# Summary

V14R0C0

# Wiring



Coil

GND  GND

12V Battery

Kill SW

GND

1  2  3  4  5  6  7  8  9  10 11 12

GND

GND

Pickup

Curve 1 or 2 *

GND

RPM
x1000

Tacho *

GND

* options

# Connector

| Pin | Type | Description |
|-----|------|-------------|
| 1 | output | To ignition coil |
| 2 | output | *not connected* |
| 3 | input | *not connected* |
| 4 | input | **Ground frame (=minus from battery)** |
| 5 | input | **+12Vdc from battery** |
| 6 | input | Kill switch |
| 7 | input | Analog Pickup |
| 8 | input | Pickup or Hall Sensor Ground |
| 9 | input | Digital Hall Effect Sensor * |
| 10 | input | *not connected* |
| 11 | output | Tachometer * |
| 12 | input | Curve Selection * |

# Kill Switch

The ignition uses the Kill switch input as a selector between 2 functions:

- Setup

- Stop engine.

# Setup Mode

1) Turn the **Kill Switch ON** (*connector pin6 connected to ground*) **PRIOR** to power on the ignition box.

2) **Power on** the ignition box with a 6 to 12v battery.

> **Warning**: The Power and Ground connections MUST BE SECURE.
> **A power outage during the setup process may cause the ignition box to brick !**

When the ignition box detects that the kill switch is already grounded, it turns into SETUP Mode.

3) The **Led** blinks 5 times meaning grounded Kill switch has been detected.
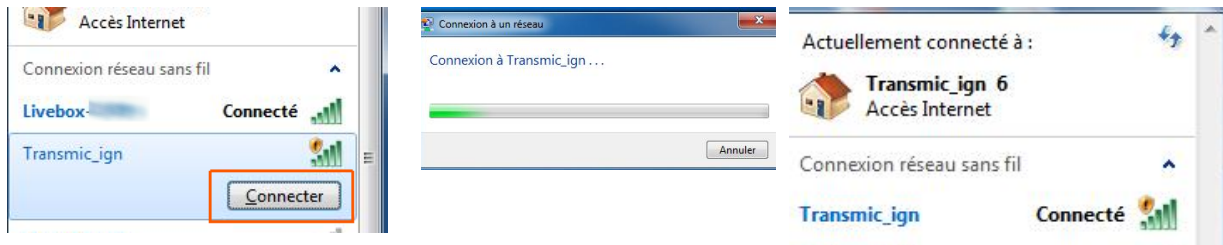Then wait for the WiFi server to start,
then blinks 5 times again meaning "*Wifi Ready*" and finally flashes once every 5 seconds.

4) The ignition box starts a **Wifi AP** (Access Point)

5) On your phone, laptop, PC, whatever, go to the **Wifi setting** and search for a new SSID called **Transmic_ign**
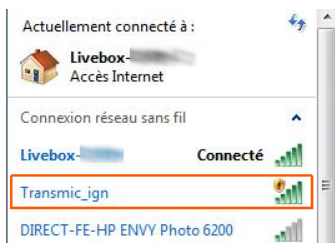


6) **Connect** to it. Password is required: it's "***password***"



8) Once your device is connected to the AP, open up a **browser**
and head over to **http://192.168.4.1/setup**                (http not https !)

9) Once connected your browser should display:



**TRANSMIC.FR**

<MODEL> <VERSION>
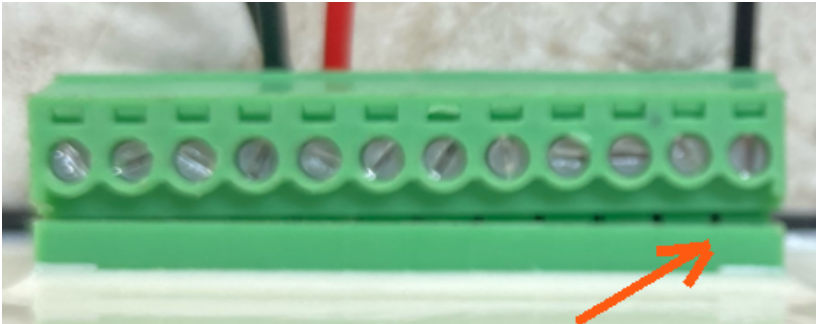
You are now connected
to your ignition box.
Options: 5
Serial: 2301 ©

[Configuration]

10) Turn the **Kill Switch OFF for Running mode**.

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Troubleshooting WiFi connection

- Check that the 12pins connector is FULLY inserted and there is nothing preventing the male connector from fully engaging.



- Reboot the ignition box. (Power off/power up)

- Ignore any browser message saying it's not connected to internet:



Indeed, it's connected ONLY to the Ignition box, not to the web.
(*It's impossible to reach Google and the ignition box at the same time*)

- You can see available SSID with a WiFi Analyzer as NetSpot for Android  or  Wifi-Analyzer for W10

- You can test the network connection from your laptop to the ignition box:

    Open a command Prompt:

    Type "cmd" into the address bar of File Explorer and hit Enter
    or Press Windows+R to open "Run" box. Type "cmd" and then click "OK"
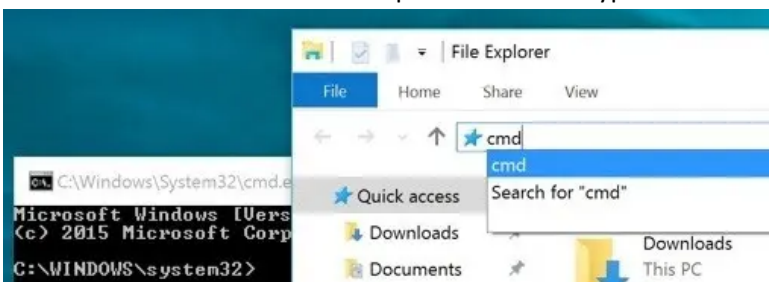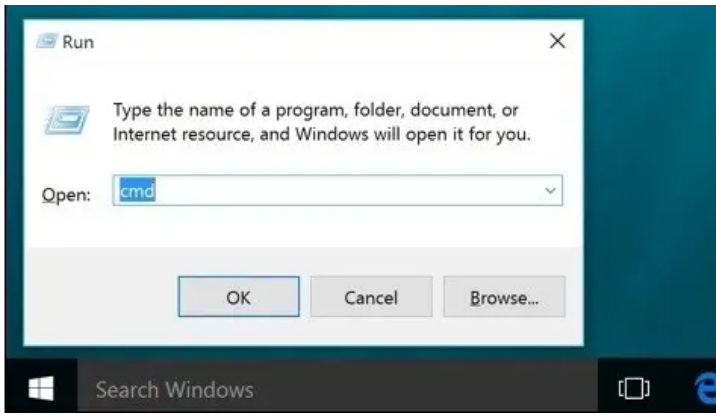
ping the ignition box, it should replies:

**C:\>ping 192.168.4.1**
Pinging 192.168.4.1 with 32 bytes of data :
**Reply** from 192.168.1.1 : bytes=32 time<1ms TTL=64
**Reply** from 192.168.1.1 : bytes=32 time<1ms TTL=64
**Reply** from 192.168.1.1 : bytes=32 time<1ms TTL=64

<u>Clear DNS cache</u>

| | | |
|---|---|---|
| Windows: | in MsDos console: | C:\>**ipconfig /flushdns** |
| MacOS: | in Terminal : | sudo dscacheutil -flushcache |
| Linux: | in Terminal: | sudo systemd-resolve –flush-caches |

Troubleshooting display

Console URL is **http**:// NOT **https**:// but some browsers like Chrome automatically switch to secure https://

- Or use Firefox. *Close <u>all</u> Firefox windows than relaunch it.*

- Or use a lightweight, portable browser as *[QtWeb](QtWeb)*

- or *[disable](disable)* **HSTS** In Chrome.

