SECTION BOOKLET

C Ignition Button

7 guides · compiled Oct 29, 2026 · https://help.impactwiringsolutions.com/section/tuning-overview/ignition-button
Each guide keeps its own page numbers and version stamp. The newest versions are always online.

Contents

1	Ignition Button Overview	v2.0	Oct 15, 2026	3 p.
2	Ignition Settings	v2.0	Oct 15, 2026	2 p.
3	Front & Rear Ignition Advance Table(s)	v2.0	Oct 15, 2026	4 p.
4	Dwell Settings	v2.0	Oct 15, 2026	2 p.
5	Engine Temp & Air Temp Timing Corrections	v1.0	Oct 15, 2026	2 p.
6	Ignition Blend Tables Overview	v1.0	Oct 15, 2026	3 p.
7	Knock Control Overview	v1.0	Oct 15, 2026	4 p.

IMPACT ECU · IGNITION BUTTON GUIDE

Ignition Button Overview

The **Ignition** button in TunerStudio holds everything about the spark: the timing tables, timing corrections for heat, coil charge time (dwell) and knock control. This guide is the map to its menu: what each item is for, and which guide explains it.

Your tune came with these set for your bike. Change them only in small steps.

> **WHAT IS IGNITION TIMING?** The spark fires a little before the piston reaches the top (**top dead center**, TDC), so the fire has time to build. **30°** means 30 degrees of crankshaft turn before TDC. More degrees is more **advance**. Too little costs power and makes heat; too much causes **knock** (pinging), which can break pistons.

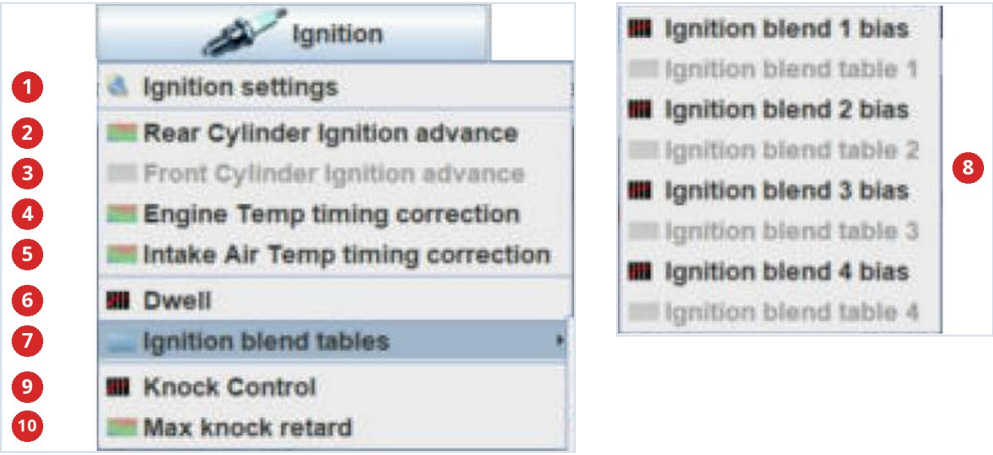
How the ECU works out the timing

STEP 1 **BASE TIMING**	**Ignition advance table:** the timing for every RPM and load. One table for both cylinders, or one for each.
STEP 2 **CORRECTIONS**	**Engine Temp** and **Intake Air Temp** corrections take a little timing out when it's hot. **Blend tables** can add or take away timing (off in our tunes).
STEP 3 **KNOCK CONTROL**	**Knock Control** takes timing out if the knock sensors hear knock, then puts it back slowly.
STEP 4 **SPARK**	**Dwell:** how long each coil charges before it fires the spark plug.

Before you change anything

- **Save a copy of your tune first**, so you can always go back.
- **Burn means save.** Changes go to the ECU as you make them, but are only kept after you click **Burn**.
- **Greyed-out items** are switched off by another setting. Each guide says which one.
- **Missing items?** Some only show when **Setup ▸ Vehicle Information ▸ Tuning View** is set to **Full**.
- **Add timing in small steps** (about 1 degree at a time). After each change, check a datalog (a recording of what the engine is doing) for knock.
- **Change one thing at a time.** Not sure? Call us first.

The Ignition menu, item by item



1. **Ignition settings** Spark on or off, one timing table or two, and fixed timing for a timing light.
2. **Rear Cylinder Ignition advance** The main timing table. With Single Table, both cylinders use it.
3. **Front Cylinder Ignition advance** The front cylinder's own table. Greyed out with Single Table.
4. **Engine Temp timing correction** Takes timing out when the engine is hot.
5. **Intake Air Temp timing correction** Takes timing out when the intake air is hot.
6. **Dwell** How long the coils charge, by RPM and battery voltage.
7. **Ignition blend tables ▸** The ▸ means it opens a smaller menu (8).
8. **Blend bias and blend table, 1 to 4** Four extra timing tables. Off in our tunes, so the tables are greyed out.
9. **Knock Control** The knock sensor settings, and how much timing to take out when knock is heard.
10. **Max knock retard** The most timing knock control may take out.

