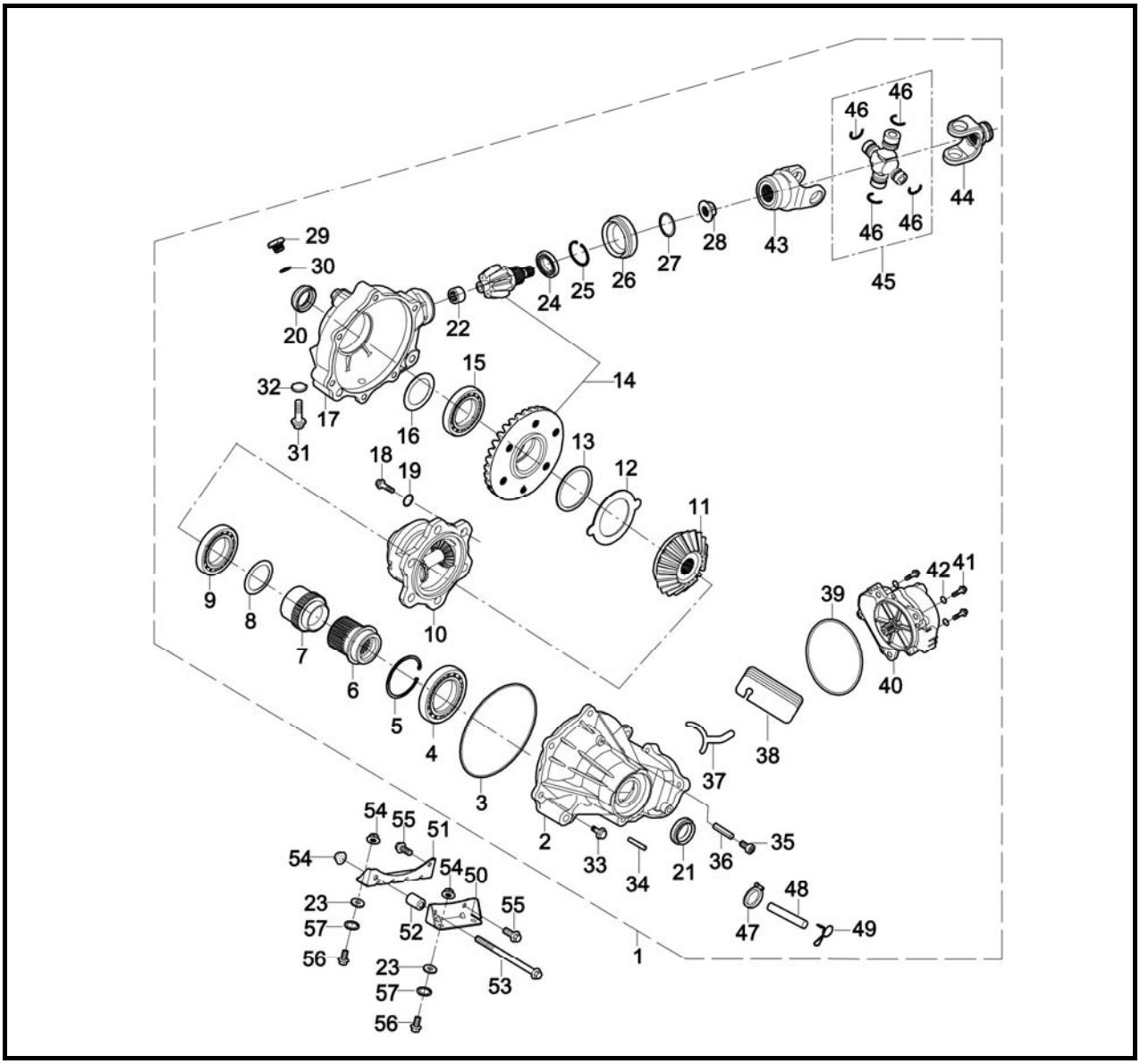
No.	Part Name	Qty	Remarks
22	Bearing Φ15×Φ21×12	1	
23	Spring Washer Φ10	4	
24	Bearing 6007	1	
25	Circlip d0=62	1	
26	Oil seal, drive gear, front bridge Φ48×Φ65×9	1	
27	O-Ring Φ14×Φ7 , Driving Tooth	1	
28	Hexagon flange self-lock nuts M14×1.5	1	
29	Screw M14×1.5×10	1	
30	O-type seal ring, rubber Φ12.5×Φ1.5	1	
31	Hexagon flange bolt M10×1.25×16	1	
32	O-type ring Φ1.5×Φ9	1	



No.	Part Name	Qty	Remarks
33	Hexagon flange bolt M8×25	6	
34	Air bag nozzle, rear bridge	1	
35	Inner Hexagon Screw With Flat Head M8×10	1	
36	Pin Φ5×75	1	
37	Fork	1	
38	Rack	1	
39	O-type seal ring, transfer Φ81×Φ2	1	
40	Transfer assy	1	
41	Inner hexagon screw with columniform-head M8×20	3	
42	Washer 8	4	
43	Connection Fork H	1	

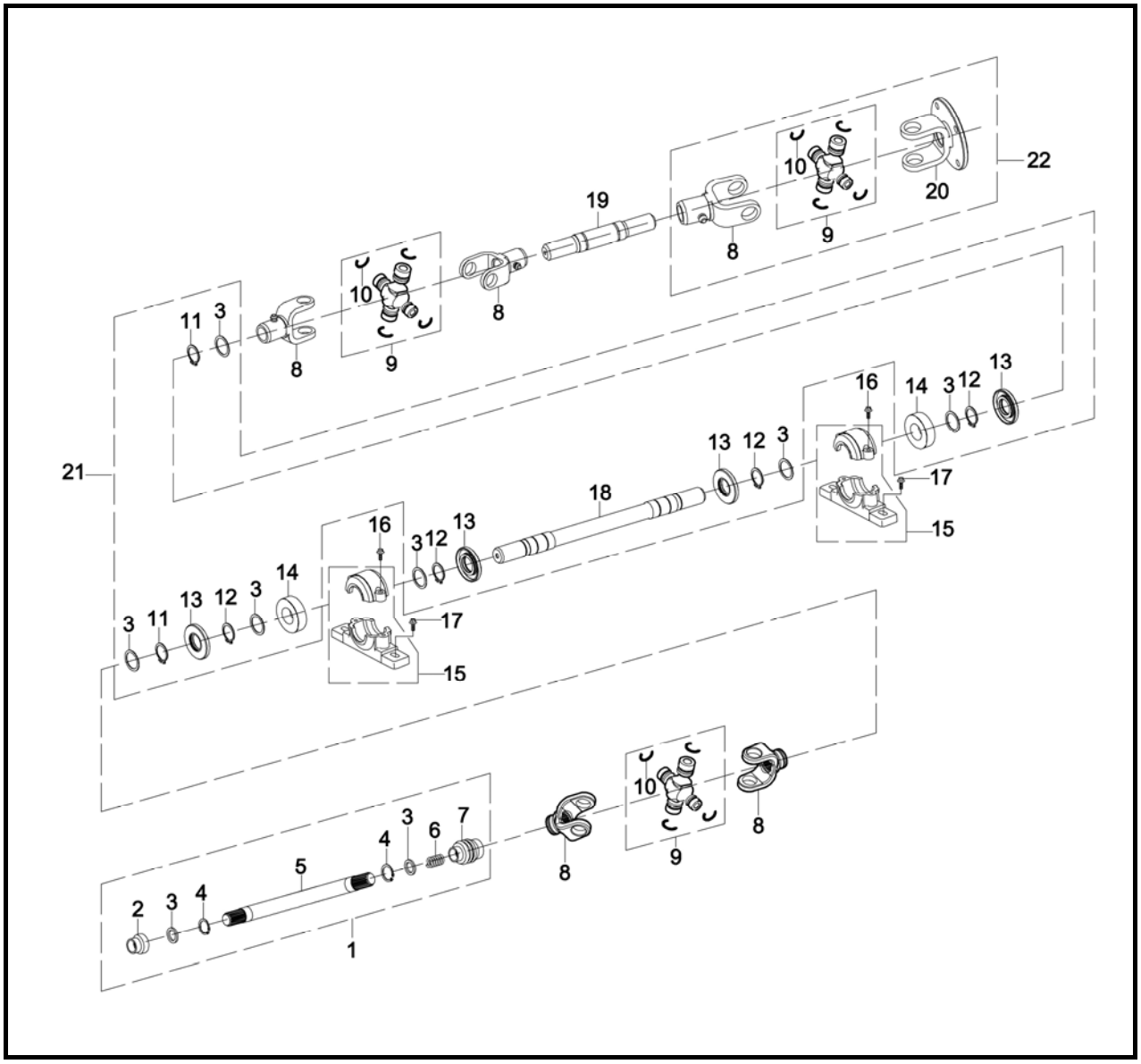


No.	Part Name	Qty	Remarks
44	Connection Fork D	1	
45	Cross joint assy	1	
46	C-type Washer(ϕ 20)	4	
47	Circlip C	1	
48	Gas pipe A	1	
49	Spring clamp Φ10	1	
50	Front bridge mounting plate(L)	1	
51	Front bridge mounting plate(R)	1	
52	Bushing Φ10.5×Φ22×36.5	1	
53	Hexagon flange bolt M10×1.25×142	1	
54	Hexagon flange nut M10×1.25	5	

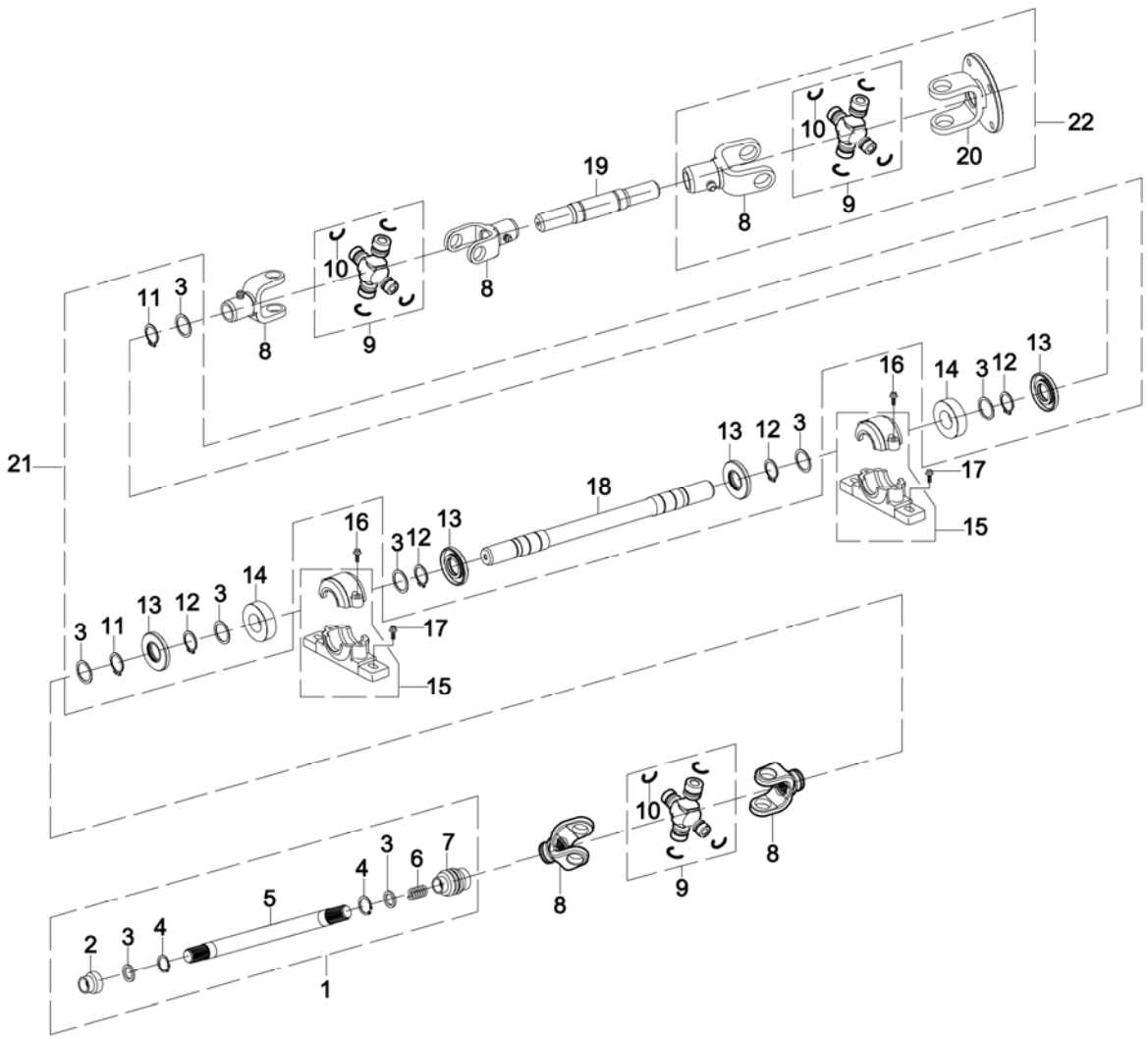


No.	Part Name	Qty	Remarks
55	Hexagon flange bolt M10×1.25×20	2	
56	Hexagon flange bolt M10×20	4	
57	Flat washer Φ10	4	

Front Transmission Axle Assy

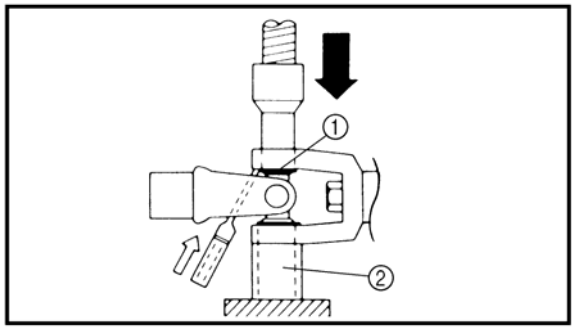


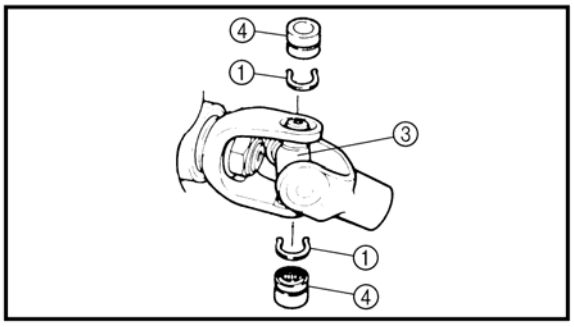
No.	Part Name	Qty	Remarks
	Transmission Axle knock down		
1	Front Bridge Drive Shaft Assy	1	
2	Transmission Shaft Dust Cover	1	
3	Pain Washer A	8	
4	Cir clip D0=25	2	
5	Front Transmission Shaft R	1	
6	Pressure Spring B,Drive Shaft	1	
7	Transmission Shaft Dust Cover B	1	
8	Connection Fork C	5	
9	Cross-Shaped Component	3	
10	C-type Washer(ϕ 20)	12	



No.	Part Name	Qty	Remarks
11	Cir clip D0=24	2	
12	Cir clip D0=25	4	
13	Oil Seal ϕ25$\times$ ϕ42$\times$7	4	
14	Ball Bearing 6205-2Rs	2	
15	Transmission Bearing Seat	2	
16	Hexagon Flange Bolt M6$\times$20	4	
17	Hexagon Flange Bolt M8$\times$25	4	
18	Front Drive Shaft T	1	
19	Rear Drive Shaft S	1	
20	Connection Fork L	1	
21	Front Bridge Middle Drive Shaft Assy	1	
22	Front Bridge Rear Drive Shaft Assy	1	

Front Bridge





DISASSEMBLING THE UNIVERSAL JOINT

Remove:

• universal joint

a. Remove the circlips ①.

b. Place the universal joint in a press.

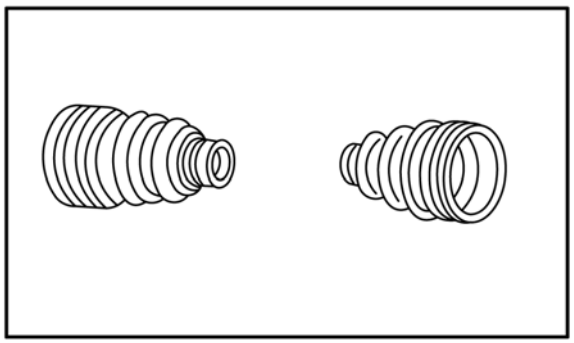
c. With a suitable diameter pipe ② ben- eath the yoke ③, press the bearing ④ into the pipe as shown.

d. Repeat the steps for the opposite bearing.

e. remove the yoke.

NOTE:

It may be necessary to lightly tap the yoke with a punch.

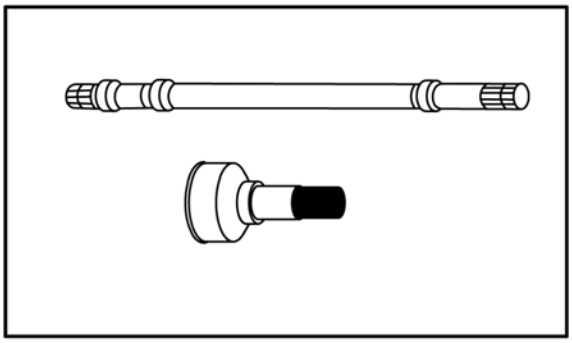


CHECKING THE C.V AXLE, FRONT AXLE

1.Check:

• Rubber dust-P cover

Cracks/damage → Replace



2.Check:

• double off-set assembly

• ball joint spline

• shaft spline

Wear/damage → Replace.

• balls and ball races

• inner surface of double off-set

Pitting/wear/damage → Replace.

·Check whether the inner and outer ball cage of the left and right transmission shaft movement is Smooth, ceaseless. If it is stagnation and obvious becoming less loosen, replace it.

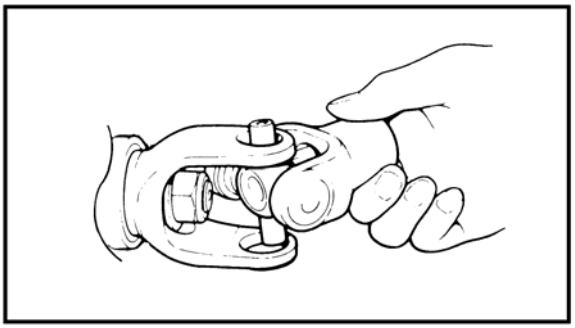
·Disassembe the left and right transmission shaft ,cleaning and assemble it again.

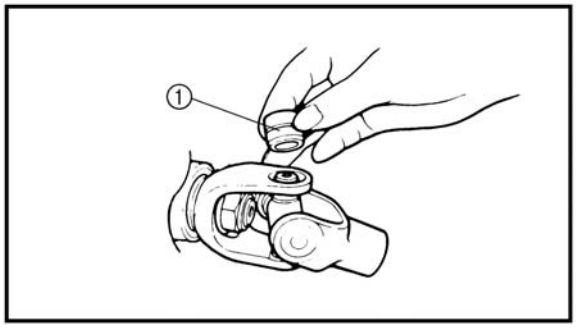
NOTE:

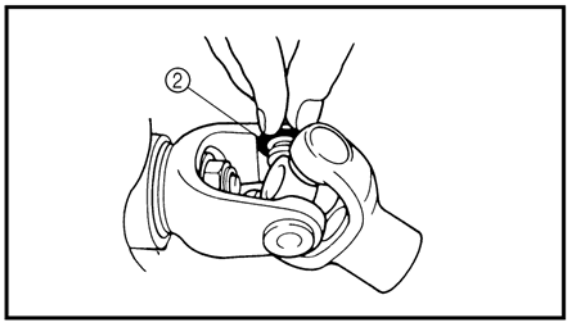
1. The dustproof rubber wrap on the ball cage is not allow to contact with the gas and diesel oil.

