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KTM 250_350_450 SXF/XCF 23
HUSKY FC/FXC 250_350_450 23

VORTEX X10 ECU **INSTALLATION & OPERATION 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: Remove the bikes seat.

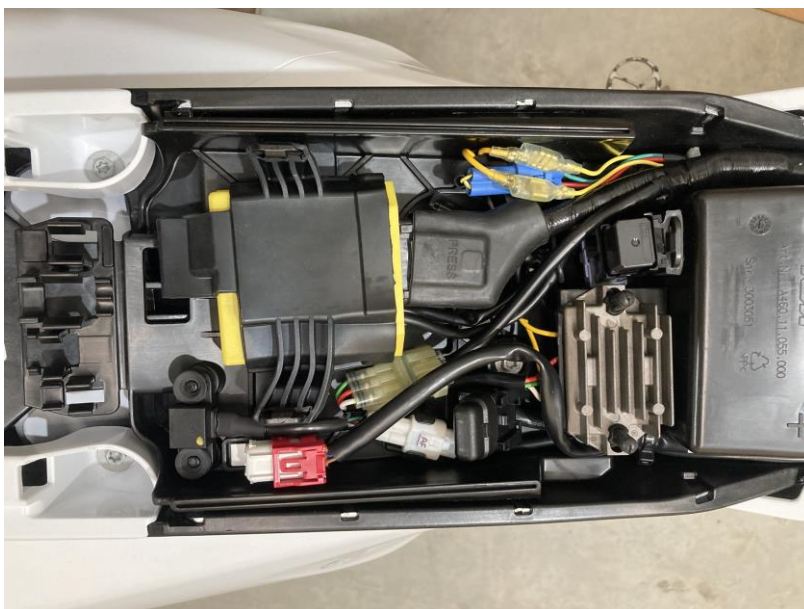
Step 2: Remove any dirt around the standard ECU box and connector using high pressure air. **Give extra attention to any dirt near the connector housing as any dirt that enters the connector when it is unplugged can cause permanent damage to the wiring harness.**

TIP: DO NOT USE HIGH PRESSURE TO WASH ANY ELECTRICAL CONNECTORS!

Step 3: Remove the Standard ECU & rubber boot from the mounting tab. **CAREFULLY** unplug the 33Way connector on the ECU **Note: These connector has a locking tab that needs to be pressed before unplugging the connector. Do not pull on the wires.**

Step 4: Remove the VORTEX X10 ECU from its package and slide into the standard Rubber Mounting Boot.

Step 5: Insert the VORTEX ECU and rubber mounting boot onto the mounting bracket as per the below picture and plug the 33Way connector onto the ECU until the locking tab clicks. Route the Programming (Black 4 Pin) & Options Port (Black 8 Pin) Cables as per below picture.



Step 6: Replace the bikes seat. Installation of the Vortex CDI is now **complete!**

VORTEX X10 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:

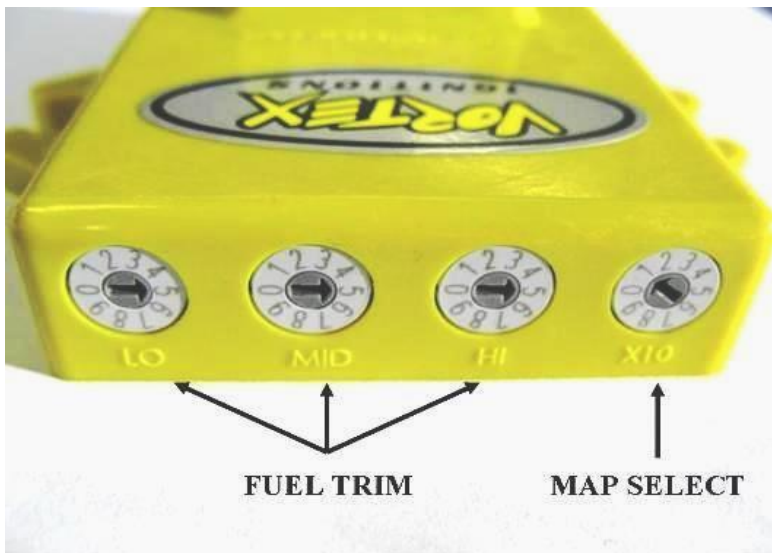
LO: 2.5-25% Throttle(Like a Pilot Jet on a Carby)

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” means NO TRIM. Position 6 through 0 (0=10) 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 great than 14:1 can cause serious engine damage.



TPS END-POINT SETTING

NOTE: – ONLY REQUIRED IF TPS HAS BEEN REPLACED

The Vortex X10 ECU can set the TPS (Throttle Position Sensor) endpoint voltages without the need for a PC or any other device. It may be necessary to set the TPS endpoints when you replace a Throttle Position Sensor or as directed by your service centre. To set follow the following steps:-

1/ With the THROTTLE CLOSED :- PRESS and HOLD the KILL SWITCH at the same time as pressing the STARTER BUTTON for 1 second. Release all and proceed to step 2.

2/ With the THROTTLE FULLY OPEN :- PRESS and HOLD the KILL SWITCH at the same time as pressing the STARTER BUTTON for 1 second.

3/ TPS endpoints are now set. This process can be repeated at any time as required but is not necessary.

KTM / HUSKY MAP SWITCH OPERATION



The Vortex X10 ECU will interact with the KTM/ HUSKY Standard Handlebar Switch in a similar way as used with the standard ECU. See below operation modes.

MAP SELECTION

MAP 1 (WHITE) = VORTEX MAP 1 (see map listing for details)

MAP 2 (GREEN) = MAP X10 – Map selected on the Vortex ECU X10 Switch

ENGAGING LAUNCH MODE

With the engine running press and hold the TC and QS switches for 1 second and the FI, TC and QS lights will flash rapidly. These Flashing lights indicates Launch Mode is active. When in Launch Mode the ECU will use parameters which alter Rev Limit, Ignition Timing and Fuel Map based on engine RPM, Throttle position and effective acceleration.

USING LAUNCH MODE

The intended method for starting in Launch Mode is to have the bike in second gear and hold the throttle from 40-100% open and the engine is on the rev limiter. We recommend holding the throttle at 100%. When the gate drops modulate the power with the clutch only as the bike leave the gate. When the ECU detects a launch condition a timer will be activated. When that time has expired the launch mode will de-activate and normal operation will then resumed as indicated by the lights not flashing. Starts can be made in any gear. TC and QS can also be active during launch by turning them on prior to activating launch mode.

TRACTION CONTROL (TC) MODE:- This mode will limit power to the rear wheel during loss of traction by changing ignition timing and other paramters.

QUICK SHIFTER (QS) MODE:- This mode will allow clutchless upshifts by removing the load from the gearbox for a preprogrammed period of time.

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 for 12 months from date of purchase and this warranty is not transferable.