PowerBlock Ignition Systems

Assembly Instruction for Microlino Ignition
Moto Guzzi & 2V-Boxer

5 Flugel Induktivsensor E_Micro_I_GB_46b for Single and Twinspark

07 Juli 2022

ASSEMBLY INSTRUCTIONS FOR Microlino IGNITION KIT :

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 Voltage! 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:

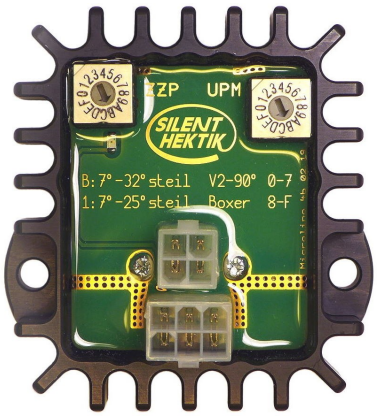
- Read the assembly instructions carefully and completely and follow the instructions. Display warning labels in a good visible place!
- To install the modules, specialized knowledge and tools are required.
- People with a Pacemaker should not carry out work on electronic ignition systems.
- To synchronize 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.

TYPE SELECTION and SPEED LIMITER :

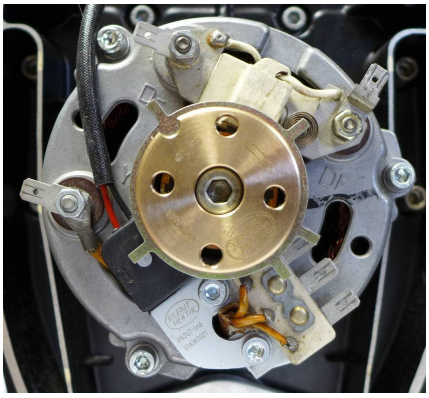
The motorcycle type and the engine speed limiter are set by the UPM_switch, top right, adjusted:

V2 90°	**2V Boxer**
0 = 7000 upm	8 = 7000 upm
1 = 7500 upm	9 = 7500 upm
2 = 8000 upm	A = 8000 upm
3 = 8500 upm	B = 8500 upm
4 = 9000 upm	C = 9000 upm
5 = 9500 upm	D = 9500 upm
6 = 10000 upm	E = 10000 upm
7 = 11500 upm	F = 11500 upm

Factory setting = B



ASSEMBLY OF THE PICKUP & THE ROTOR :

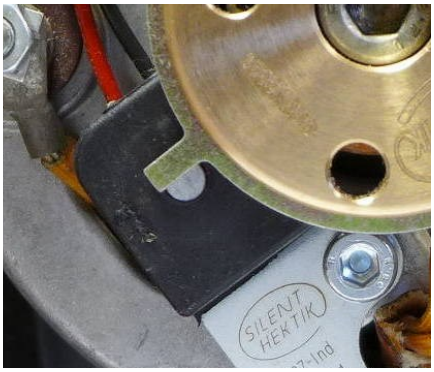


The ignition rotor is mounted directly on the LiMa rotor. Use the original screw without spring washer. Please check the contact surfaces of the rotor and remove any marks caused by the spring washer.

On the SAPRISA-LiMa an original screw with the spacer sleeves is used for the Hallsensor. On the V7-GT the ignition rotor is the front pulley. The pickup holder is fixed with the two upper screws and additionally glued with silicone.
The distance of the rotor to the Hall transducer should be 0.3-0.4mm at all points of the ignition rotor.
The basic mechanical adjustment refers to the static ignition timing :

All models **Boxer 6°-8° BTDC**

For the basic adjustment, use the RIGHT cylinder and the corresponding ignition rotor blade as in the right photos.
The trailing edge of the rotor should be towards the centre of the Hallsensor; the wing will rotate clockwise. To hold the ignition rotor while tightening, use the key of an angle grinder (Flex) and a screwdriver on the gear ring (Bosch & Saprisa). Check the static ignition timing with a stroboscopic lamp at about 1200 rpm.



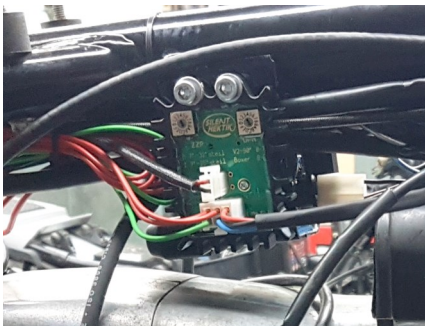
Der Induktivsensor hat einen Widerstand von 500 Ohm

ASSEMBLY OF IGNITIONBOX & COILS :

It is best to mount the power ignition box in a protected place such as under the tank or under the seat. Our digital ignition box can be mounted with rubber rings on the frame tube or with the plastic straps on an aluminium plate. The cable outlet should always be "dry".

