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 ATV model for spare parts information and service.

2.1 PERIODIC MAINTENANCE

GENARAL
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

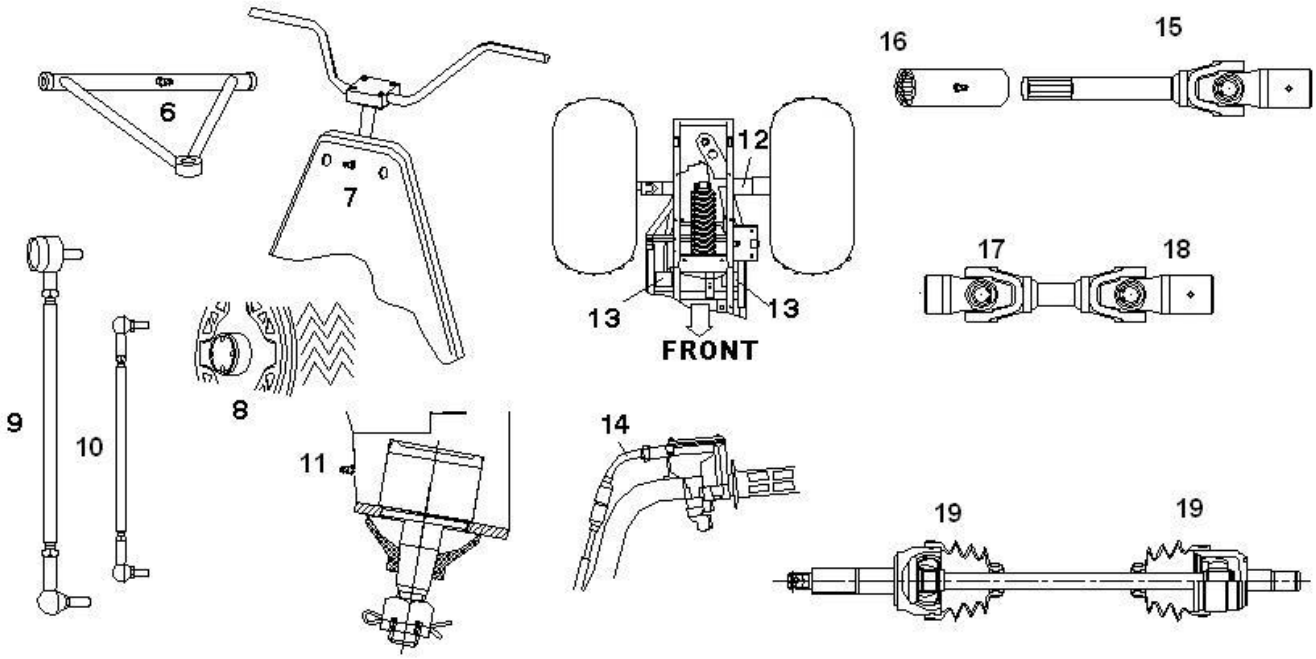
	Item	Hours	When	Remarks
	Service (Main) Brake System	/	Pre-ride	I
	Auxiliary (Secondary) Brake	/	Pre-ride	I
	Parking Brake	/	Pre-ride	I
	Tires	/	Pre-ride	I
	Wheels	/	Pre-ride	I
	Frame nuts, bolts fasteners	/	Pre-ride	I
▲	Air Filter-Pre-Cleaner	/	Daily	I C
	Coolant/Level	/	Daily	I
	Coolant	150	Annually	R
	Coolant strength	25 hrs	3 months	I Inspect strength seasonally
▲	Air Box Sediment Tube	/	Daily	D
	Headlamp Inspection	/	Daily	C apply dielectric grease to connector when

