

Superchips *flashpaq***Data Acquisition
Instructions**

Visit Flashpaq.com for downloadable updates & upgrades to your existing tuner.



Opening Screen

Ever wonder how much ignition timing your vehicle was running when you're at Wide Open Throttle? Are you curious about the sensor information your vehicle's computer uses to run your vehicle? Ever get a check engine light and want to dig a little deeper into it? Now all this and more can be unlocked with a simple download from www.flashpaq.com. A great compliment to the 'Data Logging' is our all new Advanced Data Acquisition which supports vehicle parameter Identifications or (PID's). What does this mean to you?

- View air and fuel data
 - MAF – Mass Air Flow rates and temperatures
 - Ignition Timing
 - Injector Fuel Rates
- View direct sensor information for diagnostics
 - Help Diagnose Faulty Sensors
 - Monitor Fluid Temperatures
- View powertrain data
 - Engine Sensor Data
 - Transmission Sensor Data

We're not done yet! Take Advanced Data Acquisition further – to your PC! You can grab our PC Data Acquisition Software package to view and transfer recorded PID information from the Flashpaq to your PC for enhanced review.

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Section A – Quick Start – Updating Tuners on Flashpaq.com

The Flashpaq Tune-up internet program automatically detects if the tuner is connected and the type of vehicle previously read. It will display the appropriate package part numbers to select and download.

- To update your Flashpaq with the latest firmware, calibrations and check for additional features:
 - 1) Connect your Flashpaq Tuner to your computer USB port.
 - 2) Double Click on the Flashpaq PC Application ICON.
 - 3) If multiple packages are available for your Flashpaq you will be prompted for selection of your choice:



- 4) Click 'Select' to choose the package 'Update with Data Acquisition'.
- 5) Click 'Download' to update your tuner.



- 6) The next screens will:
 - i. Check Tuner Status
 - ii. Update or Upgrade as selected from Steps 3-5
 - iii. Display Update or Upgrade confirmation
 - iv. Display unplug your Flashpaq from the computer
 - v. Display close the Flashpaq Tune-Up program.
- 7) Enjoy your updated product.

Section A - Quick Start – Record my 0 to 60 mph times now!

Please follow the steps below to log your time by speed

- Requirements to run Data Logging sessions:
 - If your engine is not running, start it
 - If your vehicle is moving, safely come to a complete stop
- From the opening screen
 - 1) SELECT Advanced Features
 - 2) SELECT Data Logging
 - 3) SELECT Log by Speed
 - 4) SELECT 0 to 60 Time

* Your engine must be running for test to operate properly.
 * Your vehicle must be stopped (I.E. 0 MPH) for test to work.
 * If your vehicle is moving you will be prompted with:
 "Stop vehicle to initialize run" until your vehicle speed is 0 MPH.

- 5) Follow ON SCREEN – "Run will start when vehicle moves"
- 6) When the run begins you will see a timer box:



- 7) When the run is completed the timer will automatically stop, then select "More" to view times:



Section A - Quick Start – Record my 0 to 60 mph times now! (cont.)

8) Times will be logged up to your target speed:



9) To view the fastest runs, select best:



*** Best times will be saved, even if Flashpaq is unplugged!**
*** You can choose to clear your best times by pressing Yes**

Note: Best times and last run times are stored separately, best times can be cleared after any run and will not affect last run times.

*** Best times will be the same as last run if only one run has been done**

Section A - Quick Start – Record my 1/8th mile times now!

Please follow the steps below to log your times by distance

- Requirements to run Data Logging sessions:
If your engine is not running, start it
If your vehicle is moving, safely come to a complete stop
- From the opening screen
 - 1) Press ENTER – after selection of Advanced Features
 - 2) Press ENTER – after selection of Data Logging
 - 3) Press ENTER – after selection of Log by Distance
 - 4) Press ENTER – after selection of 1/8th Mile Time

*** Your engine must be running for test to operate properly.**
*** Your vehicle must be stopped (I.E. 0 MPH) for test to work.**
*** If your vehicle is moving you will be prompted with:**
“Stop vehicle to initialize run” until your vehicle speed is 0 MPH.

- 5) Follow ON SCREEN – “Run will start when vehicle moves”
- 6) As the run begins you will see a box with time & top speed:



- 7) When the run is completed your final time and top speed will be displayed automatically, select “More” to view times:



Section A - Quick Start – Record my 1/8th mile times now! (cont.)

8) Times and speeds will be logged against distances:



9) To view the fastest runs, select Best:



Note: The times from a previous run were faster those in step 8, so the previous run's times continue to stay saved as 'best times'. Also, notice that all 5 distances' times and speeds were stored; that showed that at least 1 previous 1/4 mile run was successfully completed! (Step 8 only ran the 1/8th mile test.)

* Best times will be saved, even if Flashpaq is unplugged!
 * You can choose to clear your best times by pressing Yes

Note: Best times and last run times are stored separately, best times can be cleared after any run and will not affect last run times.

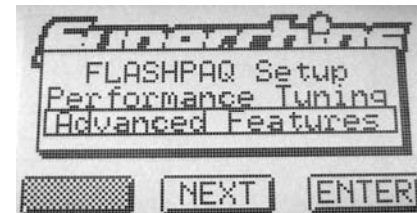
* Best times will be the same as last run if only one run has been done

Section A - Quick Start – Advanced Data Acquisition

Note: Tuner must be attached to the vehicle with ignition on at this time so that it can establish communication with the vehicle.

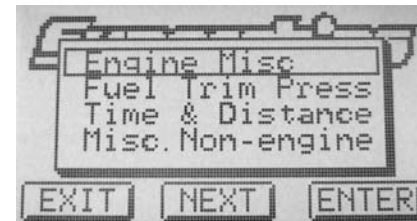
*** Press DOWN/NEXT to scroll as needed ***

From the opening screen



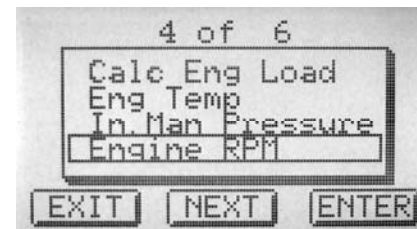
- 1) Press ENTER – after selection of Advanced Features
- 2) Press ENTER – after selection of Data Logging
- 3) Press ENTER – after selection of Advanced

Advanced will then display a menu that shows the following Options.