2. The dustproof rubber wrap does not allow to be scratched, a slight scratches can damage the dustproof rubber wrap very quickly.

3. When reassembles the left and right transmission shaft, in the ball cage must sufficiently enter 2/3 volume with the Lithium lubricating.







ASSEMBLING THE UNIVERSAL JOINT

Install:

• universal joint

a. Install the opposite yoke into the universal joint.

b. Apply wheel bearing grease to the bearings.

c. Install the bearing ① onto the yoke.

d. Press each bearing into the universal joint using a suitable socket.

CAUTION:

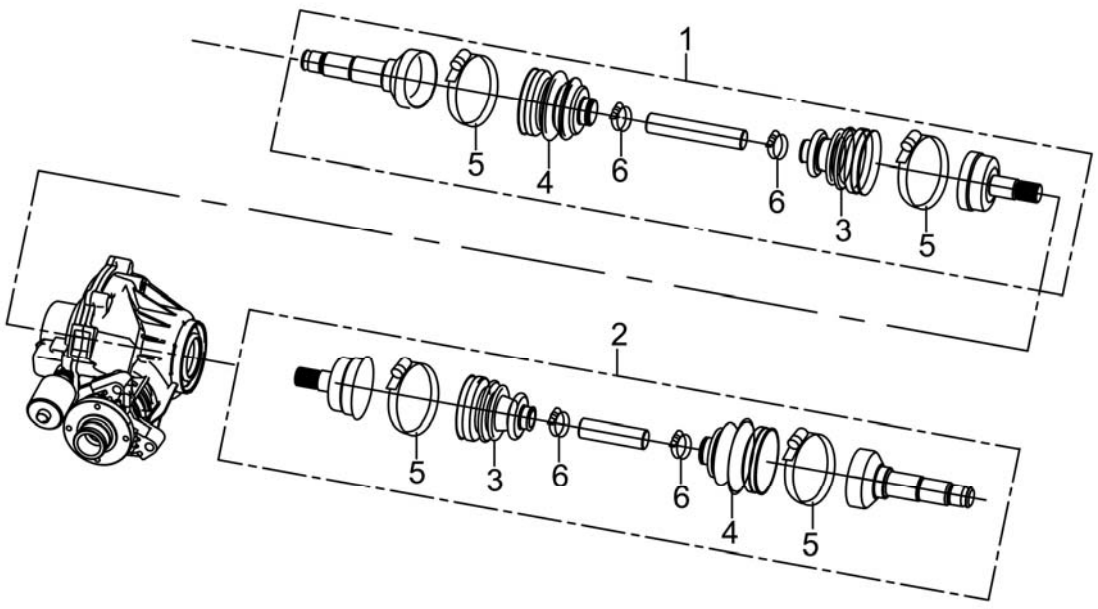
Check each bearing. The needles can easily fall out of their races. Slide the yoke back and forth on the bearings; the yoke will not go all the way onto a bearing if a needle is out of plate.

NOTE:

The bearing must be inserted far enough into the universal joint so that the circlip can be installed.

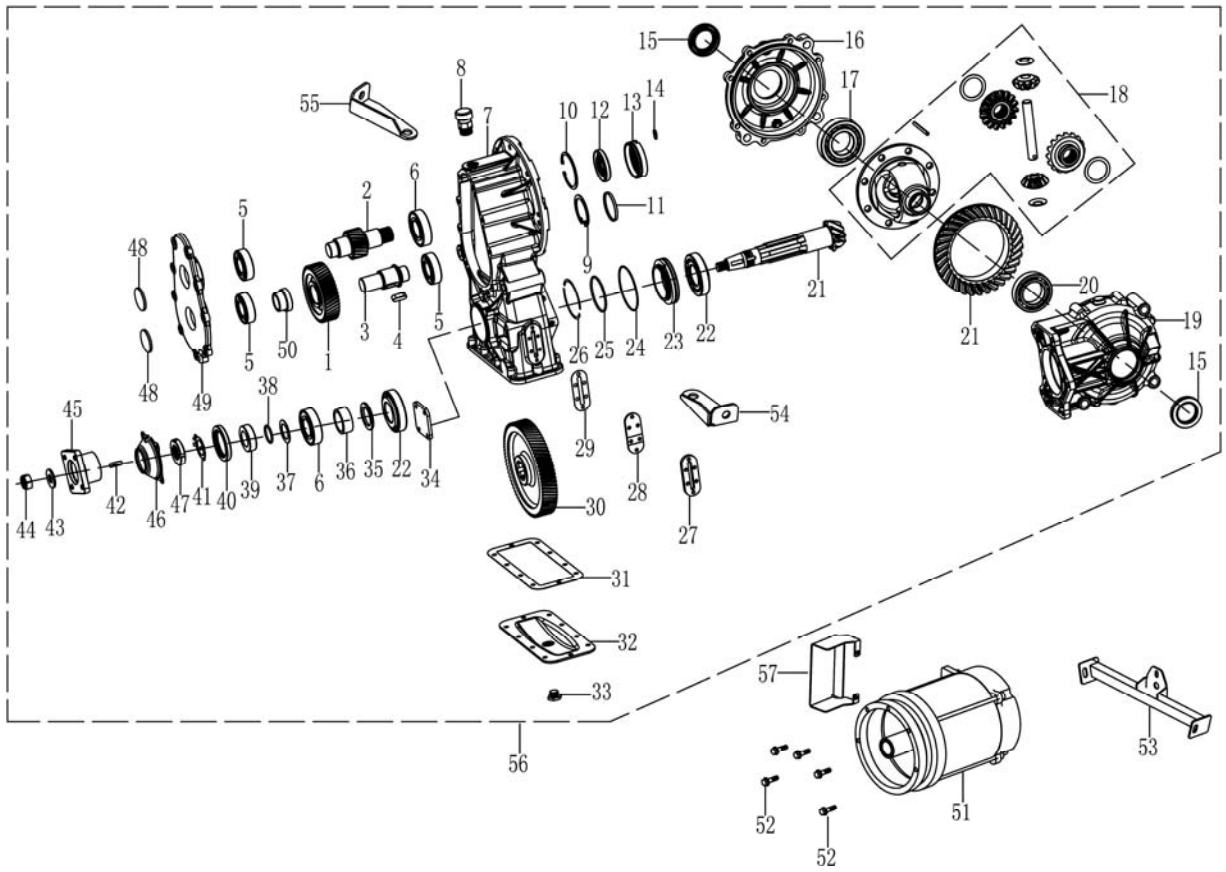
e. Install the circlips ② into the groove of each bearing.

C.V Axle, Rear Axle

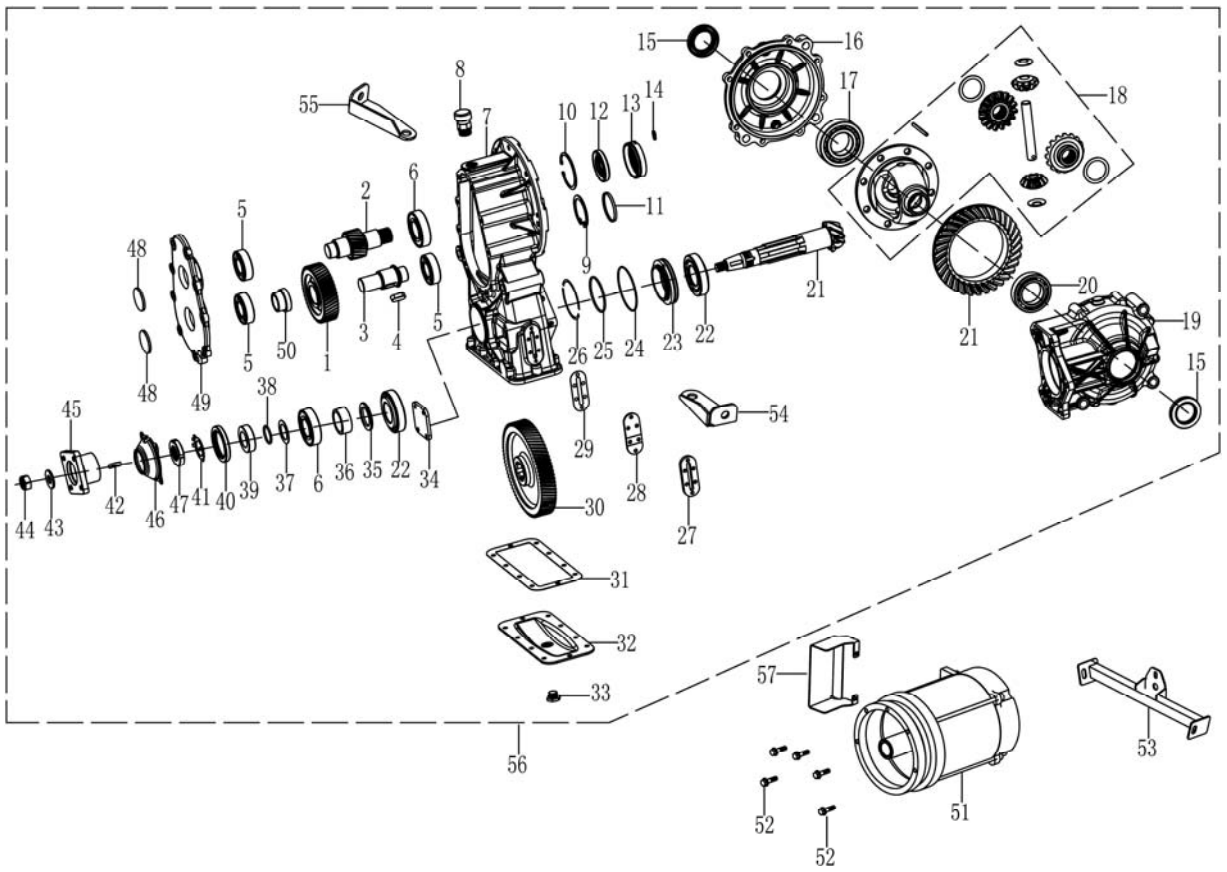


No.	Part Name	Qty	Remarks
	Removing the rear axle(L.&R.)		
1	Rear right axle shaft component B	1	
2	Rear right axle shaft component B	1	
3	Rubber dust-p boot F	2	
4	Rubber dust-p boot E	2	
5	Rubber dust-p boot clamp A	4	
6	Rubber dust-p boot clamp B	4	

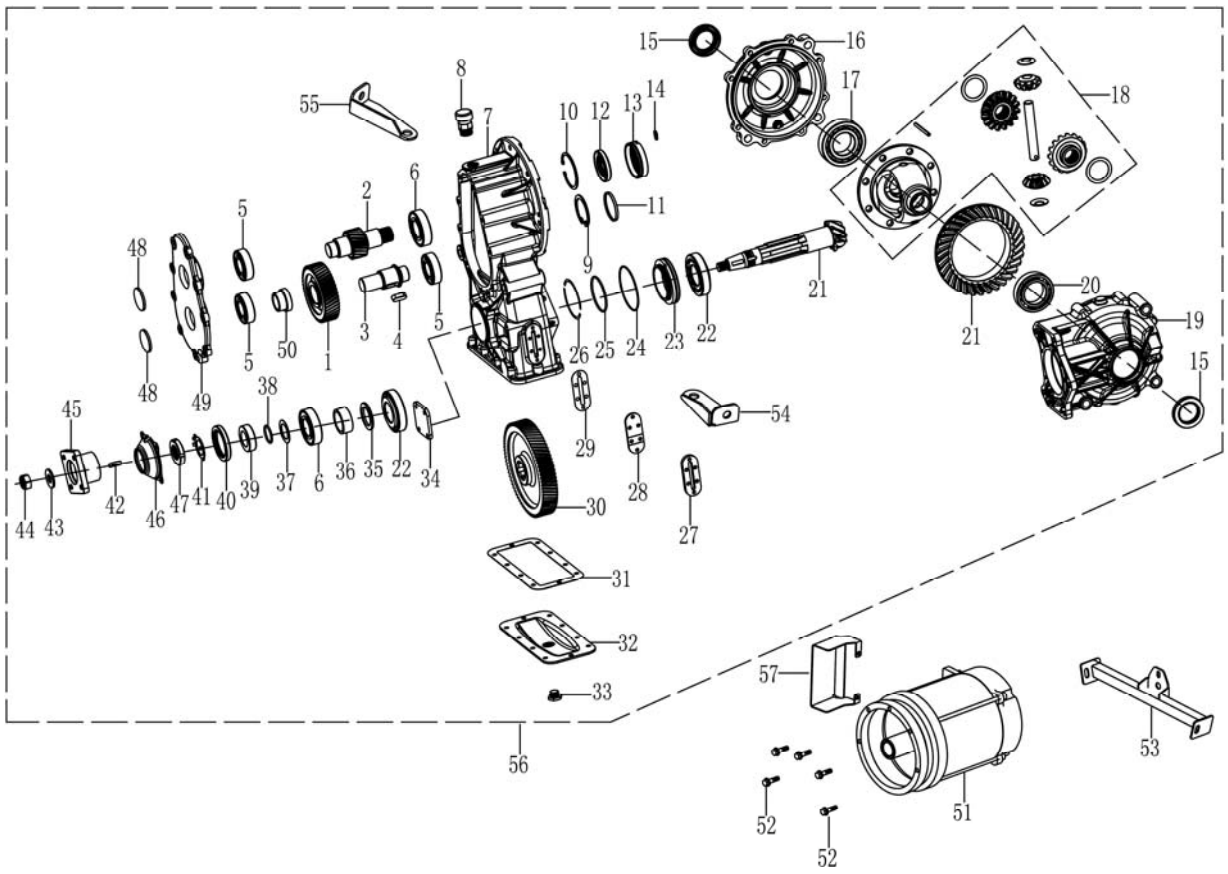
Rear Bridge



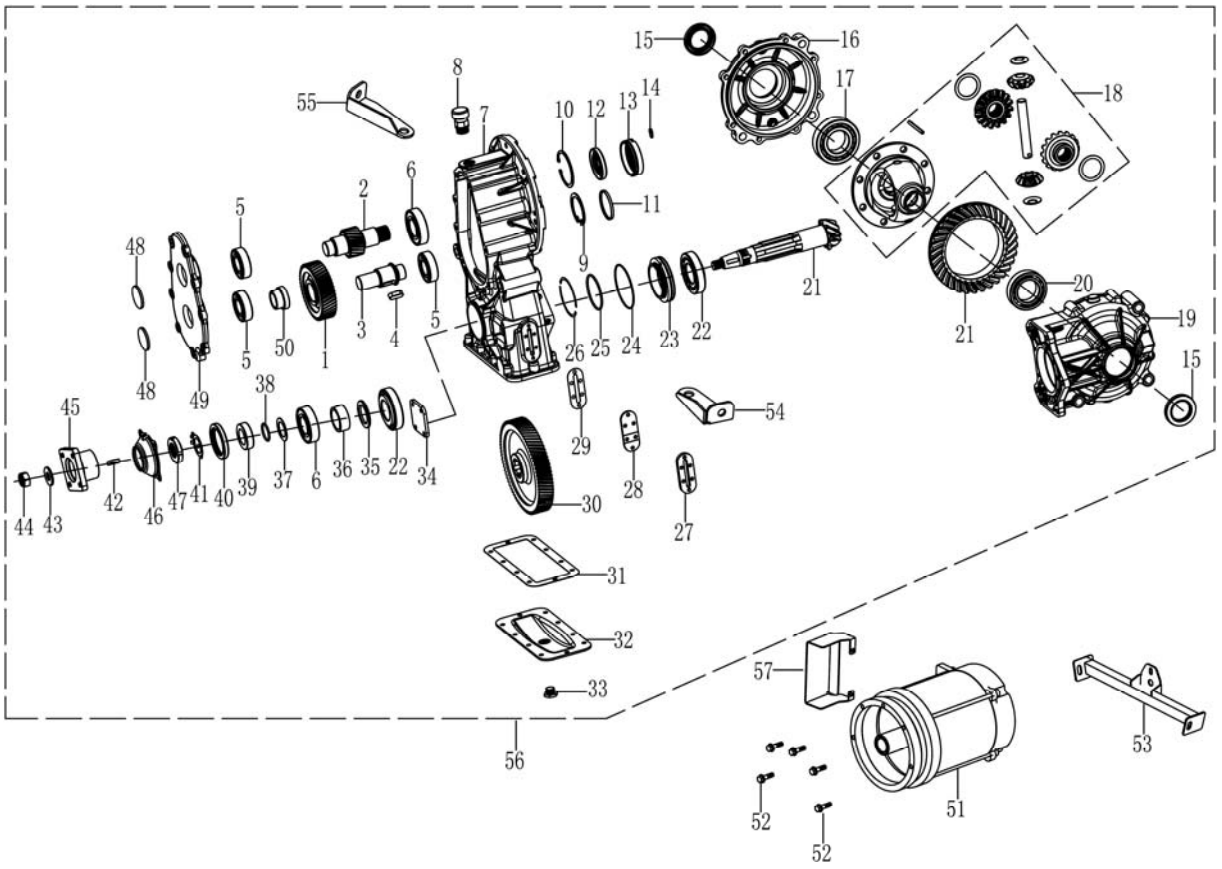
No.	Part Name	Qty	Remarks
	Removing the rear bridge reducer		
1	Idler Gear	1	
2	Driving Bevel Wheel	1	
3	Idler Gear Shaft	1	
4	Flat Key M10×25	1	
5	6205 Bearing 25×52×15	3	
6	6206 Bearing 30×62×16	2	
7	Transfer Case	1	
8	Air Tap, Rear Axle	1	
9	Cir clip D0=52	1	
10	Cir clip D0=62	1	



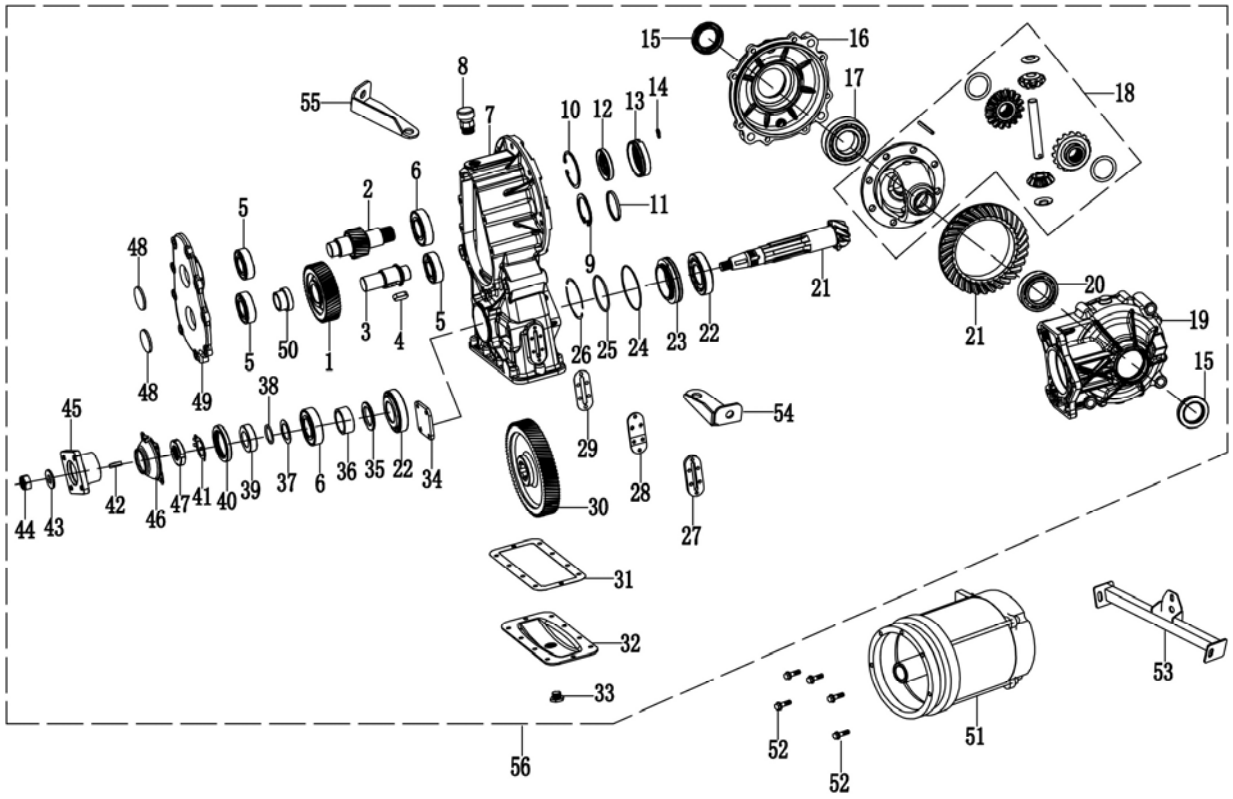
No.	Part Name	Qty	Remarks
11	Dust Cover	1	
12	Oil Seal 30×55×8	1	
13	Oil Seal Sleeve I	1	
14	Locking Block	1	
15	Oil Seal 30×55×8	2	
16	Rear Axle Gear Box Cover	1	
17	6208 Bearing 40×80×18	1	
18	Transfer Gear	1	
19	Rear Axle Gear Box	1	
20	6008 Bearing 40×68×15	1	
21	Drive&Driven Gears Assy, Rear Axle	1	



