System 787378800

Alternator/electronic ignition for Zündapp Combimot KM48 auxiliary engine

- Magneto ignition system with integrated ignition and a light output of 6V/18W AC.

- Replaces the original Noris lighting/ignition system

- No modifications to the engine block are necessary; the cable outlet may need to be enlarged slightly.

- Note: AC system (as per original)

M787378800

Advantages over the old system:

- All parts are new
- Contactless electronic ignition
- Good light
- Very stable ignition with high-energy sparks
- better starting and better combustion
- no more wear on the breaker

Installation instructions for System 787378800	15 May 2026

- If you are able to fit and adjust the original ignition system and have general mechanical skills, you can also fit a VAPE system. If you have never dealt with this before, it is best to have the system fitted by someone who is familiar with it.

- VAPE is unable to monitor compliance with these instructions, or the conditions and methods relating to the installation, operation, use and maintenance of this system. Incorrect installation may result in damage to property or even personal injury. We accept no responsibility or liability for any loss, damage or costs arising from, or in any way related to, faulty installation, improper operation, or incorrect use and maintenance. We reserve the right to make changes to the product, technical specifications or installation and operating instructions without prior notice.

IMPORTANT

Please make sure you read the entire manual carefully before you begin installation

Please note that unauthorised modifications, including attempts at repair, to the components may result in the loss of warranty rights. This also applies to cutting cables, which very often leads to the loss of reverse-polarity-protected connectors and, consequently, to short circuits or reverse polarity that can damage the components.

Please note the **information on the system information page**. Ensure that the system configuration shown actually meets the requirements of your engine. Incorrect ignition settings, for example, can certainly damage the engine and/or cause injury when starting (kickback from the kickstarter). Particular care is required during the first start-up after installation. If you notice any malfunction, check and adjust the ignition timing! During installation, check very carefully that the rotor is not rubbing against the stator coil or anywhere else, as this can occur for various reasons and lead to serious damage.

Intended use

- This is a **replacement system and not a copy of the original equipment**. The components of the system therefore look different from the original parts, and in particular the ignition coil and regulator may have different mounting points, requiring you to make adjustments. This system is intended **exclusively** as a replacement for original lighting/ignition systems in classic and modern classic motorcycles **whose engine characteristics have not been subsequently altered by design modifications**. It is not a tuning system; it does not alter the original engine characteristics and does not result in significantly higher engine power. However, it does improve the roadworthiness and safety of the vehicle through better lighting, clearer indicators, a consistently loud horn and, compared to the ageing original systems, greater overall reliability. As our systems do not cause any significant change to the engine characteristics, exhaust emissions and noise levels are not adversely affected. In most cases, exhaust emissions are likely to improve, as combustion is more complete.

- VAPE guarantees type-approved products marked with the letter 'E' in a circle (specifically for the Czech Republic, E8), thereby ensuring that the product specifications consistently comply with the relevant ECE type-approval regulations (in particular ECE R10.05). Inspections are carried out regularly by the competent authority

- The system is not capable of charging a battery. It supplies alternating current to the lighting circuit. The system has no regulator/rectifier. It is designed to power a 6V/18W lighting system without one.

- The system is **not suitable for use at sporting events.**

The warranty will be void if the system is used for purposes other than those for which it is intended. Furthermore, the system may not perform as you require, and we will be unable to assist you via our support service as we will not be aware of the situation. In the worst-case scenario, improper use may even result in the withdrawal of the operating licence.

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- **When fitting the parts**, **be sure to start with the engine-side components** (adapter, stator, rotor) to check that they actually fit before fitting the parts that are to be mounted outside the engine. Unfortunately, it is often the case that people start by fitting the regulator, ignition coil and, where applicable, the control unit, and these parts are very often modified (incorrectly!) in the process, which makes it impossible for us to resell them later. Unfortunately, replacing lighting and ignition systems on old motorcycles is not like picking something off the shelf in a supermarket; given the wide variety of models and the possible changes to the parts since they were manufactured many years ago, it is always a complex matter that can, regrettably, also involve errors.