Which guide to read

GUIDE	MENU ITEMS	WHAT IT COVERS
Ignition Settings	1	Spark, one table or two, fixed timing
Front & Rear Ignition Advance	2–3	The main timing tables
Engine Temp & Air Temp Timing Corrections	4–5	Timing taken out when it's hot
Dwell	6	Coil charge time
Ignition Blend Tables	7–8	Extra tables that add or take away timing
Knock Control	9–10	Knock sensors, timing taken out for knock

Good to know

- **Other buttons change the timing too.** While the engine is cranking, the timing comes from **Cranking ▸ Cranking ignition advance** instead of the advance table. At idle, **Idle ▸ Closed-loop idle timing** can add or take away a few degrees to hold the idle speed steady.
- **Watching the timing:** TunerStudio's **Timing: ignition** gauge shows the timing in use. In a datalog, **Ign: Timing Cyl 1** (rear) and **Ign: Timing Cyl 2** (front) show each cylinder.

NEED HELP? **Call (464) 250-9894**
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Ignition Settings

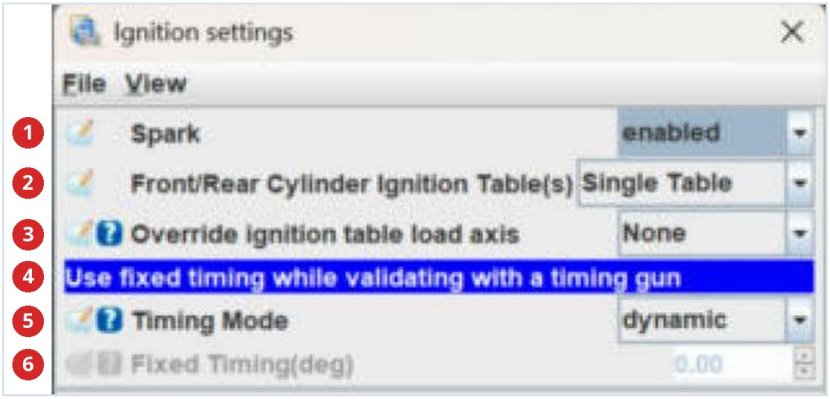
This small window switches the spark on, sets whether your bike uses one timing table for both cylinders or one for each, and has a fixed-timing mode for checking timing with a timing light.

Your tune came with these set for your bike. **You should never need to change them.**

WHERE TO FIND IT
Ignition ▸ Ignition settings

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

The settings



#	SETTING	WHAT IT DOES
1	**Spark** LEAVE AS SET	**enabled:** the ECU fires the spark plugs. **disabled** turns all spark off: the engine won't run, and most of the Ignition menu is greyed out.
2	**Front/Rear Cylinder Ignition Table(s)** LEAVE AS SET	**Single Table:** both cylinders use the Rear Cylinder Ignition advance table. **Separate Tables:** the front cylinder uses the Front Cylinder Ignition advance table, and the rear keeps the Rear table. See "One table or two?" below.
3	**Override ignition table load axis** LEAVE AS SET	**None:** the rows of the timing tables are engine load, which on our tunes is manifold pressure (MAP, kPa). The other choices are for other setups.

#	SETTING	WHAT IT DOES
4	**Use fixed timing while validating with a timing gun** DISPLAY ONLY	The blue bar is only a label for 5 and 6. A timing gun is a timing light.
5	**Timing Mode** LEAVE AS SET	**dynamic:** timing comes from the tables, as normal. **fixed:** timing is locked at the number in 6, with no corrections and no knock control. Fixed is only for checking timing with a timing light. **Never ride the bike with Timing Mode on fixed.**
6	**Fixed Timing (deg)** LEAVE AS SET	The timing used when 5 is **fixed**: **0** here. Greyed out while 5 is **dynamic**.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

One table or two?

Item 2 has two choices, **Single Table** and **Separate Tables**. Which one a bike usually uses depends on how its engine is cooled:

ENGINE	USUAL SETTING (2)	WHY
Gen 1 Milwaukee-Eight (2017–2023)	Separate Tables	Mostly air-cooled and run hotter. A table for each cylinder gives more control.
Gen 2 Touring	Single Table	Liquid-cooled heads keep the heat down, so one table does both cylinders.

Your tune may not use the usual setting. Either way, leave it as we set it. This setting is only for **timing**: the fuel (VE) tables have their own setting in Injection configuration, and that one always stays on **Separate Tables**.

> **DON'T SWITCH IT YOURSELF** Separate Tables only works if the Front table is filled in. This example bike uses Single Table, and its Front table is all **0** because it isn't used: switched over, the front cylinder would get no timing advance. Call us first.

NEED HELP? **Call (464) 250-9894**
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Front & Rear Ignition Advance

The ignition advance tables are your main timing tables. For every engine speed (RPM) and load, they tell the ECU when to fire the spark plug, in **degrees before top dead center**: how far the crankshaft still has to turn before the piston reaches the top.

Higher number = earlier spark (more timing). Lower number = later spark (less timing). Your tune came with these set for your bike.

