
FUEL INJECTION SYSTEM

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SERVICE INFORMATION

GENERAL INSTRUCTIONS

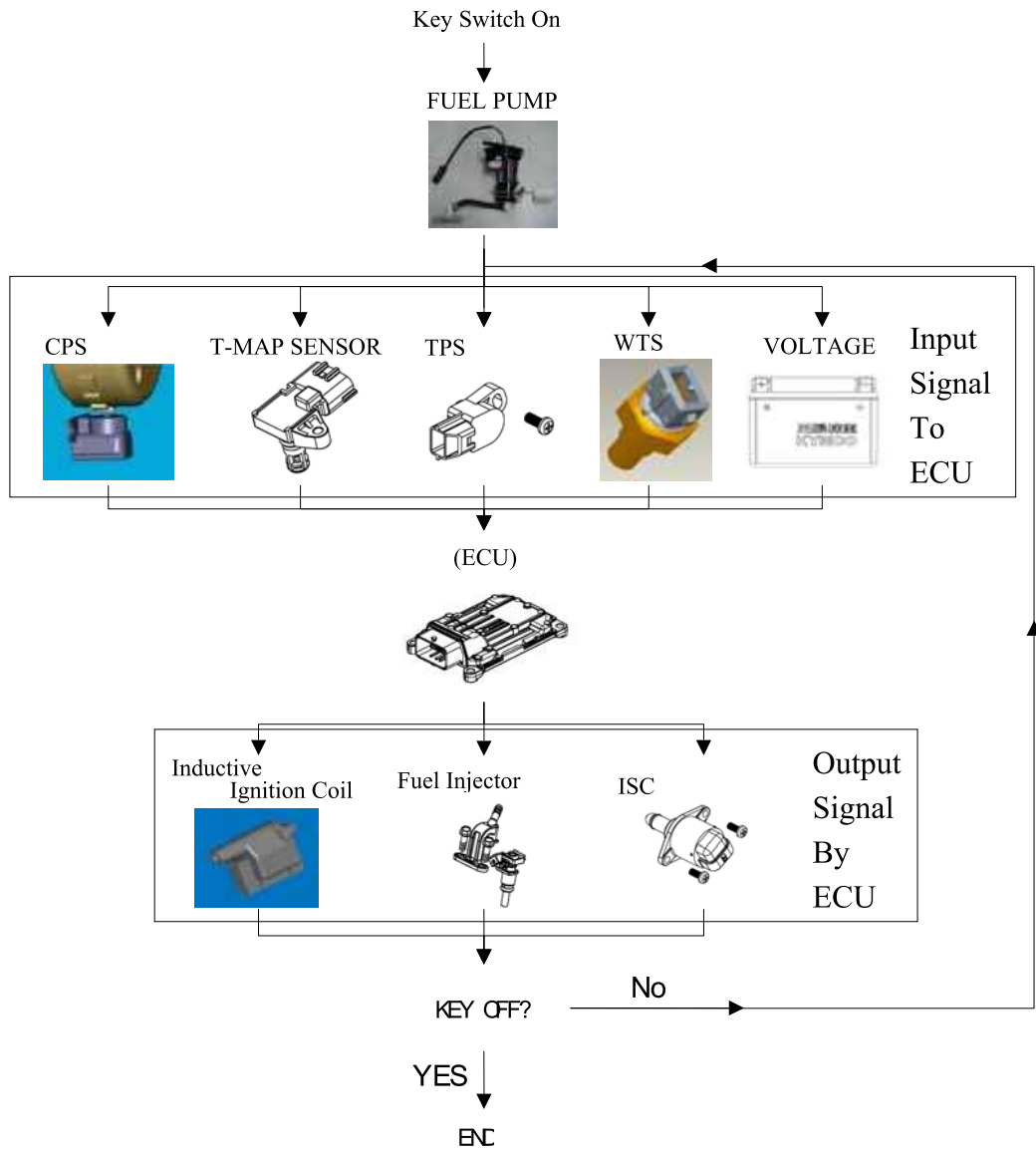
- Scooter services can be done with the engine installed in the frame.
- Be sure to relieve the fuel pressure before fuel pump or fuel hose removal.
- Bending or twisting the control cables will affect operation and could cause the cables to stick or bind, resulting in loss of vehicle control.
- Work in a fully ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.
- Do not apply the Carburetor Cleaners to the inside of the throttle body, which is coated with molybdenum.
- Do not snap the throttle valve from fully open to fully close after the throttle cable has been removed; it may cause incorrect idle speed.
- Do not loosen or tighten the painted bolts and screws of the throttle body. Loosening or tightening them can cause throttle and idle valve synchronization failure.
- Seal the cylinder head intake ports with tape or a clean towel to prevent dirt and debris from entering the intake ports after the throttle body has been removed.
- Do not damage the throttle body. It may cause incorrect throttle and idle valve synchronization.
- Do not take the fuel pump on the ground downward.
- Always replace the packing when the fuel pump is removed.
- The electronic fuel injection system is equipped with the self-diagnostic system. If the Check Engine Lamp “CELP” illuminate while riding, follow the self-diagnostic procedures to solve the problem.
- A faulty AFI problem is often related to poorly connected or corroded connectors. Check those connections before proceeding.
- When disassembling the fuel injection parts, note the location of the O-rings. Replace them with new ones upon reassembly.
- Do not disconnect the battery negative (-) or positive (+) cable while engine is running, it may cause ECU damage.
- **Do not disconnect or connect the ECU connector during the ignition switch “ON”; it may cause the ECU damage.**

