

CROSSFIRE **E5**

SERVICE MANUAL



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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.

BEFORE OPERATING THIS VEHICLE, THE OWNER AND EACH OPERATOR MUST HAVE READ AND HAVE AN UNDERSTANDING OF ALL THE INSTRUCTIONS FOR PROPER ASSEMBLY AND SAFE OPERATION, AS WELL AS THE INSTRUCTIONS CONCERNING THE ENGINE AND ALL OTHER PORTIONS OF THE VEHICLE.

NOTICE

This manual was produced by the Linhai Group primarily for use by Linhai 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 Linhai 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.

Linhai Group is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Linhai 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!



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.

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CHAPTER1General Information

CHAPTER2Maintenance

CHAPTER3.....Chassis

CHAPTER4.....Final Drive

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CHAPTER6.....Electrical

 **WARNING**

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing. Always keep alert and wear protection.

Crate of the UTV and parts in the UTV maybe have sharp edge, always pay attention and wear protection.

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 CUV model for spare parts information and service.

1.1 IMPORTANT INFORMATION

1.2 V.I.N NUMBER

1.3 VEHICLE DIMENSIONS

1.1 IMPORTANT INFORMATION

PREPARATION FOR REMOVAL PROCEDURES

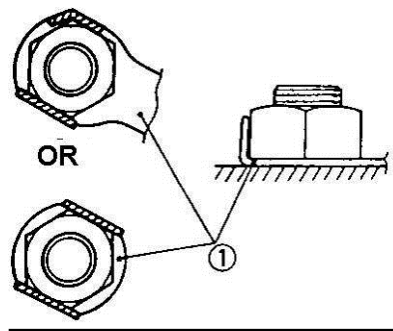
1. Remove all dirt, mud, dust and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment.
3. When disassembling the machine, always keep mated parts together. This includes gears and other parts that have been "mated" through normal wear. Mated part must always be 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

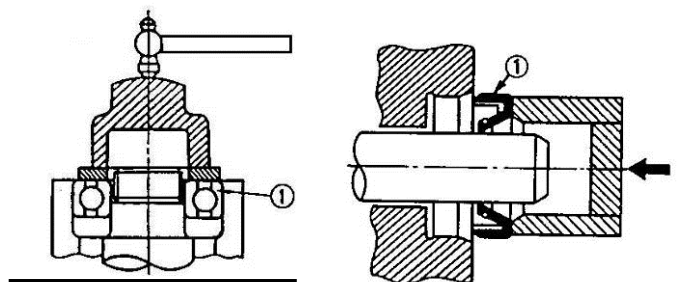
Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil bearings liberally when installing, if appropriate.

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 circlip ①, make sure that the sharp-edged corner ② is positioned opposite the thrust ③ it receives. See sectional view.

④ Shaft

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 reinsert the terminal into the connector.
6. Connect:
 - Connector

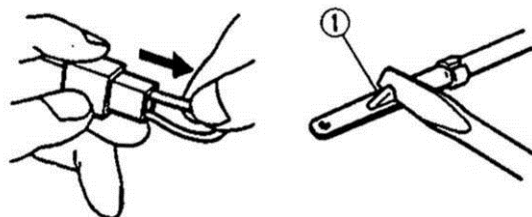
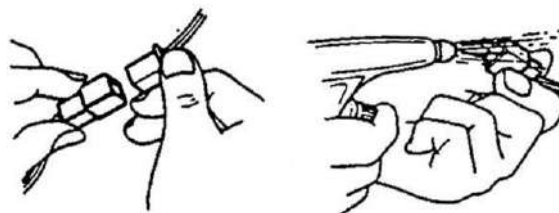
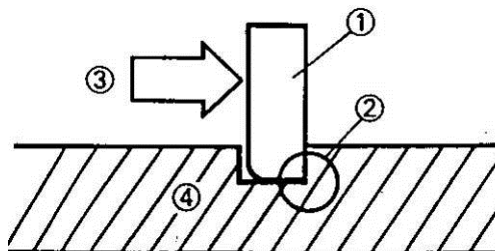
NOTE:

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.



WARNING

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Crate of the CUV and parts in the CUV maybe have sharp edge, always pay attention and wear protection.

CONVERSION TABLE

How to use the CONVERSION TABLE

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

Ex.

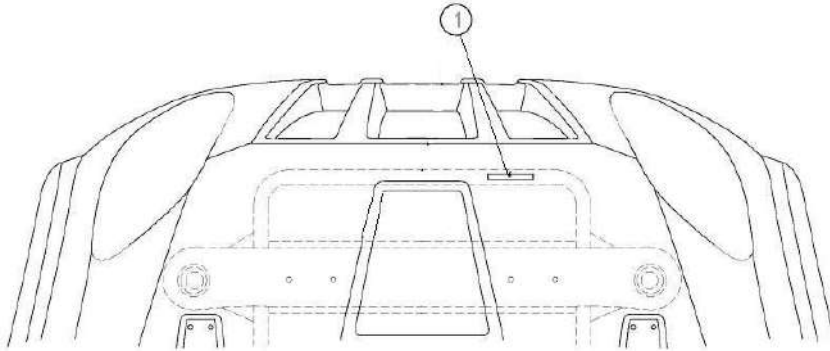
METRIC		MULTIPLIER		IMP
**mm	x	0.3937	=	**in
**cm	x	0.03937	=	**in

CONVERSION TABLE

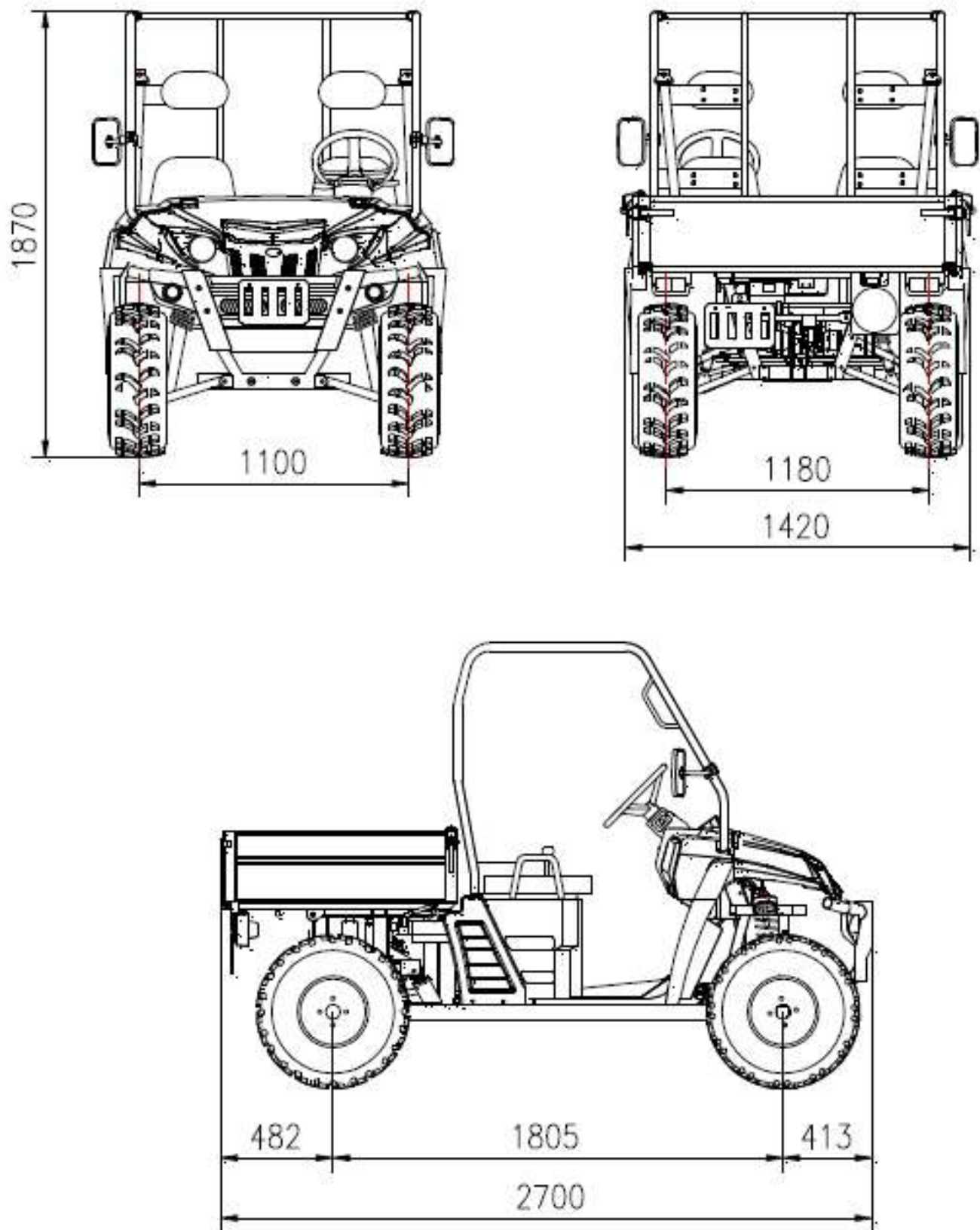
METRIC TO IMP			
	Known	Multiplier	Result
Torque	m • kg	7.233	ft • lb
	m • kg	86.794	ln • lb
	cm • kg	0.0723	ft • lb
	cm • kg	0.8679	ln • lb
Weight	kg	2.205	lb
	g	0.03527	oz
Distance	km/h	0.6214	mph
	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3927	in
	mm	0.03927	in
Volume/ Capacity	cc(cm ³)	0.03527	oz(IMP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

1.2 V.I.N NUMBER

The vehicle identification number ① is stamped into the front of the frame tube.



1.3 VEHICLE DIMENSIONS



NOTES

[illegible]

CHAPTER 2 MAINTENANCE

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.

2.1 PERIODIC MAINTENANCE

2.2 THROTTLE PEDAL INSPECTION

2.3 CHOKE ADJUSTMETN

2.4 TOE ALIGNMENT

2.5 BRAKING SYSTEM INSPECTION

2.6 SUSPENSION SPRING RPELOAD ADJUSTMENT

2.7 WHEELS

2.8 TIRE PRESSURE

2.9 FRAME, NUTS, BOLTS, FASTENERS

2.1 PERIODIC MAINTENANCE

GENERAL

CAUTION

Mark on the following chart

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

▲: Service/Inspect more frequently when operating in adverse conditions.

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.

Maintenance intervals are based upon average riding conditions and an average vehicle speed of approximately 16km/h (10 miles per hour). 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.

A = Adjust I = Inspect

C = Clean L = Lubricate

D = Drain R = Replace

T = Tighten to Correct Torque

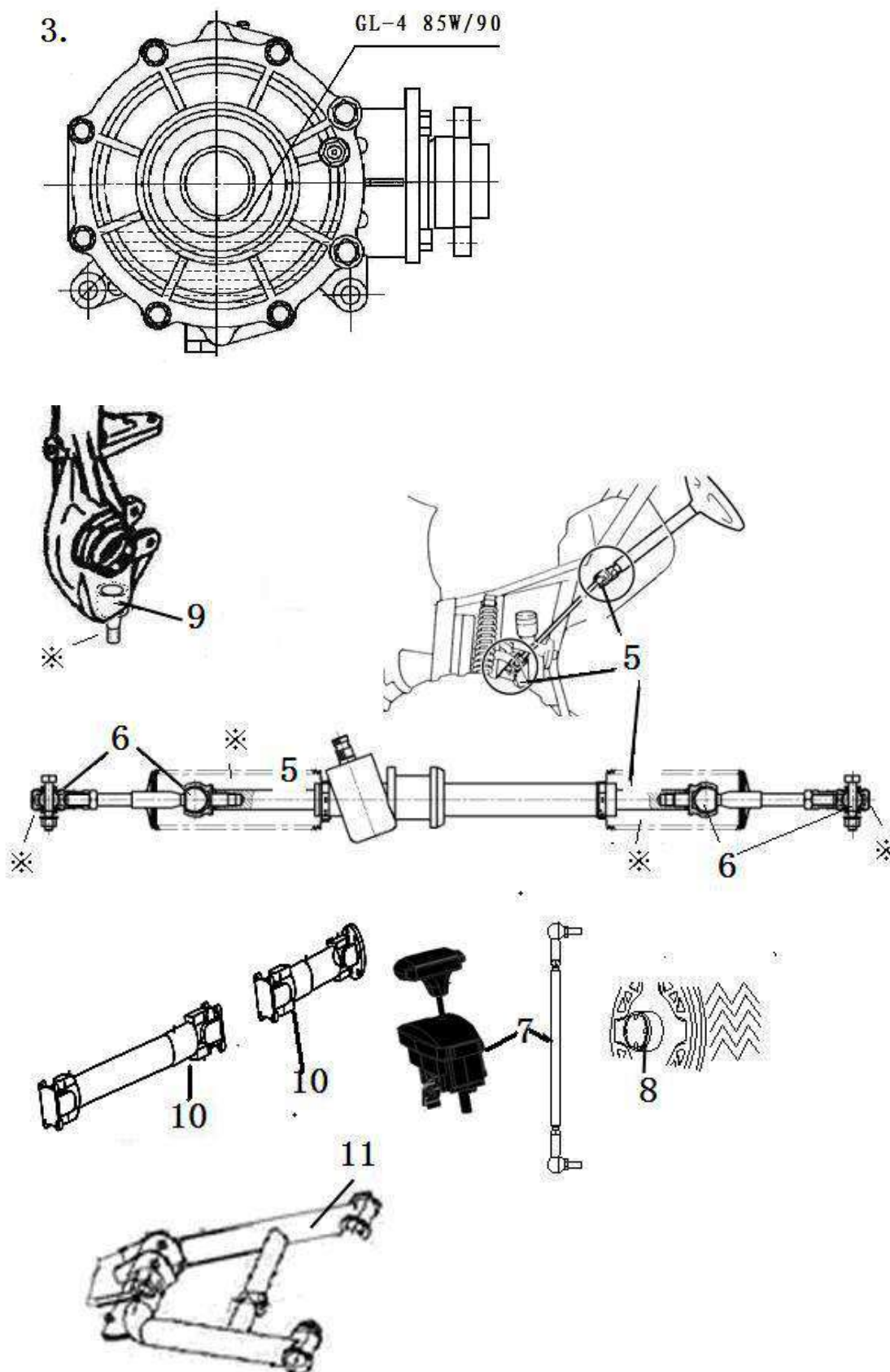
	Item	Hours	When	Remarks
	Service (Main) Brake System	/	Pre-ride	I
	Parking Brake	/	Pre-ride	I
	Tires	/	Pre-ride	I
	Wheels	/	Pre-ride	I
	Frame nuts, bolts fasteners	/	Pre-ride	I

	Headlamp Inspection	/	Daily	C apply dielectric grease to connector when replaced
	Tail lamp inspection	/	Daily	C apply dielectric grease to socket when replaced
▲	Transmission Oil Level	10	Monthly	I change annually
	Battery Terminals	10	Monthly	I C
	Battery fluid level	10	Monthly	I
DL	Brake pad wear	10	Monthly	I
▲	Gear case Oil	10	Monthly	C
		150	annually	R
▲	General Lubrication all fittings, pivots, cables, etc.	25	3 months	L
	Shift linkage	50 hrs	6 months	I A R if necessary
DL	Transmission belt	50 hrs	6 months	I R if necessary
▲	Steering	50 hrs	6 months	I L T if necessary
▲	Front Suspension	50 hrs	6 months	I L T if necessary
▲	Rear Suspension	50 hrs	6 months	I T if necessary
DL	Brake fluid Level	/	Pre-ride	I
	Brake fluid	200 hrs	24 months	Change every two years
	Idle Speed	/	As Required	A
DL	Toe adjustment	/	As Required	Periodic inspection, adjust when parts are replaced
	Headlight Aim	/	As Required	Adjust if necessary

▲	Ball joint (A arm- strut)	10 hrs	monthly	I, (for damage, wear, and play) R. Replace if necessary
DL				

LUBRICANT AND FLUID

	Item	Lube Rec	Method	Frequency
●	1. brake pedal	Grease	Grease, inspect	Monthly or 20 hours
	2.Brake Fluid	DOT 3 Only	Maintain level Between fill lines. See "7.CONTROL"	As require; change every two years or 200 hours
	3.Rear Gear case oil	SAE GL-4 85W/90	See "16.MAI- NTENANCE/ Rear Gear Case Lubrication"	Change annually or at 100 hours
●	4.Rear Axle Bearing(on swing arm model)	Grease	Locate fittings and grease	Every 3 months or 50 hours
●	5.Steering system	Grease	Lubricate the pivoting and sliding parts	Every 3 months or 50 hours
●	6.Tie rods	Grease	Grease	Semi-annually
●	7.Shift Linkages	Grease	Locate fittings and Grease	Semi-annually
●	8.Front Wheel bearings	Inspect	Inspect and replace bearings if necessary	Semi-annually
●	9.Ball joints	Grease	Inspect, Locate fittings and Grease, or replace it if necessary	Semi-annually
●	10.Prop Shaft & Shaft Yoke, Spline Joint	Grease	Locate fitting and Grease	Semi-annually
●	11. Front/Rear A-arm pivot Shaft	Grease	Locate fitting on pivot shaft and grease with grease gun	Every 3 months or 50 hours



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

LUBRICATION RECOMMENDATIONS**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.

2.2 THROTTLE PEDAL INSPECTION**THROTTLE FREEPLAY**

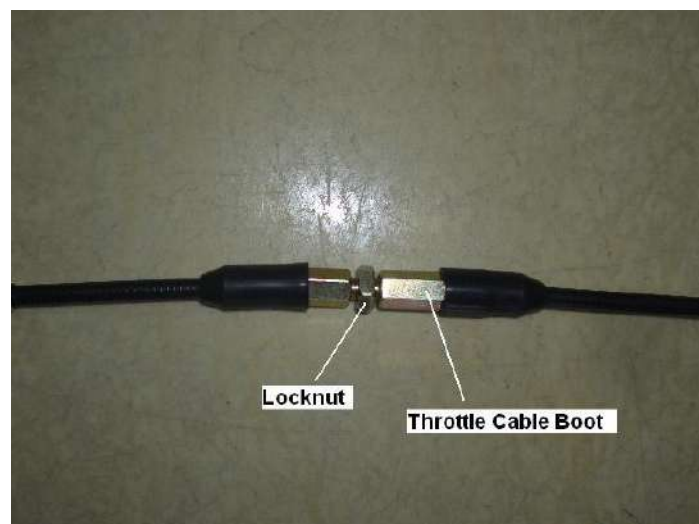
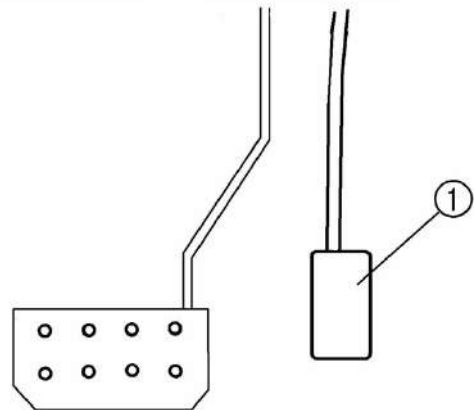
If the throttle pedal has excessive play due to cable stretch or cable misadjustment, it will cause a delay in throttle speed. Also, the throttle may not open fully. If the throttle pedal has no play, the throttle may be hard to control, and the idle speed may be erratic. Check the throttle pedal play periodically in accordance with the Periodic Maintenance Chart and adjust the play if necessary.

THROTTLE FREEPLAY INSPECTION

1. Apply the parking brake.
2. Put the gear shift lever in the N(Neutral) position.
3. Start the engine, and warm it up thoroughly.
4. Measure the distance the throttle pedal moves before the engine begins to pick up speed. Free play should be 1.5 – 3 mm.

