PowerBlock Ignition Systems

ASSEMBLY INSTRUCTIONS FOR PowerBlock with one PICKUP

E_PB_Bevel_46 3. Version (c) Feb_2002

Parts List:
Ignitionbox mit 16 timing-curves
Pickup with cable
PB_Steel Rotor with baseplate
Ignition coils
Ignition cables

22. Februar 2015

ASSEMBLY INSTRUCTIONS FOR PowerBlock ignition with one PICKUP :

The Power Block ignition system is far superior to conventional ignitions that usually achieve double the ignition tension, double the ignition energy, as well as double the spark duration. The adjustment of the ignition timing is worked out by a digital High Speed Microprocessor, with 16bit resoloution (65536 points) for each single revolution. The Signal conditioning as well as the ignition amps control are also carried out digitally, to achieve maximum efficiency with a minimum loss. The necessary D-Well time of the ignition coils is worked out digitally to achieve maximum energy saving. The output requirements of the ignition system (module + ignition coil) is approximately 17W with 1000 RPM and approximately 67W with 5000 RPM.

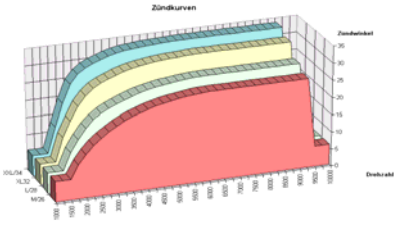
The full performance of our Power Block ignitions is only possible with SILENT HEKTIK ignition coils, because the ignition curves for the relevant ignition energy as well as tensions are tuned and the D-Well timing on the technical details of the coils are cut.
With unsuitable or inadequate ignition coils, not only does the gaurantee expire , there will also be bad trottle responce; bad coldstart or perhaps missfire.

SAFETY PRECAUTIONS AND NOTICES

Caution High Tension! Danger ! Mortal danger !

To avoid injury or destruction of the electronic, attention should be paid to the following when working on vehichles with full electronic digital high energy ignition systems:

- Read the assembly instructions carefully and completely and follow the instructions. Display warning labels in a good visible place!
- To install the modules, specialized knowledge and tools are required.
- People with a Pacemaker should not carry out work on electronic ignition systems.
- To synchronize the carburettor **never** pull out a spark plug.
- Do not touch or remove ignition cable when the ignition is on.
- Only connect of disconnect the cable from the ignition system when the ignition is turned off.
- Always connect the high tension cable to ground (mass) with or without the spark plugs after removal.
- Checking the function of the high tension part with a spark to the ground (mass) leads to damage.
- Washing the engine or vehichle is only to be carried out when the ignition is turned off and the engine is stopped.
- The ignition module should be carefully protected from static tension.
- Seperate ignition module from the cable harness when electric welding.
- Faulty alternator regulators (max. tension 15V) are often the cause of breakdown.
- Jumpstarting with a battery charger is only permitted for 1 minute with max. 15V.
- There is no gaurantee for the accuracy of the timing curves with tuned engines; consultation and tuning of the tuner absolutely necessary.
- Gaurantee-, replacement or claim for compensation only in reference to the supplied electronic; mistakes and changes in future to be accepted.



ASSEMBLY OF THE IGNITION BOX AND IGNITION COILS:

The assembly of the Power ignition box is most successful in a protected place, like under the tank or under the saddle. Our digital ignition box can be fastened with rubber rings to the frame tube or with the backside of the M4 threads on an aluminium plate. The cable exit of the box should always be dry.

The ignition coils are assembled in place of the original ignition coils. Depending on suitable mounting. To avoid faults, take care when laying the cable that the biggest possible distance is from the Pickup cable to the ignition cable. The engine housing must have a good ground (mass) connection to the battery -> Battery ground (mass) cable on gearbox housing.
With an optimal working ignition system the amount of the spark plug gap is 0.6 - 0.8mm. Please use radio surpressed ignition coil connectors with a minimum resistance of 5KOhm or a resistance cable. The operation of this device will only be perfect with a good radio surpression (also for alternator-regulator), especially with old contact-regulators.
Protect all connectors form damp and humidity with a special grease. Never use battery Pole grease, because it is alkaline. Soldered crimp connectors lead to hairline cracks and breakdown. Faulty Kill switches on the handlebars and the sidestand are often a source of trouble.
Only ignition coils with a primary resistance of 2-3Ohm should be used -> Gauranteed loss when not used!!! When the engine is stopped the amps power of the ignition module will be switched off after a few seconds. Careful when carrying out maintenance work.