22. FUEL INJECTION SYSTEM

SPECIFICATIONS

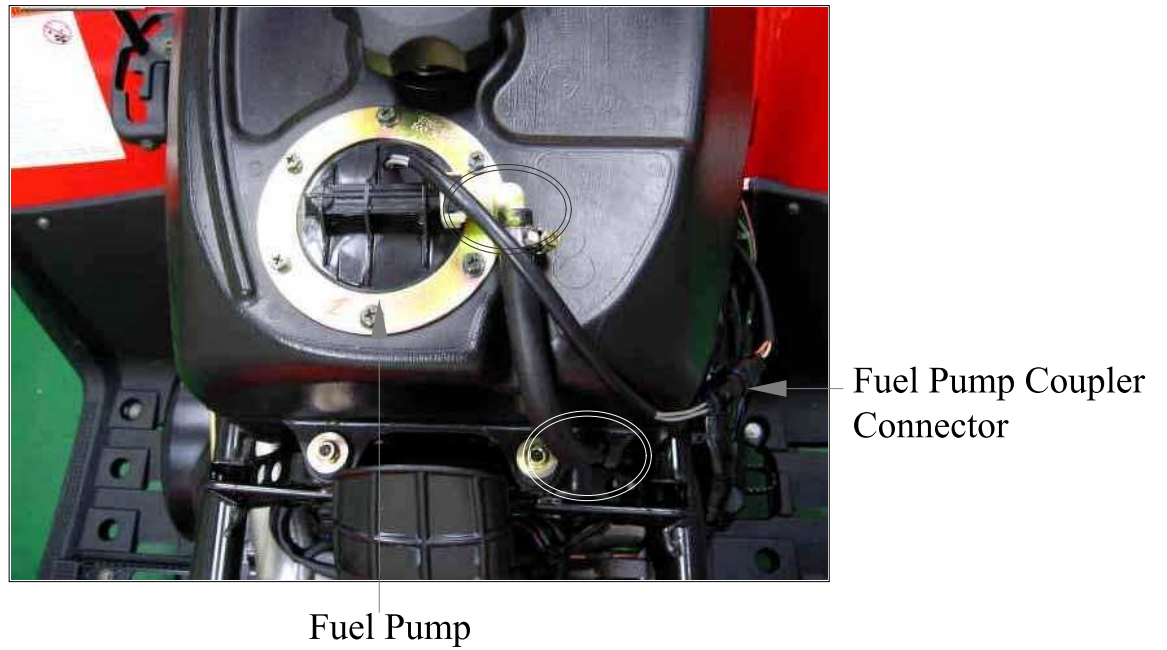
ITEM		SPECIFICATIONS
Throttle body identification number		PTA1
Idle speed		1400±100 rpm
Throttle grip free play		2~6 mm (1/16~1/4 in)
Fuel injector resistance (at 20°C/68°F)		10.6~15.9 Ω
Fuel pump resistance (at 20°C/68°F)	Float at full position	About 101 Ω
	Float at empty position	About 3 Ω
Fuel pump standard pressure (at 80 L/Hr)		300±10 kPa (3 Bar)
Water temperature sensor resistance	At -20°C/-4°F	28.6 KΩ
	At 40°C/104°F/20°C	1.46 KΩ/3.51 KΩ±10%
	At 100°C/212°F	0.176 KΩ
T-MAP sensor resistance(20°C)		1613~2544 Ω (1.2 pin)
Inductive ignition coil		Primary: 0.55~0.75 Ω
Throttle position sensor (TPS) resistance (at 20°C/68°F)		3500~6500 Ω (1.2 pin)
Crank position sensor resistance		96~144 Ω
Roll sensor voltage	Standard	0.4~1.4 V
	Over 65° (fall down)	3.7~4.4 V

INJECTION SYSTEM DIAGRAM



PARTS LOCATION





Inductive
Ignition
Coil



WTS

SW Power/Fuel
relay

Start Relay



Battery

Fan/Start Relay



TROUBLESHOOTING

Engine won't start

- Battery voltage too low
- Fuel level too low
- Pinched or clogged fuel hose
- Faulty fuel pump operating system

- Clogged fuel injector
- Faulty spark plug or wrong type
- Clogged Airflow Bypass Valve
- Wet spark plug

Engine stall, hard to start, rough idling

- Intake air leak
- Fuel contaminated/deteriorated
- Pinched or clogged fuel hose
- Idle speed miss adjusted
- Wet spark plug

Backfiring or misfiring during acceleration

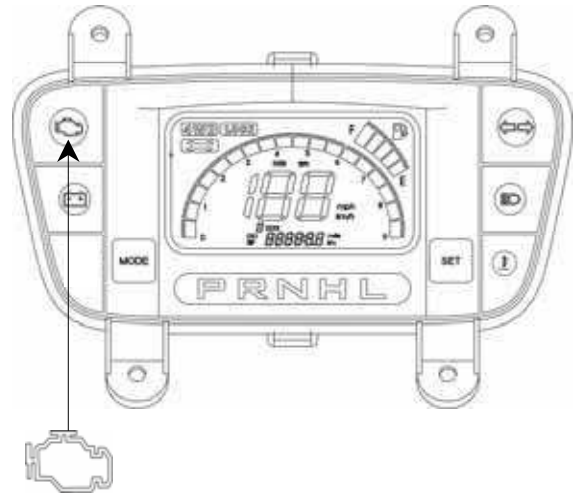
- Ignition system malfunction

Poor performance (drive ability) and poor fuel economy

- Pinched or clogged fuel hose
- Faulty fuel injector

CHECK ENGINE LAMP (CEL)

- When turning on the switch, the lamp will be lighted for 2 seconds then off. Let user to know the lamp is available and connect to ECU.
- But after then or during riding, if the CELP start to blink or keep lighting, it means something wrong with this vehicle, you better do the further check to find out the failure code to know which part get trouble
- There are 3 kinds of priority grade let user to know what kind of trouble was happened.
- Priority grade 1: CELP blinks continuously. This is the most emergent situation like engine over heat. User better slow down the riding and go to dealer for checking.
- Priority grade 2: CELP lights all the time. It means components get trouble or circuit something wrong. Do the further check to find out the failure code to know which part get trouble.
- Priority grade 3: CELP just blinks once suddenly and then disappear. It sometimes just warning like the RPM was too high in a short term.



PRIORITY	LAMP ACTION
1	ON OFF
2	ON OFF
3	ON OFF

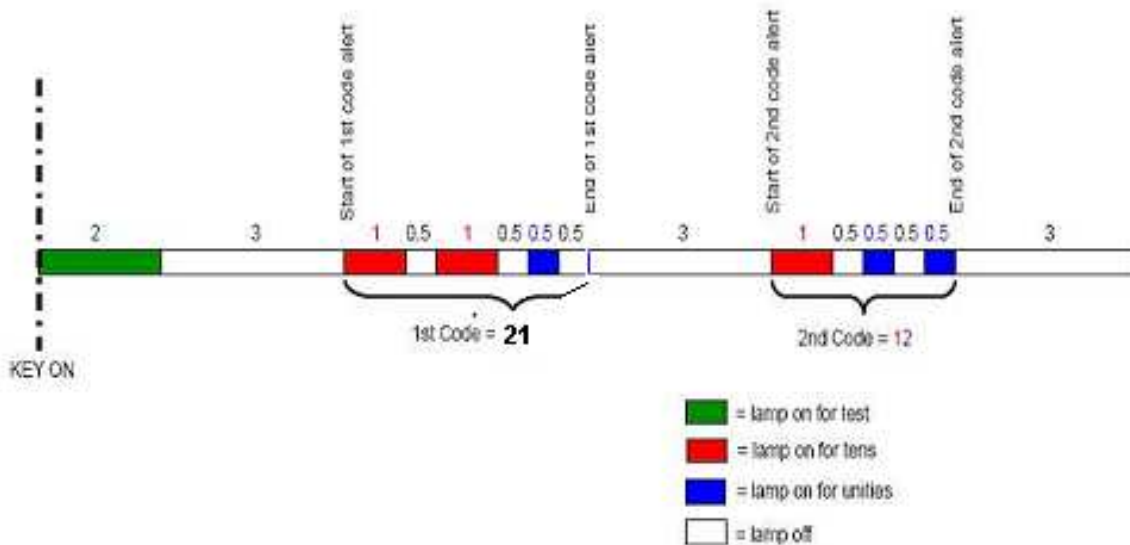
How To Show Failure Code

- You can read the failure code by as below :
- Turn switch on. The CELP will be lighted for 2 seconds then off. The CELP start to blink to show the failure codes (The number of blinks from 1 to 22).
- If vehicle got more than one failure code, the CELP will be shown from lower number failure code and then show the other higher number one after four seconds. All the failure codes would be shown repeatedly.

