



MK-320 Minicar

OWNER'S MANUAL

1/19/2011

FOREWORD

May we, the manufacturer, take this opportunity to thank you for choosing our **Minicar** to serve you.

This Owner's Manual is prepared for you to properly operate in safety. It also includes information about the general care and maintenance of your **Minicar**. Therefore, we would like you to read the manual before operating the vehicle.











It is our sincere wish that you enjoy operating this vehicle and receive fun from it. Should you have any problems, please feel free to contact our local dealer in your area.

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OPERATION WARNING

-  THIS VEHICLE IS NOT A TOY AND CAN BE HAZARDOUS TO OPERATE.**
-  NEVER OPERATE THIS VEHICLE WITHOUT PROPER INSTRUCTION.**
-  THIS VEHICLE IS NOT FOR YOUTH UNDER 16 YEARS OLD.**
-  ALWAYS FASTEN SEAT BELT.**
-  READ THIS OWNER'S MANUAL CAREFULLY.**
-  IT'S DANGEROUS TO DRIVE ON AN UNCLEAR ROAD CONDITION.**
-  TO LOWER YOUR SPEED WHEN DRIVING AT NIGHT.**
-  NEVER CONSUME ALCOHOL OR DRUGS BEFORE OR DURING RIDING.**
-  NEVER OPERATE THIS VEHICLE ON HILLS TOO STEEP.**
-  ALWAYS INSPECT YOUR VEHICLE EACH TIME YOU USE IT.**

SAFETY INFORMATION

-  Don't allow your child to ride.
-  Read all warning sticks on vehicle and follow the instruction.
-  Keep a safe distance between your vehicle and other vehicles.
-  Take a training course if you are a beginner.
-  This vehicle is designed to be operated only on level, free of obstacles.
-  When operate this vehicle on public streets, follow all safety rules that required.

SPECIFICATIONS

MODEL TYPE	MK-320
DISPLACEMENT	272 cc (7.34 cu in)
TYPE	4 Stroke, SOHC, 4 Valves, Liquid cooled.
STARTING	Electric
LUBRICATION	Wet sump with washable oil filter
TRANSMISSION	CVT with H/L & Reverse gears.
SPARK PLUG	NGK, DPR7EA
BATTERY	12 volts, 10 Ah Maintenance free
OIL CAPACITY	1.0 L SAE 5W-40 or 10W-40
COOLANT	Ethylene-glycol/water mix (25% coolant, 75% distilled water)
FUEL TANK	22.0 Liter (5.8 Gal)
OVERALL LENGTH	2690 mm (105.9 in)
OVERALL WIDTH	1465 mm (57.7 in)
OVERALL HEIGHT	1565 mm (61.6 in)
WHEEL BASE	1920 mm (75.6 in)
CLAIMED DRY WEIGHT	361 KG (795.9 lb)
BRAKE	Front: R/L Disc Brake Rear: Disc Brake
SUSPENSION	Front: Single A-arm with preload shocks Rear: Dual A-arm with 5 way preload-adjustable shocks
FRONT TIRE	155R12C,175/70-12,195/70-12,185/55-R14
REAR TIRE	155R12C,175/70-12,195/70-12,185/55-R14

 **Manufacturer reserves the right to make change without notice.**

PERIODICAL CHECK & SERVICES

Maintenance Schedule

The maintenance intervals in the following table are based upon average riding conditions. Riding in unusually dusty areas, require more frequent servicing.

