

# **Spitronics ECU - Editing Tools and Hot Keys - Guide**

Spitronics ECU software includes a number of editing tools designed to make tuning faster and more accurate.

Most functions can be accessed from the software controls or directly from the keyboard using Hot Keys.

This guide explains the main editing tools, how Hot Keys are grouped, and how they are used when working with Graphs, Matrix tuning and Data Logging.

## **Software Terminology**

Spitronics software terminology has changed over time.

Earlier software may use terms such as Map where newer software uses Tune. This guide uses the current terminology. Older terminology is only mentioned where required to identify a specific function.

Cosmos is used as the main visual reference in this guide. Hyperspace uses substantially the same editing and Hot Key system, so separate instructions are only required where operation differs significantly.

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## **Hot Key Settings**

Hot Keys are divided into four groups:

- Application Keys.
- Graph Keys.
- Matrix Keys.
- Data Logger Keys.

Each group contains shortcuts relevant to that area of the software.

The Settings page allows many Hot Keys to be changed.

To change or remove a configurable Hot Key, right-click on the selected key and choose the required option.

Keys shown in bold cannot be changed.

To change a hotkey or remove the key, right click on the selected key and select an option from the dropdown menu.  
**Bold keys can not be changed!**

General Styles Device Save Hotkeys

Application Keys Graph Keys Matrix Keys Data Logger Keys

| Description                                               | Action Key | Primary Key | Secondary Key |
|-----------------------------------------------------------|------------|-------------|---------------|
| Enables or disables realtime tuning                       | None ▾     | R           | Not Assigned  |
| Enables or disables mouse tuning                          | None ▾     | M           | Not Assigned  |
| Enables or disables easy tuning                           | None ▾     | E           | Not Assigned  |
| Show or hide all lines on maps                            | None ▾     | H           | Not Assigned  |
| Enable or disable Initialise tuning                       | None ▾     | I           | Not Assigned  |
| Clear diagnostic code list                                | None ▾     | C           | Not Assigned  |
| Close the application                                     | None ▾     | F4          | Not Assigned  |
| Toggle next available lines in the chart                  | None ▾     | T           | Not Assigned  |
| Toggle previous available lines in the chart              | None ▾     | G           | Not Assigned  |
| Set the digital selection                                 | None ▾     | D           | Not Assigned  |
| Switch to next control/Switch between graphs on same page | Ctrl ▾     | Tab         | Not Assigned  |
| Save                                                      | Ctrl ▾     | S           | Not Assigned  |

Reset to defaults

Application Keys Graph Keys Matrix Keys Data Logger Keys

| Description                                                      | Action Key | Primary Key | Secondary Key |
|------------------------------------------------------------------|------------|-------------|---------------|
| Lock the RPM selection on the matrix                             | None ▾     | Space       | Not Assigned  |
| Increase value of the fuel ratio by 1                            | None ▾     | Q           | Not Assigned  |
| Increase value of the fuel ratio by 10                           | None ▾     | W           | Not Assigned  |
| Decrease value of the fuel ratio by 1                            | None ▾     | A           | Not Assigned  |
| Decrease value of the fuel ratio by 10                           | None ▾     | S           | Not Assigned  |
| Increase value of highlighted cell in a matrix by a single point | None ▾     | Add         | OemPlus       |
| Reduce value of highlighted cell in a matrix by a single point   | None ▾     | Subtract    | OemMinus      |
| Move the matrix locked bar to the next row                       | None ▾     | N           | Not Assigned  |
| Move the matrix locked bar to the previous row                   | None ▾     | P           | Not Assigned  |
| Move between the available matrix tabs                           | None ▾     | B           | Not Assigned  |
| Matrix Zoom Cube In                                              | None ▾     | U           | Not Assigned  |
| Matrix Zoom Cube out                                             | None ▾     | Y           | Not Assigned  |