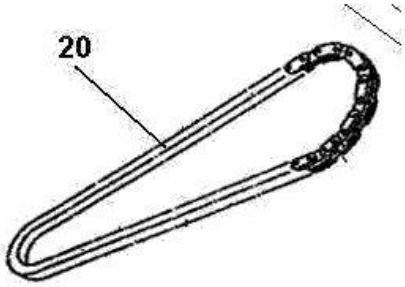
				replaced
	Tail lamp inspection	/	Daily	C apply dielectric grease to socket when replaced
▲	Air Filter-Main Element	2	Weekly	I C Replace if necessary
▲	Transmission Oil Level	10	Monthly	I change annually
	Battery Terminals	10	Monthly	I C
	Battery fluid level	10	Monthly	I
DL	Brake pad wear	2	Weekly	I
▲	Gear case Oil	10	Monthly	C
		150	annually	R
	Engine Cylinder Head and Cylinder Base Fasteners	25	3 months	I (re-torque required at first service only)
▲	General Lubrication all fittings, pivots, cables, etc.	25	3 months	L
	Engine Oil-Level	/	Daily	I
	Engine Oil Change	30 hrs	3 months	R Break-in Service at 1 month. Change oil more often in cold weather use.
▲	Oil Filter	50 hrs	6 months	I C
▲	Engine breather hose	100 hrs	6 months	I
	Throttle Cable	/	Pre-ride	I
DL	Throttle Cable	50 hrs	6 months	A L (Grease M) R if necessary
	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
▲	Rear Axle (and Bearings)	50 hrs	6 months	I L
▲	Front Suspension	50 hrs	6 months	I L T if necessary
▲	Rear Suspension	50 hrs	6 months	I T if necessary
	Spark Plug	100 hrs	12 months	I

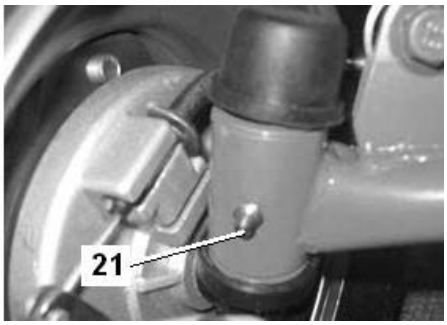
				R if necessary
DL	Ignition Timing	100 hrs	12 months	I Adjust as needed
DL	Fuel System	100 hrs	12 months	Check for leaks at tank, cap, lines, filter. Replace lines every 2 years.
DL	Fuel Filter	100 hrs	12 months	R
	Radiator	100 hrs	12 months	I R
	Cooling System hoses	50 hrs	6 months	I R if necessary
	Spark arrestor	10 hrs	monthly	C R if necessary
DL	Clutches (drive and Driven)	25 hrs	3 months	I R R if necessary
	Engine mounts	25 hrs	3 months	I T
DL	Valve clearance	100 hrs	12 months	I A
DL	Shift selector box (H/L/R/N)	200 hrs	24 months	Change grease every two years
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
▲ DL	Front drive chain (and sprockets) in transmission (only SDX300);	300 hrs (full time in 4X4), or 1000 hrs (in 2X4 alternate 4X4)		I, Replace if necessary
▲ DL	Ball joint (A arm- strut)	10 hrs	monthly	I, (for damage, wear, and play) R. Replace if necessary

LUBRICANT AND FLUID

	Item	Lube Rec	Method	Frequency
	1. Engine Oil	SAE 15W/40 SE	Add to proper level on dipstick(new engine 1400ml)	Check level daily
	2. Brake Fluid	DOT 3 Only	Maintain level Between fill lines. See "7.CONTROL"	As require; change every two years or 200 hours
	3. Transmission Oil	SEA 80W/90GL5	Add to proper level on dipstick(new transmission 900ml)	Change annually or at 100 hours
	4.Rear Gear case oil	SEA 80W/90GL5	Add to proper Level (new rear gear case 300ml)	Change annually or at 100 hours
	5. Front Gear case oil (SDX30-0)	SEA 80W/90GL5	Add to proper level (new front gear case 290ml)	Change annually or at 100 hours
▲	6. Front A-arm pivot Shaft	Grease	Locate fitting on pivot shaft and grease with grease gun	Every 3 months or 50 hours (Except Maintenance-Free A-arm pivot)
▲	7.Steering Post Bushings	Grease	Locate fitting on pivot shaft and grease with grease gun	Every 3 months or 50 hours
▲	8.Front Wheel bearings	Grease (high temperature resist)	Inspect and replace bearings if necessary	Semi-annually
	9.Tie rods	Grease	Locate fittings and grease	Semi-annually
	10.Shift Linkages	Grease	Locate fittings and grease	Semi-annually
▲	11.Ball joints	Inspect	Inspect and replace it if necessary	Semi-annually
▲	12.Rear Axle Bearing	Grease	Locate fittings and grease	Every 3 months or 50 hours
▲	13.Swing Arm Bearing	Grease	Locate fittings and grease	Monthly or 20 hours
▲	14.Throttle Cable	Grease M	Grease, inspect and replace it if necessary	Monthly or 20 hours
	15. Rear prop shaft U-joint	Grease	Locate fittings and grease	Every 3 months or 50 hours
	16. Rear prop shaft yoke	Grease	Locate fittings and grease	Every 3 months or 50 hours
	17. Front prop shaft U-joint (SDX300)	Grease	Locate fittings and grease	Every 3 months or 50 hours
	18. Front prop shaft yoke (SDX300)	Grease	Locate fittings and grease	Every 3 months or 50 hours
	19. Inner and outer CV-Joints (SDX300)	Grease M	Grease, inspect and replace it if necessary	Every 3 months or 50 hours
	21. A-arm pivot shaft	Grease	Locate fittings and grease	Every 3 months or 50 hours