Item	Frequency	Regular Service Mileage (KM)						
		500	1000	2000	3000	4000	5000	6000
Engine Oil		R	I	R	I	R	I	R
Oil Filter		C			C			C
Spark Plug		I			I			I
Valve Clearance		I			I,A			I,A
Coolant		CHECK EVERY RIDE						
Air Filter		CLEAN AND CHECK EACH 1000KM OR AFTER OFF-ROAD USE						
Carburetor		I		A		A		C,A
Driver Shaft		CHECK EVERY RIDE						
Gear Oil		R			I			R
CVT Belt								I
Suspension		I			I			I
Brake System		CHECK EVERY RIDE						
Tires Pressure		CHECK EVERY RIDE						
Tire Wear					I			I
Steering		I			I			I
Chassis Nuts , Bolts		I			I			I
Battery		I		I		I		I

 **C:** Clean; **A:** Adjust; **R:** Replace; **C:** Clean; **I:** Inspect, Adjust, Verify, Lubricate.

PRE OPERATING INSPECTION

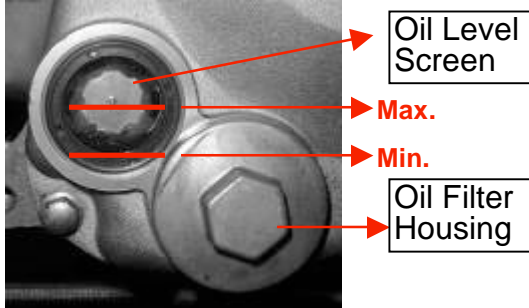
Inspect your vehicle before you ride it.

It only takes a few minutes to check and may save your life.

- ⚠ Check the tires condition and pressure.
- ⚠ Check the nuts, bolts and other fasteners.
- ⚠ Check the drive shaft condition.
- ⚠ Check the throttle for smooth opening and return.
- ⚠ Check the fuel level in fuel tank
- ⚠ Check oil level in crankcase thru oil screen.
- ⚠ Check the coolant level in coolant reservoir.
- ⚠ Check break fluid to make sure it's sufficient and not contaminated.
- ⚠ Check the brake operation to see if there are any leaking of the system.
- ⚠ Check the ease of turning to the left and right of steering handle.
- ⚠ Check brake pedal for effective braking. Try braking soon as you are driving off.

PRE OPERATING INSPECTION

Check and / or Refill Oil



CAUTIONS :

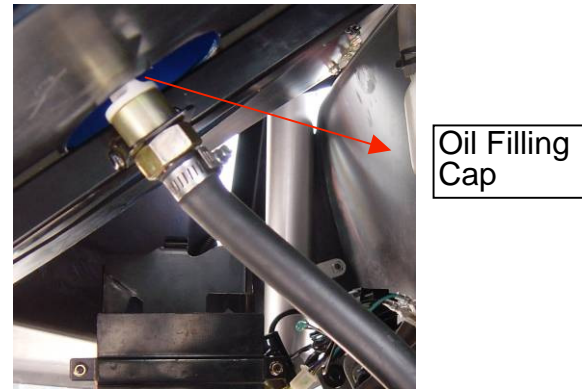
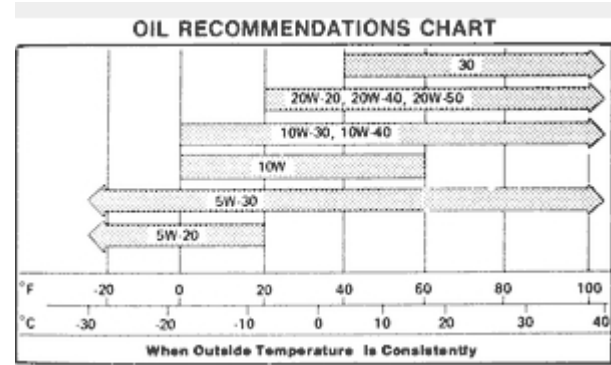
Be sure to have sufficient oil, see the oil level screen, and the filling cap is installed correctly.

Total oil capacity : 1.0 Liter

Prescribed 4-stroke engine oil only, synthetic type is recommended.

Select the proper viscosity of oil.

It would damage or burn down the engine parts if oil is insufficient.



PRE OPERATING INSPECTION

Check and refueling

Insert the key and turn to unlock (clockwise) position for opening the fuel cap.

After refueling, insert the cap properly and turn the key to lock (anti-clockwise) position.

Pull out the key and check fuel cap to make sure it's locked.