Reset to defaults

| Application Keys                                                             | Graph Keys | Matrix Keys | Data Logger Keys |
|------------------------------------------------------------------------------|------------|-------------|------------------|
| Description                                                                  | Action Key | Primary Key | Secondary Key    |
| Initialise all values based on the easy tune option to the highlighted value | Shift      | Z           | Not Assigned     |
| Navigation Left                                                              |            | Arrow Left  |                  |
| Navigation Right                                                             |            | Arrow Right |                  |
| Tune Up                                                                      |            | Arrow Up    |                  |
| Tune Down                                                                    |            | Arrow Down  |                  |

| Application Keys                           | Graph Keys | Matrix Keys | Data Logger Keys |
|--------------------------------------------|------------|-------------|------------------|
| Description                                | Action Key | Primary Key | Secondary Key    |
| Data Logger Stop/Play                      | None       | S           | Not Assigned     |
| Data Logger Pause/Play                     | None       | P           | Not Assigned     |
| Data Logger Loop on/off                    | None       | L           | Not Assigned     |
| Record start/stop                          | None       | R           | Not Assigned     |
| Open existing logged file                  | None       | O           | Not Assigned     |
| Navigation Left                            |            | Arrow Left  |                  |
| Navigation Right                           |            | Arrow Right |                  |
| Zoom In                                    |            | Arrow Up    | Page Up          |
| Zoom Out                                   |            | Arrow Down  | Page Down        |
| Data Logger Zoom all on/off                | Ctrl       | Z           | Not Assigned     |
| Toggle between logged graphs               | Ctrl       | Tab         | Not Assigned     |
| Enable/Disable current position adjustment | None       | A           | Not Assigned     |

Reset to defaults

## Application Keys

Application Keys operate throughout the ECU software and are not limited to a specific Graph or Matrix.

Typical Application Keys include:

| Function                     | Default Key |
|------------------------------|-------------|
| Realtime Tuning              | R           |
| Mouse Tuning                 | M           |
| Easy Tuning                  | E           |
| Show or Hide All Graph Lines | H           |
| Initialise Tuning            | I           |
| Clear Diagnostic Codes       | C           |
| Close Application            | F4          |

| Function                      | Default Key |
|-------------------------------|-------------|
| Next Available Graph Line     | T           |
| Previous Available Graph Line | G           |
| Digital Selection             | D           |
| Switch Control / Switch Graph | Ctrl + Tab  |
| Save                          | Ctrl + S    |

These are default assignments. Configurable keys may be changed in the Hot Key Settings.