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 FUEL SYSTEM

WARNING

Gasoline is extremely flammable and explosive under certain conditions.

Always stop the engine and refuel outdoors or in a well ventilated area.

⚠ Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.

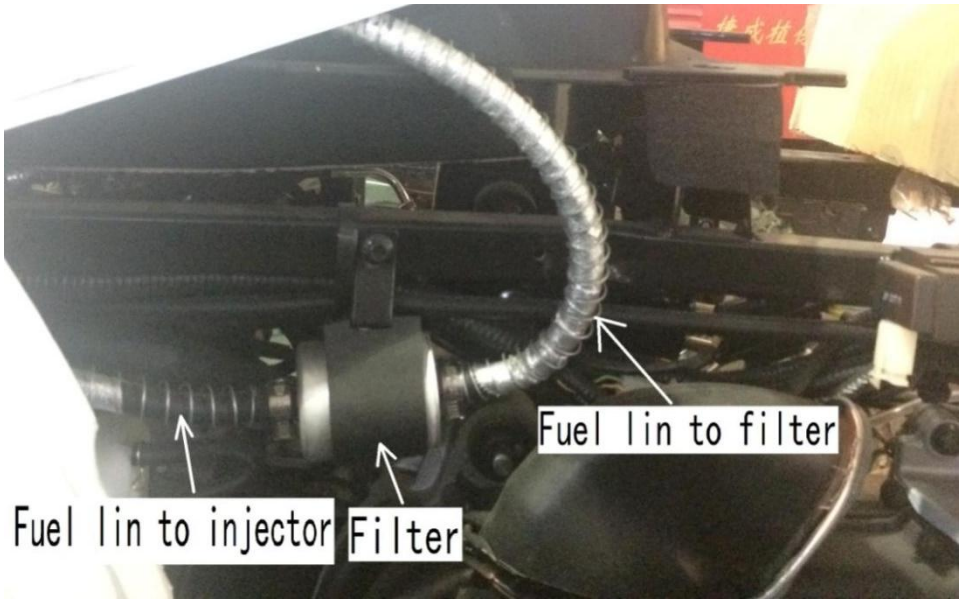
⚠ Do not overfill the tank. Do not fill the tank neck.

If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.

If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.

Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

⚠ er drain the float bowl when the engine is hot. Severe burns may result.



FUEL LINES

Check fuel lines for signs of wear, deterioration, damage or leakage. Replace if necessary.

Be sure fuel lines are routed properly and secured with cable ties.

CAUTION: Make sure lines are not kinked or pinched.

Replace all fuel lines every two years.