> **WHERE TO FIND IT**
>
> A **Ignition ▸ Rear Cylinder Ignition advance**
>
> B **Ignition ▸ Front Cylinder Ignition advance** greyed out with Single Table

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

One table or two

Ignition ▸ Ignition settings ▸ Front/Rear Cylinder Ignition Table(s) sets how your tune uses the two tables. The bike in these pictures uses **Single Table**.

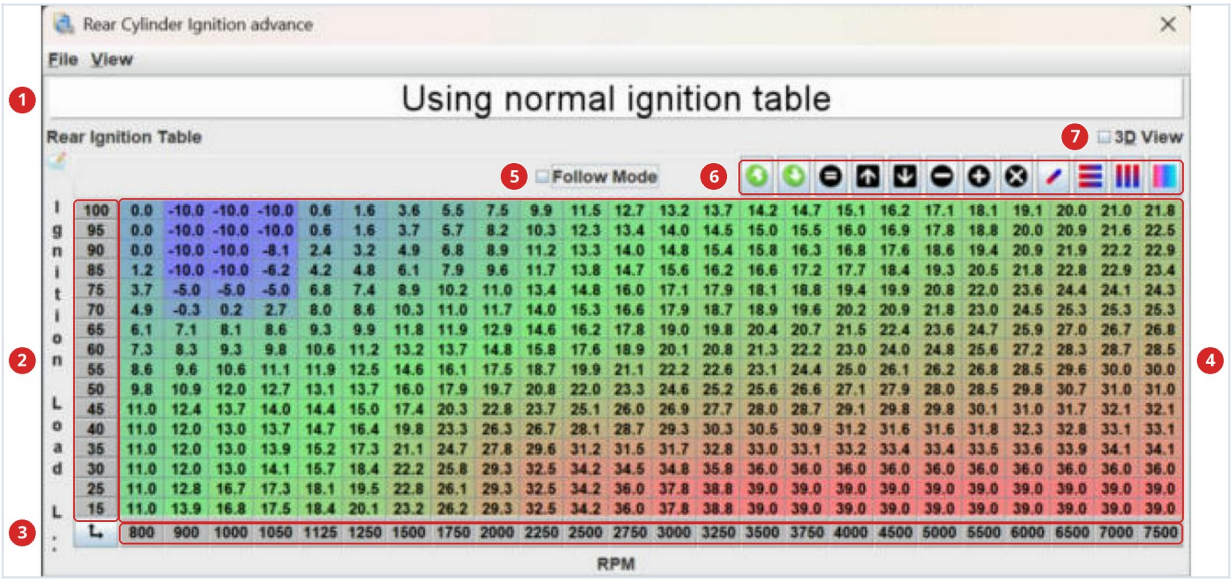
SETTING	REAR CYLINDER	FRONT CYLINDER	USUALLY ON
Single Table	Rear table	Rear table	Gen 2 Touring (liquid-cooled heads)
Separate Tables	Rear table	Front table	Gen 1 Milwaukee-Eight, 2017–2023 (mostly air-cooled)

This is for timing only. The fuel tables have their own setting, which always stays on Separate Tables.

Making changes

- Change a few cells at a time, about **1 degree** at a time. Then ride, take a datalog (a recording of what the engine is doing) and check it for knock.
- More timing isn't always more power. Past a point it only adds heat and knock.
- Keep the table smooth. Sharp steps between neighboring cells make the bike surge or jerk.

A Rear Cylinder Ignition advance



#	SETTING	WHAT IT DOES
1	**Table in use** DISPLAY ONLY	It only changes to **Using idle ignition table** when the separate idle timing table (**Idle ▸ Idle Ignition advance**) is on and the engine is idling. That's off in our tunes, so it always reads **Using normal ignition table**.
2	**Ignition Load (kPa) rows**	Engine load, measured as manifold pressure. Low numbers are closed throttle (coasting and idle); about 100 is wide open throttle at sea level. Up high it's lower: around 5,000 feet, wide open throttle reads about 84 kPa.
3	**RPM columns**	Engine speed.
4	**Timing cells** MAIN SETTING	Degrees of timing for each RPM and load. The ECU blends between neighboring cells. Raise a cell for more timing there; lower it for less.
5	**Follow Mode**	When the engine is running, follows and highlights the cells the engine is using right now.
6	**Toolbar**	Buttons for changing the cells you've selected: raise, lower, set a value, smooth and more. Hover over a button to see its name. Our TunerStudio Hot Keys sheet lists the keyboard shortcuts.
7	**3D View**	Shows this table as a 3D picture next to the grid.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

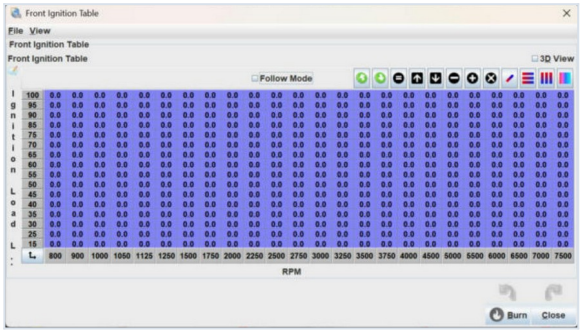
Reading this example

- **Light load, more timing.** At 40 kPa (light cruising) it runs 26.3° at 2000 RPM and 29.3° at 3000 RPM. A partly filled cylinder burns slowly, so the spark fires early.
- **Heavy load, less timing.** At 100 kPa (wide open throttle) it runs 7.5° at 2000 RPM, 13.2° at 3000 RPM and 20° at 6500 RPM (this tune's rev limit). A full cylinder burns fast and knocks more easily.
- **Negative numbers** mean the spark fires just after top dead center. This tune has some, down to −10: the blue cells at the top left (70 to 100 kPa, 900 to 1050 RPM). Leave cells like that as they are unless we tell you otherwise.