Console URL is **http**:// NOT **https**:// but some browsers like Chrome automatically switch to secure https://

# Ignition Timing

Assuming you want this ignition curve:
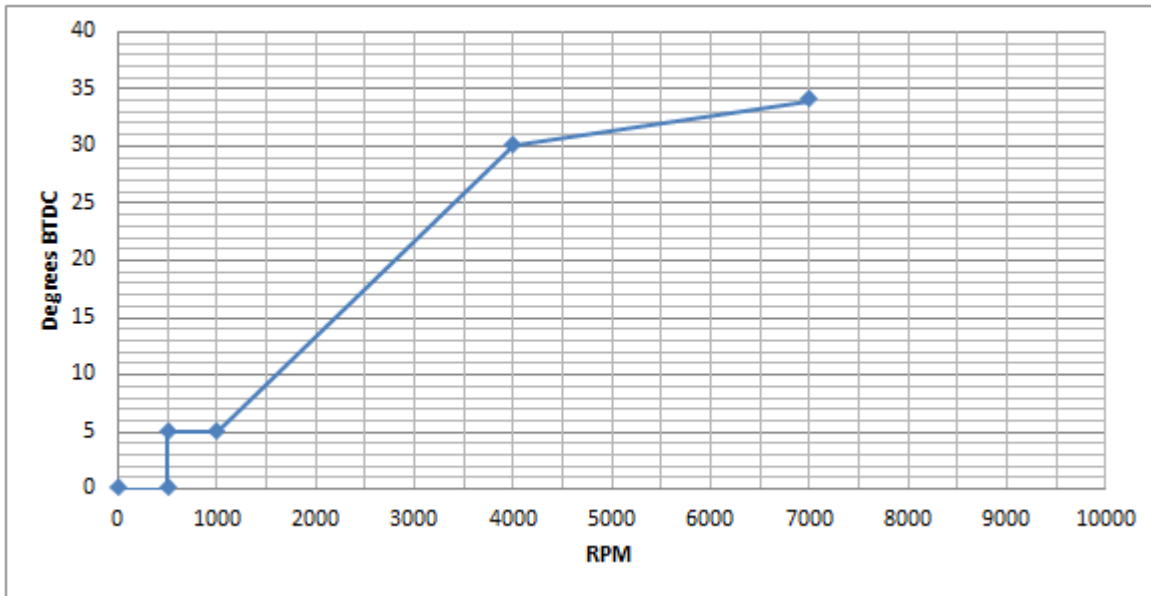


One can define the curve with 4 points but you can use up to 13 points.

*(0 to 500rpm at 0° BTDC is hard coded for no kickback.)*

The curve above is defined by 4 pairs of values

```
500  rpm     =     5°   BTDC
1000 rpm     =     5°   BTDC
4000 rpm     =     30°  BTDC
7000 rpm     =     34°  BTDC
```

Those 4 couples of values MUST be filled out in the form consecutively and in ascending order of RPM along with the pickup position.

Use this Windows software to draw the curve: Interactive_Graph.exe with Video

# Pickup Type

Default: 0

| | | |
|---|---|---|
| MENU | PICKUP TYPE | PICKUP POSITION |
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | UPDATE | |

[0]

- ◉ 0: Analog Pickup Coil (VR-PN)
- ○ 1: Analog Pickup Coil (VR-NP)
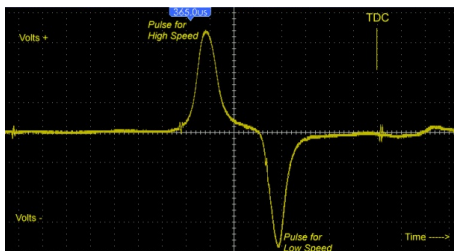- ○ 2: Digital Hall Effect Sensor **\***

[Send]

**\*** *option*

Select the type of pickup attached to the Ignition box:

*When the LEADING edge of the magnet passes in front of the pickup coil, a wave is produced and another wave of opposite voltage is generated when the FALLING edge of the magnet leaves the pickup coil. Depending on the wiring, the first pulse at Leading Edge can be positive (then negative at Falling edge), or the exact opposite.*

**0** = VR stands for Variable Reluctor aka pickup coil/trigger coil (Analog signal) **Positive** first (PN)



**1** = Variable Reluctor (Analog signal) Negative first (**NP**)
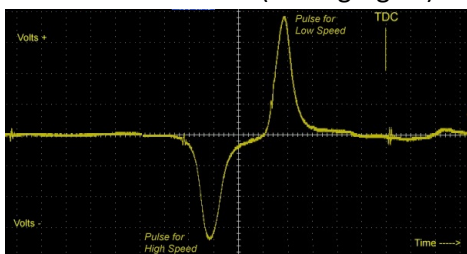


**2** = Hall Effect Sensor (Digital signal)

> This ignition box **works best with Positive first pickup** (**VR-PN**)
> If the pickup is internally grounded into the stator there is no choice, the pickup output is either PN or NP
> But if both pickup wires are available, then just [swap the wires](#) to change the polarity
> in order to get a **Positive first** signal (PN) on connector **pin7**.

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# VR pickup

Analog **VR pickup** is connected between **pin 7 and pin 8/gnd**
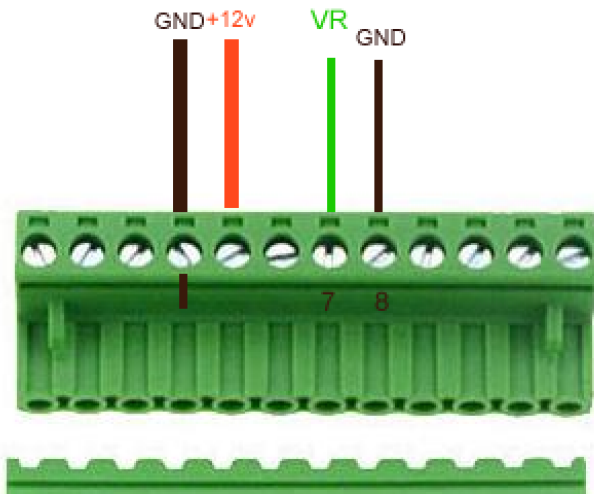


*To avoid ElectroMagnetic Interference (EMI ) it's safer to connect the pickup sensor through a shielded cable.*
*Shield grounded on one side only.*
*Twisted pair is better.*