ASSEMBLY & ADJUSTMENT OF THE PICKUPS FOR MOTOPLAT-CDI :

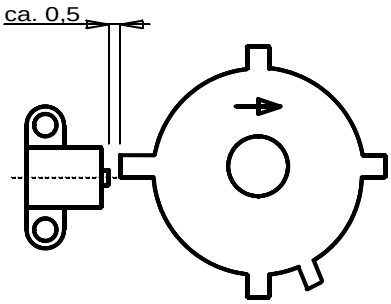
As CDI replacement the baseplate with the Pickups as well as the rotor are mounted in place of the ignition generator with a distance gap of ca. 0,5mm. As a rough adjustment the left over edge of the rotor should be approximately at the middle of the Pickup centre, in a clockwise direction. The mechanical basic adjustment refers to the static ignition timing of 6° BTDC.

By turning the baseplate with the Pickups the static ignition timing of both cylinders by means of a stroboskop-light will be adjusted to approx. 1200 RPM for 6° or 8° BTDC.

Under 900 RPM the ignition software stabilizes the idle speed.

For an easy dynamic check of the static ignition point the crankshaft can be turned with a electric drill or pneumatic tool. Clamp the high-tension of the coils to the minus of the battery and use the prim. connecter to trigger the strobo-light. Be very carefull with the high-tension !!!

ASSEMBLY & ADJUSTMENT OF THE PICKUPS FOR BOSCH-TCI :



The Pickkup`s distance is adjusted to ca. 0,5mm with the Ducati tool or a SH tool. Instead of the tools you can also use the dismanted ignition rotor on a central wave to adjust the distance: see photo on the right.

The static ignition timing is in the turning direction of the left over edge of the ignition rotor. For Singlespark this edge should be in the middle of the Pickup`s centre with 8°BTDC and for twin-spark with 6°BTDC.

For the basic adjustment of the Pickups you can use the Ducati tool or the SH tool. With the SH tool you draw near the 5mm bulge of the tool. With the Ducati tool the round Pickup centre should lie in the middle of the bulge.

After successful assembly and adjustment the static ignition timing of both cylinders approx. 1200 RPM with 6° or 8° BTDC, should be checked with a stroboskop lamp.

Under 900 RPM the ignition software stabilizes the idle speed.

Pickup, baseplate & rotor for Bosch replacemant

ADJUSTMENTS:

For basic adjustment of all single-spark ignitions (normal ignitions) the following timing-curves come into consideration:

750er-900er	**Beveldrive**	**8° BTDC**	**Nr. 9**
1000er	**Beveldrive**	**6° BTDC**	**Nr. 8**
500er-600er	**Pantah**	**9° BTDC**	**Nr. A**
650er-750er	**Pantah**	**6° BTDC**	**Nr. 9**
600er-900er	**SS & Monster**	**6° BTDC**	**Nr. 8**

On ignition-knocking because of bad petrol or with side car combination (overload), use the next flatter timing-curve form.

To tune a twin-spark ignition, a lot of experience & feeling for it is necessary . It is better if you stick with the tuners instructions. With independent tuning use the following adjustments first of all and try the next timing-curves in driving:

comp.-ratio under	**1:10**	**6° BTDC**	**Nr. 6**
comp.-ratio over	**1:10**	**8° BTDC**	**Nr. 5**
with racing-cams		**9° BTDC**	**Nr. 4**

The tuning is complete when you have the maximum driveability with the smoothest running motor.
With compression-ratio over 1:10 you have to carry out an increased radio supression with supressed coil plugs, spark plug sockets and ignition spark plugs :
e.g. BPR6HVX - JR8C
There should also be the biggest possible distance from the box to the coils.

