XY40EV

SERVICE MANUAL

NOTICE

This manual was produced by the XINGYUN Group primarily for use by XINGYUN dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on XINGYUN vehicle has a basic understanding of the mechanical ideas and the procedures of vehicle repair. Repairs attempted by anyone without this knowledge are likely to render the vehicle unsafe and unfit for use.

XINGYUN Group is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized XINGYUN dealers and will appear in future editions of this manual where applicable.

NOTE:
Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.

The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING Failure to follow WARNING instructions could result in severe injury or death to the vehicle operator, passenger, a bystander, or a person checking or repairing the vehicle.

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

NOTE: A NOTE provides key information to make procedures easier or clearer.

CONTENTS

CHAPTER 1 GENERAL INFORMATION

⚠ WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each UTV model for spare parts information and service.

1.1 IMPORTANT INFORMATION

1.2 V.I.N AND MOTOR SERIAL NUMBER

1.3 VEHICLE DIMENSIONS

1.1 IMPORTANT INFORMATION

PREPARATION FOR REMOVAL PROCEDURES

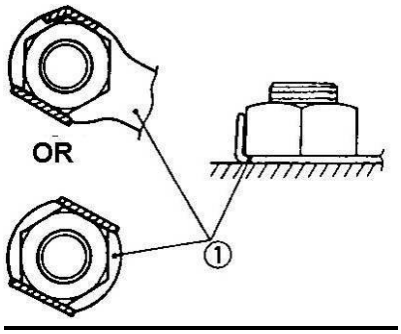
1. Remove all dirt, mud, dust and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment.
3. When disassembling the machine, always keep mated parts together. Mated part must always be reused or replaced as an assembly.
4. During machine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.

REPLACEMENT PARTS

Use only genuine parts for all replacements. Use recommended oil and grease for all lubrication jobs. Other brands may be similar in function and appearance, but inferior in quality.

LOCK WASHERS/PLATES AND COTTER PINS

Replace all lock washers/plates and cotter pins after removal. Bend lock tabs along the bolt or nut flats after the bolt or nut has been tightened to specification.



BEARINGS AND OIL SEALS

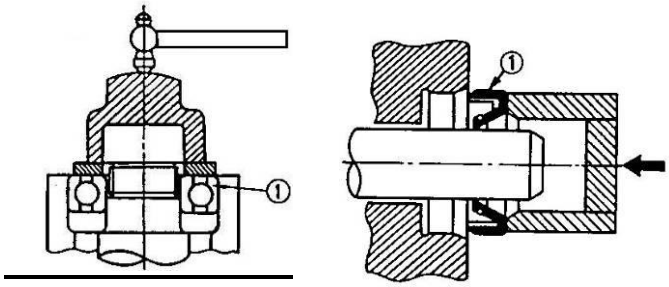
Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil bearings liberally when installing, if appropriate.

① oil seal

CAUTION:

Do not use compressed air to spin the bearings dry. This will damage the bearing surfaces.

① Bearing



CIRCLIPS

1. Check all circlips carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip①, make sure that the sharp-edged corner ② is positioned opposite the thrust ③ it receives. See sectional view.

④Shaft

CHECKING OF CONNECTIONS

Dealing with stains, rust, moisture, etc. on the connector.

1. Disconnect:
   - Connector
2. Dry each terminal with an air blower.
3. Connect and disconnect the connector two or three.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ① and reinset the terminal into the connector.
6. Connect:
   - Connector

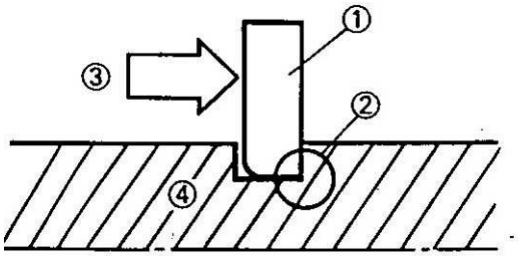
NOTE:

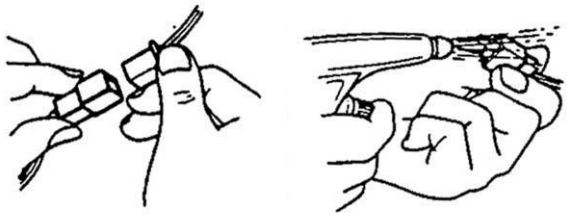
The two connectors ” click ” together.

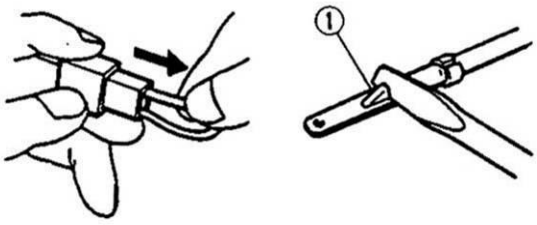
7. Check for continuity with a tester.

NOTE:

- If there is no continuity, clean the terminals.
- Be sure to perform the steps 1 to 7 listed above when checking the wire harness.
- Use the tester on the connector as shown.







CONVERSION TABLE

How to use the CONVERSION TABLE

Use this table to convert METRIC unit data to IMPERIAL unit data.

Ex.

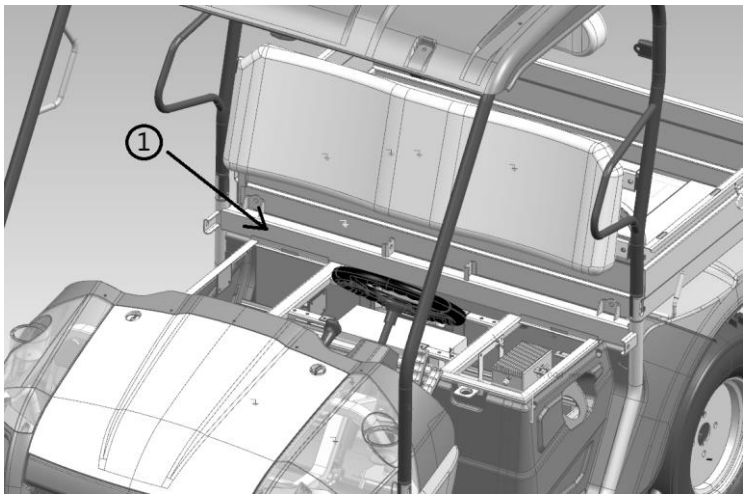
METRIC		MULIPLIER		IMP
**mm	x	0. 3937	=	**in
**cm	x	0.03937	=	**in

CONVERSION TABLE

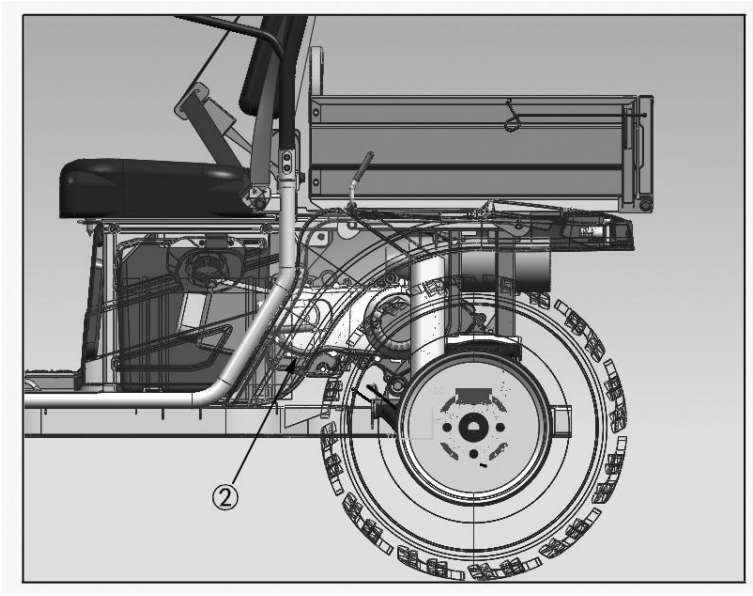
METRIC TO IMP			
	Known	Multiplier	Result
Torque	m • kg m • kg cm • kg cm • kg	7.233 86.794 0.0723 0.8679	ft • lb In • lb ft • lb In • lb
Weight	kg g	2.205 0.03527	lb oz
Distance	km/h km m m cm mm	0.6214 0.6214 3.281 1.094 0.3927 0.03927	mph mi ft yd in in
Volume/ Capacity	cc(cm^3) cc(cm^3) lit(liter) lit(liter)	0.03527 0.06102 0.8799 0.2199	oz(IMP liq.) cu • in qt (IMP liq.) gal(IMP liq.)
Miscellaneous	kg/mm kg/cm^2 Centigrade	55.997 14.2234 9/5(℃)+32	lb/in psi(lb/in^2) Fahrenheit(° F)

1.2 V.I.N AND MOTOR SERIAL NUMBER

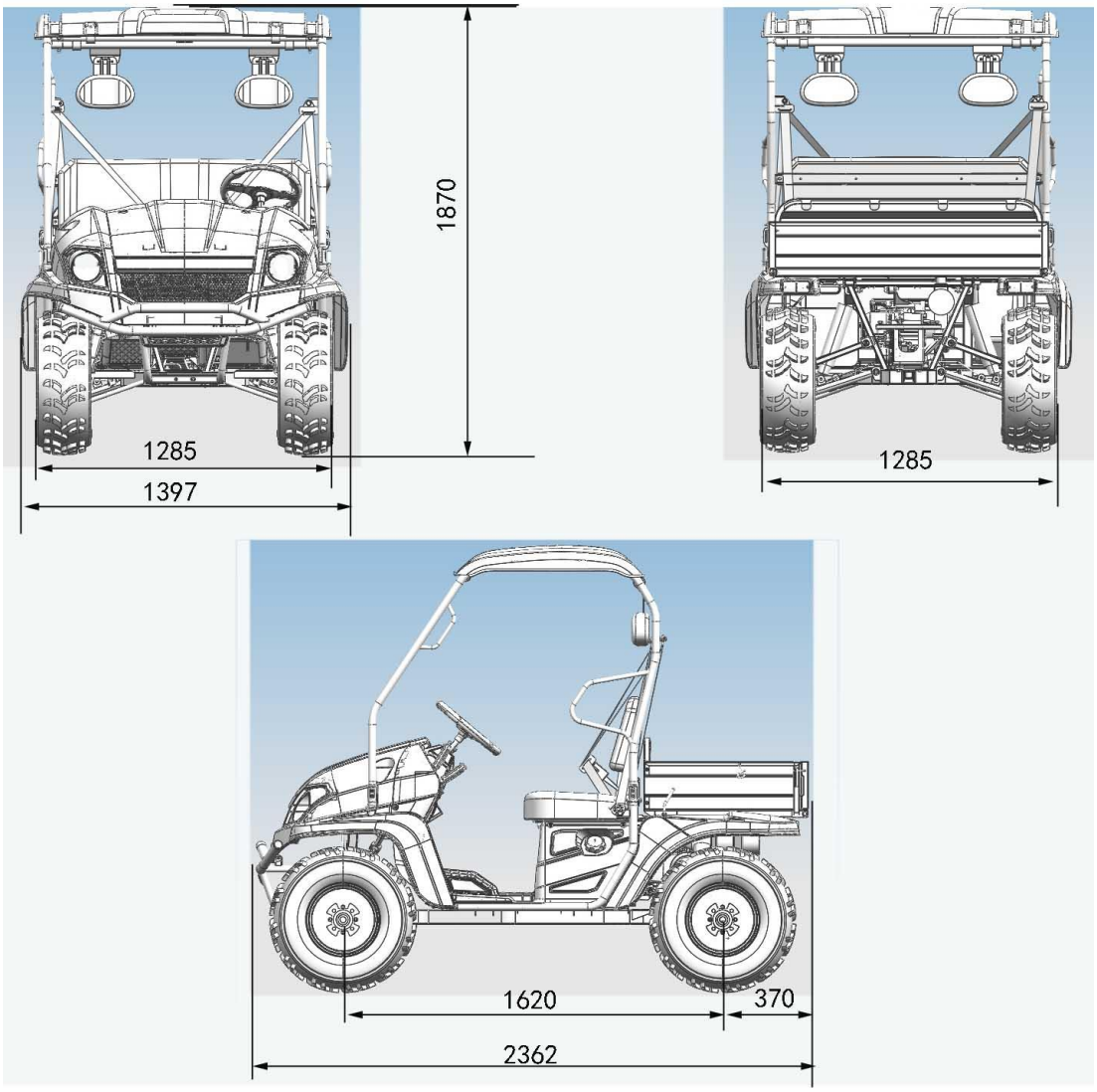
The vehicle identification number ① is stamped into the left side of the rear frame tube.



The motor serial number ② is stamped into left side of motor crankcase.



1.3 VEHICLE DIMENSIONS



Note.
The on-road equipments (rear view mirror, turn lights, etc.) are not Standard Equipment for USA.

NOTES

CHAPTER 2 MAINTENANCE

CAUTION

Due to the nature of the adjustments marked with a **D** on the following chart, it is recommended that service be performed by an authorized dealer.

- More often under severe use, such as dirty or wet conditions to purge water or dirt contamination from grease fittings and other critical components.

PERIODIC MAINTENANCE SCHEDULE

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition. Inspection, adjustment and lubrication intervals of important components are explained in the following chart on the following pages.

NOTE:

Maintenance intervals are based upon average riding conditions and an average vehicle speed of approximately 16 km/ 10 miles per hour. However, keep in mind that if the vehicle isn't used for a long period of time, the month maintenance intervals should be followed.
Vehicles subjected to severe use, such as operation in wet or dusty areas, should be inspected and serviced more frequently.

Inspect, clean, lubricate, adjust or replace parts as necessary.

NOTE:

Inspection may reveal the need for replacement parts. Always use genuine parts available from your dealer.

Service and adjustments are critical. If you are not familiar with safe service and adjustment procedures, have a qualified dealer perform these operations.