- Our systems have **NOT been tested for use with other electronic components (such as third-party ignition systems, sat-navs, mobile phones, LED lights, etc.)** and may cause damage to such components under certain circumstances. Any existing rev counters are not supported by the system. However, we do offer a rev counter solution. Similarly, any circuit breakers or ignition-controlled exhaust control systems are not supported. It may also be the case that your original ignition system had a speed-limiting device fitted for legal reasons. The new system does not have such a device. You should therefore check the legal situation beforehand.

- If you do not have the necessary expertise to carry out the installation, please have it done by a qualified professional or a specialist workshop. Incorrect installation may damage both the new system and the motorcycle, or could even result in injury to the rider.

- Before ordering a system, please check whether the **rotor puller** we recommend is included in the scope of delivery. If not, it is best to order it at the same time! If the rotor is damaged by the use of other tools or aids, the warranty claim will be void!

- The rotor is extremely sensitive to impact (e.g. including during transport). You must always check the rotor for any damage before installation. If the rotor has magnets that are not encapsulated, check that the magnets are securely in place by trying to push them sideways with your fingers. Following an impact, some of the glued-in magnets may have become loose and are now held in place solely by their magnetic force. This would cause serious damage to the system during operation. At the same time, please check the rotor's magnets for foreign objects (e.g. screws or other metallic objects).

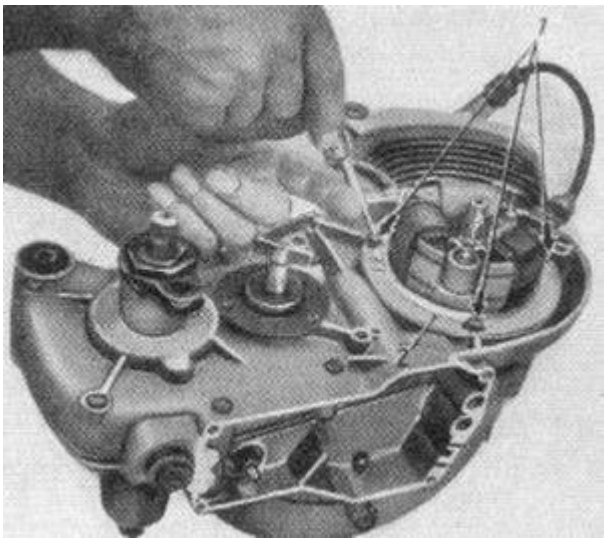
- **If you have internet access,** it **is best to view this documentation online**. You can click on most of the images to enlarge them, and you will find more detailed and possibly more up-to-date information. System list available at: *http://www.powerdynamo.biz*

You should have received the following parts:

- Pre-assembled stator unit
- rotor
- Ignition coil, rubber grommet and ignition cable
- Cable, blue
- Cable ties / rubber grommet
- Screws / small parts

- To remove the new rotor, you will need an M27x1.25 puller (order no.: 99 99 799 00 **– not included!**).

WARNING: If you use a claw puller, the magnets in the rotor will come loose!



- Now disconnect all the cables from your old alternator and remove it.

- Use a pair of pliers to remove the key from the crankshaft taper; it is no longer needed. Please don't forget this step, otherwise you will have to remove the alternator again later. Don't worry, the key was not there to secure the rotor, but simply to prevent it from being fitted incorrectly. You now have markings to guide you.

- To remove your old rotor, you will need an M27x1.25 puller. This puller is also suitable for the new rotor.

- Make sure your motorbike is securely positioned, preferably on a raised work platform, and that you have easy access to the alternator side of the engine.

- Remove the original alternator/ignition system.
- Remove the key from the crankshaft journal; it is no longer required and would get in the way of installing the system. If you forget to do this now, you will have to dismantle the whole new system again later.

- Next, feed the stator cable through the cable opening on the motor. Be careful not to damage the cable!

- Note: The motor we had had two cable outlets, but both were too small for our cable. You may therefore need to enlarge the cable outlet.