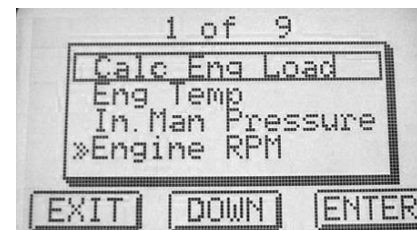
4) Press ENTER – after selection of Engine Misc.

After selecting Engine Misc., the user can scroll to the next sub-menu to choose which item will be chosen for display.



5) Press ENTER – after selection of Engine RPM

The ">>" will then be displayed next to the item to indicate that it has been selected. To unselect an item, position over the item and press the ENTER key again. Once you have selected the items from this menu that you wish to display follow the next step.



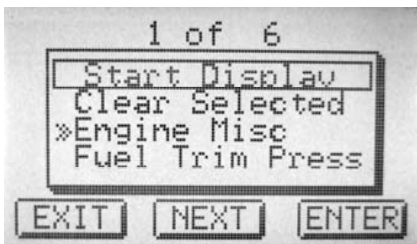
See Next Page

Section A - Quick Start – Advanced Data Acquisition (cont.)

*** Press DOWN/NEXT to scroll as needed ***

6) Press EXIT – to return to the previous screen

- Two new items will be added at the top of the section heading menu.
- **Start Display**
- **Clear Selected**



- Steps 4 & 5 can be repeated to select up to 4 different items. When you have selected all the data you wish to display you can use the **Start Display** menu item to start acquiring and displaying the data.
- Use the **Clear Selected** menu item to un-select all the items you have selected in order to start over.

If you try to select more than the maximum number of items (4) you will get a message stating “Exceeds maximum selected items” and the tuner will beep. At this point you must un-select some items before others can be selected.

Start Display will communicate with the vehicle and display the selected information on the screen. The data will continue to be updated until you press the **EXIT** button to leave the display. You can also press the **LOG** button in order to save the displayed information to the buffer in the tuner. The data will be saved until the time limit (60 seconds) is reached or the buffer is filled, or the user presses the **STOP** button.

Once data has been saved to the tuner, you can disconnect the tuner from the vehicle and connect it to your PC using the USB cable. You can then download the saved data to your PC for display and analysis by using a provided PC Data Acquisition software package.

Section A – Quick Start - PC Data Acquisition Software

- Transfer the Data from the tuner to a computer with the PC Data Acquisition Software.
 - 1) Plug the Tuner into any USB port on the computer
 - 2) Start the Flashpaq Internet Update Program (Flashpaq Tune-Up)



- 3) Click the "Data Acquisition" menu on the log in screen.



In order to see this menu item, the tuner must have Data Acquisition enabled and data must be logged in the tuner.

- 4) Click Get Data to bring up the Data Acquisition screen



- 5) Click Browse or type in the full path and file name where the data will be saved on the computer.

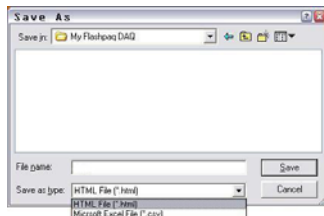


See Next Page

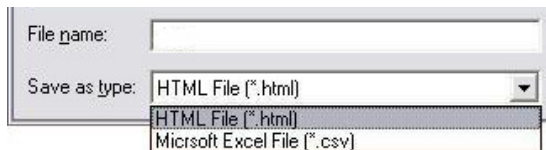
Section A – PC Data Acquisition Software (cont.)

- Clicking the browse button brings up the following screen

6) Type in a name to give the file



7) Select the file type (from the “Save as type:” dropdown)



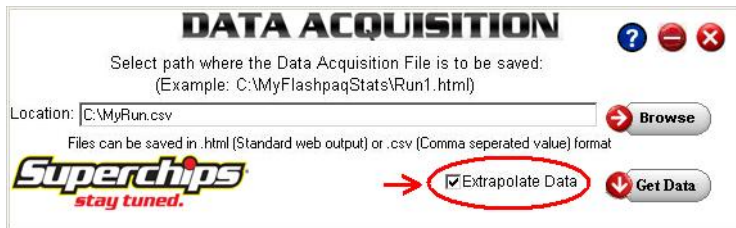
HTML format can be viewed via any internet browser
 CSV format can be opened and edited via Microsoft Excel and various other programs.

8) Click the save button

- The File name will be selected in the Data Acquisition Screen



9) Click the Extrapolate Data selection (to fill in close approximations and to assist when graphing.)



See Next Page

Section A – PC Data Acquisition Software (cont.)

Note: Uncheck Extrapolate Data Selection to show only actual Data. Once the data is transferred, it may appear as if there were data missing from the table. Not every parameter ID (ex. Engine RPM, Engine Temp, etc.) provides data at the same time. This maybe an inconvenience for graphing within Microsoft Excel or other programs.

10) Click the Get Data button



- Once the data has been read out of the tuner, the screen below will pop up.