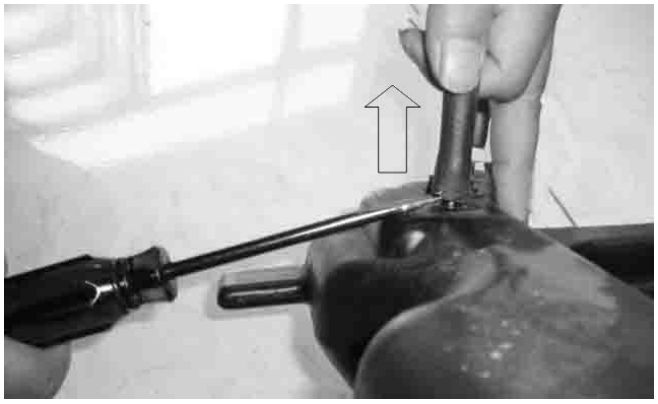
FUEL FILTER

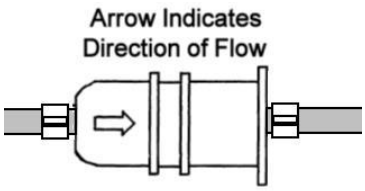
The fuel filter should be replaced in accordance with the Periodic Maintenance Chart or whenever sediment is visible in the filter.

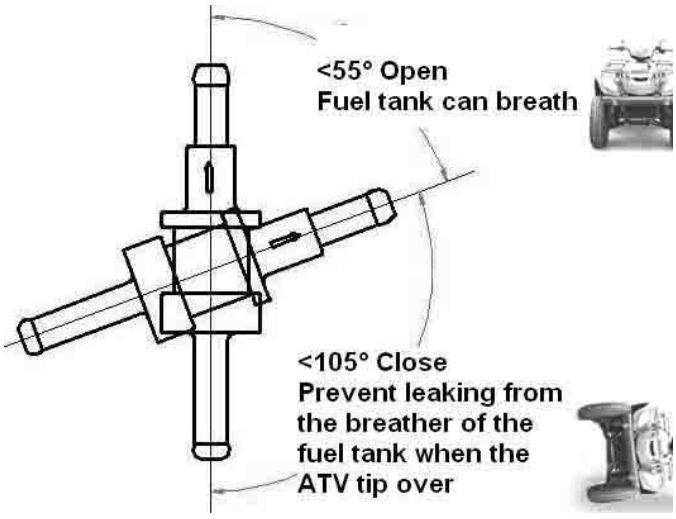
VENT LINES AND ROLL OVER VALVE*

1. Check fuel tank, oil tank, battery, and transmission vent lines for signs of wear, deterioration, damage or leakage. Replace every two years.
2. Be sure vent lines and drain lines are routed properly toward the ground and secured with cable ties. **CAUTION**: Make sure lines are not kinked or pinched

***NOTE. On some models, there is a Roll-Over Valve on the end of the gas tank vent line. Make sure the ↑ mark on the R-O Valve is upwards.**







Fuel Pump Module

Description and Working Principle

Fuel Pump Module supplies fuel to engine at system pressure. Fuel Pump Module is mounted to fuel tank at bottom and supplies fuel to engine through hoses.

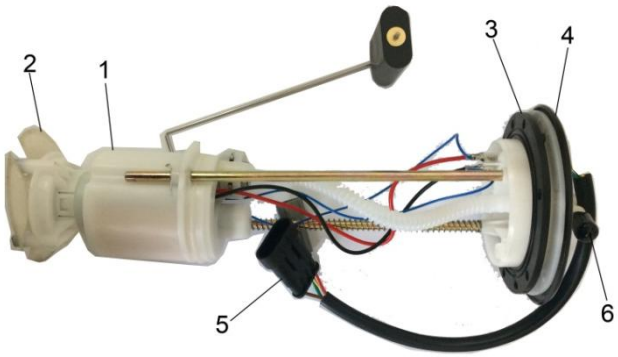
Fuel Pump module consists of Fuel Pump to generate the fuel flow and pressure regulator to regulate the fuel pressure.

Fuel Pump

When power is supplied to fuel pump, motor in pump assembly rotates the impeller.

Impeller in turn draws the fuel from strainer and pumps the flow to generate the system pressure.

Appearance & Components of Fuel Module



1. Fuel Pump
2. Strainer
3. Gasket, Fuel Module
4. Module Bracket
5. Module Harness
6. Fuel Tube (out pump)

Dimensions

Fuel Module Cover in elliptical shape with outer edge dimensions as 115mm x 65mm.