	Item	Hours	When	Remarks
●	Brake System	Pre-ride	Pre-ride	Pre-ride inspection item
	Electronic Accelerator pedal	Pre-ride	Pre-ride	Pre-ride inspection item
●	Tires	Pre-ride	Pre-ride	Inspect daily, pre-ride inspection item

●	Front and Rear Wheels/ Hubs	Pre-ride	Pre-ride	Pre-ride inspection item
●	Steering	Pre-ride	Pre-ride	Inspect daily, lubricate
D	Wheels bearings	10 hrs	Monthly	Check for looseness/ damage. Replace if damaged.
	Frame nuts, bolts fasteners	Pre-ride	Pre-ride	Pre-ride inspection item
	Headlamp Inspection	Daily	Daily	Check operation daily; apply dielectric grease to connector when replaced
	Tail/ indicator lamp inspection	Daily	Daily	Check operation daily; apply dielectric grease to socket when replaced
●	Air Filter-Main Element	Weekly	Weekly	Inspect –Replace if necessary
●	Transmission Oil Level	20 hrs	Monthly	Inspect monthly; change annually
	Battery	Monthly	Monthly	Check/clean Terminals; Check damage and deformation
D	Brake pad wear	10 hrs	Monthly	Inspect periodically
●	Rear Gear case Oil	100 hrs	Monthly	Check monthly and change annually
●	General Lubrication	50 hrs	3 months	Lubricate all fittings, pivots, cables, etc.
D	Throttle Cable/ Accelerator pedal	20 hrs	monthly	Inspect –adjust, lubricate, replace if necessary; pre-ride inspection item
D	Steering system	50 hrs	6 months	Check operation and for looseness, worn, damage, binding feeling / Adjust, repair, Replace if necessary. Check toe alignment /Adjust if necessary.
D	Front Axle	10 hrs	Monthly	Check for/ Bearing seals/ looseness/ damage.
●	Rear Axle	50 hrs	6 months	Inspect bearings, Lube
●	Front Prop Shaft＆Shaft Yoke	50 hrs	6 months	Check for looseness/ damage.
●	Rear Prop Shaft, Shaft Yoke ＆ Boots	50 hrs	6 months	Check for/ boots/ looseness/ damage.
●	Front Suspension	50 hrs	6 months	Inspect-lubricate, tighten fasteners
●	Rear Suspension	50 hrs	6 months	Inspect, tighten fasteners
D	Brake fluid	200 hrs	24	Change every two years

			months	
	Headlight Aim	As required	As required	Adjust if necessary
●	Car charger	Monthly	Monthly	Check for heat/ cleanliness Avoid water entry

LUBRICATION RECOMMENDATIONS

	Item	Lube Rec	Method	Frequency
	2.Brake Fluid	DOT 3 Only	Maintain level Between fill lines. See "7.CONTROL"	As require; change every two years or 200 hours
	3.Transmission Oil	SAE 80W/90GL5	Add to proper level on dipstick	Change annually or at 100 hours

	Item	Lube Rec	Method	Frequency
●	6.Steering system	Grease	Lubricate the pivoting and sliding parts	Every 3 months or 50 hours
●	7.Tie rods	Grease	Grease	Semi-annually
●	8.Shift Linkages	Grease	Locate fittings and Grease	Semi-annually
●	9.Front Wheel bearings	Inspect	Inspect and replace bearings if necessary	Semi-annually
●	10.Ball joints	Grease	Inspect, Locate fittings and Grease, or replace it if necessary	Semi-annually
●	11.Prop Shaft & Shaft Yoke, Spline Joint	Grease	Locate fitting and Grease	Semi-annually
●	12.Rear Axle Bearing	Grease	Grease	Every 3 months or 50 hours

NOTE:

1. More often under severe use, such as wet or dusty conditions .
2. Grease: Light weight lithium-soap grease.
3. Grease M：molybdenum disulfide(MoS_2) grease(water resistant).
4. *When suspension action becomes stiff or after washing.
5. Hours are based on 10 mph(16Km/h) average.

PERIODIC MAINTENANCE RECORD

Use the following chart to record periodic maintenance work：

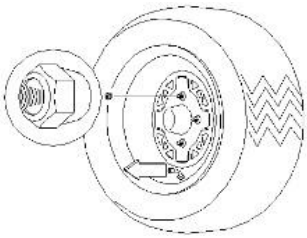
Maintenance Interval Performed	Servicing Date	Servicing Dealer or Person	Remarks
First 5 Hrs			
10 Hrs			
15 Hrs			
20 Hrs			
25 Hrs			
50 Hrs			
75 Hrs			
100 Hrs			

The following items should be checked occasionally for tightness; or if they have been loosened for maintenance service.

WHEEL NUT TORQUE SPECIFICATIONS

Bolt Size	Specification	
M12X1.25	50Ft.Lbs	69N.m

NOTE: All nuts that have a cotter pin installed must be serviced by an authorized Dealer.



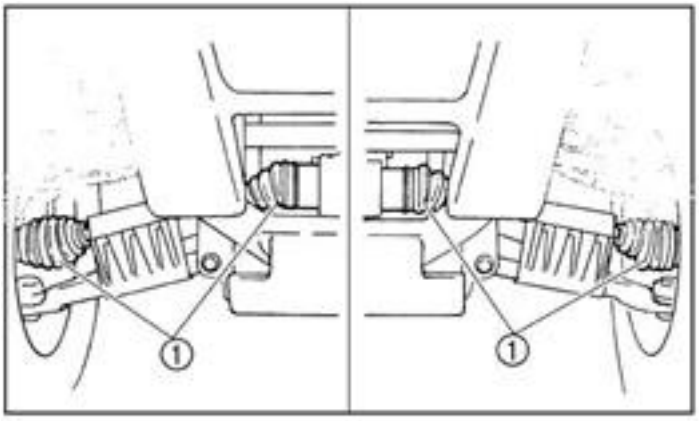
Rear Tapered nuts: install with tapered side against wheel

AXLE BOOTS

●Front Shaft Boots,

●Rear Axle (CV Joints,) Boots,

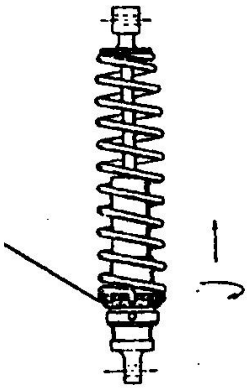
Check the protective boots for holes or tears. If any damage is found, have them replaced by an authorized dealer.



REAR SPRING ADJUSTMENT

The rear shock absorber spring is adjusted by rotating the adjuster in the direction required to increase or decrease spring tension.

Rear Spring Adjustment



STEERING

Steering Inspection

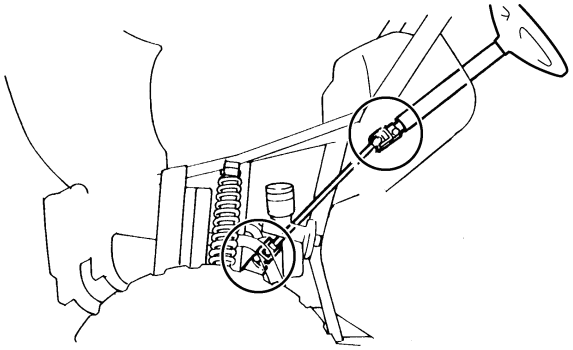
The steering assembly of the machine should be checked periodically for loose nuts and bolts, worn tie rod ends, worn boots, and damage. Checking routing of all cables, hoses, and wiring to be sure the steering mechanism is not restricted or limited. If any found, have your dealer repair

them before riding your vehicle.

The steering assembly should be also checked periodically for free operation, steering should move freely through entire range of travel without binding. Park on level ground. Turn the steering wheel right and left. Check for excessive free play, abnormal noises, or a rough feeling. Have an authorized dealer repair as necessary for proper operation.

Lubricate the pivoting parts.

Recommended lubricant:
Lithium-soap-based grease



CAMBER AND CASTER

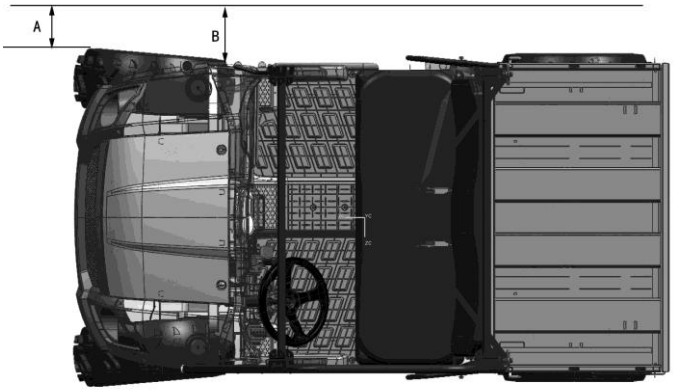
The camber and caster are non-adjustable.

TOE ALIGNMENT CHECK

WARNING

Do not attempt to adjust the tie rod for toe alignment. Severe injury or death can result from improper adjustment.

Contact your dealer. He/she has the training and tools to Make these adjustment.

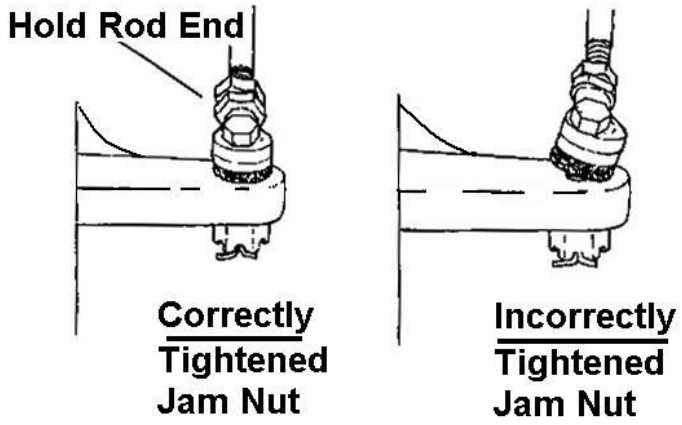


The recommended toe alignment is 1/8”to 1/4”(3to6mm) toe out.

1. Set the steering wheel in a straight ahead position and hold them in this position.
2. Measure A and B, B minus A should be 1/16” to 1/8” (1.5 to 3mm).
3. If this measurement needs to be adjusted, contact your dealer for service.

WARNING

If the tie rod is positioned incorrectly or adjusted incorrectly, it will not pivot, may break, and may separate. Severe injury or death can result



BRAKES

Front brake

WARNING

Once a bottle of brake fluid is opened, use what is necessary and discard the rest. Do not store or use a partial bottle of brake fluid. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. This causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of serious injury.

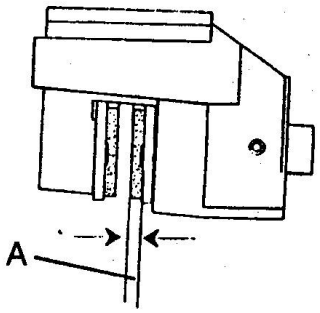
The front brake is hydraulic disc brakes which is depressing the brake pedal. These brakes are self-adjusting and require no adjustment.

The following checks are recommended to keep the brake system in good operating condition. How often they need checking depends upon the type of driving that has been done.

- Keep fluid level in the master cylinder reservoirs as described see “7.Control and part functions”. Normal functioning of the diaphragm is to extend into the reservoir as fluid lever drops. If the fluid lever is low and the diaphragm is not extended, a leak is indicated and the diaphragm should be replaced. Always fill the reservoir as indicated whenever the cover is loosened or removed to insure proper diaphragm operation. Use DOT 3 brake fluid.
- Check brake system for fluid leaks.
- Check brake for excessive travel

or spongy feel.

- Check friction pads for wear, damage and loosened.
- Check security and surface condition of the disc.
- Pads should be changed when friction material is worn to 3/64”(1mm).(A)



Rear Brake

- The rear brake is a hydraulic disc type brake which is activated by the same pedal which activates the front brake system is self adjusting and requires no maintenance other than periodic checks of the pads for wear
- Pads should be changed when the friction material is worn to 3/64”(1mm).
- Inspect the brake disc and pad wear surface for excessive wear.

Checking the brake fluid level

Insufficient brake fluid may let air enter the brake system, possibly causing the brakes to become ineffective. Before riding, check that the brake fluid is above the minimum level mark and replenish if necessary. A low brake fluid level may indicate worn brake pads and/or brake system leakage. If the brake fluid level is low, be sure to check the brake pads for wear and the brake system for leakage.

The brake fluid reservoir is located under the hood.

- When checking the fluid level, make sure the top of the brake fluid reservoir is level.
- Use only the recommended quality brake fluid. Otherwise, the rubber seals may deteriorate, causing leakage and poor braking performance.

Recommended brake fluid: DOT 3

- Refill with the same type of brake fluid. Mixing fluids may result in a harmful chemical reaction and lead to poor braking performance.
- Be careful that water does not enter the brake fluid reservoir when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.
- Brake fluid may deteriorate painted surfaces or plastic parts. Always clean up spilled fluid immediately.
- Have an authorized dealer inspect the brake system if the brake fluid level goes down.

LIGHTS

WARNING

Keep your headlights and taillights clean. Poor light while riding can result in an accident causing severe injury or death.

CAUTION

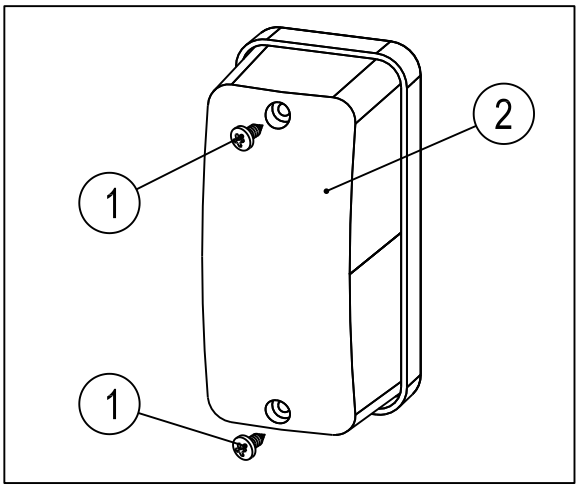
Do not service while headlight is hot. Serious burns may result.
Do not touch a halogen lamp with bare fingers. Oil from your skin leaves a residue, causing a hot spot which will shorten the life of the lamp.

Headlight Lamp Replacement

1. Use bulb 12V 35W/35W.
2. Pull the cable plug off the conducting strip in the socket, remove the clip before dismounting the bulb.
3. Fit a new bulb into the socket, sitting properly in the three slots, install the clip as shown in the fig. and connect the cable plug to the conducting strip.
4. Change the bulb.

Taillight / Brake light Lamp Replacement

If the taillight / brake light does not work the lamp may need to be replaced.



1. Screw
2. Lens

1. Remove the screws①.
2. Remove the lens②.
3. Remove bulb and replace it with recommended bulb.
4. Test the taillight/ brakelight to see that it's working .
5. Reinstall the lens and screws.

High Beam Headlight Adjustment

The headlight beam can be adjusted up and down.

1. Place the vehicle on a level surface with the headlight approximately 10”(3m) from a wall.
2. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height.
3. Start the engine and turn the headlight switch to high beam.
4. Observe headlight aim. The most intense part of the headlight beam should be aimed 2.8” (71mm) below the mark placed on the wall in step 2. **NOTE :** Driving weight must be included on the seat.
5. To turn the two adjusting screws ③clockwise is to lower the beam area and to turn the two adjusting screws ③counterclockwise is to heighten the beam area.

CHAPTE 3 ELECTRICAL

3.1 PARTS INSPECTION AND SERVICE

HEADLIGHT ADJUSTMENT

1. Use bulb 12V 35W/35W.
2. Remove the black sheath, turning the socket counterclockwise and take it out. Turning the bulb counterclockwise and Remove it from the socket.
3. Change the bulb.

HEADLIGHT ADJUSTMENT

1. The headlight beam can be adjusted vertically.
2. Place the vehicle on a level surface with the headlight approximately 33in(10m) from a wall.
3. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height.
4. Start the engine and turn the headlight switch to high beam.
5. Observe headlight aim. The most intense part of the headlight beam should be aimed 86mm to 129mm below the mark placed on the wall in step 2. NOTE : Riding weight must be included on the seat.
6. Loosen but not remove pivot bolt/ screw and adjust beam to desired

position.

7. Tighten nut and bolt / screw.

To turn the two adjusting screws backward is to lower the beam. To turn the two adjusting screws

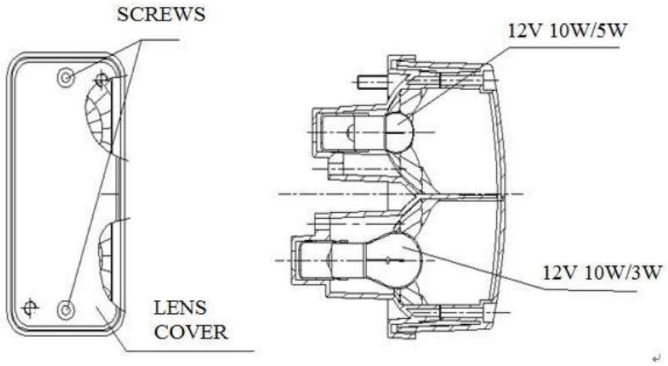
forward is to heighten the beam.