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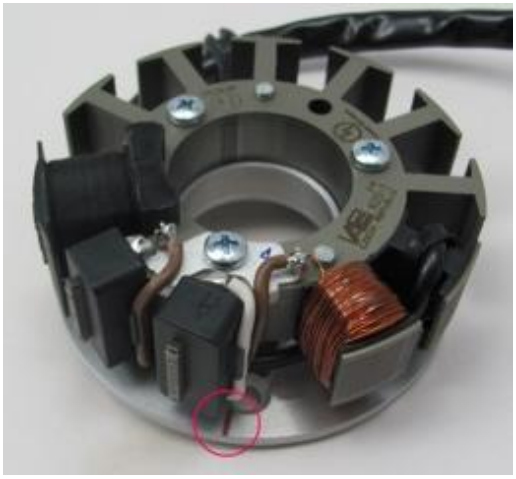
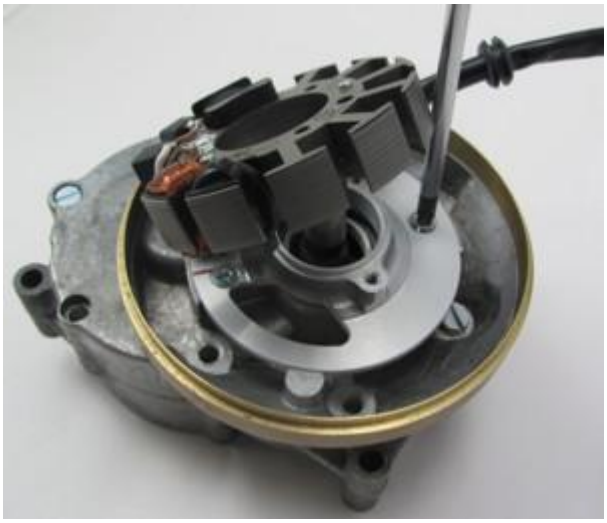


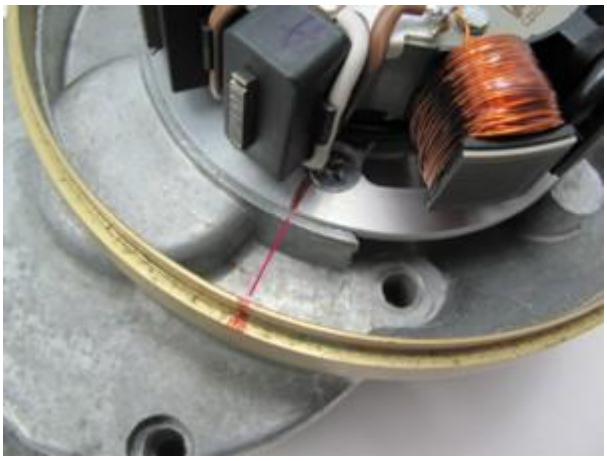
- Please note the small (red) mark on the stator base plate near the small black coils.

- This is an ignition mark. (More on this below!)

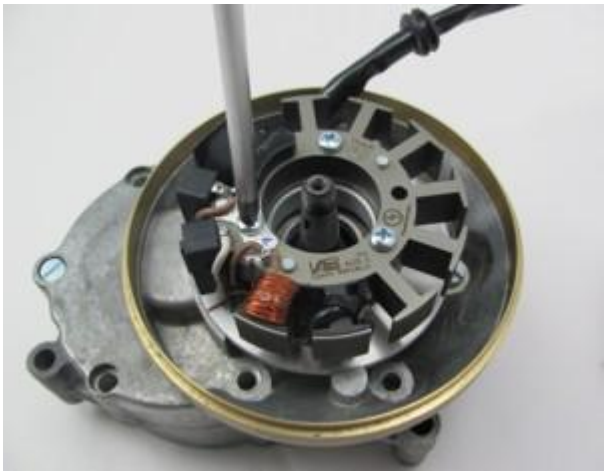
- Place the new stator unit onto the engine block and feed the cable through the cable outlet on the engine.
- To secure it with screws, the stator must be detached from the base plate. To do this, loosen the three Phillips-head screws securing it to the base plate.



- Lift the stator slightly to access the two screw holes underneath.
- Secure the plate with the two M4 screws supplied.

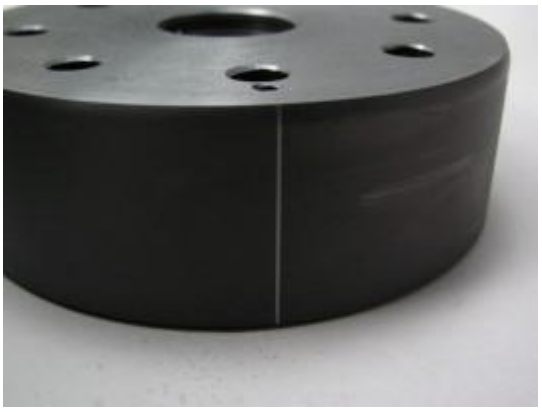


- As the new rotor will cover the ignition mark on the stator plate, we recommend transferring the mark to the housing.



