

# crank shaft

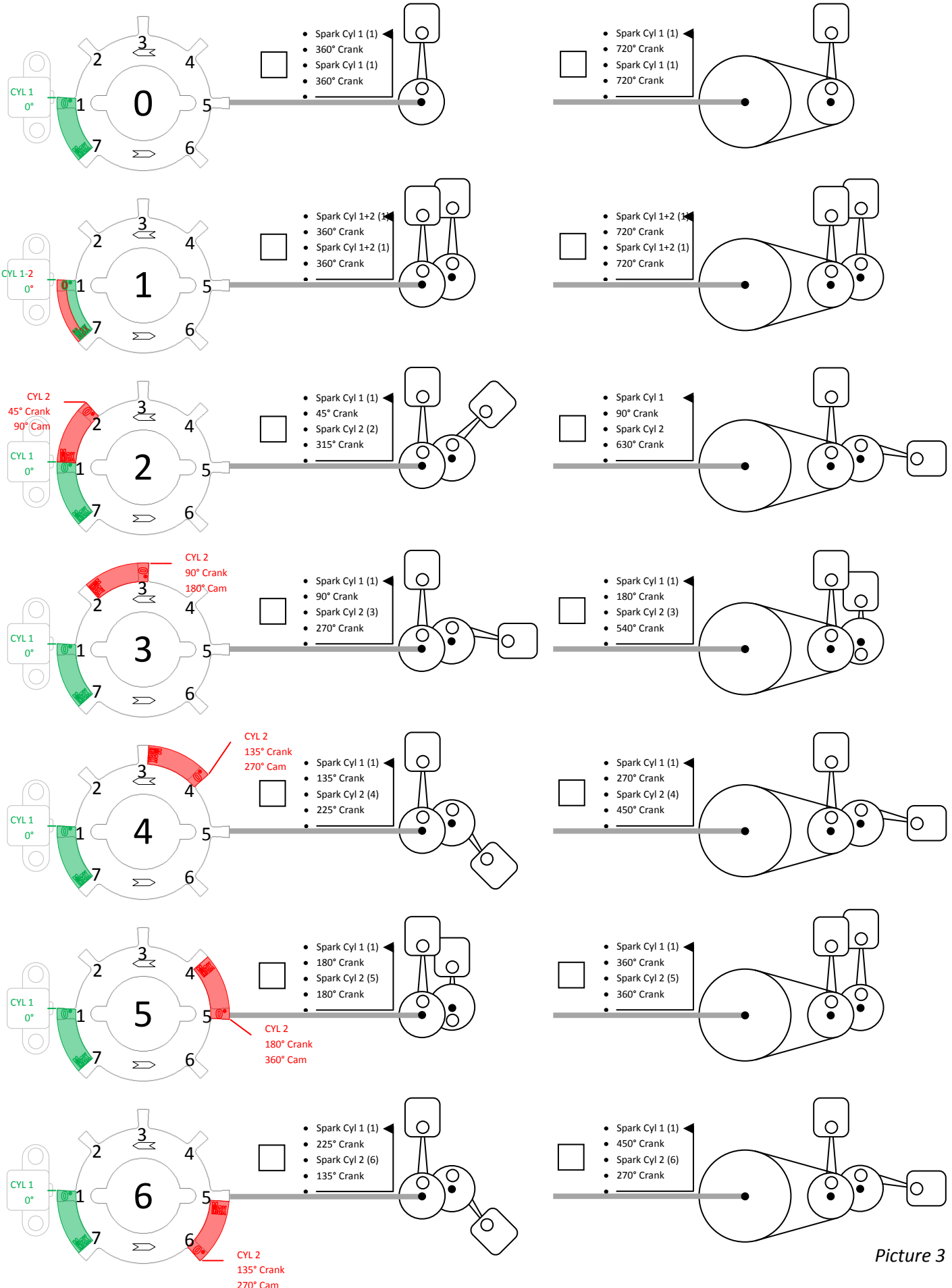
# cam shaft

## mounted

Max advance = 45°

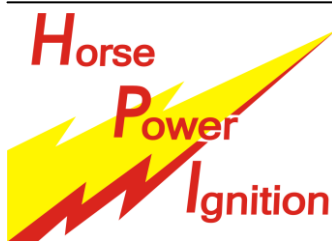
## mounted

Max advance = 90°



Picture 3

Images for LEFT rotating systems! For RIGHT rotating systems, mirror image (see picture 1)



# INSTALLATION MANUAL: UNIVERSAL TRANSISTOR CONTROLLED IGNITION 7 leaf rotor disk

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HPI wants to thank you for your confidence in its products.  
Please read this manual carefully to ensure years of enjoyment of this specialised high end electronic device.  
This manual shows you how to properly install the TCI-unit, wiring loom, rotor disk, pickup and HT-coil on your engine.