Adjustment

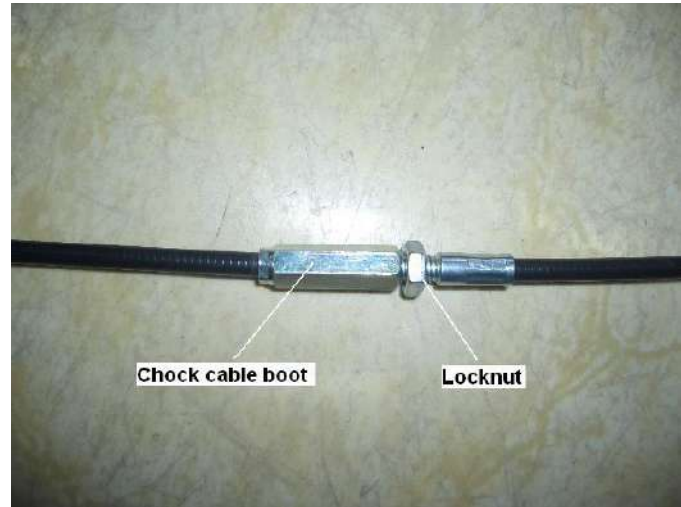
1. Slide the boot off inline cable adjuster sleeve. Loosen adjuster locknut.
2. Turn adjuster until 1.5 to 3 mm, freeplay is achieved pedal. NOTE: While adjusting freeplay, it is important you flip the throttle lever back and forth.
3. Tighten locknut.



2.3 CHOKE ADJUSTMENT

If the choke knob does not stay out when pulled, adjust the choke tension by tightening (clockwise) the choke cable boot until the choke slider freely but stays out when pulled.

If smooth choke operation is not obtainable, inspect choke cable for kinks or sharp bends in routing



2.4 TOE ALIGNMENT

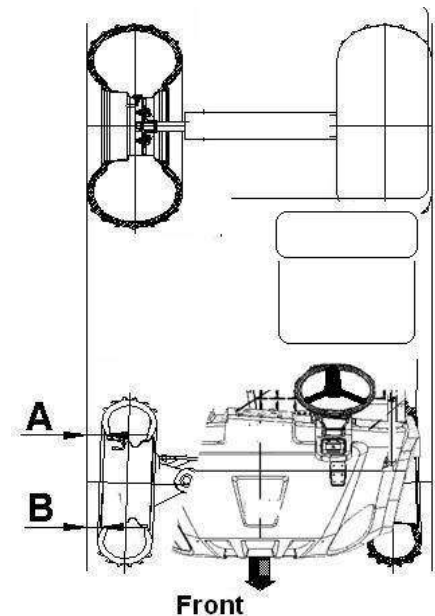
METHOD: STRAIGHTEDGE OR STRING

Be sure the steering wheel is in a straight ahead position.

NOTE: String should just touch side surface of rear tire on each side of the CUV.

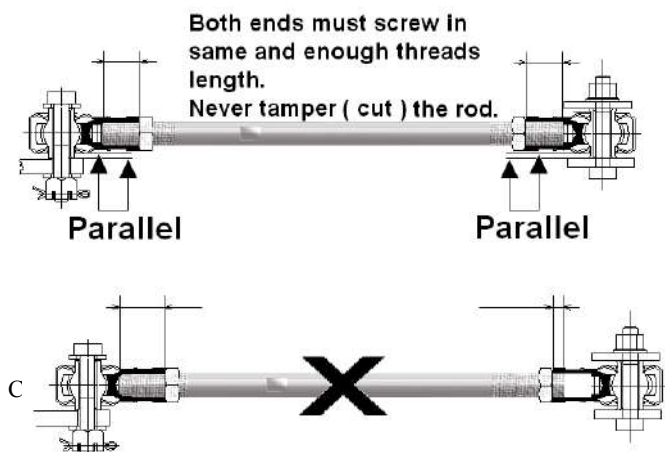
Measure from string to rim at front and rear of rim.

Rear rim measurement (A) should be 1/8" to 1/4" (3 to 6 mm) more than front rim measurement (B).



WARNING

Always pay attention to tie rods assembly, Both ends must screw in same and enough threads length.



2.5 BRAKING SYSTEM INSPECTION

The following checks are recommended to keep the braking system in good operating condition. Service life of braking system components depends on operating conditions. Inspect brakes in accordance with the maintenance schedule and before each ride

- Keep fluid level in the master cylinder reservoir to the indicated level on reservoir.

- Use DOT 3 brake fluid.

NOTE: Use new brake fluid or brake fluid from a sealed container to avoid contamination to system.

- Check brake system for fluid leaks.
- Check brake for excessive travel or spongy feel.
- Check friction pads for wear, damage and looseness.
- Check surface condition of the disc.

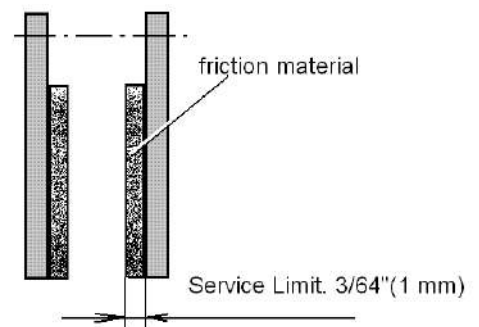


BRAKE PAD INSPECTION

Pads should be changed when friction material is worn to 3/64" (1mm).

HOSE/FITTING INSPECTION

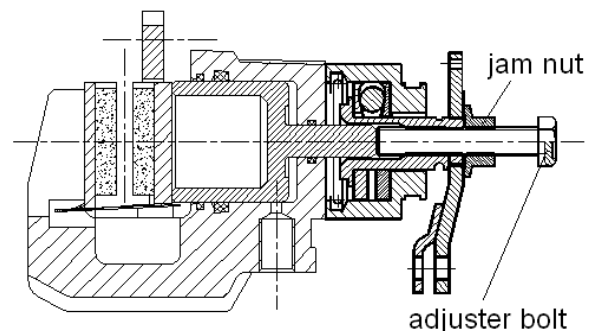
Check braking system hoses and fittings for cracks, deterioration, abrasion, and leaks. Tighten any loose fittings and replace any worn or damaged parts.



ADJUSTING THE BRAKE PEDAL

Check the brake pedal free play. Free play should be 8 – 12mm. Out of specification → Adjust.

1. Loosen the locknut
2. Turn brake rod in or out until the correct free play is obtained.
Turning in: Free play is increased.
Turning out: Free play is decreased.
3. Tighten the locknut



ADJUSTING THE PARKING BRAKE

Although the parking brake has been adjusted at the factory, the brake should be checked for proper operation. The mechanical brake must be maintained to be full functional.

1. With the engine off, apply the parking brake lever and attempt to move the CUV.

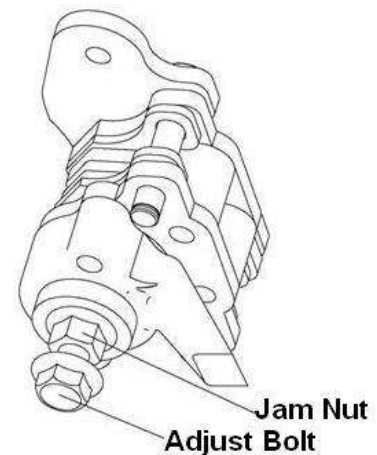
2. If the rear wheels are locked, it is adjusted properly.
3. If the wheels are not locked, it must be adjusted.

To adjust (set up) the mechanical parking brake, use the following procedure

Note: The adjusting on the caliper is for the wear out of the pads.

1. With the engine off, loosen the adjuster on the lever.
2. Loosen the jam nut of the adjuster on the caliper.
3. Turn the adjuster (bolt) CW (clockwise) by hand till the pad touch the brake disc, turn the adjuster bolt CCW (counterclockwise) by 1/4 to one turn for 10 to 20mm free play at the end of the parking lever.
4. Tighten the jam nuts securely against the adjusters.
5. Make sure the rear wheels turns freely without dragging.
6. Turn the adjuster (the one on the lever) and apply the lever. While adjusting, it is important you apply the lever back and forth for operation, free play and the locking of the parking position.
7. Make sure the rear wheels turns freely without dragging and parking brake works properly.
8. Field test for parking. It must be capable of holding the laden CUV stationary on an 18% up and down gradient.

A temporary adjusting can also be done to the brake cable on the parking lever side by turn the adjuster (nut) directly. But the adjust range is limited. Always do the **procedure 1 to 8** when necessary.



2.6 SUSPENSION SPRING RPELOAD ADJUSTMENT

Operator weight and vehicle loading affect suspension spring preload requirements. Adjust as necessary.

FRONT SUSPENSION

Compress and release front suspension. Damping should be smooth throughout the range of travel. Check all front suspension components for wear or damage.

Inspect from strut cartridges for leakage. Shock spring preload can not be adjusted, replace if

necessary.

REAR SUSPENSION

Compress and release rear suspension. Damping should be smooth throughout the range of travel. Check all rear suspension components for wear or damage.

Inspect shock for leakage

Shock spring preload can be adjusted using the shock spanner wrench.

WARNING

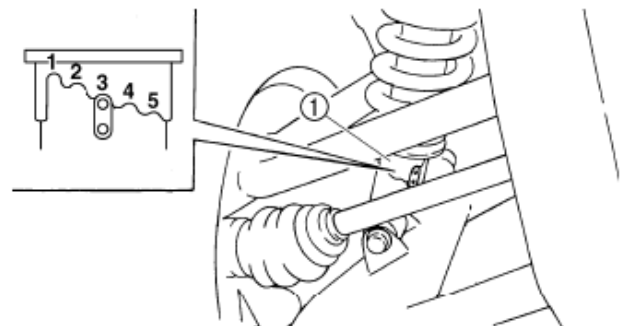
Always adjust both shock absorber spring preload to the same setting. Uneven adjustment can cause poor handling and loss of stability.

Turn the adjuster ① to increase or decrease the spring preload.

Standard position: 3

Minimum (Soft) position: 1

Maximum (Hard) position: 5



2.7 WHEELS

Inspect all wheels for runout or damage.

Check wheel nuts and ensure they are tight.

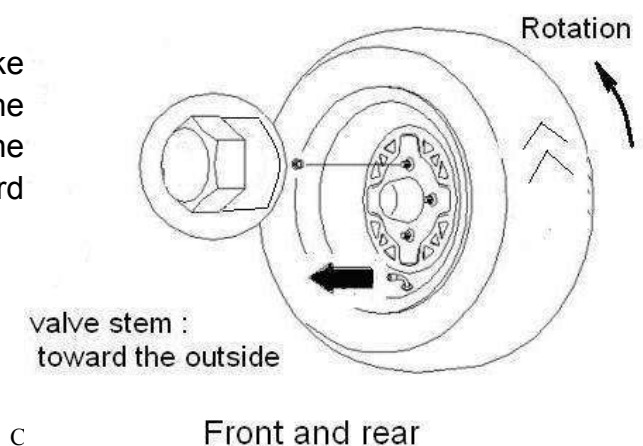
Do not over tighten the wheel nuts.

WHEEL REMOVAL

1. Stop and lock the parking brake.
2. Loosen the wheel nuts slightly.
3. Elevate the side of the vehicle by placing a suitable stand under the footrest frame.
4. Remove the wheel nuts and remove the wheel.

WHEEL INSTALLATION

1. With the transmission in gear and the parking Brake locked, place the wheel in the correct Position on the wheel hub. Be sure the valve stem is toward the outside and rotation arrows on the tire point toward rotation.
2. Attach the wheel nuts and finger tighten them. Install as shown at left for front or rear wheels.
3. Lower the vehicle to the ground.
4. Securely tighten the wheel nuts to the proper



Torque listed in the table. On wheel nuts, Make sure tapered end of nut goes into taper on wheel.

Wheel Nut Torque Specifications

Bolt Size		Specification	
Front	M12X1.25	69Ft.Lbs	95Nm
Rear	M12X1.25	69Ft.Lbs	95Nm

CAUTION: If wheels are improperly installed it could affect Vehicle handling and tire wear.

2.8 TIRE PRESSURE

TIRE INSPECTION

CAUTION:

- Maintain proper tire pressure. Refer to the warning tire pressure decal applied to the vehicle.
- Improper tire inflation may affect CUV maneuverability.
- When replacing a tire always use original equipment size and type and replace in pairs, especially in 4X4 model.
- The use of non- standard size or type tires may affect CUV handling and cause machine damage, especially in 4X4 model.

Tire Pressure Inspection	
Front	Rear
see detail on the mark of sidewall	see detail on the mark of sidewall

TIRE TREAD DEPTH

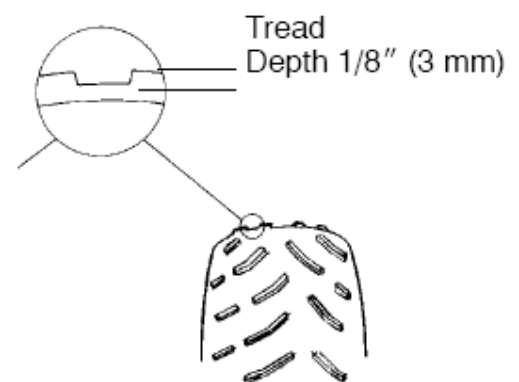
Always replace tires when tread depth is worn to 1/8" (3mm) or less.

WARNING

Operating an CUV with worn tires will increase the possibility of the vehicle skidding easily with possible loss of control.

Worn tires can cause an accident.

Always replace tires when the tread depth measures 1/8" (3mm) or less.



2.9 FRAME , NUTS, BOLTS, FASTENERS

Periodically inspect the tightness of all fasteners in accordance with the maintenance schedule. Check that all cotter pins are in place. Refer to specific fastener torques listed in each chapter.

NOTES

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CHAPTER 3 CHASSIS

WARNING

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3.1 FRONT A-ARM REPLACEMENT

3.2 REAR A-ARM REPLACEMENT

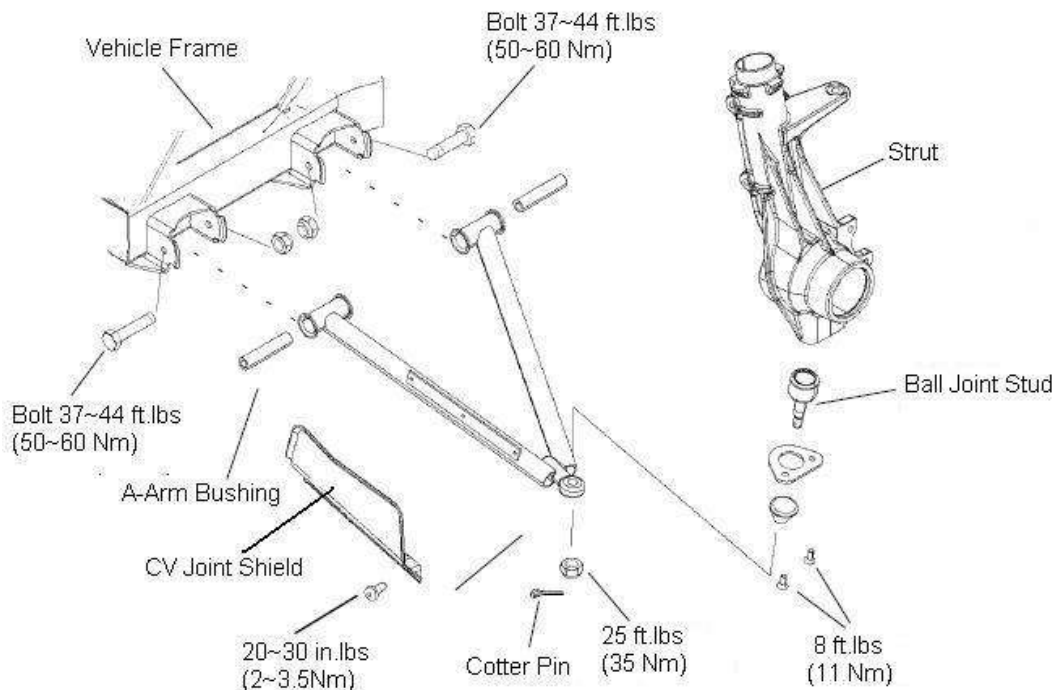
3.3 REAR STABILIZER BAR REMOVAL/INSTALLATION

3.4 FRONT STRUT REPLACEMENT

3.5 FRONT STRUT BALL JOINT REPLACEMENT

3.6 BOX REMOVAL/INSTALLATION

3.7 STEERING ASSEMBLY REMOVAL/INSTALLATION

3.1 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

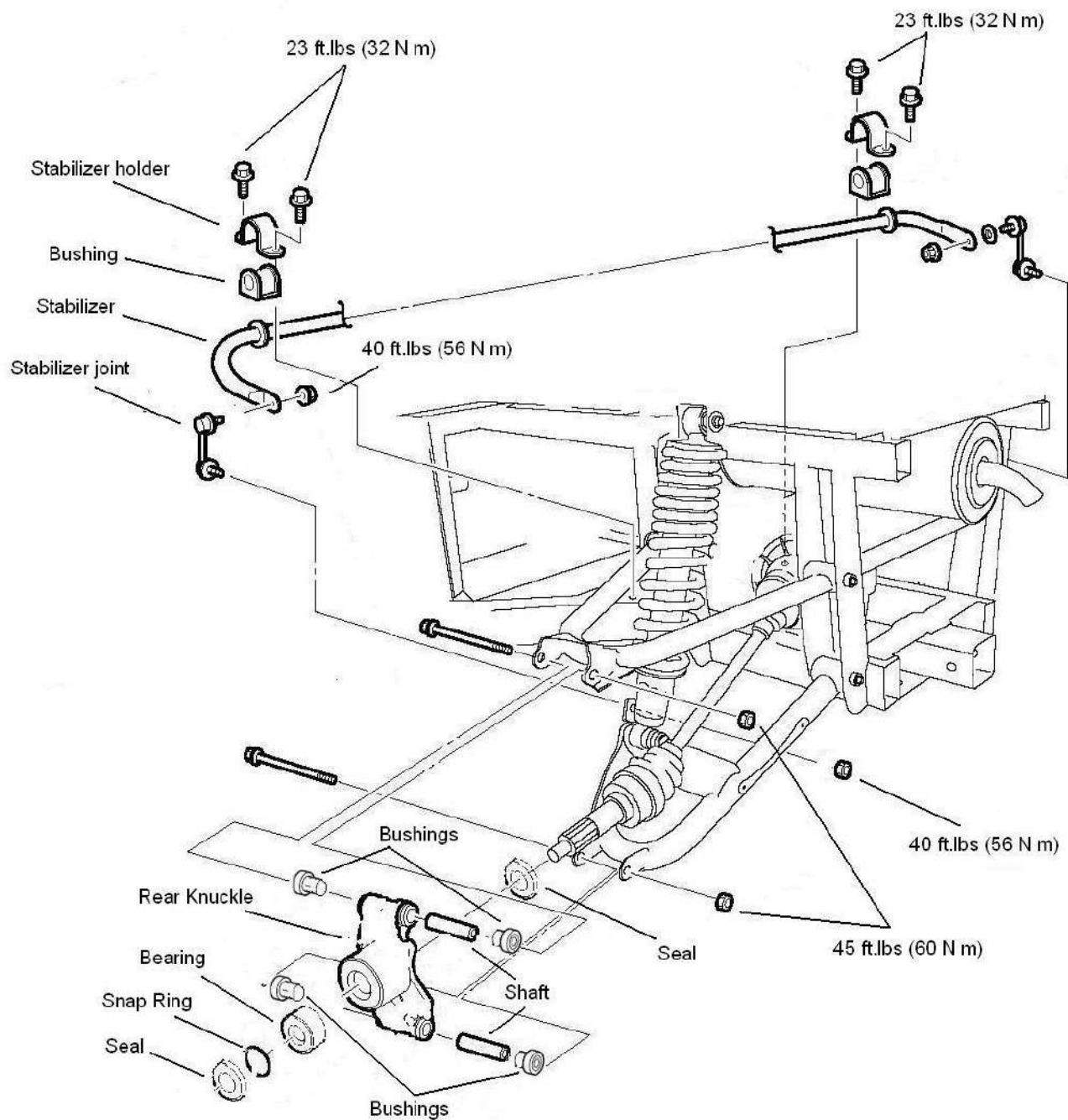
DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

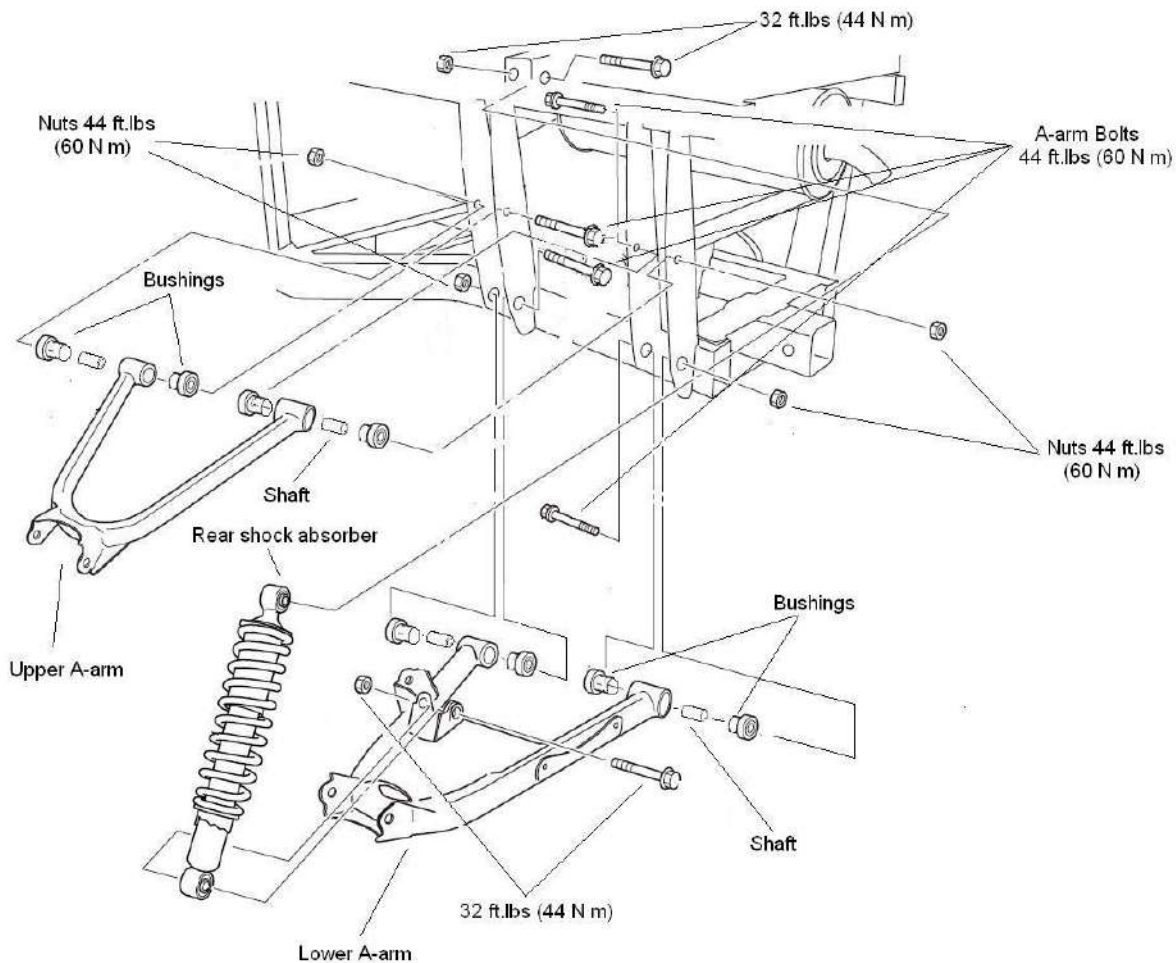
7. Attach A-arm to strut assembly. Tighten ball joint nut to 25 ft. lbs. (35 Nm). If cotter pin holes are not aligned, tighten nut slightly to align. Install a new cotter pin with open ends toward rear of machine. Bend both ends in opposite directions around nut.
8. Install hubs, calipers and wheels, 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.