How To Reset Failure Code

- After repairing the trouble, you should clear the failure code or it will still exist in the ECU memory. When you maintain this vehicle next time, it will show again and you get confuse.
- Turn switch on. The CELP will be lighted for two seconds then off.
- The CELP begins to blink to show the failure codes.
- The self-diagnosis memory data will be erased when all the failure codes has showed for 4 cycles.

Example (failure codes 1 and 2):



13. FUEL INJECTION SYSTEM

CELP FAILURE CODES LIST

Blinks	Failure Codes	Fault description	Priority	Fault management
1	P0115	Engine temperature overheat	1	1.Slow down the vehicle and go to workshop for checking immediately. 2.Confirm if the engine temperature sensor or electric circuit is abnormality.
2	P0335	Crankshaft position sensor or circuit malfunction	2	1.Check if the connector of crankshaft position sensor is loosen. 2.Check if the Rotor is align with Crankshaft position sensor during the crankshaft running.
3	P1120	Throttle position sensor setting value problem	2	1.Make sure if the connector of Throttle position sensor is connected correctly. 2.Check if the Throttle position sensor is adjusted.
4	P1121	Throttle position sensor output range problem	2	1.Make sure if the connector of Throttle position sensor is connected correctly. 2.Check if the Throttle position sensor is adjusted.

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Blinks	Failure Codes	Fault description	Priority	Fault management
5	P1122	Throttle position sensor movement speed problem	2	1. Make sure if the connector of Throttle position sensor is connected correctly. 2. Check if the Throttle position sensor is adjusted.
6	P0560	Battery voltage malfunction	1	1. Check if the battery voltage is lower or higher. 2. Check if the charge system is malfunction.
7	P0110	Intake air temperature circuit malfunction	2	Inlet air temperature sensor or electric circuit malfunction
8	P0410	Idle air valve circuit malfunction	2	1. Check if the connector of Idle air valve loosen. 2. Check if the resistance of valve is normal.
9	P0505	Idle speed volume control range problem	3	1. Check if the ISC steps range over 65 steps.
10	P0251	Injector or electric circuit problem	2	1. Check if the connector of Injector is loosen. 2. Check if the ECU send signal to Injector. 3. Check if the power source and resistance of Injector are malfunction.

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Blinks	Failure Codes	Fault description	Priority	Fault management
11	P0350	Ignition coil or electric circuit malfunction	2	1. Check if the connector of ignition coil is loosen. 2. Check if the ECU send signal to Ignition coil. 3. Check if the power source and resistance is malfunction
12	P0230	Fuel pump relay or electric circuit malfunction	2	1. Check if the connector of relay is loosen. 2. Check if the ECU send signal to relay. 3. Check the fuel pump relay resistance
13	P0219	Engine speed is over than top speed	2	Check if the belt of CVT is broken.
14	P1560	Sensor don't receive power source from ECU	2	1. Check if ECU output DC5V to sensor. 2. Check if the power source of all sensor is DC5V. 3. Replace a new ECU if the CELP still blinks even the output power source of ECU is normal.
15	P0700	Engine starting speed exceed CVT speed limited	2	Don't use it at present.
16	P0115	Engine temperature sensor or electric circuit malfunction	2	1. Check if the connector of sensor is loosen. 2. Check if ECU pin is broken. 3. Check if the resistance of sensor is malfunction.
17	P1561	Temperature gauge electric circuit malfunction	2	Don't use it at present.

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Blinks	Failure Codes	Fault description	Priority	Fault management
18	P0650	CELP electric circuit malfunction	3	<ol style="list-style-type: none">1. Check if the lamp of CELP is broken.2. Check if wires of CELP is broken.
21	P0105	Atmospheric Pressure Sensor/Circuit Malfunction	2	<ol style="list-style-type: none">1. Check if the connector of sensor is loosen.2. Check if ECU pin is broken.3. Check if voltage of sensor is fit in specification.
22	P0110	Roll sensor or electric circuit malfunction	2	<ol style="list-style-type: none">1. Check if the sensor installation direction is correct.2. Check if voltage of sensor is fit in specification.3. Check if ECU pin is broken.

TPS/ISC RESET

- If close or open the throttle grip randomly, the ECU may record the incorrect TPS when the ECU or the throttle body has been reinstalled. It can cause hard to start engine or idling speed is not smooth when engine installation.
- ISC has a motor inside, which controls ISC valve to obtain smooth idling speed. The ECU may record the incorrect ISC position during the engine speed isn't working when the ECU or the throttle body has been reinstalled. It can cause engine stop, hard to start engine or rough idling speed.

The throttle position sensor (TPS) and idle air bypass valve (ISC) have to be reset when throttle body, T-MAP, TPS, ISC or ECU has been reinstalled.

TPS/ISC RESET PROCEDURE

Start the engine till engine temperature to 85°C over on idle condition.

ECU will automatic learn engine new condition.

FUEL PUMP

INSPECTION

Put the side stand up and the engine stop switch is at “RUN”

Disconnect the fuel pump/fuel unit connector.

Connect the multimeter (+) probe to the Red terminal and the multi-meter (-) probe to the Gray terminal.

Turn the ignition switch to “ON” and measure the voltage between the terminals.

It should be shown the current battery voltage for a few seconds.

If there is still battery voltage, replace the fuel pump.

If there is not any battery voltage, inspect the following:

- Fuse
- Fuel pump relay
- ECU

Measure the resistance between the Red and Black terminals of the fuel pump side connector.