No.	Part Name	Qty	Remarks
22	30207 Bearing 35×72×18.25	2	
23	Locating Sleeve	1	
24	O-Ring 75×1.8	1	
25	O-Ring 58×1.8	1	
26	Adjust Gasket	1	
27	Press Plate	1	
28	Watch Oil Mirror	1	
29	Oil Standard Paper Pad	1	
30	Driven Bevel Wheel	1	
31	Paper Pad	1	
32	Oil Pan	1	



No.	Part Name	Qty	Remarks
33	Rear Bridge Oil Outer Bolt	1	
34	Oil Preventor Cover	1	
35	Gasket I	1	
36	Cushion Cover II	1	
37	Gasket II	1	
38	O-Ring 26.5×2.65	1	
39	Oil Seal Sleeve II	1	
40	O-Ring 45×62×8	1	
41	Anti-Rotation Gasket	1	
42	Wood ruff Key 6×9×22	1	
43	Washer Φ15×Φ22×1.5	1	
44	Hexagon Flange Locked Nut M14×1.5	1	



No.	Part Name	Qty	Remarks
45	Joint Plate	1	
46	Dash Cover	1	
47	Round Nut	1	
48	Small Dash Cap	2	
49	End Cap	1	
50	Cushion Cover II	1	
51	Drive Motot Part	1	
52	Hexagon Flange Bolt M8×30	5	
53	Motor Fixed Support	1	
54	Rear Bridge Mounting Plate II	1	
55	Rear Bridge Mounting Plate I	1	
56	Rear Axle Assy	1	
57	Assembly Drive Motor Shield	1	

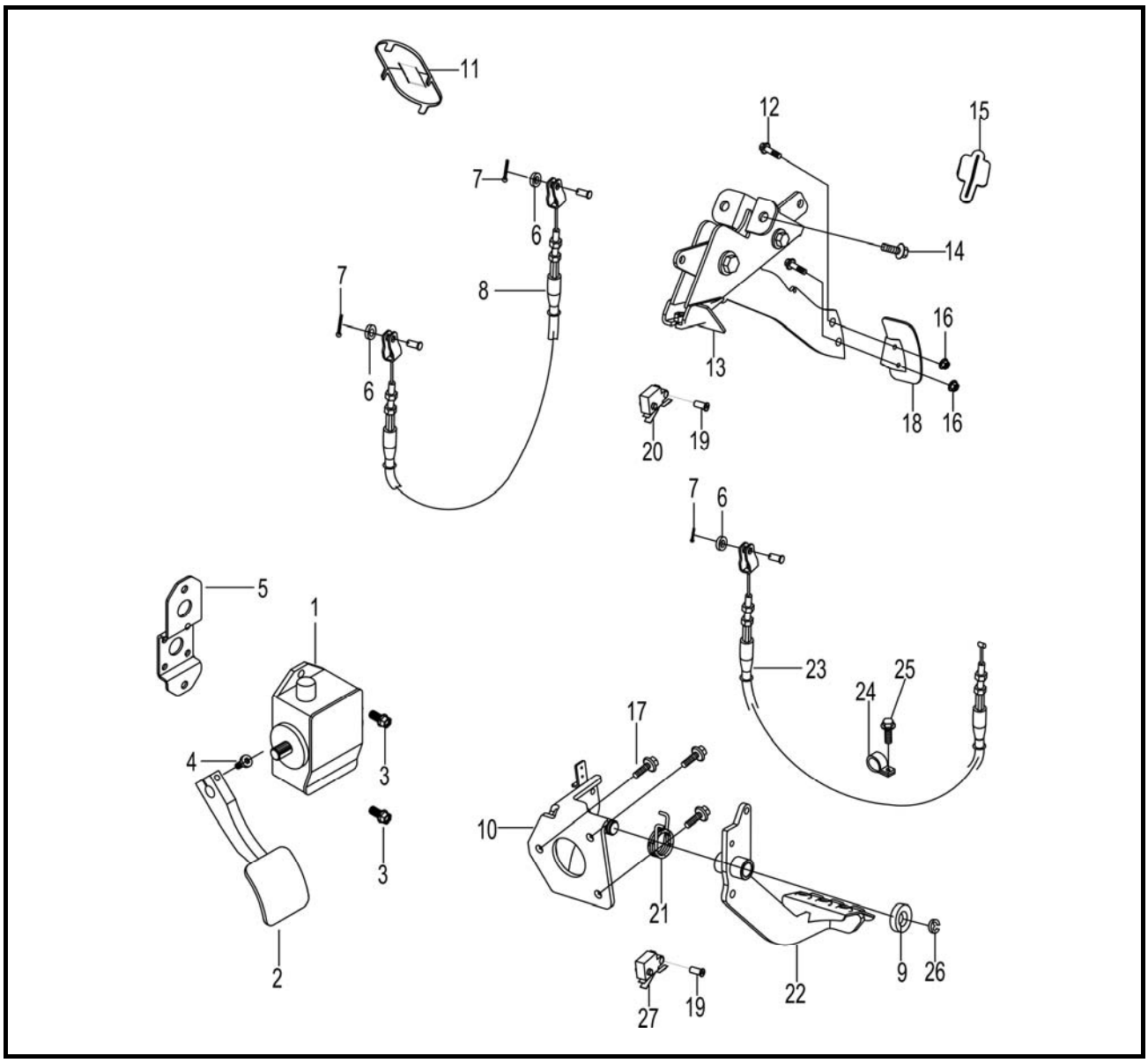
Rear Bridge

(The service method of the rear bridge parts is as the same as the front bridge parts, please refer to the before-mentioned to operate.)

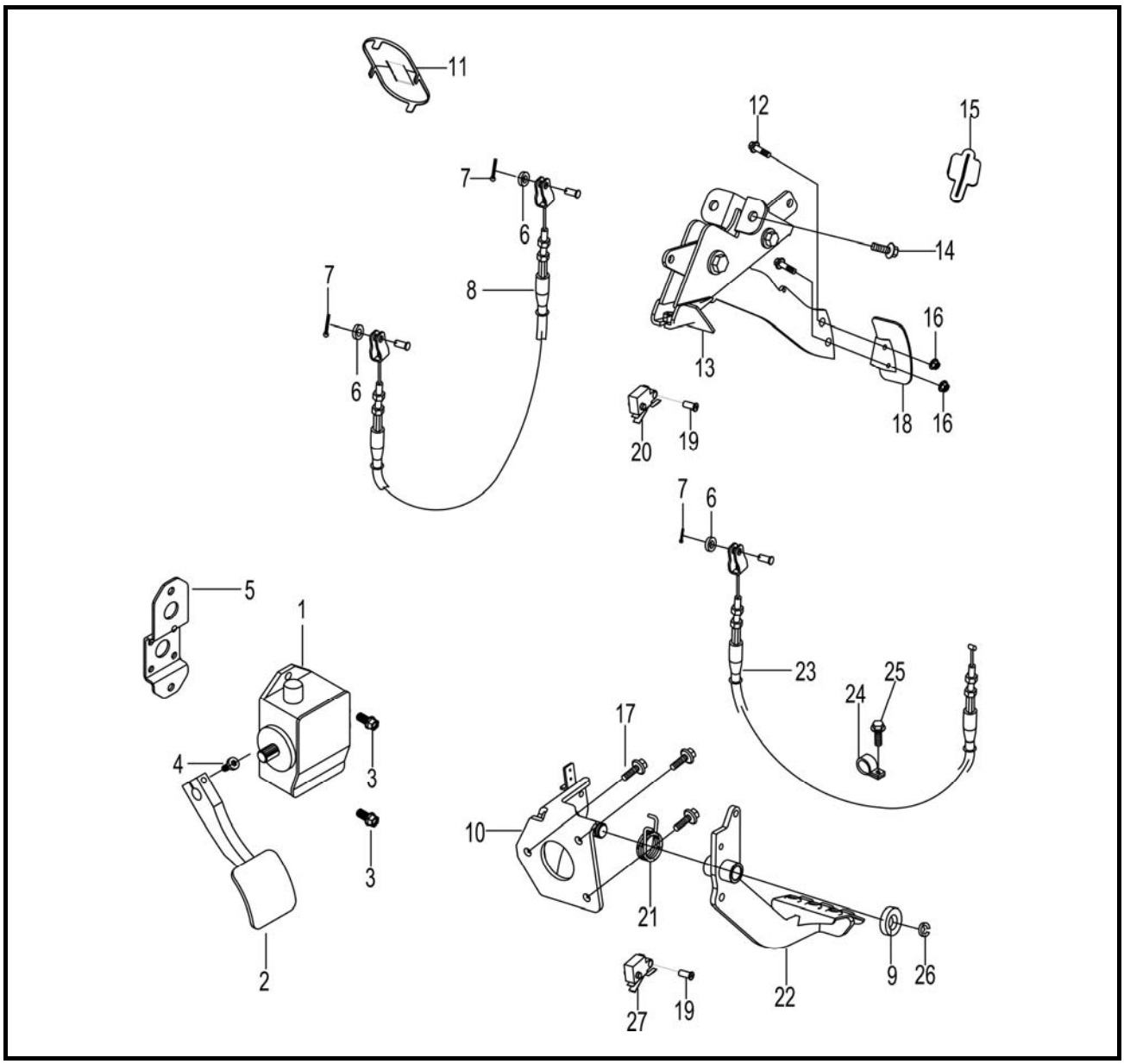
NOTE:

Apply lithium-soap-based grease to the bearing assembly and o-ring and bearing and driven gear and oil seal and drive shaft coupling and final drive pinion gear bearing housing.

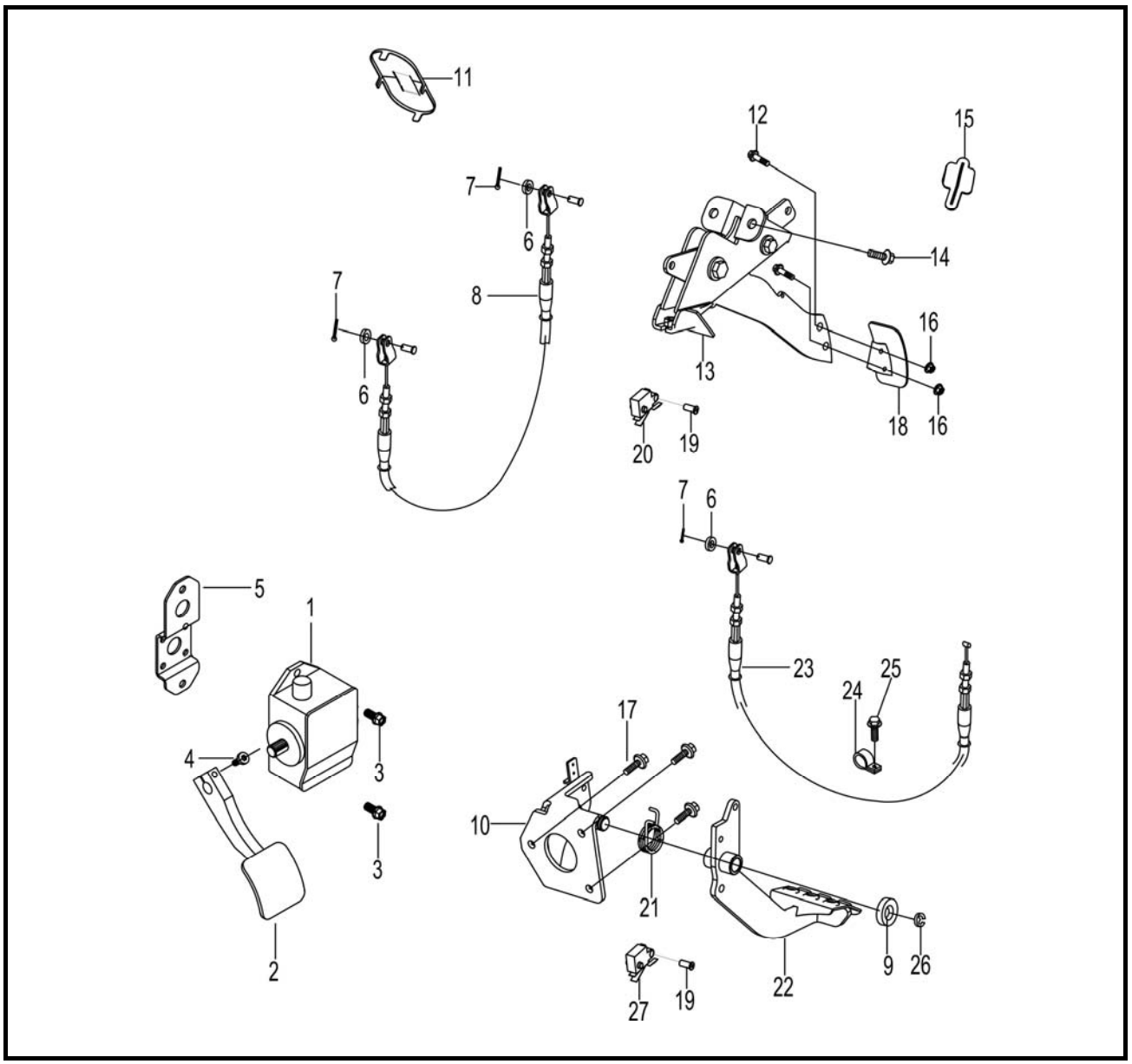
Shift Operating System



No.	Part Name	Qty	Remarks
	Removing the shift operating system		
1	Accelerator	1	
2	Accelerator Pedal	1	
3	Hexagon Flange Bolt M8×20	2	
4	Hexagon Socket Cap Screw M6×25	1	
5	Accelerator Mounting Plate	1	
6	Plain Washer 6	3	
7	Cotter Pin 2×30	4	
8	Parking Brake Cable C	1	
9	Washer Φ15×Φ22×1.5	1	

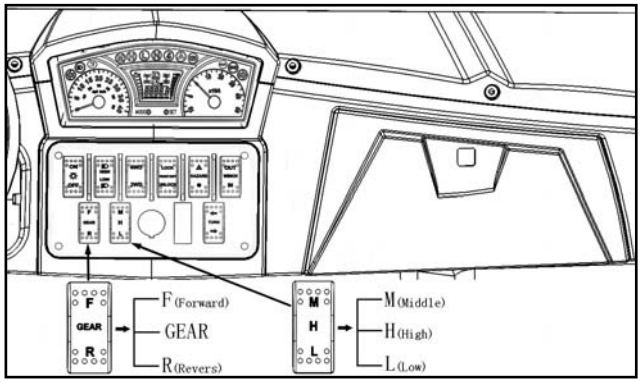


No.	Part Name	Qty	Remarks
10	Brake Pedal Mounting Seat	1	
11	Gearshift Decoration Cover	1	
12	Hexagon Flange Bolt M6×16	3	
13	Footrest Park Assy	1	
14	Hexagon Flange Bolt M8×20	2	
15	Park Dust-Proof Pad F	1	
16	Hexagon Flange Locked Nut M6	3	
17	Hexagon Flange Bolt M8×25	3	
18	Parking Pedal	1	
19	Cross Plate Head Tapping Screw M2×14	2	
20	Micros witch	1	



No.	Part Name	Qty	Remarks
21	Torsional Spring J	1	
22	Brake Pedal	1	
23	Throttle Cable Y	1	
24	Oil Pipe Clip I	1	
25	Hexagon Flange Bolt M6×16	3	
26	Cir clip Φ12	1	
27	Micros witch	1	

Reverse mechanism parts



ADJUSTING REVERSE MECHANISM PARTS

F:Forward
GEAR
R:Revers
M:Middle
H:High range
L:Low range

NOTE:

Before shifting, you must stop the vehicle and take your foot off the accelerator pedal. Otherwise, the transmission may be damaged.

Reverse mechanism parts

CHECKING AND SERVICE OF REVERSE MECHANISM

1. Check the mobility of gear shift handle. If it is not working properly, remove the gear shift Mechanism to check if the fork , ball and spring is stuck.,in which case replace the defective component and try again.The last way is to turn to the professional repairman.

2. If there is lack in the gear shift mechanism , adjust the nut of the fork to correct position and strengthen gear shift mechanism .

3. Remove the gear shift mechanism and check whether the linking rod is cracked; If so, it should be changed.

4. Check whether the bouncing spring of gear shift mechanism is intense enough.

5. Check whether the gear is engaged correctly and whether there are trip stop or lack. If these situation exists, call for the maintanance staff to test and repair it.

6. If the gear can not be engaged, we can test it from the following aspects:

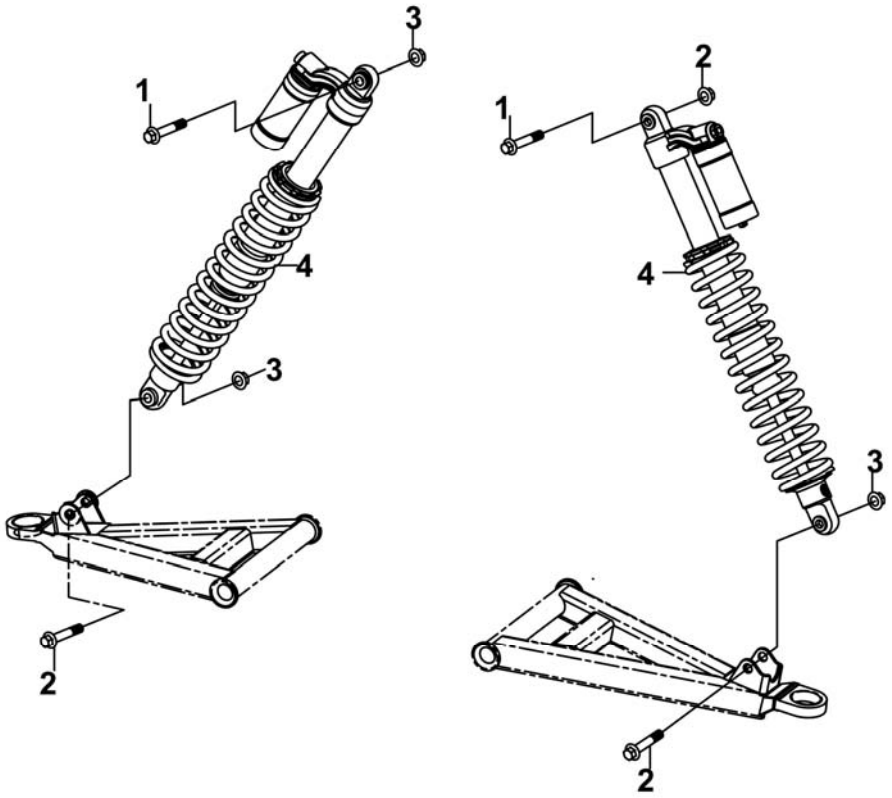
·whether the clutch can completely declutch;

·whether the gearshift is greased reliable(whether the oil pipe of gear shift mechanism is blocked);

· whether gear shift mechanism jams;If these situation happens, maintanance staff would come to test and repair it.