3.2 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 hang 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 two bolts 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).

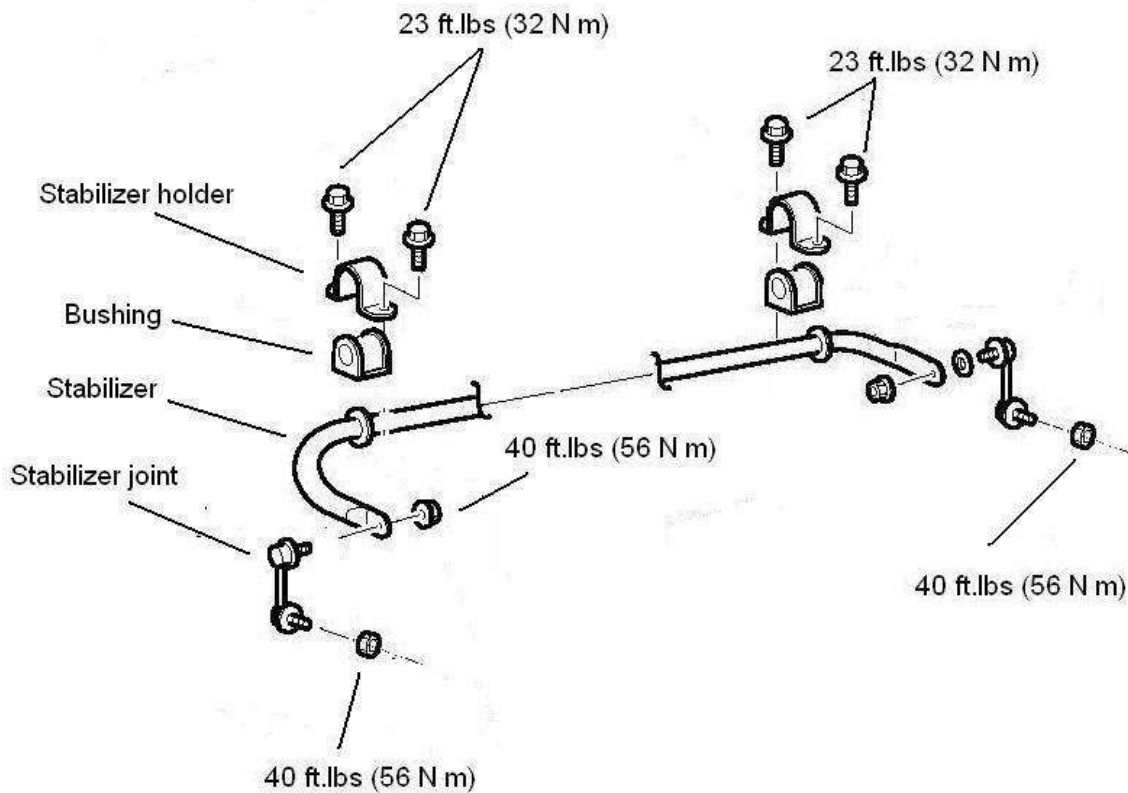
 WARNING

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.

3.3 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.

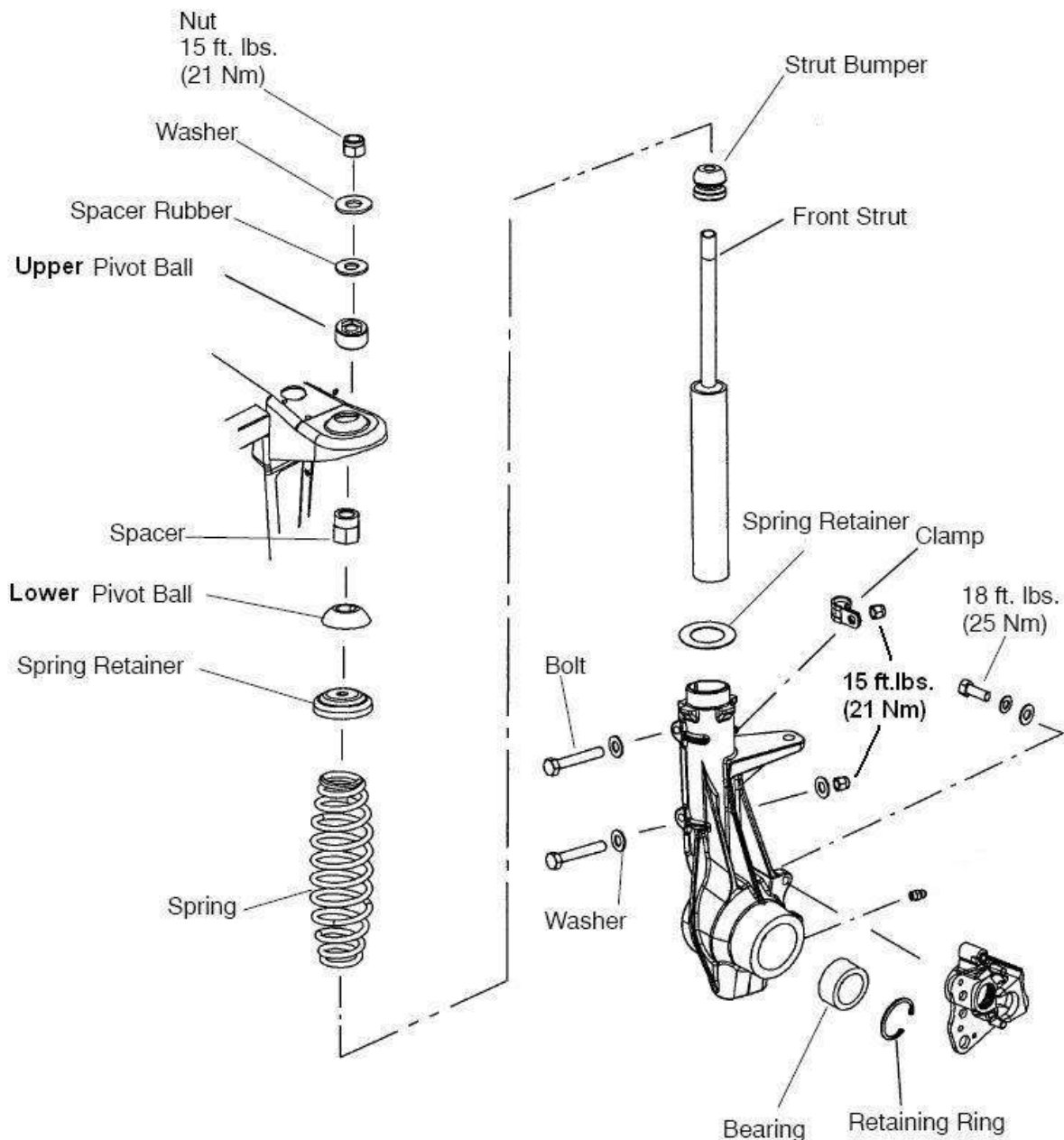


4. Remove the two bolts that secure the stabilizer bar to the main frame, each side.



5. Remove the stabilizer from the fram.
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).

3.4 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)

3.5 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.

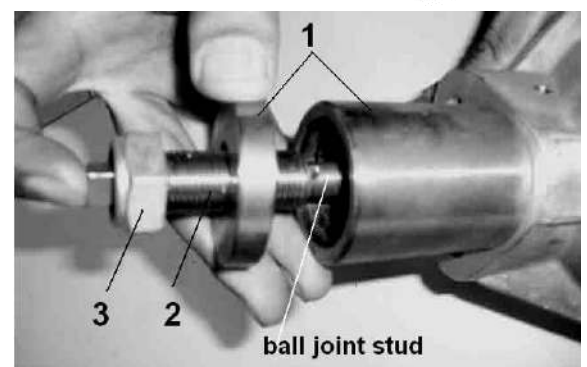
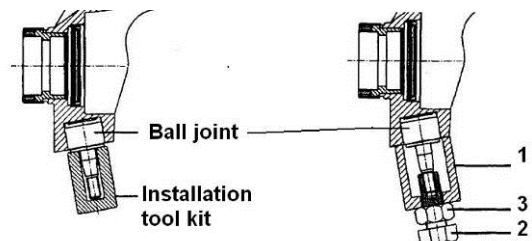
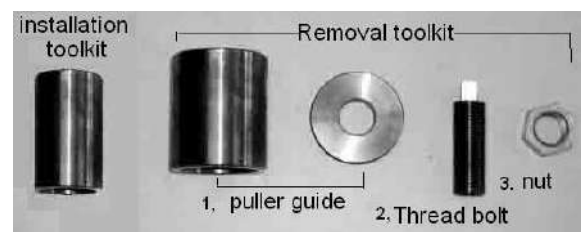
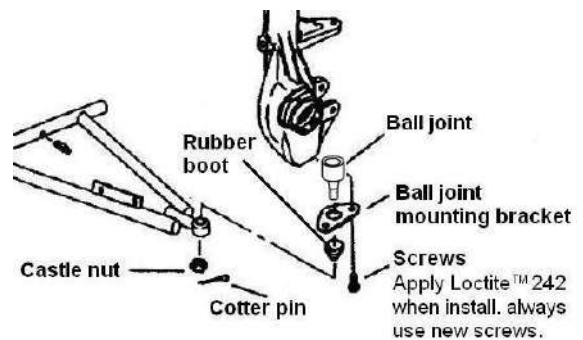
3. Remove wheel nuts and wheels.
4. Remove cotter pin from ball joint
5. Remove castle nut and separate A- arm from ball joint stud.
6. Remove screws and ball joint mounting bracket.
7. Using ball joint cup removal/installation toolkit, remove ball joint cup from strut housing. Refer to photos at right.

- Install puller guide (1) .
- Thread bolt (2) with nut (3) onto ball 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 ball joint cup and torque castle nut to 25 ft. lbs. (35 Nm).
11. Reinstall cotter pin with open ends toward rear of



machine.

3.6 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.

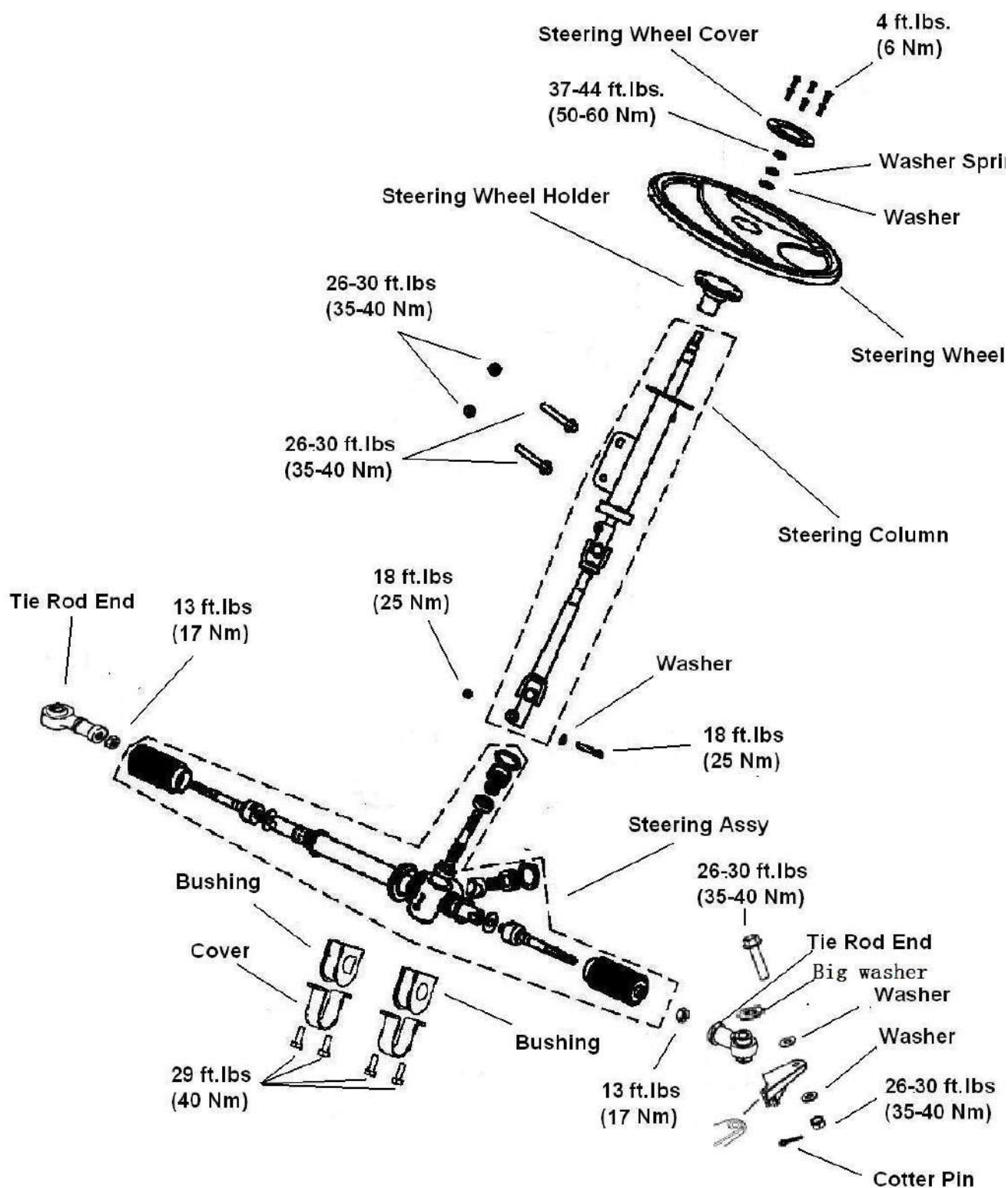
7. With the hinge pins removed, remove the box from the frame. Two people may be needed to remove the bed from the frame.

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 license light coupler.



3.7 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

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CHAPTER 4 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 UTV model for spare parts information and service.

- 4.1 WHEEL, HUB, AND SPINDLE TORQUE TABLE
- 4.2 FRONT HUB EXPLODED VIEW
- 4.3 FRONT HUB REMOVAL/INSPECTION
- 4.4 FRONT HUB INSTALLATION
- 4.5 FRONT HUB BEARING REPLACEMENT
- 4.6 FRONT DRIVE AXLE REMOVAL/ INSPECTION (4X4)
- 4.7 FRONT DRIVE AXLE INSTALLATION (4X4)
- 4.8 FRONT DRIVE AXLE DISASSEMBLY/ INSPECTION (4X4)
- 4.9 FRONT DRIVE AXLE ASSEMBLY (4X4)
- 4.10 REAR HUB EXPLODED VIEW
- 4.11 REAR HUB AND KNUCKLE REMOVAL/INSPECTION
- 4.12 REAR HUB AND KNUCKLE INSTALLATION
- 4.13 REAR DRIVE SHAFT REMOVAL
- 4.14 REAR DRIVE SHAFT INSTALLATION
- 4.15 REAR GEARCASE DISASSEMBLY
- 4.16 REAR GEARCASE ASSEMBLY

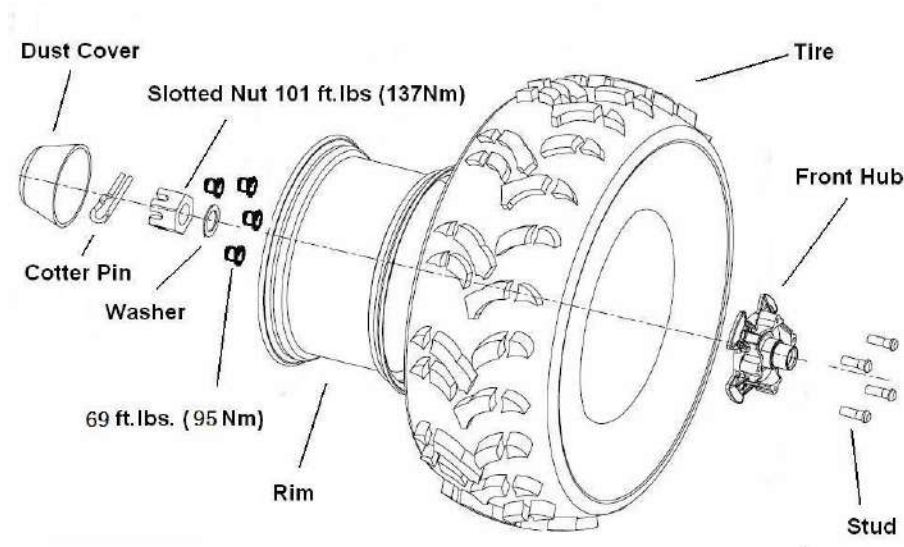
4.1 WHEEL, HUB, AND SPINDLE TORQUE TABLE

Item	Specification
Front Wheel Nuts	69 Ft.Lbs 95 Nm
Rear Wheel Nuts	69 Ft.Lbs 95 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.

4.2 FRONT HUB EXPLODED VIEW



4.3 FRONT HUB REMOVAL/INSPECTION

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

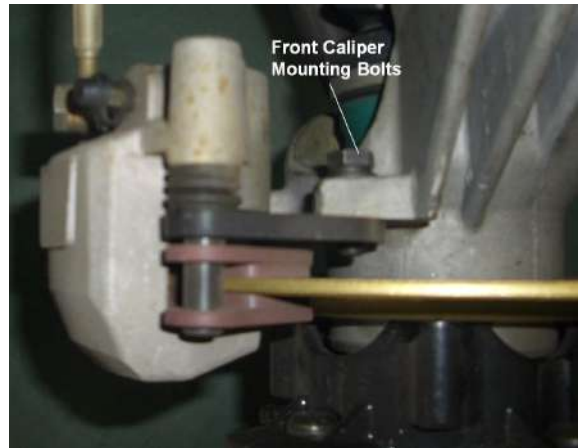
CAUTION: Serious injury may result if machine tips or falls. Be sure machine is secure before beginning this service procedure. Wear eye protection when removing bearings and seals.