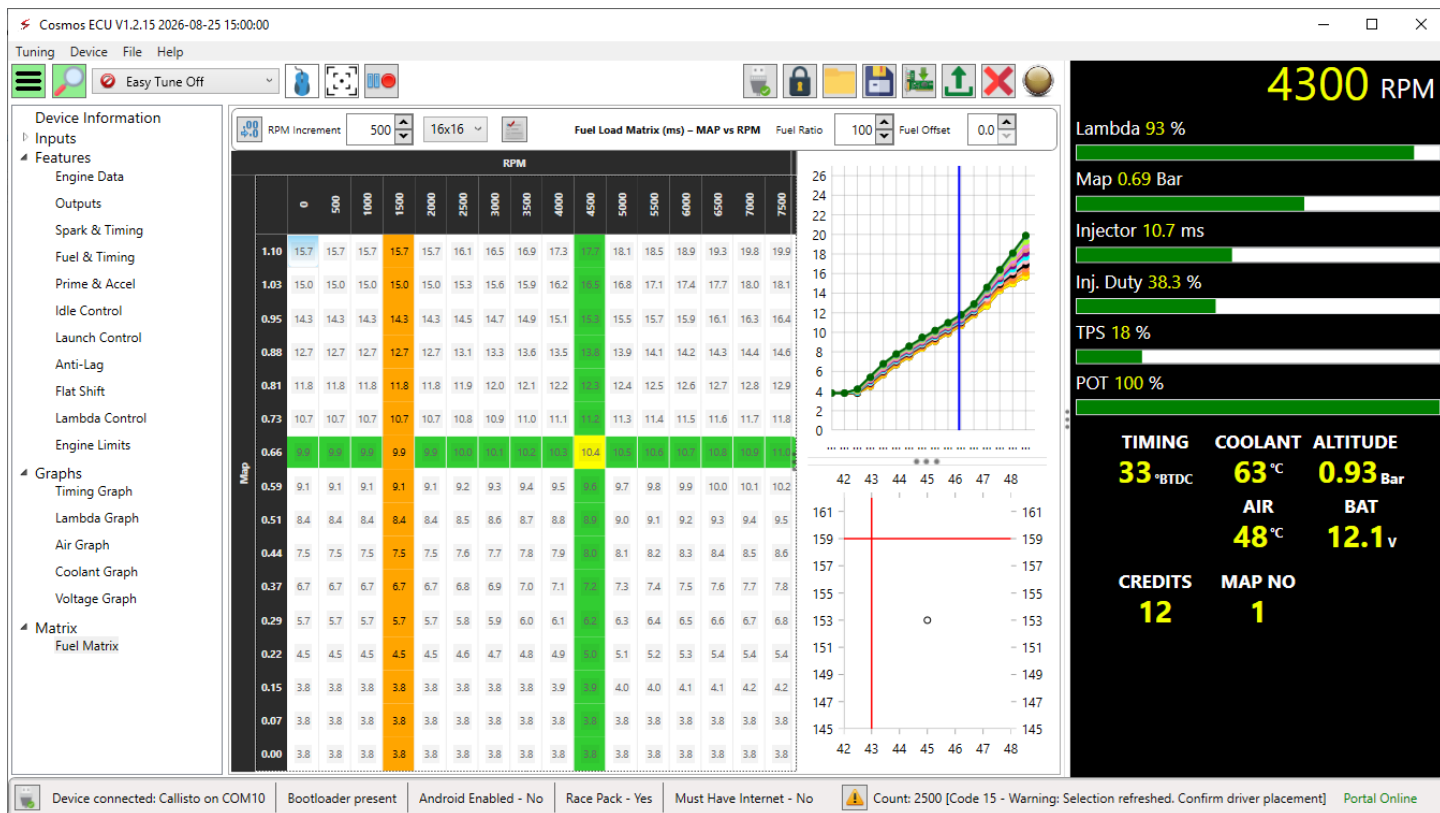
## Realtime Tracking

Realtime Tracking shows the current engine operating position inside the active Graph or Matrix.

This is useful during:

- Road tuning.
- Dyno tuning.
- Idle tuning.
- Fault finding.
- Data analysis.

The highlighted position allows the tuner to see exactly which part of the Tune is being used at that moment.



The green highlighted row/column makes this section easy to understand visually.

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## **Realtime Tuning**

Realtime Tuning allows Tune values to be changed while the engine is running.

Default Hot Key:

**R**

When Realtime Tuning is active, changes are applied immediately so that the tuner can observe the effect without repeatedly stopping and restarting the tuning process.

Realtime Tuning should be used carefully, particularly when changing ignition timing or large fuel values.

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## **Mouse Tuning**

Mouse Tuning allows Graph and Matrix values to be adjusted directly using the mouse.

Default Hot Key:

**M**

This provides a fast method of changing tuning values without using the keyboard for every adjustment.

Mouse Tuning is particularly useful when shaping Graphs or making quick local adjustments.

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## **Easy Tune**

Easy Tune allows several tuning values to be adjusted together according to the selected direction or area.

Default Hot Key:

**E**

Easy Tune reduces tuning time and helps maintain smooth Graph or Matrix shapes.

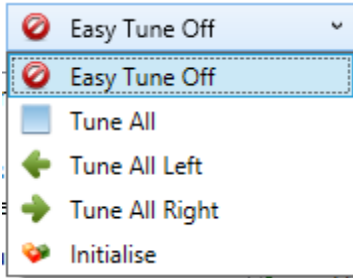
The available Easy Tune options depend on whether a Graph or Matrix is active.

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## **Graph Easy Tune**

Typical Graph Easy Tune options include:

- Easy Tune Off.
- Tune All.
- Tune All Left.
- Tune All Right.
- Initialise.



### **Tune All**

Adjusts all applicable points together.

### **Tune All Left**

Adjusts the selected point and points to the left.

### **Tune All Right**

Adjusts the selected point and points to the right.