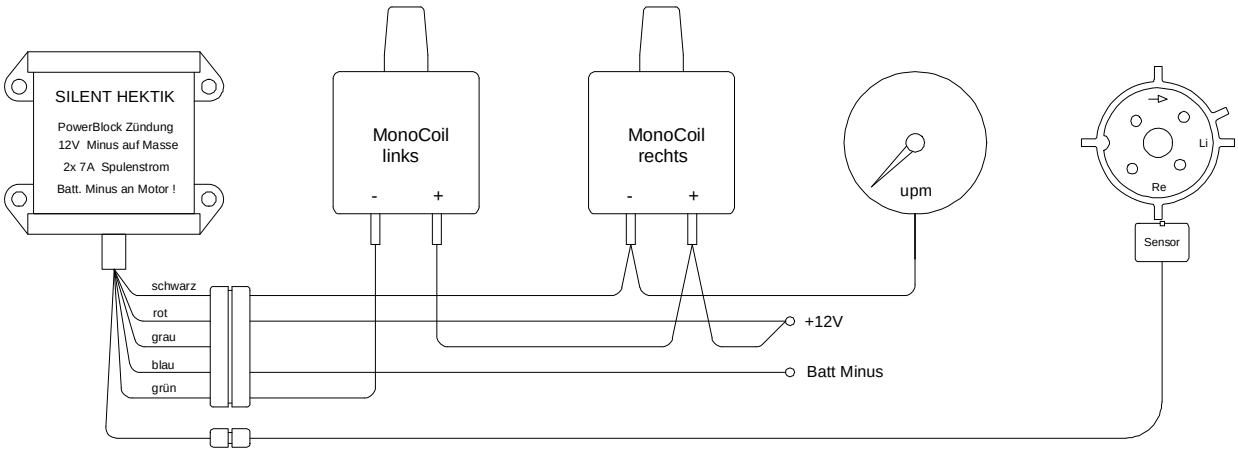
ADJUSTMENT OF THE REV LIMITTER:

The rev-limitter can be programmed with the left switch:

0 = 6000 rpm	1 = 6333 rpm	2 = 6666 rpm
3 = 7000 rpm	4 = 7333 rpm	5 = 7666 rpm
6 = 8000 rpm	7 = 8333 rpm	8 = 8666 rpm
9 = 9000 rpm	A = 9333 rpm	B = 9666 rpm
C = 10000 rpm	D = 10333 rpm	E = 10666 rpm
F = 11000 rpm		

factory setting = 8

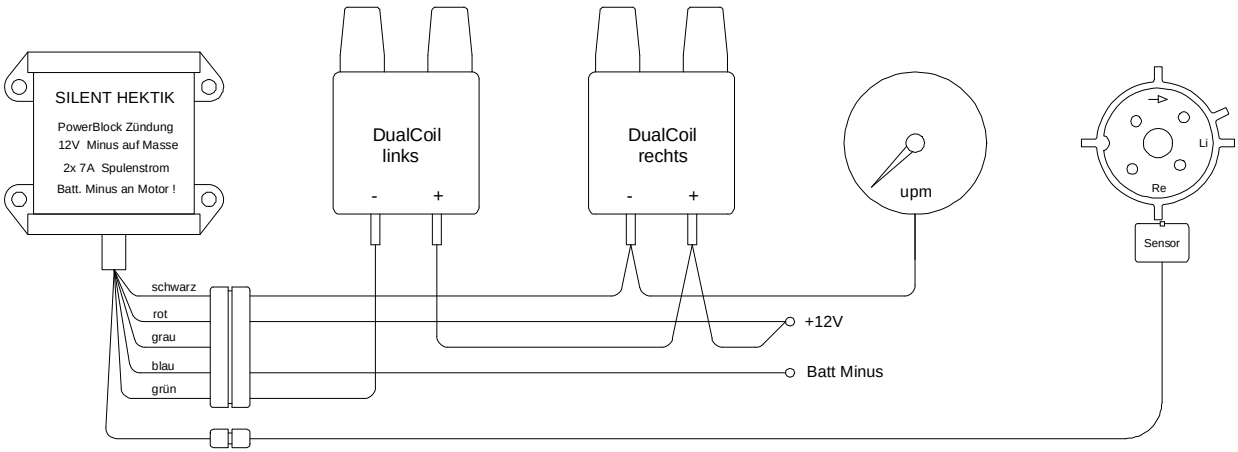
Connection diagram for single-spark :



rev counter for crankshaft speed = on coil minus On the TEC ignition-coils the plus is black.