The ignition coils are mounted instead of the original ignition coils. Depending on the model the brackets will fit. The coils should be cooled by the airstream. When laying the cables, make sure that the pickup cable & ignition box are as far away as possible (min 10cm) from the ignition coils & ignition cables to avoid radio interference.

The ignition box & the engine housing must have a very good ground connection to the battery -> ground wire to the ignition box and to the transmission housing !
For an optimal working ignition system the electrode gap of the spark plugs may be 0,6-0,7mm. Please use only interference suppressed coil- & spark plug connectors with min. 5kOhm resistance and/or resistance ignition cables. The operation of this fully electronic system will only be faultless with a very good radio interference suppression (also applies to LiMa regulators). Protect all connectors from moisture with good connector grease. Never use battery pole grease, as it is alkaline. Soldered crimp connectors lead to hairline cracks and failures due to motor vibrations. Defective "kill switches" on the handlebar fitting and the side stand are a frequent source of interference. Only ignition coils with a primary resistance of 2-3Ohm may be used -> loss of warranty! When the engine stops, the power section of the module is switched off after a few seconds; please observe when working.
Older electronic tachometers are connected to the grey output of the box. Newer tachometers can be connected to the ignition coil terminal KL1-. Our box will not be damaged when trying it out.



Zündbox mit ca. 15cm Abstand zur Spule/Spulen

ADJUSTMENTS :

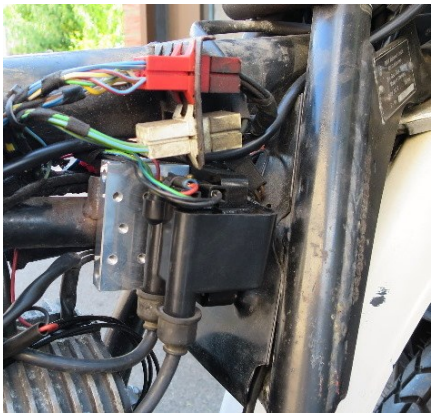
The default setting for ALL Singlespark ignitions are the 30° to 34° curves:

T3Cali - Cal2 - Cal3	**(2°vOT)**	**Nr. E**	**LM1 - LM2 - LM3**		**Nr. B**
all 2V-Boxer	**(6°vOT)**	**Nr. B**	**LM4 - LM5 - LM1000**		**Nr. A**

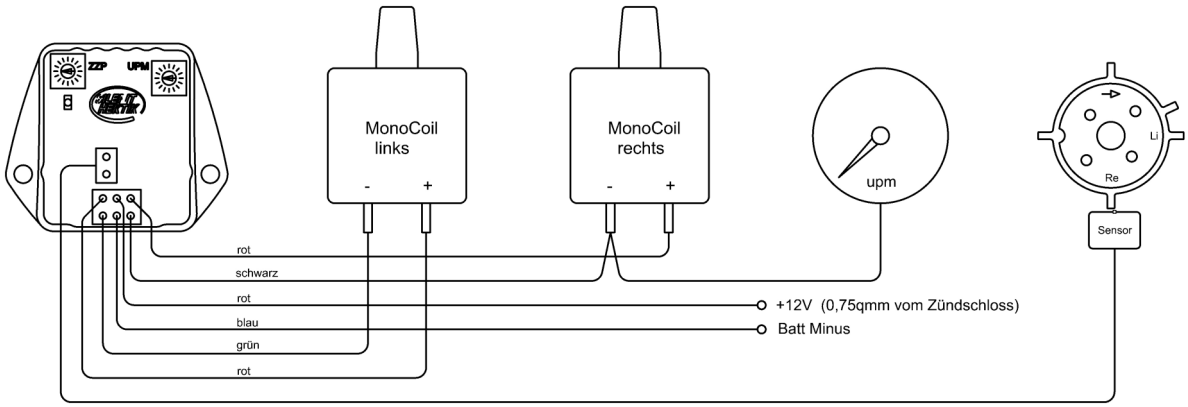
In case of "pinging", as caused by bad fuel or side-by-side operation, use the next flatter curve shape with 30°-34° vOT.
To tune a Twinspark ignition (dual ignition) requires a lot of experience and sensitivity. It is best to follow the tuner's instructions. If you tune it yourself, first use the following settings and try the adjacent lines while driving:

alle Tourer bis 1:10	**4°-6°**	**Nr. 4**	**alle Tourer ab 1:10**	**6°-8°**	**Nr. 3**
alle Sportler bis 1:10	**6°-8°**	**Nr. 2**	**alle Sportler ab 1:10**	**8°-10°**	**Nr. 1**