Identification and Markings

Fuel Module, Fuel Pump and Regulator are marked with batch code in Julian Date Code. On Fuel Module, batch code in mentioned on

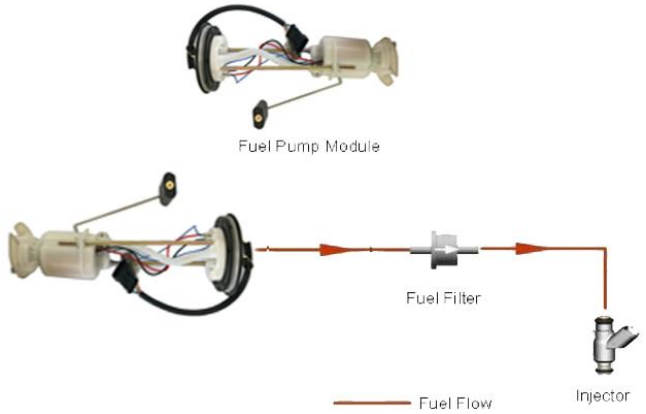
the label available on fuel module cover.
On Fuel Pump Batch code is engraved on pump body (shell).
On Fuel Pressure Regulator, batch code is engraved on regulator dome area.

Operating Conditions

□□Fuel Pump Module needs to be mounted on Fuel Tank Bottom according to the installation instructions.
□□Fuel Pump Module is intended to use with gasoline. However if the fuel contains ethanol, please contact vehicle manufacture to check whether the fuel pump module itself can survive or not.
□□Make sure there is at least 3 liters of gasoline in the fuel tank before priming for first time (do not run the pump dry)
□□Fuel Hose connections needs to be installed according to the fuel flow diagram shown Fuel Flow Description in vehicle fuel system

Service Procedure

Precautions:
Before attempting any service on fuel system, following cautions should be always



followed for personal safety and to avoid system damages.
□□Disconnect negative cable at battery.
□□DO NOT smoke, and place 'No SMOKING" sign near work area
□□Make sure to have fire extinguisher handy.
□□Make sure to perform work in well ventilated area and away from any open fire/flames.
□□Wear Safety glasses
□□To relieve fuel vapor pressure in fuel tank, remove fuel filler cap fuel filler neck and then reinstall it.
□□As fuel lines are at high pressures when the engine is stopped, loosening or disconnecting fuel line will cause dangerous spout of fuel. Before loosening/ disconnecting fuel lines, please follow the "Fuel Pressure Relief Procedure" described in this section.
□□Small amount of fuel may drip after the fuel lines are disconnected. In order to reduce the risk of personal injury, cover the pipe/ hose ends with suitable blind with no rust or contamination.
□□After servicing, make sure that the fuel hoses and clamps are connected according to the hose fitment instructions given in vehicle instruction manual.
□□After servicing, please follow the 'Fuel Leakage Check Procedure' described in this section.
□□After servicing make sure to fill at least 3 liters gasoline before pump is primed (ignition key should be turned on only after ensuring there is minimum 3 liters of fuel in the fuel tank)

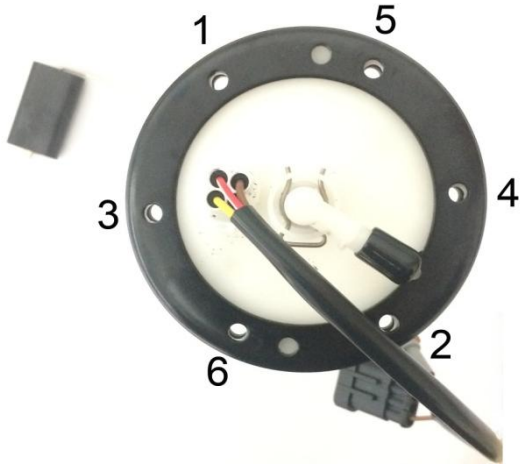
Fuel Module Removal:

□□Relieve fuel pressure in fuel lines referring to the 'Fuel Pressure Relief Procedure' provided in this section.
□□Disconnect negative cable at battery.
□□Disconnect fuel module wire coupler.
□□Drain the fuel in fuel tank thru fuel filler with help of hand pump (siphon). Collect the fuel in approved container for contamination and safety.
□□Disconnect the fuel hoses from fuel module by using standard tools
□□Remove the fuel tank from vehicle.
□□Place the fuel tank with bottom up condition. Care to be taken not to cause any scratches/ damages on fuel tank.
□□Open the fuel module mounting bolts.
□□Take out fuel module assembly from fuel tank with care
□□Care to be taken not to damage the strainer while removing fuel module from tank.

