INSTALLATION MANUAL:
OSCILLATOR IGNITION 12V-O-3 Ø31mm
1 cylinder 4 stroke camshaft engines

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.

Pickup Installation (see picture):

- Place the pickup so the metal receiver is at a distance of **16 to 16.1 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.

Only with this setup, the pickup will guarantee a reliable signal to the CDI

Rotor disk installation:

The rotor disk has to be placed on an axis which rotates at half the engines RPM (camshaft).
On a 4 stroke engine, the cylinder only needs a spark in its ignition stroke.
The cylinder thus requires 1 pulse / 2 crankshaft rotations. Since the rotor disk turns at half the engines speed (camshaft), it requires 1 tooth to generate 1 pulse / 2 crankshaft rotations.

- Make the necessary adjustments to the axis or the rotor disk to fit.
- Turn the cylinder in the Top Dead Centre. Mind the valves; take the TDC preceding the ignition stroke. Inlet and exhaust valve are closed. (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 start of the metal receiver of the pickup.
- 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	red	connect the red cable through the on/off switch to the 12V of the battery.
	black	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	red/white	connect to the cable of pickup.
	blue/white	
HT-coil	orange	connect the HT-coil to the frame. To minimize electrical interference, try to keep all cables at a safe distance from the HT cable.
	black ring	Connect the orange cable to the HT-coil, connect the black cable with ring to the bracket of the HT-coil and to the mass
Kill switch	black/white	connect the black-white to mass / ground for an emergency stop. this **does not shut down** the CDI unit! Use the on/off switch under normal circumstances
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 of hot places and moving parts.

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.

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

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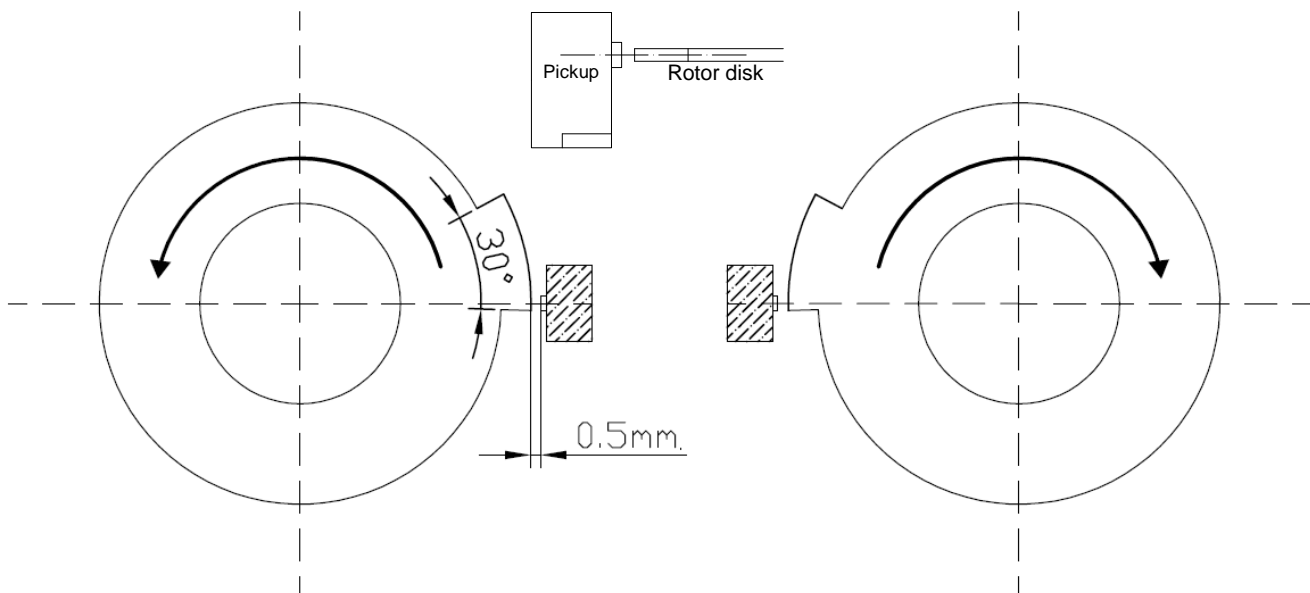
Programming the CDI-unit:

The advance curve(s) of all our programmable CDI units can be changed using the *TuneBox v4* software and a *USB interface.*
Whit 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's angles and rpms.

You can freely download TuneBox v4 from hpi's website: 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-O-3 set is designed for 1 cylinder 4 stroke engines, camshaft mounted.
- 1 CDI   *1 or 2 curves programmable or non programmable*
- 1 Rotor disk   *Ø31 mm, 1 tooth of 30°*
- 1 pickup   *with connector to the wire loom*
- 1 wire loom   *with fitting connectors*
- 1 HT coil   *with mounting bracket*
- 1 curve switch *comes with the 2 curve sets*

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