### **Initialise**

Initialises the selected values according to the active Easy Tune method.

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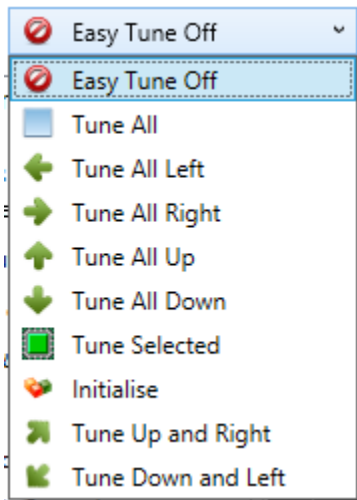
## **Matrix Easy Tune**

Matrix tuning provides additional Easy Tune directions because values can be adjusted across both RPM and load axes.

Available options include:

- Easy Tune Off.
- Tune All.
- Tune All Left.
- Tune All Right.
- Tune All Up.
- Tune All Down.
- Tune Selected.

- Initialise.
- Tune Up and Right.
- Tune Down and Left.



Matrix Easy Tune is useful when shaping a larger tuning area while maintaining a smooth transition between cells.

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## **Initialise Tuning**

Initialise Tuning applies the currently selected Easy Tune method to the highlighted value or area.

Default Application Hot Key:

I

Graph Keys may also include an Initialise function using the configured modifier key.

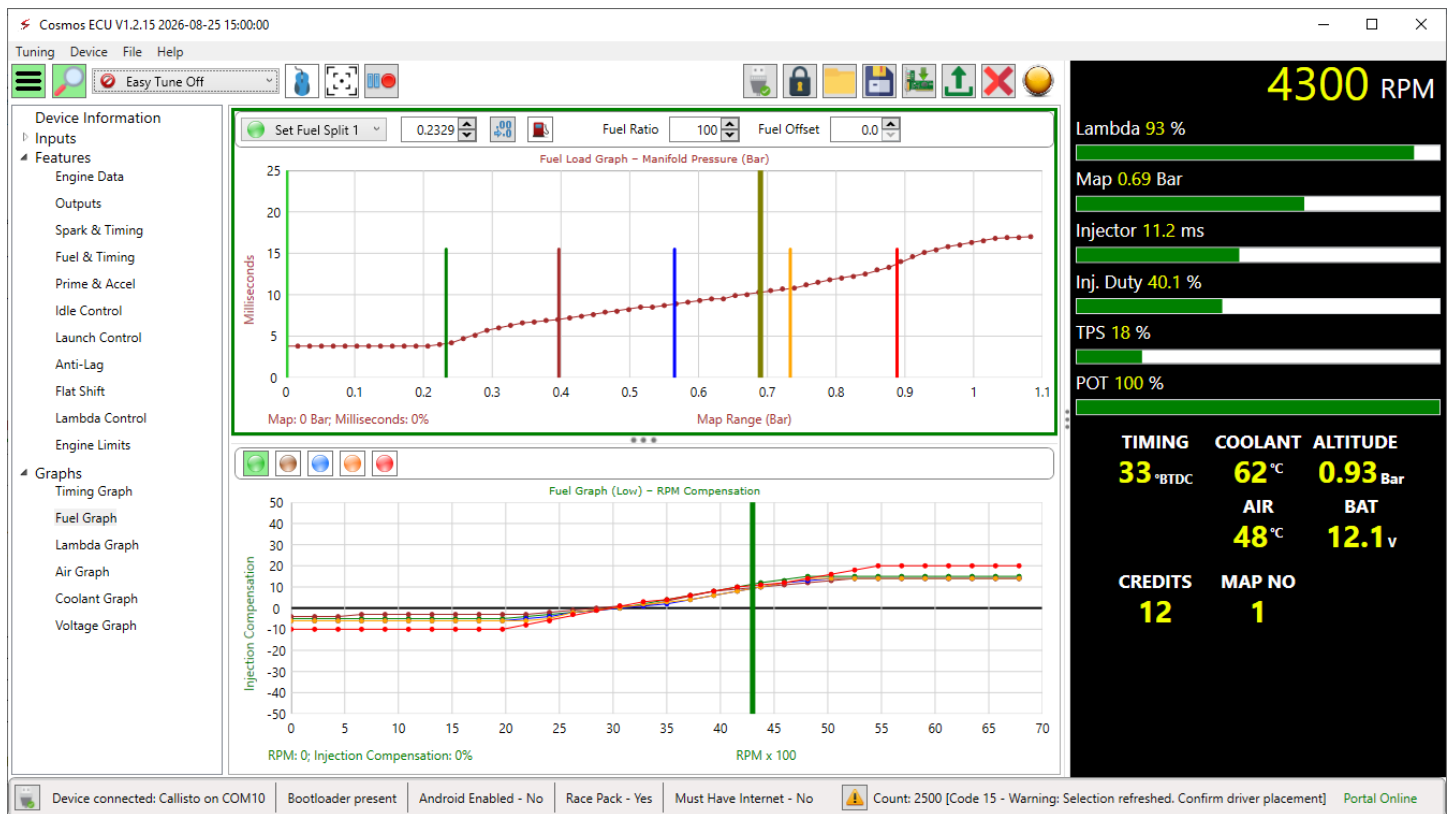
The exact result depends on the active Easy Tune selection.