CAUTIONS :

Stop the engine for refueling.

Use unleaded gasoline with octane 92 or higher.

Turn the gasoline cap anti-clockwise to loose it, clockwise to tighten.

Avoid overfilling the gasoline, when refueling, it could cause a fire when the engine is hot.

PRE OPERATING INSPECTION

Tire pressure

 **CAUTIONS :**

Recommended tire pressure:

On-road 30 psi (2.11 kg/cm²)

Max. pressure : 35 psi (2.46 kg/cm²)

Min. pressure : 24 psi (1.69




 **Do not over inflate the tire pressure as indicated on the tire.**

Check if there is any gravel in the tread grooves or any nail puncture. If so clean it.

Check for any crack or heavy worn-out. If worn-out exceeds the limit, replace it with new one.

Please check the marking on tires for detail specification.

Front and Rear Shock Absorbers

 Apply pressure on both front and rear frame body to check the function of front and rear shock absorbers.

PRE OPERATING INSPECTION

Battery

This vehicle is equipped with a maintenance free type battery that requires no maintenance.

Remove and Check

Remove battery tray fixity.

Remove negative and positive terminals (negative first).

Remove battery and check voltage.

Normal voltage : 12V and above

Keep terminals clean constantly.

Charge the battery base on the instruction that printed on battery.



PRE OPERATING INSPECTION

Coolant level

With vehicle on a level surface, liquid should be between MIN and MAX level marks stamped on coolant reservoir.

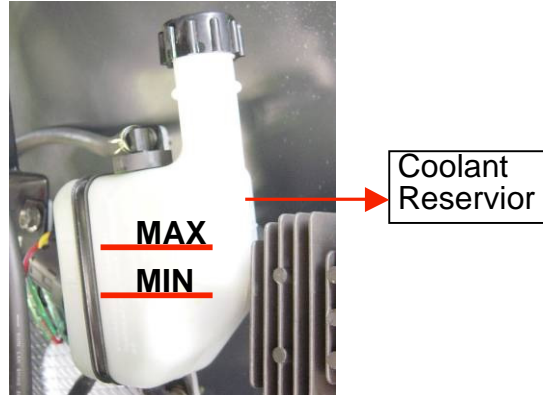
CAUTIONS :

Check coolant level while engine is cold.

Never add coolant in cooling system when engine is hot.

If the coolant is added in the coolant reservoir, check the level in the radiator too.

Add coolant if necessary.



OPERATION

KEY SWITCH

OFF & LOCK

To cut off the power supplied to turn off the engine.

The key can be extracted.

After extracted the key, turn steering wheel left or right to lock the steering.

ACG

To supplied power to vehicle accessories.

The key can not be taken out.

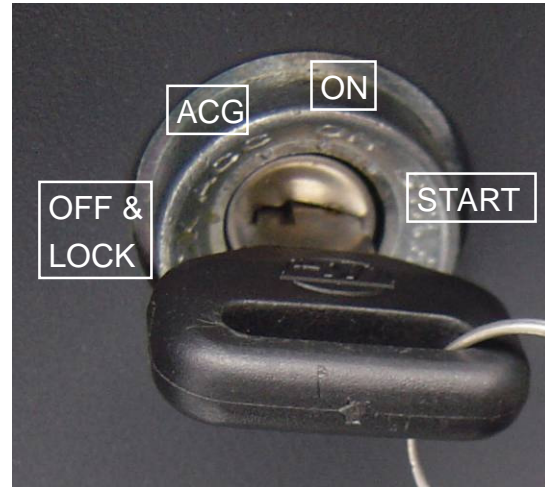
ON

To supplied main power to vehicle

The key can not be taken out.

START

Crank the starter motor to start the engine.



OPERATION

ELECTRIC STARTER

Step on the brake pedal then turn the key to start position to cranks the engine.