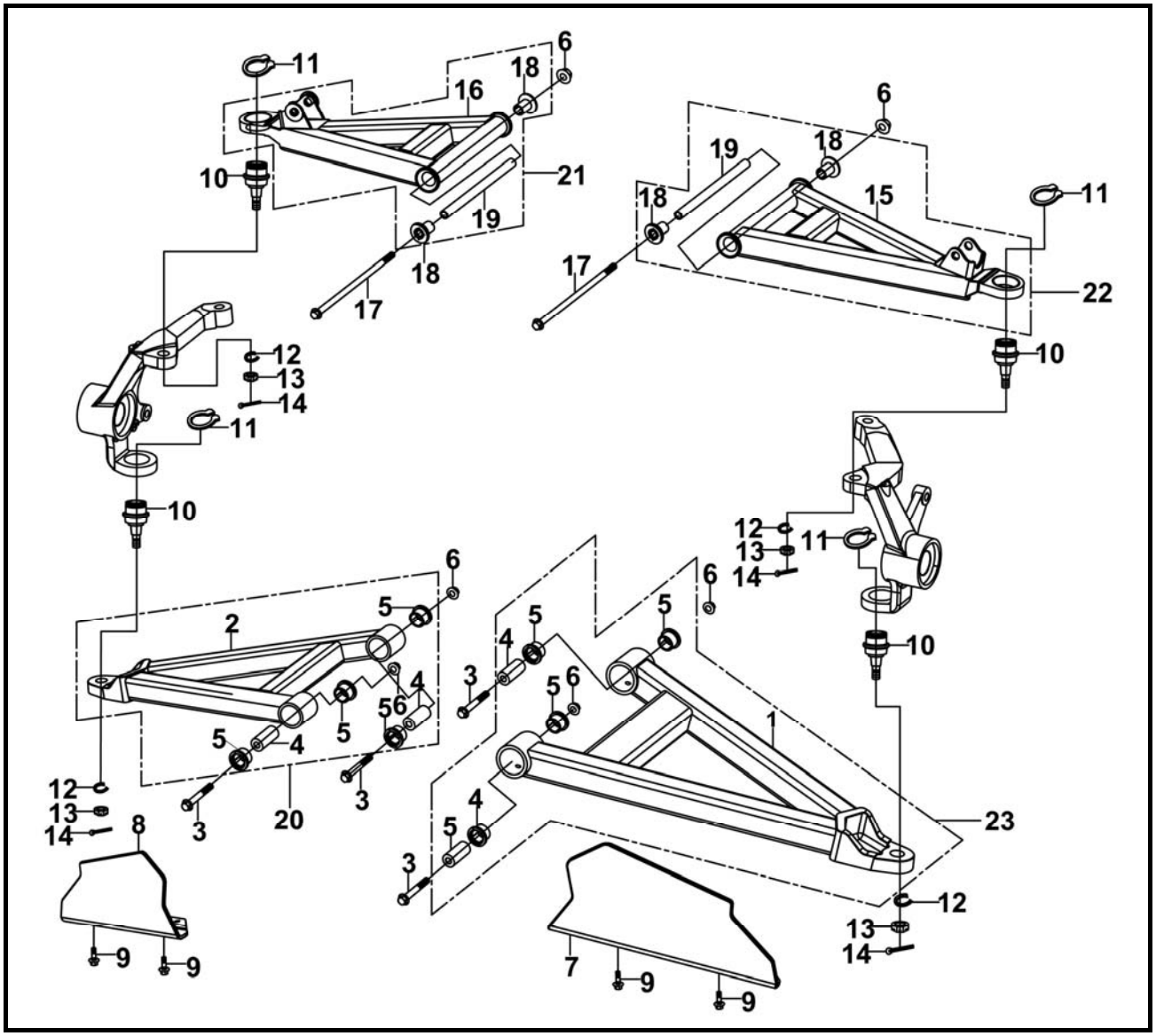
SUSPENSION

Front Swing Arm

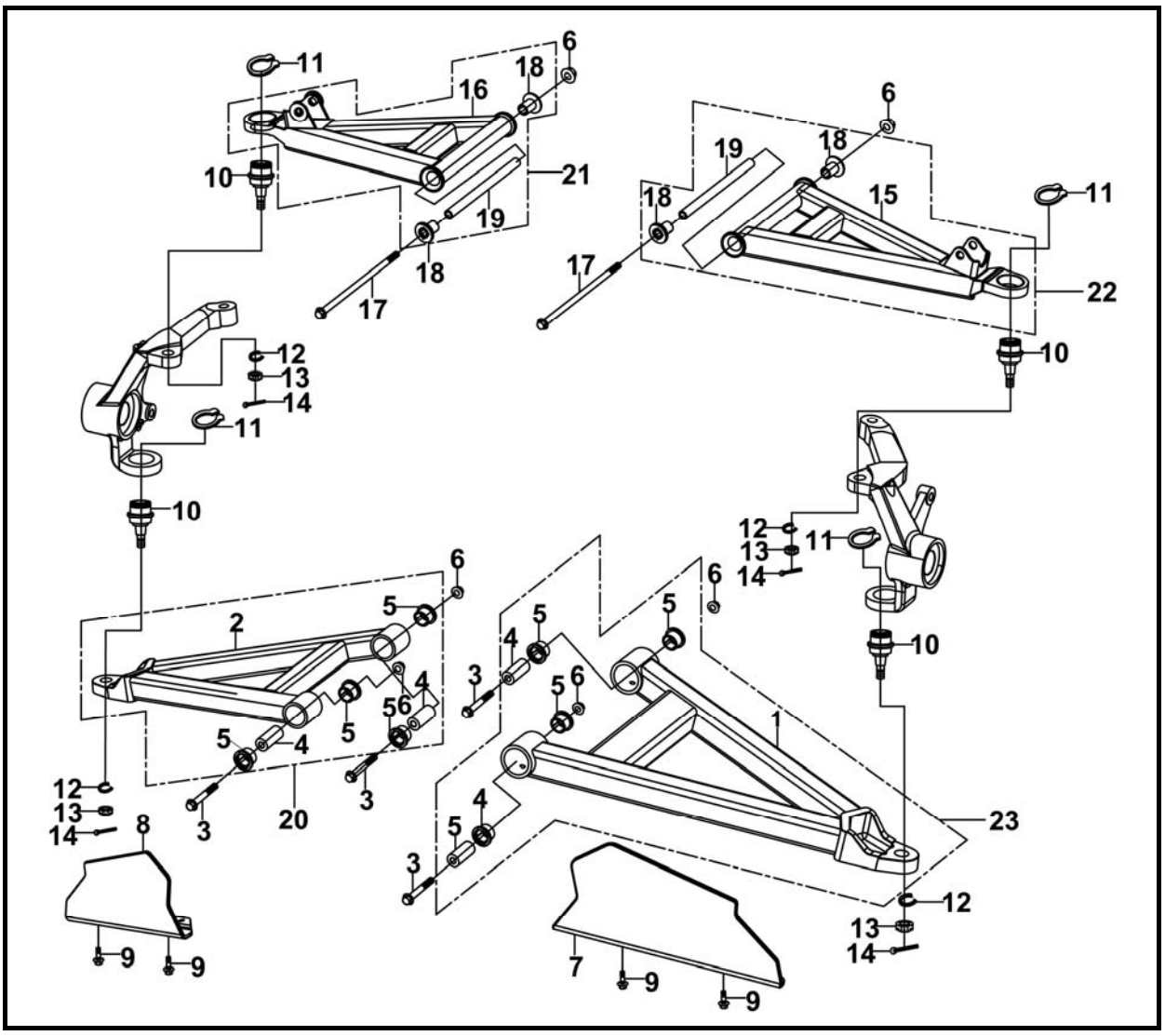


No.	Part Name	Qty	Remarks
	Removing the front swing arm		
1	Hexagon bolt with flange M10×1.25×55	2	
2	Hexagon bolt with flange M10×1.25×55	2	
3	Metal insert hexagon locknut with flange M10×1.25	4	
4	Front shock absorber assembly unit QA(gasbag shock absorber)	2	

Front Suspension



No.	Part Name	Qty	Remarks
	Removing the front suspension		
1	Front left lower rocker arm	1	
2	Front right lower rocker arm	1	
3	Hexagon bolt with flange M10×1.25×78	4	
4	Columniform bush Φ10.3×Φ23×50	4	
5	Turn up liner for rocker arm Φ23×Φ28	8	
6	Metal insert hexagon locknut with flange M10×1.25	6	
7	Rocker arm backplate Ⅰ	1	
8	Rocker arm backplate Ⅱ	1	
9	Hexagon bolt with flange M6×16	4	
10	Ball pin E, steering knuckle arm	4	



No.	Part Name	Qty	Remarks
11	CirclipD0=30	4	
12	Spring washer Φ12	4	
13	Hexagon nut M12×1.25	4	
14	Cotter pin 2.5×30	4	
15	Front left upper rocker arm	1	
16	Front right upper rocker arm	1	
17	Hexagon flange bolt M10×1.25×230	2	
18	Turnup bush Φ15.5×Φ19	4	
19	Columniform bush Φ10.2×Φ15×211	2	
20	Front right lower frame member	1	
21	Front right upper frame member	1	
22	Left front sway frame member	1	
23	Front left bottom frame member	1	

Front Suspension and arm

DISASSEMBLING, SERVICE AND ASSEMBLY THE SUPPORTING ROCKER PARTS

1. Disassembling and Service

In the suspension, there is easy to appear the problem with bushing, cotter pin and shock absorber.

·If the left and right rocker rocks fiercely, check the few aspect, whether the bushing of the rocker is crushed, the middle rubber separate is aging and chapped.

· check whether the cotter pin is credible, if it is not instead the same spec cotter pin.

·The problem with the shock absorber and maintain method, whether it can returns to the position under the pressure and the torsional spring is rupture. If it is rupture or nearly to rupture, instead the shock absorber. whether it leak oil, if so instead the same spec shock absorber. According to the different request, if there is a oil cup on the rocker, must check it whether complete and refuels.

2. Install:

Mount fore L/R damper,up-and-down rocker arm assembly onto the frame with Flange Bolt M10×70 (8pcs), M10 nuts (8pcs), Flange Bolt M10×70 (4pcs) and M10 Nut, self-locking (4pcs) to ensure a torque of 40 ~ 45Nm.

CAUTION:

·These components should be greased with butter before assembly.

·The surface of components can not be cracked.

Front Suspension and arm

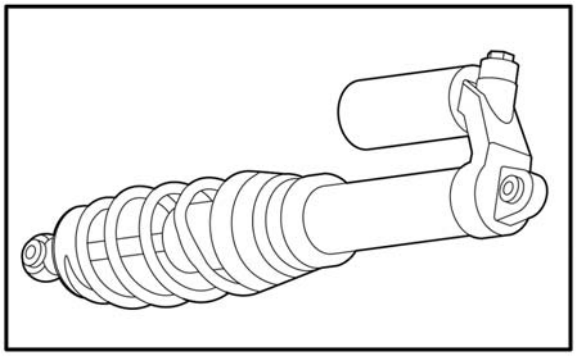
·Check whether these components are greased with butter and then tighten the up-and-down rocker arm assembly and L/R fore dampers and ther components. Fix the L/R tension rods into hole by way of the trough of open-groove nut with cotter pin (4 pcs), and make these tension rods bisection on feet.

CHECKING THE STEERING KNUCKLES

1. Check:
   • steering knuckles
   Damage/pitting → Replace

CHECKING THE FRONT ARMS

1. Check:
   • front arms
   Bends/damage → Replace.
2. Check:
   • Middle bushing
   Wear/damage → Replace.
3. Check:
   • ball joints
   Damage/pitting → Replace the ball joint.
   Free play → Replace the ball joint.
   Turns roughly → Replace the ball joint.

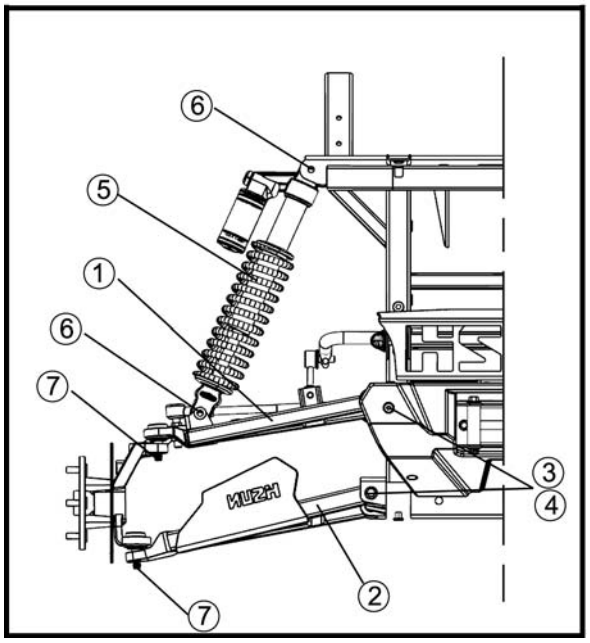


CHECKING THE FRONT SHOCK ABSORBER

1. Check:
   • shock absorber rod
   Bends/damage → Replace the shock absorber assembly.
   • shock absorber assembly
   Oil leaks → Replace the shock absorber assembly.
   • spring
   Fatigue → Replace the shock absorber assembly.

Move the spring up and down.

Front Suspension and arm



INSTALLING THE FRONT ARMS AND FRONT SHOCK ABSORBER

1. Install:
   - front arms
   - front shock absorber

a. Install the front upper arm ①and front lower arm ②.

NOTE:

• Lubricate the bolts ③ with lithium-soap-based grease.
• Be sure to position the bolts ③ so that the bolt head faces inward.
• Temporarily tighten the nuts ④.

b. Install the front shock absorber ⑤.

Nut ⑥
45 Nm (4.5 m · kg, 32 ft · lb)

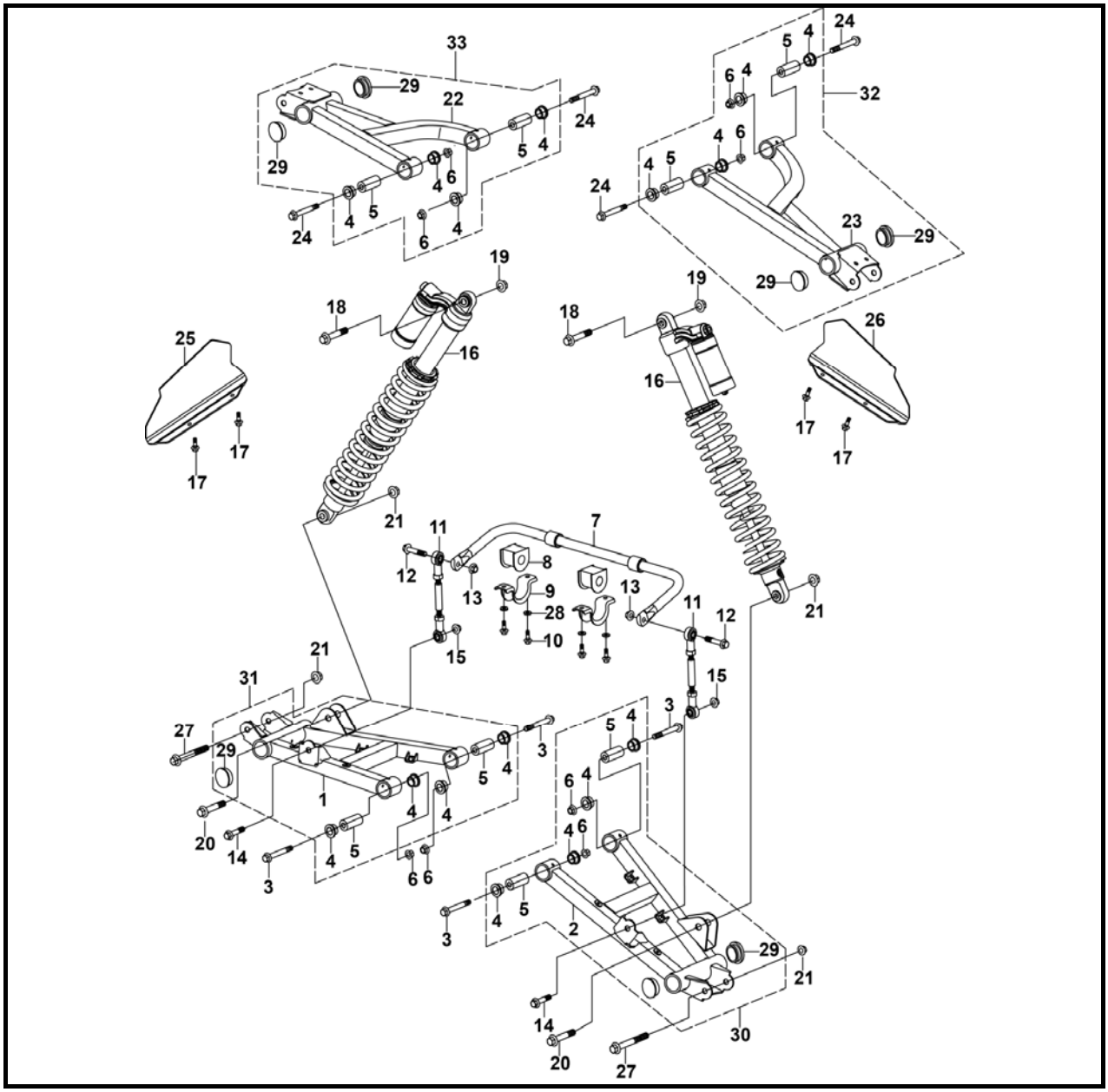
c. Install the front knuckle.