- Finally, place the stator back onto the plate and screw it back in place.

- Note: Take care not to trap any cables between the base plate and the stator. The stator must also be screwed back into place in the same position, otherwise the ignition mark will be offset by 120 degrees!



- Take a look at the new rotor. You will find a laser-etched line on its outer circumference. This is also an ignition mark.

- To ensure maximum flexibility when setting the ignition timing, we have not milled a notch into the rotor. This means you don't need to worry about the 'missing' key; it did not serve a securing function, but was only responsible for ensuring the correct ignition timing. This is now achieved using markings.

- Place the rotor loosely onto the crankshaft and ...
VERY IMPORTANT: ... check that it turns freely over the stator coils. It is quite possible that the crankshaft has become shorter at the journal following a reconditioning process, meaning the rotor may be rubbing against the coils and damaging them.

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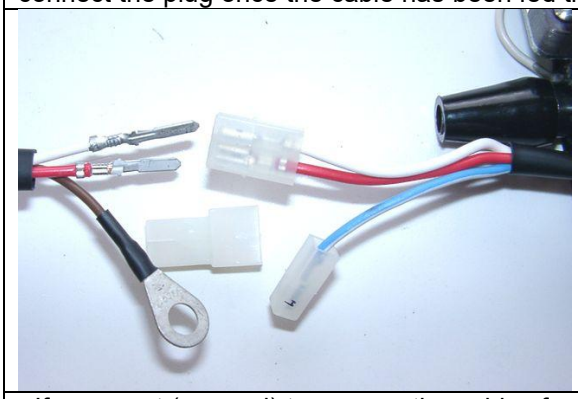
- Remove the spark plug and bring the piston into the ignition position by turning the rotor (see manual; if not available, try 5 mm before TDC).

- Now carefully remove the rotor again (without changing the position of the crankshaft) and refit it so that the rotor marking is aligned with the one on the base plate.

- Ignition occurs the moment the two markings described above are aligned.

- In this position, carefully secure the rotor with the original M10x1 nut and, if necessary, place the supplied washer underneath.

- This system is specifically designed for small or very old motorcycles/mopeds that require only a low level of light output and have limited space for installing new components (regulator). As there is no regulator, it is not possible to charge a battery!

Connect the cables as shown in circuit diagram 71ik-788, i.e.:	
- To make it easier to feed the cable through narrow openings, or indeed to make this possible in the first place, the terminals and the plug on the cable leading to the new ignition coil from the new alternator have not yet been connected to the terminals at the end of the cable. You should only connect the plug once the cable has been fed through the engine opening. To do this ...	
	... take the female connector from the ignition coil with the red and white wires. Fit the loose 2-pin connector sleeve supplied with this part onto the plug, and insert the loose alternator cables (red and white) with their terminals into the back of the plug. Ensure that the cable terminals click into place inside the plug housing. It is essential to ensure that these cables are positioned correctly within the plug: • white to white • red to red
- If you want (or need) to remove the cables from the connector housing, it is best to use a straightened paperclip to push the barbs on the contact tabs to one side, so that the connectors can be released.	
- The brown cable from the alternator with the ring terminal is screwed onto the ignition coil's earth terminal (retaining clip). The system will not work without this connection! Please do not rely on the frame's earth. Here, paint, dirt and oil residues often prevent a good earth contact for the coil.	
The black cable from the stator...	...connect to the ignition terminal on terminal 51
That leaves the blue (sometimes blue and white) cable from the ignition coil – the cut-off cable. **Note:** - If you experience ignition problems, disconnect this cable first (pull the plug). In most cases, you will then be able to continue your journey	**- If it is connected to earth, the ignition will cut out!** - We use this wiring configuration on vehicles that originally had magneto ignition (pole wheel) and therefore also switched off due to a short circuit to earth. - These vehicles have a terminal on the ignition switch (on German vehicles: terminal 2) which is connected to earth when in the "OFF" position. The blue (or white) cable is connected to this terminal. This means that the ignition is switched off in the same way as before.

