

## Power Vision 3 with Tune Lab Pre-Tune Setup Check List.

- 1.1. Open Power Core and make sure you are logged in.
  - 1.1.1. From Power Core Open C3 and WinPEP 8 Dyno Control.
- 1.2. Set up/install wideband O2 sensors.
- 1.3. If the bike is equipped with 18mm wideband bungs, and you can access them, use them.
- 1.4. If you can't use them, or the pipe does not have 18mm bungs in the pipes use Riv-Nuts.
  - 1.4.1. Dynojets current Stealth Extractor (Riv-Nut) kit tips.
    - 1.4.1.1. Drill hole as far up the pipe as possible closer to the exhaust port is better.
      - 1.4.1.1.1. Avoid double radius, and heat shield clamp placement.
      - 1.4.1.1.2. Make sure the flat washer is between the pip/riv-nit and threaded fitting to prevent too much flex on the thin-walled hollow stud.
      - 1.4.1.1.3. Using the Jam nut against the red block to lock it in position make sure that block side bung is clocked at about the 2 o'clock position.
2. Make sure your PV 3 has the latest correct firmware. Current firmware check/update is accessible through Power Core.
3. Connect Wide Bands
  - 3.1. Bike to Battery Tender.
  - 3.2. PV3 Autotune module
    - 3.2.1.1. To front WB sensor (1)
    - 3.2.1.2. To rear WB sensor (2)
    - 3.2.1.3. Power Vision 3 to Autotune module
    - 3.2.1.4. Point AFR gauges to Power Vision 3/ Wideband 1 and 2
  - 3.3. PVOG Auto tune module will work connected to RT box O2 wires. It will not connect to PV3.
    - 3.3.1.1. To front WB sensor (1)
    - 3.3.1.2. To rear WB sensor (2)
    - 3.3.1.3. To RT box
    - 3.3.1.4. Point AFR gauges to Autotune module / Wideband 1 and 2
  - 3.4. You can also connect the wide bands in the exhaust to connectors on the RT AFR pump.

**Note: we never use the pump with tubes slipped up the exhaust.**
  - 3.5. Connect autotune module to power during use and disconnect it after, especially if it's plugged into the bikes Battery.
4. Connect the Power Vision
  - 4.1. To computer via USB
  - 4.2. To Motorcycle via the correct communication cable for the bike.
5. Create a windows folder system to store the customers files in
  - 5.1. i.e., Desktop/Map/year/model/CID/Cam/EX/VIN/.../customer
6. With the Power Vision 3 under vehicle tools
  - 6.1. Reset fuel trims

- 6.2. Read the ECM, which creates the .stk file.
  - 6.2.1. Put the PV3 into USB mode.
  - 6.2.2. From the Power Core C3 Home tab open the stk from the PV3
    - 6.2.2.1. Save the stk file to the customers folder.
  - 6.2.3. If getting a tune License; from C3 Tools tab click "Power Vision Licensing."
  - 6.2.4. Follow the prompts to get the tune license.
    - 6.2.4.1. Save it in the customers folder, and to the Power Vision 3.
7. Open the STK file in WinPV
  - 7.1. Save as DJT named original tune From ECM in the customers folder.
  - 7.2. Is the cam is stock?
  - 7.3. Yes, proceed to step 7.5.
  - 7.4. No, the cam is Screaming Eagle or another aftermarket cam?
    - 7.4.1. On the C3 Home tab click "Value Files" select "Import Values":
    - 7.4.2. Select Air Flow PVV tables that are a compatible, year/model that closely matches the CID, Cam, Exhaust... of the bike you are tuning on the dyno.
    - 7.4.3. If you have a map, you feel is close you can create Air-Flow value files from it.
  - 7.5. On the C3 Home tab click "Value Files" select "Import Values" (PVV=Power Vision Value files) and from the correct year PVV folder and select 1-autotune.pvv

**Note: This PVV converts the cal/map into tool for calibrating air tables. DO NOT SEND the bike home with the customer with this in it!**

  - 7.6. If you don't have air tables from a similar build for your aftermarket cam bike, then you will need to use "Cam Cruncher."