Fuel Module Installation:

□□Replace the fuel module gasket in fuel module assembly with a new one. Old/ used gaskets can cause leakages.
□□Fold strainer towards fuel pump and insert fuel module in tank opening with care. Care should be taken not to cause any damages on strainer.
Fuel Module Orientation: Fuel module bolts not symmetrical and can be mounted

only in the intended direction. Regulator side should be facing the Fuel Tank rear side.
Make sure that the fuel tank surface at module mounting area is clean and free of surface defects.
□□Place the bolts on module cover and tighten the bolts gradually in star pattern sequence to apply equal compression on gasket. It is shown as below.



Bolt Tightening Torque: 4.4 Nm.
Fuel module is installed with special bolts (step bolts). Use designated bolts only.
Follow the tightening torque and tightening sequence instruction. Over torque and miss-sequence can cause unequal compression of gasket and leakage.
□□Install the fuel tank to vehicle.
□□Connect for fuel hoses with suitable hose clamps.
□□Connect fuel module coupler
□□Follow “Fuel Leakage Check Procedure’ to check any leakage before the engine is started.

Fuel Pressure Relief Procedure:

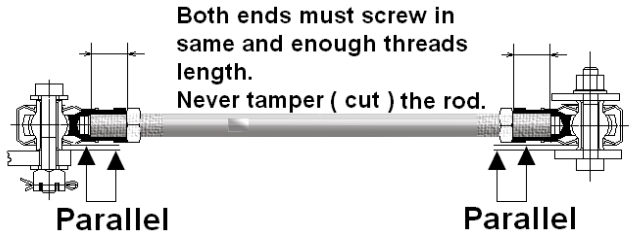
Caution: This work must not be done when engine is hot. If done so, it may cause adverse effect to catalyst (if equipped)
After making sure that engine is cold, relieve fuel pressure as follows.
□□Place vehicle gear in ‘Neutral’.
□□Disconnect fuel module electrical coupler from vehicle harness.
□□Start engine and run till it stops due to lack of fuel. Repeat ignition key ON and OFF for 2 ~ 3 times of about 3 seconds each time to relieve fuel pressure in lines. Fuel Connections are now safe for servicing.
□□Upon the completion of servicing, Connect Fuel Module Connector to Vehicle Harness

2.3 TOE ALIGNMENT

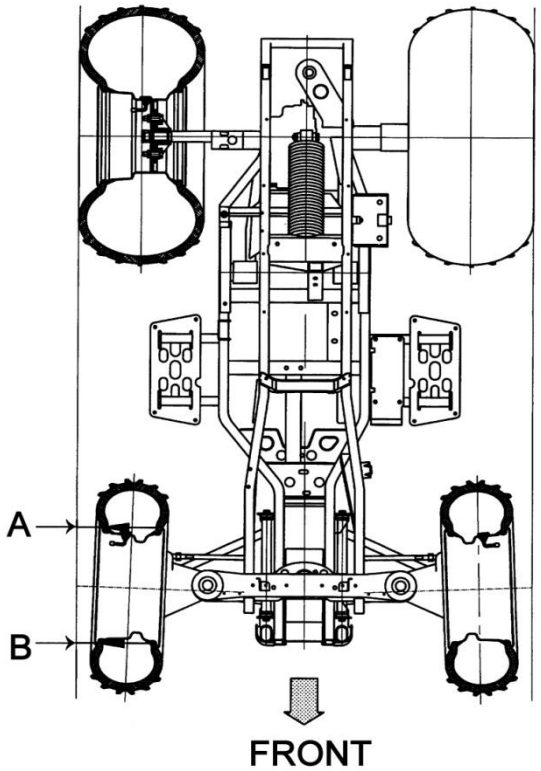
METHOD: STRAIGHTEDGE OR STRING

Be sure to keep handlebars centered

NOTE: String should just touch side surface of rear tire on each side of the ATV.
Measure from string to rim at front and rear of rim.
Rear rim measurement (A) should be 1/16" to 1/8" (1.5 to 3 mm) more than front rim measurement (B).
NOTE: The steering post arm (frog) can be used as an indicator of whether the handlebars are straight. The frog should always point straight back from the steering post when handlebars are straight.