Nut ⑧
45 Nm (4.5 m · kg, 32 ft · lb)

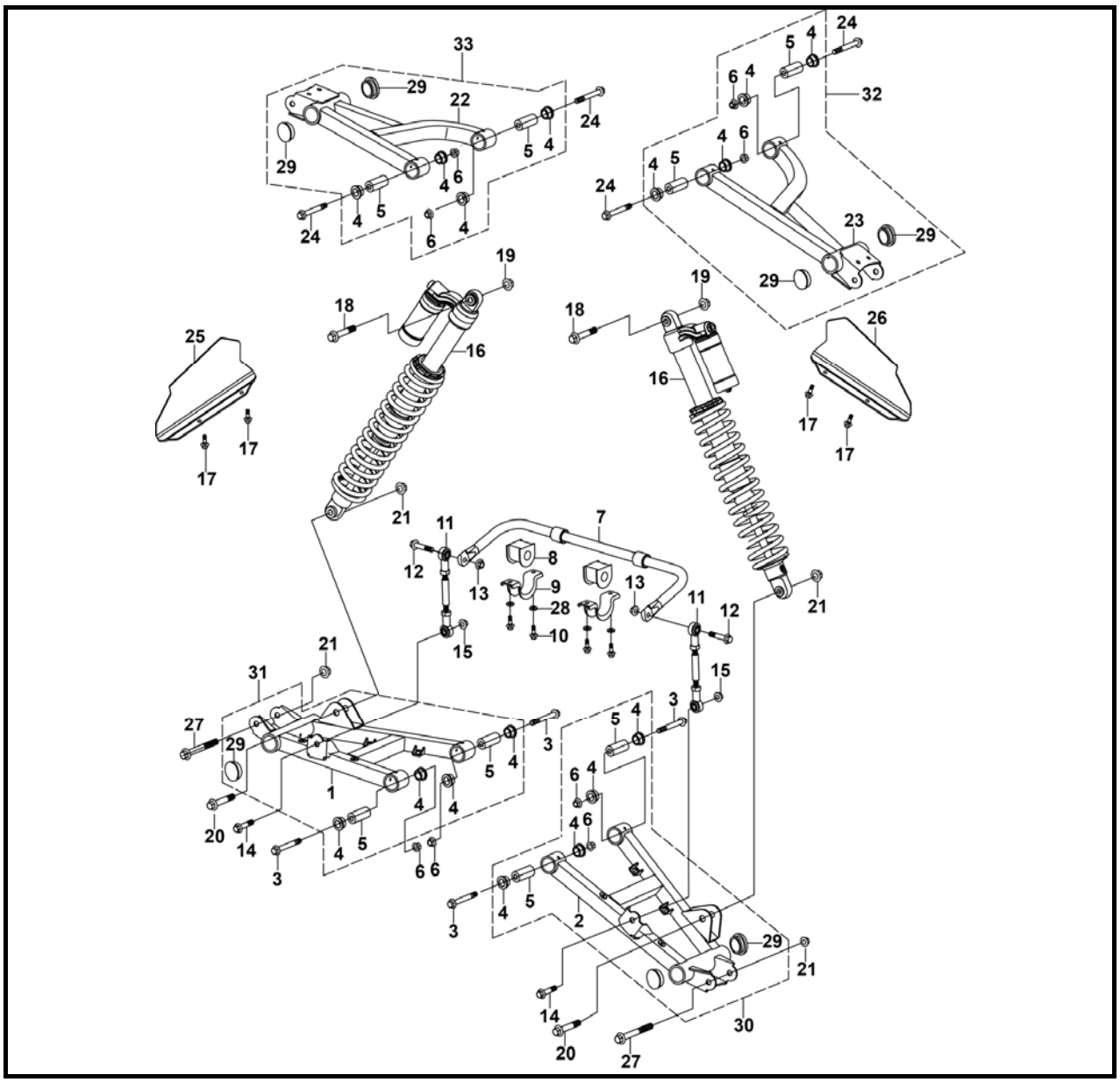
d. Tighten the nuts ④.

Nut ④
45 Nm (4.5 m · kg,32 ft · lb)

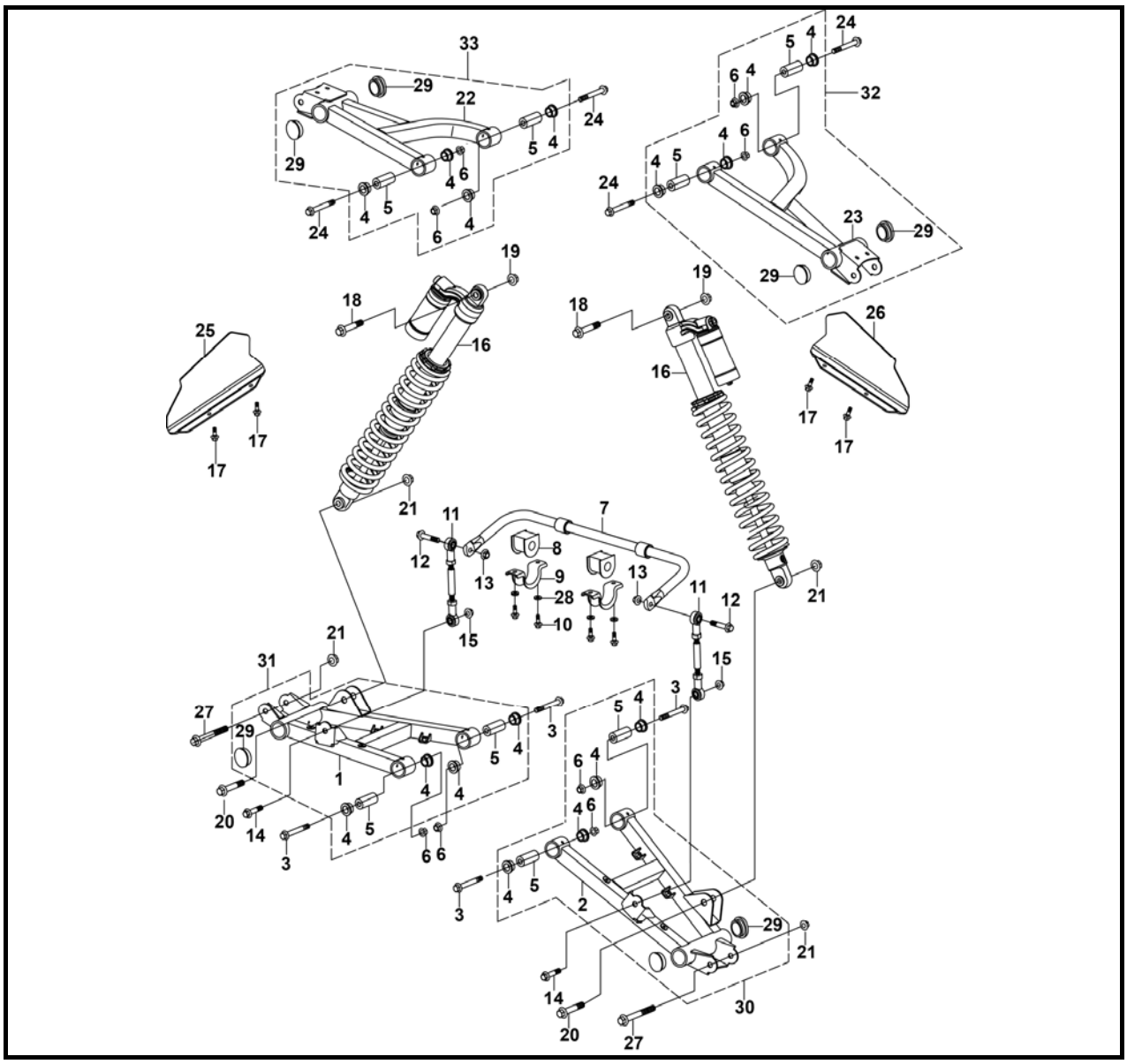
Rear Suspension



No.	Part Name	Qty	Remarks
	Removing the rear suspension		
1	Rear right lower rocker arm	1	
2	Rear left lower rocker arm	1	
3	Hexagon bolt with flange M10×1.25×78	4	
4	Turnup liner for rocker arm Φ23×Φ28	16	
5	Columniform bush Φ10.3×Φ23×50	8	
6	Metal insert hexagon locknut with flange M10×1.25	8	
7	Welding assembly, rear balancing lever	1	
8	Cushion pad Φ20×45	2	
9	Mounting cap, cushion rubber	2	



No.	Part Name	Qty	Remarks
10	Hexagon bolt with flange M8×16	4	
11	Rod assembly, rear balancing lever	2	
12	Hexagon flange bolt M10×1.25×40	2	
13	Hexagon flange nut M10×1.25	2	
14	Hexagon flange bolt M10×1.25×40	2	
15	Hexagon flange nut M10×1.25	2	
16	Rear shock absorber assembly unit Q(gasbag shock absorber)	2	
17	Hexagon flange bolt M6×16	4	
18	Hexagon bolt M10×1.25×55	2	
19	Hexagon flange nut M12×1.25	2	
20	Hexagon bolt M10×1.25×55	2	
21	Hexagon flange nut M12×1.25	2	



No.	Part Name	Qty	Remarks
22	Rear right upper rocker arm	1	
23	Rear left upper rocker arm	1	
24	Hexagon bolt with flange M10×1.25×78	4	
25	Rocker arm backplate Ⅰ	1	
26	Rocker arm backplate Ⅱ	1	
27	Hexagon flange bolt M12×1.25×110	4	
28	Spring washer Φ8	4	
29	Round plastic plug Φ38	8	
30	Rear left bottom frame parts	1	
31	Rear right shelf parts	1	
32	After the left sway frame	1	
33	Rear right upper frame parts	1	

Rear Suspension and arm

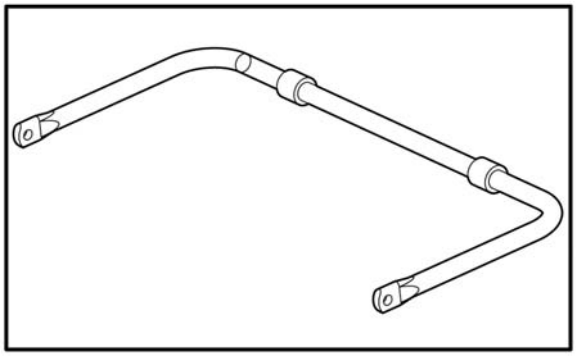
CHECKING AND SERVICE OF REAR SUSPENSION

1. It is similar to the front suspension ,Check if there exists any distortion or crack on the install axis of the shock absorber in which case it must be replaced.
2. Inspect the rocker bushing and the middle rubber separate is integrant.(According to the front Suspension)
3. The cotter pin on the head of the install axis which in the rear shock absorber whether is credible.

NOTE:

After disassemble the rear shock absorber, check if there exists any distortion or crack on the frame connection hole and the rear shock absorber, if so, inform the special serviceman to inspect and service first or install the rear shock absorber on the frame after instead.(Attention, the bolts must be the special self-lock nut, the fastening torque must be 45-55Nm)

Rear Suspension and arm



CHECKING THE STABILIZER

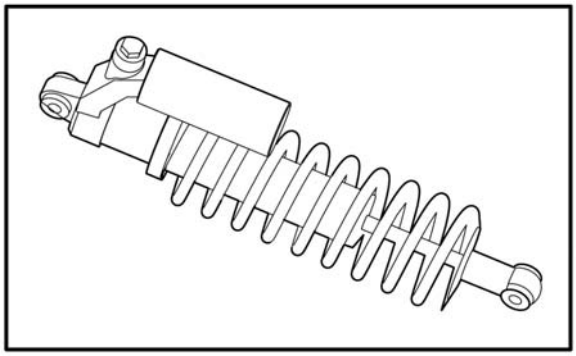
1. Check:
• bar, stabilizer
Bends/cracks/damage → Replace.

CHECKING THE STEERING KNUCKLES

1. Check:
• steering knuckles
Damage/pitting → Replace

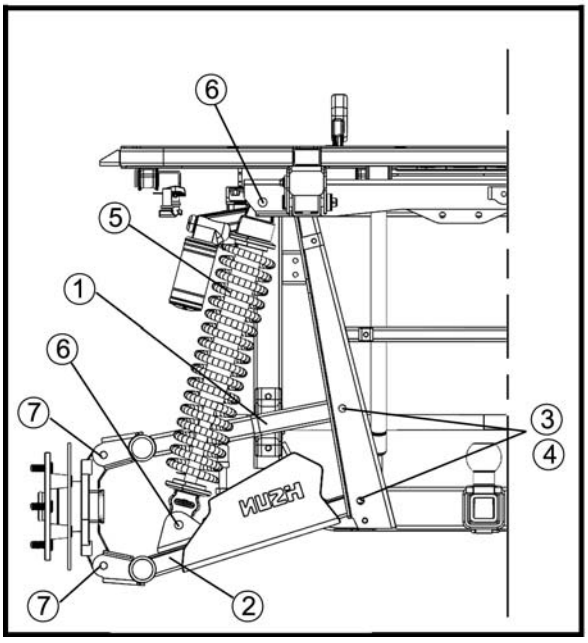
CHECKING THE REAR ARMS

1. Check:
• rear arms
Bends/damage → Replace.
2. Check:
• Middle bushing
Wear/damage → Replace.



CHECKING THE REAR SHOCK ABSORBER

1. Check:
• shock absorber rod
Bends/damage → Replace the shock absorber assembly.
• shock absorber assembly
Oil leaks → Replace the shock absorber assembly.
• spring
Move the spring up and down.
Fatigue → Replace the shock absorber assembly.



INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBER

1. Install:
   - rear arms
   - rear shock absorber

a. Install the rear upper arm ① and rear lower arm ②.

NOTE:

• Lubricate the bolts ③with lithium-soap-based grease.
• Be sure to position the bolts ③so that the bolt head faces outward.
• Temporarily tighten the nuts ④.

b. Install the rear shock absorber ⑤.

Nut ⑥
45 Nm (4.5 m · kg, 32 ft · lb)

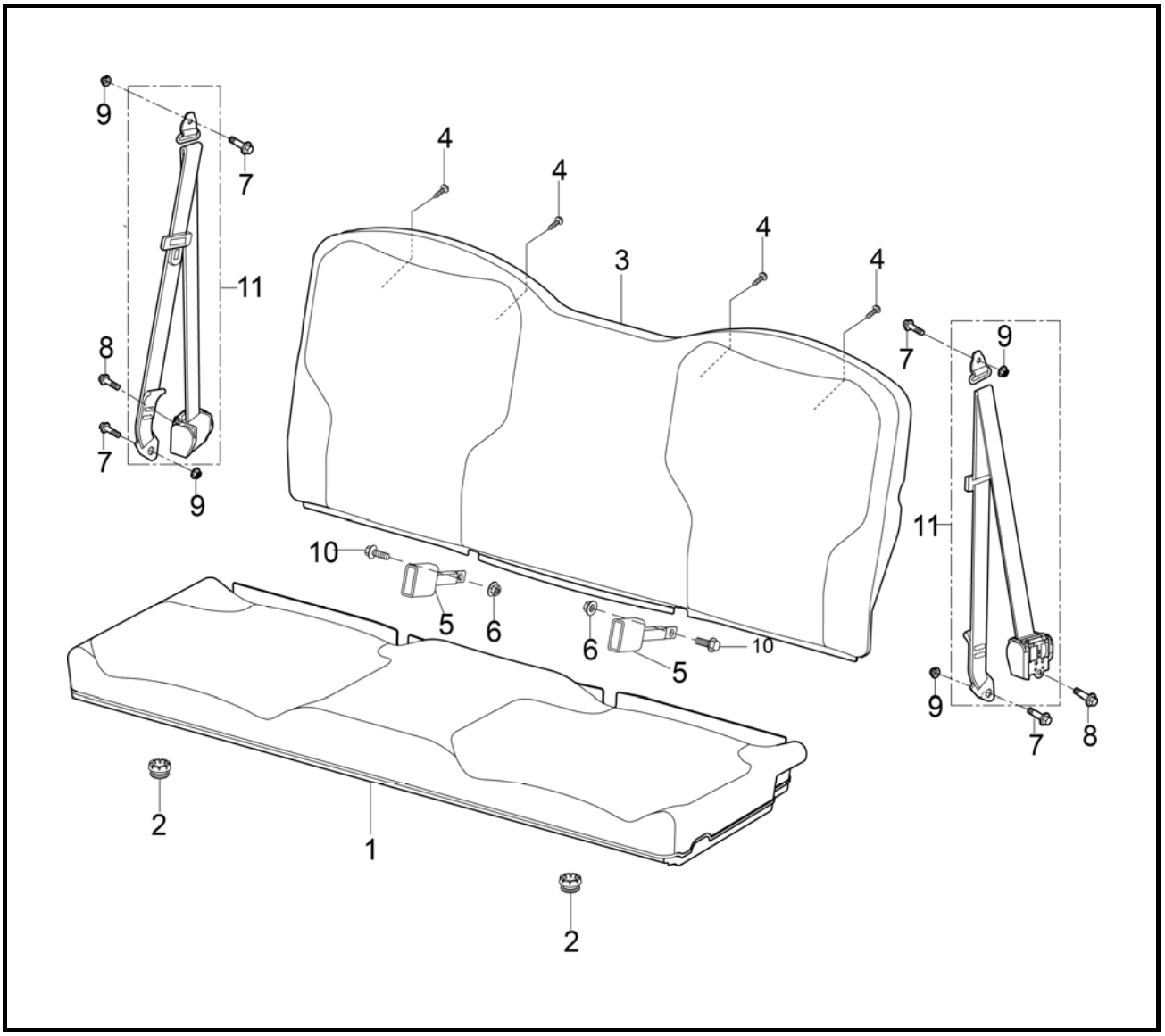
c. Install the ball joints.

Nut ⑦
30 Nm (3.0 m · kg, 22 ft · lb)

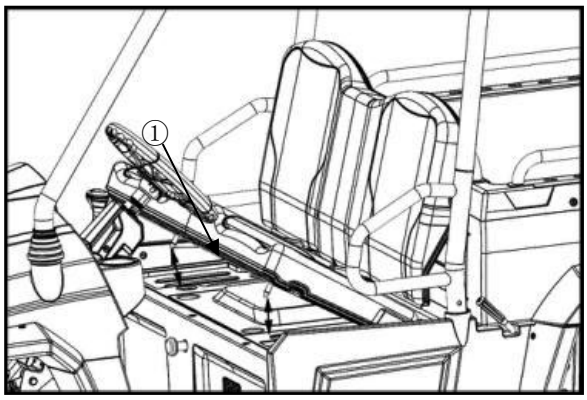
d. Install the new cotter pins.
e. Tighten the nuts.

Nut ④
45 Nm (4.5 m · kg, 32 ft · lb)

SEAT



No.	Part Name	Qty	Remarks
	Removing the seat		
1	Seat cushion Ⅰ	1	
2	Rubber socket, seat latch	2	
3	Backrest assy	1	
4	Pan head screw with cross recess	8	
5	Lock catch for the safety belt Ⅰ	2	
6	Hexagon flange nut M10×1.25	2	
7	Hexagon flange step bolt	4	
8	Hexagon flange bolt M10×1.25×20	2	
9	Hexagon flange nut M10×1.25	4	
10	Hexagon bolt with flange	2	
11	Safety belt	2	



Operator's Seat

① Seat

To open the seat, raise the seat to the forward position.

CAUTION:

·These components should be greased with butter before assembly.

·The surface of components can not be cracked.

FEATURES AND CONTROLS

Batteries

This vehicle is equipped with eight 6-volt batteries that supply the power needed to operate the vehicle. The batteries are located under the seat. See page 69 for battery access instructions.

Always observe all battery safety warnings and safe handling procedures as outlined on vehicle safety labels and in this manual. Refer to the battery maintenance section beginning on page 68.

Battery Handling Precautions

Always make sure that all electrical accessories are grounded directly to the negative (-) post on the terminal board. Never use the chassis or body as a ground connection.

Always keep battery terminals and connections clean and free of corrosion at all times. See page 69.

Always maintain a full charge on the batteries. For best battery life, avoid discharging the batteries more than 80%.

Make sure new batteries are fully charged before using.

New deep cycle batteries need to be cycled several times before reaching full capacity (50-125 cycles, depending on type). Capacity will be limited during this time.

Make sure vent caps are installed properly and securely during vehicle operation and battery charging.

Recharge batteries fully at the end of each day the vehicle is operated, allowing adequate time for the charger to complete its charge cycle. The batteries in this vehicle do not have a “memory effect”. Frequent charging will extend their life.

Avoid charging at temperatures above 120° F. (49° C.) ambient air temperature. Closed, unvented storage buildings often exceed this temperature when exposed to direct sunlight.

Never connect a 6-volt accessory directly to the batteries. Always connect any powered accessory to a 12-volt auxiliary outlet or terminal board.

Never connect jumper cables to any of the batteries of this vehicle.

Use only insulated tools when working in the battery compartment.

Batteries

Battery Conditioning

New batteries cannot initially hold all of their capacity. The approximate capacity of the battery pack increases as the number of charge cycles increases.