B Front Cylinder Ignition advance

Works like the rear table, for the front cylinder (without the bar at the top). The window is titled **Front Ignition Table**.

It's only used with **Separate Tables**, and it stays greyed out in the menu with Single Table. It shares the rear table's RPM and load numbers, so changing an axis number in one changes both.



ALL ZEROS IN THIS EXAMPLE This bike uses Single Table, and its Front table is all **0** because it isn't used. Switched to Separate Tables like this, the front cylinder would get no timing advance. Call us before switching.

Good to know

- This table isn't the only thing setting your timing. While cranking, it comes from **Cranking ▸ Cranking ignition advance**. At idle, **Idle ▸ Closed-loop idle timing** can add or take away up to 12° (in this tune) to hold the idle speed, so changing cells near idle won't change the idle much.
- The temperature corrections and knock control adjust it too. **Ign: Timing Cyl 1** (rear) and **Ign: Timing Cyl 2** (front) in a datalog show the final number.

NEED HELP? **Call (464) 250-9894**
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Dwell

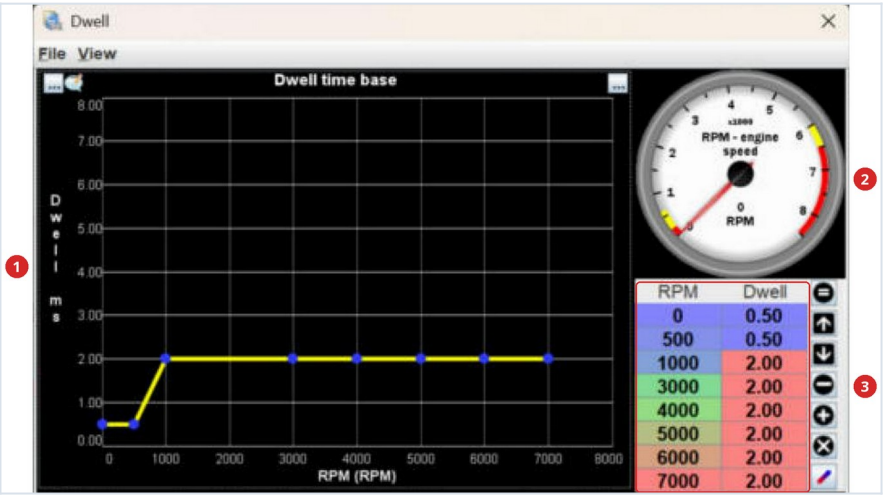
Dwell is how long each ignition coil charges before it fires the spark, in milliseconds (**ms**, thousandths of a second). Too little and the spark is weak, which can cause misfires. Too much and the coils run hot.

These are set for the coils on your bike. **You should never need to change them.** If you fit different coils, call us first.

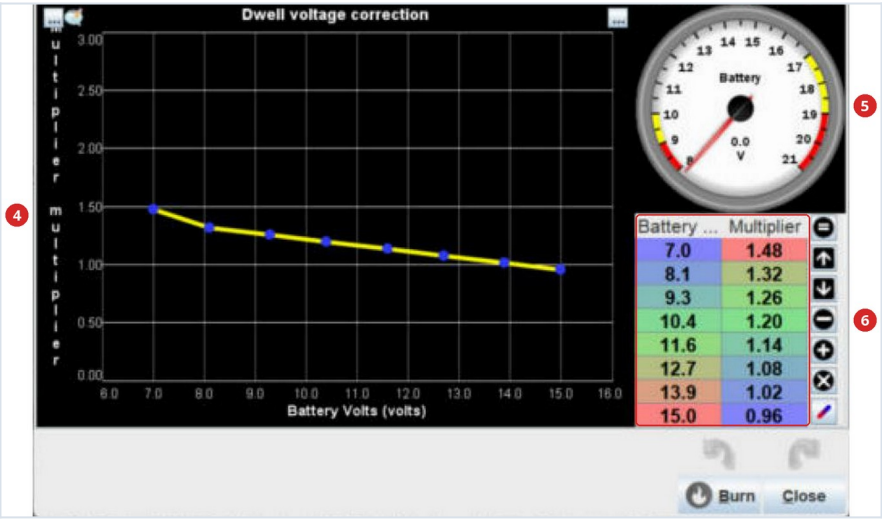
WHERE TO FIND IT
Ignition ▸ Dwell

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

The settings



#	SETTING	WHAT IT DOES
1	**Dwell time base** LEAVE AS SET	A graph of the base dwell against RPM. Its numbers are in 3.
2	**RPM gauge** DISPLAY ONLY	Live engine speed. It reads 0 when TunerStudio isn't connected.
3	**RPM and Dwell columns** LEAVE AS SET	The base dwell (ms) at each RPM. In this example: **0.5 ms** at 0 and 500 RPM, rising to **2.0 ms** at 1000 RPM and staying there up to 7000 RPM.