TAILLIGHT / BRAKELIGHT LAMP REPLACEMENT

1. From the rear of the taillight remove two screws holding lens cover in place and remove

lens cover.

2. Remove lamp and replace it with recommended lamp.
3. Reinstall the lens cover removed in step 1.
4. Test the taillight / brake light.



3.2 BATTERY

SPECIFICATIONS

DC 60V 100Ah (5×12V)　　Lead acid battery

Check for appearance and connection

1.The shell, cover of the battery has no swelling, acid leakage or damage.

2, Check whether the battery is dirt;

3. Check whether the connection wire or terminal is rusty

4. Check whether the connection bolt is loose

Avoid short circuit

NOTE

The short circuit current can reach up to thousands of ampere,. As a result, a large amount of heat is generated in the connecting part of the short circuit, it will damage the battery, leakage of liquid and even explosion, cause serious injury or death.

In order to avoid short circuit, you need to be extra careful when you Install or remove batteries and using insulation tools. The cable for connecting the battery cannot placed casually, it may cause short circuit.

The battery terminal screws should be covered by insulating cap. Arrangement of cable should void overlapping pressure to produce a breakdown.

CHARGING

The car charger is under the cargo bed and the charging socket located on the left side under the seat.

Each car is equipped with a charging plug. Please use the original charging plug.

Check the charging plug and charging socket whether these is damaged or

water stains, to prevent short circuits.

There has a charging indicator on instrument panel to indicates charging capacity.

charging capacity: RED (<80%)

YELLOW(>80%)

GREEN (100%)

Maintain

1.Do not allow the battery to be in a state of loss for a long time, it will decrease the capacity of the battery and affect the service life seriously.

2. If you find mileage significantly reduced，check the voltage of each battery using a universal meter. In usually, one single battery voltage will reach more than 13.1V in the state of full power. If one of the battery voltage has been significantly lower than the other batteries, please go to the authorized dealer for inspection and maintenance.

3 avoid exposure in the sun

The sun exposure will increase the temperature of the battery, increase the amount of water loss, thereby affecting the battery life.

4. Electric vehicles should be slow to accelerate in the start. If you step on the accelerator pedal to the end at first time, it will cause the battery discharge is too fast, thereby reduction of battery life..

5. In winter, the battery capacity decreases with the decrease of temperature, which is a normal phenomenon. To 68℉ as the standard，battery capacity will drop to 80% in 14℉.

6. Keep the battery surface clean, vehicle parking should be parked in a cool ventilated place.

7.Please charge the battery to full before you need place the vehicle for a long time and charging one time at least each month.

8. The original car charger is through the battery matching, do not replace the charger arbitrarily.

3.3 Drive System

Drive system configuration:

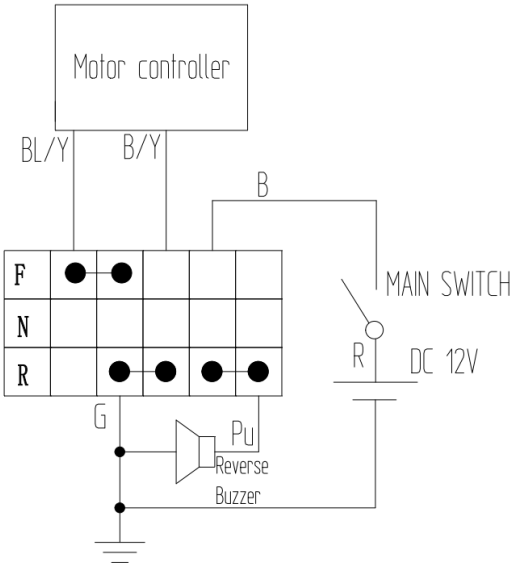
Motor rated power: 4KW
Motor type: BLDC
Battery: 12V100Ah*5
Maximum Speed: 40km/h
Mileage: 50km

3.3.1 Electronic shift lever

Have 3 gears : Front Neutral Reverse

When select reverse, reverse buzzer will be working.

Schematic Diagram



3.3.2Electronic accelerator pedal

working voltage:5V (Provided by the motor controller)

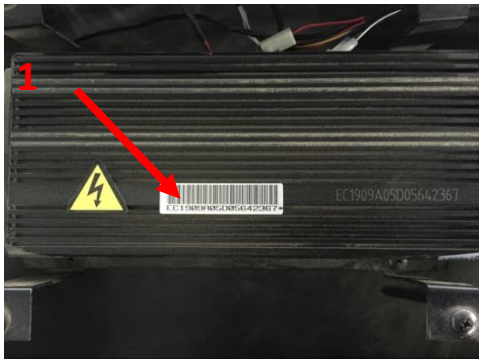
output voltage:0.9~4.0V

Initial voltage: ＜1V （If the initial voltage > 1V, the motor cannot working）

You can use a multimeter to measure the voltage between Blue line and Yellow line which is the pedal output voltage.

3.3.3 Motor controller

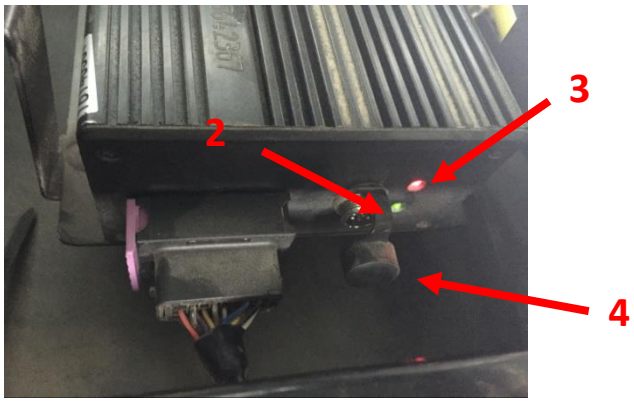
1.Controller Number



2.Power indicator light

3.Work indicator

4.Host computer interface



Terminal function

	8	7	6	5	4	3	2	1
A	VH	1HC			STL	ACC	12V+	RTN
B	THM	1HB	MS		R	ACC-OUT	L1	VKEY
C	RTN	1HA			F		12V-	

A1：Accelerator pedal -

B1：60V power supply

A2：DC converter input +

B2：DC contactor coil-

C2；DC converter input -

A3；Accelerator pedal +

B3；Accelerator pedal OUTPUT

A4：Ground enable

B4：Reverse

C4：Front

B6: Motor speed signal

A7: Hall sensor C

B7: Hall sensor B

C7: Hall sensor A

A8: Hall sensor power supply+

B8: Motor temperature signal

C8: Hall sensor power supply-

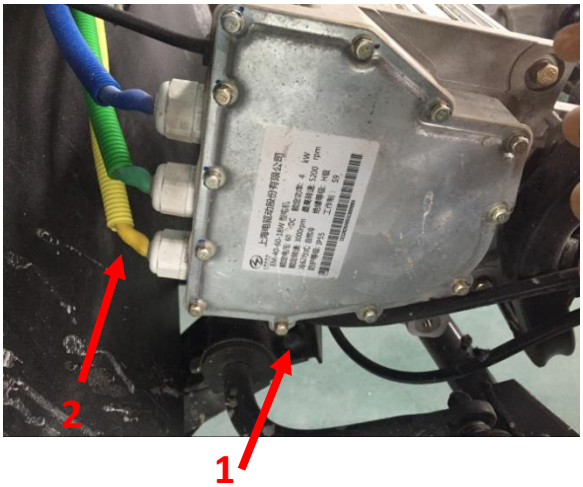
3.3.4 Motor

Rated voltage: 60V

TPYE : BLDC

Rated speed: 3000rmp

Rated torque: 13N.m



1.Controller Number

2. Power cable

3.3.5 Car charger

input voltage:100~240Vac

Input frequency:47~63Hz

charger current: 15A

If the indicator light not work, check the voltage red/blue/brown line to green line. There have voltage, replace the indicator light, otherwise, car charger is fault.

Charging abnormal

check the car charger output voltage (60V), if the voltage is normal , battery is fault , otherwise check the input power and charging line. If the line and power supply is ok, car charger is fault.

3.4 Drive System Common Malfunction

3.4.1Vehicle without electricity

check the fuse and fuse box

check the wire which connect the 12V battery

3.4.2 Vehicle have electricity but motor not start

Motor controller indicator is normal (red and green light normally on)

↓

Switch to reverse gear, check the motor controller terminal B4 whether connect to negative of battery, if not, check the stroke switch in electronic shift lever

Switch to front gear, check the motor controller terminal C4 whether connect to negative of battery, if not, check the stroke switch in electronic shift lever

If terminal B4, C4 no fault, step on the accelerator pedal and measuring the voltage between terminal B3 and A1 (should between 1.0V~4.0V) .If the voltage is not normal, check the accelerator pedal.

If the voltage between terminal B3 and A1 is normal , controller fault.

Motor controller indicator is abnormal

(1) red light off , green light off

check the voltage between terminal A4 and B2 (60V), if the voltage is normal, controller is fault; if not , check the wire connection.

(2) green light on, red light off

check the DC contactor coil voltage(12V),

If the voltage is normal, check whether the DC contactor is pull-in.

(3) green light on, red light twinkle

Flicker mode:

0.25s on----0.25s off----0.25s on----0.25s off ----2s off(loop)

check the voltage between terminal A3 and A2 (5V), if the voltage is not normal,

controller is fault. Otherwise, observe whether the accelerator pedal is returned and check the voltage between terminal A3 and A1,the initial voltage should be less than 1V.

(4) green light on, red light twinkle

Flicker mode:

0.25s on----0.25s off----0.25s on----0.25s off ----0.25s on----2s off(loop)

check the plug which for motor hall sensor

(4) green light on, red light twinkle

Flicker mode:

0.25s on----1s off----0.25s on----1s off ----0.25s on----2s off(loop)

check the motor temperature

(5) green light on, red light twinkle

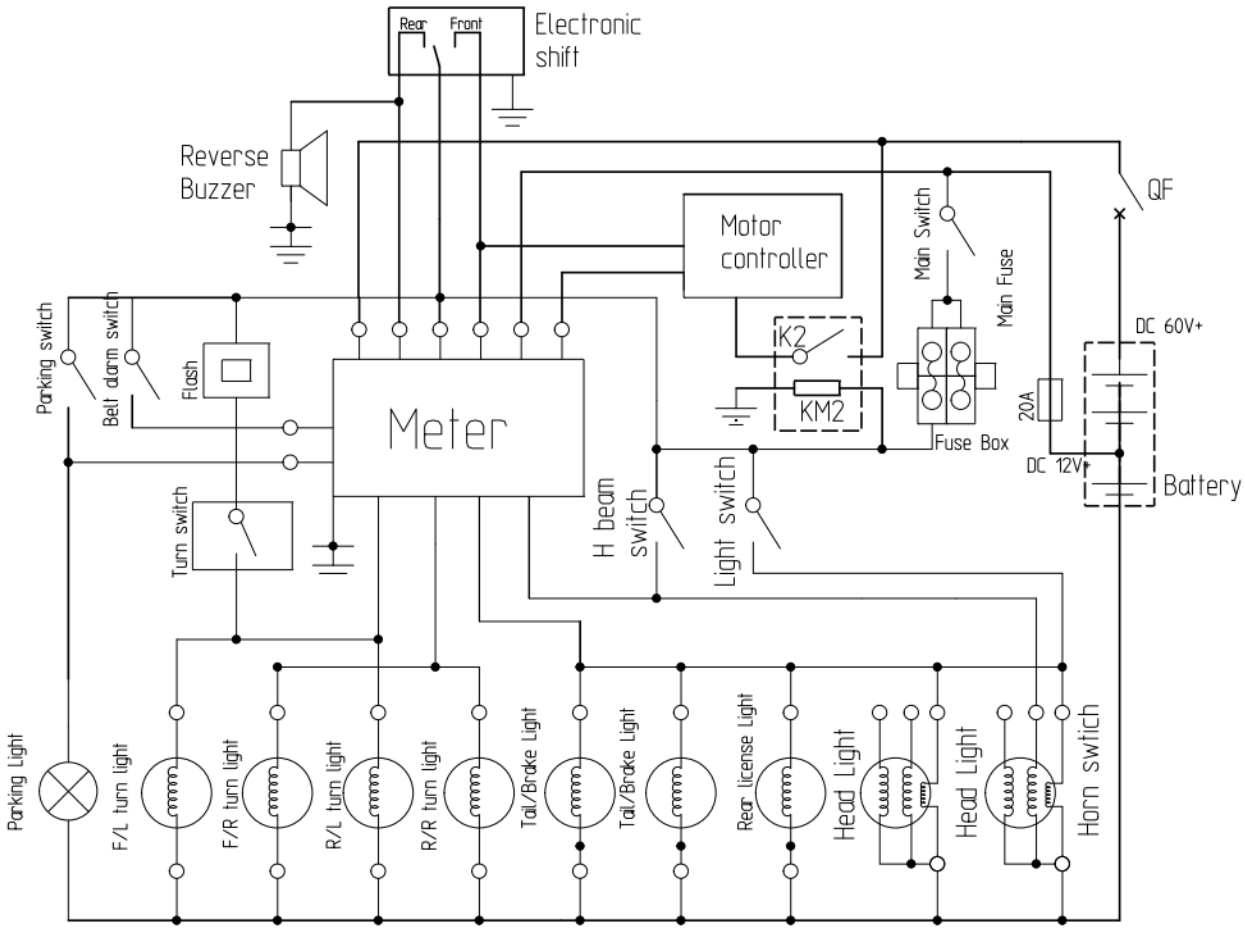
Flicker mode:

0.25s on----0.25weixinsoff (loop)

Controller system fault, replace a new one.

3.3.5 LIGHTING SYSTEM

FOR USA MODEL



TROUBLESHOOTING

Procedure

Check:

1. Fuse (Main)
2. Battery
3. Main switch
4. Lights switch\
5. Distance light switch
6. Wiring connection (entire lighting system)

1.fuse NO CONTINUITY

Replace the fuse

2.Battery NO CONTINUITY

Check the battery condition.

Clean battery terminals

3. Main switch

NO CONTINUITY

CHECK SWITCHES Replace the main switch

4. Light switch NO CONTINUITY

CHECK SWITCHES

Replace the light switch

5. Distance light switch

CHECK SWITCHES

Replace the H/L demo light switch

6.Wiring connection

POOR CONNECTIONS

Check the connection of the entire lighting system → correct

7.check the condition of each lighting system.

LIGHT SYSTEM CHECK

1. If the headlight fail to come on → NO CONTINUITY

1.Blub and bulb socket
CHEC**K SWITCHES**

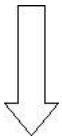
Replace the bulb and/ or bulb socket

2. Voltage
Connect the pocket tester (DC20V) to the headlight.
A When the distance switch is on low beam.
B When the distance switch is on high beam.

Headlight:
Tester (+) lead →White or Blue lead
Tester negative (-) lead →Green lead
high beam

Turn on the main switch.
Turn on the light switch.
Turn the distance switch to low beam or high beam.
Check for voltage (12V) on the lead at bulb socket connectors.

OUT OF SPECIFICATION
The wiring circuit from the main switch to bulb socket connector is faulty



This circuit is not faulty

2. the taillight fails to come on

1. Bulb and bulb socket

CHECK SWITCHES → NO CONTINUIT → Replace the bulb and /or bulb socket

CONTINUITY

2. Voltage

Connect the pocket tester (DC20V) to the bulb socket connector.