# Hall Sensor

Digital **Hall Sensor** is connected between **pin 9 and pin 8/gnd**
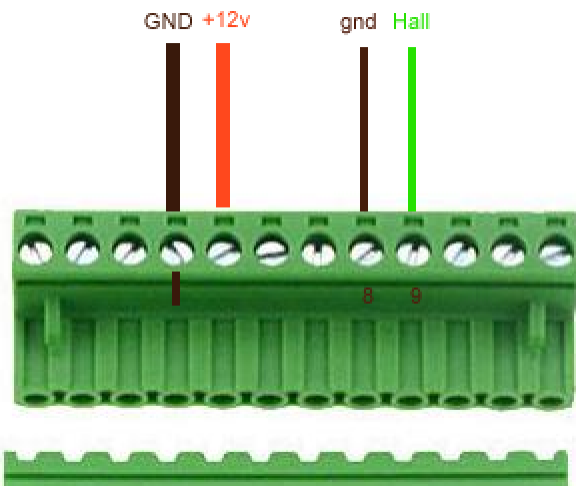


[Pickup Type](#) must be set to [**2**] for use of a Hall sensor.

## 2 types of Sensors

- Hall sensors with **open-collector** output, give a floating voltage when no magnet. They needs a pull-up resistor.
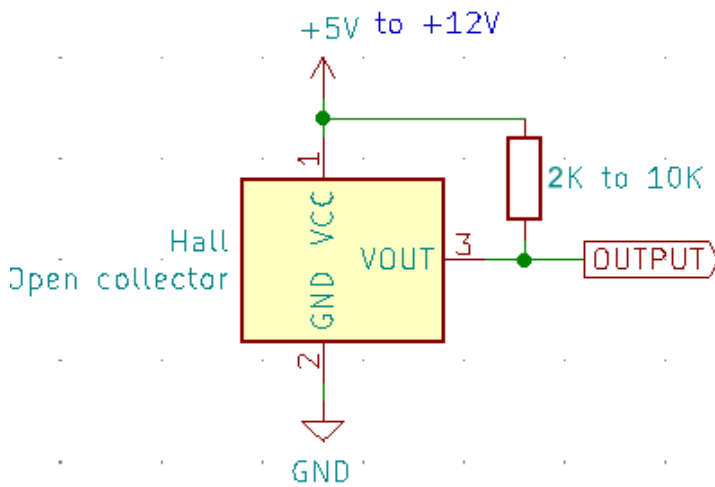


- Hall sensors with **built-in pull-up resistor** give positives voltage when no magnet.
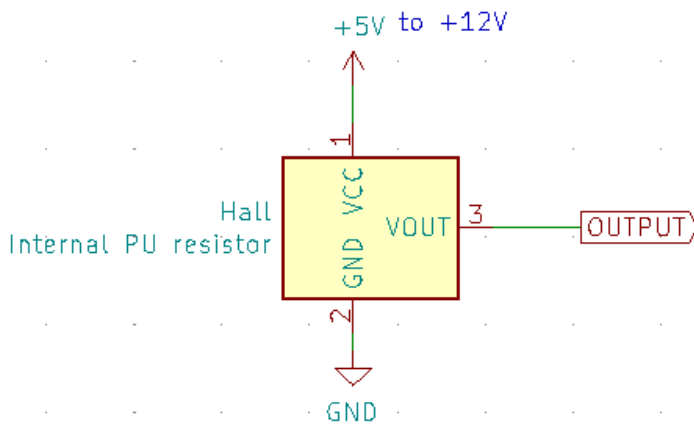


Hall sensors require a +5v to +12vdc supply voltage. *See datasheet*

*You can even connect an **Optical Sensor** as long as it puts out a CLEAN square signal similar to the one above.*

*See Appendix 2 for Position*

V14R0C0

## Output of a Hall sensor



When a magnet passes in front of the Hall sensor

+5 to +24v

Default state is HIGH

0v
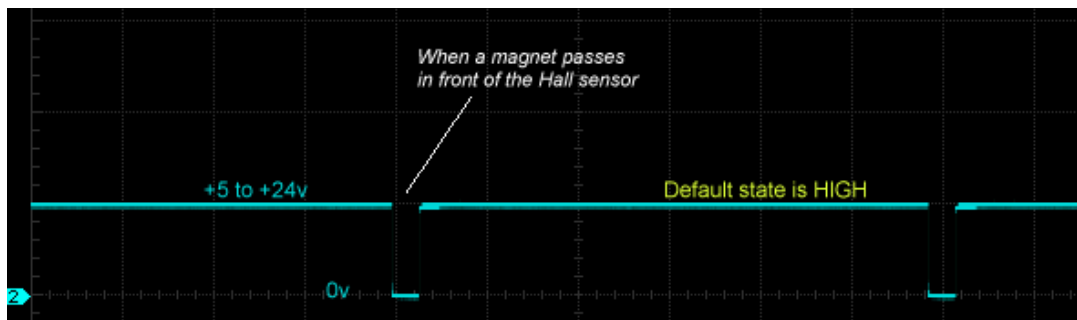
## Timing

The ignition box uses the **rising edge** of the Hall sensor signal.



Hall sensor output

# Pickup Position

Default: 50
Range of values: 1 to 180

| MENU | PICKUP TYPE | PICKUP POSITION |
|---|---|---|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

[USERPOS]

BTDC

45 °

Send

- Go back to the opened browser and first thing first, enter the **Pickup Position** then click **Send**

Formula is: ***Pickup position = Base advance + Magnet Length***

*Magnet Length*:



*Base advance* is generally 5 to 15° BTDC

*See Appendix 1,2,3,4 to find the physical position of the pickup relative to TDC.*

Current value appears in blue on the form.

V14R0C0

# Shaft

| MENU | PICKUP TYPE | PICKUP POSITION |
|------|-------------|-----------------|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

[USERSFT]

◯ 0: CrankShaft
◯ 1: CamShaft
◯ 2: 2pulses/rev

[Send]

- Select if the pickup is placed :

- **0**: on the **crankshaft** via the flywheel (2stk) with 1 pulse per rotation

- **0**: on the **crankshaft** via the flywheel (4stk) with 1 pulse per rotation with wasted spark.
  (*one spark occurs during the compression stroke and another during the exhaust stroke.*)

- **1**: on the **camshaft** (4stk)  with 1 pulse per 2 rotations.

- **2**: on the **crankshaft** with 2 pulses per rotation

Current value appears in blue on the form.

# Advance Timing

- Proceed now to enter the advance timing.

We want to setup:

```
500  rpm    =      5°   BTDC
1000 rpm    =      5°   BTDC
4000 rpm    =      30°  BTDC
7000 rpm    =      34°  BTDC
```

Enter values <u>consecutively</u> in <u>ascending</u> order of RPM !