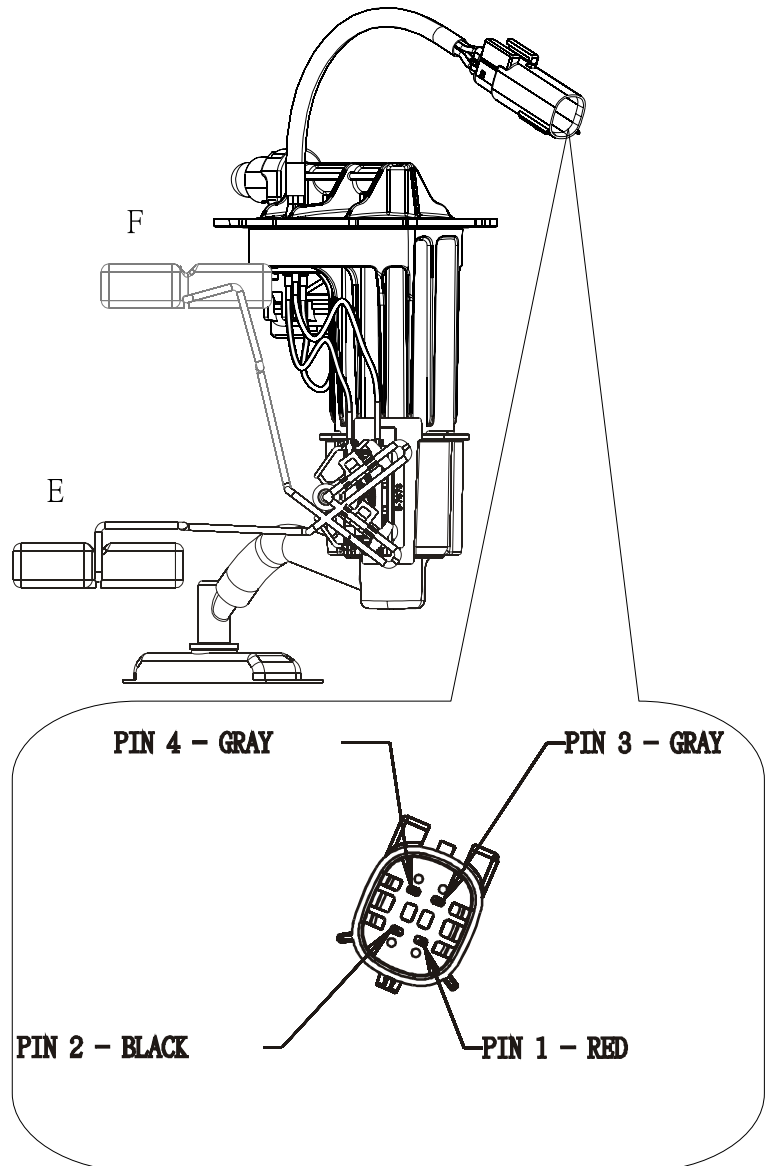
Standard (at 20°C/68°F): About 10.7 Ω

Fuel level sensor inspection

Measure the resistance between the red and blue terminals of the fuel pump side connector.

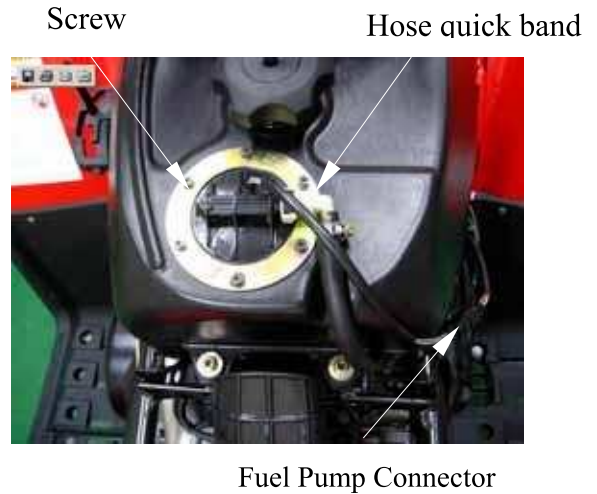
Standard (at 20°C/68°F):

Float at full position	About 101Ω
Float at empty position	About 3 Ω



REMOVAL

Disconnect the connector and fuel band from the fuel pump.
Remove the six screws onto the fuel pump.
Remove the fuel pump and O-ring.



INSTALLATION

Replace a new O-ring on the fuel tank.
Don't damage the fuel pump wire and ensure the connector rearward carefully.

Torque: 0.35 kgf-m (3.5 N-m, 2.5 lbf-ft)

FUEL OUTPUT PRESSURE INSPECTION

Turn the key to the OFF position.
Use the fuel hose clamp.
Disconnect the fuel hose from the fuel injector.
Connect the fuel pressure gauge.
Turn the key to the ON position.
Check the fuel pressure.

Standard:3.0 Bar



O-ring

* **If the fuel output pressure is less than 3.0 bar, may fail to start the engine or in trouble in case of riding.**

FUEL PUMP RELAY

INSPECTION

Remove the fuel pump relay.
Connect the ohmmeter to the fuel pump relay connector terminals.

Connection: R/L-B/R

Connect 12 V battery with the fuel pump relay connector.

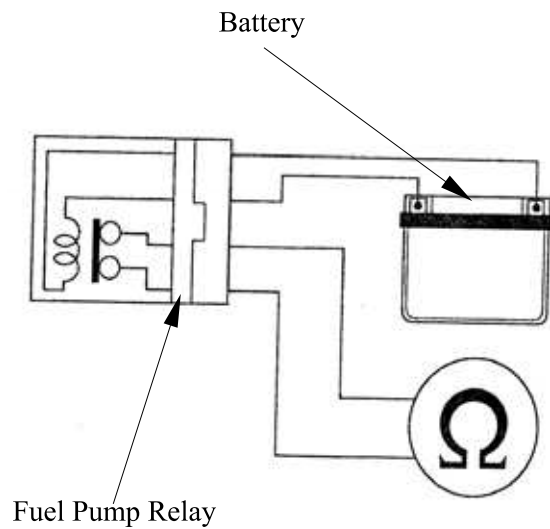
Connection: R/Y-O/R

There should be continuity only when 12 V battery connected.

If there is not continuity when the 12 V battery is connected, replace a fuel pump relay.

REMOVAL

Disconnect the fuel pump relay connector and remove it from frame.



Fuel Pump Relay



TILT SWITCH(ROLL SENSOR)

INSPECTION

Support the ATV level surface.

Turn the ignition switch to “OFF”

Remove the screws, washers and tilt switch.

* Do not disconnect the tilt switch connector during inspection.

Place the tilt switch vertical as shown, and turn the ignition switch to “ON”.

Measure the voltage between the following terminals of the tilt switch connector with the connector connected.

Terminal	Normal
V/R (+) -G(-)	5 V (ECU voltage)
B/W (+) - G(-)	0.4~1.4 V

Incline the tilt switch 65 ± 10 degrees to the left or right with the ignition switch turned to “ON”.

Measure the voltage between the following terminals of the tilt switch connector with the connector connected.

Terminal	Normal
V/R (+) - G (-)	5 V (ECU voltage)
B/W (+) - G(-)	3.7~4.4 V

If repeat this test, first turn the ignition switch to “OFF”, then turn the ignition switch to “ON”.

REMOVAL/INSTALLATION

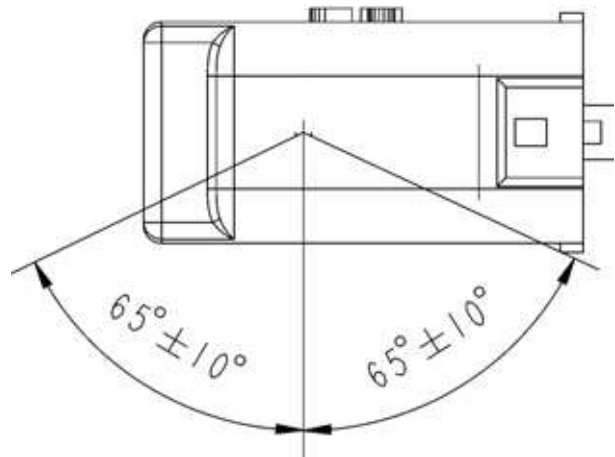
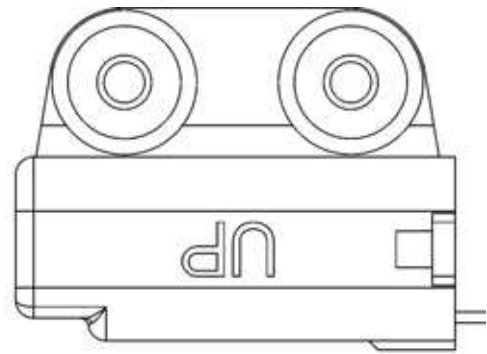
Disconnect the connector and remove two screws.