#	SETTING	WHAT IT DOES
4	**Dwell voltage correction** LEAVE AS SET	A graph of a multiplier against battery voltage. A coil charges more slowly at low voltage, so the ECU stretches the dwell when the voltage is low. Its numbers are in 6.
5	**Battery gauge** DISPLAY ONLY	Live battery voltage. It reads 0.0 when TunerStudio isn't connected.
6	**Battery Volts and Multiplier columns** LEAVE AS SET	The multiplier at each voltage: **1.48** at 7.0 V, **1.02** at 13.9 V and **0.96** at 15.0 V in this example.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

How the ECU uses them

- **Dwell = base dwell × multiplier.** At 3000 RPM and 13.9 V: 2.0 ms × 1.02 = about 2.04 ms. The ECU blends between points, and past the last point it uses the last value.
- While starting (from a stop until RPM first reaches the **Cranking RPM limit**, 600 here), the coils get the **Fixed Cranking Dwell** from **Cranking ▸ Cranking settings** instead: 5.0 ms here. After that the ECU uses these curves, even if RPM dips below 600.
- In a datalog (a recording of what the engine is doing), **Ignition: coil charge time** shows the dwell in use.

NEED HELP? Call (464) 250-9894
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Engine Temp & Air Temp Timing Corrections

These two tables adjust the timing for temperature. A hot engine and hot intake air knock more easily, so the ECU takes a little timing out when it's hot.

A negative number takes timing out, a positive number adds it, and 0 means no change. Your tune came with these set for your bike. Leave them as they are: they protect the engine on hot days.

WHERE TO FIND IT

- **A** **Ignition ▸ Engine Temp timing correction**
- **B** **Ignition ▸ Intake Air Temp timing correction**

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

How they work

- The number is added to the timing from the ignition advance table, for both cylinders. The two corrections add up.
- The ECU blends between neighboring cells. Past the edges it uses the edge: above 120 °C, for example, it keeps using the 120 °C numbers.
- They work whenever the engine is running, but not while it's cranking or when Timing Mode is on fixed.
- If a temperature sensor fails, its correction is 0, so the engine loses this heat protection. Have a failed sensor fixed before riding hard.

A Engine Temp timing correction

Window title: **Warmup timing correction**. In our tunes it works when the engine is hot.



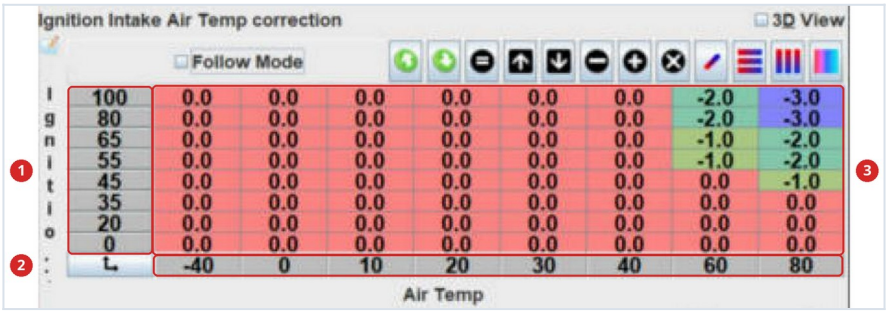
THE NUMBERS IN THE PICTURES (A AND B)

#	SETTING	WHAT IT DOES
1	**Ignition Load (kPa) rows**	Up the side: engine load, measured as manifold pressure.
2	**Temperature columns (°C)**	Along the bottom. **A:** engine temperature (**CLT Temp**; CLT is short for coolant temperature). **B:** intake air temperature (**Air Temp**).
3	**Correction cells (deg)** LEAVE AS SET	Degrees of timing added (+) or taken out (−) at each temperature and load.

In this example: no change up to 80 °C (176 °F). At 100 °C (212 °F) it takes out 1° at 35 kPa, 2° at 70 kPa and 3° at 105 kPa. At 120 °C (248 °F) it takes out up to 4°. The 105 and 140 kPa rows are above what an engine without a turbo or supercharger reaches (about 100 kPa at sea level): at full throttle it takes out about 3° at 100 °C and almost 4° at 120 °C.

B Intake Air Temp timing correction

Window title: **Ignition Intake Air Temp correction**.



In this example: no change up to 40 °C (104 °F). At 60 °C (140 °F) it takes out 1° to 2° from 55 kPa up. At 80 °C (176 °F) it takes out 1° to 3° from 45 kPa up.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

Hot intake air usually comes from heat soak: sitting at a light or riding slowly on a hot day. In a datalog (a recording of what the engine is doing), **Ign: CLT correction** and **Ign: IAT correction** show what these tables are doing.