Note: Cam cruncher is part of the Power Core Software Suite. If you don't have it call or email Dynojet Tech support. 800-992-4993. [PVtech@Dynojet.com](mailto:PVtech@Dynojet.com)

    - 7.6.1. Open Cam Cruncher
    - 7.6.2. Find your cam on the list.
    - 7.6.3. If you're working on a Twin Cam type the numbers that are in IVO and IVC under the cam info into IVO and IVC under the airflow folder in this cal/map.
    - 7.6.4. If you're working on an Milwaukee 8 read the numbers that are in IVO and IVC under the cam info. Add 11 to each number and type it into IVO and IVC under the airflow folder in this cal/map.
8. Double check the following important tables to make sure they were changed by the 1-autotune.pvv.

**Note: Most of these tables have already been changed by the Values we imported in step 7.5. Also, some bikes may not have all of these tables.**

  - 8.1. Under Airflow: "Torque Based ETC" table; Disable Torque based throttle with a 0 in the cell. PVV should have changed it to 0 Note 2020 bikes equipped with RDRS this must be enabled again after the dyno tune by putting a 1 in the cell.
  - 8.2. 2021-\* with RDRS disable it by putting a "0" in the "Torque Based ETC" and putting a 0 in the RDRS table.
  - 8.3. Injector Size
  - 8.4. Lambda Air-Fuel Ratio set to a flat 13.0:1 (0.84 Lambda) it may display 12.9-13.1:1 on the table, this is okay).

**Note: This Lambda/Air-Fuel table is used for VE calibration only! Not for daily riding!**
  - 8.5. RPM Limit: normally 6-6.5 on Harley Big Twins
  - 8.6. Speed Limiters set to 255kph (168MPH) in all of the speed limiter tables.
  - 8.7. Spark Advance, if you don't know what to look for here yet just make sure it looks similar to the other spark tables you have used. Eventually you will learn what to look for here.
9. Save as DJT in the Power Vision 3. I like to name this first round Cal1.
  - 9.1. Turn on the key and run switch, using the Power Vision 3 flash Cal1 into the motorcycles ECM. When done turn off the key for 15 seconds.
  - 9.2. Start the bike and warm it up to 170-200F or so.

- 9.3. Check MAP(KPA) at idle. You can display it on C3, or WinPEP 8 Dyno Control, or on the PV3 Screen.
- 9.4. Should be between 25 kpa and 35 kpa.
  - 9.4.1. if it is higher go to the PV software and load the tune.
  - 9.4.2. Under Airflow Go to 1000 RPM cell under the Map Load Normalization table.
  - 9.4.3. Change the ratio number at 1000 rpm.
    - 9.4.3.1. Example if the KPA was 40 put .9 for ratio number. If the KPA is 50 put .8 for ratio number.
    - 9.4.3.2. Save the modified cal/map to the PV3.
    - 9.4.3.3. Turn on the key and run switch.
    - 9.4.3.4. Flash it to the ECM.
    - 9.4.3.5. Turn the key off for 15 seconds.
    - 9.4.3.6. Go back to step 9.2.
- 9.5. If the idle is in the proper range, you are ready to Tune/Build VE tables.
10. Step test/stripe the VE cells on a Dyno, or a test track. Use the dyno tuning check list for proper step test set up and striping/tuning tips. The goal is to get at least 10 samples in every easily accessible cells.
11. Do the math.
  - 11.1. If you logged your Wide Band Data on a test track open the log file in WinPEP 8 Data.
  - 11.2. If you logged your data on the dyno open all the runs for this tuning round in WinPEP 8 Data.
  - 11.3. In C3 Tune Lab click the "Perform Correction" button. You may have to select the O2 sensors you used.
  - 11.4. When the corrections for the cylinders come up look at the numbers. These are a percent of change it is currently making to the VE table. The closer to 0.0 the better. An acceptable tolerance is 2.5.
  - 11.5. If the VE tables are not with in tolerance yet save the cal/map to Cal2 on the Power Vision 3
    - 11.5.1. Flash Cal2 to the ECM
    - 11.5.2. Go back to step 10.
  - 11.6. If the VE tables are with in tolerance.
    - 11.6.1. On the C3 Home tab click "Value Files" select "Import Values" (PVV=Power Vision Value files) and from the correct year PVV folder and select "Finish Tune.pvv"
    - 11.6.2. Save cal/map/tune as final in the customers folder on your computer
    - 11.6.3. Save cal/map/tune as final on the PV3
    - 11.6.4. Flash the ECM.