Tester (+) lead → Brown terminal
Tester (-) lead → Green terminal

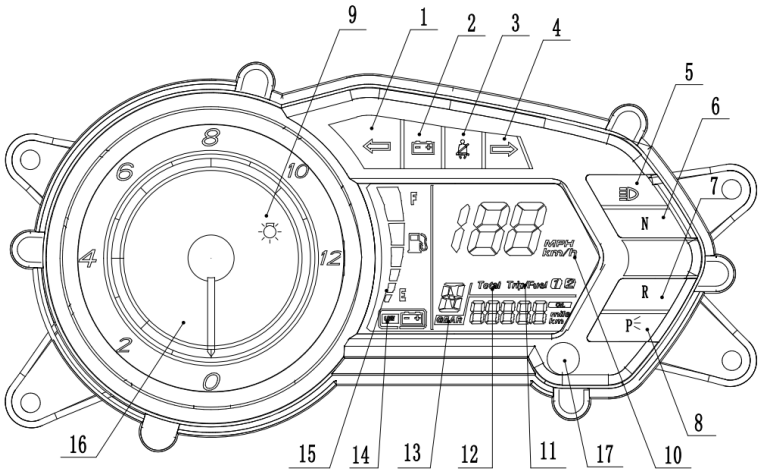
Turn on the main switch.

Turn the lights switch to pilot position.

Check the voltage (12V) on the bulb → OUT OF SPECIFICATION → The wiring circuit from main switch to bulb connecto is faulty.

This circuit is not faulty

3.6 LCD Meter



1. Turn Left Indicator
2. Low voltage indication
3. Low voltage indication
4. Turn Right Indicator
5. High beam indicator light
6. Neutral indicator
7. Reverse indication
8. Parking indicator
9. Light switch indication
10. Vehicle speed meter
11. Short mileage
12. Total mileage
13. LCD display
14. Low voltage alarm(LCD)
15. Electric quantity display
16. Motor tachometer
17. Function button

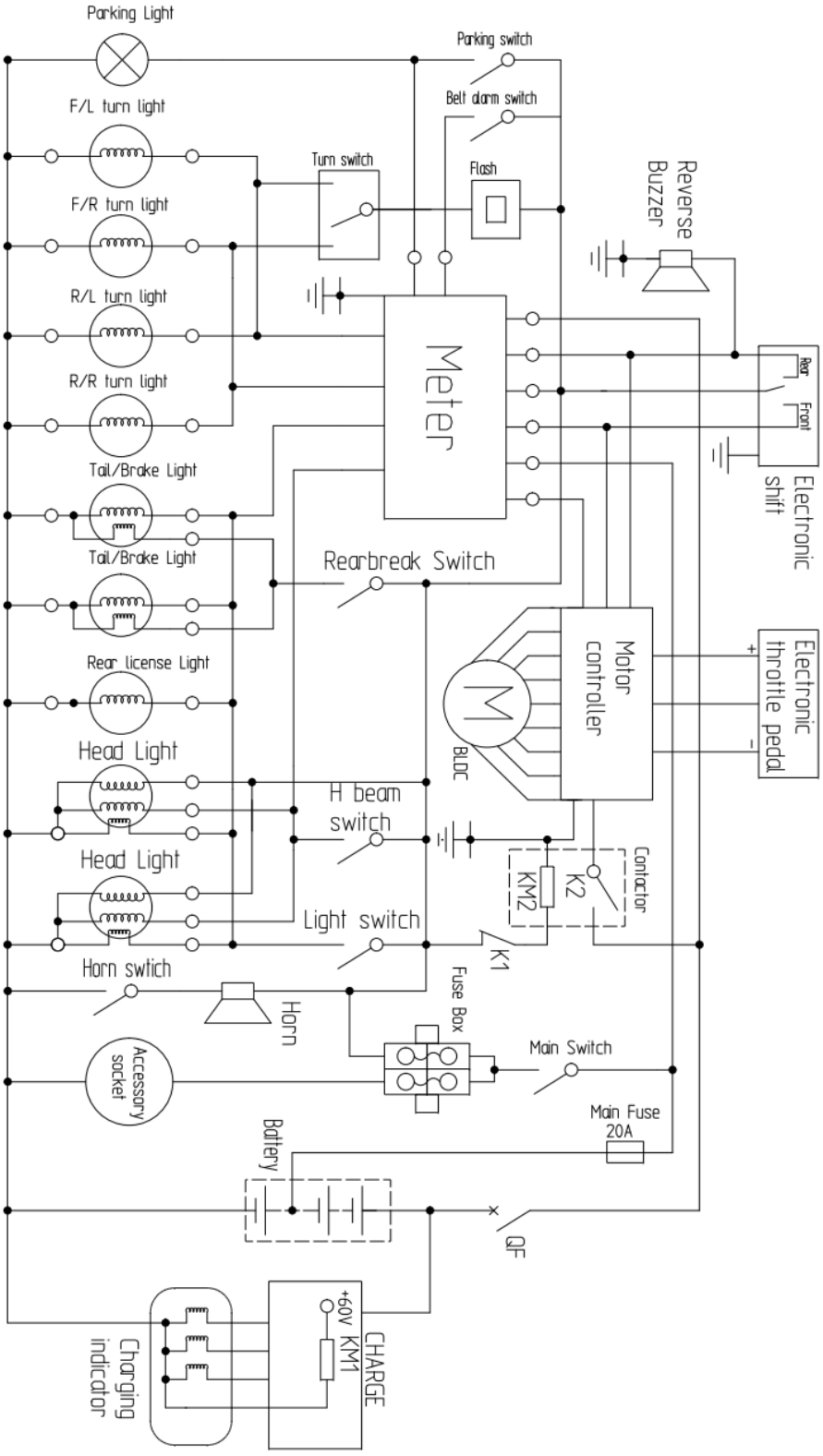
INSTRUMENT OF THE FUNCTION BUTTON

1.When the main switch open, the meter is on Self checking status, press the button for 5s can make km-mile exchange.

2. In the meter working status, press the button can choose the short mileage and total mileage.

3. In the display of short mileage, press the button for 3s can cleared the mileage.

3.7 WIRING DIAGR

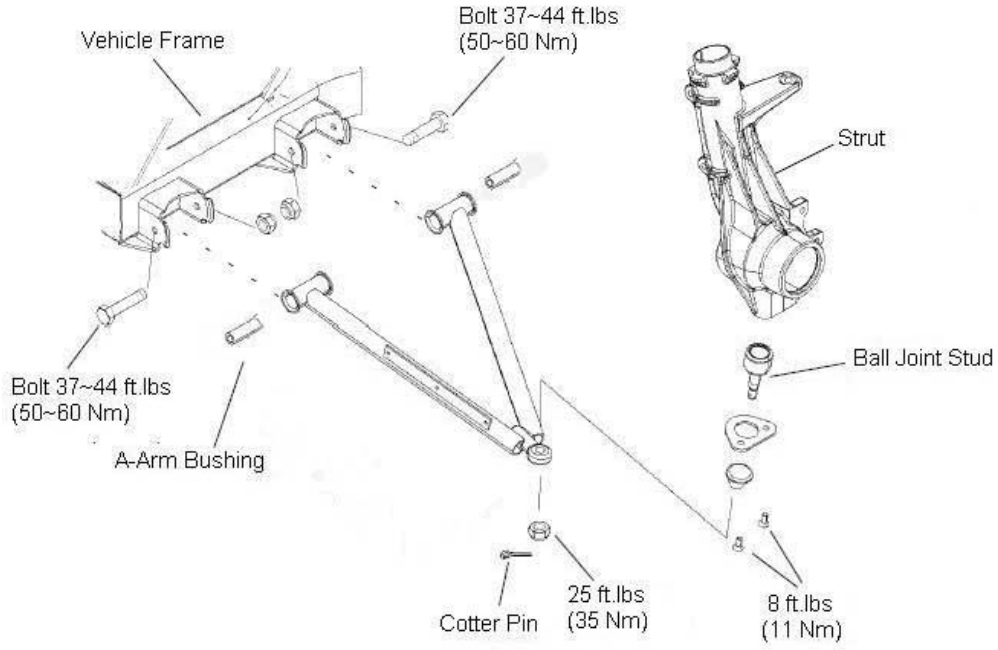


CHAPTER 4 CHASSIS

WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each CUV model for spare parts information and service.

4.1 FRONT A-ARM REPLACEMENT



1. Elevate and safely support vehicle with weight removed from front wheel(s).
2. Remove cotter pin from ball joint stud at wheel end of A- arm and loosen nut until it is flush with end of stud.
3. Using a soft face hammer, tap nut to loosen A- arm from bolt. Remove nut and A-arm from hub strut assembly.
4. Loosen and remove two bolts on A-arm, and remove A-arm.
5. Examine A-arm bushing. Replace if worn or tore. Discard hardware.
6. Install new A-arm assembly onto vehicle frame. Install new bolts and new nuts.

NOTE:
Tighten the nuts only finger-tighten at this time. They will be tightened to the final torque after the front wheels are installed and the vehicle is on the ground.

⚠ WARNING

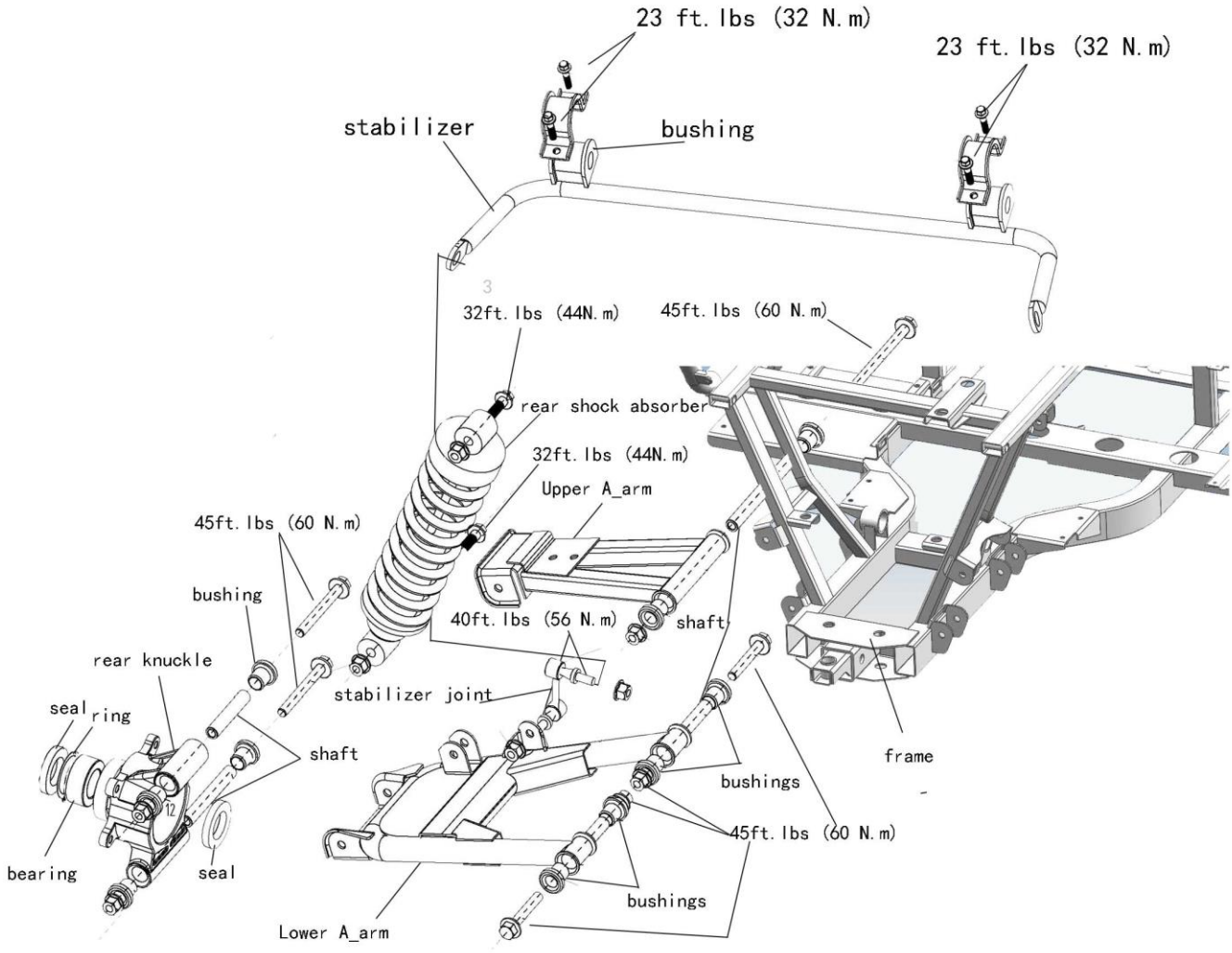
DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

7. Attach A-arm to strut assembly. Tighten ball joint nut to 25 ft. lbs. (35 Nm). If cotter pin holes are not aligned, tighten nut slightly to align. Install a new cotter pin with open ends toward rear of machine. Bend both ends in opposite directions around nut.
8. Install hubs, calipers and wheels, lower the vehicle to the ground. Apply Loctite™ 242 to screw threads of the A arm bolts and torque bolts to 37-44 ft. lbs. (50-60 Nm).

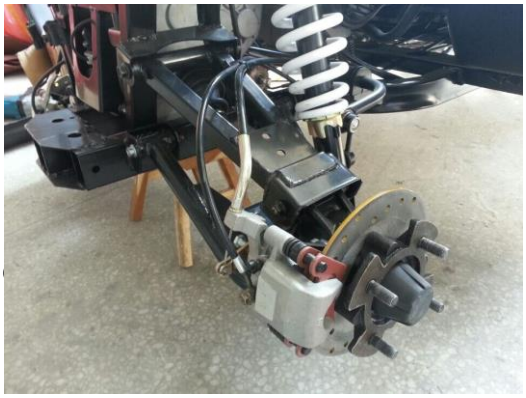
⚠ WARNING

Upon A-arm installation completion, test vehicle at low speeds before putting into regular service.

4.2 REAR A-ARM REPLACEMENT



1. Elevate and safely support vehicle with weight removed from the rear wheel(s).



2. Remove the wheel nuts and wheel.

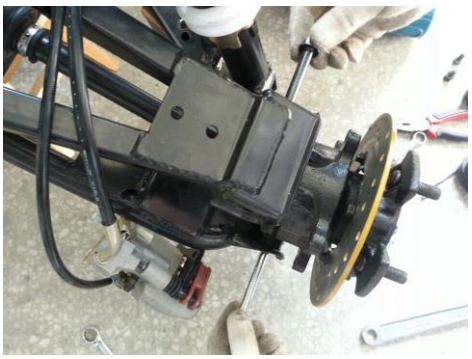
NOTE: To ease the removal of the spindle bolt, remove the hub cap and loosen the spindle bolts before removing the wheel.

3. Remove the hub cap, cotter pin, spindle bolt, and washer.

4. Remove the brake caliper. Suspend the brake caliper from the frame with a wire.

NOTE: Do not let the brake caliper hand from the brake line or damage may occur.

5. Loosen two bolts that secure the rear knuckle to the A-arm. Remove the rear knuckle assembly by sliding it off of the axle.



6. Remove the bolt that secures the shock and coil to the lower A-arm.

7. Loosen the bolt that secure the A-arm to frame by alternating each about 1/3 of the way until A-arm can be removed. Perform this procedure on the upper A-arm.
8. Examine the A-arm bushing and A-arm shaft. Replace if worn. Discard hardware.