NEED HELP? Call (464) 250-9894
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Ignition Blend Tables

Blend tables let a tuner add or take away timing based on something other than RPM and load, like ethanol content, throttle position or a sensor you've added. There are four of them, and they're **off** in our tunes.

Leave them off unless we set one up for you.

WHERE TO FIND IT

- (A) **Ignition ▸ Ignition blend tables ▸ Ignition blend 1 bias** (and 2, 3, 4)
- (B) **Ignition ▸ Ignition blend tables ▸ Ignition blend table 1** greyed out while off

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

How a blend works

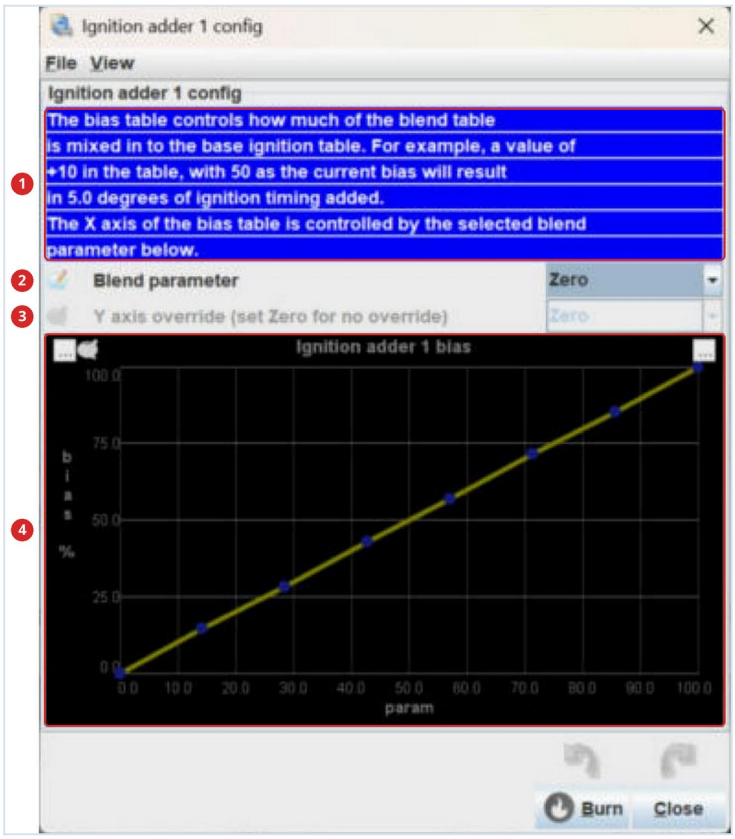
1. **Blend parameter:** the input the blend watches, like Ethanol (Flex) %. **Zero** means the blend is off.
2. **Bias curve:** for each value of that input, how much of the blend table to use, from 0 to 100%.
3. **Blend table:** degrees to add (+) or take away (−), by RPM and load.
4. The ECU adds **bias × table value** to the timing. The window's own example: **+10** in the table with a bias of **50%** adds **5 degrees**.

The four blends add up, and they work on both cylinders. Like the temperature corrections, they work while the engine runs, not while it's cranking. If the input's sensor fails, the blend adds nothing. In a datalog (a recording of what the engine is doing), **ignBlendOutput 1** to **4** show how many degrees each blend is adding: 0 while they're off.

ABOUT THESE PICTURES In our tunes the Blend parameter is **Zero**, so the bias curve is greyed out and the blend table can't be opened from the menu. For the table picture we set it to **TPS** for a moment with TunerStudio offline (not connected to a bike), then set it back to Zero without saving.

A Ignition blend bias

The window is titled **Ignition adder 1 config** (2, 3 or 4 for the other blends).