Pair 500:5 first etc etc…

7000 being the <u>last value</u> (*as the firmware stops reading when it meets a null value*),

7000 will act as the <u>hard rev-limiter</u>: No more sparks at 7001 RPM !

| MENU | PICKUP TYPE | PICKUP POSITION |
|---|---|---|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

**Curve N°1 or N°2***

USERTIM

RPM
`3000`

ADV
`14` °

Curve
`0` (0=curve N°1)

[Send]
* *Option*

**Stored Values:**

Timing Curve 1:

| 0 | 500 |
|---|---|
| 4 | 5 |
| 8 | 1000 |
| 12 | 5 |
| 16 | 3000 |
| 20 | 40 |
| 24 | 8000 |
| 28 | 30 |
| 32 | 0 |
| 36 | 0 |
| 40 | 0 |
| 44 | 0 |

*RPM can be entered with a 100rpm step but RPM will be measured with **1rpm** precision.*

*Timing can be entered with a precision of 1° but the processor calculate all timing values between the points you entered, using linear interpolation so an **accuracy of 0.1°** is done at this step.*

*Any timing values will be COMPLETELY OFF IF PICKUP POSITION IS FALSE: **PICKUP POSITION IS KEY***

*See Appendix 1 for Position*

*Curve N°1 is stored at addresses 0 to 100*

V14R0C0

# Select curve

Default: curve N°1

If you bought the 2 curves option, then connect a switch between connector **pin 12 and ground**.

When switch is **open** (or no switch connected), **curve N°1** is used.

If switch is **on** (*pin 12 connected to ground*) <u>BEFORE</u> turning on the ignition box, then **curve N°2** will be used.

You cannot change the curve while running. (*The switch is not read by the ignition*)

| MENU | PICKUP TYPE | PICKUP POSITION |
| --- | --- | --- |
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

**Curve N°1 or N°2***

500 => 14

RPM
3000

ADV
14 °

Curve
1  (0=curve N°1)

Send
* Option

|  | |
| --- | --- |
| 96 | 0 |
| 100 | 0 |
| Timing Curve 2: | |
| 104 | 501 |
| 108 | 5 |
| 112 | 1001 |
| 116 | 8 |
| 120 | 3001 |
| 124 | 30 |
| 128 | 10001 |
| 132 | 40 |
| 136 | 0 |
| 140 | 0 |
| 144 | 0 |
| 148 | 0 |
| 152 | 0 |
| 156 | 0 |
| 160 | 0 |
| 164 | 0 |
| 168 | 0 |
| 172 | 0 |
| 176 | 0 |
| 180 | 0 |
| 184 | 0 |
| 188 | 0 |
| 192 | 0 |
| 196 | 0 |
| 200 | 0 |
| 204 | 0 |
| Settings: | |

*Curve N°2 is stored at addresses 104 to 204*

# Read

- To display the values that have been set, click on the **Read** button on the **Home** page :

| MENU | PICKUP TYPE | PICKUP POSITION |
|---|---|---|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

Read

Dump

Home

Clear Timing

Clear All

Factory Restore

**Stored Values:**

Timing Curve:

| 0 | 500 |
|---|---|
| 4 | 5 |
| 8 | 1000 |
| 12 | 5 |
| 16 | 4000 |
| 20 | 30 |
| 24 | 7000 |
| 28 | 34 |
| 32 | 0 |
| 36 | 0 |
| 40 | 0 |
| 44 | 0 |
| 48 | 0 |
| 52 | 0 |
| 56 | 0 |
| 60 | 0 |
| 64 | 0 |
| 68 | 0 |
| 72 | 0 |
| 76 | 0 |
| 80 | 0 |
| 84 | 0 |
| 88 | 0 |
| 92 | 0 |
| 96 | 0 |
| 100 | 0 |

✔ exit (at row 32)

**Stored Values:**

Timing Curve:

| 0 | 500 |
|---|---|
| 4 | 5 |
| 8 | 1000 |
| 12 | 5 |
| 16 | 4000 |
| 20 | 30 |
| 24 | 0 |
| 28 | 0 |
| 32 | 0 |
| 36 | 0 |
| 40 | 7000 |
| 44 | 34 |
| 48 | 0 |
| 52 | 0 |
| 56 | 0 |
| 60 | 0 |
| 64 | 0 |
| 68 | 0 |
| 72 | 0 |
| 76 | 0 |
| 80 | 0 |
| 84 | 0 |
| 88 | 0 |
| 92 | 0 |
| 96 | 0 |
| 100 | 0 |

✘ exit (at row 24)

| 92 | 0 | 196 | 0 |
|---|---|---|---|
| **96** | 0 | **200** | 0 |
| 100 | 0 | 204 | 0 |

Settings:

| 212 | 400 | Kick Speed (AC/DCCDI) |
|---|---|---|
| 216 | 50 | Pickup Position (°btdc) |
| 232 | 0 | Pickup Type (0:VR) |
| 233 | 3 | Dwell (TCI) |
| 234 | 0 | DwellType (TCI) |
| 235 | 0 | |
| 236 | 0 | Adv 0-500rpm (°atdc) |
| 237 | 0 | Console output (0:No) |
| 238 | 0 | HV Boost (DCCDI) |
| 239 | 0 | Shaft (0=crankshaft) |
| 240 | 0 | Autospark (TCI/DCCDI) |
| 241 | 0 | |
| 242 | 0 | |
| 243 | 0 | Bypass (TCI) |
| 244 | 1 | Cylinders |
| 245 | 2 | Strokes |
| 248 | 2 | Starts |

Home

All values must be **<u>consecutive</u>** and in <u>ascending</u> order of RPM !

V14R0C0

# Dump

Read EEPROM addresses and display them in HEX values for <u>debug</u> purpose.

| MENU | PICKUP TYPE | PICKUP POSITION |
|---|---|---|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

Read

Dump

Home

Clear Timing

Clear All

Factory Restore

## Dump EEPROM Hex Values:

| 0 | F4 | 01 | 00 | 00 | 05 | 00 | 00 | 00 |
|---|---|---|---|---|---|---|---|---|
| 8 | 40 | 1F | 00 | 00 | 28 | 00 | 00 | 00 |
| 16 | 34 | 21 | 00 | 00 | 28 | 00 | 00 | 00 |
| 24 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 32 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 40 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 48 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 56 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 64 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 72 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 80 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 88 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 96 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 104 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 112 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 120 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 128 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 136 | FE | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 144 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 152 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 160 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 168 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 176 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 184 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 192 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 200 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 208 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 216 | 32 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 224 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 232 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 240 | 00 | 00 | 00 | 00 | 01 | 00 | 00 | 00 |

Home

V14R0C0

# Modification



**LINE**

**NEW VALUE**

Send

Say you want to modify the advance timing for 7000rpm and set 35° instead of 34°

In *Read* mode above, we saw that RPM 7000 is stored at address 24 and timing for 7000rpm is at address 28.



| 24 | 7000 |
| 28 | 34 |
| 32 | 0 |

Since we want to modify the advance timing at line 28, we now have to enter :

| Line | **28** |
| New value | **35** |
| then | **Send** |



**LINE**
28

**NEW VALUE**
35

Send

Same thing to change any other values.

Remember: All timing values must be in ascending order of RPM and no blank address between timing values.
*Use Read button to check that.*

V14R0C0

# Add points

Say you want **to add** one advance timing of 34° @ 8000rpm

In *Read* mode above, we saw that last RPM 7000 is stored at address 24 and timing for 7000rpm is at address 28.