9. Remove the bottom stabilizer bar nut.
10. Loosen two bolts that secure the A –arm bushing to frame by alternating each about 1/3 of the way until the A-arm can be removed. The lower A-arm should now be free to remove.
11. Insert new A-arm bushings and new A-arm shaft into new A-arm.
12. Install new A-arm assembly onto vehicle frame. Apply Loctite™ 242 to screw threads of the A arm bolts and torque bolts to 44 ft. lbs. (60 Nm).

⚠ WARNING

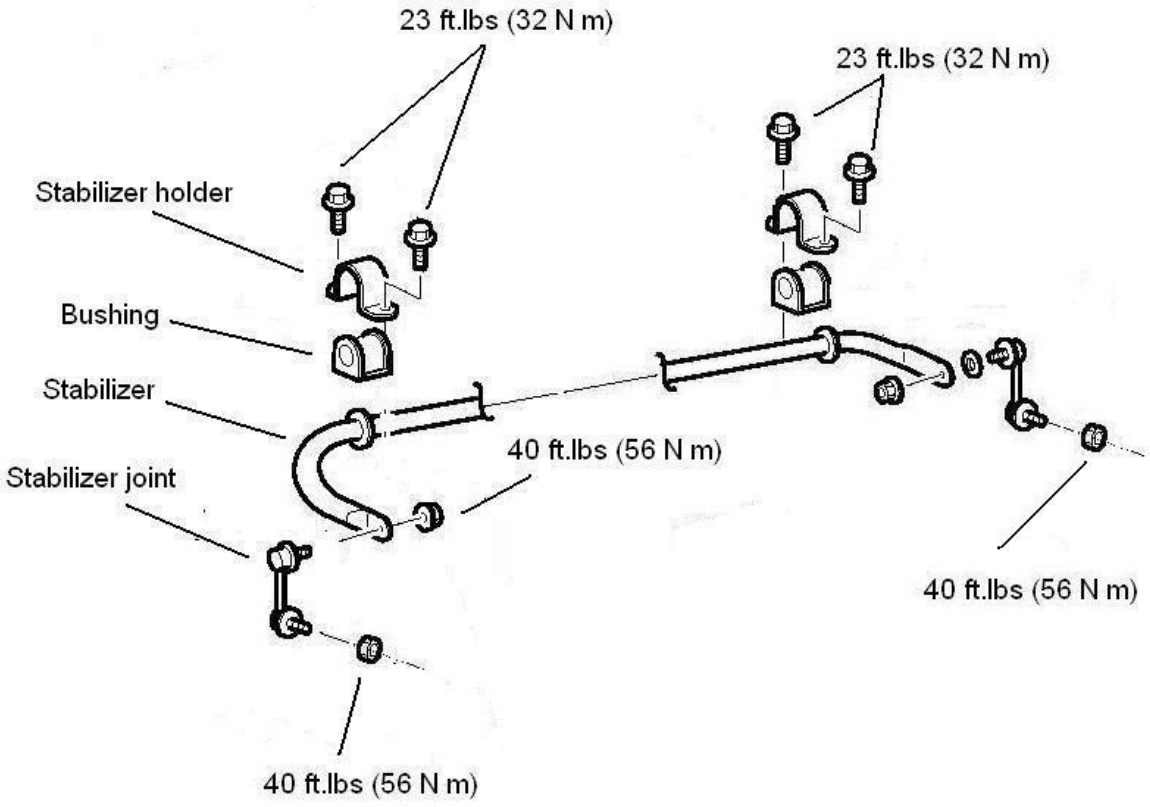
DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

13. Attach A-arm to rear knuckle. Tighten upper and lower bolts to 44 ft. lbs. (60 Nm).
14. Install the shock and tighten shock bolt to 32 ft.lbs. (44 Nm).
15. Install the stabilizer and tighten nut to 40 ft.lbs. (56 Nm).
16. Re-install wheel and caliper.

⚠ WARNING

Upon A-arm installation completion, test vehicle at low speeds before putting into regular service.

4.3 REAR STABILIZER BAR REMOVAL/INSTALLATION



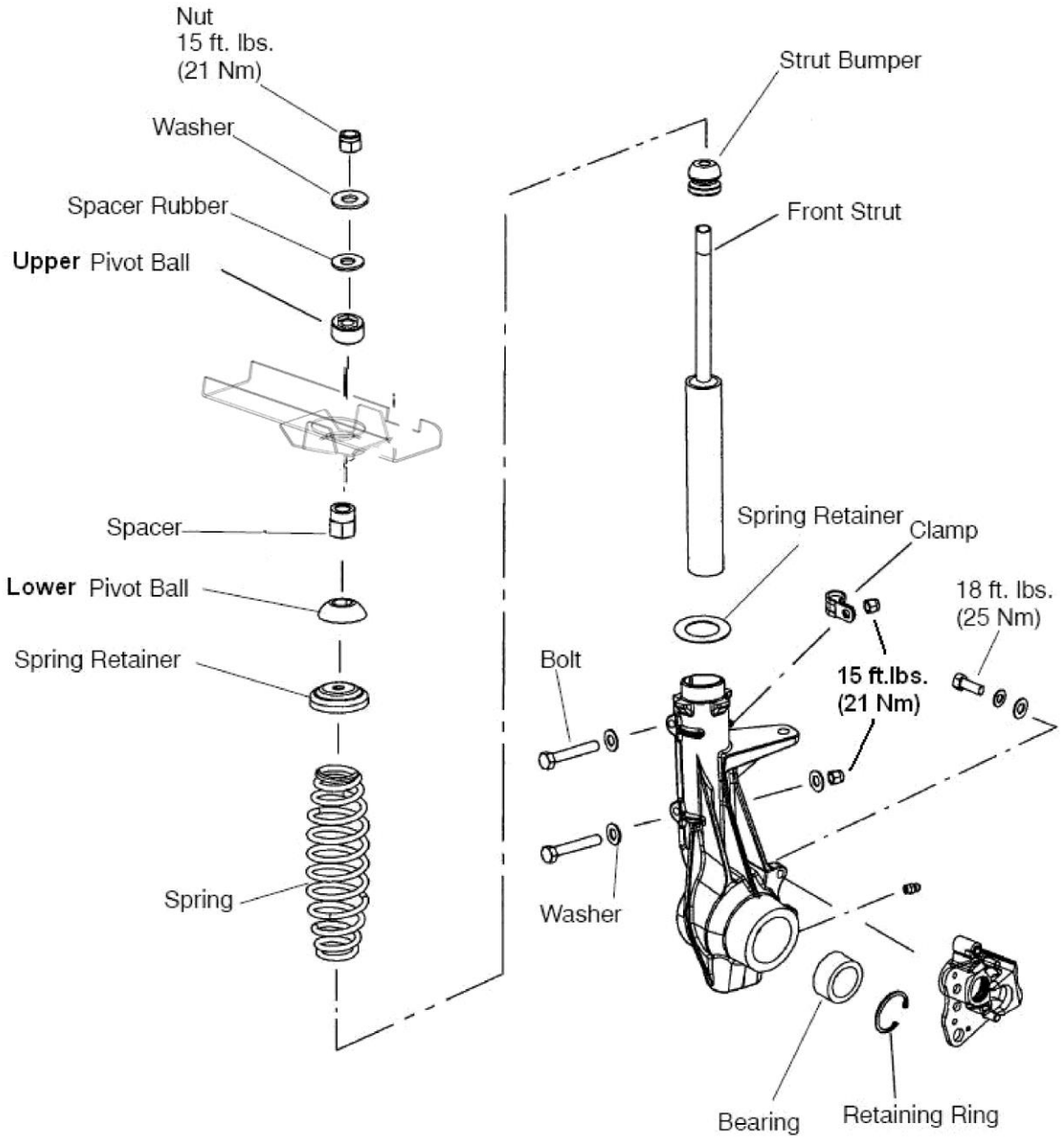
1. Elevate and safely support vehicle with weight removed from the rear wheel(s).
2. Remove the rear wheel to gain access to the stabilizer bar, each side.

3. Remove the stabilizer bar nut from the lower A-arm, each side.

4. Remove the two bolts that secure the stabilizer bar to the main frame, each side.

5. Remove the stabilizer from the frame.
6. Inspect the stabilizer bar. Inspect the bushings and replace if needed.
7. Inspect the stabilizer joint and replace if needed.
8. Reverse the procedure for installation.Torque the stabilizer bolts to 23 ft.lbs (32 Nm).

4.4 FRONT STRUT REPLACEMENT



1. Hold strut rod with wrench and remove top nut.
2. Compress spring.
3. Remove upper strut pivot assembly.
4. Remove coil spring and collapse strut body.
5. Remove two pinch bolts from strut body.
6. Remove strut body.
7. Install front shock cartridge until bottomed in strut casting.

8. Install pinch bolts with clamp(s). Torque pinch bolts to 15ft.lbs.(21Nm).
9. Reassemble spring and top pivot assembly. Be sure all parts are installed properly and seated fully.
10. Torque strut rod nut to specification. Do not over torque nut.
    Strut Rod Nut Torque :15 ft. lbs. (21 Nm)

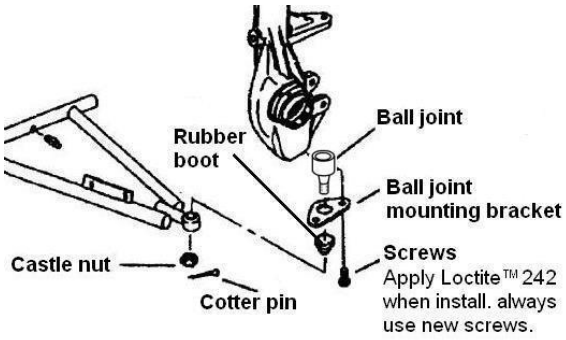
4.5 FRONT STRUT BALL JOINT REPLACEMENT

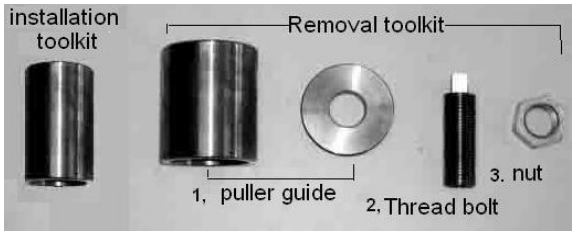
1. Loosen front wheel nuts.
2. Elevate and safely support CUV under footrest/frame area. .

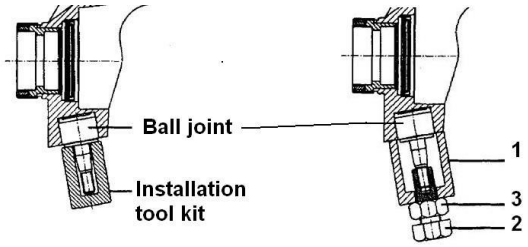
CAUTION: Serious injury may result if CUV tips or falls. Be sure CUV is secure before beginning this service procedure.

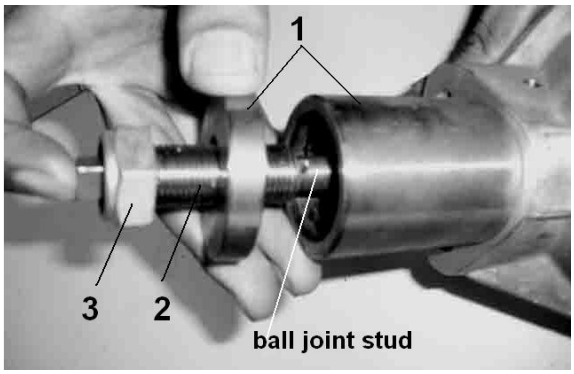
3. Remove wheel nuts and wheels.
4. Remove cotter pin from ball joint
5. Remove castle nut and separate A- arm from ball joint stud.
6. Remove screws and ball joint mounting bracket.
7. Using ball joint cup removal/installation toolkit, remove ball joint cup from strut housing. Refer to photos at right.
   - Install puller guide (1) .
   - Thread bolt (2) with nut (3) onto bal joint stud as shown .
   - Hold bolt (2) and turn nut (3) clockwise until ball joint is removed from strut housing.
8. To install new ball joint cup.
   - Insert new ball joint into driver (installation toolkit).
   - Drive new ball joint cup into strut housing until fully seated.
9. Apply Loctite 242 (blue) to threads of mounting bracket new screws.

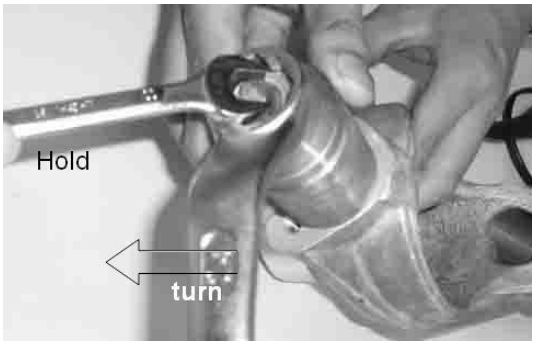
   Torque screw s to 8 ft.lbs. (11 Nm).
10. Install A- arm on bal joint cup and torque castle nut to 25 ft. lbs. (35 Nm).
11. Reinstall cotter pin with open ends toward rear of machine.











4.6 BOX REMOVAL/INSTALLATION

Box Removal

1. Disconnect the license light coupler.
2. Lift the box into the dump position.
3. Remove the box shock pin from the frame (both sides).
4. Remove the shocks from the shock brackets. Let the shocks fully extend.

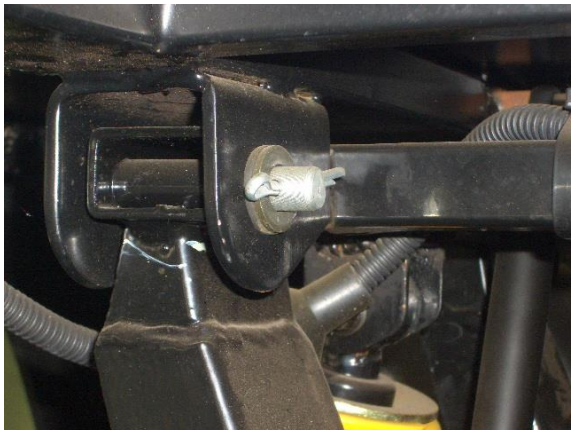
CAUTION: Safely support the box during the rest of the removal process. The box is not as stable with the shocks removed.

5. Remove the cotter pin from the hinge pin.
6. Remove the hinge pin (both sides).

CAUTION: Safely support the box during the rest of the removal process. The box is not as stable with the hinge pin removed.

7. With the hinge pins removed, remove the box from the frame. Two people may be needed to remove the bed from the frame.

