



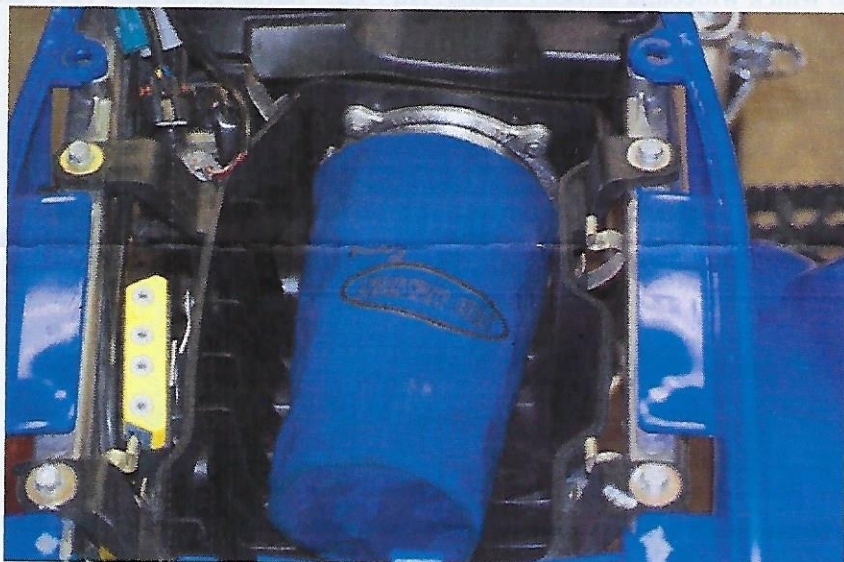
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## YFM700R RAPTOR 15-21 VORTEX X10 ECU INSTALLATION INSTRUCTIONS

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:** Remove the bikes Seat.

**Step 2:** Remove the Standard ECU from the LHS of the airbox by undoing the two mounting bolts. **CAREFULLY** unplug the 26 Way connector on the ECU. **Note: These connectors have a locking tab that needs to be pressed before carefully unplugging the connector. BE CAREFUL NOT TO PULL ON THE WIRING HARNESS WHEN UNPLUGGING THIS CONNECTOR.**



**Step 3:** Remove the Vortex ECU from its package and slide into the Vortex rubber mounting boot. Slot the ECU and Mounting boot onto the stainless mounting bracket provided and bolt onto the side of the airbox.

**Step 4:** Carefully plug the main connector onto the VORTEX ECU sub harness and push firmly until the locking tab clicks. Be careful not to get dirt in connectors!

**Step 5:** Use zip ties to secure any loose wiring. Replace the seat. Note: Do not over tighten zip ties on any wiring

NOTE: There are additional cables coming out of the ECU. One is for programming the ECU and the other introduced in Version B of the ECU-6 is used for additional programmable features such as Launch control, Dual Map, Dual Injector operation etc.

Installation is now complete. Enjoy!

**See next page for additional information on trim switches.**

**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 (richer) and position 4 through 1 is subtracting fuel (leaner) 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 in that throttle opening. If a fuel trim switch is in position 3 then 5% fuel is subtracted from the selected map throttle opening.

**NOTE:** The "LO", "MID" and "HI" switches are fuel trim based on throttle opening and NOT RPM

**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 15:1 can cause serious engine damage.

## DYNAMIC TRACTION CONTROL

The Vortex X10 ECU has an exciting new feature called Dynamic Traction Control (DTC). As the name suggests this is a form of Traction Control. When this DTS is turned on the ECU will monitor rear wheel acceleration and when the programmed acceleration is exceeded will control engine power and reduce wheel spin.

## ACTIVATING DTC (Dynamic Traction Control)

Engine Running in Neutral – TOGGLE the Vortex DUAL SWITCH once.  
When DTC is active the FI Lamp will display a fast flash with longer delay.

**Note:** This fast flash should not be confused with the Fault Flash Codes provided to indicate a faulty sensor. The Fault codes display as a slow flash with a long break between counts. See included Fault Flash Codes sheet for a description of these codes.