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



2.4 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.

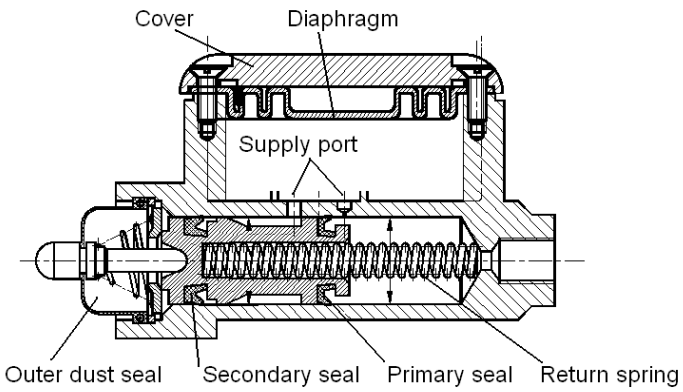
- Check brake system for fluid leaks.
- Check brake for excessive travel or spongy feel.
- Check friction pads for wear, damage and looseness.
- Check surface condition of the disc.

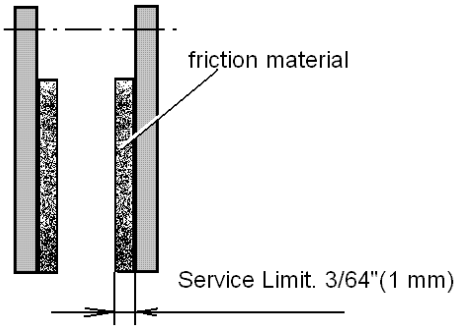
BRAKE PAD INSPECTION

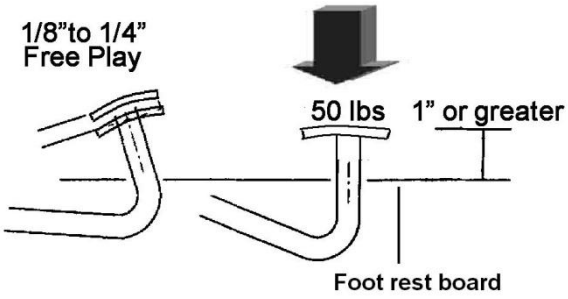
- Pads should be changed when friction material is worn to 3/64" (1mm).

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.

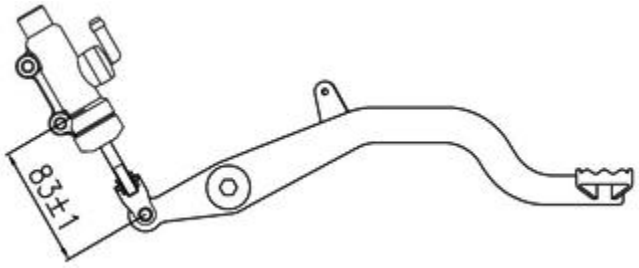






Adjusting brake pedal for B-Type

If the push rod joint is reinstalled, adjust the push rod length so that the distance between the centers of the master cylinder lower mounting bolt hole and joint pin hole is 83±1mm.After adjustment, tighten the joint nut.



1. First check foot brake effectiveness by applying a 25 kg (50 lb). (Approx) downward force on the pedal.

   The top of the pedal should be at least 1 inch, (25 .4m m) above the surface of the footrest.

If less than one inch, two things must be examined:
Free Play:
Free play of the brake pedal should be 1/8-1/4 inch (3-6mm).
If free play is excessive, inspect pedal, linkage, and master cylinder for wear or damage and replace any worn parts.

Bleeding:
If free play is correct and brake pedal travel is still excessive, air may be trapped some where in the system. Bleed the hydraulic brake system in a conventional manner, following the procedure outlined in the Brake chapter.

FOOT BRAKE TESTING

The foot brake should be checked for proper adjustment.
Support the rear wheels off the ground. While turning the rear wheels by hand, apply the auxiliary footbrake. This brake should not stop the wheels from turning until the lever is half way between its rest position and bottoming on the footrest.

2.5 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.

2.6 WHEELS

Inspect all wheels for run out of damage.
Check wheel nuts and ensure they are tight.
Do not over tighten the wheel nuts.

