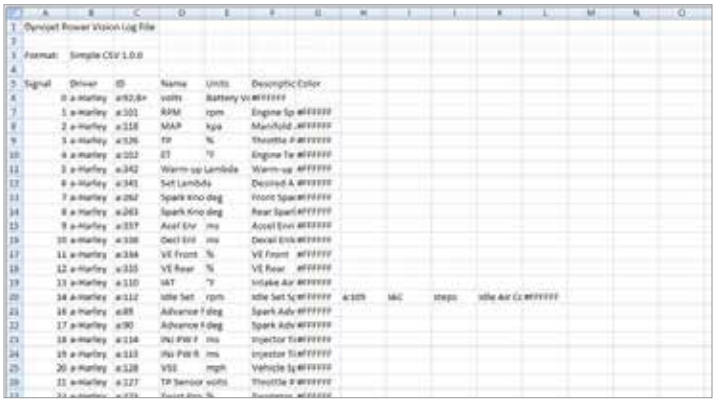
WORKING WITH A LOG

I HAVE CREATED A LOG ON MY POWER VISION. HOW CAN I VIEW IT?

If you have created log on your Power Vision, and saved it on your computer (see guide for creating and retrieving a log), the log is a CSV (Comma Separated Value) file type. You can open this CSV file in several ways.

