

YGE 120/160HV Ver. 4.23 setup with VBar Ver 5.23 Governor

This is for setup with Full Size VBar and Spectrum satellites

1. Transmitter Setup

- a. Your Normal Throttle Curve should be 0 to 100
- b. Throttle Trim at Mid Point ,or Low Point, or disabled, does not matter as long as you keep it in the same place.

2. VBar Initial Setup: It is important to setup the VBar before doing any ESC Programming; it is possible to use another method as this one is long.

- a. Power on VBar only, 4 Cell NiMh pack is going to be needed, It's good to have a NiMh pack with a switch plugged into open servo socket on VBar.
- b. In VBar Throttle Endpoints at -100 and +100 in Setup/Transmitter, Adjust with Tx Endpoints as necessary to get -100 and +100.

3. Initial ESC Test

- a. Motor connected to ESC, **Remove Pinion on Motor, Remove blades**
- b. **Power on Tx, Throttle Low Position**
- c. **Power on VBar** only, 4 Cell NiMh pack is going to be needed, It's good to have a NiMh pack with a switch plugged into open servo socket on VBar.
- d. **Connect LiPo to ESC**
 - i. You should hear 3 descending tones
- e. **This will Power up Motor!**
 - i. **Move Throttle to Middle Position**, Motor should turn in correct direction, if not switch any 2 wires from ESC to Motor.
- f. **Unplug Lipo from ESC, Power off VBar**

4. ESC Setup – Program Card II

a. Wiring

- i. Program Card Left Port (ESC) to ESC Program Cable(short 4" one). (Be sure orange wire is on left of Prog. Card)
- ii. ESC Throttle Rx Cable(Long one) is disconnected
- iii. Program Card Right Port(RX) to VBar Throttle Port.
- iv. 4 Cell Ni MH Pack(NO More than 6.5V) to VBar for Power.

b. Programming

- i. **This controller offers the possibility of soft start-up then with a short response time.** (Plane Fast is what I ended up with as I could not get the response of Plane Fast when I programmed Heli Middle+Gov off X 3+Plane Fast)
- ii. **Power on Tx, then VBar(Wait for Swash Bump), then Lipo to ESC**
- iii. Press **Enter Button on the ProgCard** (Controller Settings are read, and are now on Page 1 of the Program Card)
- iv. We will skip timing and brake
- v. **Select Cut off type = slow down** and press **Enter**
- vi. **Select Cut off Voltage =3.1V** and press **Enter**
- vii. **Select Cells=12** and press **Enter**
- viii. **When calibrating ESC Endpoints with VBar you want the Gov enabled and press the button in Gov II Collective Control. Note the**

Long TX Cable from the ESC is disconnected, but be careful as motor can spool up if not done properly.

- ix. **Tx Stick at 0 Throttle, select Special Functions Stop press Enter**
- x. **TX Stick at 100% Throttle select Special Functions Full press Enter**
- xi. **On Program Card Press Left 2 buttons simultaneously and hold for 4 sec.** (This switches to Page 2 of the Program Card, now left LED blinks for page 2)
- xii. **Set Startup Speed to Plane Fast and confirm with Enter**
- xiii. **Select Act Freew/Gov Mode and select Gov off and press Enter Three times.**
- xiv. **Set Startup Speed to Plane Fast and confirm with Enter.**
- xv. **(For the controller here is another confirmation.)**
- xvi. **Verify Settings are correct for Page 2 by simply scrolling thorough**
 - 1. **Gov off, Startup Speed=Plane Fast, Freewheel=OFF, Startup Power=Auto**
- xvii. **Set other OPTIONAL settings per your motor/preferences**
 - 1. **Timing = 12 deg(Xera 4530)**
 - 2. **PMW = 10KHz(Xera 4530)**
- xviii. **Calibrate VBar Governor**
 - 1. **Calibrate Motor Stop**
 - a. **Turn on Collective Control**
 - b. **Raise Motor On Slider until motor turns on – Note Value**
 - c. **Now put that value -12 in Motor Off**
 - d. **Now Turn off Collective Control**
 - e. **Turn on Throttle Hold**
 - f. **Raise Throttle to Mid Stick**
 - g. **Turn off Throttle hold**
 - h. **If there is a 2 second delay the Motor Stop Value is too low (-107 as an example).**
 - i. **Start increasing Motor Stop by -1 until there is no delay when switching out of throttle hold.**
 - 2. **Calibrate Max Throttle**
 - a. **Turn on Collective Control**
 - b. **Go to full throttle on TX(Spool Up)**
 - c. **Decrease max throttle until motor starts slowing down. You want the minimum value that gets you max throttle**

5. ESC Phase Sensor Output Wiring:

- a. **Vbar JST Female Connector**
 - i. **Just Brown wire(Ground) and Signal(Orange), Red(Power) not needed**
- b. **ESC JST Male Connector**
 - i. **Brown Wire to Brown Wire on Vbar(Ground<>Ground)**

- ii. Orange Wire to Brown Wire(Signal<>Ground)
- iii. Red Wire to Orange on VBar(Phase Output <> Signal)

6.



Notes:

Test Flight One – Hover 5 Min

ESC Settings

Timing 18 deg
Slow Down – Lipo
Cut off 3.1V
Cells=12
Freewheel=On
Gov=off
Startup Heli Middle then Plane Middle
PMW=12KHz
Startup Power=2%
ESC=140 deg
Motor=150 deg

Test Flight Two

ESC Settings

Timing 6 deg
Startup Heli Middle then Plane Fast
Startup Power = Auto – No real difference between Auto
ESC=104 deg
Motor=120 deg