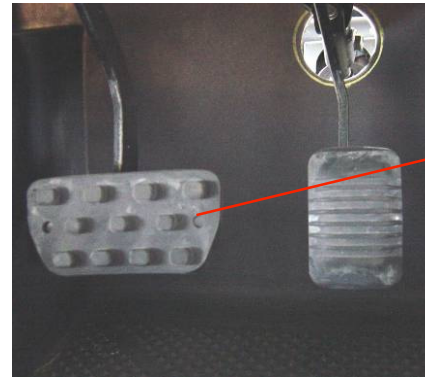
After engine started, release the key and it will kept in "ON" position.

CAUTIONS :

**When cranks the engine:
Don't turn the key to start position as the engine is running.
Don't press the starter button more than 10 seconds when start up.**



Start
Position



Brake
Pedal

OPERATION

SIGNAL LIGHT SWITCH

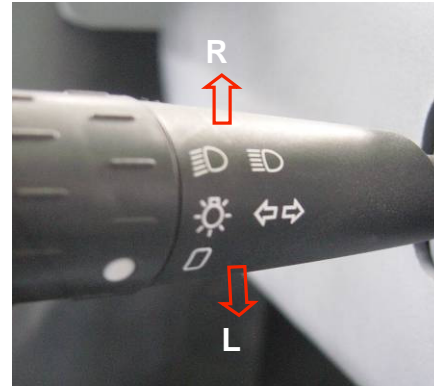
- ↑ Turn switch shaft up, the right signal light flashing indicates turning to the right.
- ↓ Turn switch shaft down, the left signal light flashing indicates turning to the left.
- ⚠ The switch will automatically return to neutral when turning steering wheel ahead.

⚠ CAUTIONS:

Always turn on signal lights before turning.

HORN BUTTON

Press the horn button on the switch shaft.



OPERATION

HEADLIGHT SWITCH

Turn switch shaft to change lighting function.
The light function can be "OFF", "Position Light" and "Head Light".

CHANGING HEADLIGHT BEAM

Pull switch shaft toward driver to change Hi-Low beam.

Pull switch shaft up again to change setting.



Low beam

For normal condition.

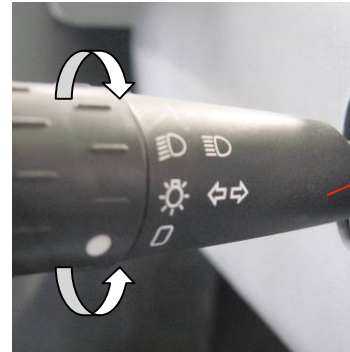


High beam

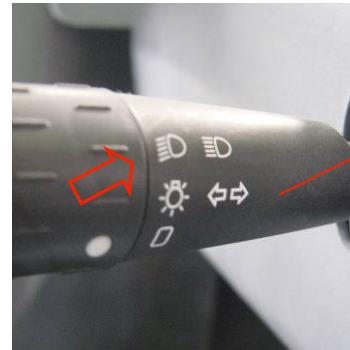
For farther lighting, instrument panel indicated "blue" light.

PASSING

Pull switch shaft can also for passing.



Switch Shaft



Switch Shaft

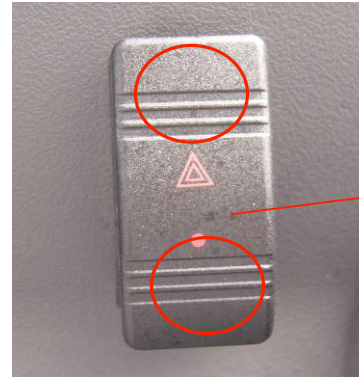
OPERATION

HAZARD WARNING SWITCH

— HAZARD

Press lower side of hazard switch and all indicator lights will start blinking together.

Press upper side of hazard switch to release hazard function.



Hazard Switch

OPERATION INSTRUMENT PANEL



OPERATION

GEAR SHAFT

L From **Neutral** position, hoist the gear shaft to top for low speed forward.

Use in uphill driving or rough terrain conditions.

Speed limited below 50 Km/Hr.

H From **Neutral** position, hoist the gear shaft for high speed forward.