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.

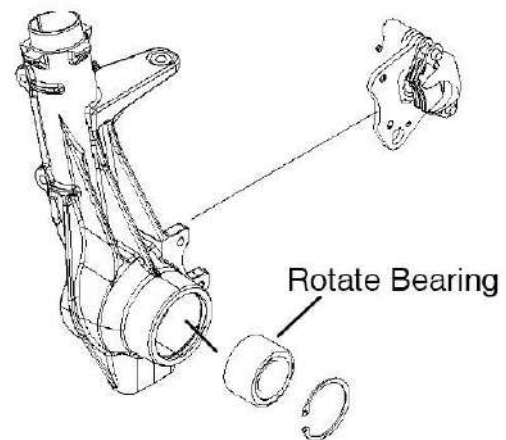
CAUTION: Do not hang the caliper by the brake line. Use wire to hang the caliper to prevent possible damage to the brake line.



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.



4.4 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

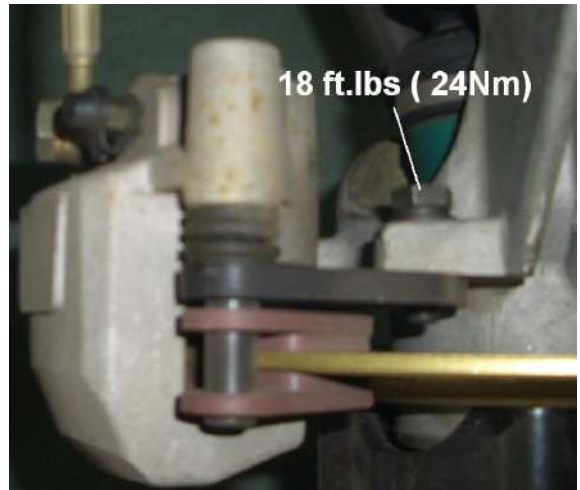


spindle in different directions. Install hub cap.

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.



4.5 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.

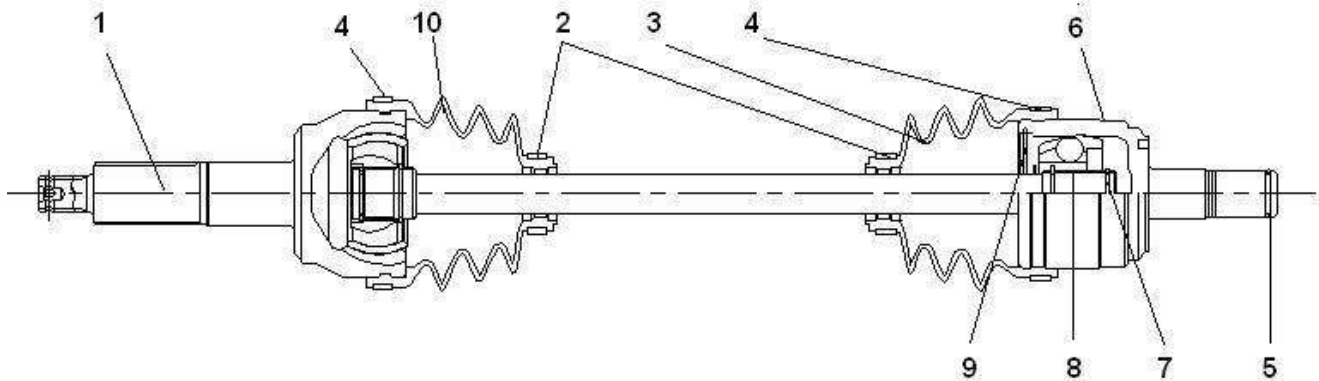
NOTE: Due to extremely close tolerances and minimal wear, the bearings must be inspected visually, and by feel. While rotating bearings by hand, inspect for rough spots, discoloration, or corrosion. The bearings should turn smoothly and quietly, with no detectable up and down movement and minimal movement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

5. Inspect bearing housing for scratches, wear or

damage. Replace housing if damaged.

4.6 FRONT DRIVE AXLE REMOVAL/INSPECTION (4X4)

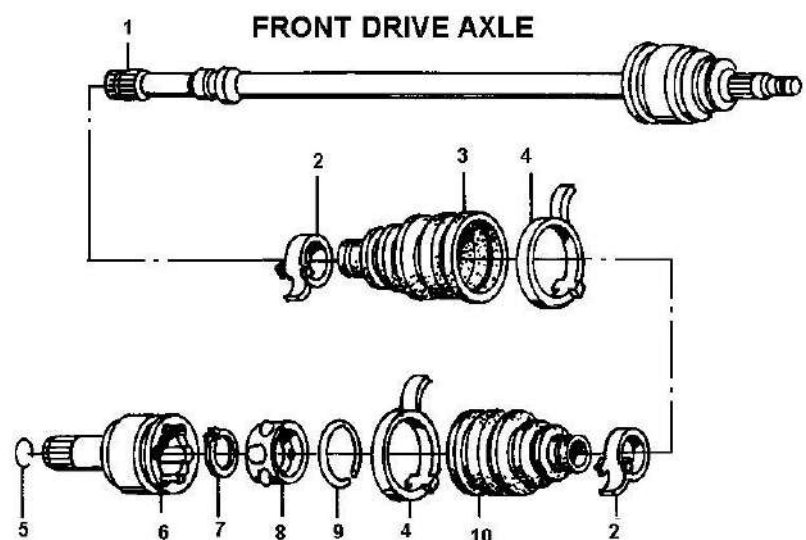
FRONT DRIVE AXLE



NOTE: The outer CV joint cannot be disassembled or repaired, if damage or faulty the drive axle assembly must be replace.

1. Drive Axle/Outer CV Joint Assembly.
2. Boot Band "A".
3. Outer Board Boot.
4. Boot Band "B".
5. Stopper Ring
6. Plunging Joint
7. Circlip
8. Bearing
9. Stopper ring
10. Inboard boot.

NOTE: Always order and replace 6 and 8 together.



REMOVAL

1. Place the vehicle on level ground and set the parking brake, Block the rear wheels so the vehicle will not roll in either direction.
2. Remove the front wheels, steering tie rods, disconnect the A arm on the ball joint end as described in this Chapter and Chapter 4.

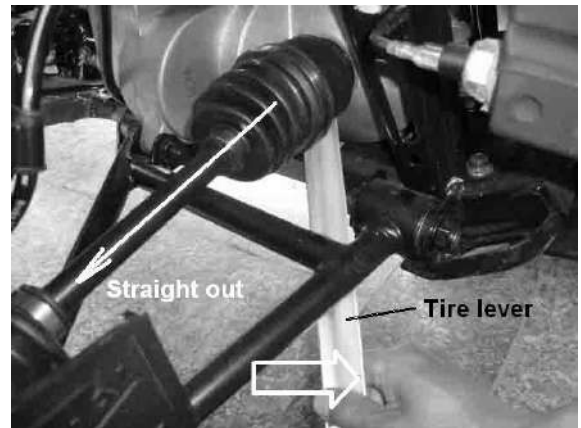
CAUTION: To avoid damage to the front gearcase oil seal, hold the front drive shaft horizontal and straight out from the front differential during removal.

3. Hold the drive shaft straight out.
4. Place a tire lever between the inner CV joint and the differential housing, with a small piece of wood against the housing to help get "leverage" and protect the casting. "pop" the inner CV joint out from the front gearcase.

INSPECTION

NOTE: The boots are subjected to a lot of abuse if the vehicle is ridden in rough terrain. If the boots are damaged and left un-repaired, the driveshaft joints will fail prematurely by allowing the joint to be exposed to dirt, mud and moisture. This also allows the loss of critical lubrication.

1. Check the rubber boots for wear, cuts or damage and replace if necessary as described under the Disassembly / Assembly procedure in this chapter.
2. Move each end of the drive shaft in a circular motion (and also reciprocate for inner one) and check the drive shaft joints for excessive wear or play.
3. This inner CV joint (inboard pivot joint) can be serviced if there is wear or play. The outer CV joint (outboard pivot joint) cannot be serviced if worn or damaged and if necessary, the drive shaft assembly must be replaced.



4.7 FRONT DRIVE AXLE INSTALLATION (4X4)

CAUTION: To avoid damage to the front gearcase oil seal and the strut oil seal, hold the front drive shaft horizontal and straight into the strut during installation.

1. Hold the drive shaft straight in from the front differential.
2. Push the drive shaft straight into the front differential and push it in all the way until it bottoms out. If necessary, carefully tap on the outer end of the drive shaft with a rubber mallet or soft-faced mallet.
3. After the drive shaft is installed, pull the inner CV joint a little to make sure the drive shaft stopper



ring has locked into the front differential side gear groove.

4. Carefully install the outer CV joint (spindle) into the strut, install the front hub and wheel.
5. Install the ball joint on the A arm, the steering tie rods, the hubs and the wheels as described in this Chapter and Chapter 4.

4.8 FRONT DRIVE AXLE DISASSEMBLY/ INSPECTION(4X4)

INNER CV JOINT DISASSEMBLY

NOTE: The outer CV joint cannot be disassembled or repaired, if damage or faulty the drive axle assembly must be replace.

1. Open the clamps on both boot band "A" and "B" on the inner CV joint, then remove boot band "B". Discard the boot band, it cannot be reused.
2. Carefully slide the boot (A) onto the drive axle and off the inboard joint.
3. Wipe out all of the molybdenum disulfide grease within the inboard joint cavity.
4. Remove the stopper ring from the inboard joint.
5. Remove the inner CV joint.
6. Remove the circlip and slide off the bearing assembly. Be careful not to drop any of the steel balls from the bearing cage.
7. Slide the inner CV off the drive axle and discard the boot band "A", it cannot be reused.
8. If the outboard boot requires replacement, perform the following:
 - a. Open the clamps on both boot bands "A" and "B" on the outer CV joint, then remove boot band "B". Discard the boot band, it cannot be reused.
 - b. Slide the outboard boot off the drive axle and discard the boot band "A", it cannot be reused.
9. Inspect the drive axle as described in this chapter.

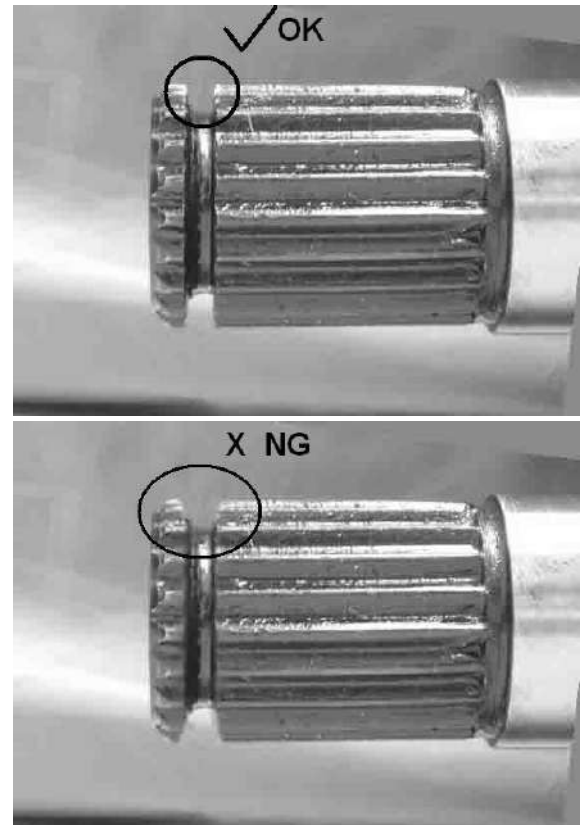
INNER CV JOINT INSPECTION

1. Clean the bearing assembly in solvent and thoroughly dry.
2. Inspect the steel balls, bearing case and the

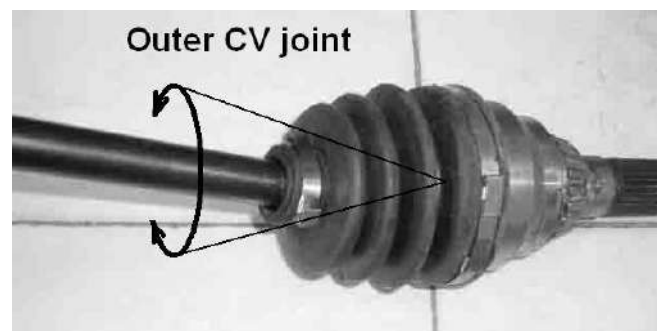
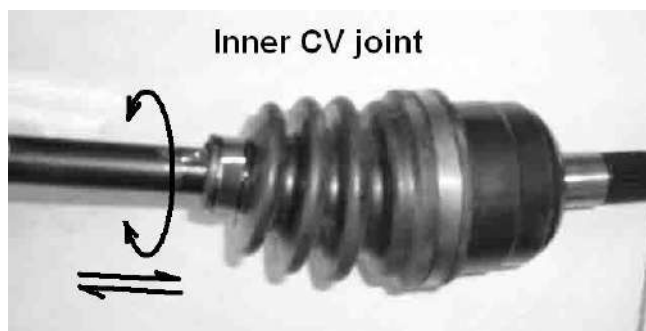


bearing race for wear or damage.

3. Check for wear or damage to the inner splines of the bearing race.
4. If necessary, disassembly the bearing assembly for further inspection. Carefully remove the steel balls from the bearing cage then remove the bearing race from the bearing cage.
5. If any of the components of the bearing assembly are damaged, replace the entire assembly as no replacement parts are available.
6. Clean the inner CV joint in solvent and thoroughly dry.
7. Inspect the interior of the inboard joint where the steel balls ride. Check for wear or damage and replace the joint if necessary.
8. Inspect the snap ring groove on the inboard joint for wear or damage.
9. Inspect the splines on the inner CV joint for wear or damage.
10. Check the stopper ring in the end of the inboard joint. Make sure it seats in the groove correctly, if damage the ring must be replaced. See right picture.
11. Inspect the exterior of the inner CV joint for cracks or damage, replace if necessary. Check the movement of the joint for excessive play or noise by moving the drive axle in a circular and reciprocate direction.
12. Inspect the drive axle for bending, wear or damage.
13. Inspect the inner end splines, the outer end splines and the front hub cotter pin hole for wear or damage. If any of these areas are worn or damaged, replace the drive axle.



Check the movement of the joint



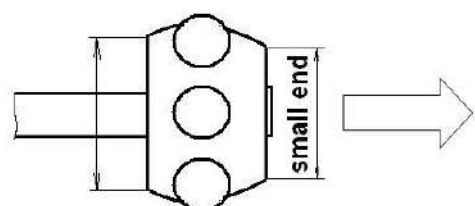
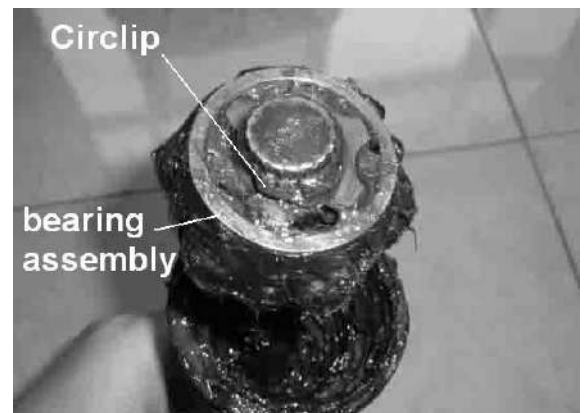
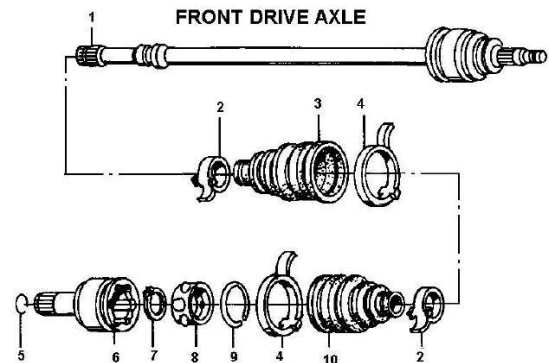
NOTE: Inner CV joint must be replaced with the bearing as an assembly.

4.9 FRONT DRIVE AXLE ASSEMBLY (4X4)

1. The rubber boots are not identical and must be installed on the correct joint. The boots are marked as follows:
 - a. Inner CV joint boot : "inner",
 - b. Outer CV joint boot: "outer".
2. If the outboard boot was removed, install a new boot onto the drive axle at this time.

NOTE: Position the new boot bands with their tabs facing toward the rear of the vehicle.

3. Install 2 new small boot bands onto the drive axle.
4. Install the inboard boot and move the small boot band onto the boot. Bend down the tab on the boot band and secure the tab with the locking clips and tap them with a plastic hammer. Make sure they are locked in place.
5. If the bearing assembly was disassembled, assemble the bearing as follows:
 - a. Position the bearing race and install the race into the bearing case. Align the steel ball receptacles in both parts.
 - b. Install the steel balls into their receptacles in the bearing case.
 - c. Pack the bearing assembly with molybdenum disulfide grease. This will help hold the steel balls in place.
6. Position the bearing assembly with the small end of the bearing going on first and install the bearing onto the drive axle.
7. Push the bearing assembly on until it stops, then install the circlip. Make sure the circlip seats correctly in the drive axle groove.
8. Apply a liberal amount of molybdenum disulfide grease to the bearing assembly. Work the grease in between the balls, the race and the case. Make sure all voids are filled with grease.
9. Apply a liberal amount of molybdenum disulfide grease to the inner surfaces of the inboard joint.
10. Install the inboard joint over the bearing assembly and install the stopper ring. Make sure it is seated correctly in the inboard joint groove.



11. After the stopper ring is in place, fill the inboard joint cavity behind the bearing assembly with additional molybdenum disulfide grease.
12. Pack each boot with the following amounts of molybdenum disulfide grease:
 - a. Inboard boot: 35-55 grams (1.2-1.9 oz.).
 - b. Outboard boot: 30-50 grams (1.1-1.8 oz.).
13. Move the inboard boot onto the inner CV joint.
14. Move the inboard joint on the drive axle.

NOTE: Position the new boot bands with their tabs facing toward the rear of the vehicle .

14. Move the small boot band onto the boot. Bend down the tab on the boot band and secure the tab with the locking clips and tap them with a plastic hammer. Make sure they are locked in place.

15. Install the large boot bands onto each boot.

CAUTION: It is critical to avoid undue stress on the rubber boots after the drive axle is installed and the vehicle is run. Don't twist the boot, and always set the both ends in designed position.

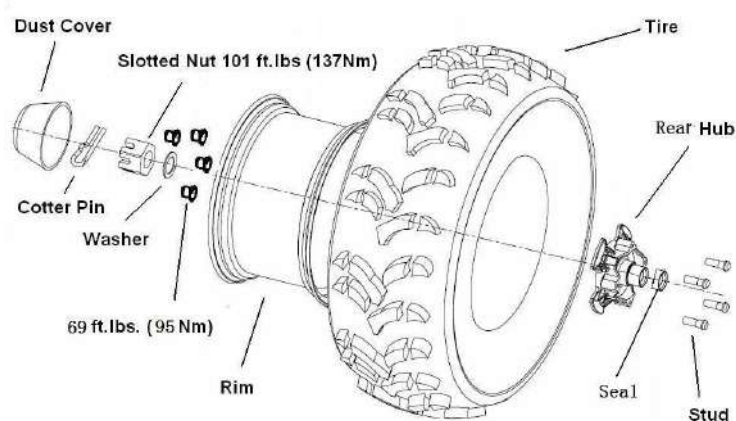
16. Secure all large boot bands. Bend down the tab on the boot band and secure the tab with the locking clip and tap them with a plastic hammer. Make sure they are locked in place.

17. If removed, install the stopper ring and make sure it is seated correctly in the drive axle groove.

18. Apply molybdenum disulfide grease to the end splines.



4.10 REAR HUB EXPLODED VIEW



4.11 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.