- The high-voltage cable (ignition cable) ... Please **do not use** "Nology Super Cables" ("hot wire"). These cause interference in VAPE systems and may damage the electronics	... screw them into the ignition coil and fit the rubber cap over them. This is, of course, easier if you do this before fitting the coil to the bike. Please also use the ignition cable supplied and not an old, unknown cable.

- You'll be doing yourself a favour if, at this stage, you fit your motorbike with new spark plugs and new plug leads (preferably with 1–2 kiloohms, but no more than 5). More than enough faults can be traced back to 'seemingly good' cables, plugs and leads (including brand-new ones)!
- **Do not use** spark plugs with an internal spark plug resistor **in conjunction** with spark plug caps fitted with a spark plug resistor (this results in double the resistance). Always use only one method of noise suppression.

- Finally – **before fitting the battery and before the first start** – please take your time to check all fixings and wiring. Remember to replace all bulbs from 6 to 12 volts. Also remember that from now on you will need a 12V battery. The horn can remain on 6 volts.

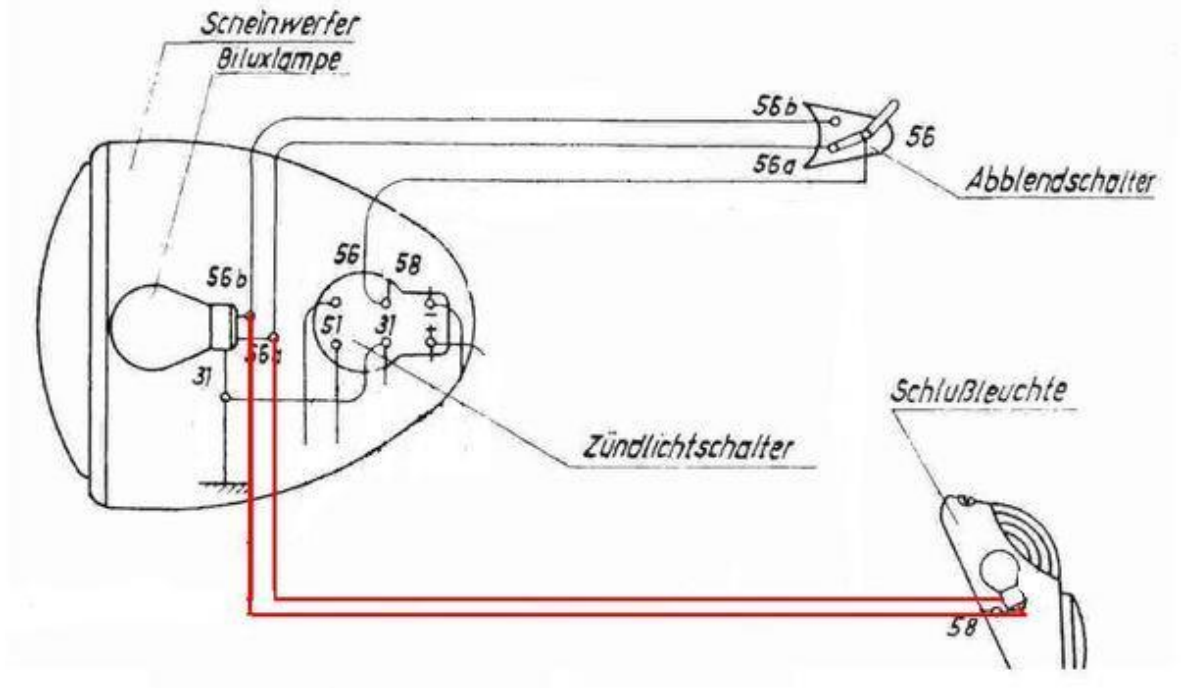
- If the system does not work straight away, please consult our troubleshooting page. As a first step, disconnect the blue cable between the relay and the ignition coil (unplug the connector); most faults are hidden in the switch-off area.

- IMPORTANT: Please note that if **the crankshaft** has been (previously) **reconditioned**, its alternator journal may have been over-machined and is therefore shorter. This causes the rotor to sit lower, which can result in contact between the rotor (the rivets are the lowest point) and the stator coil. The result is a damaged stator and consequently a loss of ignition.