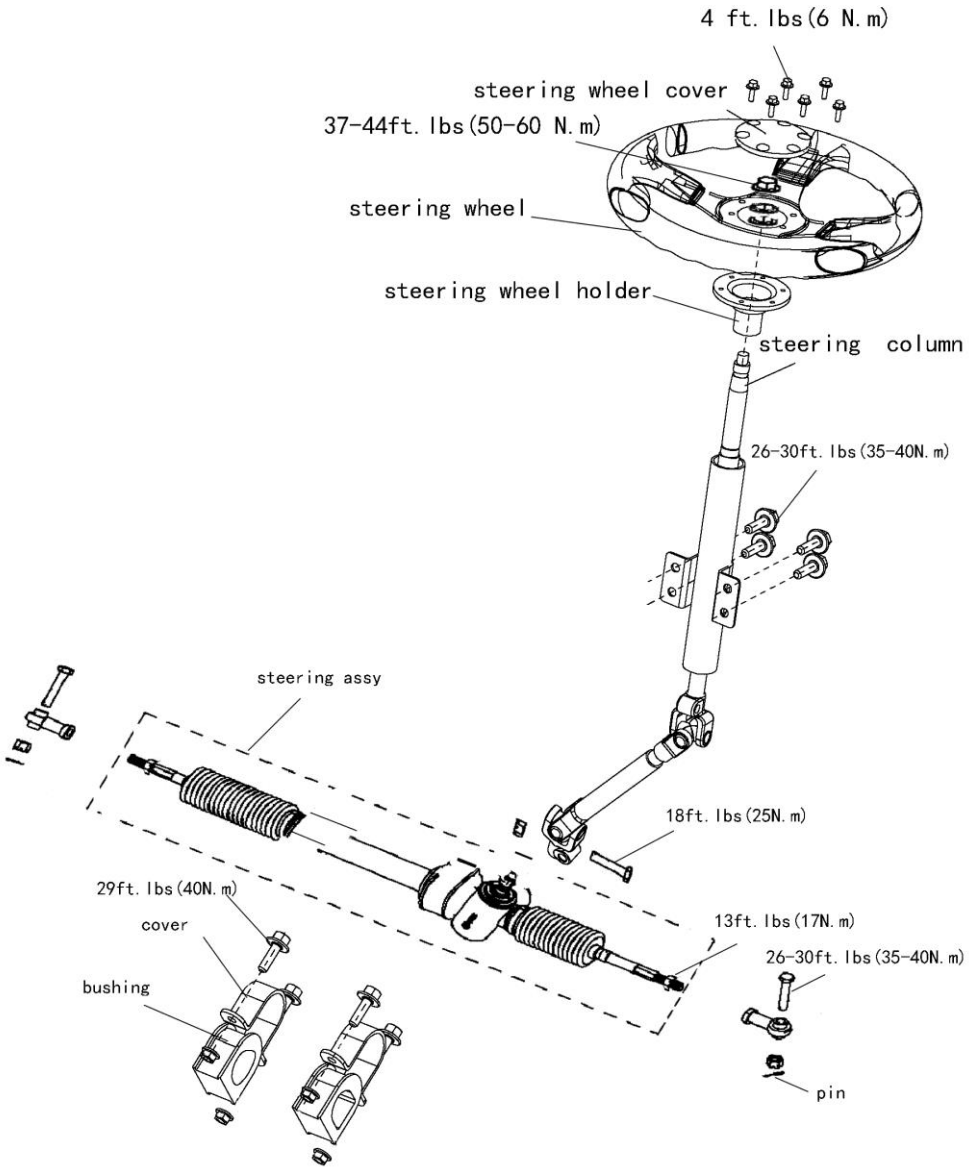
CAUTION: Use caution when removing the box. It is recommended to have two people to carefully remove the box from the frame.



Box Installation

1. Place the box onto the frame. Align the hinges of the box with the frame.
2. Install the box hinges (both sides).
3. Secure the box hinges with the cotter pins (both sides).
4. With the hinges installed, decompress the box shocks and place them into the shock brackets on the frame (both sides).
5. Secure the box shocks with the shock pin (both sides).
6. Lower the box and secure the latch.
7. Connect the taillight coupler.

4.7 STEERING ASSEMBLY REMOVAL/INSTALLATION



1. With the steering wheel cover bolts removed, remove the steering wheel cover and the steering wheel.
2. With the steering wheel holder nut removed, remove the steering wheel holder.
3. Remove the steering column bolts.
4. Remove the upper of the steering column.
5. Remove the cotter pins and the tie rod end bolts (both sides).
6. With the cover bolts removed, remove the steering assy and the lower of the steering column.
7. Reverse the procedure for installation.

NOTES

CHAPTER 5 FINAL DRIVE

WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each CUV model for spare parts information and service.

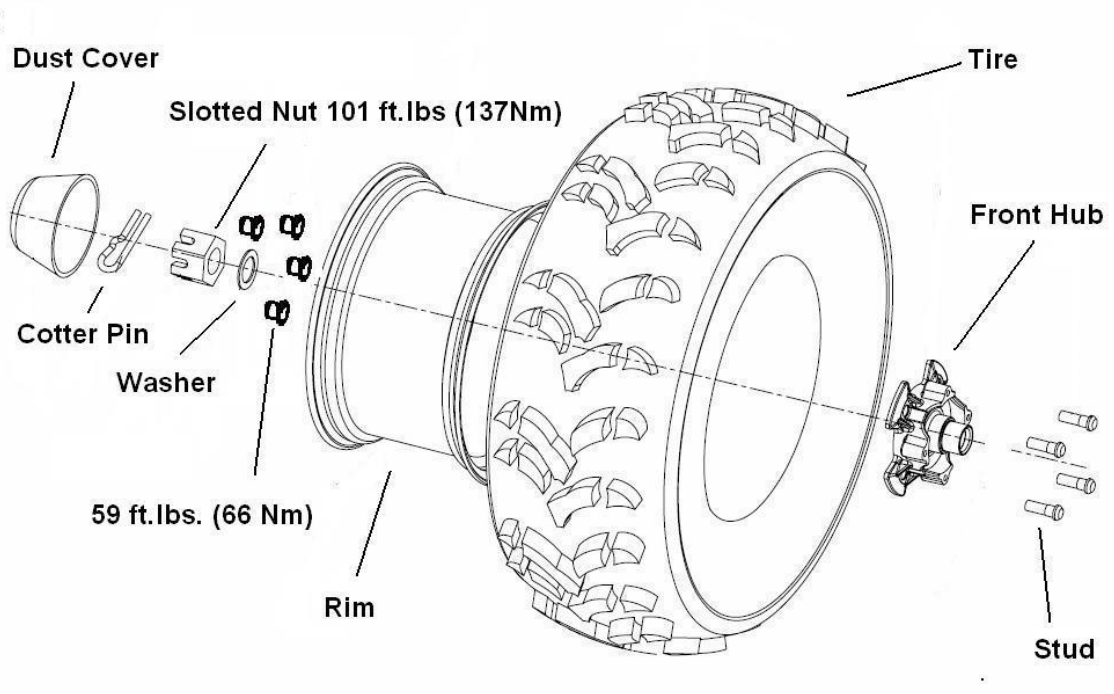
5.1 WHEEL, HUB, AND SPINDLE TORQUE TABLE

Item	Specification
Front Wheel Nuts	59 Ft.Lbs 66 Nm
Rear Wheel Nuts	59 Ft.Lbs 66 Nm
Front Hub Nut on Spindle/ outer CV joint	101 Ft.Lbs 137 Nm
Rear Hub Retaining Nut	101 Ft.Lbs 137 Nm

Refer to exploded views and text for torque values of other fasteners.

CAUTION: Locking nuts, and bolts with pre-applied locking agent should be replaced if removed. The self- locking properties of the nut or bolt are reduced or destroyed during removal.

5.2 FRONT HUB EXPLODED VIEW



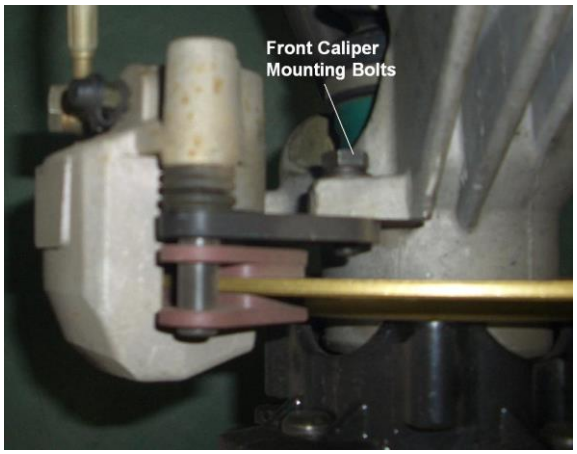
5.3 FRONT HUB REMOVAL/INSPECTION

1. Elevate front end and safely support machine under footrest/frame area.

CAUTION: Serious injury may result if machine tips or falls. Be sure machine is secure before beginning this service procedure. Wear eye protection when removing bearings and seals.

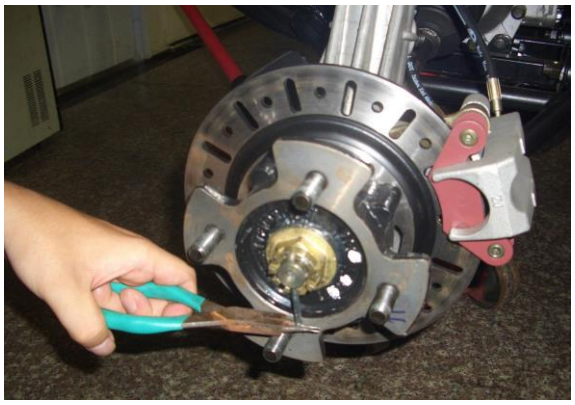
2. Check bearings for side play by grasping the tire/Wheel firmly and checking for movement.

3. Grasp the top and bottom of the tire. The tire should rotate smoothly without binding or rough spots.
4. Remove wheel nuts and wheel.
5. Remove the two brake caliper mounting bolts.

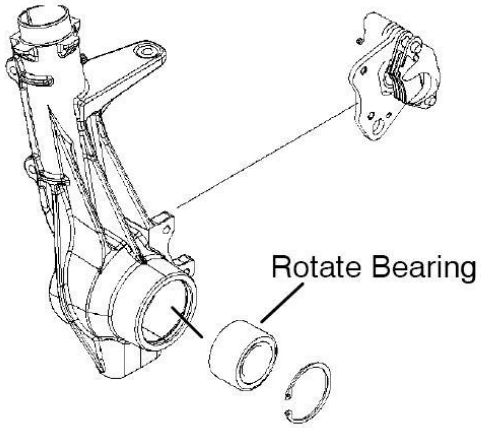


CAUTION: Do not hang the caliper by the brake line. Use wire to hang the caliper to prevent possible damage to the brake line.

6. Remove hub cap, cotter pin, front spindle nut, and washer.

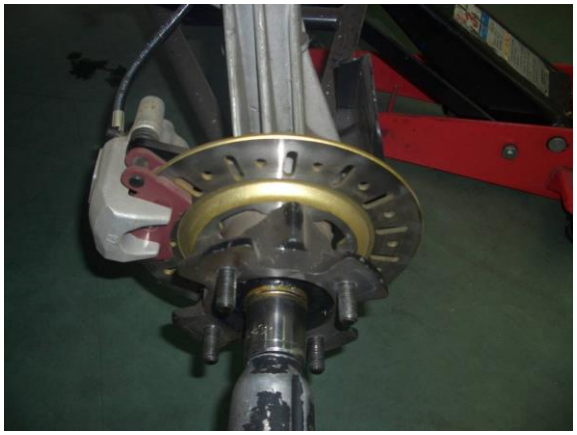


7. Rotate each bearing by hand and check for smooth rotation. Visually inspect bearing for moisture, dirt, or corrosion, or roughness is evident.

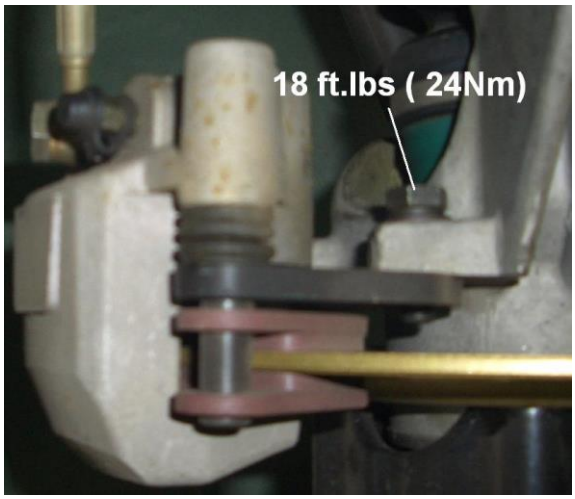


5.4 FRONT HUB INSTALLATION

1. Inspect the hubstrut bearing surface for wear or damage.
2. Apply grease to drive axle spindle.
3. Install spindle through the backside of the hubstrut. Install the hub onto the spindle.
4. Install spindle nut and tighten to 101 ft.lbs (137 Nm).
5. Install a new cotter pin. Tighten nut slightly if necessary to align cotter pin holes.
6. Rotate wheel and check for smooth operation. Bend both ends of cotter pin around end of spindle in different directions. Install hub cap.



7. Rotate hub. It should rotate smoothly without binding or rough spots or side play.
8. Install brake caliper using new bolts. (Apply Loctite™ 242 to threads) Tighten bolts to 18 ft.lbs (24 Nm)



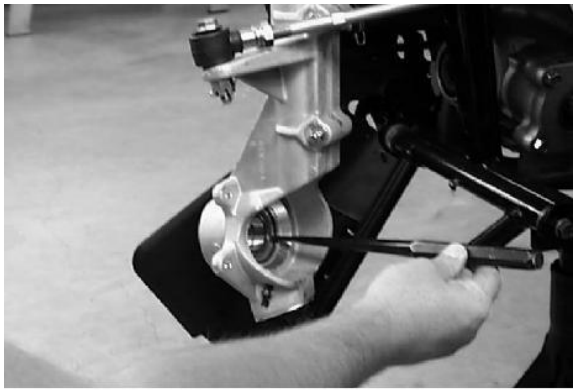
CAUTION: New bolts have a pre-applied locking agent which is destroyed bolts upon removal. Always use new brake caliper mounting bolts upon assembly.

9. Install wheel and wheel nuts and tighten evenly in a cross pattern to specified torque.

5.5 FRONT HUB BEARING REPLACEMENT

1. Remove outer snap ring.

2. Form the back side, tap on the outer bearing race with a drift punch in the reliefs as shown.
3. Drive bearing out evenly by tapping on outer race only. Once bearing is at bottom of casting, support casting on outer edges so bearing can be removed.

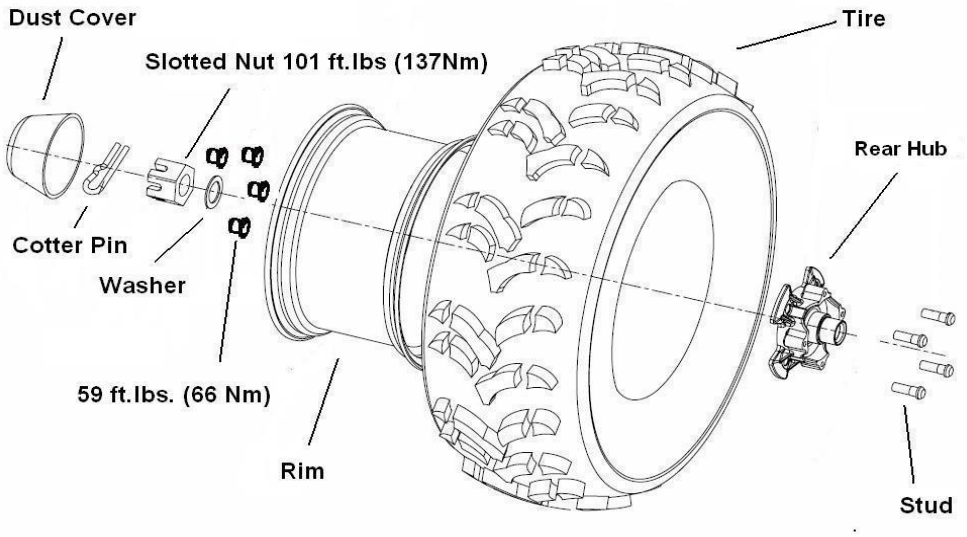


4. Inspect bearing.

NOTE: Due to extremely close tolerances and minimal wear, the bearings must be inspected visually, and by feel. While rotating bearings by hand, inspect for rough spots, discoloration, or corrosion. The bearings should turn smoothly and quietly, with no detectable up and down movement and minimal movement sideways between inner and outer race.