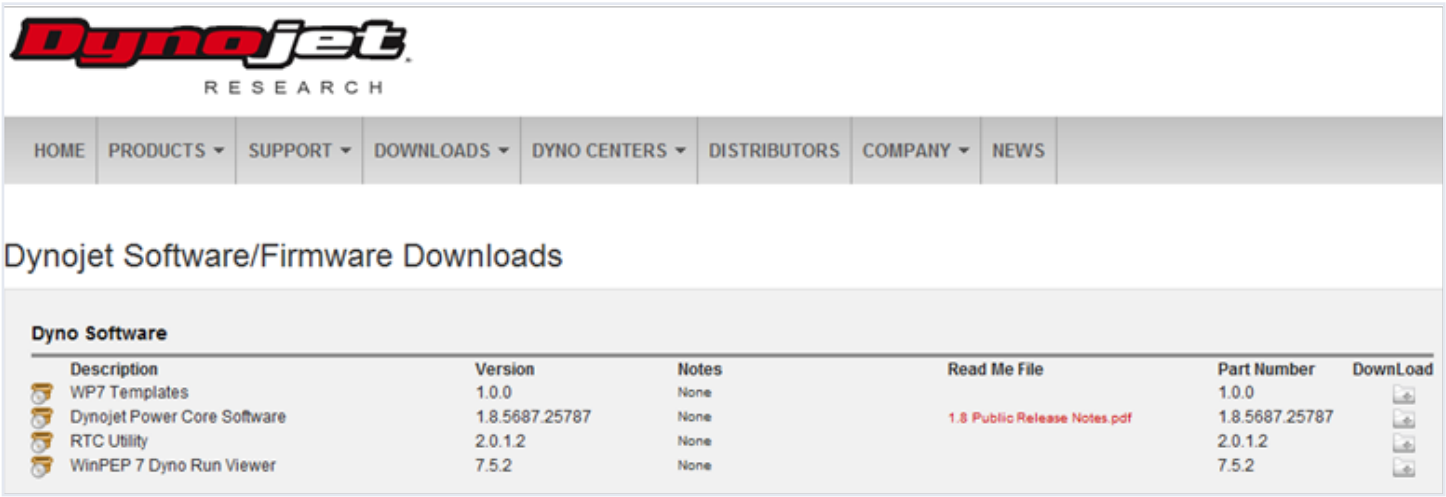
```
"Dynojet Power Vision Log File"
"Format:","Simple CSV 1.0.0"

"Signal","Driver","ID","Name","Units","Description","Color"
0,"a-Harley","a:92,8+","volts","Battery Voltage","#FFFFFF"
1,"a-Harley","a:101","RPM","rpm","Engine Speed","#FFFFFF"
2,"a-Harley","a:118","MAP","kpa","Manifold Absolute Pressure","#FFFFFF"
3,"a-Harley","a:126","TP","%","Throttle Position","#FFFFFF"
4,"a-Harley","a:102","ET","°F","Engine Temperature","#FFFFFF"
5,"a-Harley","a:342","Warm-up Lambda","","Warm-up Fuel AFR (Lambda)","#FFFFFF"
6,"a-Harley","a:341","Set Lambda","","Desired Air/Fuel (Lambda)","#FFFFFF"
7,"a-Harley","a:262","Spark Knock F","deg","Front Spark Knock Retard","#FFFFFF"
8,"a-Harley","a:263","Spark Knock R","deg","Rear Spark Knock Retard","#FFFFFF"
9,"a-Harley","a:337","Acel Enr","ms","Accel Enrichment","#FFFFFF"
10,"a-Harley","a:338","Decl Enl","ms","Decel Enleanment","#FFFFFF"
11,"a-Harley","a:334","VE Front","%","VE Front","#FFFFFF"
12,"a-Harley","a:335","VE Rear","%","VE Rear","#FFFFFF"
13,"a-Harley","a:110","IAT","°F","Intake Air Temperature","#FFFFFF"
14,"a-Harley","a:112","Idle Set","rpm","Idle Set Speed","#FFFFFF"
15,"a-Harley","a:109","IAC","steps","Idle Air Control Motor Position","#FFFFFF"
16,"a-Harley","a:89","Advance F","deg","Spark Advance Front","#FFFFFF"
17,"a-Harley","a:90","Advance R","deg","Spark Advance Rear","#FFFFFF"
18,"a-Harley","a:114","INJ PW F","ms","Injector Time Front","#FFFFFF"
19,"a-Harley","a:115","INJ PW R","ms","Injector Time Rear","#FFFFFF"
20,"a-Harley","a:128","VSS","mph","Vehicle Speed","#FFFFFF"
21,"a-Harley","a:127","TP Sensor","volts","Throttle Position Sensor","#FFFFFF"
22,"a-Harley","a:273","Twist Pos","%","Twistgrip Position","#FFFFFF"
23,"a-Harley","a:510","WBO2 FL","lambda","WBO2 LAMBDA Front","#FFFFFF"
24,"a-Harley","a:511","WBO2 RL","lambda","WBO2 LAMBDA Rear","#FFFFFF"
25,"a-Harley","a:411","WBO2 F","ratio","WBO2 AFR Front","#FFFFFF"
26,"a-Harley","a:412","WBO2 R","ratio","WBO2 AFR Rear","#FFFFFF"

"Time","B+","RPM","MAP","TP","ET","Warm-up Lambda","Set Lambda","Spark Knock F","Spark Knock R","Acel Enr","
"ms","volts","rpm","kpa","%","°F","","","deg","deg","ms","ms","%","%","°F","rpm","steps","deg","deg","ms",
10,14.3,2731,50.52,17,250,0,0.94,0,0,0,0,67.5,66,69.8,976,45,37,40.5,6.74,5.97,70.84,1.23,15.63,0.89,0.966,1
502,14.3,2727,50.89,17,250,0,0.94,0,0,0,0,67.5,66,69.8,976,45,37,40.5,6.79,6.06,70.84,1.23,15.63,0.89,0.966,
```

This is a typical CSV file opened via Windows Notepad. You can work with the log file this way if you like, but it would be fairly difficult.



Below is the same log file opened with a spreadsheet program like Microsoft Excel. This is much easier to work with than Notepad, as each value is separated in a different column. But there is a better way to analyze this data.

Dynojet's Power Core dyno software has the ability to import and graph data from a CSV file. See below. You can download the software here, http://www.dynojet.com/downloads/downloads.aspx?dc=Software/Firmware



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Dynojet Software/Firmware Downloads

Dyno Software

Description	Version	Notes	Read Me File	Part Number	DownLoad
WP7 Templates	1.0.0	None		1.0.0	
Dynojet Power Core Software	1.8.5687.25787	None	1.8 Public Release Notes.pdf	1.8.5687.25787	
RTC Utility	2.0.1.2	None		2.0.1.2	
WinPEP 7 Dyno Run Viewer	7.5.2	None		7.5.2	

Select the Dynojet Power Core Software download button on the Right.