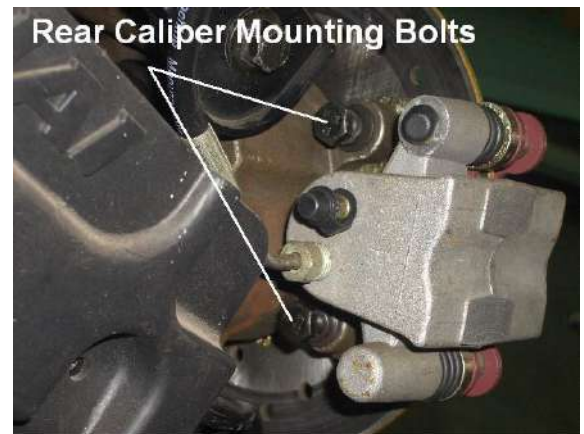
2. Check bearings for side play by grasping the tire/Wheel firmly and checking for movement. Grasp the top and bottom of the tire. The tire should rotate smoothly without binding or rough spots.

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.



4.12 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 69 ft.lbs. (95 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)

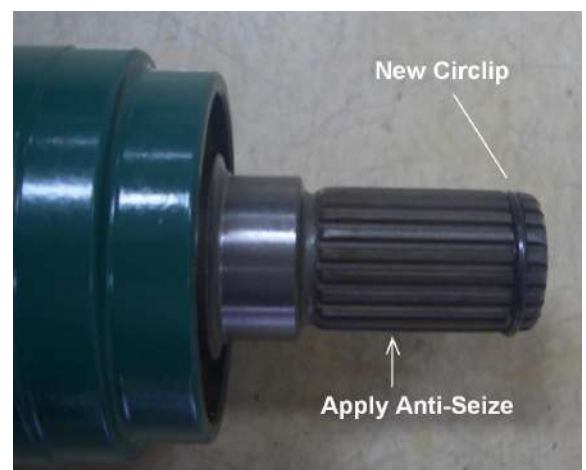
4.13 REAR DRIVE SHAFT REMOVAL

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.



4.14 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.



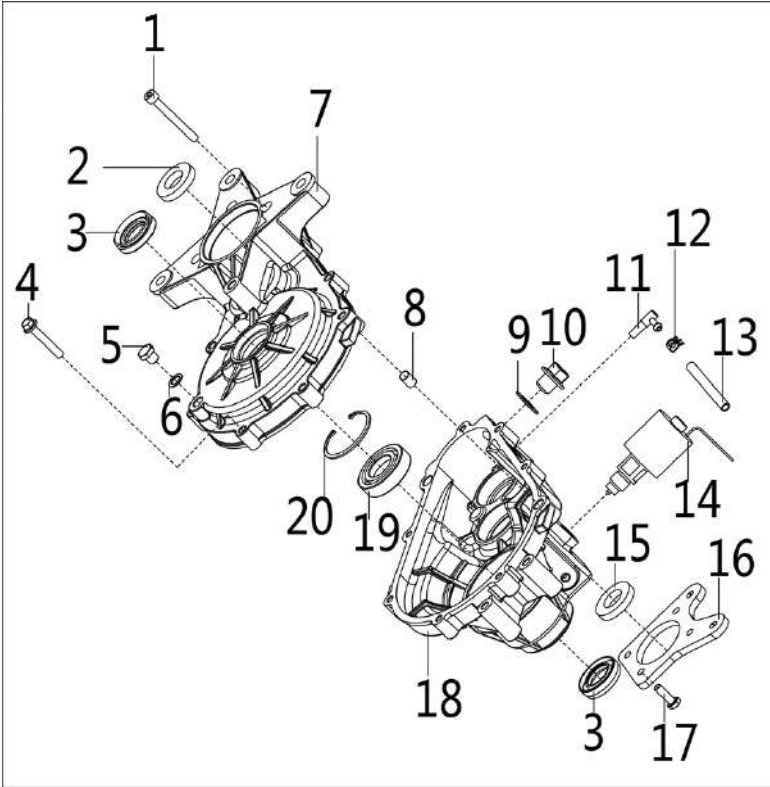
3. Slide the rear drive axle into the knuckle.



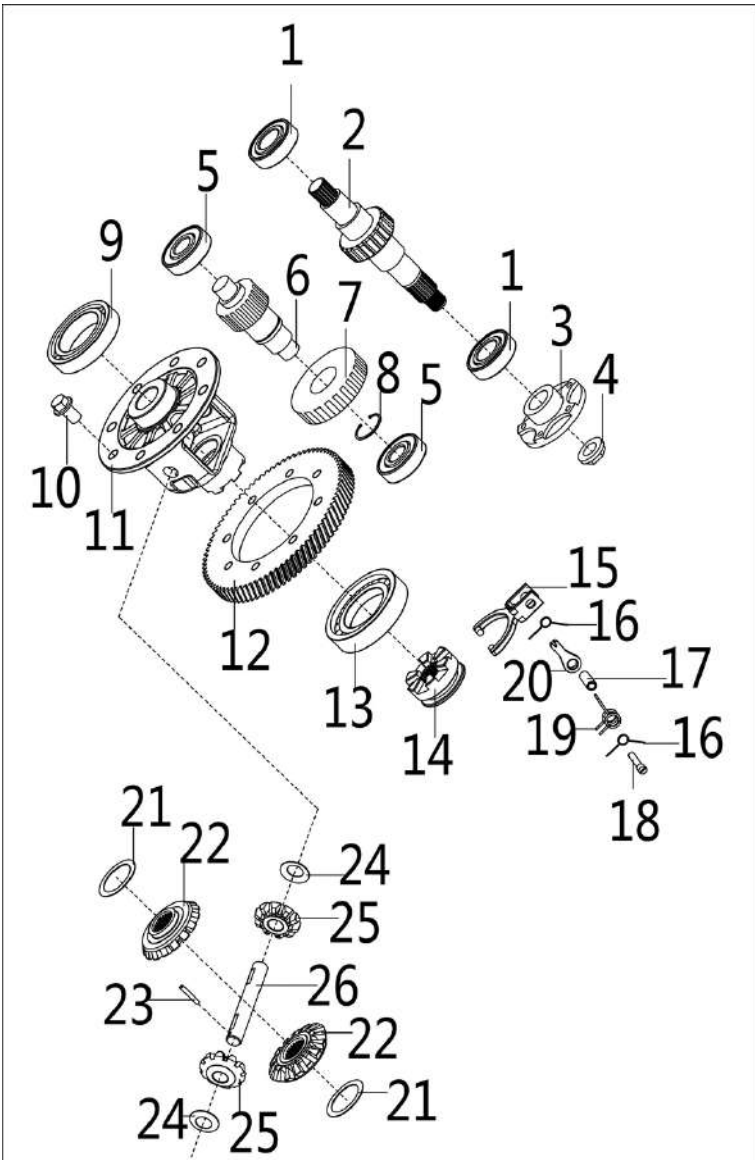
4. Lift knuckle into place and install bolt to upper and lower control arm. Torque bolt to 44 ft.lbs (60 Nm).
5. Install the washer and the spindle retainer nut.
6. Install the wheel and wheel nuts. Torque wheel nuts to 69ft.lbs. (95 Nm).
7. Lower the vehicle. Torque the spindle retaining nut to 101 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)

4.15 REAR GEAR CASE DISASSEMBLY

REAR GEARCASE EXPLODED VIEW



1	SOCKET HEAD BOLT M8X70
2	SEAL 25X47X7
3	SEAL 30X50X13.5
4	BOLT M8X50
5	DRAIN SCREW
6	WASHER
7	LEFT CASE
8	DOWEL PIN
9	WASHER 18
10	BOLT M18x1.5
11	VENT NOZZLE
12	CLAMPS
13	VENT PIPE
14	DIFF SOLENOID
15	SEAL 25X47X8
16	MOUNT BRACKET-PARKING BRAKING
17	BOLT M8X20
18	RIGHT CASE
19	BEARING 206
20	CLIP 62



1	BEARING 6205
2	INPUT GEAR
3	COUPLER
4	NUT M16X1.5
5	BEARING 6304
6	MID GEAR SHAFT
7	MID GEAR
8	CLIP 30
9	BEARING 110
10	HEXAGON FLANGE BOLT
11	DIFF CASE
12	OUTPUT GEAR
13	BEARING 6210
14	CLUTCH GEAR
15	Shift Yoke
16	Shift Return Spring
17	Shift Bar
18	Shift Pin
19	Shift Lever Spring
20	Shift Lever
21	Side Gear Thrust-Washer
22	Diff Side Gear
23	Diff Roll Pin
24	Pinion Mate Thrust-Washer
25	Diff Pinion Mate Gear
26	Diff Cross Pin

1. Remove the oil Drain Screw **A** and let the oil drain from the gearbox.

Important: Clean the plug carefully and
Replace the Washer **B** before its assembled.

→Fig 1

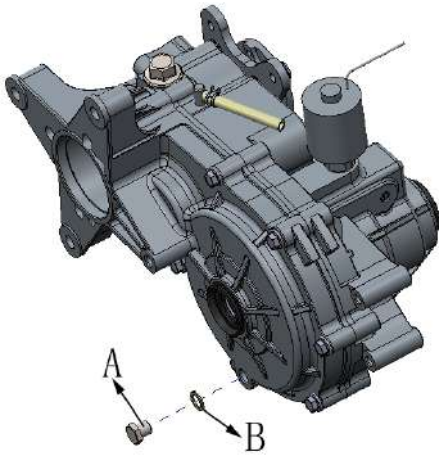


Fig 1

2. Remove the three Socket Head Bolts **A** and six Bolts **B** and Left Case **C**.

→Fig 2

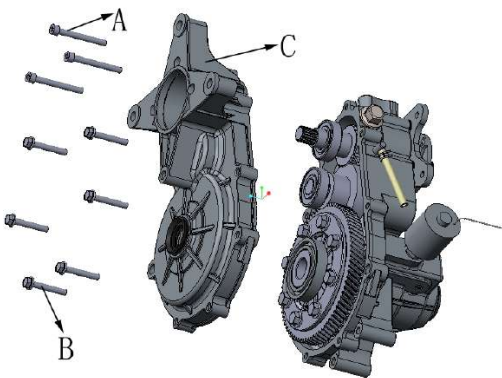


Fig 2

3. Remove the Input Gear **A** and Mid Gear Shaft **B** and Diff Case Assembly **C** and Clutch Gear **D** and Coupler **E** and Nut **F**.

→Fig3

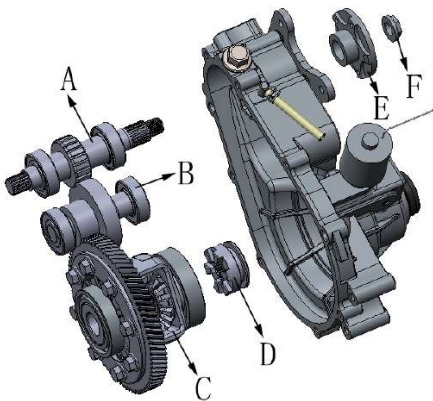


Fig 3

4. Remove two Bearing 6205 **A**, two Bearing 6304 **B**, Input Gear **C**, and Mid Gear Shaft **D**.
→Fig 4

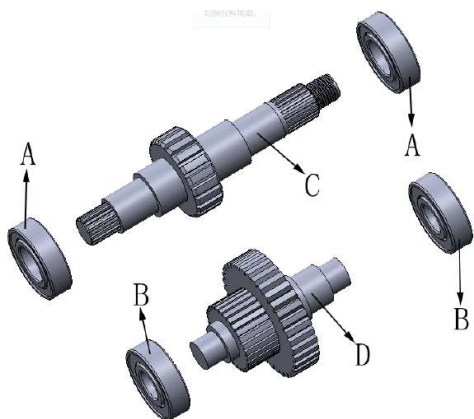


Fig 4

5. Remove the Diff Solenoid **A**, Shift Yoke Assembly **B**, Shift Pin **C**.
→Fig 5

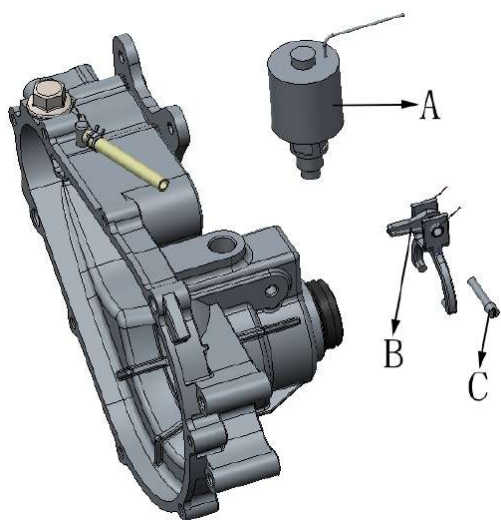


Fig 5

6. Remove the Clip **A** and Bearing 206 **B**.
→Fig 6

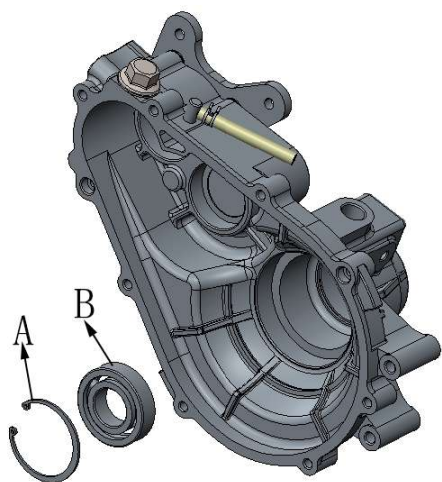


Fig 6

7. Remove the Shift Return Spring **A** and the Shift Lever **B** and Shift Lever Spring **C** and Shift Bar **D** and Shift Yoke **E**.

→Fig 7

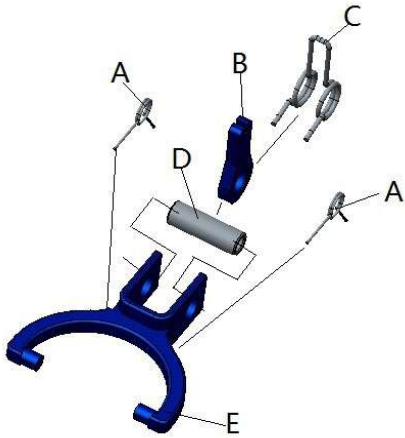


Fig 7

8. Remove the Bearing 6210 **A** and Bearing 110 **E**. Then, remove eight Bolts **D**, remove Output Gear **B** from Diff Assembly **C**.

→Fig 8

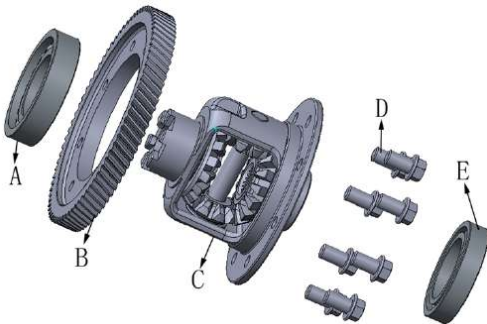


Fig 8

9. Remove the Diff Roll Pin **A**. Then, remove the Diff Cross Pin **B**.

→Fig 9

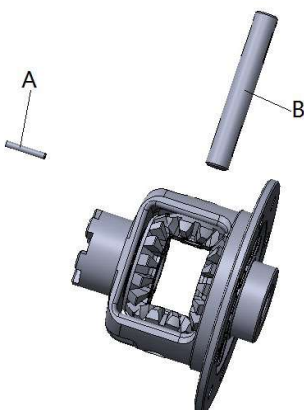


Fig 9

10. First turn Diff Pinion Mate Gear **B** 90 ° and then remove Pinion Mate Thrust-Washer **A** and Diff Pinion Mate Gear **B** and Side Gear Thrust-Washer **C** and Diff Side Gear **D** and Diff Case **E**.

→Fig 10

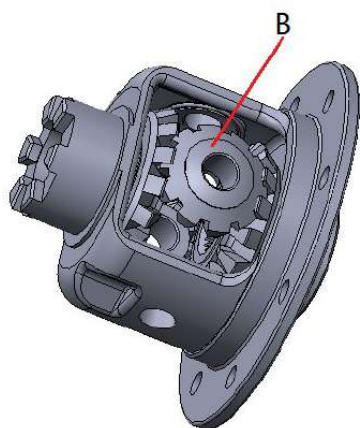
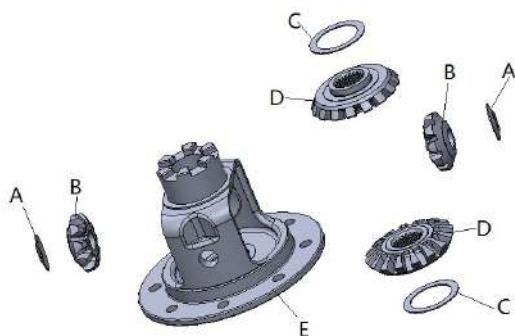


Fig 10



4.16 REAR GEAR CASE ASSEMBLY

1. Mount Pinion Mate Thrust-Washer **A** and Diff Pinion Mate Gear **B** and Side Gear Thrust-Washer **C** and Diff Side Gear **D** and Diff Case **E** as shown, then turn Diff Pinion Mate Gear **B** 90 °.

→Fig 11

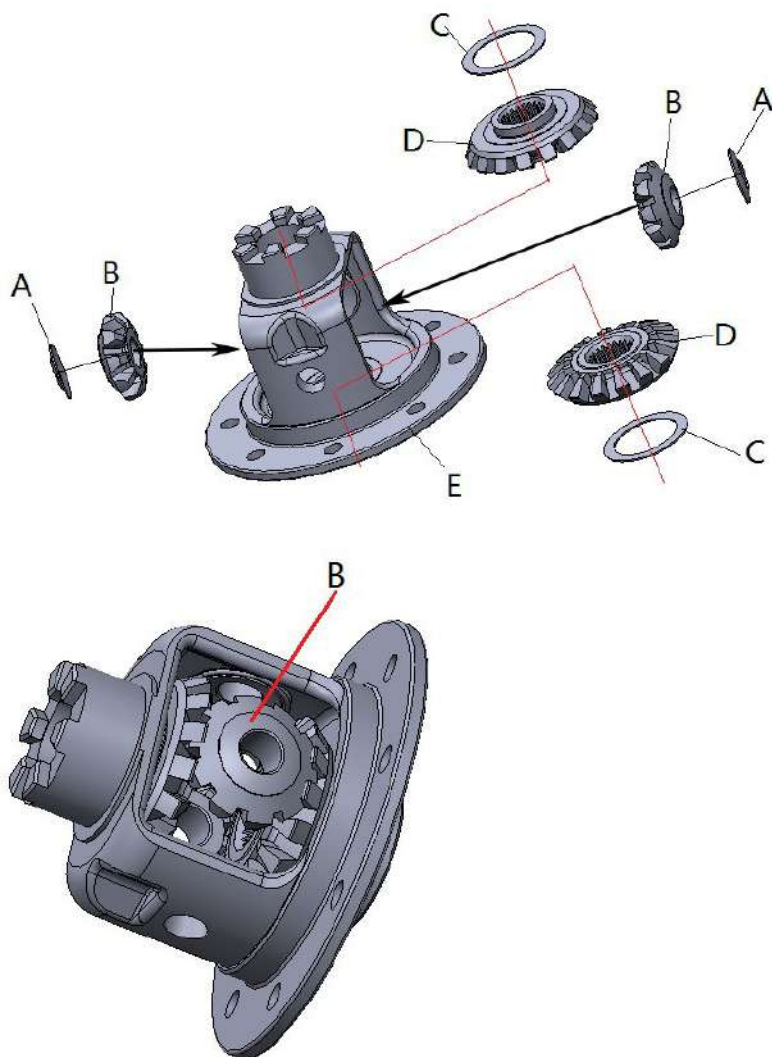


Fig 11

2. Mount the Diff Cross Pin **B**. Then, mount the Diff Roll Pin **A**.

→Fig 12

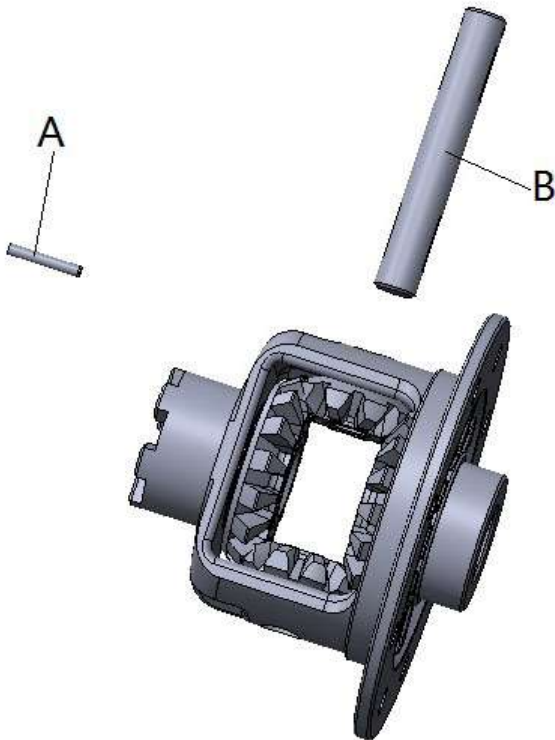


Fig 12

3. Mount Output Gear **B** to Diff Assembly **C**, mount eight Bolts **D**. Then, mount the Bearing 6210 **A** and Bearing 110 **E**.