5. Inspect bearing housing for scratches, wear or damage. Replace housing if damaged.

5.6 REAR HUB EXPLODED VIEW



5.7 REAR HUB AND KNUCKLE REMOVAL/INSPECTION

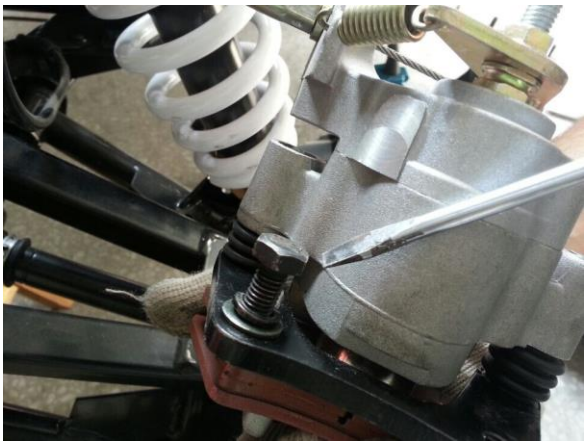
1. Elevate rear end and safely support machine under main frame area.

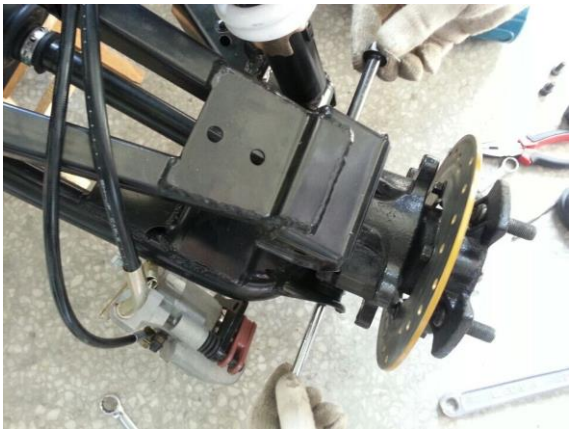
CAUTION: Serious injury may result if machine tips or falls. Be sure machine is secure before beginning this service procedure. Wear eye protection when removing bearings and seals.

2. Check bearings for side play by grasping the tire/Wheel firmly and checking for movement. Grasp the top and bottom of the tire. The tire should rotate smoothly without binding or rough spots.
3. Remove wheel nuts and wheel.
4. Remove the two brake caliper attaching bolts.

CAUTION: Do not hang the caliper by the brake line. Use wire to hang the caliper to prevent possible damage to the brake line.

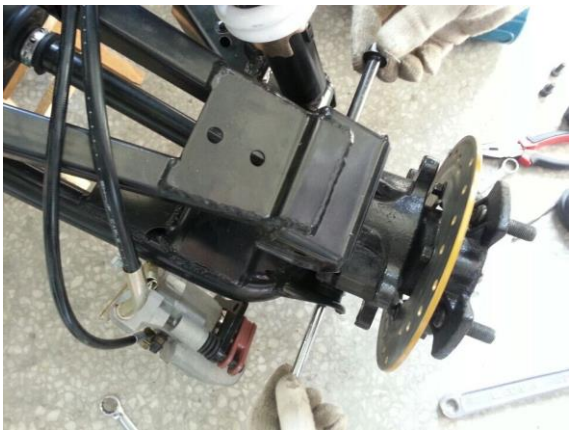
5. Remove hub cap, cotter pin, front spindle nut, and washer.
6. Remove the upper and lower control arm bolts.
7. Slide the rear hub and knuckle from the rear drive axle.
8. Inspect the rear hub and knuckle assembly by hand for smoothness and side to side movement, replace as needed.





5.8 REAR HUB AND KNUCKLE INSTALLATION

1. Start the rear hub and knuckle assembly onto the drive shaft.
2. Align the bottom of knuckle and lower control arm. Secure with the lower control arm bolt.
3. With the driveshaft placed in the knuckle, align the knuckle with the top control arm. Secure with the upper control arm bolt.
4. Torque the top and bottom A-arm bolts as shown in the photo.
5. Install the washer and the spindle retainer nut.
6. Install the wheel and wheel nuts. Torque wheel nuts to 59 ft.lbs. (66 Nm).
7. Lower the vehicle. Torque the spindle retaining nut to 101 ft.lbs. (137 Nm). Install a new cotter key and the hub cap.
8. Install brake caliper using new bolts. (Apply Loctite™ 242 to threads) Tighten bolts to 18 ft.lbs (24 Nm)

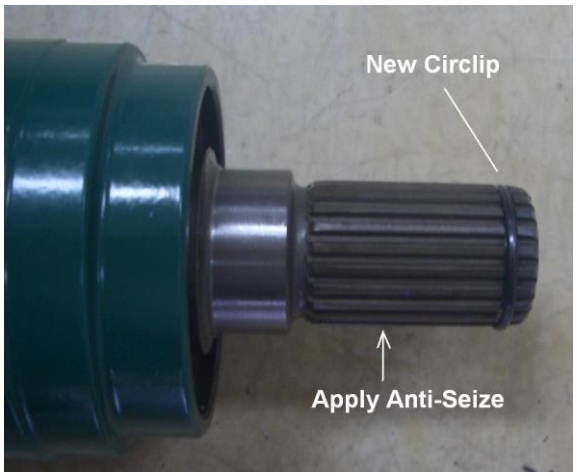


5.9 REAR DRIVE SHAFT REMOVAL

1. Repeat of the steps in the “REAR HUB AND KNUCKLE REMOVAL” section.
2. Slide the rear drive axle out of the knuckle by pulling the hub and knuckle assembly outward and down.

3. Pull the rear drive axle straight out of the frame. Use short sharp jerks to free the circlip from the gearcase. The circlip holds the axle in the gearcase.
4. Inspect the axle splines and cv boots for any damage.

5.10 REAR DRIVE SHAFT INSTALLATION



1. Install a new circlip onto the rear drive shaft. Apply Anti-Seize Compound onto the rear driveshaft splines (both ends).

2. Reinstall the rear driveshaft into the rear gearcase. Be sure the circlip is securely fit into the rear gearcase. Use a rubber mallet to tap on the outboard end of the driveshaft if necessary.

3. Slide the rear drive axle into the knuckle.

4. Lift knuckle into place and install bolt to upper and lower control arm. Torque bolt to 44 ft.lbs (60 Nm).
5. Install the washer and the spindle retainer nut.
6. Install the wheel and wheel nuts. Torque wheel nuts to 59 ft.lbs. (66 Nm).

7. Lower the vehicle. Torque the spindle retaining nut to 101 ft.lbs. (137 Nm). Install a new cotter key and the hub cap.
8. Install brake caliper using new bolts. (Apply Loctite™ 242 to threads) Tighten bolts to 18 ft.lbs (24 Nm)

NOTES

CHAPTER 6 BRAKES

WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each ATV model for spare parts information and service.

NOTE: Also See Chapter 2 for Maintenance Information.

6.1 SPECIFICATIONS

Front Brake Caliper		
Item	**Standard**	**Service Limit**
Brake Pad Friction material Thickness	0.157"/ 4mm	0.04"/ 1mm
B rake Disc Thickness	0.150- 0.164"/3.810- 4.166mm	0.140"/ 3.556mm
Brake Disc Thickness Variance Between Measurements	-	0.002 "/ .051m m
Brake Disc Runout	-	0.005 "/ .127mm

Rear Brake Caliper			
Item		**Standard**	**Service Limit**
Brake Pad Friction material Thickness	hydraulic	0.157"/ 4mm	0.04"/ 1mm
	Hydraulic with mechanics park	0.236"/ 6mm	
	mechanics park	0.197"/ 5mm	
Brake Disc Thickness		0.177-0.187"/4.496-4.750m m	0.167"/4.242mm
Brake Disc Thickness Variance Between Measurements		-	0.002 "/ 0.051mm
Brake Disc Run out		-	0.005 "/ 0.127mm

6.2 TORQUE

Item	Torque (ft. lbs. except where noted*)	Torque (Nm)
Front Caliper Mounting Bolts	18.0	25
Rear Caliper Mounting Bolts	18.0	25
Front Brake Disc	18.0	25
Rear Brake Disc	18.0	25

6.3 BRAKE SYSTEM SERVICE NOTES

- It is strongly recommended always change the caliper and (or) the master cylinder as an assembly. The parts inside maybe not interchangeable due to different brake manufactures and (or) different brake type.
- Do not over – fill the master cylinder fluid reservoir.
- Make sure the brake lever and pedal returns freely and completely.
- Check and adjust master cylinder reservoir fluid level after pad service.
- Make sure atmospheric vent on reservoir is unobstructed.

- Adjust foot brake after pad service.
- Test for brake drag after any brake system service and investigate cause if brake drag is evident.
- Make sure caliper moves freely on guide pins (where applicable) .
- Inspect caliper piston seals for foreign material that could prevent caliper pistons from returning freely.
- Perform a brake burnishing procedure after install new pads to maximize service life.
- DO NOT lubricate or clean the brake components with aerosol or petroleum products. Use only approved brake cleaning products.

6.4 BURNISHING PROCEDURE

Brake pads (both hydraulic and mechanical) must be burnished to achieve full braking effectiveness. Braking distance will be extended until brake pads are properly burnished. To properly burnish the brake pads, use the following procedure.

1. Choose an area large enough to safely accelerate the CUV to 50 km/h (30 mph) and to brake to a stop.
2. Using hi gear, accelerate to 50 km/h (30 mph); then compress brake lever (pedal) to decelerate to 0-8km/h (5 mph).
3. Repeat procedure on each brake system 20 times until brake pads are burnished.
4. Adjust the mechanical parking brake (if necessary).)
5. Verify that the brake light illuminates when the hand lever is compressed or the brake pedal is depressed.

⚠ WARNING

Failure to properly burnish the brake pads could lead to premature brake pad wear or brake loss. Brake loss can result in severe injury.

6.5 BRAKE BLEEDING-FLUID CHANGE

NOTE: When bleeding the brakes or replacing the fluid always start with the caliper farthest from the master cylinder.

CAUTION:

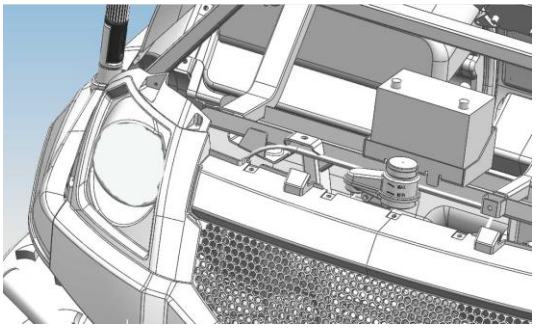
Always wear safety glasses.

CAUTION:

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the CUV

This procedure should be used to change fluid or
bleed brakes during regular maintenance.

1. Clean reservoir cover thoroughly.



2. Remove cover from reservoir.

3. If changing fluid, remove old fluid from reservoir with a brake fluid pump or similar tool.
4. Add brake fluid up to the indicated MAX level on the reservoir.

DOT 3 Brake Fluid

5. Begin bleeding procedure with the caliper that is farthest from the master cylinder. Install a box end wrench on the caliper bleeder screw. Attach a clean, clear hose to the fitting and place the other end in a clean container. Be sure the hose fits tightly on the fitting.
6. Slowly pump foot pedal until pressure builds and holds.
7. Hold brake pedal on to maintain pedal pressure, and open bleeder screw. Close bleeder screw and release foot pedal.

NOTE: Do not release foot pedal before bleeder screw is tight or air may be drawn into master cylinder.

8. Repeat procedure until clean fluid appears in bleeder hose and al air has been purged. Add fluid as necessary to maintain level in reservoir.

CAUTION:

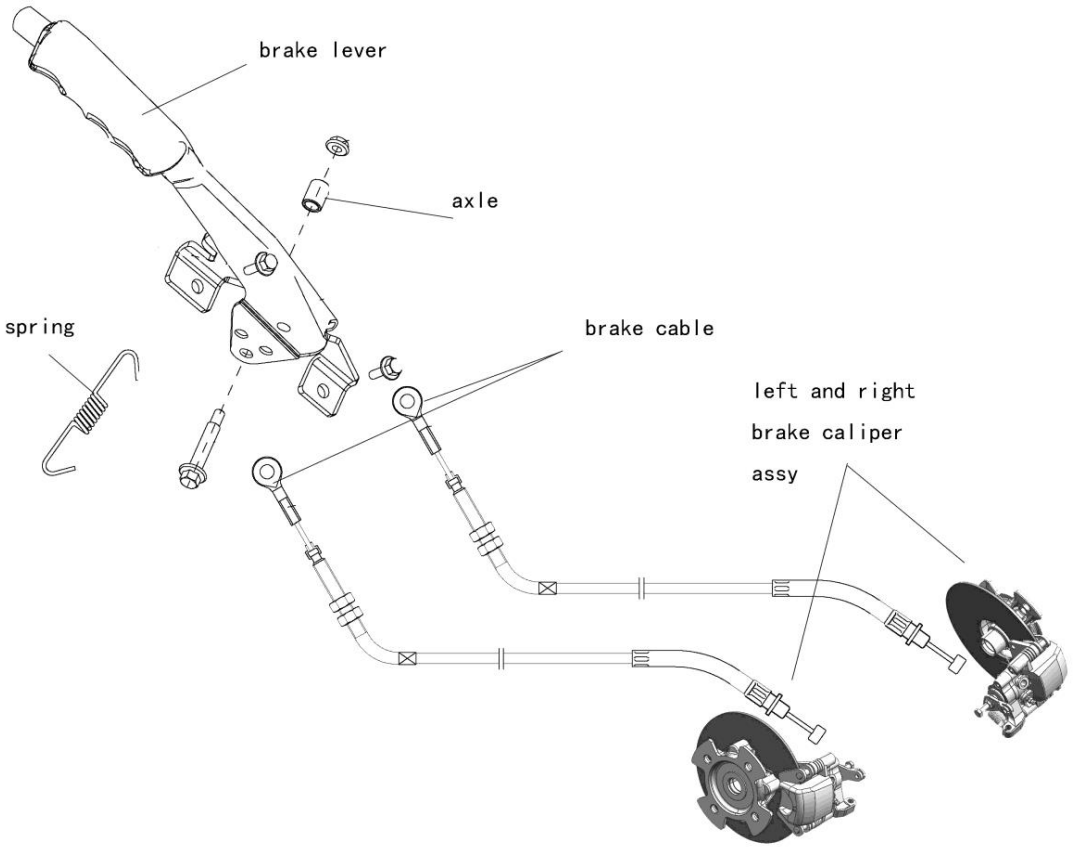
Maintain at least 1/2 "(13mm of brake fluid in the reservoir to prevent air from entering the master cylinder.

9. Tighten bleeder screw securely and remove bleeder hose.
10. Repeat procedure steps 5- 9 for the remaining calipers.
11. Add brake fluid to MAX level inside reservoir.

Master Cylinder Fluid Level
Between the MIN line and the MAX line of reservoir.