trigger-rotor rotation for both diagrams is clockwise

Connection diagram for twin-spark :



BLAU = blue ROT = red GRÜN = green SCHWARZ = black LINKS = left RECHTS = right

IGNITION TIMING RANGES AND BOX - DIAGNOSIS:

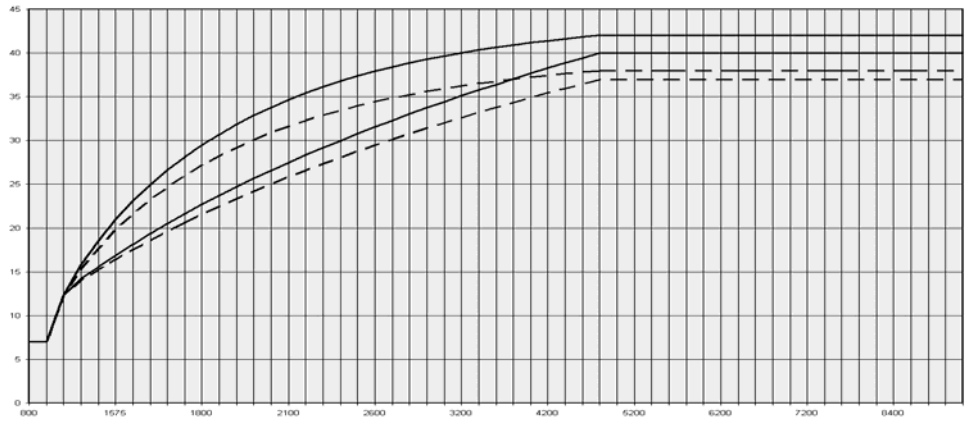
By undoing the four screws on the bearer angle, the top cover can be removed.

The right switch for the ignition timing, range 0 to 15, is inside the box.
Take the appropriate timing-curve from the diagramms.

There is also a diagnosis interface in the form of a light diode:

Ignition off	=	LED off
Ignition on	=	LED blinks to the switch position
Start with > 7V	=	LED blinks at half engine speed
Start with < 7V	=	LED don´t lights at BTDC
Start with > 120 RPM	=	LED blinks at half engine speed
Start with < 120 RPM	=	LED blinks to switch position

Die 16 Zündkurven der **PowerBlock** - Zündung Version PB_46

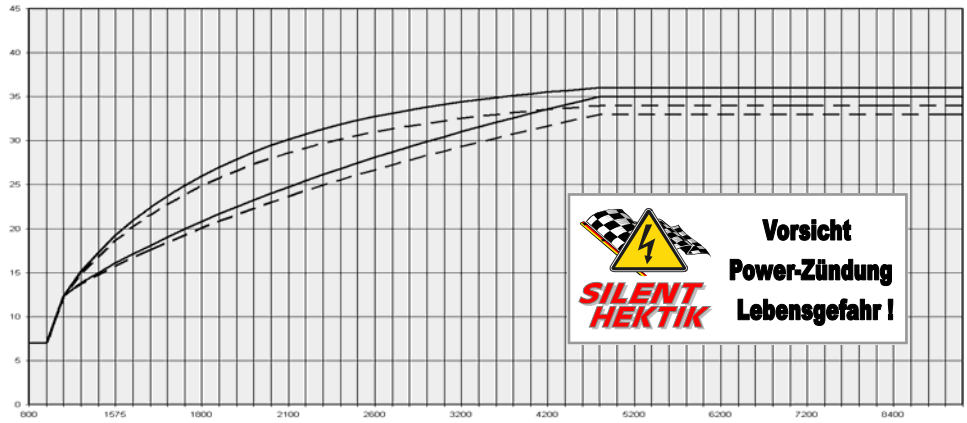


Schalterstellungen:

7° vOT statisch

Nr.	**F**	42°	L
Nr.	**E**	40°	S
Nr.	**D**	38°	L
Nr.	**C**	37°	S

MonoCoil D-Well

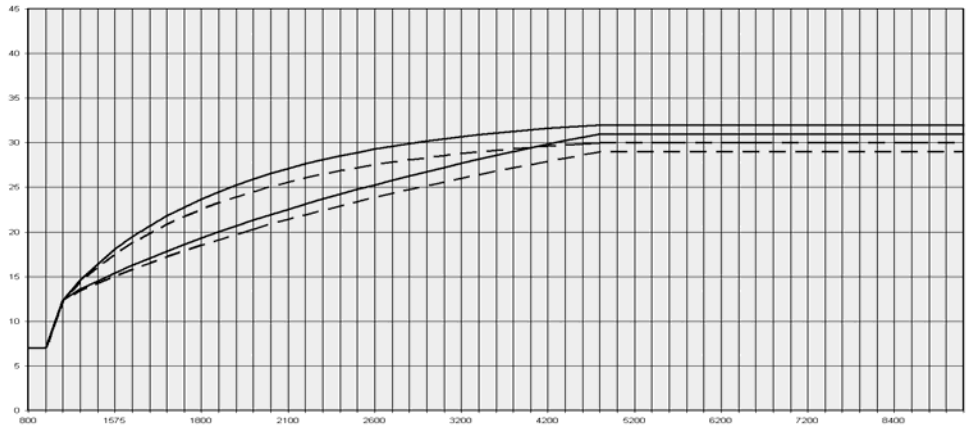


7° vOT statisch

Nr.	**B**	36°	L
Nr.	**A**	35°	S
Nr.	**9**	34°	L
Nr.	**8**	33°	S

MonoCoil D-Well

factory setting = 8

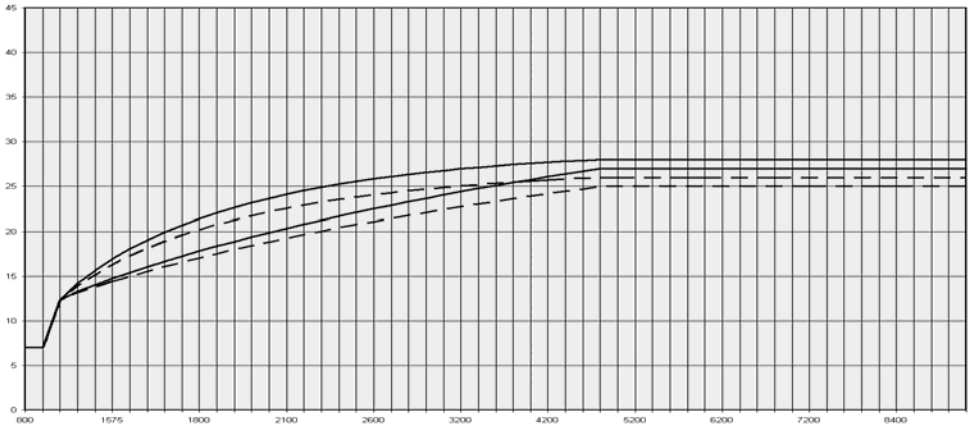


7° vOT statisch

Nr.	**7**	32°	L
Nr.	**6**	31°	S
Nr.	**5**	30°	L
Nr.	**4**	29°	S

DualCoil D-Well

Twinspark bei 2°-4° vOT



7° vOT statisch

Nr.	**3**	28°	L
Nr.	**2**	27°	S
Nr.	**1**	26°	L
Nr.	**0**	25°	S

DualCoil D-Well

Twinspark bei 6°-8°vOT

SILENT HEKTIK

INJEKTIONS IGNITIONS COILS SPARK-PLUGS REGULATORS TOOLS

... and the power will be with you !

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