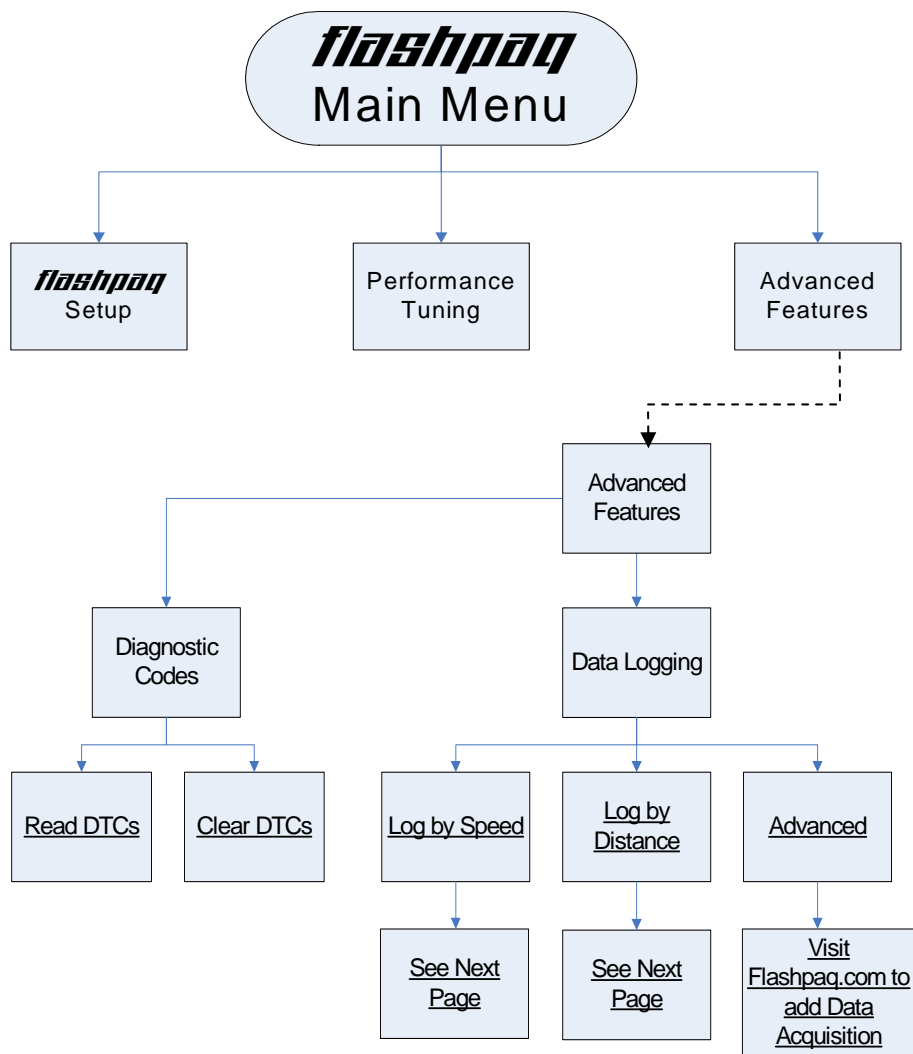
11) Click "Yes" to open the file and show the Data



Click "No" to return to the previous screen where another read can be done.

- After a successful data transfer, the Flashpaq Data Acquisition Program can be closed by clicking the "red X" button at the top-right of the screen.

Section B – Overview of *Flashpaq*



Diagnostics Codes

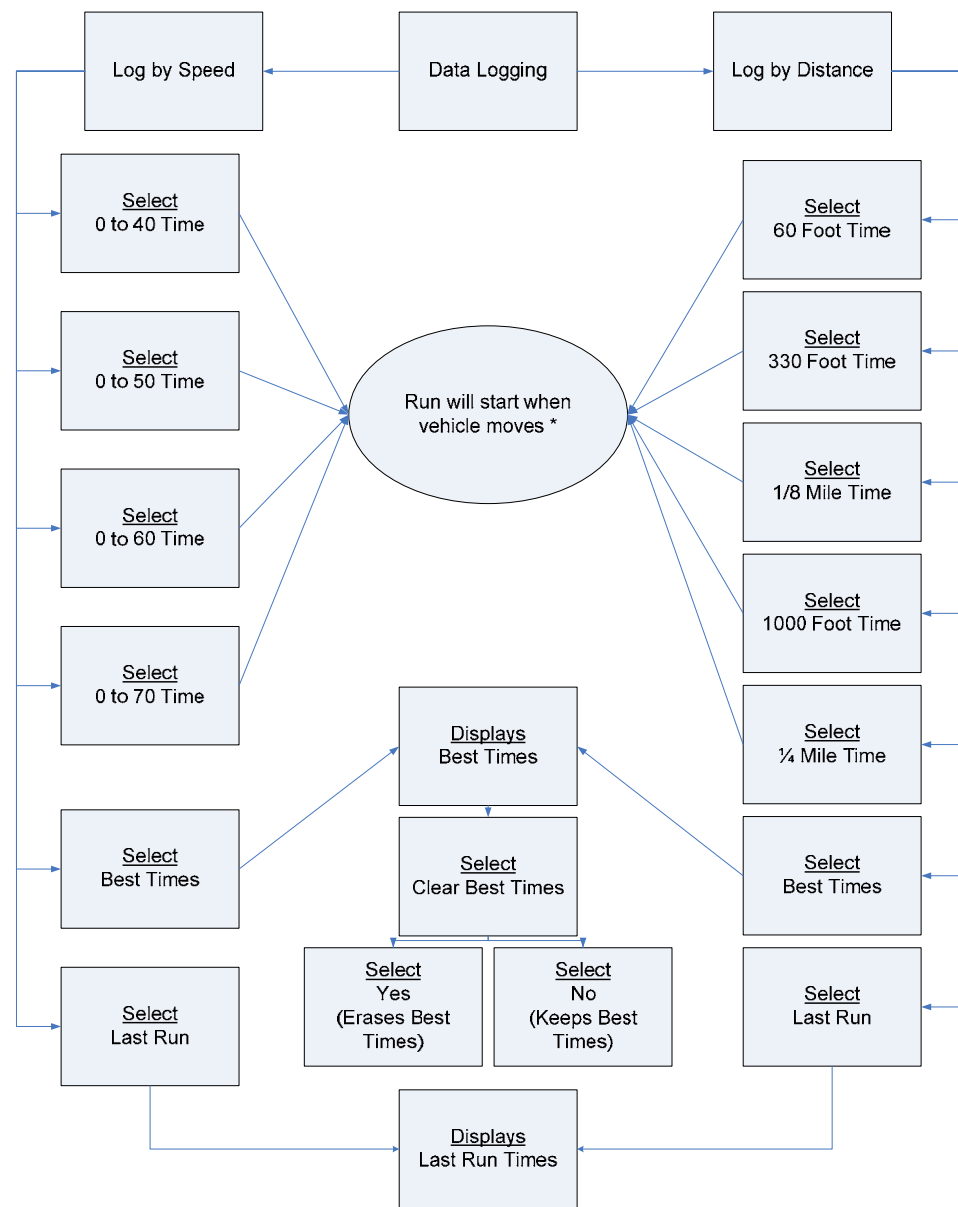
Read DTC's: Reads & displays DTC's (Diagnostic Trouble Codes) from connected vehicle. (This feature is for live vehicle diagnostics; an active vehicle connection to tuner is required. Vehicle DTC's, if present, will be displayed along with a full text description, when available)

Clear DTC's: Clears current DTC's (Diagnostic Trouble Codes) from connected vehicle.