12. Install master cylinder reservoir cover.
13. Field test machine at low speed before putting into service. Check for proper braking action and pedal reserve. With pedal firmly applied, pedal reserve should be no less than 1/2 " (1.3cm).
14. Check brake system for fluid leaks and inspect all hoses and lines for wear or abrasion. Replace hose if w ear or abrasion is found.

6.6 PARKING BRAKE AND BRAKE LINE INSPECTION



1. Inspect the spring on the parking brake lever assembly.

2. Inspect the parking brake cable at the parking brake lever assembly on the brake caliper.

3. Inspect the brake lines and brake line connections for possible leaks or loose lines.

6.7 PARKING BRAKE ADJUSTMENT

Parking Brake Inspection

1. Push the parking brake up with your hand.
2. After 2 to 4 clicks of lever travel, the vehicle should not roll while parked.
3. If the vehicle moves, adjustment is necessary.
4. Adjust the parking brake where the cable attaches to the lever assembly on the rear brake caliper.

Parking Brake Adjustment

1. Place the vehicle in neutral on a flat level surface.
2. Carefully lift the rear of the vehicle off the ground and stabilize on jack stands.
3. Loosen the jam nut (A) on the rear caliper adjustment bolt (B).
4. Tighten the adjustment bolt (B) until the rear tire

will not roate.
5. Back the adjustment bolt (B) out 1/4 turn.
6. Tighten the jam nut (A) while holding the adjustment nut (B) in place.

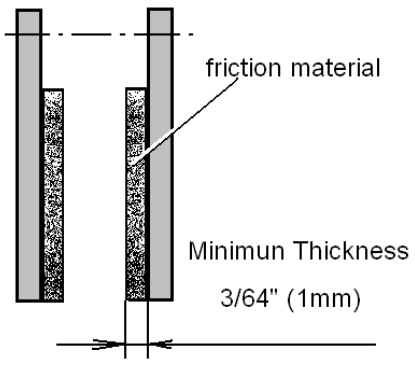
6.8 PARKING BRAKE REAR CALIPER REMOVAL / INSTALL

Park Brake Caliper Disassembly / Pad Inspection

NOTE: Do not get oil, grease, or fluid on the park brake pads. Damage to the pads may cause the pads to function improperly.

1. Loosen the two brake caliper bolts in equal increments. Remove the bolts from the bracket and lift park brake assembly out.

2. Measure the thickness of the caliper parking brake pads. Replace pads if worn beyond the service limit.
   Service Limit 0.3/64"(1 mm)



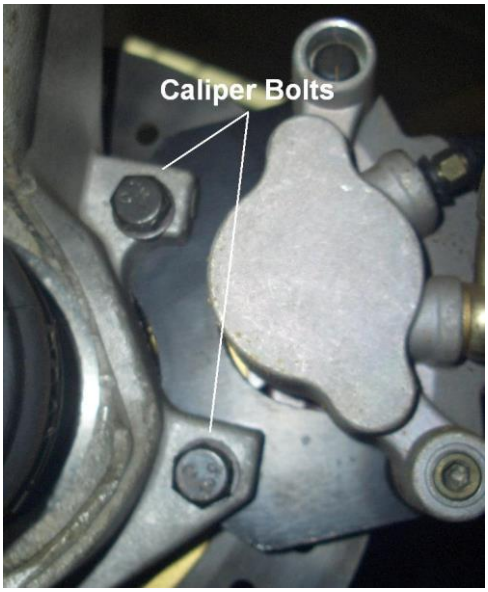
Park Brake Caliper Installation

1. Install the park brake assembly into place. Tighten the two bolts in increments for proper installation.
2. Torque the two bolts to 18 ft.lbs. (24 Nm).
3. Test the park brake for proper function.

6.9 FRONT PAD REMOVAL / INSPECTION / INSTALLATION

NOTE: The brake pads should be replaced as a set
REMOVAL

1. Elevate and support front of CUV safely.

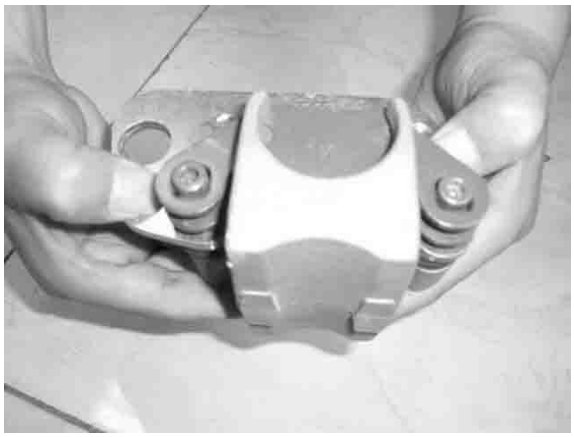


CAUTION:

Use care when supporting vehicle so that it does not tip or fall. Severe injury may occur if machine tips or falls.

2. Remove the front wheel.

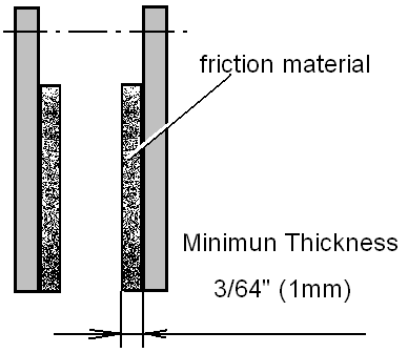
3. Remove the two caliper bolts and caliper from mounting bracket.



4. Push caliper piston into caliper bore slowly using a C-clamp or locking pliers with pads installed.

NOTE: Brake fluid will be forced through compensating port into master cylinder fluid reservoir when piston is pushed back into caliper. Remove excess fluid from reservoir as required.

5. Push mounting bracket inward and slip outer brake pad past edge. Remove inner pad.



INSPECTION

Measure the thickness of the pad friction material. Replace pads if worn beyond the service limit.

Service Limit 0.3/64"(1 mm)

INSTALLATION

1. Lubricate mounting bracket pins with a light film of All Season Grease, and install rubber dust boots.
2. Compress mounting bracket and make sure dust boots are fully seated. Install pads with friction material facing each other. Be sure pads and disc are free of dirt or grease.
3. Install caliper on hub strut, and torque mounting bolts.
   Front Caliper Mounting Bolts
   Torque 18 ft. lbs. (25 Nm)
4. Slowly pump the brake lever until pressure has been built up. Maintain at least 1/2 ". (13 mm) of brake fluid in the reservoir to prevent air from entering the brake system.
5. Install the adjuster screw and turn clockwise until stationary pad contacts disc, then back off 1/2 turn (counter clockwise).
6. Be sure fluid level in reservoir is up to MAX line inside reservoir and install reservoir cap.
   Master Cylinder Fluid
   Up to MAX line inside reservoir
7. Install wheels and torque wheel nuts.
8. It is recommended that a burnishing procedure be performed after installation of new brake pads to extend service life and reduce noise. Start machine and slowly increase speed to 30 mph. Gradually apply brakes to stop machine. Repeat procedure 10 times.

6.10 FRONT DISC INSPECTION / REMOVAL / REPLACEMENT

INSPECTION

1. Visually inspect the brake disc for nicks, scratches, or damage.
2. Measure the disc thickness at 8 different points around the pad contact surface using a 0-1" micrometer and a dial indicator. Replace disc if

worn beyond service limit.

Brake Disc Thickness
New 0.150-0.164" (3.810 - 4.166 mm)
Service Limit 0.140" / 3.556 mm
Brake Disc Thickness Variance
Service Limit 0.002 " (0.051 mm)
difference between measurements

3. Mount dial indicator as shown to measure disc runout on the dial indicator. Replace the disc if runout exceeds specifications.
   Brake Disc Runout
   Service Limit 0.005" (0.127 mm)

REMOVAL/ REPLACEMENT

1. Removal caliper and hub. Apply heat to the hub in the area of the brake disc mounting bolts to soften the bolt locking agent.
2. Remove bolts and disc.
3. Clean mating surface of disc and hub.
4. Install new disc on hub and tighten to specified.

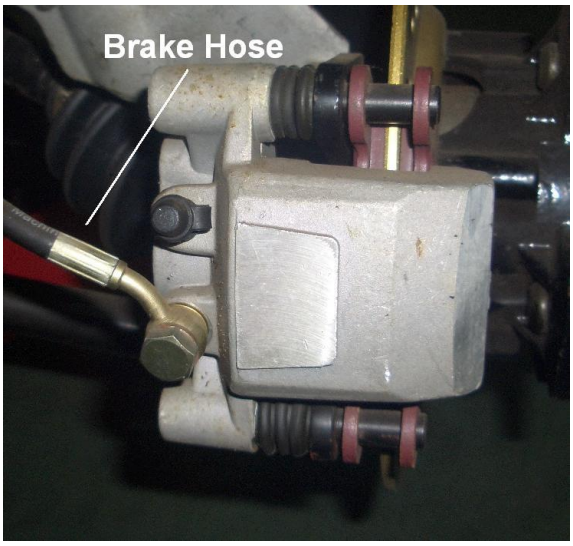
CAUTION:

Always use new brake disc mounting bolts.
Front Brake Disc Mounting Bolt Torque :
18 ft. lbs. (25 Nm)

6.11 FRONT CALIPER REMOVAL/ INSPECTION / INSTALLATION

CAUTION:

The caliper is a non-serviceable Component; it must be replaced as an assembly.



NOTE: If any special service needed, contact the CUV manufacture via the agent for the parts and special instruction.

REMOVAL

1. Remove wheel, remove caliper from the strut.
2. Loosen and remove brake hose to caliper. Place a container under caliper to catch fluid draining.

INSPECTION

Inspect caliper body for nicks, scratches or worn. Replace caliper as an assembly if any problem exists.

INSTALLATION

1. Install caliper on hub strut, Apply Loctite™ 242 to screw threads and Install new bolts.
   Front Caliper Mounting Bolt Torque
   18 ft. lbs. (25 Nm)
2. Install brake hose and tighten to specified torque.
   Banjo Bolt Torque: 15 ft. lbs. (21 Nm)

NOTE: If new brake pads are installed, it is recommended that a burnishing procedure be performed after installation of new brake pads to extend service life and reduce noise. Start machine and slowly increase speed to 30 mph. Gradually apply brakes to stop machine. Repeat procedure 10 times.

6.12 REAR BRAKE PAD REMOVAL/ INSPECTION / INSTALLATION

NOTE: The brake pads should be replaced as a set.

REMOVAL

1. Elevate and support rear of CUV safely.

CAUTION:

Use care when supporting vehicle so that it does not tip or fall. Severe injury may occur if machine tips or falls.

2. Remove the rear wheel.
3. Remove the two caliper bolts and lift caliper off of disc.

NOTE: When removing caliper, be careful not to damage brake line. Support caliper so as not to kink or bend brake line.

4. Push caliper piston into caliper bore slowly using

a C-clamp or locking pliers with pads installed.

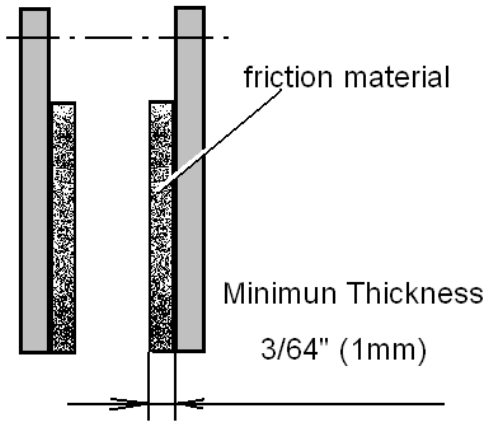
NOTE: Brake fluid will be forced through compensating port into master cylinder fluid reservoir when piston is pushed back into caliper. Remove excess fluid from reservoir as required.

5. Remove the brake pads.
6. Clean the caliper with brake cleaner or alcohol.

INSPECTION

Measure the thickness of the pad friction material. Replace pads if worn beyond the service limit.

Service Limit 0.3/64"(1 mm)



INSTALLATION

1. Install new pads in caliper body.
2. Install caliper and torque mounting bolts.
   Brake Caliper Torque: 18 ft. lbs. (25 Nm)
3. Turn adjuster screw back in finger tight using a hex wrench.
4. Slowly pump the brake lever until pressure has been built up. Maintain at least 1/2 ". (13 mm) of brake fluid in the reservoir to prevent air from entering the brake system.
5. Install wheels, burnishing procedure should be performed.

6.13 REAR CALIPER REMOVAL/ INSPECTION/ INSTALLATION

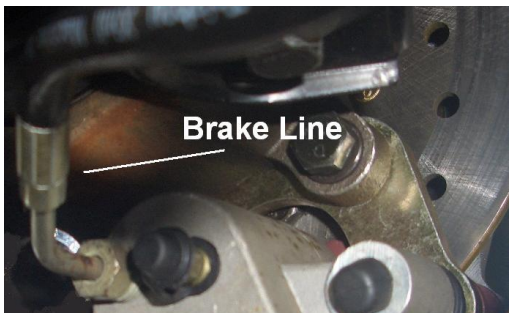
CAUTION:

The caliper is a non-serviceable Component; it must be replaced as an assembly.

NOTE: If any special service needed, contact the CUV manufacture via the agent for the parts and special instruction.

CAUTION:

Use care when supporting vehicle so that it does not tip or fall. Severe injury may occur if machine tips or



falls.

1. Safely support the rear of the machine.
2. Use a wrench to remove the brake line. Place a container to catch brake fluid draining from brake lines.
3. After the fluid has drained into the container, remove the caliper mounting bolts and remove caliper.
4. Remove brake pad as described above.
5. Inspect surface of caliper for nicks, scratches or damage and replace if necessary.
6. Install brake pads in caliper body with friction material facing each other, with the spacer between the pads. Install retaining pin through outer pad, pad spacer and inner pad.
7. Install caliper and torque mounting bolts to 18 ft.lbs. (25 Nm).
8. Install brake hose and tighten to specified torque.
   Banjo Bolt Torque: 15 ft. lbs. (21 Nm)
9. Bleed.
10. Field test unit for proper braking action before putting into service. Inspect for fluid leaks and firm brakes. Make sure the brake is not dragging when lever is released. If the brake drags, recheck assembly and installation.
11. Install the rear wheel and wheel nuts. Carefully lower the vehicle.

NOTE: If new brake pads are installed, it is recommended that a burnishing procedure be performed after installation of new brake pads to extend service life and reduce noise.

6.14 REAR BRAKE DISC INSPECTION / REMOVAL / REPLACEMENT

INSPECTION

1. Visually inspect the brake disc for nicks, scratches, or damage.
2. Measure the disc thickness at 8 different points around the pad contact surface using a 0-1" micrometer and a dial indicator. Replace disc if worn beyond service limit.

Brake Disc Thickness
New 0.150-0.164" (3.810 - 4.166 mm)
Service Limit 0.140" / 3.556 mm
Brake Disc Thickness Variance
Service Limit 0.002 " (0.051 mm)
difference between measurements

3. Mount dial indicator as shown to measure disc runout on the dial indicator. Replace the disc if runout exceeds specifications.

Brake Disc Runout
Service Limit 0.005" (0.127 mm)

REMOVAL/ REPLACEMENT

1. Removal wheel/ hub and caliper.
2. Remove bolts and disc from the flange.
3. Clean mating surface of disc and hub.
4. Install new disc on flange.
   Tighten to specified.
   Rear Brake Disc Mounting Bolt Torque :
   18 ft. lbs. (25 Nm)

CAUTION:

Always use new brake disc mounting bolts.

NOTES