## **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.





**X10 ECU SETTINGS**  
**YFM700R 15-21 RAPTOR**  
**ECU-6D**  
**DYNAMIC TRACTION CONTROL**

X10 Map File Name: YFM700R\_15-21 RELEASE-1 (ECU-6D)(FWe006.4.0.23) 15-1-21 Vecu1

X10 Switch Position	IGNITION MAP DESCRIPTION	FUEL MAP DESCRIPTION	Rev Limit RPM	Rev Limit Style
1	POWER MAP 1 BEST OVERALL POWER TRACK	FUEL MAP 1 DRI MOTOR & PIPE	9,200	SPARK CUT / 100
2	TRACTION MAP 1	FUEL MAP 1 DRI MOTOR & PIPE	9,200	SPARK CUT / 100
3	TORQUE MAP 1	FUEL MAP 1 DRI MOTOR & PIPE	9,200	SPARK CUT / 100
4	TORQUE MAP 2	FUEL MAP 1 DRI MOTOR & PIPE	9,200	SPARK CUT / 100
5	POWER MAP 1 BEST OVERALL POWER TRACK	FUEL MAP 2 DRI MOTOR & PIPE -RICHER +5%	9,200	SPARK CUT / 100
6	POWER MAP 2	FUEL MAP 2 DRI MOTOR & PIPE -RICHER +5%	9,200	SPARK CUT / 100
7	POWER MAP 3	FUEL MAP 3 (FOR STD MOTOR & PIPE)	9,200	SPARK CUT / 100
8	TORQUE MAP 3	FUEL MAP 3 (FOR STD MOTOR & PIPE)	9,200	SPARK CUT / 100
9	TORQUE MAP 4	FUEL MAP 3 (FOR STD MOTOR & PIPE)	9,200	SPARK CUT / 100
0	BASED ON STD IGNITION MAP	BASED ON STD FUEL MAP	8,950	SPARK CUT / 100

Standard Rev Limit: 8,950

Date Revision Record  
 15/01/2021 RELEASE-1 (FW e006.4.0.23) FOR USE WITH USING ECU-6D ONLY

TRACTION CONTROL: USING THE VORTEX HANDLEBAR MAP SWITCH- FAST TOGGLE OF THE SWITCH WILL ENGAGE DYNAMIC TRACTION CONTROL  
 WHEN ACTIVE SEE A SHORT CONTINUOUS SHORT FLASH FOLLOWED BY A LONGER DELAY ON THE ENGINE LAMP

**NOTE: ALL MAP HAVE HIGHER REV LIMIT THAN STANDARD**  
**WARNING: ALL MAPS HAVE BEEN TESTED WITH AND WE RECOMMEND USING 98 RON (92 AKI) OR HIGHER OCTANE RATED FUEL**  
**IF FUEL LESS THAN 95 RON (91 AKI) FUEL IS USED WITH THIS PRODUCT MAY CAUSE DETONATION AND ENGINE DAMAGE**  
 USA AKI = (R+M)/2 = 92  
 AUSTRALIA & NZ RON = 98  
 EUROPE RON = 98





**DATE:** 27/08/2010

See below the VORTEX X10 ECU Fault Flash Codes. The Vortex ECU will flash the Handlebar LED or the FI light (on applicable models) 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 - High	Vehicle is not upright - Engine won't start
		Tip Over Sensor is faulty - Engine will not start
2	Tip over sensor activated - Low	Vehicle is not upright - Engine won't start
		Tip Over Sensor is faulty - Engine will not start
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.
11	BARO sensor input voltage low	BARO connector unplugged.
		BARO wiring short or open circuit.
		BARO sensor faulty.
12	BARO sensor input voltage high	BARO connector unplugged.
		BARO wiring short or open circuit.
		BARO sensor faulty.

IMPLEMENTED FOR ECU WITH DATE CODE ON OR LATER THAN 100820  
 DATE CODE 100820 is date 20th AUG 2010