

# INSTALLATION MANUAL: TRANSISTOR IGNITION 12V-TCI-TWIN S/D Ø20mm 2-4 Cylinder Cam Shaft Mounted

HPI – Kuilenstraat 97, 3960 Bree, Belgium  
TEL: (0032) 089-46 74 39 | FAX: (0032) 089-47 33 28 | GSM: (0032) 0495-53 90 21  
Email: [hpi@hpi.be](mailto:hpi@hpi.be) | Website: [www.hpi.be](http://www.hpi.be)

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 CDI-unit, wiring loom, rotor disk, pickup and HT-coil on your engine.

## Pickups Installation (see picture):

- Place the pickup so the metal receiver is at a distance of **10.5 to 10.6 mm** from the axis centre line or at **0.5 to 0.6 mm** from the tooth of the rotor disk.
- Along the axis, the tooth's middle must be aligned with the middle of the metal receiver on the pickup.
- The cylinders of the 12V-TCI-TWIN kit will spark independent of each other; you can place the pickups where you like. The example below shows the 144° setup for Morini engines.

## Rotor disk installation:

The rotor disk has to be placed on an axis which rotates at half the engines RPM (camshaft).

Every cylinder (S) or cylinder pair (D) requires 1 pulse / 2 crank shaft rotations. Therefore each cylinder or cylinder pair has its own pickup. Since the rotor disk turns at half the engines speed it requires 1 tooth to generate 1 pulse / 2 crank shaft rotations for each cylinder or cylinder pair.

- Make the necessary adjustments to the axis or the rotor disk to fit.
- Turn one of the cylinders or pairs in their Top Dead Centre. (Remove the spark plug and use a micrometer to make a correct measurement).
- 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 end of the metal receiver of the pickup.**  
Follow the colour code of the wires to determine which pickup corresponds to which cylinder or pair (yellow or blue).
- Tighten the rotor to the axis in this position.

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

## Installing the CDI-unit:

Mount the CDI-unit to the frame.

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

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

## ATTENTION

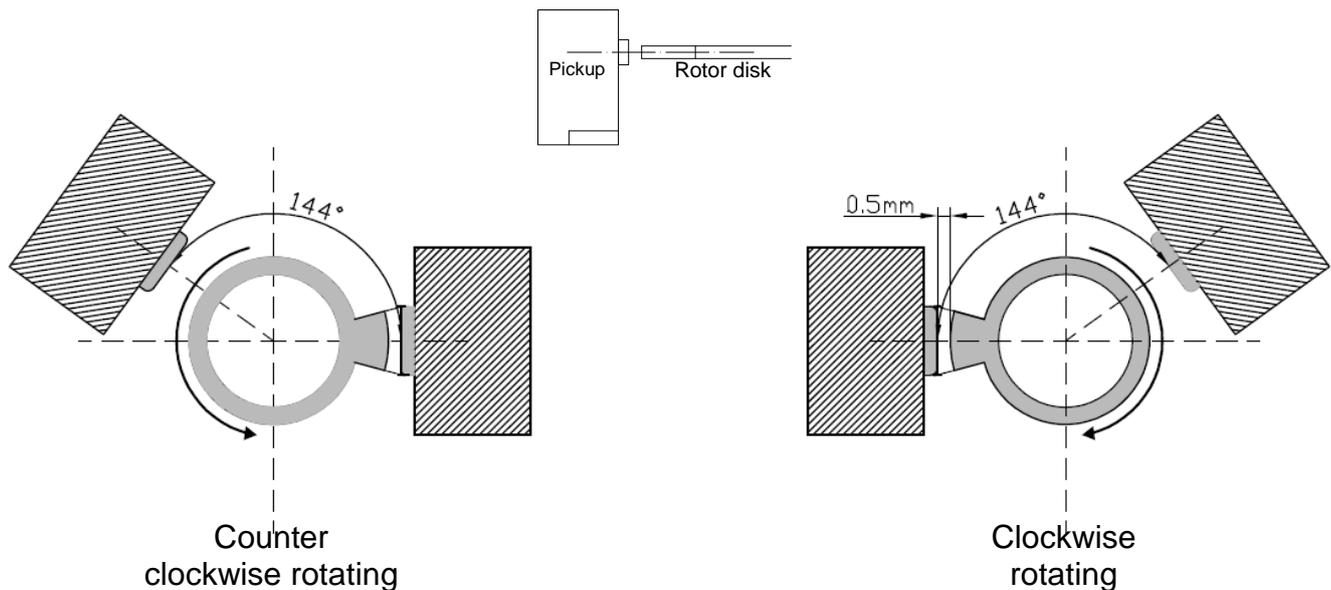
**Use resistive spark plug with resistive spark plug cap (typically 5K)**

# INSTALLATION MANUAL: TRANSISTOR IGNITION 12V-TCI-TWIN S/D Ø20mm 2-4 Cylinder Cam Shaft Mounted

HPI – Kuilenstraat 97, 3960 Bree, Belgium  
TEL: (0032) 089-46 74 39 | FAX: (0032) 089-47 33 28 | GSM: (0032) 0495-53 90 21  
Email: [hpi@hpi.be](mailto:hpi@hpi.be) | Website: [www.hpi.be](http://www.hpi.be)

Please attend to the following remarks:

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



## Programming the CDI-unit:

The advance curve(s) of all our programmable CDI 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.

The firmware of the CDI is designed to apply the programmed advance curves to the crankshaft. It will automatically compute the programmed crank advance angle to the correct cam angle. (360° crank turn = 180° cam turn) The advance curves you design with *TuneBox* are related to the crankshaft.

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

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

## Contents of the set:

The 12V-TCI-TWIN S/D Ø20mm set is designed for 2 or 4 cylinder 2 and 4 stroke V engines, camshaft mounted.

- 1 CDI *1 or 2 curves programmable or non programmable*
- 1 Rotor disk *Ø20 mm, 1 tooth of 30°*
- 2 pickups *with connectors to the wire loom*
- 1 wire loom *with fitting connectors*
- 2 HT coils *with double exit for 4 cylinder engines(D) - with mounting bracket*
- 1 curve switch *comes with the 2 curves sets*

## **ATTENTION**

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