The next 2 empty slots available are:

| | |
|----|------|
| 24 | 7000 |
| 28 | 34 |
| 32 | 0 |
| 36 | 0 |
| 40 | 0 |

Address **32** for RPM and Address **36** for timing

We now have to enter :

| | |
|-----------|------|
| Line | **32** |
| New value | **8000** |
| then | **Send** |

| | |
|-----------|------|
| Line | **36** |
| New value | **34** |
| then | **Send** |

Remember: All timing values must be <u>**consecutive**</u> and in <u>ascending</u> order of RPM !

*Use* <u>Read</u> *button to check that.*

# Clear points

Say you want to remove the last advance timing of 34° @ 7000rpm

In *Read* mode above, we saw that last RPM 7000 is stored at address 24 and timing for 7000rpm is at address 28.

| | |
|---|---|
| 24 | 7000 |
| 28 | 34 |
| 32 | 0 |
| 36 | 0 |
| 40 | 0 |

To zero out those values we now have to enter :

| Line | **24** |
|---|---|
| New value | **0** |
| then | **Send** |

| Line | **28** |
|---|---|
| New value | **0** |
| then | **Send** |

Remember: All timing values must be **consecutive** and in ascending order of RPM !
*Use Read button to check that.*

**Stored Values:**

Timing Curve:

| 0 | 500 |
|---|---|
| 4 | 5 |
| 8 | 1000 |
| 12 | 5 |
| 16 | 4000 |
| 20 | 30 |
| 24 | 0 |
| 28 | 0 |
| 32 | 0 |
| 36 | 0 |
| 40 | 7000 |
| 44 | 34 |
| 48 | 0 |
| 52 | 0 |
| 56 | 0 |
| 60 | 0 |
| 64 | 0 |
| 68 | 0 |
| 72 | 0 |
| 76 | 0 |
| 80 | 0 |
| 84 | 0 |
| 88 | 0 |
| 92 | 0 |
| 96 | 0 |
| 100 | 0 |

exit

V14R0C0

# Clear Timing

This button will **clear TIMING values** WITHOUT confirmation.

<span style="color:red">Pickup position, polarity, shaft, dwell etc are kept.</span>
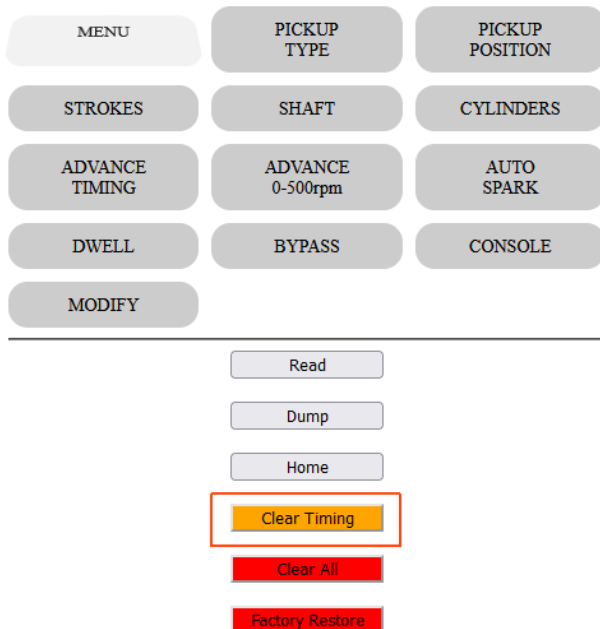


Browser shows :

## Timing values cleared!

Please restart the ignition box.

<span style="color:red">This box now has no Advance Curve and cannot operate until you set timing values.</span>

Restart the ignition box. (power off/power on)

*Don't forget the Kill switch position if you want to return in Setup mode….*

# Clear All

This button will **clear ALL values** WITHOUT confirmation.
Timing, Pickup position, polarity, shaft, dwell etc are zeroed.
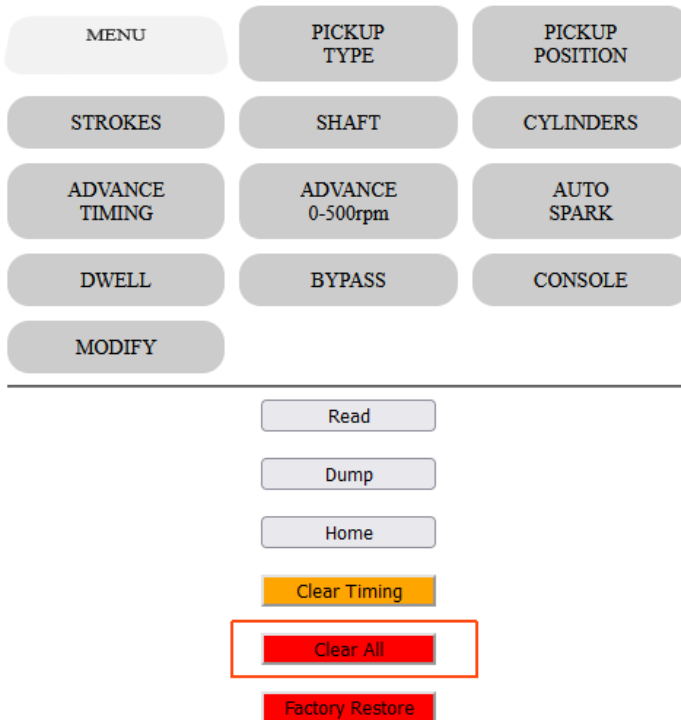


Browser shows :

## EEPROM values cleared!

Please restart the ignition box.

This box is now *empty* and cannot operate until you set values. '

Restart the ignition box. (power off/power on)

*Don't forget the Kill switch position if you want to return in Setup mode….*

# Factory Restore

This button will **Restore Factory Default** WITHOUT confirmation.

*Timing, Pickup position, polarity, shaft, dwell etc are set to default values.*

| MENU | PICKUP TYPE | PICKUP POSITION |
|------|-------------|-----------------|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

Read

Dump

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Clear Timing

Clear All

Factory Restore
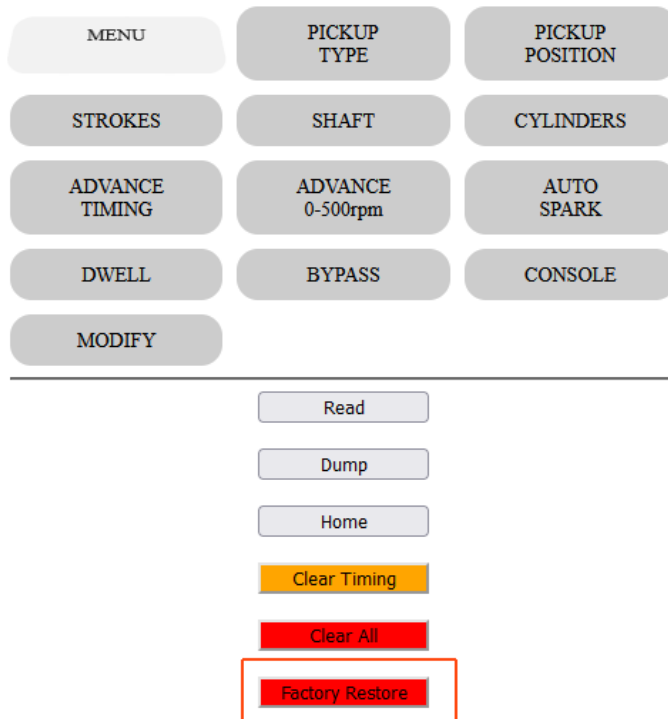
Browser shows :

## Init All done!

This box now have a default Advance Curve which is not the one you need...
Tune the values before to start the engine!