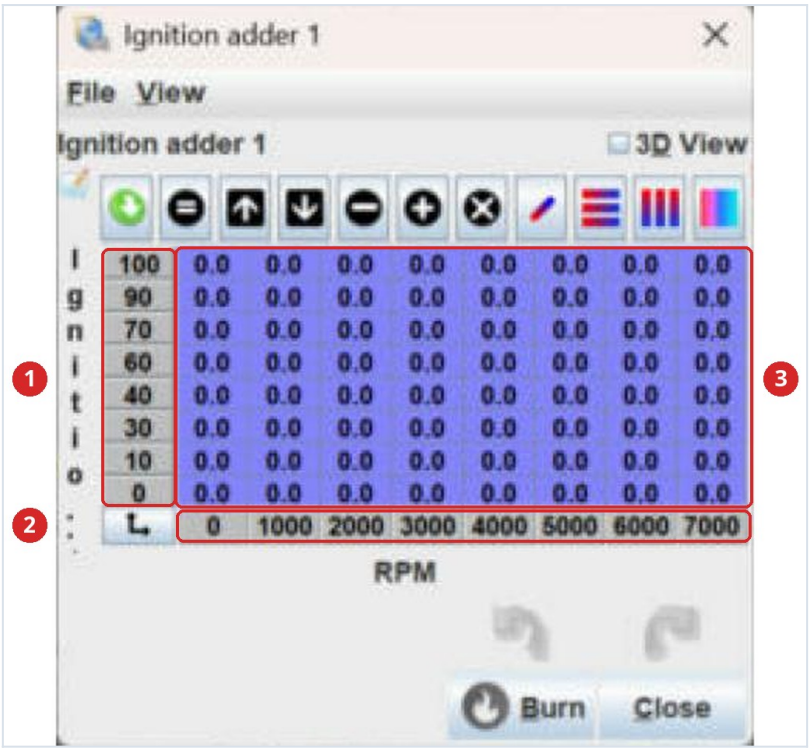


#	SETTING	WHAT IT DOES
1	**Help text** DISPLAY ONLY	Explains the bias, with the +10 and 50 example above.
2	**Blend parameter** ADVANCED	The input this blend watches. **Zero = off**, as in our tunes. Choices include TPS, MAP, engine and air temperature, Ethanol (Flex) %, battery voltage, RPM, gear, vehicle speed and spare sensor inputs.
3	**Y axis override (set Zero for no override)** ADVANCED	**Zero:** the blend table's rows are engine load (manifold pressure), like the main timing table. Another choice uses that input for the rows instead. Greyed out while 2 is Zero.
4	**Bias curve** ADVANCED	Across: the value of the input in 2 (**param**). Up: how much of the table to use (**bias**, %). Greyed out while 2 is Zero.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

B Ignition blend table

The window is titled **Ignition adder 1** (or 2, 3, 4).



#	SETTING	WHAT IT DOES
1	**Ignition Load (kPa) rows**	Engine load (manifold pressure), like the main timing table, or the input picked in Y axis override.
2	**RPM columns**	Engine speed.
3	**Cells (deg)** ADVANCED	Degrees added (+) or taken away (−) at full bias. **0 everywhere** in our tunes.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

NEED HELP? Call (464) 250-9894
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com

IMPACT ECU · IGNITION BUTTON GUIDE

Knock Control

Knock (also called pinging or detonation) is the fuel exploding in the cylinder instead of burning smoothly. It can crack pistons. Your engine has a knock sensor on each cylinder. Knock control listens to them, takes timing out when it hears knock, then puts the timing back slowly.

Knock control is on in most of our tunes and set for your engine. If yours shows **enabled**, leave it on. If it shows **disabled**, leave it that way and call us before turning it on.

WHERE TO FIND IT

A **Ignition ▸ Knock Control**

B **Ignition ▸ Max knock retard**

The numbers in these pictures come from one example bike. Your tune's numbers will be different, so don't copy them. Units are Metric (°C, kPa, km/h). Red numbers in each picture match the table below it.

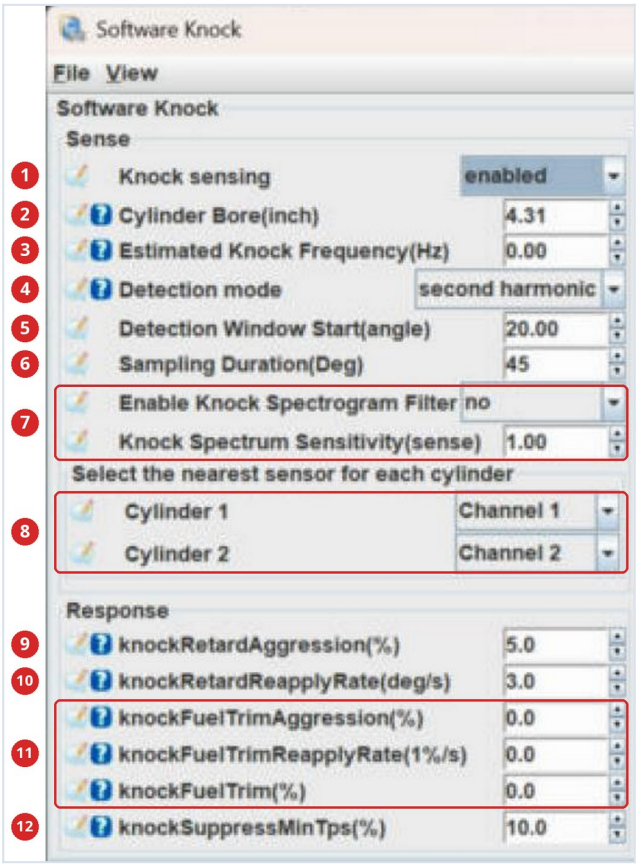
How knock control works

- Right after each spark, the ECU listens to that cylinder's knock sensor for a short moment.
- If the sound is louder than the knock line for that RPM (13), it counts a knock and takes timing out of **both cylinders**: 5% here (9) of the distance from the current timing down to −20°. At 30° of timing that's 2.5°.
- It never takes out more than the **Max knock retard** table allows (B).
- Then it puts the timing back at **3 degrees per second** here (10).
- Below **10% throttle** opening here (12), it doesn't take timing out, and any timing it took out goes straight back. Knocks it hears there still add to the knock count.