Remove the Tilt switch.

Installation is in the reverse order of removal.

* Install the tilt switch with its “UP” mark facing up.

Tighten the mounting screws securely.



Roll Sensor



ELECTRIC CONTROL UNIT (ECU)

REMOVAL/INSTALLATION

- * Do not disconnect or connect the ECU connector during the ignition switch "ON"; it may cause the ECU damaged.
- The throttle position sensor (TPS) and idle air bypass valve (ISC) have to be reset when throttle body, MAP, TPS, ISC or ECU has been reinstalled.

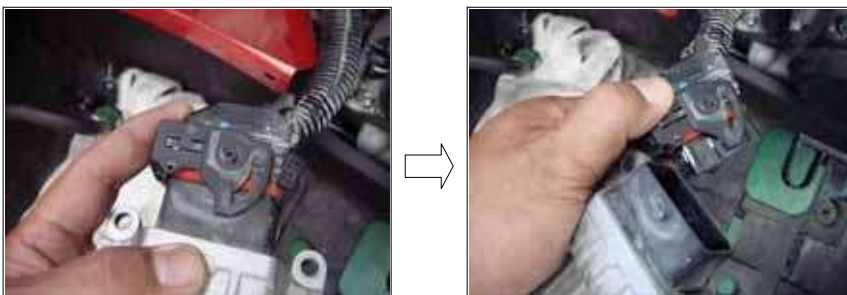


ECU Connector

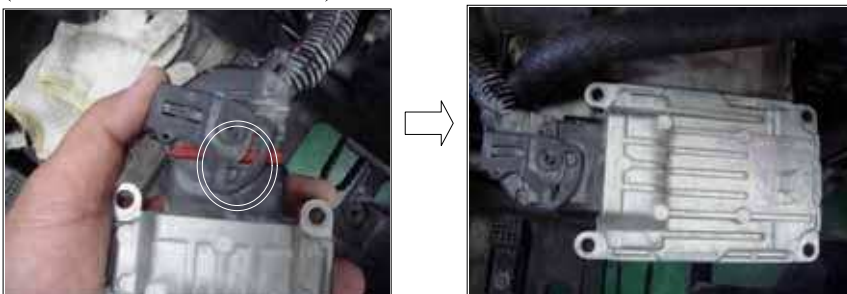
Disconnect the ECU connector and remove the ECU from the frame.

Installation is in the reverse order of the removal.

ECU connector remove procedure
(Same as DOWNTOWN 125i)



ECU connector install procedure
(Same as DOWNTOWN 125i)



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INSPECTION

Outlook checking

Checking for ECU pin(1-48) if has damage.

Checking for ECU part number if is correct.

3920A-LKA8-E00 is correct

Voltage inspection

Connect the meter (+) probe to the B4(R/W)wire and the

meter (-) probe to the M3(G/B) wire to measure the voltage

MAP content (edition issue no.)



Performance confirmed



V/R	(A1)	SENSOR POWER
	(A2)	
	(A3)	
BR/L	(A4)	+12V SWITCH POWER
B/L	(B1)	CAN-HIGH (+)
	(B2)	
L/R(2)	(B3)	ENG CHECK
R/W	(B4)	+12V MEMORY
W/L(2)	(C1)	CAN-LOW (-)
	(C2)	
V/G(1)	(C3)	SENSOR GROUND (1)
BR/W(1)	(C4)	ISC (STEPB2)
L/Y	(D1)	CRANK ANGLE (+)
B/W	(D2)	TILT SENSOR
GR/L	(D3)	ISC (STEPA1)
G/O	(D4)	ISC (STEPA2)
G/W(1)	(E1)	CRANK ANGLE (-)
W/R	(E2)	GEAR-D (L)
	(E3)	
G/B(2)	(E4)	ISC (STEPB1)
	(F1)	BRAKE SWITCH
O/B	(F2)	MANIFOLD PRESSVRE
BR/W(2)	(F3)	AIR INTAKE TEMP
G/L	(F4)	ENGINE COOLANT TEMP
	(G1)	LHCA-ENGINE STOP SW
V/G(2)	(G2)	SENSOR GROUND (2)
V/B	(G3)	THROLLER POSITION
	(G4)	
G/L(2)	(H1)	K-LINE
W/B(2)	(H2)	GEAR-B (H)
V	(H3)	SPEED SIGNAL
LG/R	(H4)	GEAR-C (N)
B/R	(J1)	FUEL RELAY
	(J2)	DIFF-LOCK INPUT
L/R	(J3)	GEAR-A (R)
	(J4)	OVERRIDE
B/O	(K1)	IGNITION RELAY
L(2)	(K2)	FAN RELAY
W/L(1)	(K3)	4WD INPUT
	(K4)	
R/Y	(L1)	+12V SWITCHED POWER
	(L2)	
	(L3)	STARTER SOLENOID
W/R(2)	(L4)	INJECTOR
B/Y	(M1)	IGNITION COIL
	(M2)	
G/B(1)	(M3)	GROUND (1)
G/B(1)	(M4)	GROUND (2)

EFI ECU (M3 C)
48P

FUEL INJECTOR

INSPECTION

Disconnect the fuel injector connector.
Measure the resistance between 2 pins of the fuel injector connector.

Standard: 10.6~15.9 Ω (at 20°C/68°F)



REMOVAL

Disconnect the connector from the fuel injector.
Remove the bolts of the fuel injector.
Take out of the fuel pipe and fuel injector from the Inlet pipe.
Remove the fuel injector from the fuel pipe.



Connector

Bolt

*

Ensure the fuel pipe without any pressure, then remove the fuel injector.

STEP 1: Disconnect the fuel pump relay or fuel pump connector.

STEP 2: Turn the key to the ON position. Starting the engine till the engine stop working.

INSTALLATION

Apply the engine oil to a new O-ring.
 Install the fuel injector into the fuel pipe.
 Ensure the clip of the fuel injector inserted into the groove of the fuel pipe.



Install the fuel pipe into the intake manifold

Be careful not to damage the O-ring.
 Tighten the fuel pipe mounting bolts.