PS: Apply Loctite 271 evenly on the eight Bolts **D** screw thread. Tighten the eight Bolts to a torque of 90~100Nm

→Fig 13

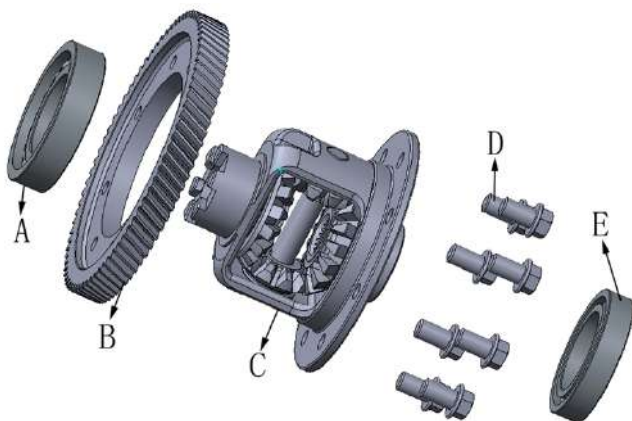


Fig 13

4. Mount the Shift Return Spring **A** and the Shift Lever **B** and Shift Lever Spring **C** and Shift Bar **D** and Shift Yoke **E** as shown.
→Fig 14.

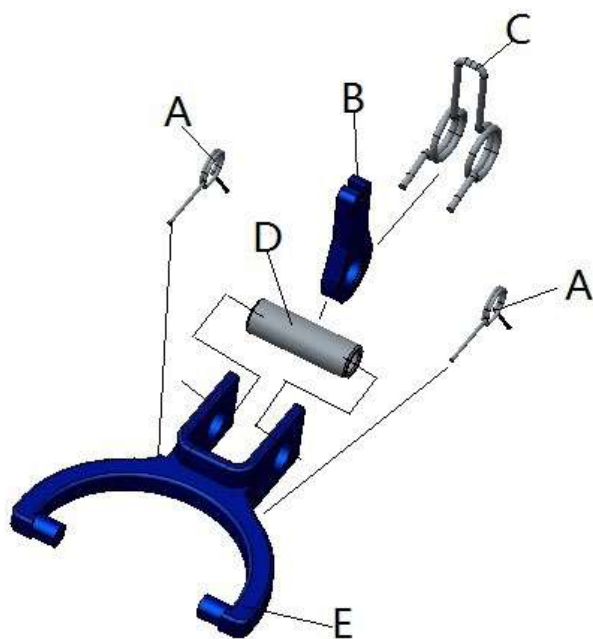


Fig 14

5. Mount the Clip **A** and Bearing 206 **B**.

→Fig 15

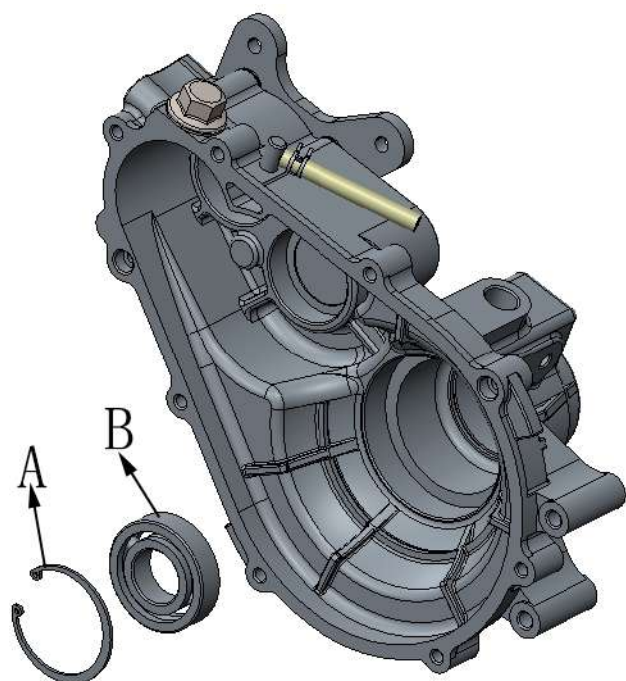


Fig 15

6. Mount the Diff Solenoid **A**, Shift Yoke Assembly **B**, Shift Pin **C**...

→Fig 16

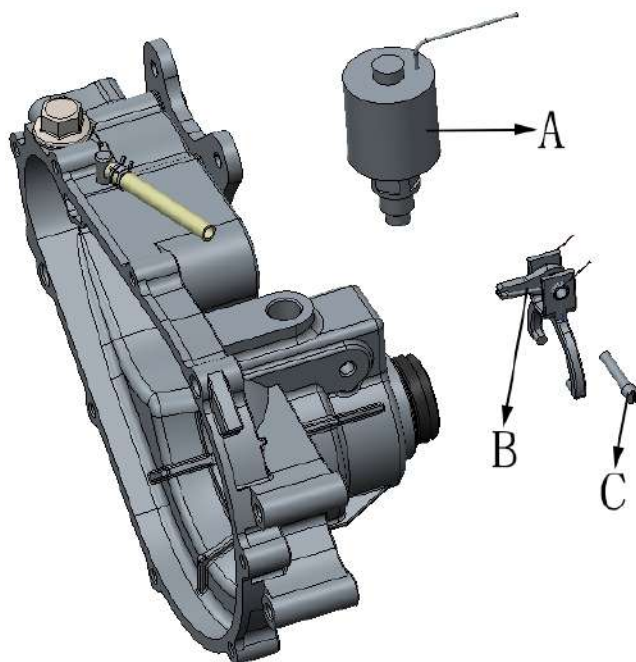


Fig 16

7. Mount two Bearing 6205 **A**, two Bearing 6304 **B**, Input Gear **C**, and Mid Gear Shaft **D**.

→Fig 17

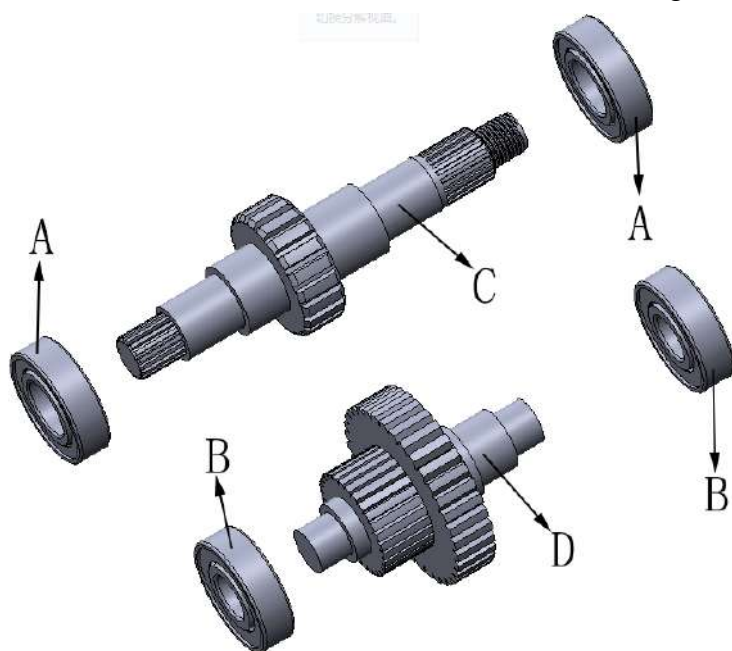


Fig 17

8. Mount the Input Gear **A** and Mid Gear Shaft **B** and Diff Case Assembly **C** and Clutch Gear **D** and Coupler **E** and Nut **F**.

→Fig 18

PS: Apply Loctite 271 evenly on the Bolt **F** screw thread. Tighten the Bolt to a torque of 80~90Nm

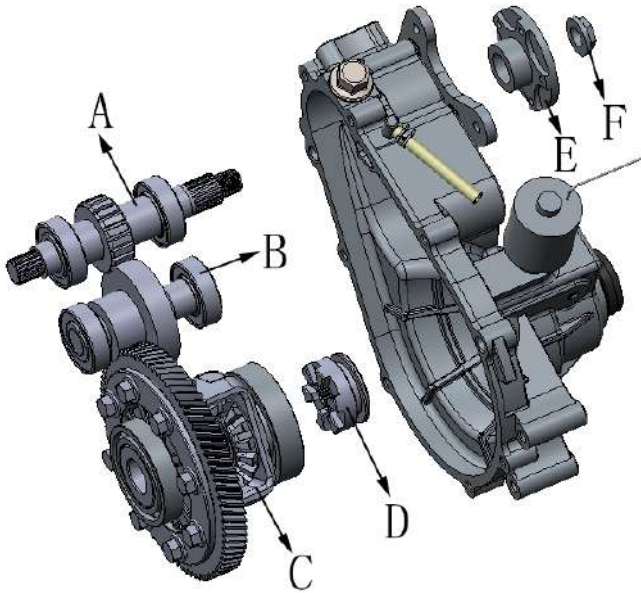


Fig 18

9. Mount the three Socket Head Bolts **A** and six Bolts **B** and Left Case **C**.

PS: Apply Loctite sealant 510 evenly on the surface of the seal.

→Fig 19

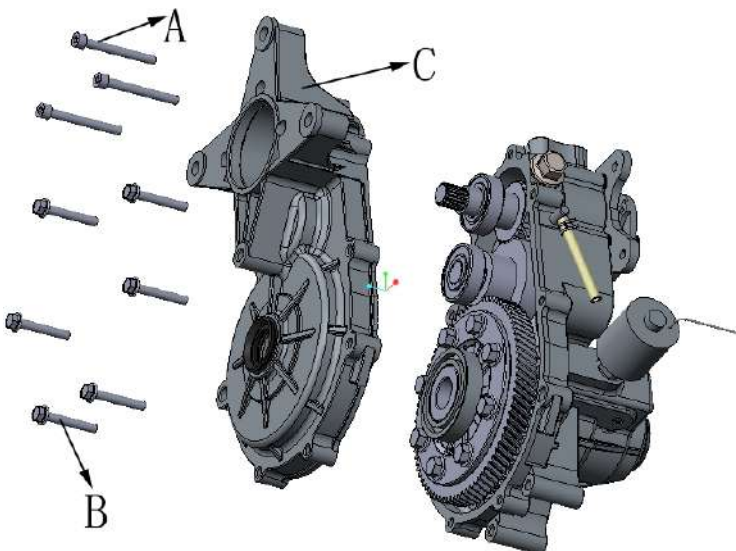


Fig 19

10. Mount the oil Drain Screw A and Washer B.

Add $825 \pm 25\text{mL}$ oil(85W/90GL-4) from C

→Fig 20

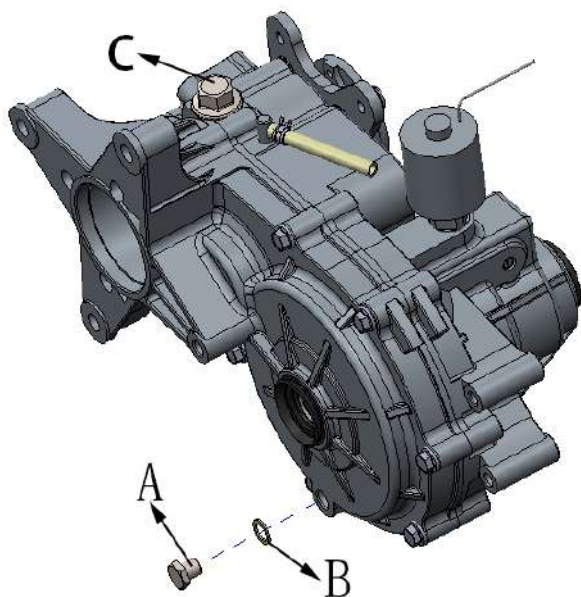


Fig 20

NOTES

[illegible]

CHAPTER 5 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.

5.1 SPECIFICATIONS

5.2 TORQUE

5.3 BRAKE SYSTEM SERVICE NOTES

5.4 BURNISHING PROCEDURE

5.5 BRAKE BLEEDING-FLUID CHANGE

5.6 PARKING BRAKE AND BRAKE LINE INSPECTION

5.7 PARKING BRAKE ADJUSTMENT

5.8 PARKING BRAKE REAR CALIPER REMOVAL/INSTALL

5.9 FRONT PAD INSPECTION / REMOVAL / REPLACEMENT

5.10 FRONT DISC INSPECTION / REMOVAL / REPLACEMENT

5.11 FRONT CALIPER REMOVAL/ INSPECTION / INSTALLATION

5.12 REAR BRAKE PAD REMOVAL/ INSPECTION / INSTALLATION

5.13 REAR CALIPER REMOVAL/ INSPECTION/ INSTALLATION

5.14 REAR BRAKE DISC INSPECTION / REMOVAL / REPLACEMENT

5.1 SPECIFICATIONS

Front Brake Caliper		
Item	Standard	Service Limit
Brake Pad Friction material Thickness	0.157"/ 4mm	0.04"/ 1mm
Brake 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	0.04"/ 1mm
	Hydraulic with mechanics park	
	mechanics park	
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

5.2 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
Park Brake Mounting Bolts	35	47
Banjo Bolt	15.0	21

5.3 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.

5.4 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.

5.5 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 all 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

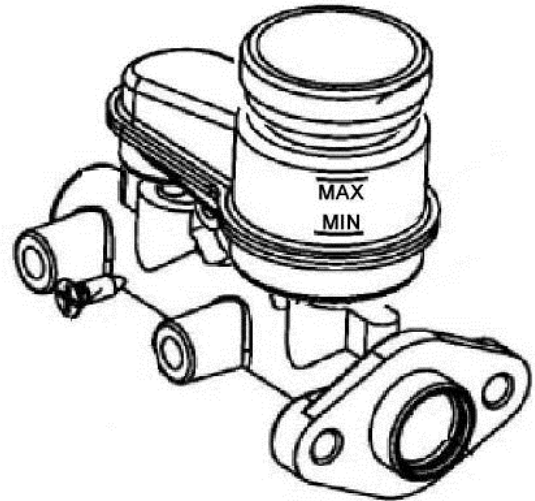
calipers.

11. Add brake fluid to MAX level inside reservoir.

Master Cylinder Fluid Level

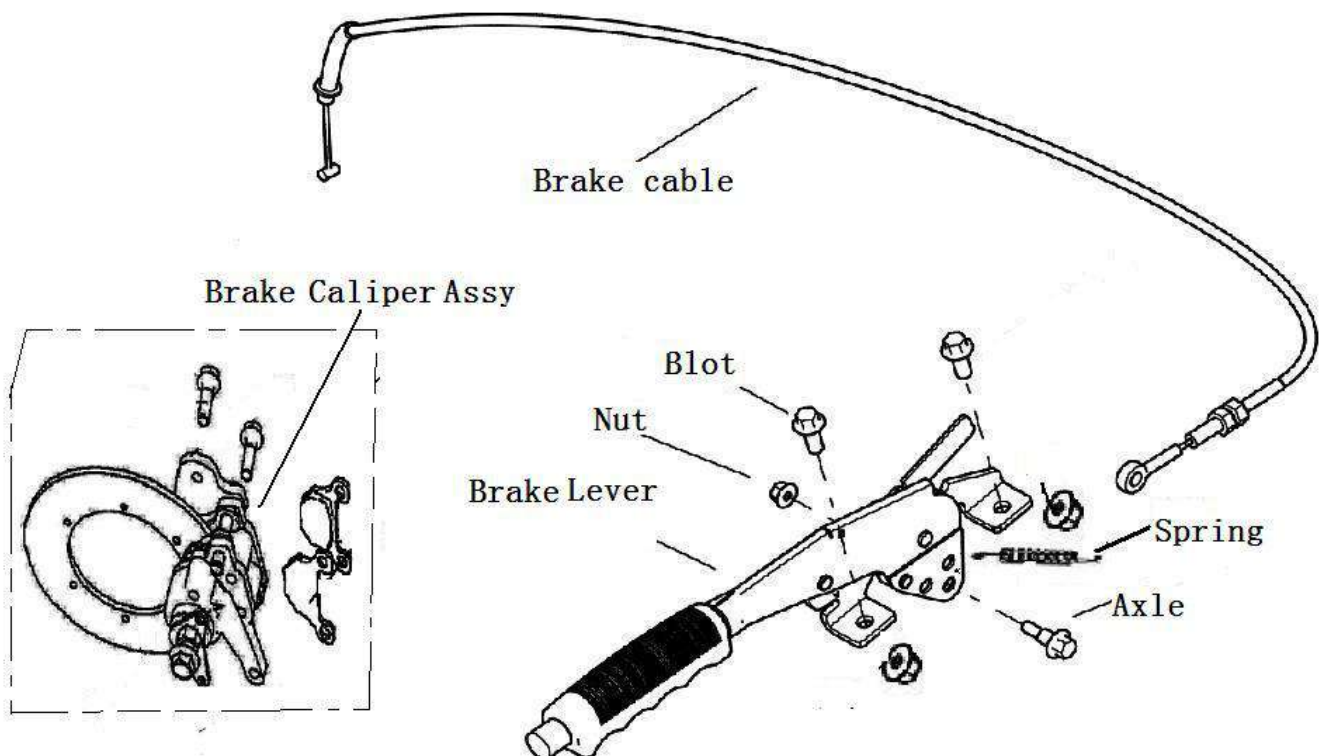
Between the MIN line and the MAX line of reservoir.

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 wear or abrasion is found.



5.6 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.



5.7 PARKING BRAKE ADJUSTMENT

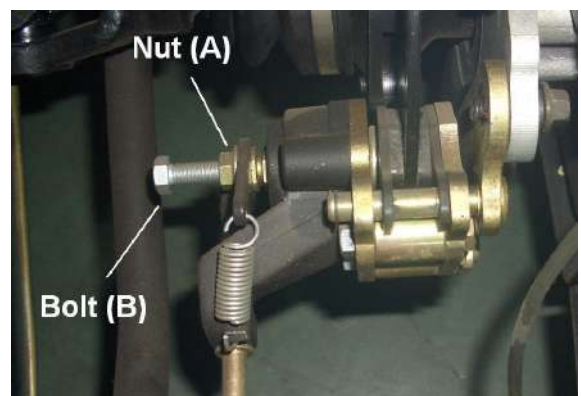
Parking Brake Inspection

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 rotate.
5. Back the adjustment bolt (B) out 1/4 turn.
6. Tighten the jam nut (A) while holding the adjustment nut (B) in place.



5.8 PARKING BRAKE REAR CALIPER REMOVAL / INSTALL

Park Brake Caliper Disassembly / Pad Inspection

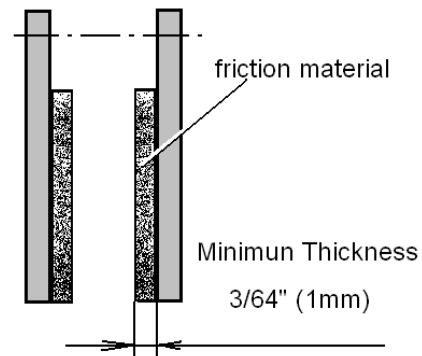
NOTE: Do not get oil, grease, or fluid on the park brake pads. Damage to the pads may cause the pads to function improperly.

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 35ft.lbs. (47 Nm).
3. Test the park brake for proper function.



5.9 FRONT PAD REMOVAL / INSPECTION / INSTALLATION

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

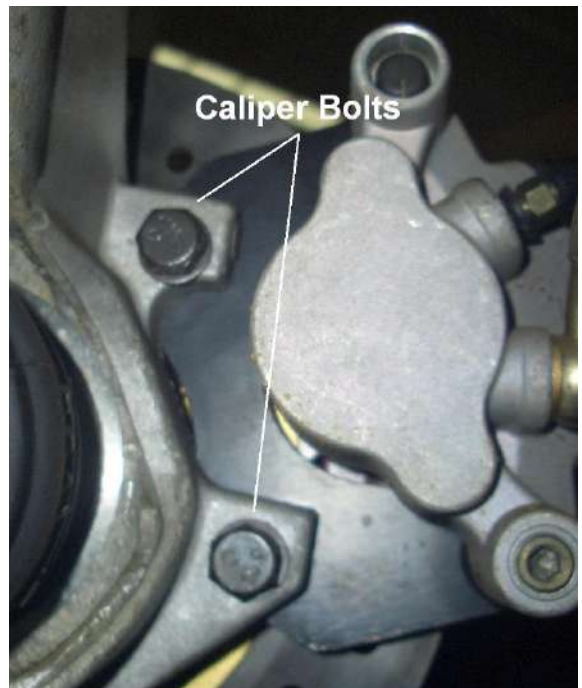
1. Elevate and support front of CUV safely.