Use in generally driving conditions.

R From **Neutral** position, pull down the gear shaft for backward.

Speed limited below 15Km/Hr.

N-Neutral



CAUTION:

Always completely stop the vehicle and apply the brake prior to moving the gear shaft.

Totally stop vehicle when you are from reverse to forward.

Before moving vehicle in reverse, ensure the path behind is clear of obstacles or bystanders.

Remain seated.

OPERATION

LOCKING DIFFERENTIAL

Locking differentials work by temporarily locking together a differential's output shafts, causing all wheels to turn at the same rate, providing torque in case of slippage.

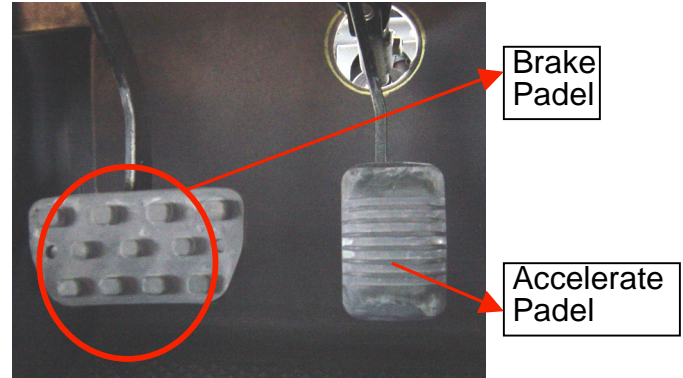


OPERATION

BRAKE

The foot brake pedal is located at front of driver beside with accelerate pedal.

When step on the brake pedal, front and rear wheels will effect at same time.



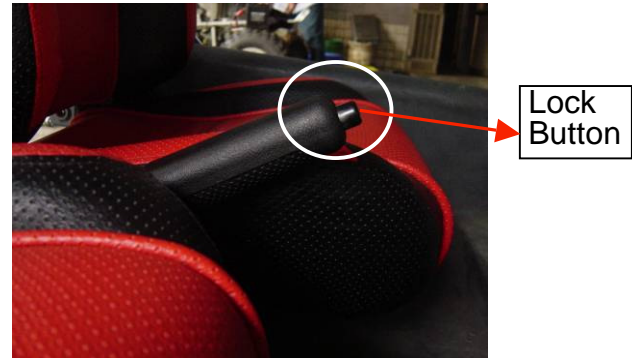
PARKING BRAKE HANDLE

Parking

Pull the parking brake handle up to perform brake function.

Releasing

Pull parking brake handle up then press lock button down to release parking brake.



OPERATION

ENGINE START-UP & CAUTIONS

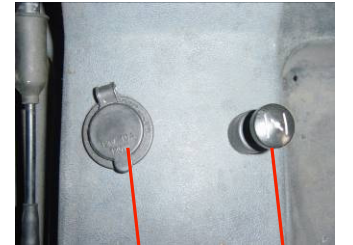
- ⚠ Check oil and fuel prior to start-up.
- 1. Set the gear to neutral and engaged parking brake.
- 2. Use key to turn “Main Switch” on.
- 3. Turn the key to start position to crank the starter motor..

⚠ CAUTIONS :

**Release the key immediately after engine start-up.
Did not pressing the button again as engine is running
otherwise engine may be damaged.
Start-up the engine at an open area to avoided emission poisoning.**

- 4. In case the engine will not start after the starter running 3 ~ 4 seconds, step on acceleration pedal slightly, then try again, the engine should start.
- 5. Use choke function on right side of central floor, if the temperature is low and difficult to start.

- ⚠ **Brake pedal must step to the end, otherwise the CDI wouldn't function.**



Power
Supply

Choke

OPERATION

FUEL METER

The fuel meter is located on the left side of the instrument panel.

When the tank was full, the level light bars are shows at top. During the fuel consuming, light bars cease from top then down to bottom.

It is recommend to added fuel when fuel meter symbol start to flashing.