FUEL INJECTOR CLEANING

PROBLEM

1. Fuel Injector cannot output the fuel.
2. The Injector injection time (ms) is shorter or longer.

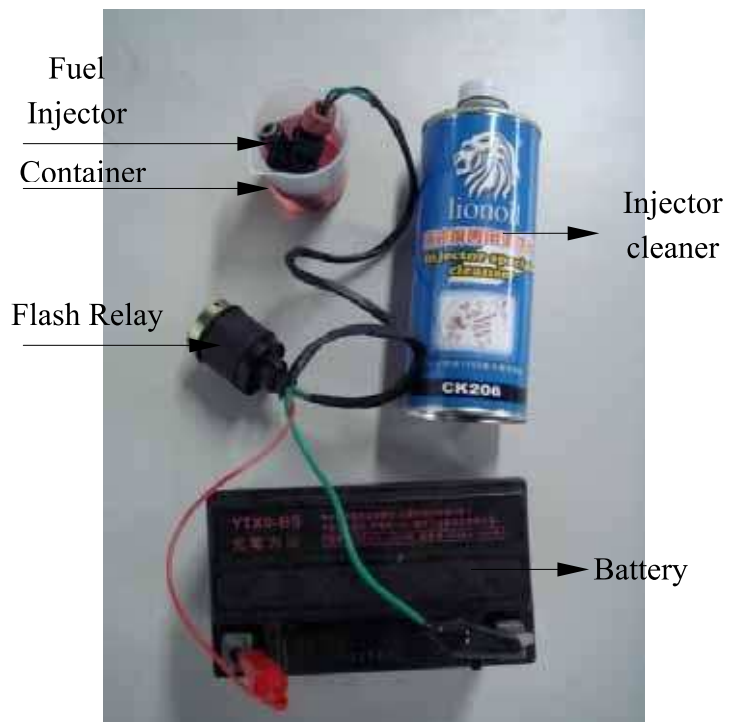
Standard: See the KYMCO Diagnostic report

ANALYSIS

Injector block (With some carbons).

TROUBLESHOOTING

1. Use the specified injector cleaner.
2. Pouring the liquid of injector cleaner until half container.
3. Connect the battery as picture.
4. The injector cleaner with the flash relay.
5. Keeping the fuel Injector operation.
6. Waiting for 20~30 minutes.
7. Cleaning the carbons completely.



WTS SENSOR (Water Temperature Sensor)

REMOVAL / INSTALLATION

Drain the coolant from the cooling system.
 Disconnect the WTS sensor connector from the sensor.
 Remove the WTS sensor and O-ring.



Install a new O-ring and WTS sensor.

* Always replace an O-ring with a new one.

Tighten the WTS sensor to the specified torque.

Torque: 1.2 kgf-m (12 N-m, 8.6 lbf-ft)

Connect the WTS sensor connector.

Fill the cooling system with the recommended coolant.

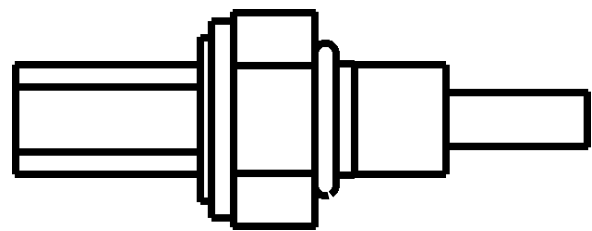
INSPECTION

Measure the resistance at the WTS sensor terminals.

STANDARD

°C	-20	40	100
KΩ	28.6	1.46	0.176

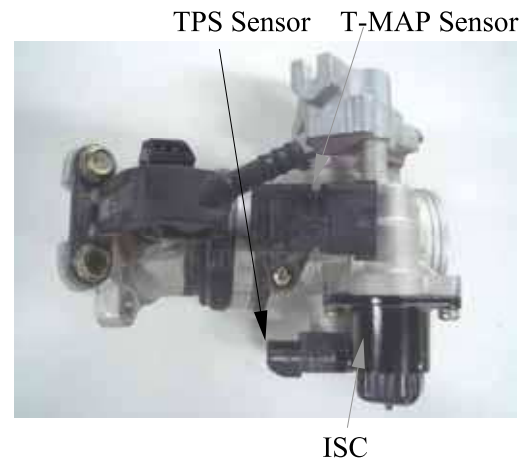
Standard: 3.51±10% KΩ (at 20°C/68°F)



THROTTLE BODY

/T-MAP SENSOR/ISC/TPS

- Turn off the ignition switch while replacement.
- Check and confirm if the voltage is over 12V by a voltmeter after replacement.
- Check and confirm if the other connectors are installed correctly after replacement.
- Do not damage the throttle body, it may cause the throttle and idle valve isn't synchronization.
- The throttle body is preset in KYMCO factory, do not disassemble it by a wrong way.
- Do not loosen or tighten the painted bolts and screws for the throttle body. Loosen or tighten them can cause the throttle and idle valve to synchronization failure.
- **TPS and ISC have to be reset after the throttle body T-MAP, TPS, ISC or ECU has been reinstalled.**



T-MAP SENSOR INSPECTION

Support the scooter on a level surface.

Put the side stand up and engine stop switch is at "RUN".

Turn the ignition switch to "ON" position.

Measure if the ECU voltage outputs to the T-MAP sensor between the following terminals of the MAP connector.

Terminal	Normal
V/R (+) -V/G (-)	5 V

TPS INSPECTION

Support the ATV on a level surface.

Turn the ignition switch to “ON”.

Measure if the ECU voltage outputs to TPS between the following terminals of the TPS connector.

Terminal	Normal
V/R (+) -V/G(-)	5 V

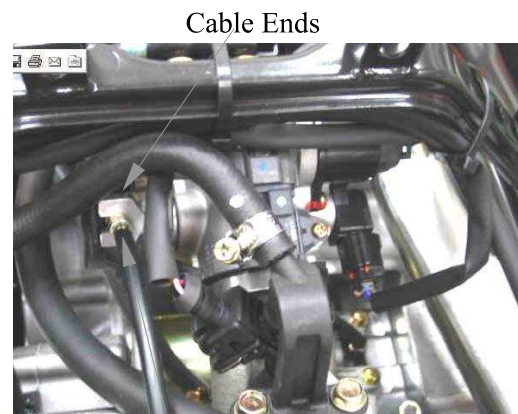
Throttle position sensor (TPS) resistance
(at 20°C/68°F) 3500~6500 Ω



REMOVAL

Loosen the throttle cables with the adjusting nuts.

Disconnect the throttle cable ends from throttle seat.



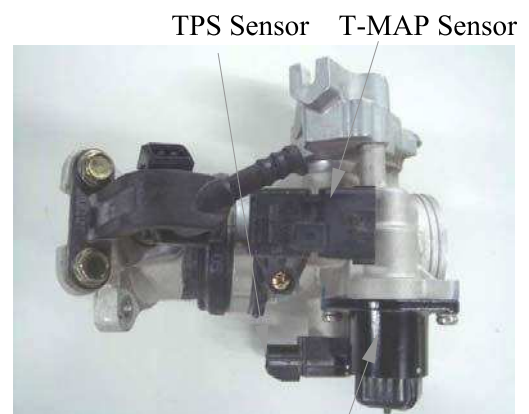
Adjusting Nuts

Disconnect the TPS, ISC and T- MAP sensor connectors.