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

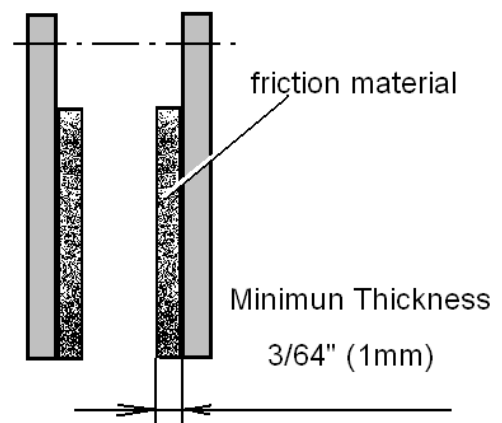
Torque 18 ft. lbs. (25 Nm)

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.



5.10 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)

5.11 FRONT CALIPER REMOVAL/ INSPECTION / INSTALLATION

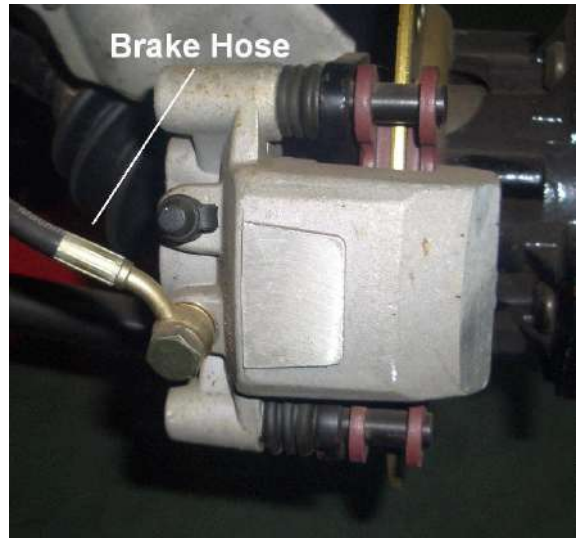
CAUTION:

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.

5.12 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.

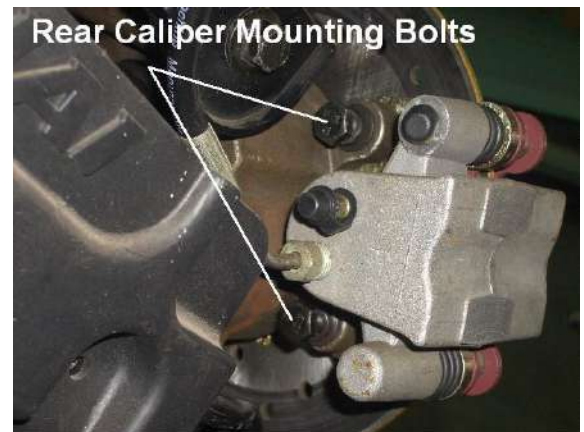
2. Remove the rear wheel.
3. Remove the two caliper bolts and lift caliper off of disc.

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.

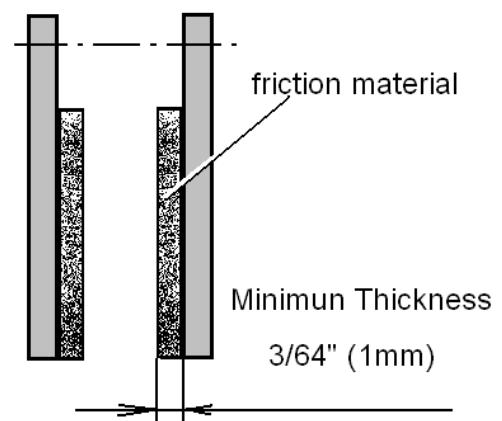
5. Remove the brake pads.
6. Clean the caliper with brake cleaner or alcohol.



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.

5.13 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.

5.14 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

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CHAPTER 6 ELECTRICAL

- 6.1 PARTS INSPECTION AND SERVICE
- 6.2 BATTERY
- 6.3 Vehicle travel system
- 6.4 CHARGING SYSTEM
- 6.5 LIGHTING SYSTEM
- 6.6 SPEEDOMETER SYSTEM
- 6.7 MAIN SWITCH AND HANDLE SWITCH
- 6.8 WIRING DIAGRAM

6.1 PARTS INSPECTION AND SERVICE

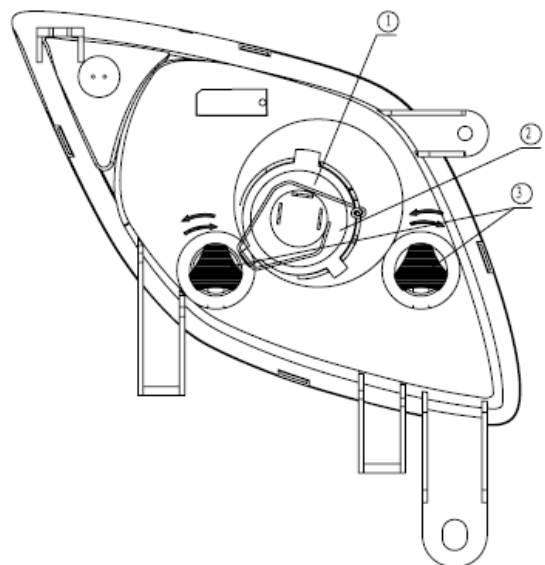
A HEADLIGHT ADJUSTMENT

1. Use bulb 12V 35W/35W.
2. Pull the cable plug off the conducting strip in the socket, remove the clip① 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.

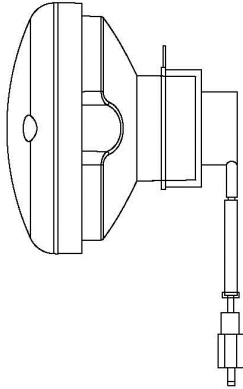
HEADLIGHT ADJUSTMENT

1. The headlight beam can be adjusted vertically (all models) and horizontally (except the light on handlebar).
2. Place the vehicle on a level surface with the headlight approximately 25'(7.6m) 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 2' (51mm) 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 ③ clockwise is to lower the beam. To turn the two adjusting screws ③ counterclockwise is to heighten the beam.



TAILLIGHT / BRAKELIGHT LAMP REPLACEMENT



1. Remove the cover.
2. Turn the plug and remove it from the socket.
3. Fit the plug in the socket and reassemble the cover.

6.2 BATTERY

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

External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

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

WARNING: The gases given off by a battery are explosive. Any spark or open flame near a battery can cause an explosion which will spray battery acid on anyone close to it. If battery acid gets on anyone, wash the affected area with large quantities of cool water and seek immediate medical attention.

BATTERY INSTALLATION

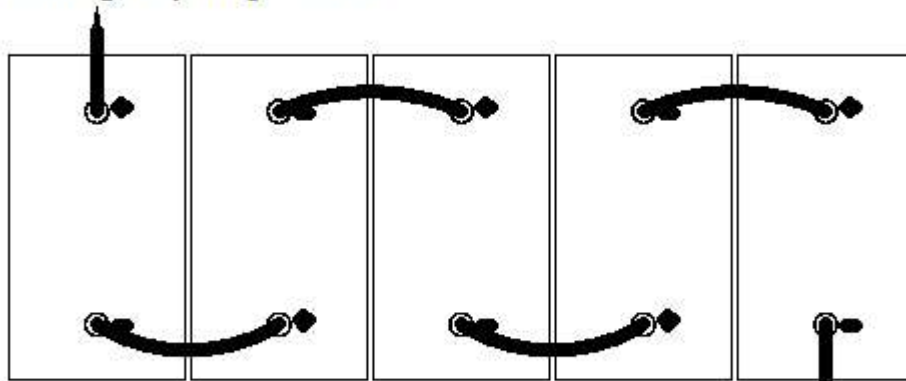
NOTE: Tighten the cable terminal. Poor contact of battery terminal may result in burnout of terminal.

NOTE: Reinstall battery, attaching positive (+) (red) cable first and then the negative (-) (black) cable.

NOTE: Lead acid batteries should be kept at or near a full charge as possible.

Schematic diagram of battery pack connection

TO emergency stop switch



To motorcontroller B(-)

6.3 Vehicle travel system

Procedure

Check:

- | | |
|----------------------------|-----------------------|
| 1. Fuse (Main) | 7. Motor |
| 2. Battery | 8. Main switch |
| 3. DC-DC Voltage Converter | 9. accelerator |
| 4. Charger | 10. DC contactor |
| 5. Emergency stop switch | 11. Wiring connection |
| 6. Motor controller | |

1. Fuse → NO CONTINUITY → Replace the fuse.

↓ CONTINUITY

2. Battery

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

Refer to "BATTERY INSPECTION"

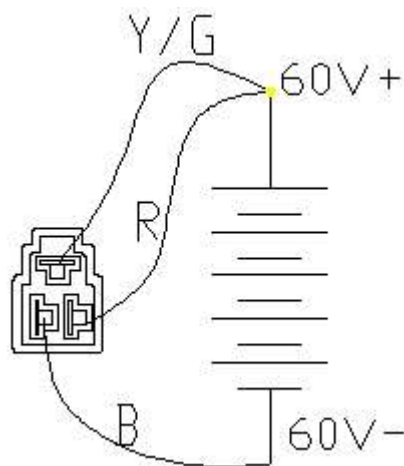
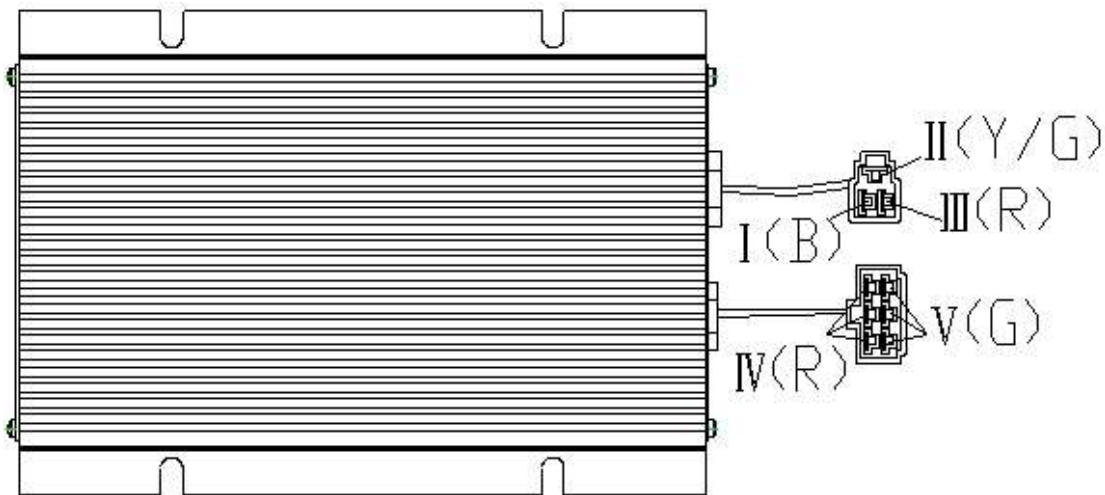
↓ CORRECT

3. DC-DC Voltage Converter

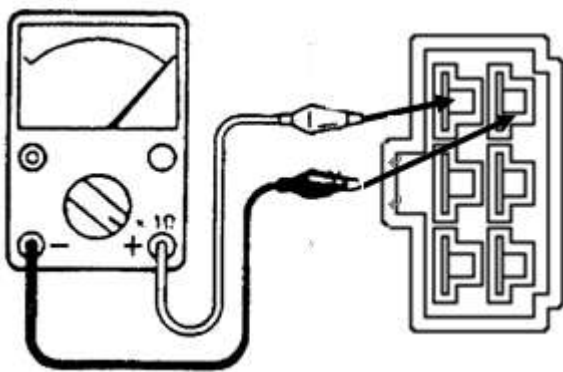
Check the "DC-DC Voltage Converter" → OUT OF SPECIFICATION

replace the "DC-DC Voltage Converter".

Refer to "DC-DC Voltage Converter INSPECTION"



Connect the three-hole plug-in to the 60V power supply as shown in the figure above , there is a 12 V-13.8V voltage between IV terminal and V terminal(Measuring with a multimeter)。

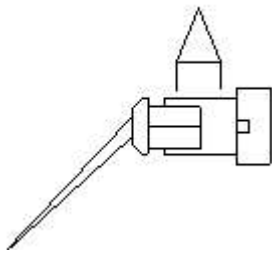


↓ CORRECT

4、Charger

- Check the charger → Confirm the Charger Charging Lock Terminal A and Main Cable Connection Reliable (note : Poor contact will result in no response of vehicles to

acceleration signals)。

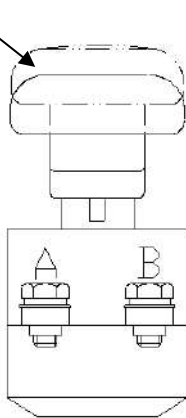


Refer to "Charger INSPECTION"
 CORRECT

5、Emergency stop switch

Normal working state

State of emergency

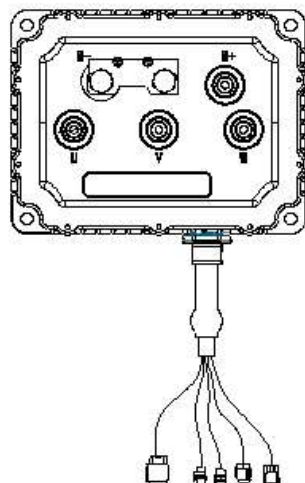


note: When a vehicle is in danger, the user should press the emergency stop switch at the first time. The vehicle will not be able to drive or charge after pressing the emergency stop switch

When the emergency stop switch is in normal working state, the terminals A and B are connected。

CORRECT

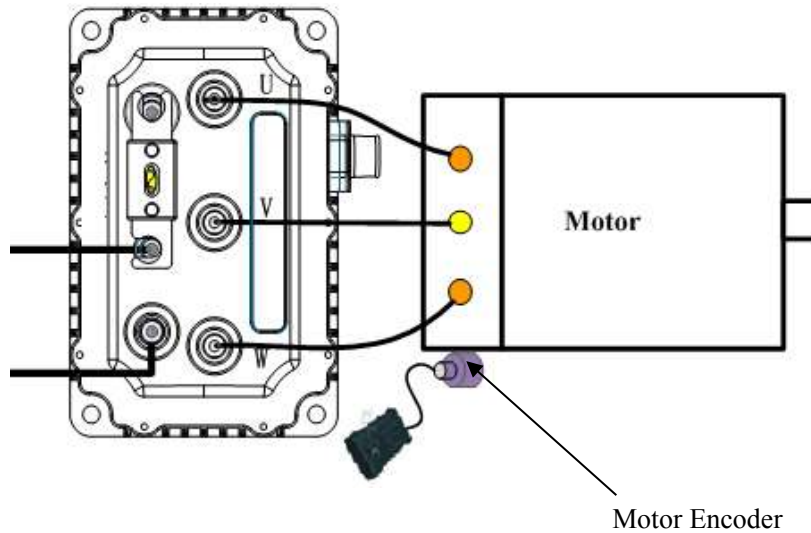
6. Motor controller



6.1 MOTOR Controller alarm

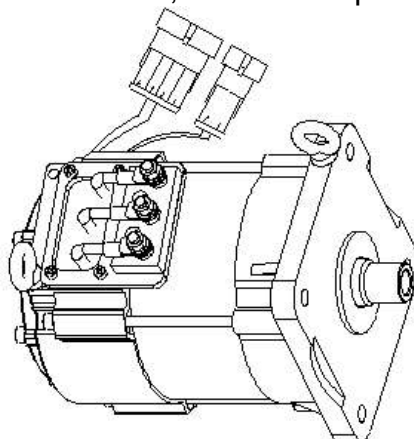
MOTOR Controller alarm code			
No	Alarm mode	Alarm meaning	Reasons for failure and treatment methods
1	Motor Controller Keep on ringing	accelerator pedal fault	1、The accelerator has an acceleration signal when Main switch is turned on。 ——→Check whether the accelerator pedal is stuck 2、Poor contact with main cable connector ——→Check whether the accelerator connector is firmly connected and whether the terminal of the connector is damaged. 3、 replace the accelerator
2	sounds one long and two short	Motor not started	Turn off the Main switch then turn on
3	sounds one long and three short	Overcurrent	1、Short circuit of motor cable ——→ Inspection of motor cables and terminals 2 、 motor encoder——→ Check whether the encoder wiring is correct
4	sounds one long and four short	Motor Controller Overheating	Turn off the Main switch , Cooling Controller.
5	sounds one long and five short	The relay in the controller does not suck	1 、 Check whether the cable on the controller terminal is —reliable Fastening connection post 2 、 Controller failure Replacement of Controller
6	sounds one long and six short	Current Detection Fault in Controller	Replacement of Controller
7	sounds one long and seven short	Signal error of motor encoder	Replacement of motor encoder
8	sounds one long and nine short	Undervoltage of battery pack	1、 Check battery pack voltage 2 、 Check whether the charger is invalid
9	sounds one long and ten short	Overvoltage of battery pack	Check battery pack voltage
10	sounds one long and eleven short	Motor overheating	Turn off the Main switch , Cooling motor.
11	sounds one long and thirteen short	Accelerator Voltage Output Abnormality	Replacement of Accelerator

6.2 Check whether the three-phase wiring between motor and controller is reliable. Poor contact can cause damage to the controller.


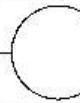
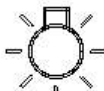






7、Motor check

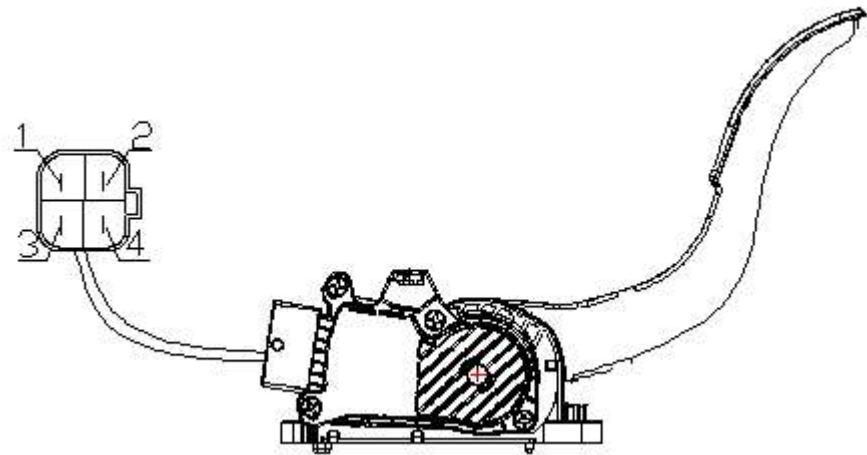
Connections with the controller are normal, and when you tap the accelerator, you find that the car doesn't move, or it jitters at a very slow speed. **→** The motor encoder is normal, but the motor phase sequence is not correct. It needs to change the U V or V W phases of the motor **→** . Or motor encoder abnormality, such as encoder power supply abnormality, disconnection, poor terminal contact, terminal sequence error, encoder damage.