Initialise is particularly useful when building a Tune from a known starting value.

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## Graph Editing

Graph tuning allows the tuner to adjust a line of values across a selected operating range.



This screenshot is useful because it shows:

- Main Fuel Load Graph.
- RPM Compensation Graph.
- Multiple graph lines.
- Realtime position.
- Fuel Ratio.
- Fuel Offset.

## Show or Hide Graph Lines

Default Hot Key:

H

This changes between showing multiple Graph lines and a simplified view.

It is useful when several Graph lines overlap and the tuner wants to focus on one line at a time.

## Next and Previous Graph Line

Default Hot Keys:

**T** - Next Graph Line

**G** - Previous Graph Line

These allow the tuner to move between available Graph lines without using the mouse.

This is especially useful when tuning several RPM or load lines in sequence.

### **Graph Navigation**

Graph Keys also include normal navigation controls.

Typical default keys include:

- Arrow Left - move left.
- Arrow Right - move right.
- Arrow Up - increase Tune value.
- Arrow Down - decrease Tune value.

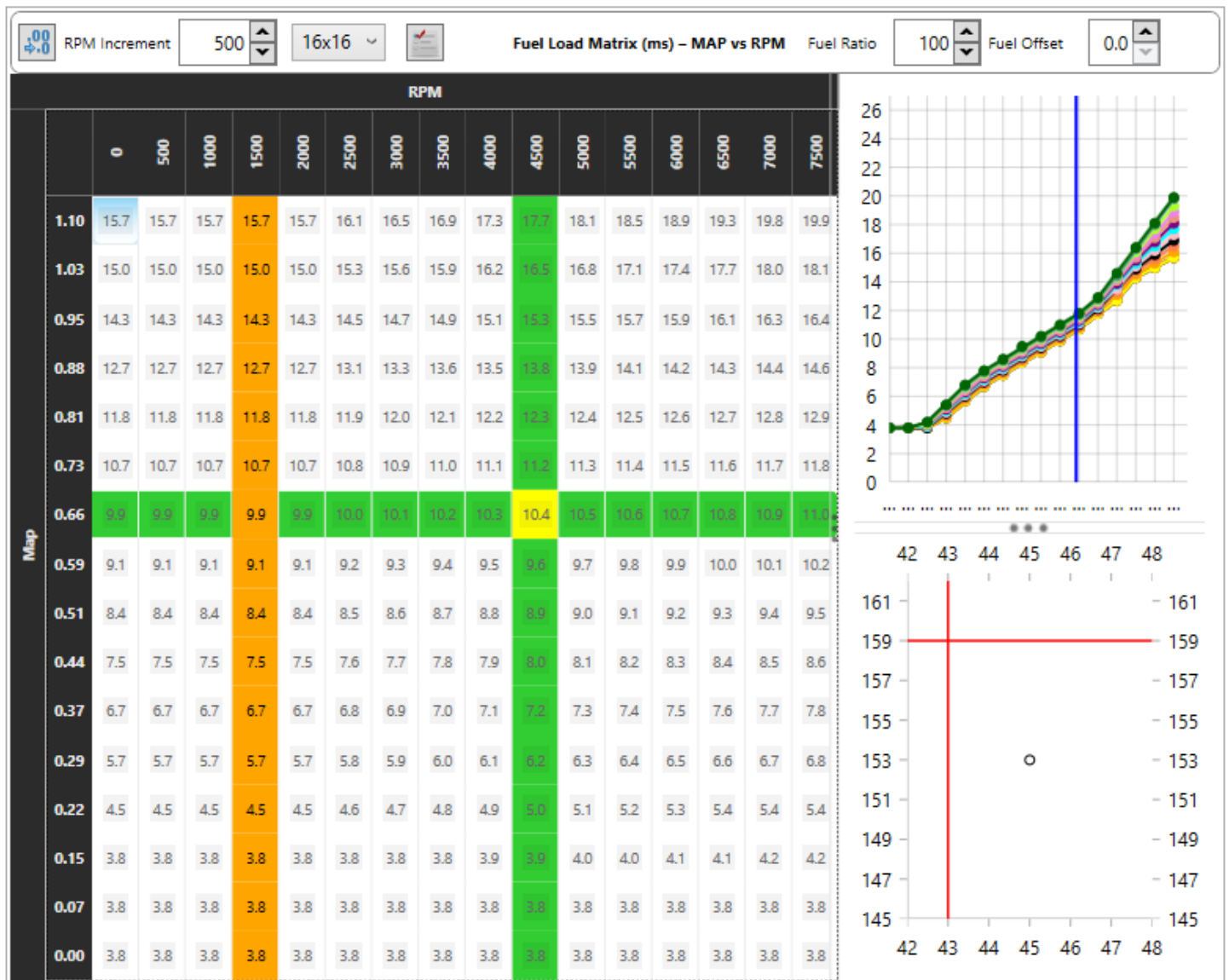
Some Graph functions can also use modifier keys such as Shift where configured.