Restart the ignition box. (power off/power on)

*Don't forget the Kill switch position if you want to return in Setup mode....*

V14R0C0

## *Advanced settings*

*If you don't need those Extra settings, just let them to their default value.*

## Advance at kick start

For an easier Manual Kick start and to avoid kick backs, you can delay the advance between 0 to 500rpm to send the spark a few degrees **After** Top Dead Center (ATDC)

| MENU | PICKUP TYPE | PICKUP POSITION |
|------|-------------|-----------------|
| STROKES | SHAFT | CYLINDERS |
| ADVANCE TIMING | ADVANCE 0-500rpm | AUTO SPARK |
| DWELL | BYPASS | CONSOLE |
| MODIFY | | |

[0]

ATDC
5 ⌄ °

Send

*Current value appears in blue on the form.*

# AutoSpark

Default: Off
Range of values: 0ff, 300 1000, 3000, 10000rpm

This **autotest function** is usable on TCI and DCCDI only.
The ignition box fires the ignition by itself at 300/1000/3000/10000rpm WITHOUT any pickup connected.
This way you can test the wiring, the TCI/DCCDI, the ignition coil and sparkplug.

**Of course, remove the sparkplug from the cylinder head and connect it's metal part to the bike frame.**

| ADVANCE TIMING N°2 | DWELL | AUTOSPARK |
|---|---|---|
| CONSOLE | BYPASS | MODIFY |

[0]

○ 0: Off
○ 1: 300rpm
○ 2: 1000rpm
○ 3: 3000rpm
○ 4: 10000rpm

[ Send ]

*Current value appears in blue on the form.*

# Kick Speed

For an easier Manual Kick start and to avoid kick backs, you can select what will be the RPM of the very first engine rotation when it is kick started.



*Current value appears in blue on the form.*

# DC-CDI

The DC converter output voltage is set to 180Vdc by default.
Set to "1" charges the internal capacitor to 300Vdc for a boost effect!
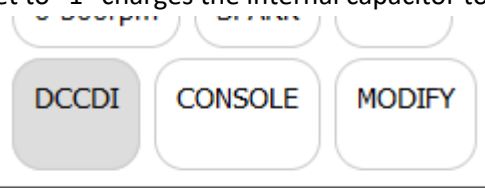


*Current value appears in blue on the form.*

*Yellow: pickup signal        blue boosted DC converter voltage, Pink default voltage.*



V14R0C0
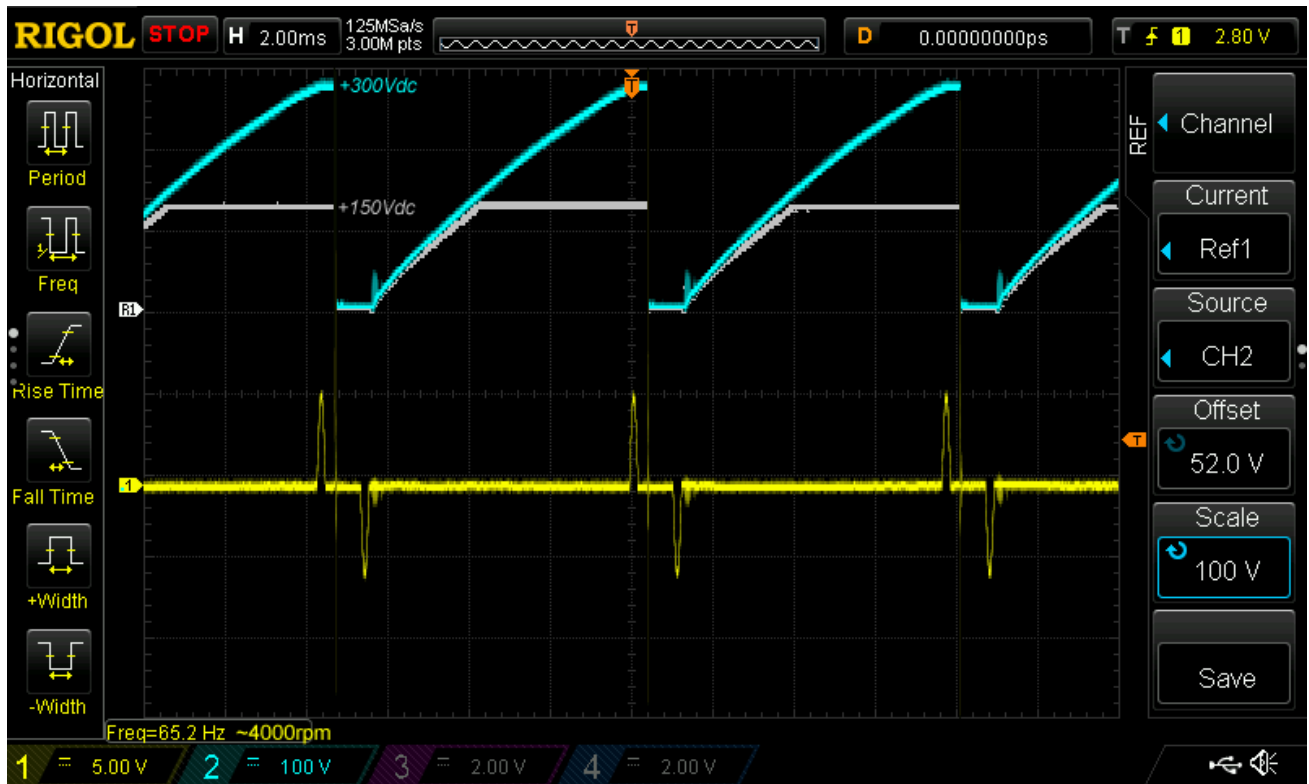
# Console

Enable the Console output:
- Turn the ignition box in **Setup Mode**
- Go to "**CONSOLE**", check "1" to enable the console output, press Send
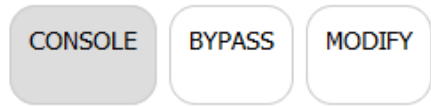


Current value appears in blue on the form.