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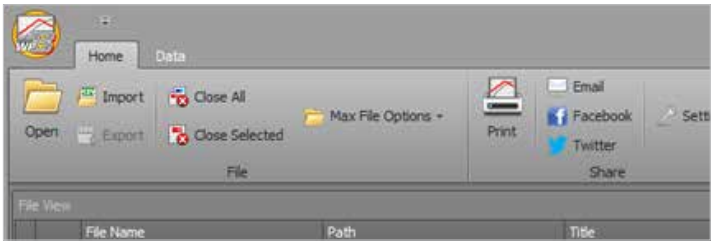
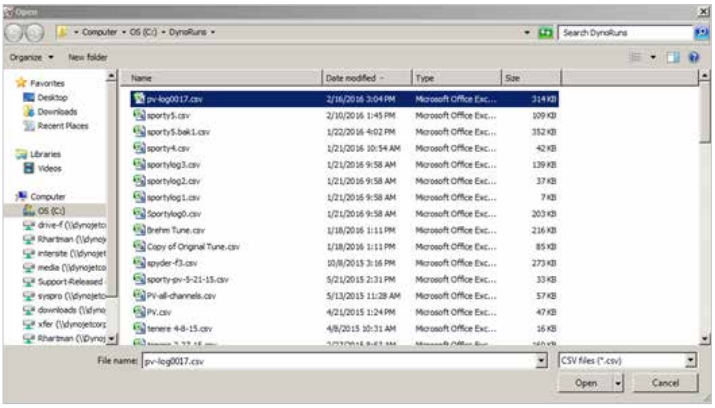
www.dynojet.com **pvtech@dynojet.com** **800-992-4993**

Once the Software is installed, open Power Core. **Select WinPEP 8 Data Center.**