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## Matrix Editing

Matrix tuning allows fuel or timing values to be adjusted according to both RPM and load.

The current operating area is shown in realtime, allowing the tuner to identify the active cells.



## Matrix RPM Lock

Default Hot Key:

Space

Matrix Lock holds the selected RPM row while the tuner moves through the load range.

This is particularly useful on a dyno where the engine is held at a fixed RPM while different load points are tuned.

## **Move Matrix Locked Row**

Default Hot Keys:

**N** - Move locked bar to the next row.

**P** - Move locked bar to the previous row.

These keys move the Matrix lock to another RPM row.

## **Matrix Cell Adjustment**

Default keys include:

**Add / Numpad +** - increase the highlighted cell by one point.

**Subtract / Numpad -** - decrease the highlighted cell by one point.

These provide precise single-point adjustment of the selected Matrix cell.

## **Move Between Matrix Tabs**

Default Hot Key:

**B**

This moves between the available Matrix tabs where more than one Matrix is present.

## **Matrix Cube Zoom or Grap Line View**

Default Hot Keys:

**U** - Matrix Cube Zoom In.

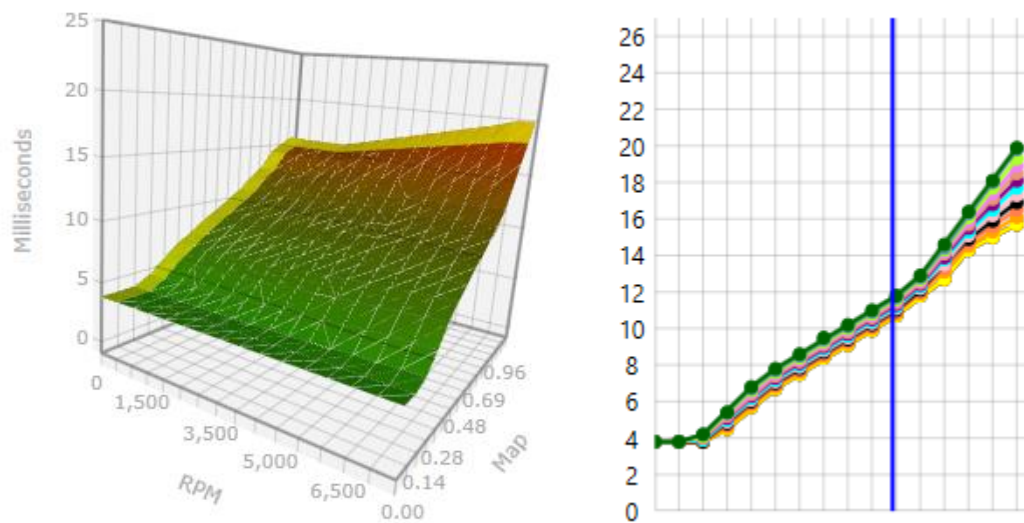
**Y** - Matrix Cube Zoom Out.