8.Main switch check

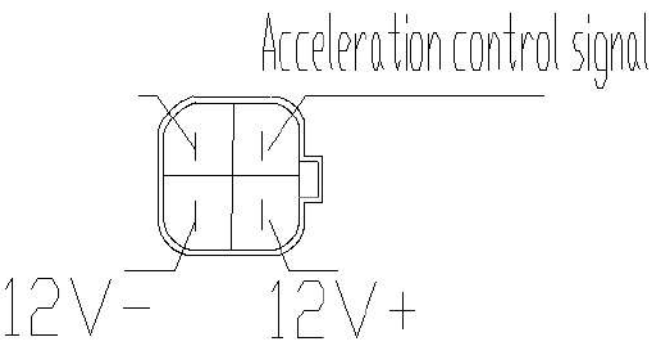
	Power	BAT	LIGHT	IG
OFF				
ON				
				

9. accelerator

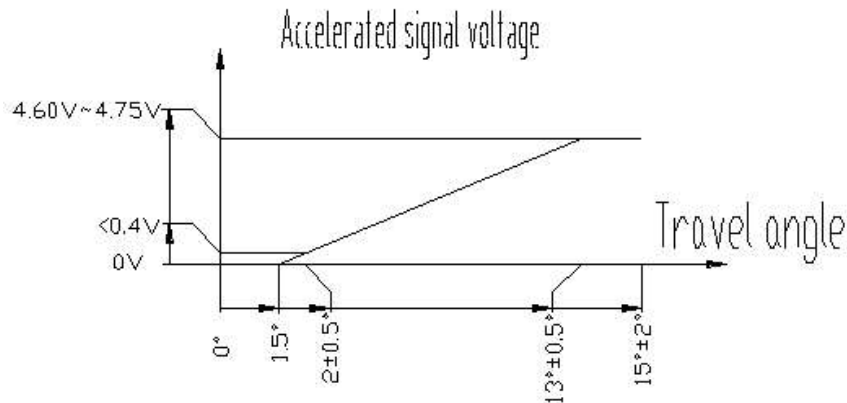


- 1、 Accelerator switching signal 2、 Acceleration control signal
- 3、 Accelerator power supply negative pole 4、 Accelerator power supply positive pole

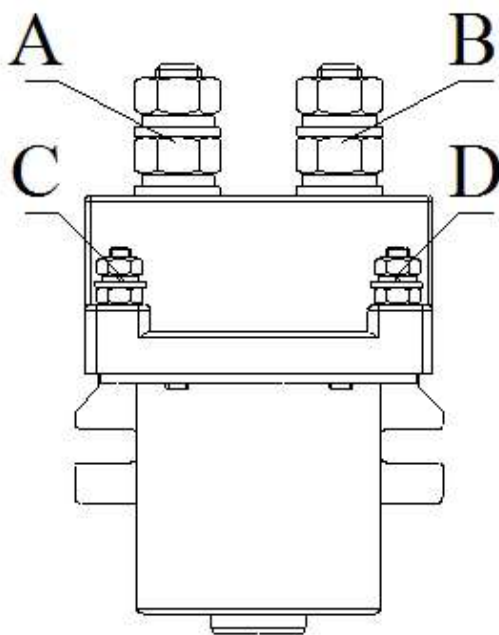
Inspection methods and procedures



Connect the terminal 3 of the accelerator to the terminal 4 with 12 V DC power supply according to the figure above, press the pedal to the termination position lightly, and check the voltage value of terminal 2 and 3 with the multimeter. It fits the figure below.



10. DC contactor

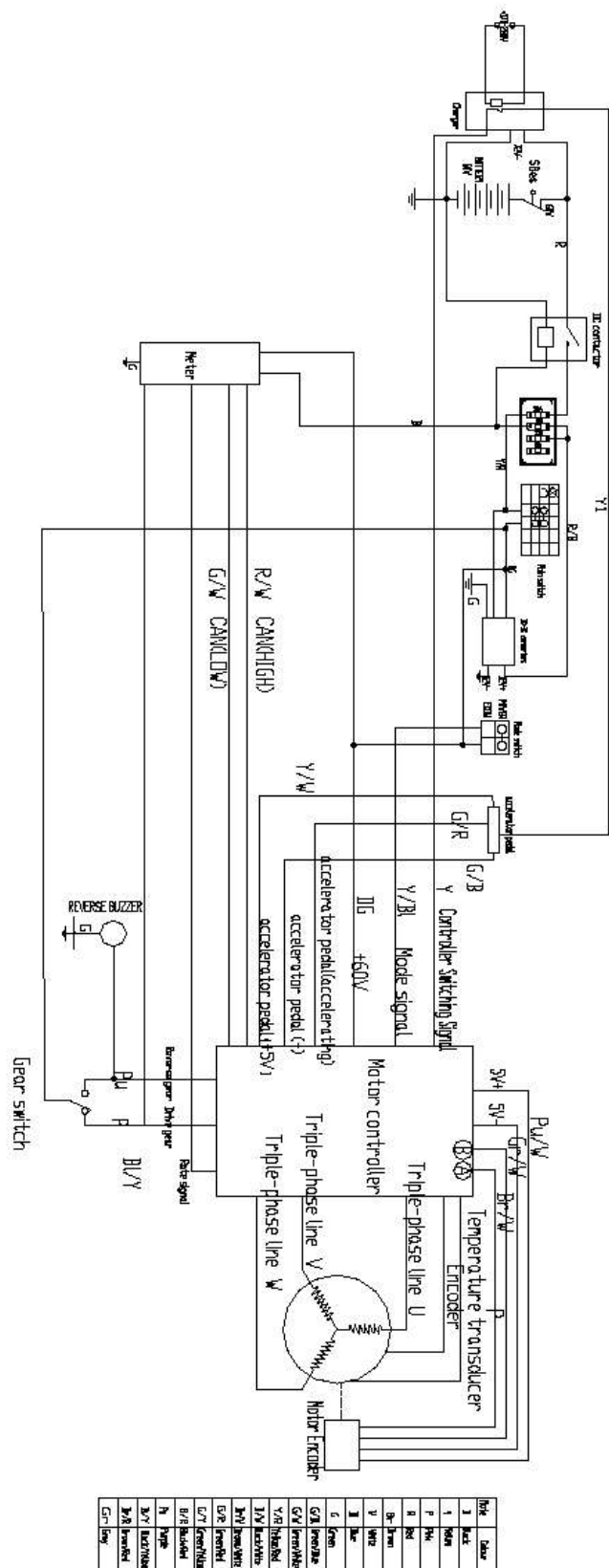


The DC contactor terminal C and terminal D connected with 12V(DC) voltage, then A and B terminals are interconnection(Measuring with a multimeter)。

11.Wiring connection

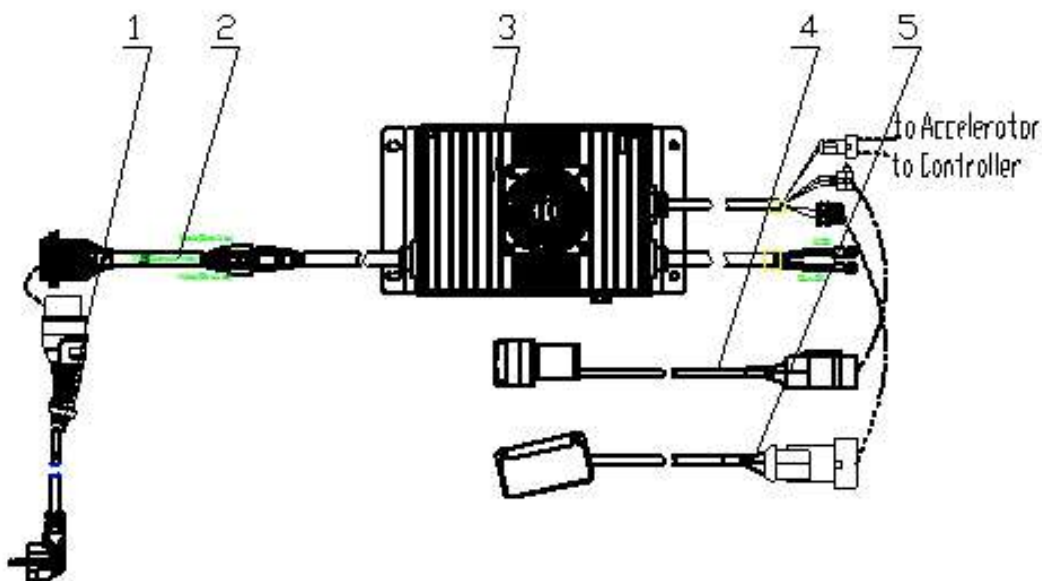
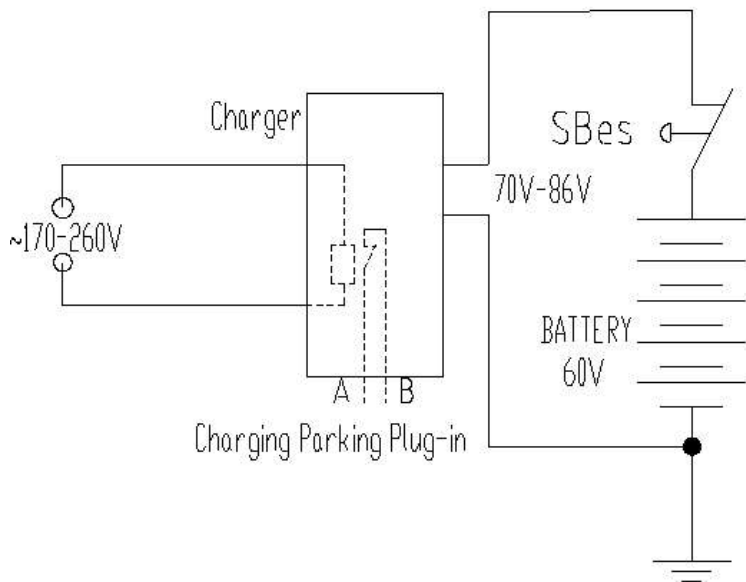
Check the connection of the entire system \longrightarrow POOR CONNECTIONS
 \longrightarrow correct

Travel system CIRCUIT DIAGRAM



6.4 CHARGING SYSTEM

CHARGING SYSTEM CIRCUIT DIAGRAM



Connecting positive and negative poles of battery pack (Red Wire Connecting Positive Pole)

- 1、 **Charging interface:**
- 2、 **Charger socket**
- 3、 **Charger body**
- 4、 **Charging display lamp:**
- 5、 **Battery temperature sensor**

When the charger is connected to 220V AC power supply, the voltage at both ends of the battery pack increases by 5-25V.

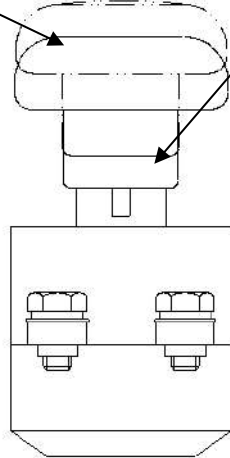
Inspection methods and procedures

1、Emergency stop switch

Confident that the emergency stop switch is in normal working state, If not, pull out the switch button.

Normal working state

State of emergency



2.Wiring connection

Check the connection of the changing system, Refer to “CIRCUIT DIAGRAM”.

3. Charging display lamp



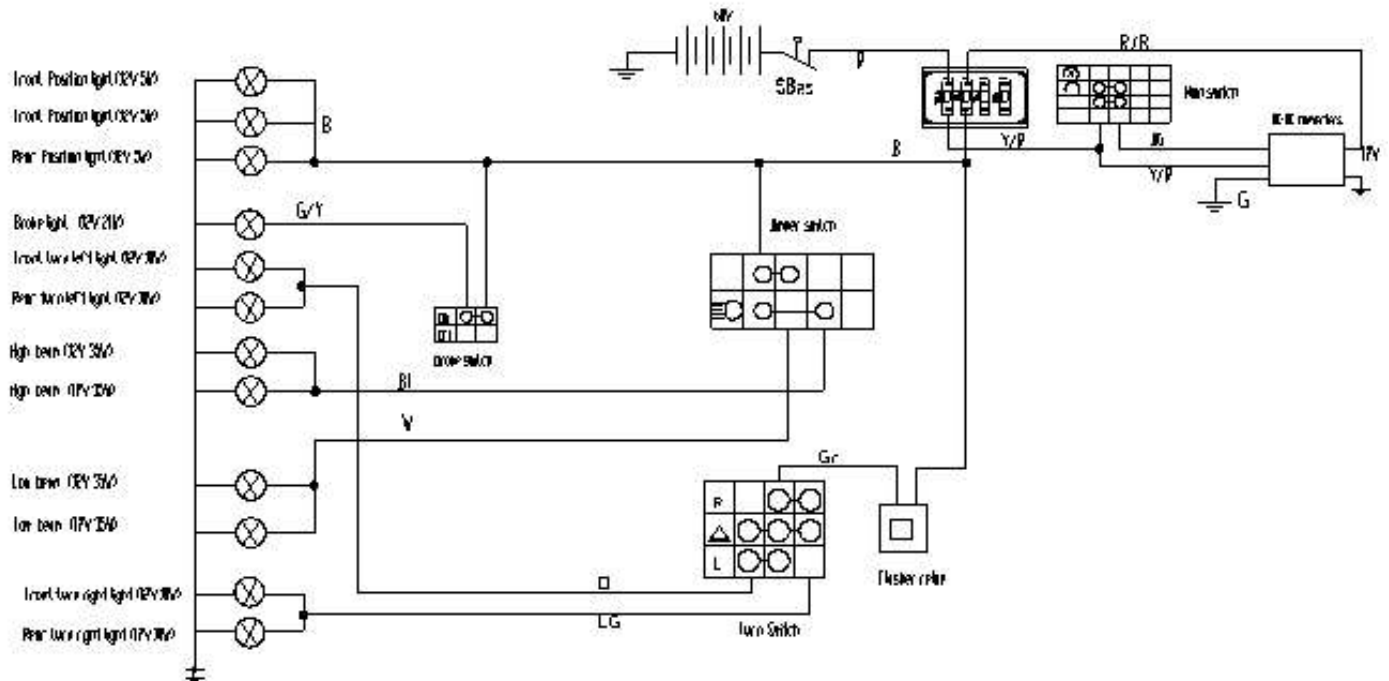
Charging capacity < 80% flashing interval of red light 1 s

Charging capacity > 80% yellow light flashing interval 1 s

Charge = 100% green light always on

When the battery pack is under-charged, if the green light is on for half an hour after charging, charging failure or battery damage may occur.

6.5 LIGHTING SYSTEM



1. Fuse (Main)
2. Battery
3. Main switch
4. Lights switch
5. DC-DC converters
6. Wiring connection (entire lighting system)

1. Fuse → NO CONTINUITY → Replace the fuse.
 ↓ CONTINUITY

2. Battery

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

Refer to "BATTERY INSPECTION"

↓ CORRECT

3. Main switch

CHECK SWITCHES → NO CONTINUITY → Replace
 ↓ CONTINUITY

4. Lights switch

CHECK SWITCHES → NO CONTINUITY → Replace
 ↓ CONTINUITY

5. DC-DC Voltage Converter

Check the "DC-DC Voltage Converter" → OUT OF SPECIFICATION

replace the “ DC-DC Voltage Converter”。

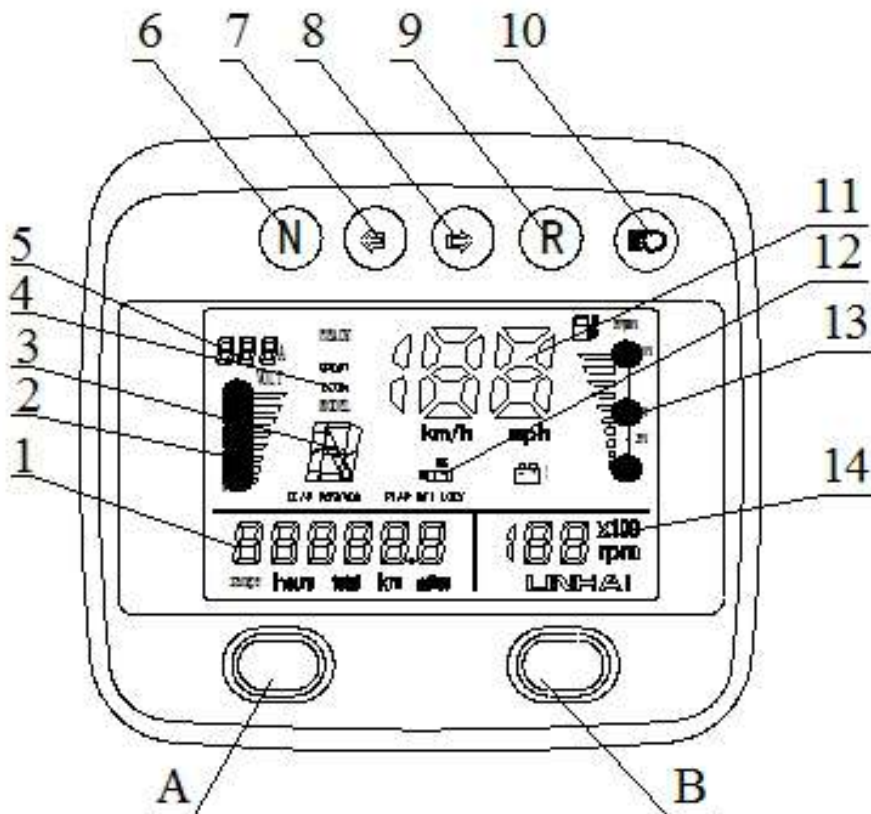
➔ Refer to " DC-DC Voltage Converter INSPECTION"

6. Wiring connection (entire lighting system)

Check the connection of the entire lighting system ➔ POOR CONNECTIONS

➔ correct

6.6 LCD Meter



1. Engine working hour counter
and The odometer

2. Voltmeter

3. gear position Indication

4. Mode indication

5. Ammeter

6. Neutral indicator light

A: km/ mile selector

B: hour / distance selector

7. Turn indicator light (L)

8. Turn indicator light(R)

9. Reverse indicator light

10. High beam indicator light



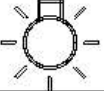




11. Speedometer

12. Overheat warning lamp

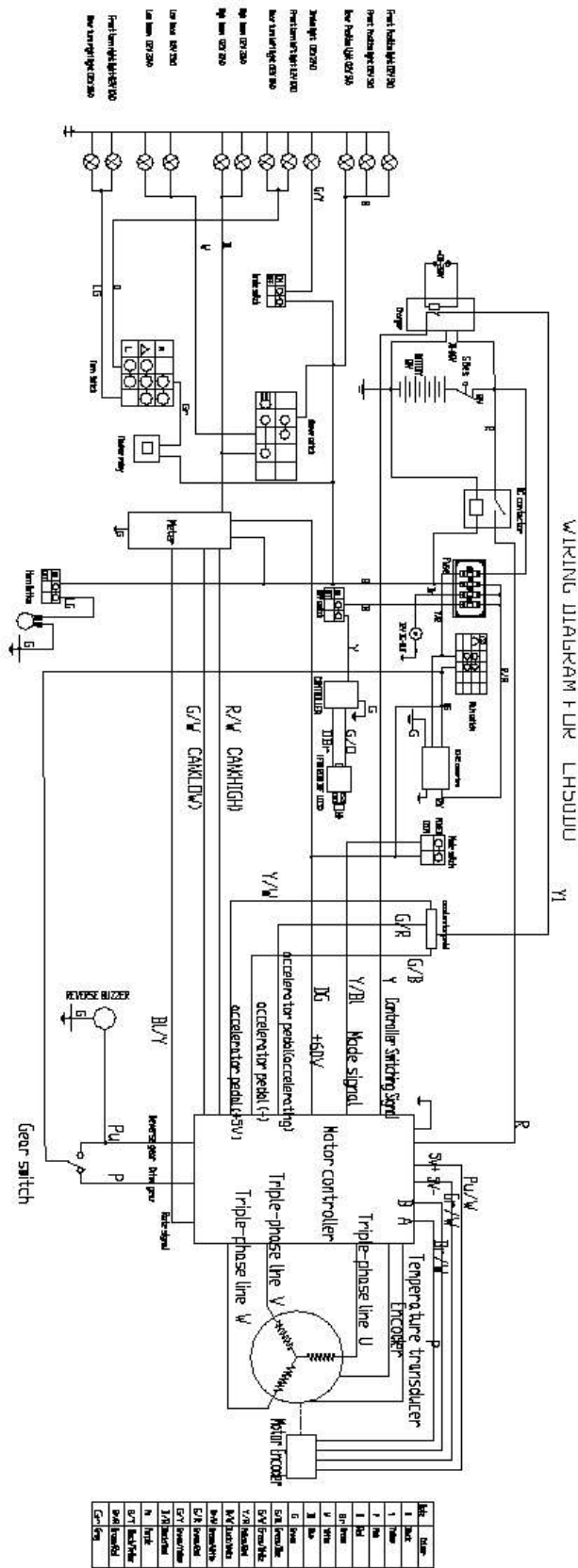
13. Coulomb meter

14. Motor rpm meter

6.7 MAIN SWITCH

	Power	BAT	LIGHT	IG
OFF				
ON				
				

6.8 WIRING DIAGR



NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.