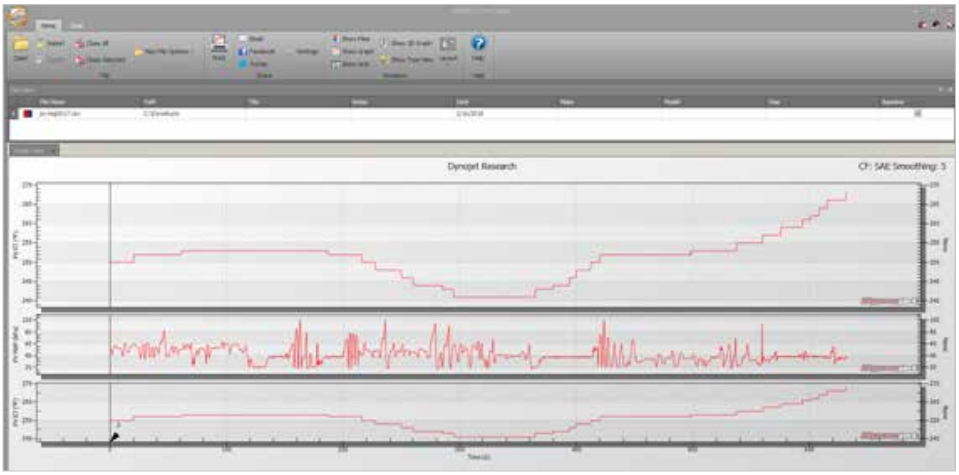


Once the Data Center software is open, **Select Import.**

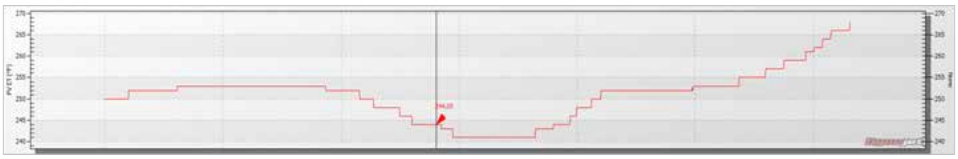


Next find your saved log file on your computer, **select it, and click Open.**

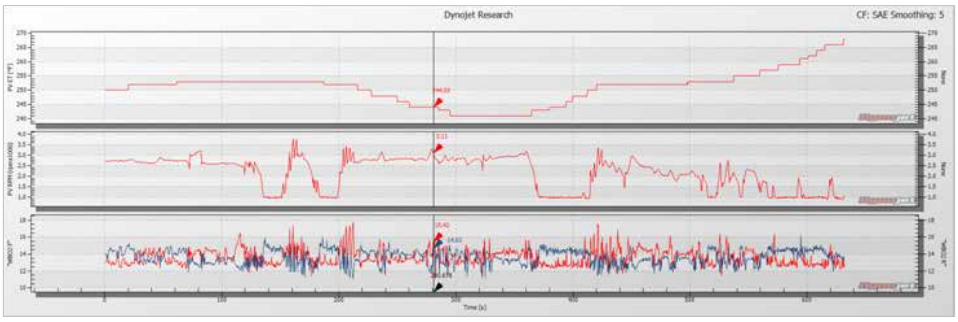
Once the log file is open, you are presented with a number of graph screens at the bottom of the screen. You can have one, two, or three graphs. **Go to the Data tab>select Single, Double or Triple Graph.**



Now you need to select the data to graph. Start by selecting the bottom choice, Time. Next on the Left and Right of each graph, you can click the item, then Power Vision, then the data you want graphed. Below PV ET (F) is selected on the Left. The engine temperature is plotted during the time of the log.



Repeat for the other graphs, selecting the data you want to see.



It makes sense to graph on one graph the Left and Right similar data from the front and rear cylinder.

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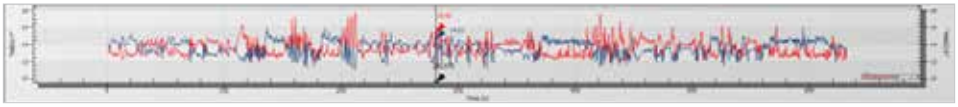
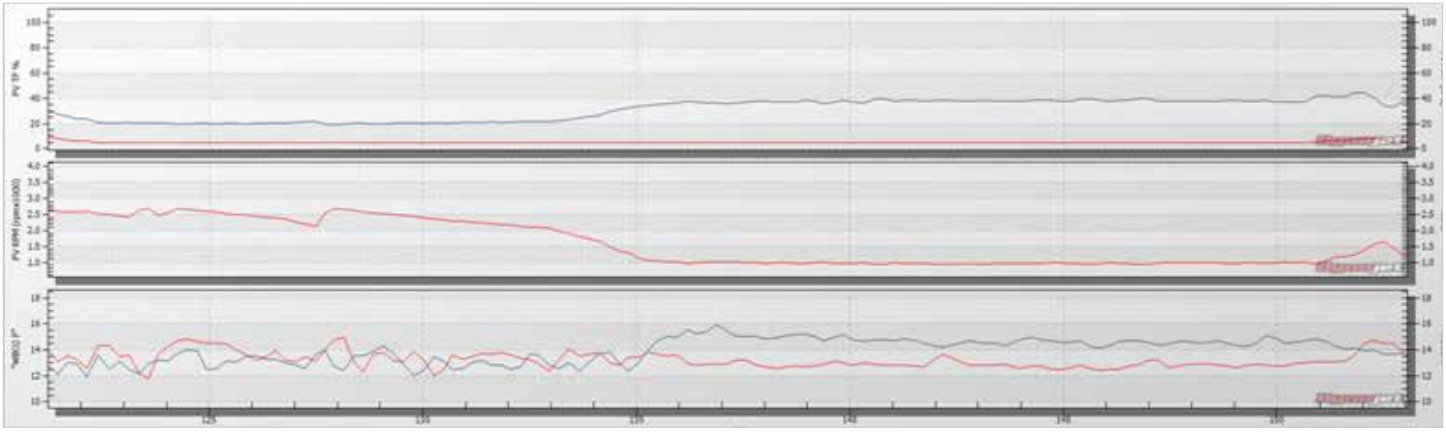
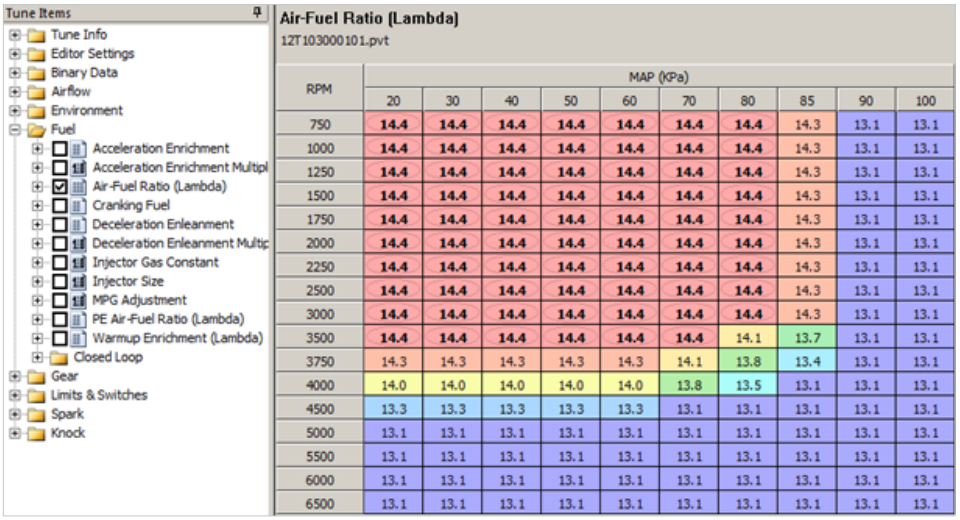