Suggested wiring for 788 systems (6V/18W without a regulator) to prevent the rear light bulb from burning out when the lights are dimmed or brightened

- If the headlight and tail light bulbs are wired in parallel as standard, switching between full-beam and dipped-beam headlights can cause the tail light bulb to blow, as there is briefly no voltage at the headlight when the switch is in the intermediate position, allowing the voltage to the tail light to rise momentarily. This is not only the case in our 788 systems, but also in many original older systems. Some manufacturers at the time had addressed this problem either by fitting a choke coil or by incorporating a safety circuit of this kind.

- Here we describe the safety wiring for the rear light bulb and recommend using this with our 788 systems if a low-beam switch is fitted



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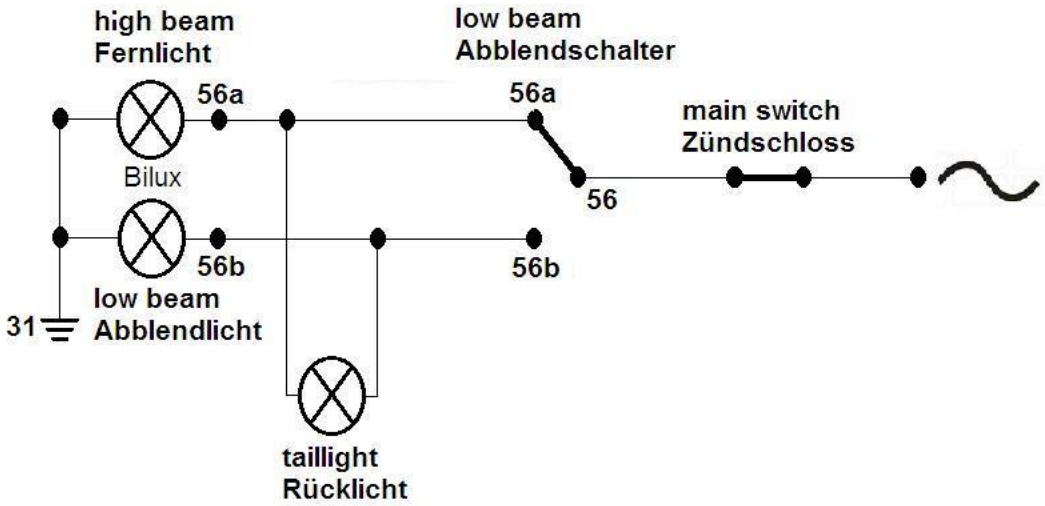
- What you need to do (after checking whether your motorbike already has such a safety circuit) is to disconnect the earth connection of the rear light bulb and run an additional cable from there to the headlight in place of this earth connection. You will now have two cables from the rear light.

- Connect one of these to the contacts for the main beam and one to the contacts for the dipped beam, as shown in the circuit diagram above (and in the diagram below). If the headlight bulb does not receive power when the switch is changed, the rear light bulb will not receive power either and will be protected.

- Please note, however, that if the headlight bulb fails, the rear light will also fail.



Important safety and operating instructions – MUST be read in full and observed!

- Observe the safety instructions and requirements prescribed by the vehicle manufacturer and the automotive trade. Installation requires specialist knowledge.
The ignition marks applied to the material are for guidance only during installation. Once installed, please check that the settings are correct using appropriate methods (such as a stroboscope) to prevent damage to the engine or risks to your health. You are solely responsible for the installation and correct adjustment.

- Caution : Ignition systems generate high voltage – risk of fatal injury! Our ignition coils can reach up to 40,000 volts! If handled carelessly, this can not only cause severe pain but, more importantly, be harmful to the heart! People with pacemakers should not carry out any work on ignition systems. Always maintain a safe distance from the electrode and exposed high-voltage cables, and during testing, press the spark plug connector firmly to earth using an insulating object to safely discharge the voltage.
Never disconnect a spark plug lead to synchronise the carburettor! Never disconnect or touch the ignition cables whilst the engine is running or at starting speed. Only wash the vehicle when the engine is switched off.