- ⚠ **There's about 2.0L fuel remains in the tank when fuel symbol start to flashing.**

Fuel Level
Light Bar



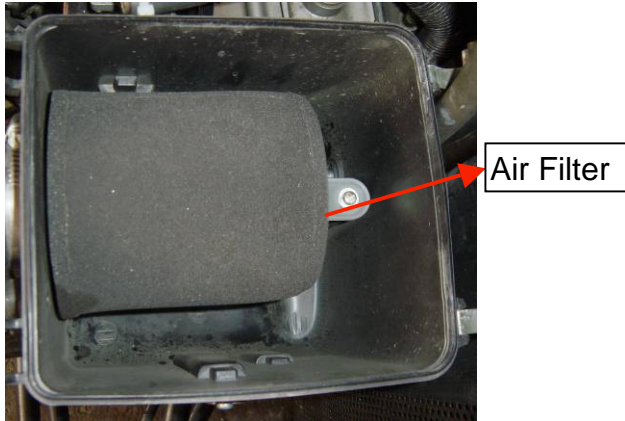
MAINTENANCE

CLEAN AND REPLACE AIR FILTER

Air filter is located under fuel tank.

Move the seat to find air filter house.

**CLEAN AND CHECK FILTER EACH 1000KM
OR AFTER OFF-ROAD USE. REPLACE AIR
FILTER YEARLY.**

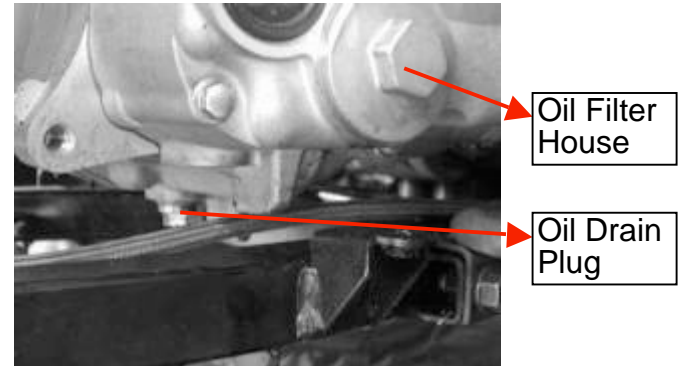


CLEAN OIL FILTER

Oil filter house is located on lower left side of cylinder head.

Remove oil filter house to clean filter.

**EACH 6000KM WHEN CHANGE OIL,
REPLACE FILTER, TOO.**



MAINTENANCE

DRAIN AND REFILL GEAR OIL

Main Gear Box

Place the vehicle on a level surface.

Select **NEUTRAL** position then apply parking brake.

Remove gear oil drain plug to drain gear oil.

Reinstall the drain plug and remove refill plug.

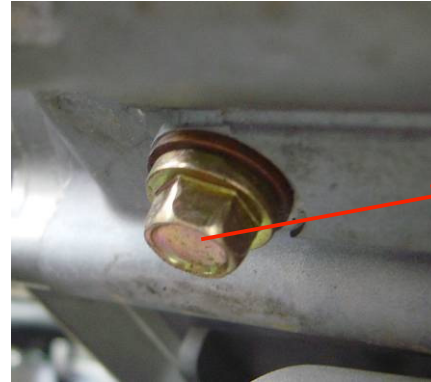
Adding gear oil as specified, do not overfill.

Properly tighten refill plug.

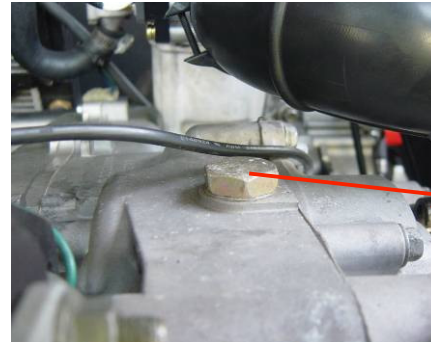


CAUTIONS :

- Replace gear oil at first 500Km maintenance. Then, replace each 6000Km
- Check oil level each 3000Km.
- Use grade SAE 80W-90 transmission oil in gear box.
- Total oil capacity : 0.5 Liter



Gear oil drain plug of main gear box



Gear oil refill plug of main gear box

MAINTENANCE

DRAIN AND REFILL GEAR OIL

Differential

Place the vehicle on a level surface.