SOME CHANGES NEED A RESTART Changes to Knock sensing, Cylinder Bore, Estimated Knock Frequency and Detection mode (items 1 to 4) only take effect after the ECU restarts. Click **Burn**, turn the key off and unplug the USB cable for a few seconds, then plug it back in and turn the key on. The ECU stays on while the USB cable is plugged in, even with the key off.

A Knock Control

The window is titled **Software Knock**. Its left half holds the settings (1 to 12). Its right half holds the knock line (13).



#	SETTING	WHAT IT DOES
1	**Knock sensing** LEAVE AS SET	**enabled** turns knock control on. Leave it as your tune came.
2	**Cylinder Bore (inch)** LEAVE AS SET	Your engine's bore (cylinder width): **4.31** in this example. The ECU uses it to work out the pitch of the knock sound to listen for: a bigger bore knocks at a lower pitch. Fitted a big-bore kit? Call us.
3	**Estimated Knock Frequency (Hz)** LEAVE AS SET	Frequency is the pitch of the sound, in Hz. **0** means the ECU works it out from the bore (2), using Detection mode (4). Any other number is used exactly as typed, and Detection mode is then ignored.
4	**Detection mode** LEAVE AS SET	**second harmonic:** listens at twice the knock frequency, where there's usually less background noise.

#	SETTING	WHAT IT DOES
5	**Detection Window Start (angle)** LEAVE AS SET	Listening starts this many degrees of crankshaft turn after each spark: **20** here.
6	**Sampling Duration (Deg)** LEAVE AS SET	How long it listens, in degrees of crankshaft turn: **45** here.
7	**Knock spectrogram settings** LEAVE AS SET	For the knock spectrogram, a picture of the knock sensor's sound that a TunerStudio add-on can show. They don't change how knock is found.
8	**Cylinder 1 and Cylinder 2** LEAVE AS SET	Which knock sensor input each cylinder listens on. **Cylinder 1 is the rear cylinder** (Channel 1), Cylinder 2 the front (Channel 2).
9	**knockRetardAggression (%)** ADVANCED	How much timing to take out for each knock: **5%** of the distance from the current timing down to −20°.
10	**knockRetardReapplyRate (deg/s)** ADVANCED	How fast timing comes back after knock: **3.0** degrees per second.
11	**knockFuelTrim settings** LEAVE AS SET	Can add fuel when knock is heard. All **0** in our tunes: no fuel is added. Leave them at 0.
12	**knockSuppressMinTps (%)** ADVANCED	Below this throttle opening (**10%**), knock control doesn't take timing out, and any timing it took out goes back at once.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

THE KNOCK LINE



13 **Knock Sensitivity By RPM** ADVANCED

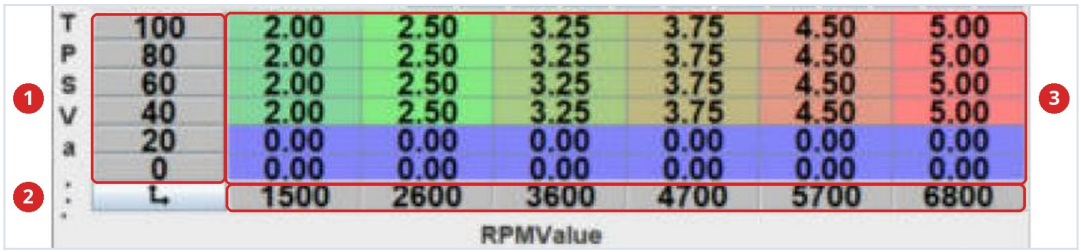
A knock is counted when a sensor's reading goes above this line. The columns are **RPM** and **Threshold** (loudness, in dB): **−20** up to 2300 RPM, rising to **−5** from about 6200 RPM. Engines get noisier as RPM rises, so the line rises too.

A lower number is more sensitive and counts more knocks.

The graph beside these columns stays empty (its scale only goes from 0 to 8). Go by the columns.

B Max knock retard

The most timing knock control may take out, by RPM and load.



#	SETTING	WHAT IT DOES
1	**Load rows**	Engine load: manifold pressure in kPa, like the timing table, even though TunerStudio labels them **TPSValue**: 60 means 60 kPa. For the same reason, don't go by Follow Mode's highlight in this table.
2	**RPM columns**	Engine speed.
3	**Cells (deg)** ADVANCED	The most timing that may be taken out. In this example: **none** at 0 and 20 kPa (closed throttle); **2°** at 1500 RPM up to **5°** at 6800 RPM from 40 kPa up.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

Checking for knock

- Take a datalog (a recording of what the engine is doing). **Knock: Retard** shows how many degrees knock control is taking out of both cylinders right now, and **Knock: Count** how many knocks it has heard since the ECU last started.
- **Knock: Cyl 1** (rear) and **Knock: Cyl 2** (front) show how loud each cylinder's sensor is. **Knock: Threshold** shows the knock line at the current RPM: a reading above it is a knock.
- Seeing knock retard often? Call us: the tune may have too much timing for your fuel, or the engine may be running hot.

NEED HELP? **Call (464) 250-9894**
Mon–Fri 8 AM–7 PM · Sat 9 AM–4 PM · Central Time · More guides at help.impactwiringsolutions.com