## Pickup Installation (see pictures):

- Place the pickup so the metal receiver is at a distance at **0.5 to 0.6 mm** from the leafs of the rotor disk. (*picture 1*)  
For the Ø46 this is **23.5 to 23.6 mm** from the axis centre line  
For the Ø31 this is **16 to 16.1 mm** from the axis centre line
- Along the axis, the leaf's middle must be aligned with the middle of the metal receiver on the pickup. (*picture 2*)  
Only with this setup, the pickup will generate a reliable signal for the TCI

## Rotor disk installation:

Depending on your engine's configuration, the rotor disk has to be placed on an axis which rotates at the engines RPM (crank shaft) or on an axis that runs at half turning speed (cam shaft). (*picture 3*)

- Make the necessary adjustments to the axis or the rotor disk to fit.
- Determine the correct sequence of your cylinders, making sure you will have a spark when the cylinder is in it's power stroke (*picture 3*)
- Turn cylinder 1 in its Top Dead Centre. (Remove the spark plug and use a micrometer to make a correct measurement). **WARNING!** For cam shaft types it is necessary to place the piston in the top point of the POWER stroke, since there will be **no wasted spark** to save your battery.
- Place the rotor on the axis and position it as shown in the picture.
- **The falling edge of the tooth should be aligned with the middle of the metal receiver of the pickup.** (*picture 1*)
- Tighten the rotor to the axis in this position.
- Check whether the top position of the second cylinder (power stroke) corresponds with the corresponding leaf (*picture 3*)
- Do not use a cam shaft TCI on a crank shaft and vice versa.

This position corresponds with 0° in the TuneBox v4 software to program the TCI units.

## Installing the TCI-unit:

Mount the TCI-unit to the frame.

- |                       |                        |   |
|-----------------------|------------------------|---|
| • <b>power</b>        | red ring<br>black ring | connect the red cable <b>through the on/off switch</b> to the 12V of the battery.<br>connect the black ring to the mass (frame or battery ground)   |
| • <b>powerjet</b>     | short grey             | connect this to the power jet. This will switch to ground at the programmed values. (optional)  |
| • <b>Pickup</b>       | yellow/white<br>black  | connect to the cable of pickup.   |
| • <b>HT-coil 1</b>    | yellow<br>red          | connect the HT-coil to the frame. To minimize electrical interference, try to keep all cables at a safe distance from the HT cable.<br>connect the long, red cable to the + of the HT-coil,<br>connect the long, yellow cable to the – of the HT-coil |
| • <b>HT-coil 2</b>    | blue<br>red            | connect the HT-coil to the frame. To minimize electrical interference, try to keep all cables at a safe distance from the HT cable.<br>connect the long, red cable to the + of the HT-coil,<br>connect the long, blue cable to the – of the HT-coil   |
| • <b>Curve switch</b> | yellow<br>yellow/green | connect the curve button to these wires. (optional)<br>switch the button to select the desired advance curve.   |

Fasten all the cables to the frame and keep them clear of hot places and moving parts.

## **ATTENTION**

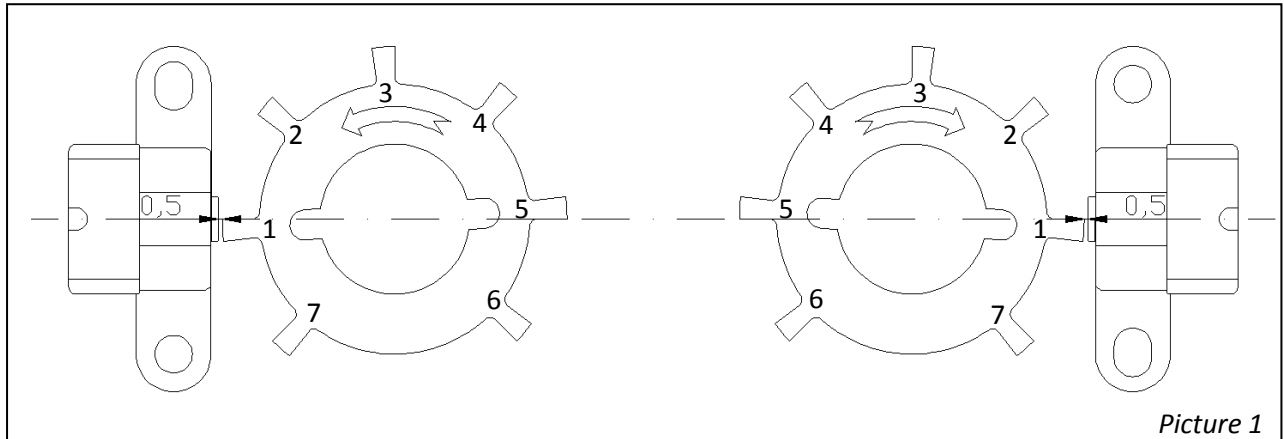
**Use resistive spark plug with resistive spark plug cap (typically 5K)**