(This feature is for live vehicle diagnostics; an active vehicle connection to tuner is required. Vehicle DTC's, if present, will be cleared. If DTC's reoccur, this could indicate a vehicle malfunction or problem condition)

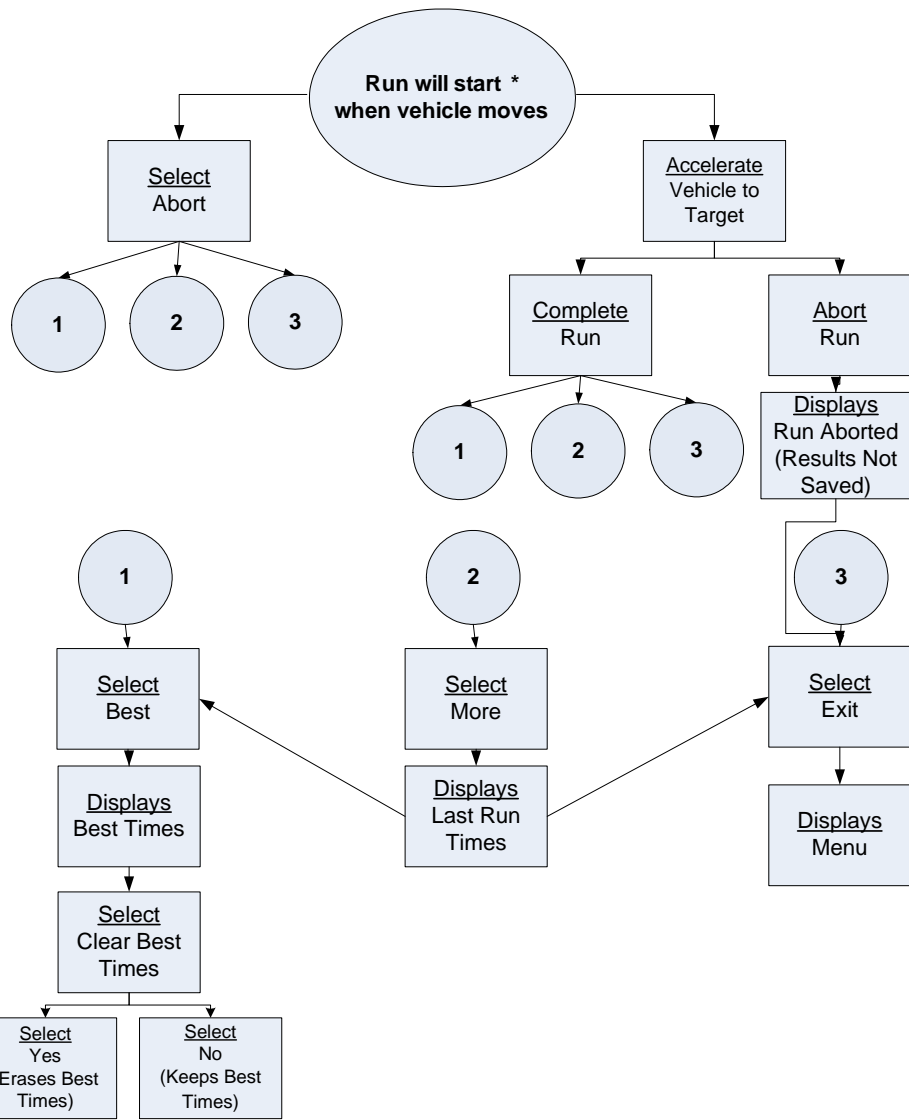
Data Logging: A simple download from www.flashpaq.com enables Data Acquisition **for most flashpaq tuners**.