Select **NEUTRAL** position then apply parking brake.

Remove gear oil drain plug to drain gear oil.

Reinstall the drain plug and remove level plug.

Place a funnel into the oil level hole to refill gear oil.

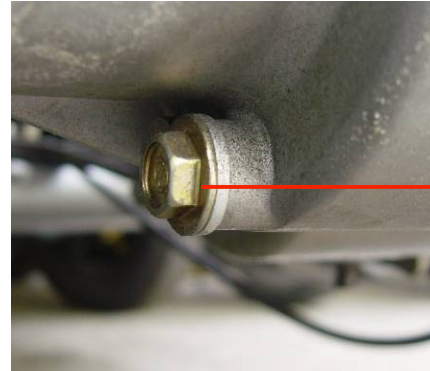
Adding gear oil till the oil sloping.

Properly tighten oil level plug.



CAUTIONS :

- Replace differential gear oil at first 500Km maintenance. Then, replace each 6000Km
- Check oil level each 3000Km.
- Use grade SAE 80W-90 transmission oil in gear box.
- Total oil capacity : 0.5 Liter



Gear oil drain plug of differential



Gear oil level plug of differential

MAINTENANCE

CVT DRAIN

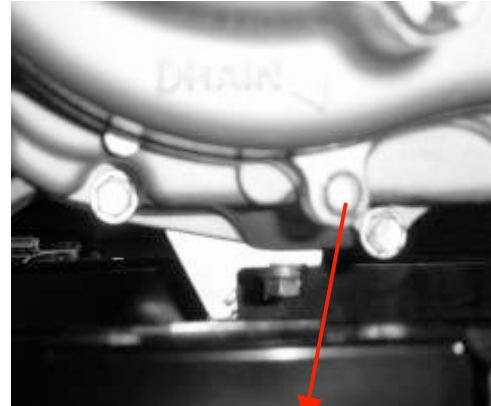
In case the water gets in CVT house and cause slipping.

Switch off the engine then place the vehicle on a level surface.

Remove the bolt below CVT drain mark for draining.

Tighten the bolt properly then restart the engine.

Wait till CVT warmed-up to ride.



CVT Drain Bolt

MAINTENANCE

PARKING BRAKE

Parking brake was solo control by parking brake handle and parking caliper.

Check parking brake before ride.

Emergency Brake

Parking brake can be used as an emergency brake but just during the pedal brake is fail.

Adjustment

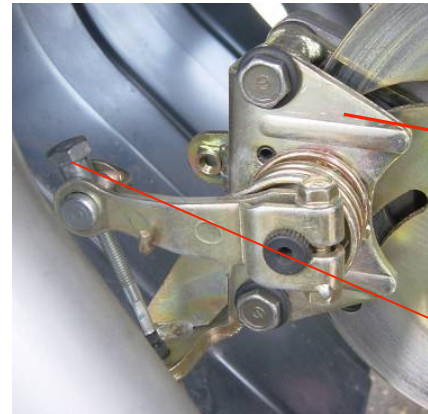
Put parking brake handle on neutral.

Turn-in the adjustment nut then pull parking brake handle to engage the brake.

Re-check the effectiveness of parking brake, if necessary, re-adjust.