- Power **off** the ignition box
- **Disconnect** the **Kill** wire from ground
1) **Power on** the ignition box, it goes in "**Run Mode**"

2) The **blue LED** flashes once if curve N°1 is selected or flashes twice for curve N°2

4) The ignition box also creates a **WiFi AP** (*Access Point*)

5) On your phone, laptop, PC, whatever, go to the **Wifi setting** and search for a new SSID called **Transmic_ign**
*You can see available SSID with a Wifi Analyzer as* NetSpot for Android *or* Wifi-Analyzer for W10
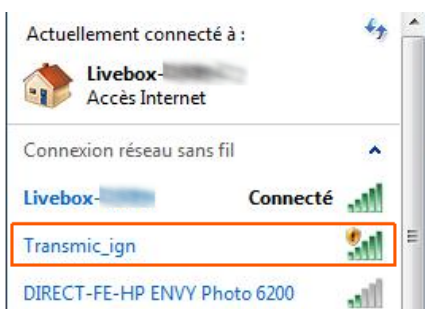
6) **Connect** to it

From CDIv12r0 to CDIv12r2 *no password* was required

Up from CDIv12r3 password is required: it's "***password***"
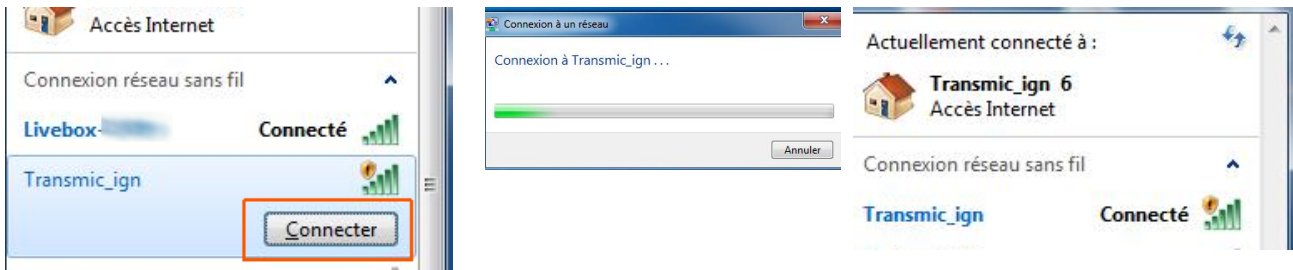


7) **Start** the engine

8) Once your device is connected to the AP, open up a **browser** and type in the address bar:

- Until version ACDCCDIv12r3c3:      http://192.168.4.1
- From version ACDCCDIv12r4c0 (August2023) :      http://192.168.4.1/console

9) After a few seconds, the browser should display both the **RPM and the advance timing** in degrees BTDC followed by 2 bargraphs



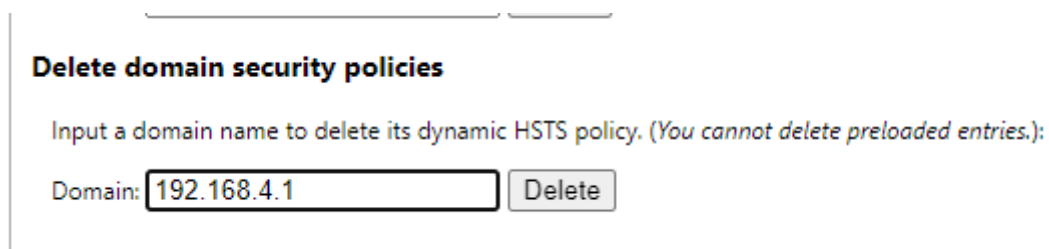**Display appears ONLY when the engine is running.**

*Because of the impact on Ignition box performance, please use it for debug only and disable this function when you are done with it!*

# Troubleshooting

Workarounds

- Use Firefox. *Close all Firefox windows than relaunch it.*

- Use a lightweight, portable browser as *QtWeb*

- In Chrome, disable **HSTS** (*HTTP Strict Transport Security*) that forces to open websites in HTTPS:
      - Write **chrome://net-internals/#hsts** in the address bar.
      - Scroll down the page to :

**Delete domain security policies**

Input a domain name to delete its dynamic HSTS policy. (*You cannot delete preloaded entries.*):

Domain: `192.168.4.1`   [ Delete ]

      - add **192.168.4.1** and hit **Delete** to disable Force https for this particular website.

## Running Mode

1) **Disconnect** the **Kill** wire from ground if you previously went into **Setup Mode**

2) **Power on** the ignition box, it goes in "**Run Mode**"

3) The **blue LED** flashes one time.

4) Start the engine. The blue LED **blinks** in sync **with RPM**.

5) When the engine runs, if **Kill** wire is connected **to ground** THEN it **stops** the engine.

**/!\ XT550-XT600**: Kill the engine with the Kill switch BEFORE shutting down the +12v.
*(As it's a software kill, the processor must be powered on to be able to kill the engine!)*
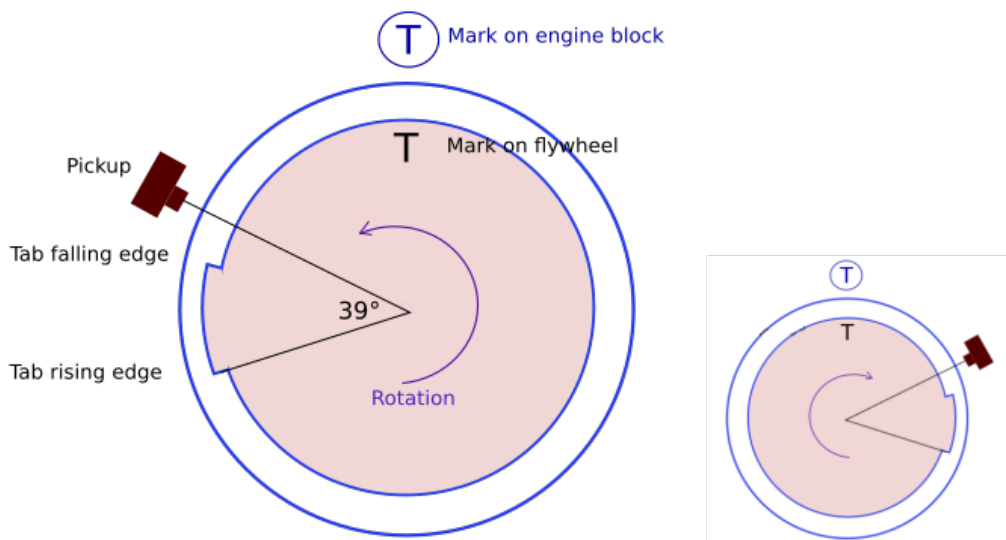
# Appendix 1

Find the Hall sensor or Pickup position.