Section B – Overview of *Flashpaq*



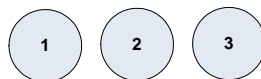
*See following page for continuation

Section B – Overview of *Flashpaq*



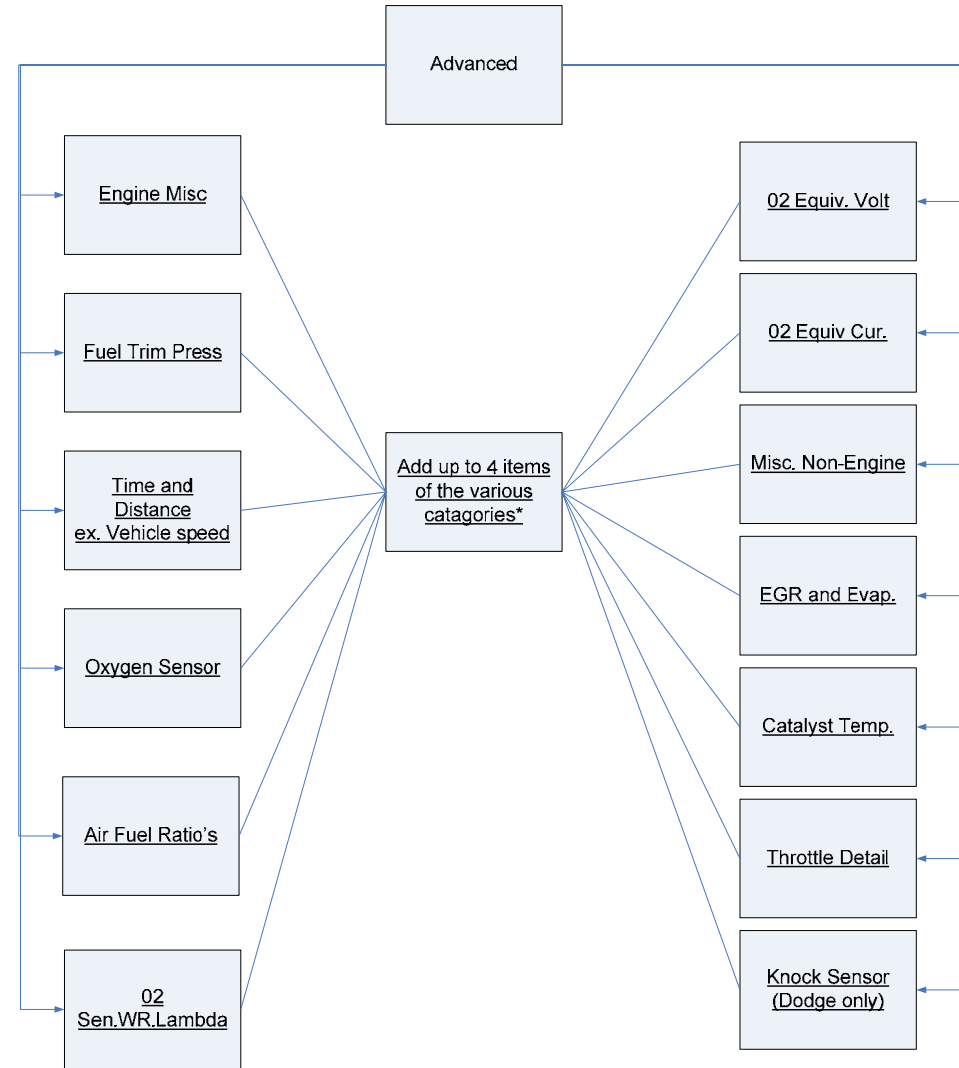
Notice that "Select Abort" and "Complete Run" have the symbols directly below each text box. That's because both functions "Select Abort" and "Complete Run" have the same menu options: "Select Best", "Select More", and "Select Exit".

To follow the menu simply follow the top numbered circle to the matching bottom numbered circle.



Section B – Overview of *Flashpaq* Advanced Data Acquisition

Note: Categories and options will vary based on the vehicle.



* Choose up to four of any of the available items listed under any of the available categories located under advanced.

Section C – F.A.Q. – Data Acquisition**A. My tuner displays a Com Error Check & ensure ignition is on**

Answer: Data Acquisition requires that the ignition is on whenever selecting a speed or distance test. (It would be ideal to have the engine running so you can complete a test...)

The Flashpaq Data Acquisition program continuously monitors your vehicle computers for speed and distance information, if the ignition is not on, the Flashpaq cannot retrieve this data.

B. What happens when I abort a run?

Answer: Your FLASHPAQ Data Acquisition program never stores the results from an aborted run, no matter how far along in that run you are. Therefore, if you abort any run, at any time, the data set is not retained and cannot be viewed in “Last Run” and will not affect “Best Times”.

C. When I try to access Data Logging I see “Visit Flashpaq.com for availability” – why?

Answer: Flashpaq Data Acquisition is not built into your Flashpaq. First you must register at www.flashpaq.com. Afterward you can log-in and download the upgrade by following the instructions at the beginning of this manual.

D. What’s with the numbers at the top of each menu screen?

Answer: Included in the download of the Data Acquisition package is a new scrolling menu system. Now if more than 4 menu items are available, you will see an index of which menu item you are on and how many total menu items are available. (Menu item 1 is pictured below)



By pressing the down key 3 times you will land on the 0 to 70 Time selection, but that is only item 4 of 6. Simply press the down key again and the screen will scroll to item 5. Repeat for additional items off screen. When you are at the last menu item (item 6), simply press the down key again to return to the top of the menu, item 1.

Section C – F.A.Q. – Data Acquisition (cont.)**E. What is the longest timed run I can make?**

Answer: 99.99 seconds is the maximum time a run can take, regardless if you are in Log by Speed or Log by Distance. After 99.99 seconds the run automatically aborts and your data is discarded. (See FAQ – B)

F. After selecting my test run I see “Stop vehicle to initialize run” – why?

Answer: The Flashpaq Data Acquisition program communicates with your vehicle and retrieves vehicle speed and distance information to determine when and how fast your vehicle is moving. If your vehicle is moving safely come to a stop to prepare for a test.

G. After selecting my test run I see “Run will start when vehicles moves” – why?

Answer: The Flashpaq Data Acquisition program communicates with your vehicle and retrieves vehicle speed and distance information to determine when and how fast your vehicle is moving. The test will begin as soon as your vehicle begins to move.

H. During a run I had to stop my vehicle, but I did not press abort – what happened?

Answer: The Flashpaq Data Acquisition program will detect that your vehicle has come to a stop and reset the test. All information is discarded regardless of how far along you were in your run. (See FAQ–B)

I. My display screen suddenly got really dark – why?

Answer: This is normal. The Flashpaq has an internal backlight to illuminate the display screen. After a certain period of inactivity the backlight turns off to save power. Simply press any key and the backlight will come back on. The Backlight does not need to be on for a test to begin or end. An example of this would be setting the Flashpaq Data Acquisition up early, such as during staging at a drag strip, then minutes later performing a run. The screen back light may be off, but the program is still running and will capture the requested data.

J. During a run the time on my screen looked blurry, is something wrong with my display or tuner?

Answer: No, your Flashpaq is a high quality, high resolution product. It is capable of measuring times smaller than 1/100 th of a second (0.01 seconds). When this type of accuracy is displayed it is moving so fast that it appears blurry, but in fact is not.

Section C – F.A.Q. – Data Acquisition (cont.)**K. Does Flashpaq store the data separately for Log by Speed and Log by Distance?**

Answer: Yes, Log by Speed and Log by Distance tests are run and stored completely separately and do not affect each other - this includes Last Run and Best Times.