# INSTALLATION MANUAL: UNIVERSAL TRANSISTOR CONTROLLED IGNITION 7 leaf rotor disk

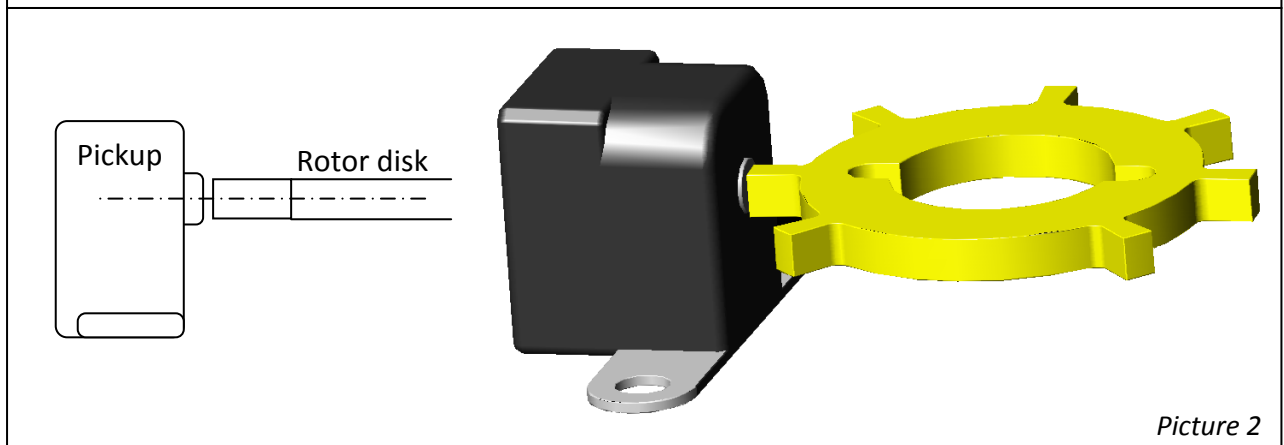
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Please attend to the following remarks:

- the TCI-unit and cables must not be exposed to **mechanical stress**
- the TCI-unit must not be exposed to **excessive heat** (not behind the radiator, close to the cylinder or the exhaust)
- the TCI-unit must not be exposed to **electrical interferences** (not close to the ht-coil)
- the TCI-unit must not be directly exposed to **fluids** (water, gasoline, oil,...)
- **Do NOT** extend cables, this may cause interference and damage to the TCII or the engine.



Picture 1



Picture 2

## Programming the TCI-unit:

The advance curve(s) of all our programmable TCI units can be changed using the *TuneBox v4* software and a *USB interface*. With this powerful software tool you are able to design your own ignition curves to obtain maximum performance of your engine.

You can freely download TuneBox v4 from hpi's website: [www.hpi.be](http://www.hpi.be).

To avoid damage to your TCI and engine, stop the engine and switch off the power to the TCI while programming.

## Contents of the set:

The 12V-T-1 set is designed for 1 cylinder 2 and 4 stroke engines, crankshaft mounted.

- 1 TCI *1 or 2 curves programmable or non programmable*
- 1 Rotor disk *Ø46 mm / Ø31 mm with 7 leaves*
- 1 pickup *with connector to the wire loom*
- 1 wire loom *with fitting connectors*
- 1 or 2 HT coils *with mounting bracket*
- 1 curve switch *comes with the 2 curve sets*

## **ATTENTION**

**Use resistive spark plug with resistive spark plug cap (typically 5K)**