WHEEL, HUB TORQUE TABLE

Item	LH400ATV-F	
Front Wheel Nuts	69 Ft.Lbs	96 N.m
Rear Wheel Nuts	69 Ft.Lbs	96 N.m
Front Spindle Nut	Refer to FRONT HUB INSTALLATION	
Rear Hub Retaining Nut	80 Ft.Lbs	110.6 N.m

WHEEL REMOVAL

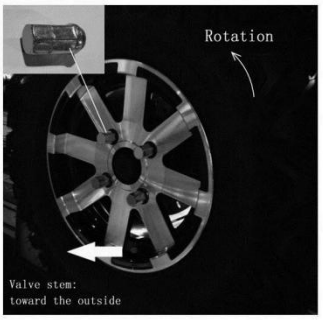
1. Stop the engine, place the transmission in gear And lock the parking brake.
2. Loosen the wheel nuts slightly.
3. Elevate the side of the vehicle by placing a suitable stand under the footrest frame.
4. Remove the wheel nuts and remove the wheel.

CAUTION:

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

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 right 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 above. On rear wheel nuts, Make sure tapered end of nut goes into taper on wheel.



Front
Flange nuts:install with tapered side against wheel

Rear
Flange nuts:install with tapered side against wheel

2.7 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 ATV maneuverability.
- When replacing a tire always use original equipment size and type and replace in pairs, especially in SDX300 model.
- The use of non- standard size or type tires may affect ATV handling and cause machine damage, especially in SDX300 model.

TIRE TREAD DEPTH

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

Tire Pressure Inspection

	Front	Rear
LH400ATV-F （recommend）	7PSI (48±0.5KPa)	7PSI (48±0.5KPa)

WARNING Operating an ATV 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.

2.8 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.

LH400 ATV-F			
Item	Torque （Ft-Lb）	Torque (Nm)	Remarks
Handlebar Clamp Nut M6	12	16	
Handlebar Clamp Nut M8	18	25	
Nut M10X1.25 Attaching Tie Rod to Steering column	26-30	35-41	
Nut M10X1.25 Attaching Tie Rod to Front Absorber Strut body	26-30	35-41	
Tie Rod Jam Nut M12	13	17	
Bolt M10 Attaching A-Arm and Frame	30	41	
MANTENANCE-FREE PIVOT DESIGN Bolt M12 Attaching A-Arm and Frame	37-44	50-60	LT*
Nut M10X1.25 Attaching A-Arm to Ball Joint Stud	22-25	30-35	
Screw M6 Attaching Ball Joint Mounting Bracket to Front Absorber Strut body (MacPherson)	8	11	LT*
Swing Arm Pivot Left	14	19	Refer to SWING ARM ASSEMBLY INSTALLATION ，4.2 SWING ARM，CHAPTER 4A CHASSIS
Swing Arm Pivot Right	120	165	
Threaded Pivot Nut (for swing arm)	120	165	
Nut M14X1.5 Attaching Front Absorber to Frame (MacPherson)	15-18	21-25	LT*
Nut M8 Binding Front Absorber and Front Absorber Strut body (MacPherson)	15	21	LT*
Bolt M8 Attaching Front Caliper to Front Absorber Strut body	18	25	LT*
Bolt M8 Attaching Upper Steering Clamp to Frame	12	16	
Nut M8 Attaching Lower Steering Bearing Retainer to Frame	12	16	
Nut M10X1.25 Attaching Front Wheel to Front Wheel Hub	20	27	
Front （Drive） Axle Nut	Refer to FRONT HUB INSTALLATION		
Screw M8 Attaching Front Brake Disc to Front Wheel Hub	18	25	LT*
Nut M10X1.25 Attaching Rear Brake Disc to Rear Brake	22-25	30-35	LT*
Rear Axle Nut M20X2 (for swing arm)	80	110.6	
Rear Hub Retaining Nut M20X1 （for IRS）	101	137	
Nut M10X1.25 Attaching Rear Caliper to Axle Tube	18	25	LT*
Bolt M12x30 Attaching Axle Tube and Swing arm to Rear Gear-box	60	80	
Bolt M12x35 Attaching Axle Tube to Swing arm	60-66	80-90	

LT*—Apply Loctite™ 242

NOTES