L. Why is one of my soft key buttons grayed out?

Answer: When a menu requires less than 3 keys to operate the unneeded keys will be automatically disabled.

M. When can I use the Data Acquisition?

Answer: The Data Acquisition feature will work at any time. The vehicle you are testing does not need to be performance programmed by Flashpaq to work. Therefore, you can run Flashpaq Data Acquisition on vehicles besides yours. You can also run 'before and after tests' on the vehicle you have tuned to show the difference in speed and acceleration between stock and modified tuning.

N. What vehicles can I use Data Acquisition on?

Answer: Each Flashpaq is designed specifically for a range of vehicles which is usually listed on the tuner label and box as well as displayed on the screen when the unit is first powered up. It is recommended to stay within this family of vehicles to reduce the possibility of damage to a vehicle or Flashpaq due to differences in vehicle wiring. These types of issue are not covered by Superchips or our warranty.

O. Can I setup Data Acquisition early so that it will run when I get to the starting line?

Answer: Yes, by taking advantage of how the Flashpaq Data Acquisition was designed you can actually set the required test up early and even drive to the starting line as long as you do not reach the speed or distance you are testing for. Basically, the Data Acquisition will reset every time the vehicle comes to a stop. Therefore, if you have setup a ¼ mile run and have started and stopped moving, even multiple times, the Data Acquisition will reset each time the vehicle speed is zero as long as you have not completed the test you have selected (by reaching the target speed or distance). (See FAQ – B, I)

Section C – F.A.Q. – Data Acquisition**P. I selected 1000 ft. time but when the run completed I saw other values filled in, why?**

Answer: Data Acquisition automatically stores all distance or speed trigger points up to the target distance or speed. In this case, 1000 ft. times were selected, so the 60 ft, 330 ft, 1/8 mile and 1000 ft times were logged.

Q. How do the Best Times get determined?

Answer: Anytime a completed run has one or more times that beat the previously stored best times, the new 'faster' time(s) will overwrite the past 'slower' time(s). You can alternately switch between best times and last run to see which times match; any matching times tell you that the last run at least tied, if not beat the best times. Since the Data Acquisition records down to 1/100th of a second (0.01 seconds) it is highly unlikely that a time tied, but more than likely that time beat the previous best run times.

Additionally, you should understand that the data from the entire run is not stored to best times when a single or even multiple times are faster than previous best times. Only the times which are, in fact, faster than past best will be stored to best times. Therefore, when viewing best times, recognize this feature can support a collection of fastest times taken from numerous, completed last runs.

R. How do I erase Best Times?

Answer: You can clear the results of best times directly after viewing a run by answering yes to "Clear Best Times?" Also, you can clear best times from the Log by Speed or Log by Distance menu. Remember, Log by Speed and Log by Distance are treated separately, so clearing data or running a test in one section does not interfere or interact, in any way, with the other.

S. Does Data Acquisition affect my Flashpaq programming status or options?

Answer: No, Data Acquisition is handled as a separate program within the Flashpaq, so no matter what programming status your tuner is in (Stock, Vin Locked – Performance mode, etc) it will not be affected by Data Acquisition regardless of how many times you use it. Conversely Data Acquisition is not affected by any programming procedures or status either.

Recovery Procedure

There is no recovery procedure required as vehicle programming does not occur.

Error Notification

Flashpaq Data Acquisition supports only one error condition: Com Error – See FAQ - A.

Section C – F.A.Q. – Advanced Data Acquisition**A. My tuner displays a Com Error Check & ensure ignition is on**

Answer: Advanced Data Acquisition requires that the ignition is on whenever selecting a test. (It would be ideal to have the engine running so you can complete a test...)

B. What is a PID?

Answer: PID is an abbreviation for Parameter Identification which is a term used to describe various diagnostic data and lists of standard parameters that are available from a vehicle computer. See Page 16 under the Advanced Data Acquisition section for categories available.

C. Why do categories and options vary based on the vehicle?

Answer: Each vehicle supports a unique number of PIDs available. This is determined by the Original Equipment Manufacturer.

D. Will I use all of the PIDs available for my vehicle?

Answer: Some PIDs that are available may only be useful by advanced users with extensive automotive knowledge. Not all PID's will contain information useful to all users.

E. Why do I only see titles and no data when I go to the display page?

Answer: There is a loss of communication to the vehicle. Ensure the vehicle ignition is on and check the connection to the vehicle; restart the tuner if necessary.

F. I downloaded Data Acquisition into my Flashpaq, but my Flashpaq Tuneup program doesn't show Data Acquisition in the menu bar?

Answer: You must first use your Flashpaq with Data Acquisition enabled on a compatible vehicle & log data into the tuner.

G. How do I clear the Data Acquisition log out of my Flashpaq?

Answer: The Flashpaq automatically clears its' buffers when logging starts.

H. I used the Data Acquisition feature and logged my PIDs for 60 seconds, and I decided to rerun my log, but for only 10 seconds. What Data is stored?

Answer: Only the data of the most recent log is stored.

I. After logging data on my Flashpaq, how can I review the data?

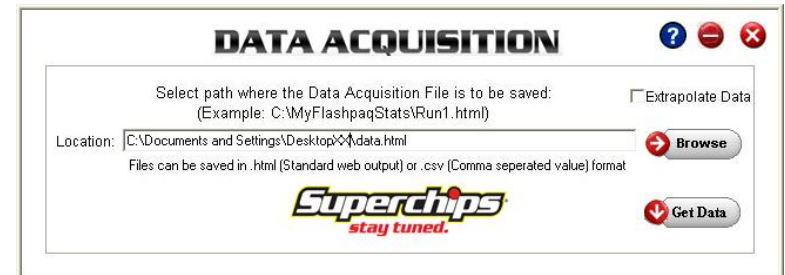
Answer: PC Data Acquisition software on the Flashpaq Tuneup program must be used to view stored data on your Flashpaq tuner.

J. Why does my ignition need to be on to use Data Acquisition?

Answer: Data Acquisition is always monitoring vehicle PIDs, therefore viewing or storing of data requires the ignition to be on in order to provide vehicle communications.