Loosen the air cleaner connecting hose band screw.

Loosen the intake manifold band screw.

Remove the throttle body, T-MAP sensor, TPS sensor and ISC sensor as a set.



ISC

DISASSEMBLY

Remove the screws and then remove the ISC .

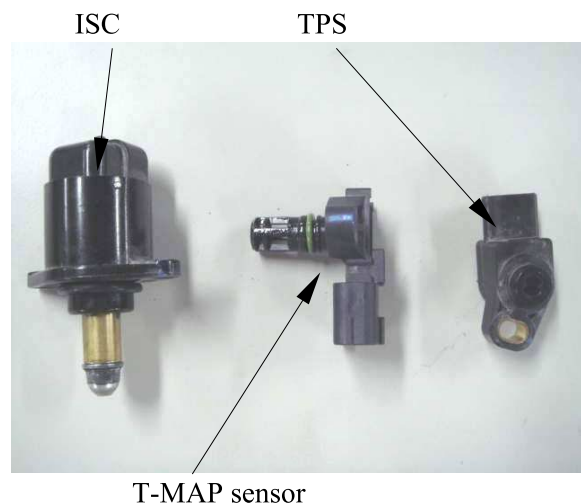
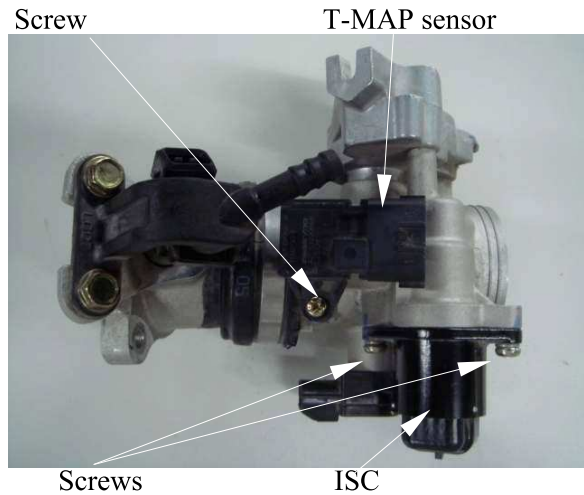
Remove the screw..

Remove the T-MAP sensor.

Remove the screw and then remove the TPS.

ASSEMBLY

* The throttle position sensor (TPS) and idle air bypass valve (ISC) have to reset when the throttle body T-MAP sensor, TPS, ISC or ECU has been reinstalled.



Apply oil onto a new O-ring.

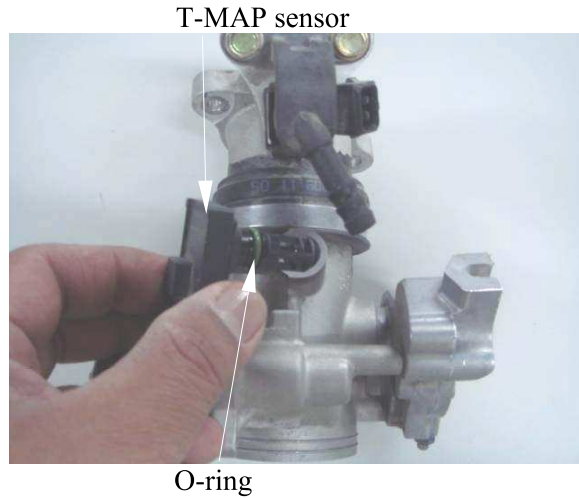
When install the TPS onto the throttle body, being careful not to damage the O-ring. Install and tighten the screw securely.

Apply oil onto a new O-ring.

When install the T-MAP sensor onto the throttle body, being careful not to damage the O-ring.

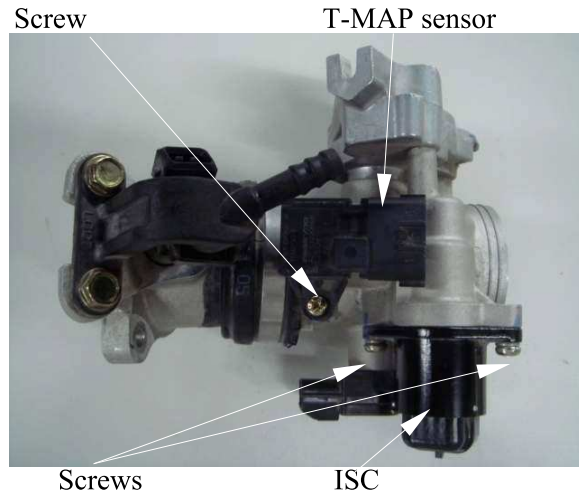
* Always replace an O-ring with a new one.

Install the set plate and tighten the screw securely.



Apply oil onto a new O-ring.

When install the ISC and T-MAP sensor onto the throttle body, being careful not to damage the O-ring.



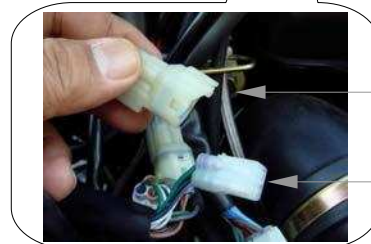
DIAGNOSTIC TOOL CONNECTOR

INSPECTION

- Remove front cover
- Make sure moving the shift lever into the N or P position .
- Remove diagnostic tool connector protect sheath.
- Turn the ignition switch to “ON”
- Measure the voltage between the following terminals of the diagnostic tool connector .



Front cover



Diagnostic Connector Protect sheath.

Diagnostic Connector

Terminal	Normal
BR/L (+) G/B (-)	Battery voltage
B/L (+) W/L (-)	Battery voltage - 1 V

13. FUEL INJECTION SYSTEM


KYMCO Diagnostic Report
MXU 500i
SF :
Production
Date :
Customer :
Service
Date :
Eng. No:
Mileage :