At maximum driving dynamics with the smoothest engine run, the tuning is completed. For compression ratios above 1:10, interference suppressed spark plugs should be used

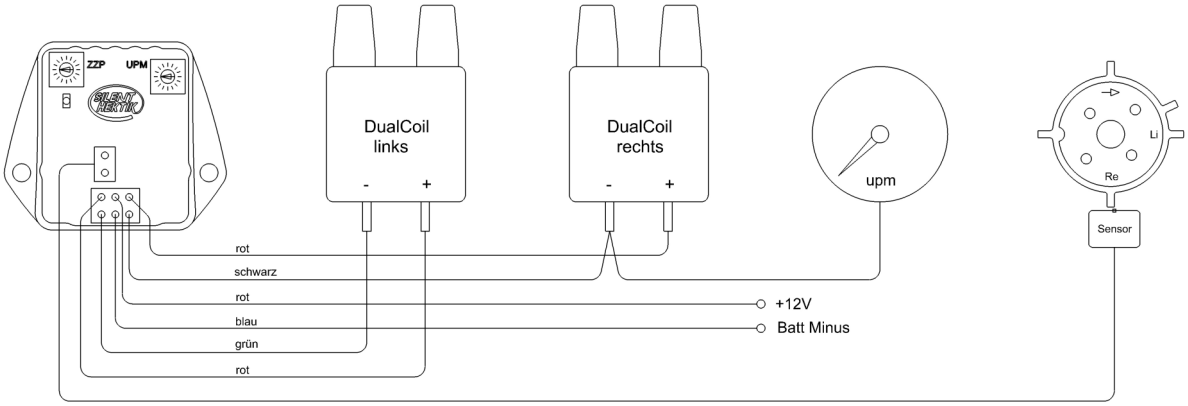


Connection diagram for single-spark :



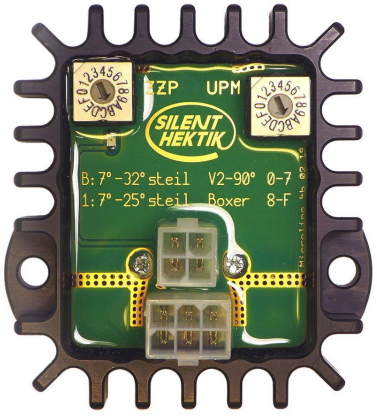
For Moto Guzzi V2 with regular ignition both ignition coils are connected. All cables in 0,75qmm.

Connection diagram for twin-spark :



For BMW 2V boxers with regular ignition, the right-hand ignition coil is connected. All cables in 0,75qmm.

IGNITION TIMING RANGES AND BOX - DIAGNOSIS:

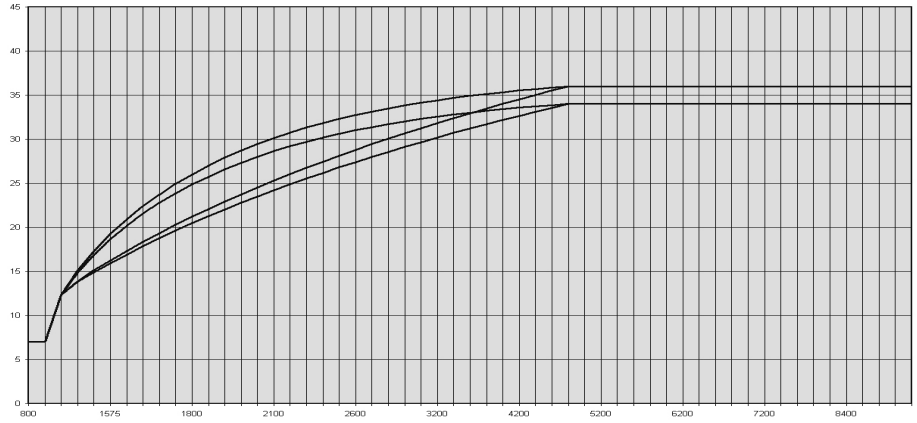


The left switch for the ignition timing, range 0 to 15, is inside the box.
Take the appropriate timing-curve from the diagramms.