Parking Brake Handle



Parking Brake Caliper

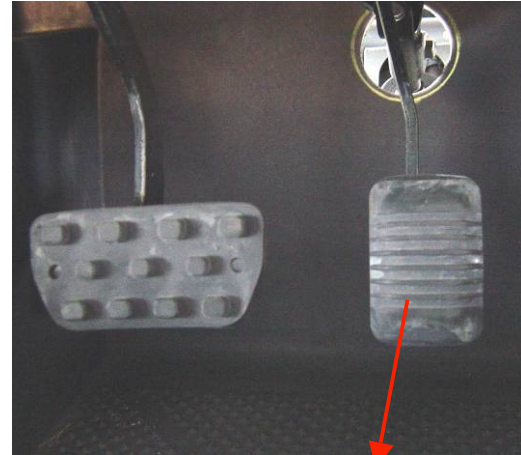
Adjustment Nut

CORRECT WAY OF DRIVING

START OF DRIVING

Press the acceleration pedal slowly to control your speed.

- ⚠ Acceleration is to increase the speed. Slowly control the pedal action while driving on a slope. It will activate the engine power.
- ⚠ Deceleration is to decrease the speed. Release the pedal will do.
- ⚠ This vehicle equip with differential box to providing more effective turning control. However, in case of slippage, the driver can use differential locking function to avoid sinking.



Acceleration Pedal

CORRECT WAY OF DRIVING

STOP OF THE VEHICLE

Approaching to the parking point:

Release the accelerator and press brakes pedal to decrease speed.

Complete stop:

Stop the engine by turns the key switch to “OFF”.

⚠ Don't park on uneven ground to avoid tipping over.

⚠ CAUTIONS :

Don't turn the key switch to “OFF” during riding.

BRAKE-IN PROCESS

During the first 500KM of riding, do not run the vehicle more then 60km/hr or approach maximum RPM of the engine.

⚠ The brake-in process will greatly increase the lifetime and long term power of the engine.

ABNORMALITIES AND TROUBLE SHOOTING

If the engine fails to start or engine fails to keep running.

Check is the engine stop switch was in the RUN position.

Check the gas tank is fuel are available and sufficient.

Whether the procedure for engine start up is correct.

- ⚠ Try to diagnose these malfunctions yourself first.**
- ⚠ Contact the local dealer as soon as possible for checking on any abnormality of your vehicle.**

VIN NUMBER and IDENTIFICATION

Please record the VIN and engine number for further reference.

The frame number (VIN) is stamped on the front right side of frame.

FRAME NO. RFL _____



FRAME NUMBER

The engine number is engraved on middle top of right crankcase.

ENGINE NO. _____



ENGINE NUMBER

P.D.I. (Pre-Delivery Inspection)

- 1. Record the frame and engine number into the owner's manual.
- 2. Check that all tires have correct pressure specified on the tire or in the owner's manual.
- 3. Engine oil (4 Stroke, SAE10W/40 or Grade SAE 40) is enough.
- 4. Battery is installed properly.
- 5. All brakes are adjusted properly.
- 6. Fuel tank has enough gasoline to operate.
- 7. Check the suspension and drive shaft for proper setup.
- 8. Check that all electrical components and lights are working properly.
- 9. Make sure that the owner's manual and tool bag are installed in the tool box.
- 10. Make sure that the bolts and nuts are fastened properly according to the manual.

MAINTENANCE and SERVICE RECORD

P.D.I.	500 KM	1,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :
2,000 KM	3,000 KM	4,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :

MAINTENANCE and SERVICE RECORD

5,000 KM	6,000 KM	7,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :
8,000 KM	9,000 KM	10,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :

MAINTENANCE and SERVICE RECORD

11,000 KM	12,000 KM	13,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :
14,000 KM	15,000 KM	16,000 KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :

ABNORMALITIES SERVICE RECORD

ODOMETER : KM	ODOMETER : KM	ODOMETER : KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :
ODOMETER : KM	ODOMETER : KM	ODOMETER : KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :

ABNORMALITIES SERVICE RECORD

ODOMETER : KM	ODOMETER : KM	ODOMETER : KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :
ODOMETER : KM	ODOMETER : KM	ODOMETER : KM
NOTES : _____ _____ _____	NOTES : _____ _____ _____	NOTES : _____ _____ _____
DEALER :	DEALER :	DEALER :
DATE :	DATE :	DATE :