Section C – F.A.Q. – PC Data Acquisition Software**A. What is an Invalid Path Error?**

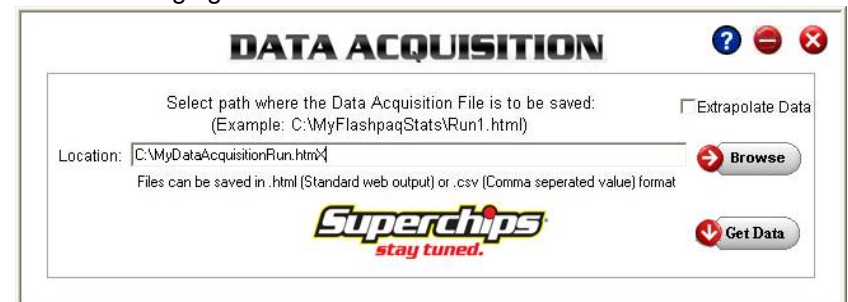
This error occurs when the path entered in the "Location" field as shown below is invalid.



To resolve this issue, type the path manually in the "Location" box or click the "Browse" button and by follow the steps outlined in Section A: Quick Start – PC Data Acquisition Software. With 'Browse' and selection of a file name you eliminate typing mistakes.

B. What is an Invalid Extension Error?

This error occurs when the wrong file extension (or no file extension) was used for the filename entered in the "Location" box as shown below. Changing the extension to .csv or .html will resolve this issue.



Section D - Overview of O2 Sensor and Catalyst System Configurations

Per direction from the SAE E/E Diagnostics Committee, the following conventions are used for identifying and referencing O2 sensor placement in multiple-bank systems.

Terminology	Definition and Location
Bank B(1)	Defines a specific group of cylinders sharing a common control sensor. Bank#1 is identified as always containing cylinder #1, with Bank#2 defined as the opposite bank. If only one bank exists, Bank#1 must be used. With a single bank system utilizing multiple sensors, Bank#1 must be used to identify the sensors as #1, #2, #3, etc. in order as they move further away from the cylinder(s). If a bank is not associated with a cylinder, then a common fixed reference point must be selected arbitrarily.
Sensor S(1)	Defines an electrical component with a varying analog input signal. Oxygen sensors are numbered to follow the convention described above in "Bank" (i.e. Bank#1, Sensor#1). O2 Sensor#1 is identified as closest to the engine. The first sensor in a bank is #1, the next sensor in the same bank is #2, etc. References to Bank#x, Sensor#y is often documented as "Sensor x/y". If a manufacturer uses only a single sensor, then the sensor #1 designation must be used. If the sensors are lettered (i.e. Sensor A, B, C etc.), this typically indicates manufacturer-defined terms.
Left vs. Right, or Front vs. Rear	Defines a component by its position as if viewed from the driver's seat location. "Left" is synonymous or interchangeable with "Front", as are "Right" and "Rear" positions. Also, "Intake" is sometimes associated with "Left/Front", and "Exhaust" is sometimes associated with "Right/Rear".

C.2 Example Configurations

The examples below and on the following pages illustrate and clarify these conventions.

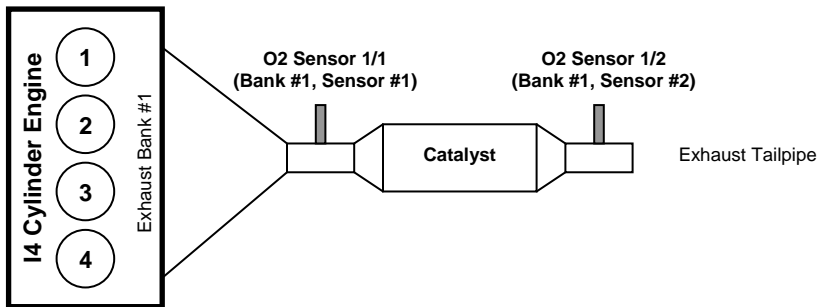


Figure 1 - I4 cylinder engine configuration with single exhaust bank and one catalyst

Section D - Overview of O2 Sensor and Catalyst System Configurations

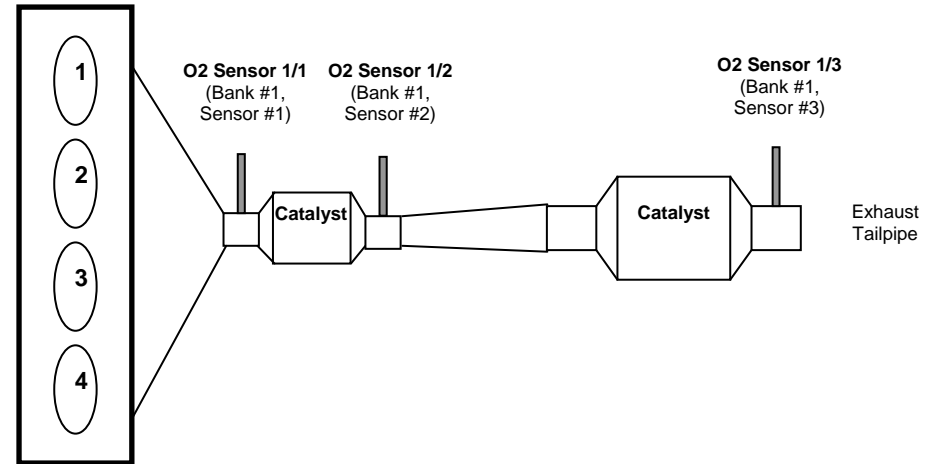


Figure 2 - I4 cylinder engine configuration with single exhaust bank and two catalysts