Mouse over it, scroll wheel.

The 3D Matrix Cube provides a visual indication of the Tune shape.

This is useful for identifying:

- Sudden peaks.
- Sudden dips.
- Uneven transitions.
- Areas that require smoothing.



## Fuel Ratio

Fuel Ratio provides a global percentage correction to the fuel calculation.

The Matrix Hot Keys provide direct adjustment:

**Q** - Increase Fuel Ratio by 1.

**W** - Increase Fuel Ratio by 10.

**A** - Decrease Fuel Ratio by 1.

**S** - Decrease Fuel Ratio by 10.

Fuel Ratio is useful when a broad fuel correction is required, for example after changing injector size, fuel pressure or adapting a Tune to a similar engine.

Do not use Fuel Ratio to hide an incorrectly shaped fuel Tune.

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|                                    |            |     |             |     |
|------------------------------------|------------|-----|-------------|-----|
| Fuel Load Matrix (ms) – MAP vs RPM | Fuel Ratio | 100 | Fuel Offset | 0.0 |
|------------------------------------|------------|-----|-------------|-----|

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## Fuel Offset

Fuel Offset adds a fixed injector-time correction to the calculated fuel output.

Fuel Offset is mainly used for injector dead-time compensation and related injector setup.

Because Fuel Offset affects low injector times proportionally more than high injector times, it should not be treated as a normal fuel-tuning control.

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Fuel Load Matrix (ms) – MAP vs RPM   Fuel Ratio   100   Fuel Offset   0.0

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## **Context-Sensitive Hot Keys**

Some Hot Keys perform different functions depending on the active software area.

For example:

- R can enable Realtime Tuning in the tuning interface.
- R starts or stops recording in the Data Logger.
- S may be used for Fuel Ratio adjustment in Matrix tuning.
- S is also used for Data Logger Stop/Play.
- P may move the Matrix locked row.
- P is also used for Data Logger Pause/Play.

This is not a conflict.

The active software page determines which function receives the Hot Key command.

## **Data Logger Hot Keys**

The Data Logger has its own Hot Key group.

Typical default shortcuts include:

| Function                      | Default Key            |
|-------------------------------|------------------------|
| Stop / Play                   | S                      |
| Pause / Play                  | P                      |
| Loop On / Off                 | L                      |
| Record Start / Stop           | R                      |
| Open Existing Log             | O                      |
| Navigation Left               | Arrow Left             |
| Navigation Right              | Arrow Right            |
| Zoom In                       | Arrow Up / Page Up     |
| Zoom Out                      | Arrow Down / Page Down |
| Zoom All                      | Ctrl + Z               |
| Toggle Logged Graphs          | Ctrl + Tab             |
| Current Position Adjustment A |                        |