# of Charge Cycles:	New	15	30	45
Percent of Full Capacity:	80%	90%	95%	100%

Ambient Temperature Implications on Batteries

1. Battery range decreases as ambient temperature decreases. This can affect the range by up to 30%.

2. Batteries discharge when left uncharged. They can discharge up to 13% per month (higher rates in warmer climates) with the key off and much faster if the key is left on.
3. Batteries can freeze if left uncharged at low ambient temperatures.

Percent Charged:	100%	50%	0%
Approximate Freezing Point:	-60° F (-51° C)	0° F (-18° C)	25° F (-4° C)

Charger Operation

Open the hood and any door enclosures or zippers. This will decrease charger temperature, which allows it to operate more efficiently, and shorten charge times. See pages 68-69 for charging procedures.

1. Always use extension cords with the appropriate ratings for the country in which it is used. In North America this is a UL rating. The cords must also be rated for the conditions in which they are used, such as being rated for protection from oil in a garage or workshop environment.
2. Use the proper cord wire gauges for the cord length used:

Length:	<25 ft (7.5 m)	<50 ft (15 m)	<100 ft (30 m)
Gauge:	16AWG (1.5mm2)	14AWG (2.5mm2)	10AWG (6.0mm2)

Battery Operation Range

Range is significantly affected by tire pressure, alignment, terrain and driving style. Always maintain proper tire pressure as specified on safety labels.

MAINTENANCE

Batteries

WARNING

Battery posts, terminals and related components contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Always wash your hands after touching or handling the batteries.

WARNING

Charging a damaged battery can result in serious injury. Never attempt to charge a frozen or bulging battery. Discard the battery appropriately and install a new battery.

WARNING

Improperly connecting or disconnecting battery cables can result in an explosion and cause serious injury or death.

WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing.

External: Flush with water.

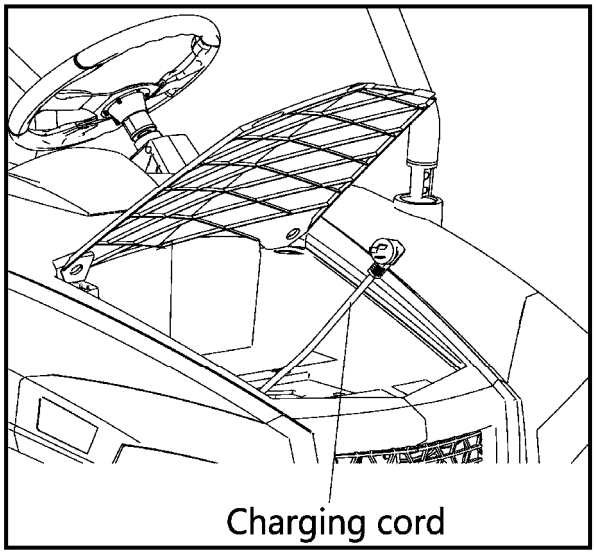
Internal: To add water and electrolyte into the battery is prohibited。

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

Battery Charging

When not in use, park the vehicle and connect the battery charger. The vehicle's charging cord is located inside the right Storage box.



WARNING

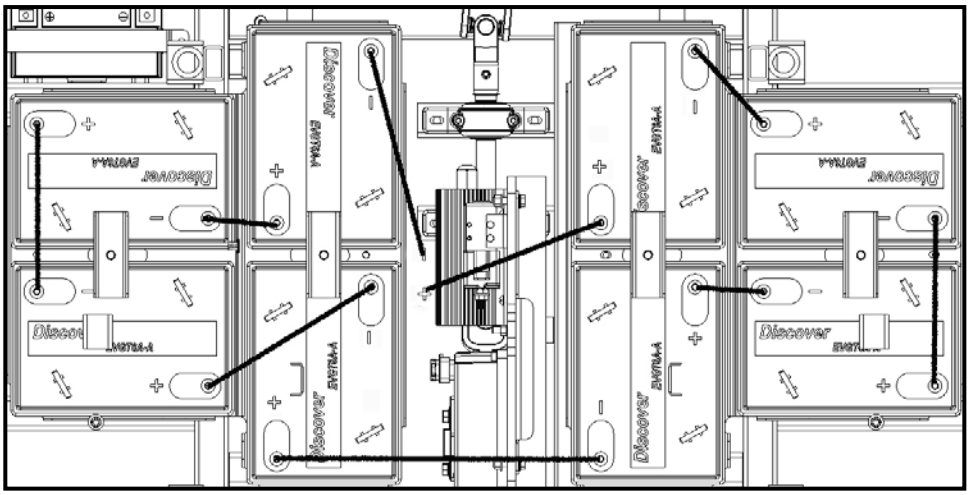
Failure to provide adequate ventilation while charging batteries can result in an explosion. Hydrogen gas is emitted during charging and will rise and accumulate at the ceiling. Always ensure a minimum of five (5) air changes per hour in the charging area. Never charge the batteries in an area subject to a flame or spark, including areas containing gas or propane water heaters and furnaces. Do not smoke in the charging area.

Always follow these precautions when charging the batteries:

1. Position the vehicle on a level surface.
2. Make sure the charging area is well ventilated.
3. Make sure the key is off.
4. Open the hood and any door enclosures or zippers.
5. Always use a extension cord with a minimum rating of 20 amps.
6. Inspect the charging cord and extension cord for cracks, loose connections and frayed wiring. Replace any damaged components promptly.
7. Always connect the vehicle charger to the extension cord first, then plug the cord into a wall receptacle.
8. Make sure the charger uses a dedicated circuit to prevent overloading. If charging multiple vehicles, each vehicle should use a dedicated circuit.

Tip: After the batteries have fully recharged, the battery charger will automatically cycle in and out of the trickle charge mode to maintain the charge.

9. When disconnecting the charger, always disconnect the extension cord from the wall receptacle first, then disconnect the cord from the vehicle's charging cord.



Battery Access

To access the batteries, remove the seat. See page 46. Remove the storage tray (if equipped).

NOTE

Before removing the seat to access the batteries, make sure any wire or metal items (including seat belt latches) remain clear of the battery compartment to avoid causing a short circuit to the electrical system.

Battery Inspections

Inspect battery terminal connections monthly. Clean batteries as recommended. Using an insulated wrench, torque bolts to 8 ft. lbs. (11 Nm).

Battery Cleaning

Always keep battery terminals and connections free of corrosion. To clean, remove corrosion with a stiff wire brush. Wash with a solution of one tablespoon baking soda and one cup water. Rinse well with tap water and dry off with clean shop towels. Coat battery terminals with dielectric grease or petroleum jelly.

NOTE

Do not allow cleaning solution or tap water to enter the batteries.

Battery Replacement

With proper care and maintenance as outlined in this owner's manual, battery life could be extended up to four years or longer, depending on the amount of use. When battery replacement is necessary, please see your authorized HSUN dealer.

WARNING

Handling batteries and electrical components improperly can result in serious injury or death. Do not attempt to remove batteries or battery cables. Always see your dealer for battery-related service.

ELECTRICAL SYSTEM MALFUNCTION INSPECTION

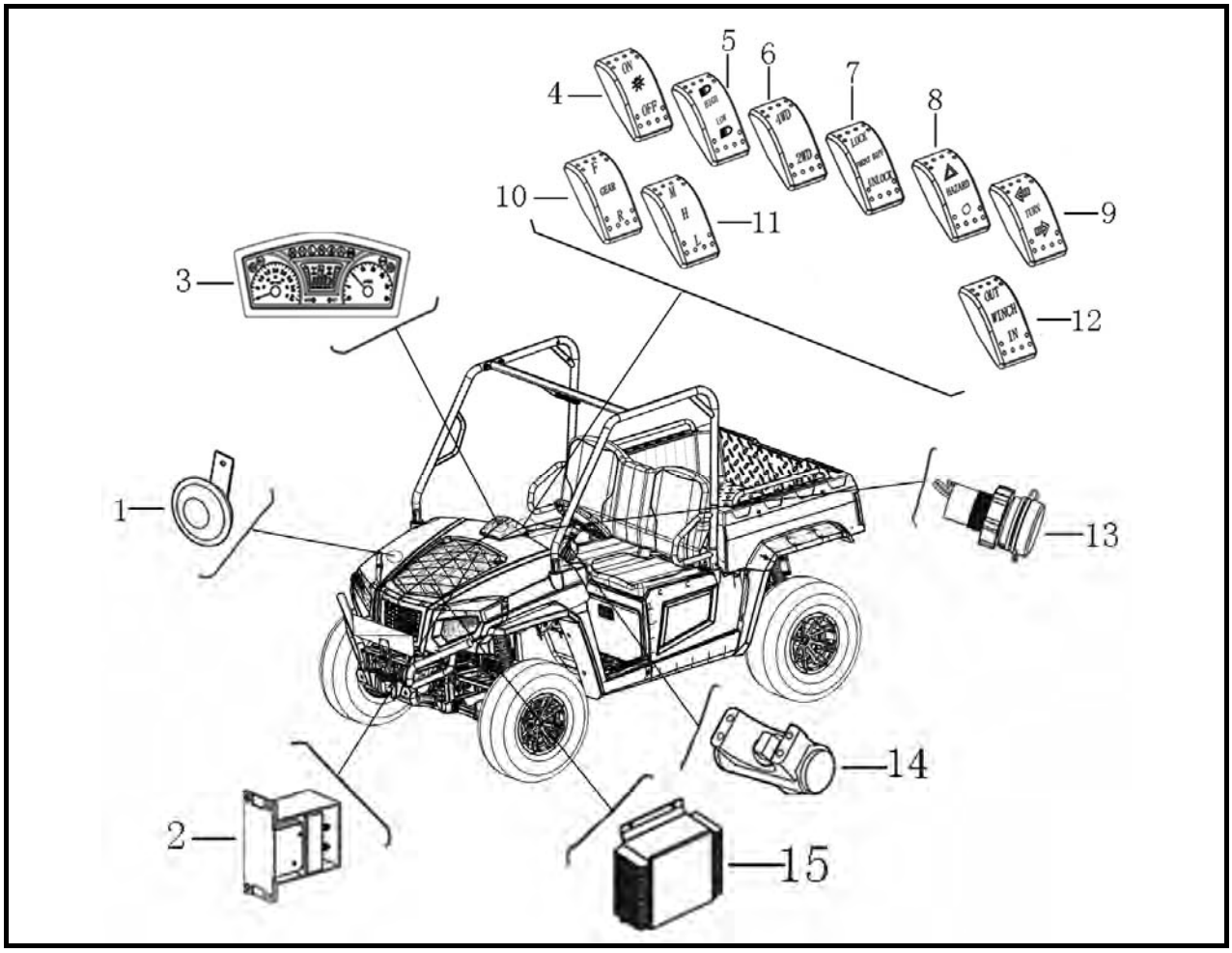
S/N	Failure	Inspection	Solution
1	Headlight does not work properly.	1. Check the functionality of headlight switch.	Repair or change the damaged switches.
		2. Check the cable for damage.	Repair.
		3. Check the light or lamps for damage.	Change the damaged lamps.
2	When the key switch is at “ON” position, battery indicate light does not turn on, and vehicle is not working.	1. Check the function of the key switch.	Change the damaged key switch.
		2. Check DC/DC converter.	Change the damaged DC/DC.
		3. Check the cables.	Repair.
		4. Check the power LED for damage.	Change the damaged power LED.
		5. Check the fuse.	Change the damaged fuse.
3	Turn the "key switch "to "ON" position, the odometer does not display, electric golf cars does not work.	1. Check the functionality of key switch.	Change the damaged key switch.
		2. Check the DC/DC convertor for damage.	Change the damaged DC/DC convertor.
		3. Check the cable for damage.	Repair.
		4. Check the odometer for damage.	Change the damaged odometer.
		5. Check the fuse for burning out	Change the damaged fuse.
4	Power indicator does not work.	1. Check the power indicator for damage.	Change the damaged power indicator.
		2. Check the cable for damage.	Repair.
		3. Check the “towing/driving” switch for damage.	Change the damaged switch.
5	Power indicator displays wrong.	1. Check the battery if completely charged.	Change the damaged charger.
		2. Check the power indicator for damage.	Change the damaged power indicator.
6	Turning lights working abnormally.	1. Check the turning lights switch on the steering.	Change the damaged combination switch.
7	Turning lights working abnormally.	1. Check the cables.	Change the damaged flash relay
		2. Check the turning flash relay.	
8	Reverse buzzer working abnormally.	1. Check the cables.	Repair.
		2. Check the controller.	Change the damaged buzzer

S/N	Failure	Inspection	Solution
9	Horn doesn't sound.	1. Check the horn switch for damage.	Change the damaged combination switch.
		2. Check the cable for damage.	Repair.
		3. Check the horn for damage.	Change the damaged horn.
10	Tail light doesn't work properly.	1. Check the functionality of taillight switch.	Change the damaged combination switch.
		2. Check the cable for damage.	Repair.
		3. Check the light or lamp for damage.	Change the damaged light or lamp.
		4. Check the rear brake switch for damage.	Change the damaged rear brake switch.
11	Emergency light doesn't work properly.	1. Check the functionality of emergency lamp.	Change the damaged combination switch.
		2. Check the cable for damage.	Repair.
		3. Check the turning light for damage.	Change the damaged turning light.
12	Speed can not be changed.	1. Check the sensor of acceleration.	Change the damaged throttle sensor.
		2. Check the cables.	Repair.
		3. Check the connect cable of the motor sensor.	Repair.
		4. Check the controller.	Change the damaged controller.
		5. Check the motor.	Change the damaged motor.
13	Speed become slow or power become weak.	1. Check the battery, whether the voltage of battery is less than standard value or the battery is broken.	Change the damaged battery.
		2. Check the controller.	Change the damaged controller.
		3. Check the motor.	Change the damaged motor
		4. Check the sensor of acceleration.	Change the damaged throttle sensor.
		5. Check the sensor between the motor and the controller,	Repair or change the damaged plug or socket.
14	Speed become slow or power become weak.	1. Whether the socket is open circuit or not.	
15	Can not reverse.	1.Check the switch of "Forward/ Reverse".	Change the damaged switch.

S/N	Failure	Inspection	Solution
		2. Check the controller.	Change the damaged controller.
16	Driving mileage decreased after full electricity charged.	1. Check the battery	Change the damaged battery or re-match the battery.
		2. Check the controller.	Change the damaged controller.
		3. Check the motor.	Change the damaged motor.
		4. Check the cables.	Repair.
17	Can not run while accelerating.	1. Check the power of the battery.	Charge the battery .
		2. Check cables, whether the function of acceleration protection is broken or not.	Repair the cable or change the damaged throttle sensor.
		3. Check the connecting wires between the batteries if loose.	Fasten the fixing bolt of conductor terminal.
		4. Check the sensor socket of the motor for proper connection.	Re-connect the socket.
		5. Check the sensor of acceleration.	Change the damaged throttle sensor.
		6. Check the "forward / reverse" switch for water penetration.	Remove the water in the switch.
		7. Check the switch of "Forward/Reverse".	Change the damaged switch.
18	Maximum speed exceeded 24km/h	1. Check the controller.	Change the damaged controller.
		2. Check the parameter of controller for incorrect settings.	Reset the controller with portable programmer.
		3. Check the motor.	Change the damaged motor.

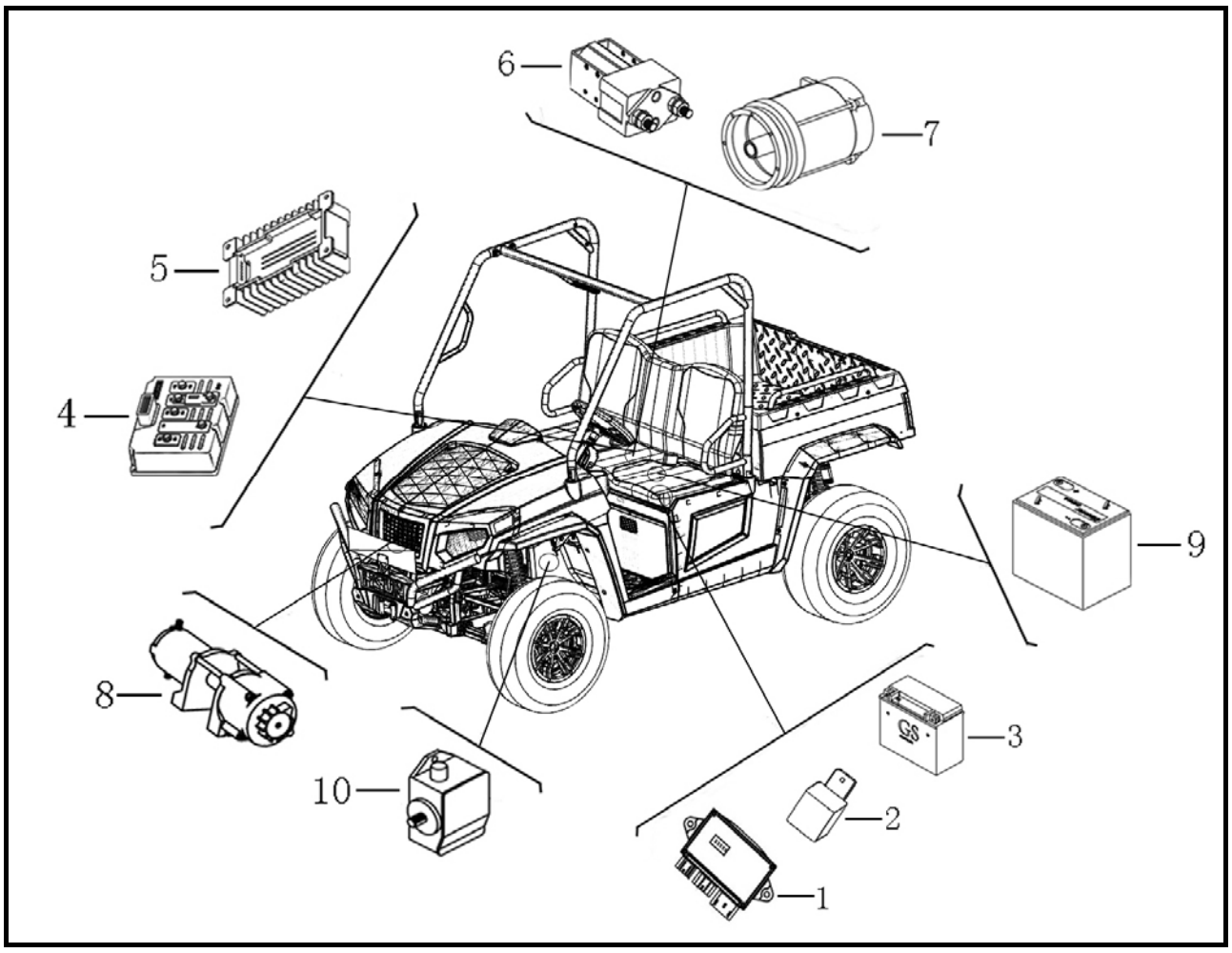
ELECTRICAL

ELECTRICAL COMPONENTS



1. Horn
2. Windlass controller
3. Speedmeter
4. Light switch assy
5. Low (hight beam) convert switch
6. Driven switch assy.
7. Front bridge differential convert switch
8. Emergency lamp switch
9. Left(Right) turn controller switch
10. Shift control switch
11. Mode change switch
12. Windlass controller switch
13. DC socket
14. Ignition switch parts
15. Charger connector