This graph shows front and rear air fuel ratio, from wideband o2 sensors.

You can zoom into an area by clicking and dragging with the mouse, creating a box around the small area you want to see closer. Below is an area of the log, where the top graph shows the throttle is closed, reading 5%, in Red. Also in the top graph, Map in Blue is around 40 kpa. The middle graph shows the rpm dropping while decelerating, leveling out at 1000 rpm. The bottom graph shows the AFR for each cylinder. The line in Red is the front cylinder, showing richer than the Blue line for the rear cylinder at idle.



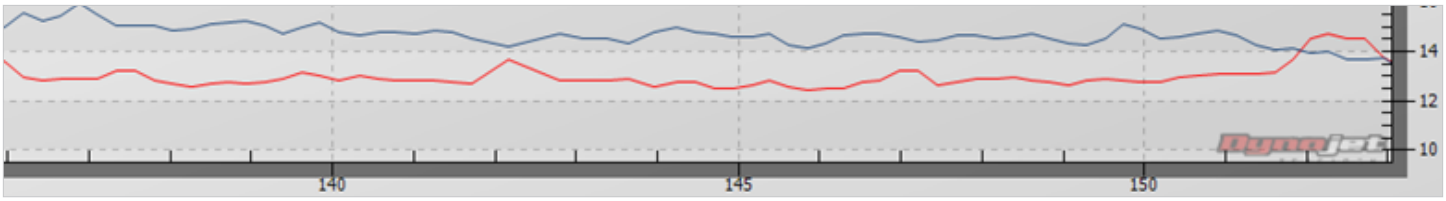


Air-Fuel Ratio (Lambda)

12T103000101.pvt

RPM	MAP (KPa)									
	20	30	40	50	60	70	80	85	90	100
750	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
1000	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
1250	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
1500	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
1750	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
2000	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
2250	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
2500	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
3000	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	13.1	13.1
3500	14.4	14.4	14.4	14.4	14.4	14.4	14.1	13.7	13.1	13.1
3750	14.3	14.3	14.3	14.3	14.3	14.1	13.8	13.4	13.1	13.1
4000	14.0	14.0	14.0	14.0	14.0	13.8	13.5	13.1	13.1	13.1
4500	13.3	13.3	13.3	13.3	13.3	13.1	13.1	13.1	13.1	13.1
5000	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
5500	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
6000	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
6500	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1

If you want to modify this tune based on this AFR data, you would open the tune used to create this log in WinPV, and start by looking at the AFR table in the tune. This tune is commanding an AFR of 14.4 at 40 kpa and 1000 rpm.