- If your VAPE ignition cable was supplied with rubber spark plug connectors attached *(which do not have a built-in suppression resistor)*, please use spark plugs with a built-in resistor *(to comply with local laws regarding electromagnetic compatibility requirements)*. Alternatively, replace the cable(s) with standard ones and use shielded spark plug connectors *(under no circumstances, however, should you use suppressed spark plugs AND suppressed spark plug connectors at the same time. This would lead to interference, particularly difficulty in starting the engine).* The total resistance of the spark plug-spark plug connector combination should not exceed 5 kΩ.

- Remember that spark plug caps age and their resistance increases as a result. If an engine only starts when cold, the cause is almost certainly a faulty spark plug cap or a faulty spark plug. Do not use so-called spark-boosting cables (e.g. Nology).

- After installation, please ensure you check that all retaining screws are tight. If the parts become loose, they will be damaged. We only tighten the screws loosely during pre-assembly!

- First of all, give the system you've just installed a chance to fire up before you start measuring and testing everything. Please also follow our instructions on how to check for a spark. All our parts are tested before dispatch. In any case, there is little you can measure on them. Under no circumstances should you attempt to measure the electronic components (including the ignition coil, except for its high-voltage output). You risk damaging them and will still not obtain any useful results!
Bear in mind that if the engine does not run straight away, this is often due to the carburettor, the intake rubber and, above all, the spark plug caps and spark plugs (unfortunately even brand new ones); usually, the settings need to be adjusted after installing a Lima alternator. If the system does not run straight away, check the earth connections first and foremost, particularly between the chassis earth and the engine block.
Before you remove the parts again and send them to us for inspection, please check our knowledge base to see if there is already an answer to your problem there. If not, please use our service ticket system to request specific assistance.

- If you have a system with a dual ignition coil, please note a few specific features of this coil. The ignition will only work correctly if both spark plugs are connected to the coil. This means you cannot simply remove one spark plug to test it, as each output is grounded via the other spark plug. If you really only want to test one side, the other coil output must be grounded.

- The spark produced by traditional breaker systems has a low energy level of around 10,000 volts and therefore appears thick and yellow. The spark produced by our systems is a high-energy spark of up to 40,000 volts and is therefore very sharply focused and blue, which makes it less visible. Furthermore, the spark is only generated once the engine has reached a certain speed following the kick-start. Simply pressing the kick-start lever by hand does not produce a spark.

- Most of our systems combine the ignition and the alternator in one unit. You can tell this by the presence of a regulator. Apart from the voltage output by the regulator, there is little else you can measure on it. If you are not getting any power, check the earth connections and the wiring from the regulator to the ignition switch first and foremost. This important connection is often cut and overlooked during installation! Most PD systems have DC regulators/rectifiers. However, there are also AC regulators, which have specific features that need to be taken into account.

- Never carry out electrical welding on the vehicle without first completely disconnecting all electronic components containing semiconductors (regulator, ignition coil and control unit). The stator and rotor do not need to be removed. Only solder using equipment operated via series transformers, or unplug the soldering iron before soldering to prevent damage to the components caused by overvoltage. Never use copper paste on connectors or spark plugs.

- Electronic components are sensitive to reverse polarity. After carrying out any work on the system, always check that the battery is connected correctly and that the wiring is correct. Reverse polarity and short circuits will immediately destroy the control unit and the ignition coil! As a general rule, wires should always be connected colour-to-colour. Any exceptions are explicitly stated in the instructions. Damage caused by reverse polarity is not covered by the warranty.

- When assembling the rotor, please take care not to damage the magnets. Avoid applying direct mechanical force to the rotor. **Never place the stator inside the rotor when transporting the generator;** please follow our shipping instructions (packaging).

- Lightly oil the outside of the rotor; otherwise, it will rust quickly in the harsh environment (which is not harmful, but looks unsightly).

- Never use a claw puller or a hammer to remove the rotor. This may cause the magnets to come loose. Always use only a screw-in puller M27x1.25 (see installation instructions).

- If your vehicle is not going to be used for a prolonged period, you should disconnect the battery (if fitted) to prevent any slow discharge via the rectifier diodes. However, even with the battery disconnected, you will notice that it has discharged after a long period of time; this is normal.

- Please take note of these instructions, but don't let them unsettle you. Thousands of customers have already successfully installed our systems before you.

Good luck and enjoy your drive!

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Schaltplan 71-788
(wiring diagram)