ELECTRICAL COMPONENTS

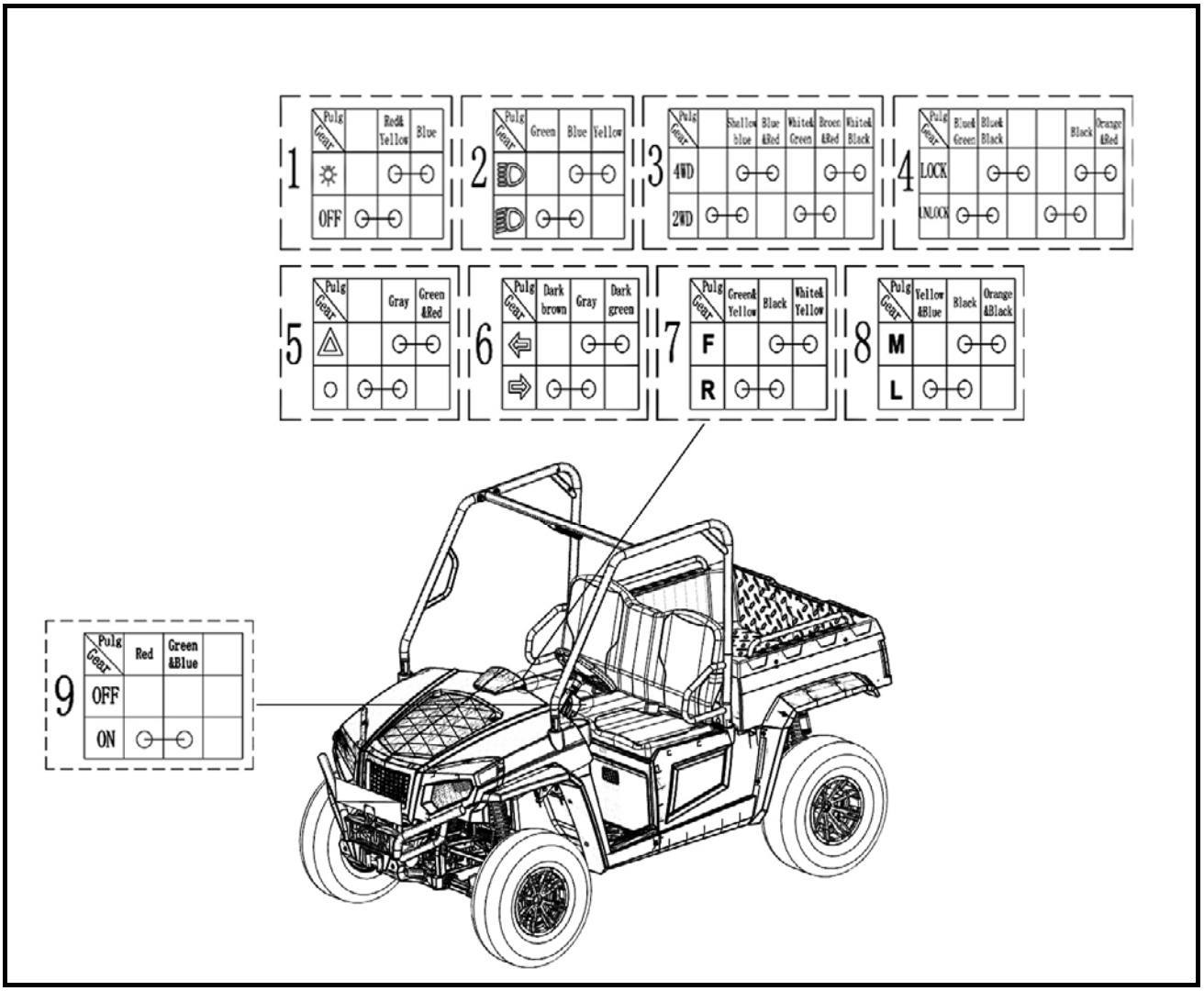


1. Relay assy
2. 48V relay
3. Battery
4. Controller
5. DC/DC switch
6. Main contactor combination
7. Drive motor components
8. Winch assy
9. Power battery assy
10. Accelerator

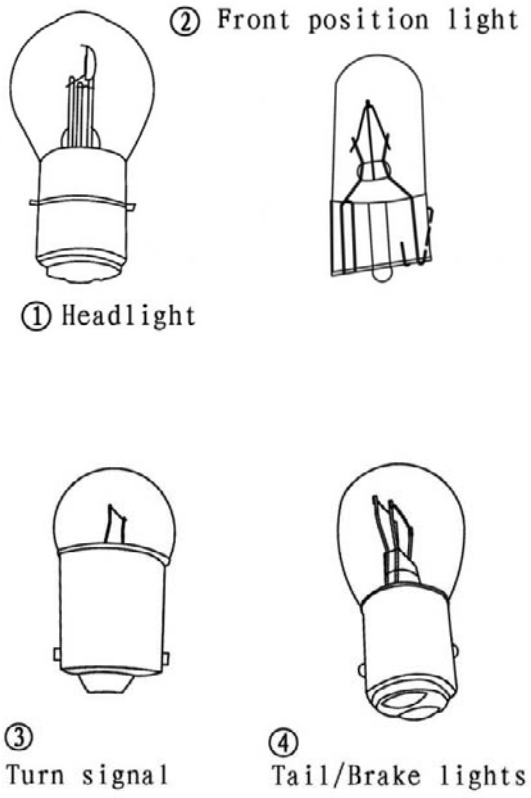
Checking the switch continuity

Refer to “CHECKING THE SWITCH” and check for continuity between lead terminals. Poor connection, no continuity → Correct or replace.

* The coupler locations are circled.



1. Light switch assy
2. Low (hight beam) convert switch
3. Driven switch assy
4. The front axle differential switch
5. Emergency lamp switch
6. Left(Right) turn controller switch
7. Shift control switch
8. Mode change switch
9. Ignition switch parts



CHECKING THE BULBS AND BULB SOCKETS

Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals

Damage/wear → Repair or replace the bulb, bulb socket or both.

Improperly connected → Properly connect.

Incorrect continuity reading → Repair or replace the bulb, bulb socket or both.

WARNING:

Since the bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

CAUTION:

- **Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.**
- **Avoid touching the glass part of the bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb and the luminous flux will be adversely affected. If the bulb gets soiled, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.**

CHARGING SYSTEM

CIRCUIT DIAGRAM（see 224 page）

TROUBLESHOOTING

IF THE BATTERY IS NOT CHARGED:

1. Fuse (main)
2. Battery
3. Charging voltage
4. DC/DC switch
5. Wiring connections(the entire charging system)

NOTE:

Remove some parts before maintenance

1. Cushion

Repair with following special toolings

1. Fuse (main)

"30A" fuse for battery to DC/DC positive line

NO CONTINUITY → Replace the fuse.

CONTINUITY ↓

2.Battery

• Check the battery condition. Refer to "CHECKING AND CHARGING THE

Open-circuit voltage

12.8 V or more at 20 °C (68 °F)

INCORRECT → • Clean the battery terminals. • Recharge or replace the battery.

CORRECT ↓

3. Charging voltage

Connect and turn the electricity of the vehicle and test the voltage of 12V/18Ah battery at both ends of the battery

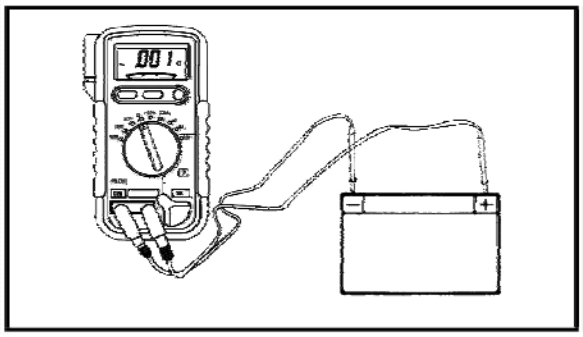
Tester (+) lead → Battery (+) terminal

Tester (–) lead → Battery (–) terminal

If the voltage is 13.8V, then it works well.

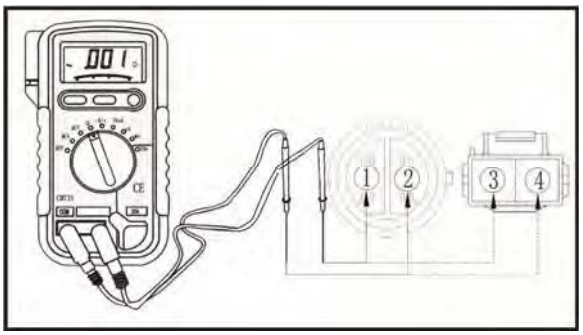
NOTE:

Use a fully charged battery.



MEETS SPECIFICATION → The charging circuit is not faulty.

OUT OF SPECIFICATION ↓



4. DC/DC switch

Check the input voltage of the battery pack to DC/DC to see if the data is between 33V and 52V.
Check the output voltage of the DC/DC converter to see if the data is 13.8V.

OUT OF SPECIFICATION

Replace DC/DC switch

MEETS SPECIFICATION

5. Wiring connections

• Check the connections of the entire charging system. Refer to “CIRCUIT DIAGRAM”.

POOR CONNECTION

Properly connect the charging system.

CORRECT

Replace the rectifier/regulator.

LIGHTING SYSTEM

CIRCUIT DIAGRAM（see 224 page）

TROUBLESHOOTING

IF THE HEADLIGHT AND/OR TAILLIGHT FAIL TO COME ON:

Procedure

Check

1. Fuses (main, lighting system)
2. Battery
3. Main switch
4. Light switch
5. Wiring connections(the entire lighting system)

NOTE:

- **Remove the following part(s) before troubleshooting:**
1. **Console**
2. **Front luggage carrir**
3. **Front covering parts**
- **Use special tool(s) for troubleshooting**.

1. Fuses (main, lighting system)

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the fuse(s).

CONTINUITY ⇩

2. Battery

- Check the battery condition. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3.

Open-circuit voltage

12.8 V or more at 20 °C (68 °F)

INCORRECT →
- Clean the battery terminals.
- Recharge or replace the battery

CORRECT ⇩

3. Main switch

Refer to “CHECKING THE SWITCH”.

INCORRECT → Replace the main switch.

CORRECT ⇩

4.Light switch

Refer to “CHECKING THE SWITCH”.

INCORRECT → Replace the light switch.

CORRECT ⇩

5. Wiring connection

- Check the connections of the entire lighting system. Refer to “CIRCUIT DIAGRAM”.

POOR CONNECTION → Properly connect the lighting system.

CORRECT ⇩

Check the condition of each of the lighting system’s circuits. Refer to “CHECKING THE LIGHTING SYSTEM”.

CHECKING THE LIGHTING SYSTEM

1. If the headlights fail to come on:

(1). Bulb and bulb socket

- Check the bulb and bulb socket for continuity.

NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ⇩

(2). Voltage

- Connect the pocket tester (DC 20 V) to the headlight couplers.

Tester (+) lead → Black terminal ① or Yellow terminal ②

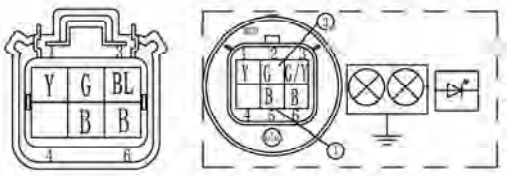
Tester (–) lead → Green terminal ③

Ⓐ When the light switch is on "≡D".

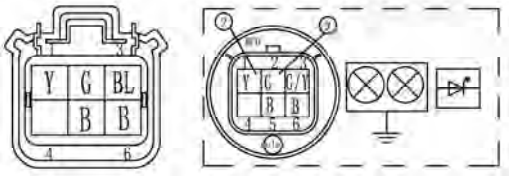
Ⓑ When the light switch is on "≡D"

- Turn the main switch to "ON".
- Turn the light switch to "≡D" or "≡D".
- Check the voltage (12 V) of the "Green" and "Yellow" leads on the bulb socket connector.

A



B



OUT OF SPECIFICATION → The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

MEETS SPECIFICATION ⇩

This circuit is not faulty.

2. If the taillights fail to come on:

(1). Bulb and bulb socket

• Check the bulb and bulb socket for continuity.

NO CONTINUITY → Replace the bulb and/or bulb socket.

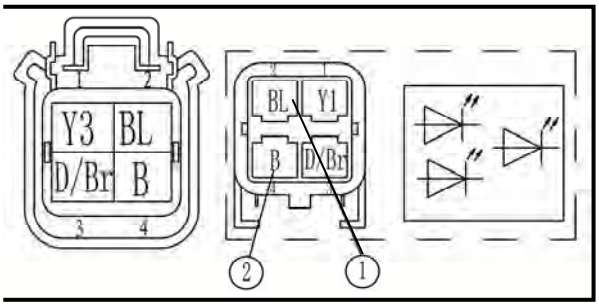
CONTINUITY ⇩

(2) . Voltage

• Connect the pocket tester (DC 20 V) to the tail/brake light couplers.
Tester (+) lead → Yellow1 lead terminal ①
Tester (–) lead → Black lead terminal ②

• Turn the main switch to “ON”.
• Turn the light switch to“≡D” or “≡D”.

• Check the voltage (12 V) of the “Blue” lead on the bulb socket connector.



OUT OF SPECIFICATION → The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

MEETS SPECIFICATION ⇩

This circuit is not faulty.

SIGNALING SYSTEM
CIRCUIT DIAGRAM（see 224 page）

TROUBLESHOOTING

IF A BRAKE LIGHT, AN INDICATOR LIGHT, OR THE WARNING LIGHT FAILS TO COME ON:

Procedure

Check:

1. Fuses (main, signaling system)
2. Battery
3. Main switch
4. Wiring connections (the entire signal system)

NOTE:

- **Remove the following part(s) before troubleshooting:**
  1. **Console**
  2. **Front frame**
  3. **Front pedal**
- **Use special tool(s) for troubleshooting.**

1. Fuses (main, signaling system)

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the fuse(s).

CONTINUITY ↓

2. Battery

- Check the battery condition. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3.

Open-circuit voltage

12.8 V or more at 20 °C (68 °F)

INCORRECT →
- Clean the battery terminals.
- Recharge or replace the battery.

CORRECT ↓

3.Main switch

Refer to “CHECKING THE SWITCH”.

INCORRECT → Replace the main switch

CORRECT ↓

4. Wiring connections

- Check the connections of the entire signal system. Refer to “CIRCUIT DIAGRAM”.

POOR CONNECTION → Properly connect the signal system.

CORRECT ↓

Check the condition of each of the signal system’s circuits. Refer to “CHECKING THE SIGNAL SYSTEM”.

CHECKING THE SIGNAL SYSTEM

1. If the brake lights fail to come on:

(1). Bulb and bulb socket

• Check the bulb and bulb socket for continuity.

NO CONTINUITY → Replace the bulb and/or bulb socket.

CONTINUITY ↓

(2). Bake light switch

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the brake light switch.

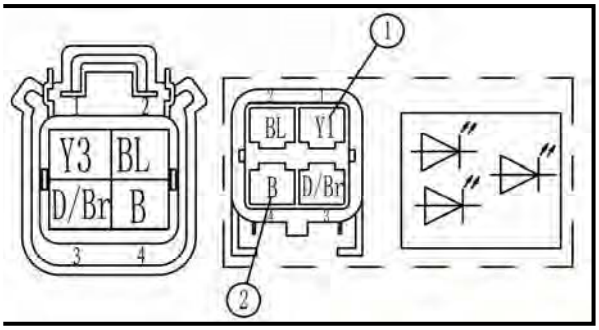
CONTINUITY ↓

(3). Voltage

• Connect the pocket tester (DC 20 V) to the bulb socket connector.
Tester (+) lead → Dark/Brown terminal ①
Tester (–) lead → Black terminal ②

• Turn the main switch to “ON”.
• Turn the light switch to “≡D” or “≡D”.

• Check the voltage (12 V) of the “Yellow” lead on the bulb socket connector.



OUT OF SPECIFICATION → The wiring circuit from the main switch to the bulb socket connector is faulty, repair it.

MEETS SPECIFICATION ↓

This circuit is not faulty.

2. If F,N,R light is not bright

(1). Test the gear shift switch

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the gear switch

CONTINUITY ↓

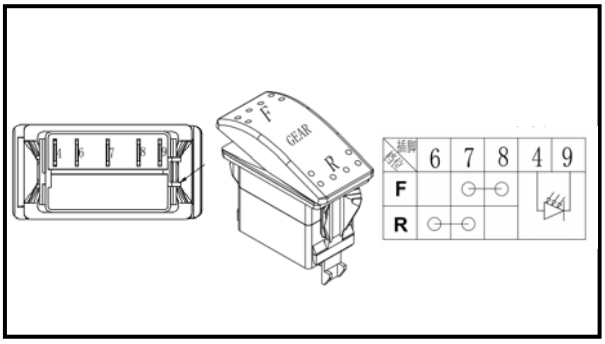
(2). Wire connection

Check the main beam connected to the gear switch connector is strong

NO CONTINUITY → Repair the main beam connection with gear switch connector

CONNECTION IS FIRM ↓

This circuit is not faulty.



3. If the parking brake indicator light fails to come on: Parking light

(1). Brake switch

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the parking brake switch

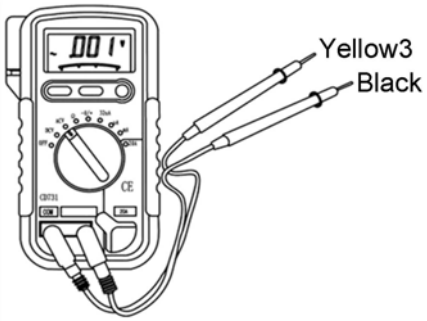
CONTINUITY ↓

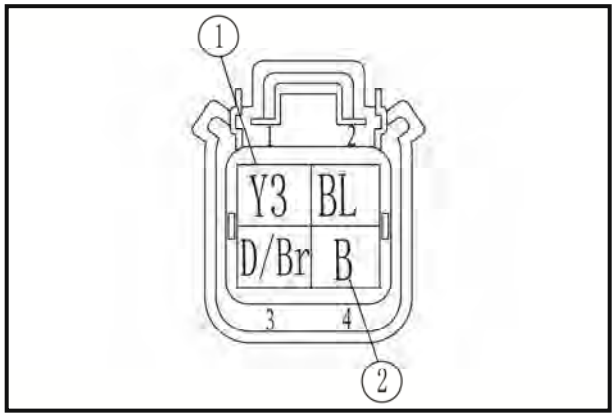
(2). Voltage

Set the multimeter to DC12V, test the brake lamp voltage at both ends

Yellow3 power meter pens → ①

Black power meter pens → ②





NO VOLATGE DISPLAY → Replace the fuse F2

DISPLAY +12V ↓

This circuit is not faulty.

4. If the reverse indicator light fails to come on:

(1). Directional signal switch

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the Reverse switch

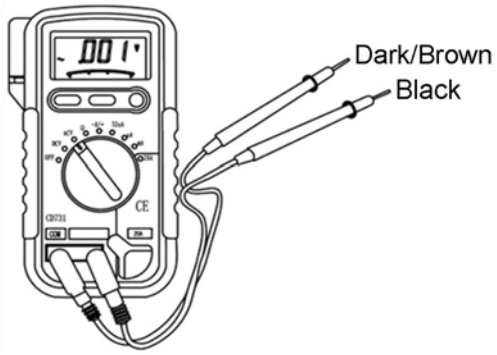
CONTINUITY ⇩

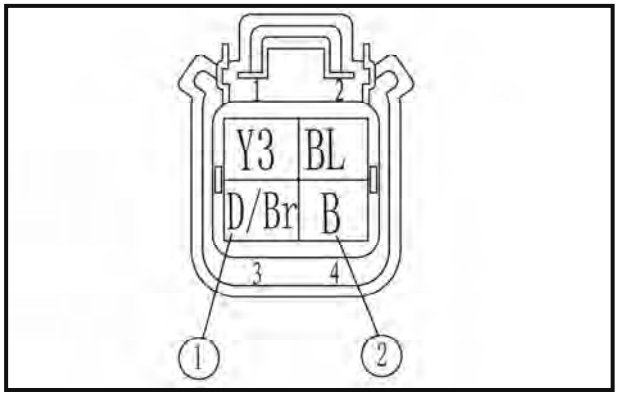
(2). Voltage

Set the multimeter to DC12V, test the direction lamp voltage at both ends

Dark/Brown power meter pens ⟶ ①

Black power meter pens ⟶ ②





NO VOLATGE DISPLAY → Replace the fuse F2

DISPLAY +12V ⇩

This circuit is not faulty.