Reason of repair: <input type="checkbox"/> maintenance <input type="checkbox"/> breakdown				
Item		Date	Reference	Memo
ECU Version	ECU No		LKA8	
	Hardware Ver			
	Software Ver			
	Calibration Ver		QK111010	
	Model Name		A4LKA8QKAA	
DTC	Active			
	Occurred			
	History			
(Cool Engine) EnginesStop	Air Temp.(°C)		environ.temp ± 2 °C	
	Engine Temp.(Coiling)		environ.temp ± 2 °C	
	Atom. Pressure(Kpa)		101.3 ± 3 kPa	The ambient pressure drop about 12 kpa at the altitude every 1000m raised
	Throttle Position(%)		0% / 90% over	Idle/Throttle fully
	Throttle Position (V)		0.67V ± 0.05 / >3.6V	Idle/Throttle fully
	TPIdleMean (V)		0.67 ± 0.05	
	Battery Volt (V)		>12 V	
	Idle speed setpoint (rpm)		---	
	ISCAdapMean (°)		---	
	Roll Sensor volt (V)		---	
	Accumulated ECU. run time(M)		---	
(Hot Engine) BeforeRepair	EngineSpeed IDLE(rpm)		1400 ± 100 rpm	
	MAPSample (kPa)		30 ~ 40kpa	
	Injection duration (ms)		2.6 ~ 3.8ms	
	Ign. Advance (°)		12 ~ 16 BTDC	
	Ign.Dwell duration (ms)		---	
	Air Temp.(°C)		>45 °C	
	Engine Temp. (°C)		>80 °C	
	O2 sensor voltage (V)		---	
	O2 sensor heater (Yes/no)		---	
	O2 sensor correct		---	
	IDLE CO(%)		1.5 ~ 4.5 %	
ISC Step		< 65		
(Hot Engine) AfterRepair	EngineSpeed IDLE(rpm)		1400 ± 100 rpm	
	MAPSample (kPa)		30 ~ 40kpa	
	Injection duration (ms)		2.6 ~ 3.8ms	
	Ign. Advance (°)		12 ~ 16 BTDC	
	Ign.Dwell duration (ms)		---	
	Air Temp.(°C)		>45 °C	
	Engine Temp. (°C)		>80 °C	
	O2 sensor voltage (V)		---	
	O2 sensor heater (Yes/no)		---	
	O2 sensor correct		---	
	IDLE CO(%)		1.5 ~ 4.5 %	
ISC Step		< 65		
Repair description			Repair Process	

Report ID=

Report Version : JAN/29/2010

22. FUEL INJECTION SYSTEM



ATV FI DIAGNOSTIC TOOL OPERATION INSTRUCTIONS 3620A-LEB2-E00(ENGLISH VERSION)

version:V1.0.7

22. FUEL INJECTION SYSTEM

1. FI DIAGNOSTIC TOOL

- This tool is developed by KYMCO and for KYMCO vehicle only.
- Please refer to the specification when serving this vehicle.
- This tool is without battery inside. The power is provided from vehicle.
- This software can be updated with computer for new model through the USB cable. The power required of tool is connected with 12V battery.
- For connection, please connect this tool with the connector of ECU. It's available when turning on the ignition switch.

- The function includes ECU version, model name, data analysis .
 - ECU version: includes model name, ECU number, identifications number and software version.
 - Failure codes: DTC reading, DTC clearing and troubleshooting.
 - Data analysis: For ECU's software inspection.
 - **Adjust : The adjust function setting is not allowed**



22. FUEL INJECTION SYSTEM

2. DTC INSPECTION PROCEDURE

Showing four functions on the screen when switching on power.



LKA8 is for
MXU500i

- A). ECU version: Including of model name, ECU number, identifications number and software version. Press the **Enter** button

Press the " Enter " button



LKA8 is for
MXU500i

22. FUEL INJECTION SYSTEM

B). Press the " Down " button and then turn to the first page.



C). Press the " Enter " button to check the DTC failure code

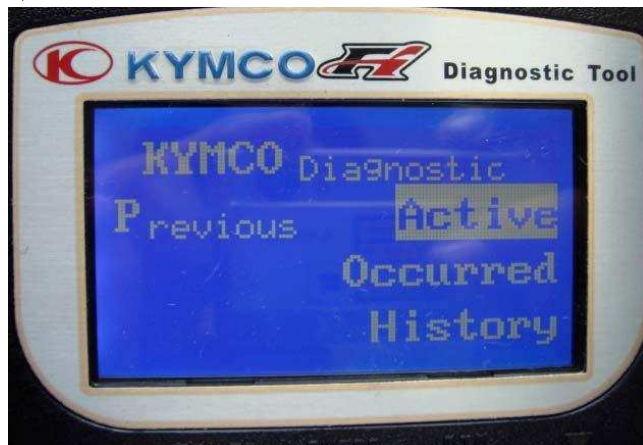


22. FUEL INJECTION SYSTEM

D). Press the " Enter " button



E). Press the " Enter " button



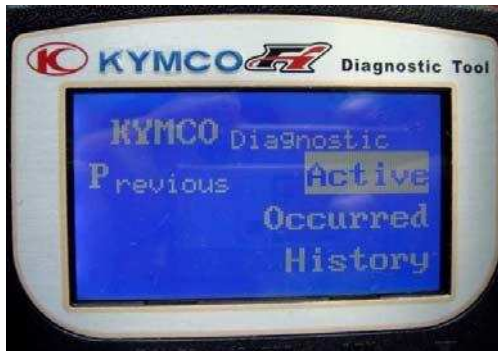
F). Display what's DTC number on this DTC-List.

Press the " Enter " button and then turn to the previous page

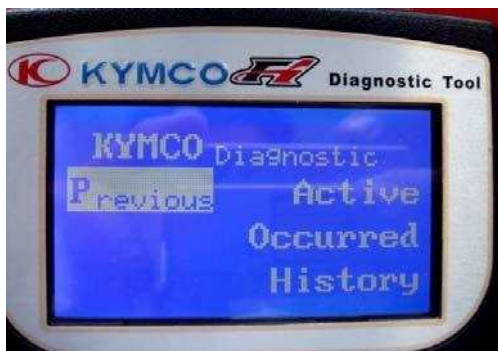


22. FUEL INJECTION SYSTEM

G). Press the " UP " button



H). Press the " Enter " button and then turn to the previous page .



I). Press the " UP " button



22. FUEL INJECTION SYSTEM

J). Press the " Enter " button and then turn to the first page.



22. FUEL INJECTION SYSTEM

3. DTC CLEAR PROCEDURE

A). Check the DTC



B). Press the " Enter " button



C). Choose " Load DTC "
Press the " Down " button



22. FUEL INJECTION SYSTEM

D). Press the " Enter " button and the indicator is lighting.



E). Clearing DTC completed if the indicator is off.



22. FUEL INJECTION SYSTEM

4. DATA ANALYSIS PROCEDURE

A). Press the " Down " twice



B). Choose " Data Analyze"

Press the " Enter " button to enter page 01



C). Down-page 01

The measure figures including of Engine speed, Battery voltage and Engine speed.

Press the " Down " button to enter page 02.



22. FUEL INJECTION SYSTEM

D). Down-page 02

The measure figures including of TPS position, TPI idle adapted and ISC step .

Press the “ Down” button to enter page 03.



E). Down-page 03

The measure figures including of engine temperature ,air temperature and intake pressure .Press the “ Down” button to enter page 04.



F). Down-page 04

The measure figures including of atmosphere temperature, fuel injector interval and ignition advance . Press the “ Down” button to enter page 05.



22. FUEL INJECTION SYSTEM

G). Down-page 05

The measure figures including of gear position and gear ratio.

Press the “ Down” button to enter page 06.



H). Down-page 06

The measure figures including of rollover voltage(The function setting is not allowed).

Press the “ Down” button to enter page 07.



I). Down-page 07

The measure figures including of ECU counter.



J). Press the " UP " to the previous page.