



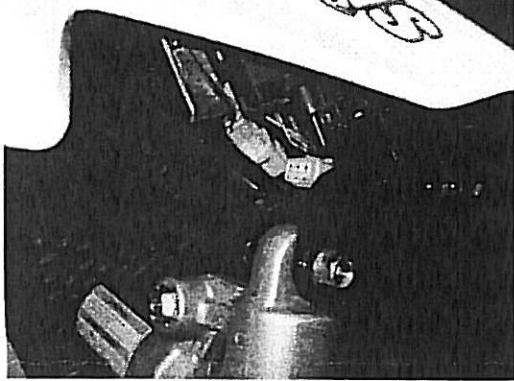
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LTR450 06-10 VORTEX X10 ECU INSTALLATION INSTRUCTIONS

Thankyou for purchasing your Vortex X10 ECU (Engine Control Unit). We hope you will enjoy the benefits of our product. Please read and follow the below mounting and operation instructions carefully.

Step 1: Locate the standard ECU under the plastic shroud at the front of the quad.



Step 2: Wash and Remove any dirt around the standard ECU box and connector with a low pressure hose. Do not blast the connectors with high pressure. Allow to dry or blow off any excess water with high pressure air. **Give extra attention to any dirt near the connector housing as any dirt that enters the connector when it is unplugged can cause permanent damage to the wiring harness.**

Step 3: Remove the Standard ECU by sliding the rubber mounting boot together with the ECU off the mounting tabs. **CAREFULLY** unplug the 36Way connector on the ECU **Note: These connectors have a locking tab that needs to be pressed before carefully unplugging the connector.**

Step 4: Remove the Vortex ECU from its package and slide into the Rubber Mounting Boot supplied.

Step 5: Insert the VORTEX ECU and rubber mounting boot onto the mounting bracket as per the standard ECU was mounted.

Step 6: Carefully plug the 36 Way connector onto the VORTEX ECU and push firmly until the locking tab clicks. Route the black programming harness (with rubber cap) coming from the Vortex ECU along the wiring harness out of the way and zip tie.

Note: This is also the connection for the optional handlebar switch.

Installation is now complete. Please refer to the Map listing provided for a guide to the 10 map settings provided. We suggest you test all the settings to find the one that fits with your riding style or track conditions on the day. See next page for a guide to how the fuel trim and map switches work.

MAP SELECTOR & FUEL TRIM Switch Operation:

The Vortex X10 ECU has 10 Pre-programmed Power settings from "Mild to Wild". By changing the position of the X10 Switch on the ECU the user can change the type of power delivery for different rider styles or track conditions. See Map listing chart for explanation of the power type expected from each setting. In addition there are three switches which will modify the fuel supplied to the motor through the EFI system. These switches are divided as follows:

LO: 5-25% Throttle(Like a Pilot Jet on a Carby)

MID: 33-66% Throttle(Like a Needle Jet on a Carby)

HI: 75-100% Throttle(Like a Main Jet on a Carby)

Each switch position is either + or - fuel in 2.5% increments. The base position is "5,5,5" with position 6 through 0 adding fuel and position 4 through 1 is subtracting fuel from the selected X10 Map. For example if a fuel trim switch is on position 6 then 2.5% fuel is added to the selected map. If a fuel trim switch is in position 3 then 5% fuel is subtracted from the selected map.

NOTE: It is not advisable to go leaner on any setting unless you are an experienced engine tuner or are monitoring the Air/Fuel ratio with a wideband sensor / reader. Air / Fuel Ratios greater than 15:1 can cause serious engine damage.

INDEMNITY

Note: This is a performance product and is designed for competition use only. The manufacturer or their distributor accepts no responsibility for damage or injury caused by this product. Because we cannot control the application or use of this product, the buyer assumes all risks of any and all damage that may occur to their self, their machinery or third party due to the use of this product. The product is guaranteed against manufacturing defects.



DATE: 10/10/2009

See below the VORTEX X10 ECU Fault Flash Codes. The Vortex ECU will flash the Handlebar LED or the FI light when there is a fault condition in one of the sensors. This Code will flash until the ECU is reset by being powered down and restarted.

NOTE: These are a tool for fault finding a problem only and cannot be considered absolute.

Fault Code	Fault Condition	Troubleshooting Suggestions
1	Tip over sensor activated	
2		
3	TPS sensor input voltage low	TPS connector unplugged. TPS wiring short or open circuit. TPS sensor wrong position adjustment. TPS sensor faulty.
4	TPS sensor input voltage high	TPS connector unplugged. TPS wiring short or open circuit. TPS sensor wrong position adjustment. TPS sensor faulty.
5	MAP sensor input voltage low	MAP connector unplugged. MAP wiring short or open circuit. MAP sensor faulty.
6	MAP sensor input voltage high	MAP connector unplugged. MAP wiring short or open circuit. MAP sensor faulty.
7	IAT sensor input voltage low	IAT wiring short or open circuit. IAT sensor faulty.
8	IAT sensor input voltage high	IAT connector unplugged. IAT wiring short or open circuit. IAT sensor faulty.
9	ECT sensor input voltage low	ECT wiring short or open circuit. ECT sensor faulty.
10	ECT sensor input voltage high	ECT connector unplugged. ECT wiring short or open circuit. ECT sensor faulty.

ECU_0_1_20 Ecu Fault Codes - 2009-9-28

IMPLEMENTED FOR ECU WITH DATE CODE ON OR LATER THAN 091010

DATE CODE 091010 is date 10th OCT 2009



X10 CDI SETTINGS
LTR450 09-10
ECU

X10 Map File Name: LTR450_09-10 RELEASE-4 (FW 0-2-22) 30-7-10.Vecu1

Handlebar Switch Position	X10 Switch Position	Main Curve Name	Power Type	SPARK CUT Rev Limit RPM
"MAP 1"	1	Map 1	BEST OVERALL POWER	11,200
"MAP"	2	Map 2	TRACTION MAP 1	11,200
"MAP"	3	Map 3	TRACTION MAP 2	11,200
"MAP"	4	Map 4	LINEAR POWER MAP 1	11,200
"MAP"	5	Map 5	POWER MAP 2 - FUEL SAME 8	11,200
"MAP"	6	Map 6	RMZ450 IGNITION & VORTEX FUEL MAP	11,200
"MAP"	7	Map 7	POWER MAP 3 - FUEL SAME 8	11,200
"MAP"	8	Map 8	MAP 1 + FUEL MAP FOR HIGHER FLOW	11,200
"MAP"	9	Map 9	STD IGNITION + VORTEX FUEL MAP	11,200
"MAP"	0	Map 10	STD IGNITION& FUEL MAP + REV LIMIT	11,200
RELEASE DATE: 29/09/09			Standard Rev Limit:	10,450 RPM FUEL CUT
REVISED: 12/05/2010		Update for (FW Version 0-2-9) + ADD NEW MAPS 4, 5 & 7		
12/07/2010		Update for (FW Version 0-2-14)		