7. If the four-wheel drive indicator light fails to come on：

(1). **2WD/4WD switch detection**

Refer to “CHECKING THE SWITCH”.

NO CONTINUITY → Replace the 2WD/4WD switch.

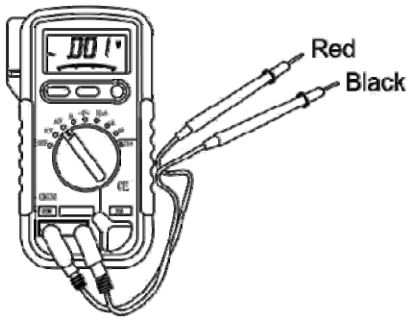
CONTINUITY

(2). Voltage

Set the multimeter to DC12V, test the 2WD /4WD switch voltage at both ends.

Red power meter pens → ①

Black power meter pens → ②



NO VOLATGE DISPLAY → Replace the fuse F3.

DISPLAY +12V

This circuit is not faulty.

2WD/4WD SELECTING SYSTEM CIRCUIT DIAGRAM（see 224 page）

TROUBLESHOOTING

1. Check if the 2/4WD switch is working.

a. Turn on the switch, put the gear to position N; keep front and rear wheel off the ground , and then roll the front wheel to see if the rear wheel is moving together with it or if it is rotatable.

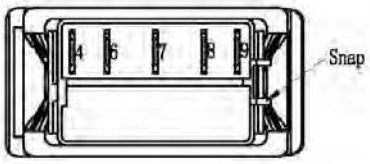
b. After the actions above being done, and the wheels are rotatable, please check the electricity with multimeter, if has no electricity, please check the fuse.

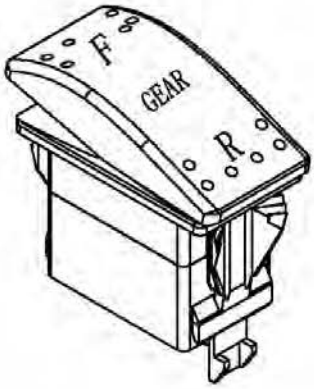
2. Check if the rear differential is working.

a. Check the sound. When the switch is turned on, the magneto valve will make s sound ‘TA’ to show that it is working and the rear wheel won’t be able to rotatable at the same direction.

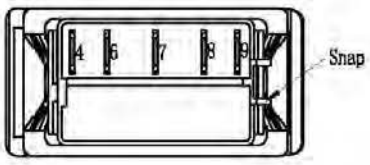
b. If no sound is made, check if the controller of magnetic valve has a output of 12V electricity, and check if the magnetic valve has a input of 12V electricity, if it has the input, it means the valve doesn't work, please change for a new one ; if not , please check if the input end of controller has a input, if it has, change for a new controller, if not , check the fuse.

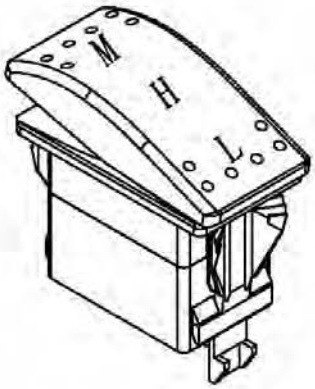
SCHECKING THE SWITCH



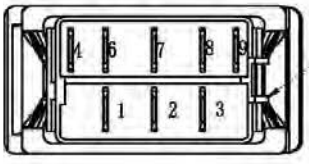


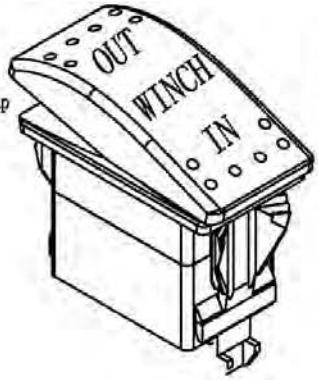
Plug / Gear	6	7	8	4	9
F		⊖—⊖			
R	⊖—⊖				



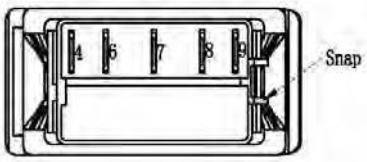


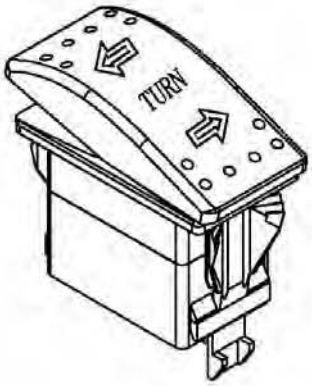
Plug / Gear	6	7	8	4	9
M		⊖—⊖			
L	⊖—⊖				



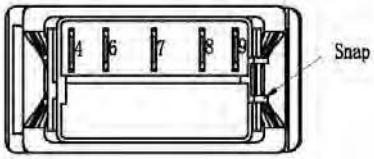


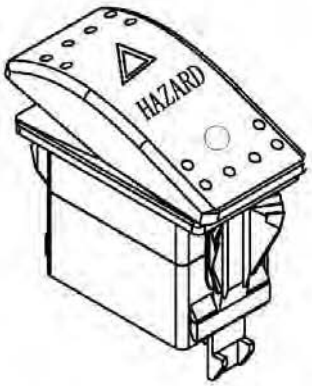
Plug / Gear	1	2	3	6	7	8	4	9
OUT		⊖—⊖			⊖—⊖			
IN	⊖—⊖			⊖—⊖				



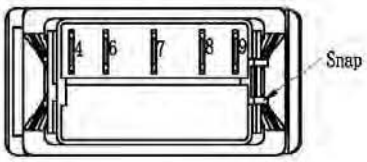


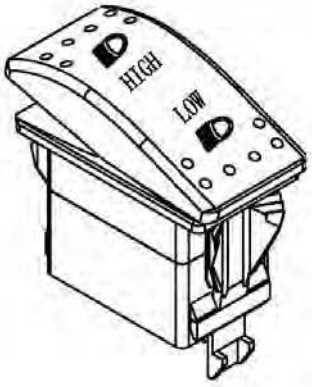
Plug / Gear	6	7	8	4	9
⇦		○	○		
⇨	○	○			



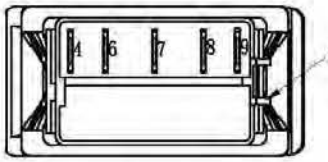


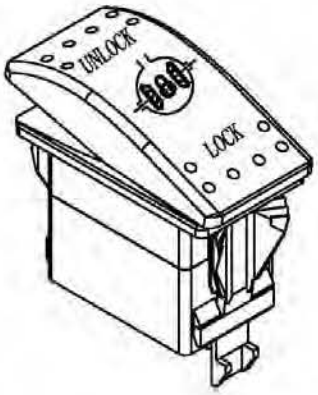
Plug / Gear	6	7	8	4	9
△		○	○		
○	○	○			



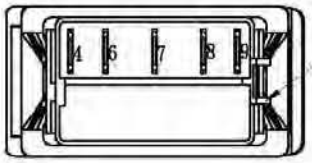


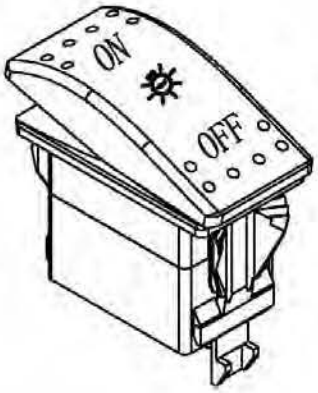
Plug / Gear	6	7	8	4	9
		○	○		
	○	○			



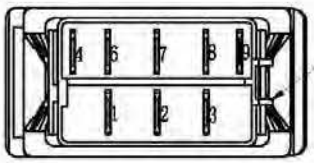


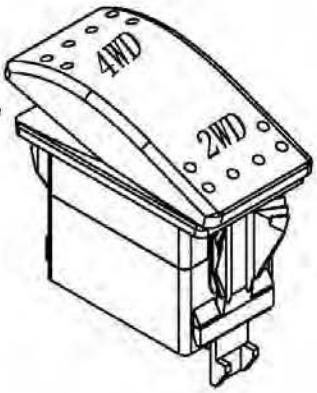
Plug / Gear	6	7	8	4	9
UNLOCK		○	○		
LOCK	○	○			





Plug / Gear	6	7	8	4	9
ON		○	○		
OFF	○	○			





Plug / Gear	1	2	3	6	7	8	4	9
4WD		○	○		○	○		
2WD	○	○		○	○			

TROUBLESHOOTING

Present section clarifies the ordinary malfunction maintenance and countermeasure for the electric vehicle. It is useful for your using on the electric vehicle.
The maintenance of the electric vehicle requires the expertise. For the problems which can not be solved by you, please contact the dealers.

NOTE:

The following trouble, not including all possible troubles, is a help for trouble guide. Please refer to relevent contents for the inspection, adjustment and replacement of part.

BODY PARTS AND PROTECTION PARTS

malfunction phenomena	countermeasure
Panel cracked up	1、Check the hole of frame and lug mounted to panel, whether it is distortion or dilapidation. And then repair and lacquer it. 2、Change new plastic pancel. 3、Re-paste the sticker and warning plate.
Frame cracked up by the out shoot of the ground	1、Check the rear speed reducer box, whether it is disrepair or oil leakage. 2、Check the brake cable, whether it is cracked up or not. 3、Check the frame, whether it is cracked up or not.

BRAKING SYSTEM

malfunction phenomena	countermeasure
Rear braking blocked	1、Check the rear inner brake pad, whether the return spring is broken or blocked. 2、Check the brake cable is blocked or not. 3、Check the brake pedal is blocked or not.
Braking performance descend	1、Check the brake pad is abrasion or exceed limitation. 2、Check the brake cable is elongated or not.
Noise from rear brake while driving	1、Check the rear inner brake pad, whether the return spring is broken or blocked. 2、Check the brake cable is blocked or not.
Excursion while braking in high speed	1、 Check rear brake, whether the difference between left and right brake force is in the stated area. 2、Check the left and right front shock absorber, whether the difference of the spring force is exceeded the standard value. 3、Check the rubber sheath connected the front rocker and frame is broken or not.

ELECTRICAL SYSTEM

malfunction phenomena	countermeasure
Lights working abnormally	1、Check the function of the big light switch. 2、Check cables. 3、Check lights and bulbs.
When the haul/run switch is at "ON" position, on skid-proof function	1、Check the switch. 2、Check the controller. 3、Check the cables. 4、Check the safely.
When the key switch is at "ON" position, battery indicate light does not turn on, and vehicle is not working	1、Check the function of the key switch. 2、Check DC/DC converter. 3、Check the cables. 4、Check the fuse.
Electricity meter display error	1、Check the electricity meter. 2、Check cables. 3、Check the haul/run switch.
Turning lights working abnormally	1、Check the turning lights switch on the steering. 2、Check the cables. 3、Check the turning flash relay.
Reverse buzzer working abnormally	1、Check the cables. 2、Check the controller.
Switches and wires	1、 Broken main cable 2、 Broken main switch
Battery	1、Low battery voltage 2、Faulty battery

RUNNING SYSTEM

malfunction phenomena	countermeasure
Steering wheel turning clearance is too much big	1、Check the lock nuts of shift straight rod, turning joint and steering stem. 2、Check the two ball joints at the each end of the shift straight rod. 3、Check the cross gimbals of turning transmission shaft, whether the clearance is large or not. 4、Check the gear of steering stem, whether the clearance is large or not.
Front wheel shaking while driving	1、Check the bearing in the turning gimbals. 2、Check the main pin shaft and the main pin bearing. 3、Check the bearing in the wheel rim. 4、Check the front wheel and the lock nut, whether it is loosen or broken. 5、Check the rubber sheath connected the front rocker and frame is broken or not.

Rear wheel shaking while driving	1、Check the bearing in the rear axle case. 2、Check the connection between rear axle and the plate spring. 3、Check the rear wheel and the lock nut, whether it is loosen or broken.
Wheels jumped while driving	1、Check the wheel rim, whether it is anamorphic or not. 2、Check the front and rear axle, whether it is bent or not. 3、Check the tires, whether it is aged or anamorphic.
Shock absorber become softness and less convenient while driving	1、Check whether the vehicle is overload. 2、Check the plate spring, whether it is become two soft after long time used. 3、Check the damp performance of the shock absorber.
Noise came from the front and rear axle while driving	1、Check the bearing in the front and rear wheel rims. 2、Check the bearing in the rear speed reduction case and differential.

ELECTROMOTOR DRIVE SYSTEM

malfunction phenomena	**countermeasure**
Speed can not be changed	1、Check the sensor of acceleration. 2、Check the cables. 3、Check the connect cable of the motor sensor. 4、Check the controller. 5、Check the motor.
Speed become slow or power become weak	1、Check the battery, whether the voltage of battery is less than standard value or the battery is broken. 2、Check the controller. 3、Check the motor. 4、Check the sensor of acceleration. 5、Check the sensor between the motor and the controller, whether the socket is open circuit or not.
Maximum speed exceeded 24km/h	1、Check the controller. 2、Check the motor.
Driving mileage decreased after full electricity charged	1、Check the battery 2、Check the controller. 3、Check the motor. 4、Check the cables.
Can not run while accelerating	1、Check the power of the battery. 2、Check cables, whether the function of acceleration protection is broken or not. 3、Check the sensor of acceleration. 4、Check the switch of “Forward/Reverse”
Can not reverse	1、Check the switch of “Forward/Reverse” 2、Check the controller.

FAULTY BRAKE

POOR BRAKING EFFECT	
Disc brake	1、Worn brake pads 2、Worn disc 3、Air in brake fluid 4、Leaking brake fluid 5、Faulty master cylinder kit cup 6、Faulty caliper kit sea 7、Loose union bolt 8、Broken brake hose and pipe 9、Oily or greasy disc/brake pads 10、Improper brake fluid level

SHOCK ABSORBER MALFUNCTION

Loss of damping function	
Shock absorber	1、Bent or damaged damper rod 2、Damaged oil seal lip 3、Fatigued shock absorber spring

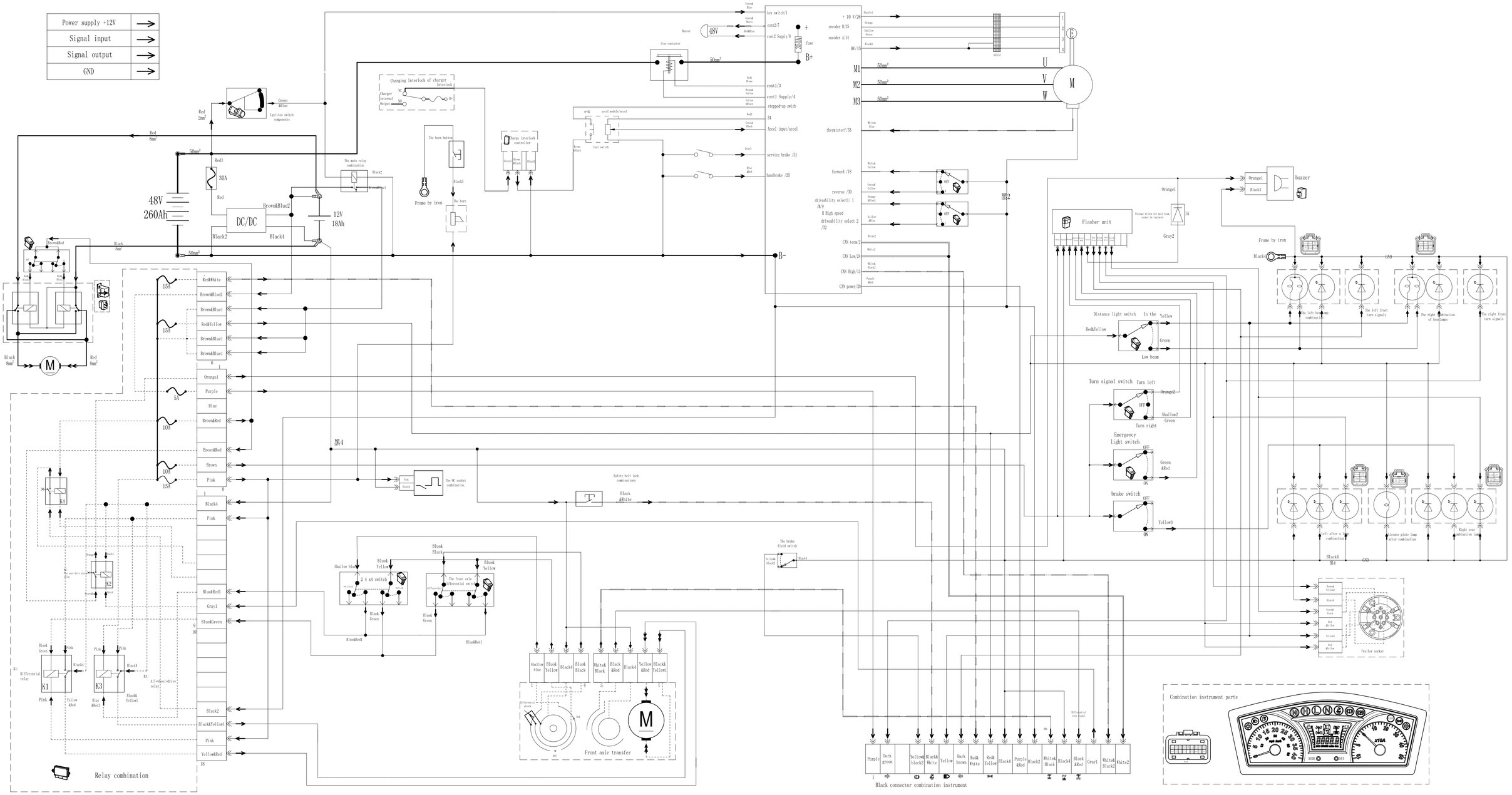
UNSTABLE HANDLING

UNSTABLE HANDLING	
Steering column	Improperly installed or bent
Steering	1、Incorrect toe-in 2、Bent steering shaft 3、Improperly installed steering shaft 4、Damaged bearing 5、Bent tie-rods
Tires	1、Uneven tire pressures on both sides 2、Incorrect tire pressure 3、Uneven tire wear
Rim	1、Deformed wheel 2、Loose bearing 3、Bent or loose wheel axle
Frame	1、Bent 2、Damaged frame
Suspension	1、 Over worn or loosen main knuckle ball stud 2、 Bent rocker 3、 Broken shock absorber 4、 Broken buffer rubber of rocker shaft

LIGHTING SYSTEM

HEAD LIGHT IS OUT OF WORK	
Head light is out of work	1、Improper bulb 2、Too many electric accessories 3、Hard charging(broken stator coil and/or faulty rectifier/regulator) 4、Incorrect connection 5、Improperly grounded 6、Bulb life expired
BULB BURNT OUT	
Bulb burnt out	1、Improper bulb 2、Faulty battery 3、Faulty rectifier/regulator 4、Improperly grounded 5、Faulty main and/or lights switch 6、Bulb life expired
ERROR DISPLAY OF METER	
Wrong Speed	1、 Then sensor on rear axle is damaged or polluted by iron powder 2、 The connection between sensor to meter is wrong. 3、 Broken meter

WIRING DIAGRAM



0.5mm²---0.05
1.25mm²---0.15
2.0mm²---0.2
3.0mm²---0.3
8.0mm²---0.4
14mm²---0.7