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 ab Version Micro_GB_40

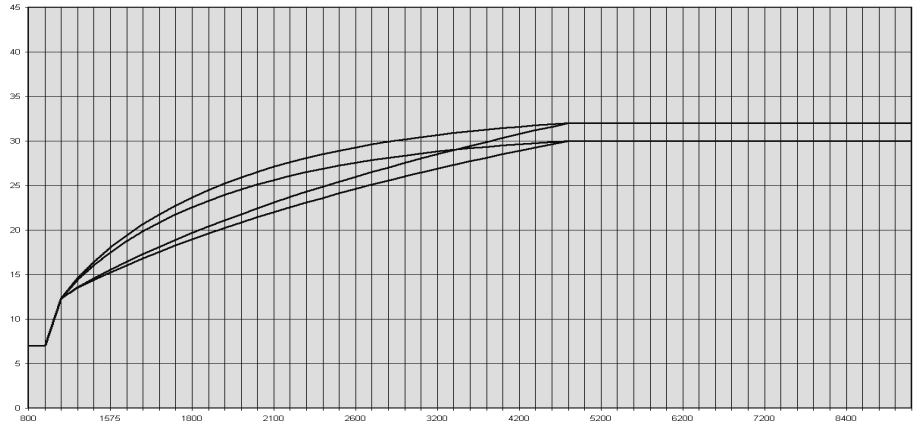


Schalterstellungen:

7° vOT statisch

Nr.	**F**	36°	steil
Nr.	**E**	36°	flach
Nr.	**D**	34°	steil
Nr.	**C**	34°	flach

MonoCoil D-Well

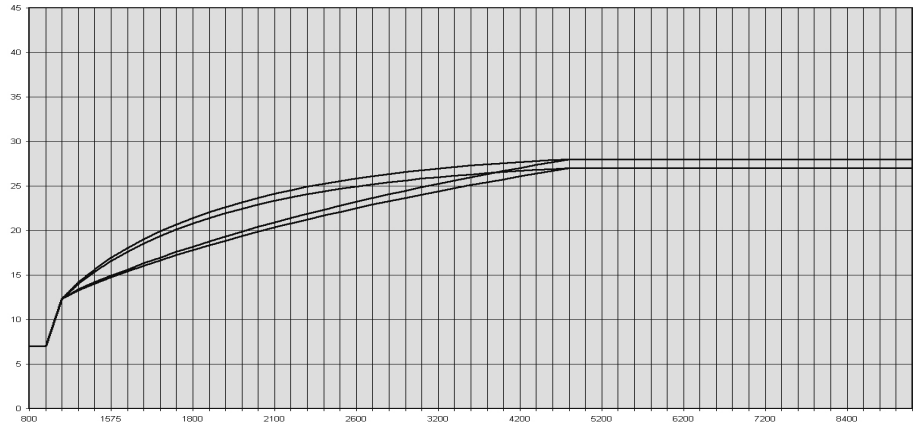


7° vOT statisch

Nr.	**B**	32°	steil
Nr.	**A**	32°	flach
Nr.	**9**	30°	steil
Nr.	**8**	30°	flach

MonoCoil D-Well

Werkseinstellung = Nr. B

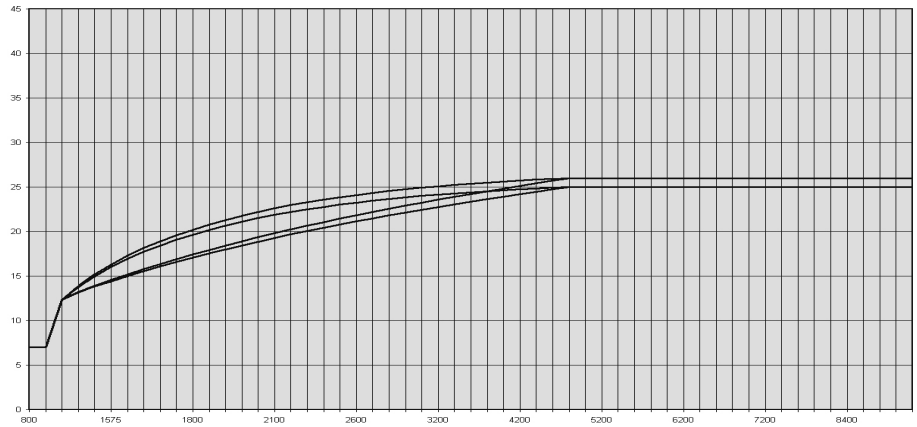


7° vOT statisch

Nr.	**7**	28°	steil
Nr.	**6**	28°	flach
Nr.	**5**	27°	steil
Nr.	**4**	27°	flach

DualCoil D-Well

Twinspark bei 6°-8° stat. vOT



7° vOT statisch

Nr.	**3**	26°	steil
Nr.	**2**	26°	flach
Nr.	**1**	25°	steil
Nr.	**0**	25°	flach

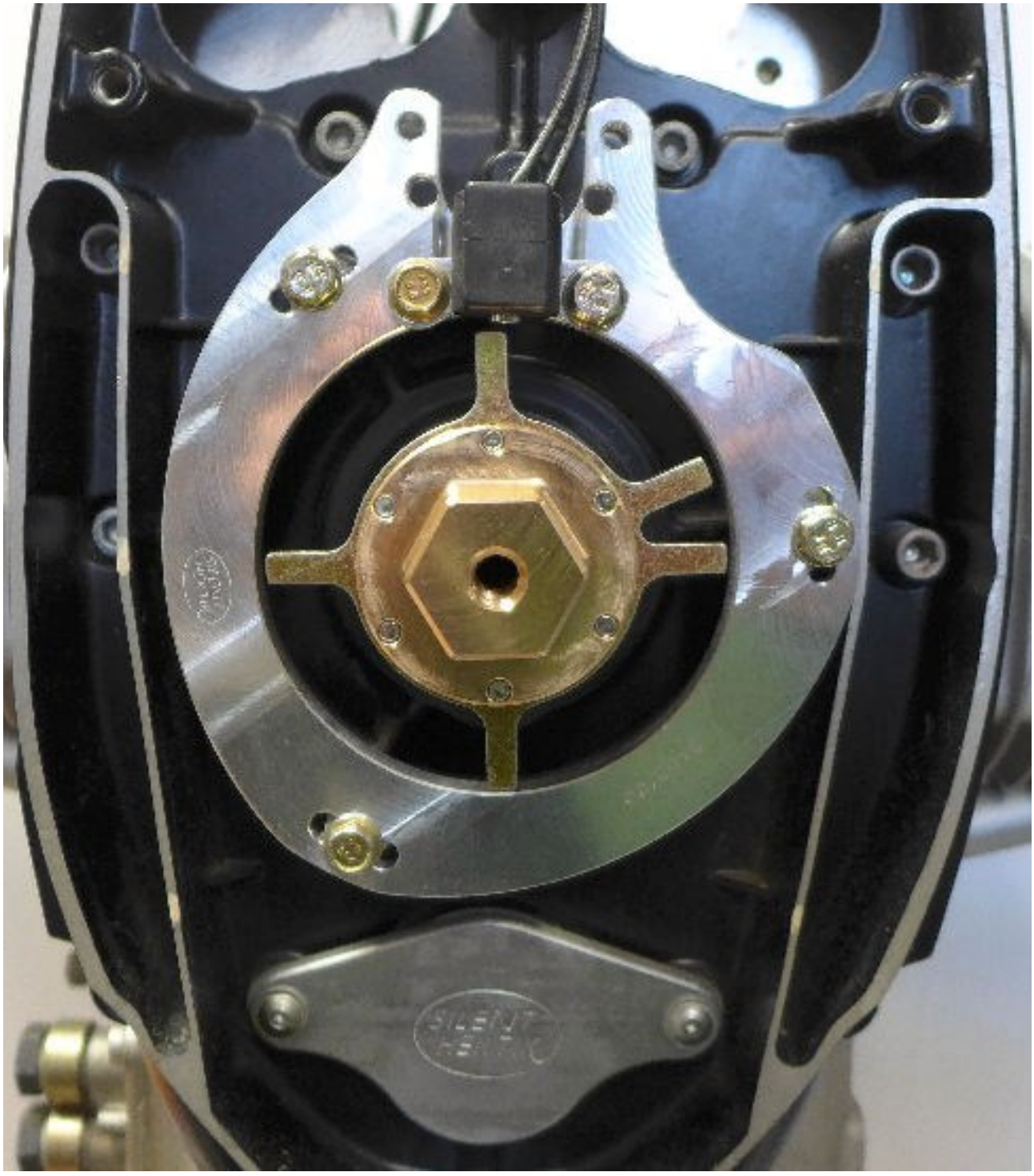
DualCoil D-Well

Twinspark bei 6°-8° stat. vOT

Montage der PowerBlock Zündanlage auf unsere 410W LiMa:

The gap of Inductivesensors should be 0.4 to 0.6mm

Montage der PowerBlock Racing Zündanlage ohne Lichtmaschine:



The gap of Hallsensors should be 0.6mm to 0.8mm.
The gap of Inductivesensors should be 0.4 to 0.6mm

SILENT HEKTIK

INJEKTIONS IGNITIONS COILS SPARK-PLUGS REGULATORS TOOLS

...und die Power wird mit Dir sein !

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