*In the example below the pickup/sensor is set at 39° BTDC*

## Method N°1
### Pickup aligned with rising edge
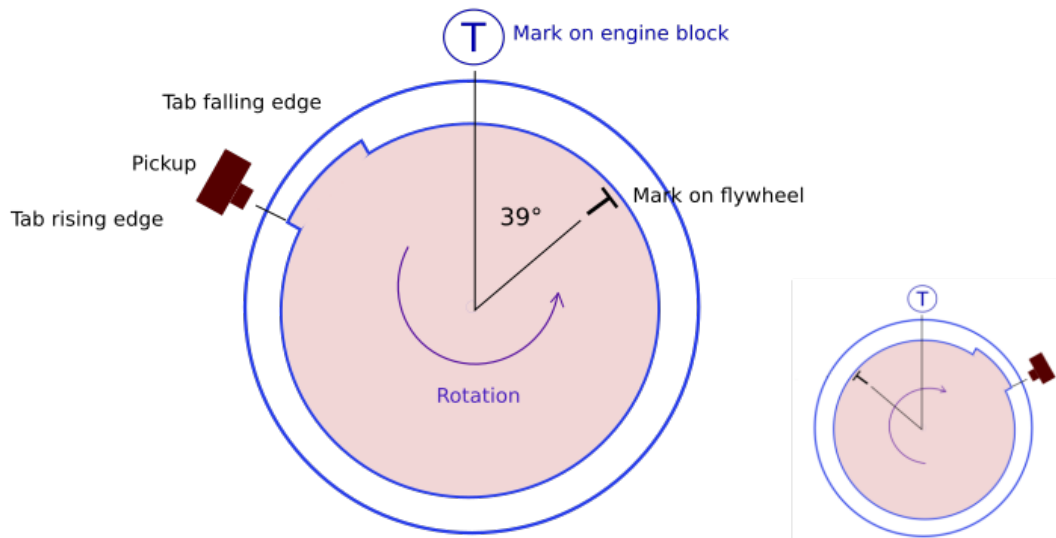


## Method N°2
### Engine at TDC



Leading|Rising edge generate pulse for high revs
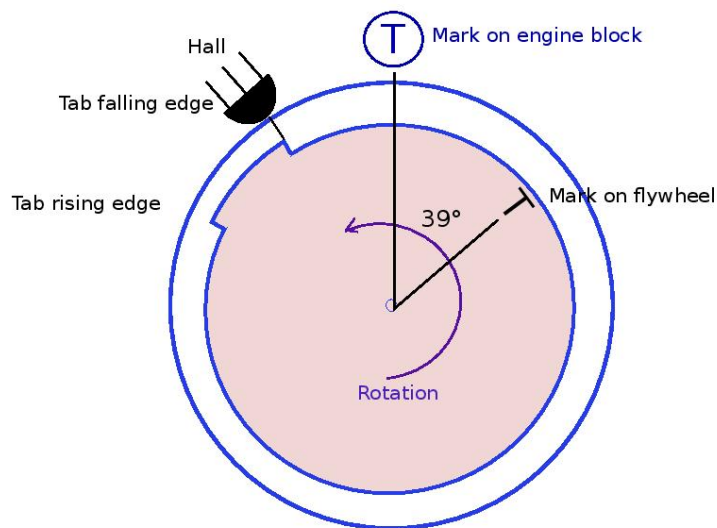Trailling|Falling edge generate pulse for idle.
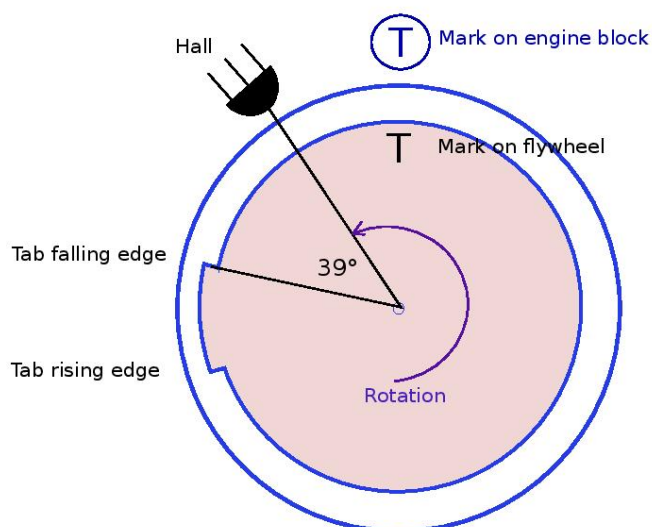
calageTDC_pickup_2methods.svg

# Appendix 2

Find the physical position of the digital **Hall Sensor** relative to Top Dead Center.

*In the example below the sensor is set at 39° BTDC*

## Method N°1
### Hall sensor aligned with falling edge



## Method N°2
### Engine at TDC

# Appendix 3

A) Remove the sparkplug, find the TDC position with a *dial indicator gauge* or a *caliper rule*:

B) Align the pickup with the beginning of the magnet on the rotor and measure the travel of the piston with the caliper rule:
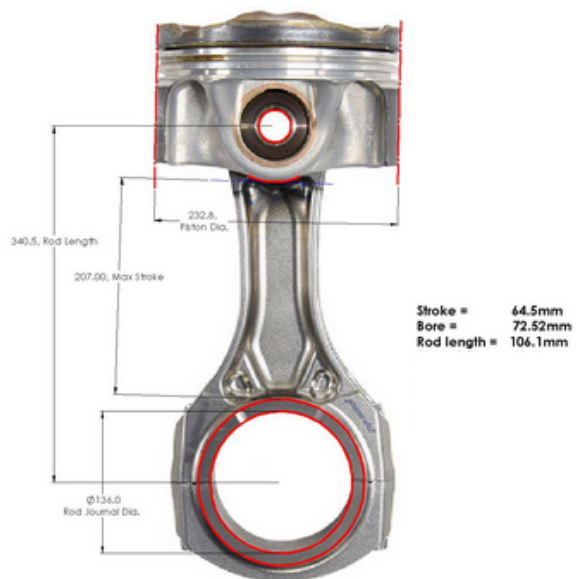
C) Use an online timing calculator to convert millimeters into degrees:

https://lambretta-images.com/tuningh/port-timing-calculators/degrees-to-mm-timing-calculator/

or

http://www.ajcshop.fr/Calculettes/html/calculette-convertisseur-allumage.htm

ie:



=>

Stroke =    64.5mm
Bore =     72.52mm
Rod length =  106.1mm

| 1 | -> | 64.5 | Course en mm |
| 2 | -> | 106.1 | Longueur de bielle (entraxe) en mm |
| 3 | -> | | Diamètre (D) du volant en mm (uniquemer |
| 4 | -> | 0.67 | Avance en mm |
| | Calculer | 10.25 | Avance en degrés (angle α) (renseigner 1, 2, 4) Le résultat est en ° et centièmes de ° |

# Appendix 4

## Tries and errors and Timing Lamp



First method:

For example, if you set the "*Pickup position*" to 40° BTDC plus some timing points then with your Timing Lamp you measure MORE advance than what is set in the user interface (ie you measure 35° instead of 30°@3000rpm) then INCREASE the "*Pickup position*" (40° → 45°)

If you set the "*Pickup position*" to 40° BTDC and with your Timing Lamp you measure LESS advance than what is set in the user interface (ie you measure 25 instead of 30°@3000rpm) then LOWER the "*Pickup position*" (40° → 35°)

Second method:

Set a FLAT advance timing with a SAFE value:
Example: 10° BTDC from 500 to 4000rpm

Run the bike and measure the timing with a Timing Lamp.

If you measure say 15° BTDC (instead of 10°) that mean the "*Pickup Position*" is off by 5°.
Increase the "*Pickup Position*" by 5.

If you measure say 5° BTDC (instead of 10°) that mean the "*Pickup Position*" is off by 5°.
Lower the "*Pickup Position*" by 5.