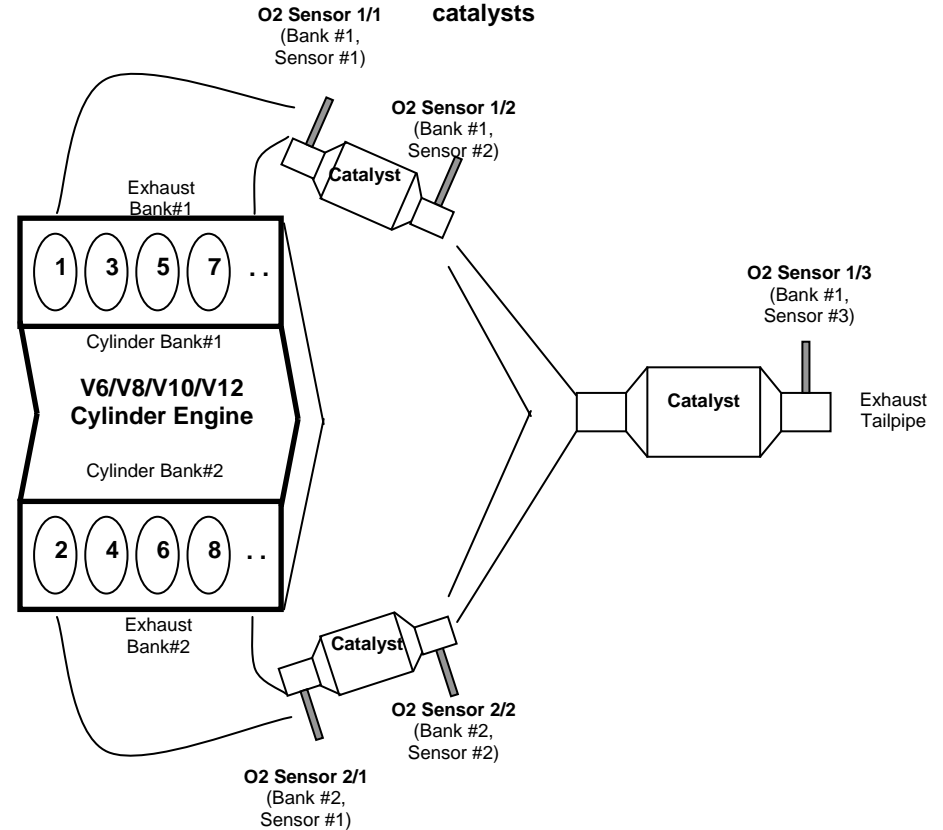


Figure 3 - V6/V8/V10/V12 cylinder engine configuration with dual exhaust banks and three catalysts ('Y' shape)

Section D - Overview of O2 Sensor and Catalyst System Configurations

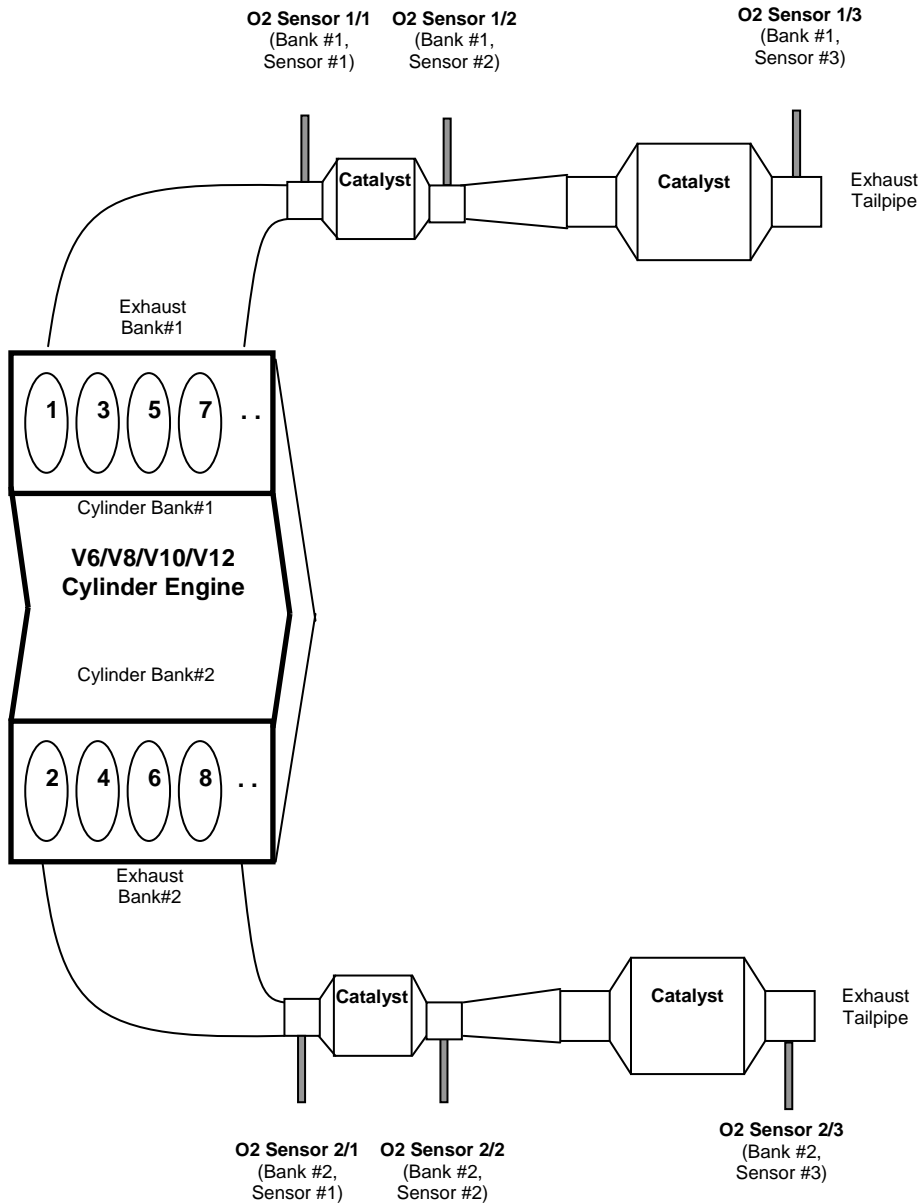


Figure 4 - V6/V8/V10/V12 cylinder engine configuration with dual exhaust banks and four catalysts