| Application Keys                           | Graph Keys                        | Matrix Keys | Data Logger Keys |
|--------------------------------------------|-----------------------------------|-------------|------------------|
| <u>Description</u>                         |                                   |             |                  |
| Data Logger Stop/Play                      | <input type="text" value="None"/> | S           | Not Assigned     |
| Data Logger Pause/Play                     | <input type="text" value="None"/> | P           | Not Assigned     |
| Data Logger Loop on/off                    | <input type="text" value="None"/> | L           | Not Assigned     |
| Record start/stop                          | <input type="text" value="None"/> | R           | Not Assigned     |
| Open existing logged file                  | <input type="text" value="None"/> | O           | Not Assigned     |
| Navigation Left                            |                                   | Arrow Left  |                  |
| Navigation Right                           |                                   | Arrow Right |                  |
| Zoom In                                    |                                   | Arrow Up    | Page Up          |
| Zoom Out                                   |                                   | Arrow Down  | Page Down        |
| Data Logger Zoom all on/off                | <input type="text" value="Ctrl"/> | Z           | Not Assigned     |
| Toggle between logged graphs               | <input type="text" value="Ctrl"/> | Tab         | Not Assigned     |
| Enable/Disable current position adjustment | <input type="text" value="None"/> | A           | Not Assigned     |

Detailed Data Logger operation is covered in the Data Logging documentation.

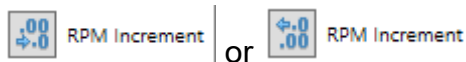
## Digital Selection

Default Hot Key:

**D**

Digital Selection is used where the active software control requires a digital selection.

The exact behaviour depends on the page and active control.



## Switch Control or Graph

Default Hot Key:

**Ctrl + Tab**

This moves to the next available control or switches between Graphs on the same page.

It is useful when tuning without repeatedly using the mouse.

## Clear Diagnostic Codes

Default Hot Key:

**C**

This clears the current diagnostic-code list.

After repairing a fault, clear the diagnostic codes and retest the system.

### **Save**

Default Hot Key:

**Ctrl + S**

Save the Tune regularly while working.

Frequent saving reduces the risk of losing tuning progress.

The software also includes additional Tune and recovery functions covered in the Tune and File Management documentation.

### **Close Application**

Default Hot Key:

**F4**

This closes the application.

Save the Tune before closing the software.

### **Customising Hot Keys**

Many Hot Keys can be changed to suit the tuner.

Open:

**Settings → Hotkeys**

Select the required Hot Key group.

To change or remove a configurable key, right-click the selected key and choose the required option.

Bold keys cannot be changed.

The software also provides a **Reset to defaults** function.

| Application Keys                           | Graph Keys | Matrix Keys | Data Logger Keys |
|--------------------------------------------|------------|-------------|------------------|
| Description                                | Action Key | Primary Key | Secondary Key    |
| Data Logger Stop/Play                      | None ▾     | S           | Not Assigned     |
| Data Logger Pause/Play                     | None ▾     | P           | Not Assigned     |
| Data Logger Loop on/off                    | None ▾     | L           | Not Assigned     |
| Record start/stop                          | None ▾     | R           | Not Assigned     |
| Open existing logged file                  | None ▾     | O           | Not Assigned     |
| Navigation Left                            |            | Arrow Left  |                  |
| Navigation Right                           |            | Arrow Right |                  |
| Zoom In                                    |            | Arrow Up    | Page Up          |
| Zoom Out                                   |            | Arrow Down  | Page Down        |
| Data Logger Zoom all on/off                | Ctrl ▾     | Z           | Not Assigned     |
| Toggle between logged graphs               | Ctrl ▾     | Tab         | Not Assigned     |
| Enable/Disable current position adjustment | None ▾     | A           | Not Assigned     |

Reset to defaults

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## Hot Key Configuration File

Custom Hot Key assignments are stored in the ECU configuration file.

When upgrading the software, make a backup copy of the existing configuration file before installing the new version.

After the upgrade, copy the saved configuration over the new configuration file name where applicable. This restores the customised Hot Key assignments.

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## **Quick Reference**

The default Hot Keys are intended to speed up tuning, but the software should always be checked because configurable keys may have been changed by the user.

Before relying on a Hot Key:

- [ ] Confirm the active software page.
- [ ] Confirm the Hot Key assignment if the software has been customised.
- [ ] Remember that some keys are context-sensitive.
- [ ] Save the Tune regularly.
- [ ] Use Realtime Tuning carefully while the engine is running.

For a condensed printable list of Hot Keys, refer to the **Spitronics ECU - Hot Keys - Quick Reference**.