Seeing the engine is being commanded to run at an AFR of 14.4, we can see rear cylinder in Blue in this area of the log is close to correct. The front cylinder in Red is richer than the commanded 14.4.

RPM	MAP (KPa)											
	10	20	30	35	40	50	60	70	80	90	95	100
750	79.0	79.9	84.1	82.6	80.8	79.4	74.9	74.9	75.6	82.6	83.2	84.4
1000	79.0	82.9	87.3	84.3	80.8	79.4	75.4	75.3	76.1	83.2	84.4	85.6
1125	79.0	84.5	89.0	83.7	81.4	80.0	76.5	76.5	76.7	84.4	86.2	88.0
1250	78.5	84.5	89.0	86.0	82.7	81.0	79.5	80.4	79.8	83.3	95.0	98.3
1500	77.0	90.3	95.1	91.2	86.4	85.0	83.9	83.2	82.1	79.7	94.6	98.4
1750	73.5	87.5	92.1	89.8	89.1	87.8	85.9	85.9	83.7	82.7	95.0	103.6
2000	71.0	88.3	93.0	91.1	89.7	87.6	87.3	85.4	85.8	86.4	98.6	106.0
2250	70.5	87.0	91.6	91.8	91.0	89.4	87.8	86.8	86.6	85.4	96.4	106.4
2500	73.0	95.5	100.5	98.3	97.2	95.8	92.9	92.5	91.4	88.4	96.6	104.8
2750	75.0	89.3	94.0	94.5	95.7	93.1	92.1	89.4	88.3	86.5	93.0	102.7
3000	74.5	89.7	94.4	93.3	94.5	92.1	91.0	88.7	87.4	86.1	97.8	108.2
3500	69.5	87.7	92.3	92.2	93.8	90.9	90.4	90.7	89.7	90.1	105.7	108.0
4000	63.5	94.2	99.2	98.9	100.2	98.2	98.8	96.9	93.0	92.4	101.3	108.1
4500	60.0	84.6	89.1	95.9	97.0	99.2	95.4	93.5	90.2	90.3	93.5	98.1
5000	61.5	85.2	89.7	95.5	100.4	100.7	93.1	90.2	86.8	83.5	85.5	86.6
5500	64.0	86.3	90.8	92.7	94.2	95.8	88.4	86.7	82.1	81.4	82.6	82.0
6000	65.5	86.8	91.4	92.7	94.2	95.8	87.4	84.8	80.1	75.4	75.8	74.9
6500	65.5	86.8	91.4	92.7	94.2	93.5	85.7	84.2	79.5	75.4	75.8	74.9
7000	65.5	86.8	91.4	92.7	92.4	93.5	84.1	84.2	79.5	75.4	75.8	74.9

To modify this tune, and lean out the front cylinder, we would modify the front VE table. This tune has VE tables that are based on rpm vs. Map. This bike was idling at 1000 rpm and around 40kpa, so we would modify the highlighted area below, of the front cylinder VE table.

RPM	MAP (KPa)						
	10	20	30	35	40	50	60
750	79.0	79.9	84.1	72.6	70.8	79.4	74.9
1000	79.0	82.9	87.3	74.3	70.8	79.4	75.4
1125	79.0	84.5	89.0	83.7	81.4	80.0	76.5
1250	78.5	84.5	89.0	86.0	82.7	81.0	79.5

We would lower the value of the highlighted cells by about 10 each. You generally want to change a few cells in the area, not just one.

This should lean out the cylinder from the current 13's, to the 14's AFR that we want. **Save this changed tune, flash to the bike, and then test.**