System 776079900

Alternator/electronic ignition system for NSU ZD 201 Pony (not a block) and Victoria KR20ZB

- please note, as there is a risk of confusion:
- For clockwise-rotating crankshaft and system diameter **of 210 mm**
- Alternator secured **with 3 screws**
- Replaces the original Noris SDZ 6/30 ignition alternator, upgrading to 12V/180W and contactless electronic ignition. The ignition timing is fixed; modern fuels make adjustment unnecessary. The weight of the new rotor is 2.7 kg
The system is capable of operating without a battery.
- Note: The original method of switching off the system via the ignition pin is not supported.
- ATTENTION: For alternators with **an outer diameter of 210 mm**. (Please note: There were very similar ones with a diameter of 190 mm!)

Advantages over the old system:

- All parts are new
- significantly brighter light
- Very stable ignition with high-energy sparks
- Better starting and improved combustion
- no more wear on the breaker

Installation instructions for System 776079900 - System for NSU with clockwise-rotating crankshaft	4 June 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 worked on one 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 equipment.

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 and noise emissions are not adversely affected. In most cases, exhaust emissions are likely to improve, as combustion is more complete.

- VAPE guarantees that its products are type-approved and marked with the letter 'E' (specifically 'E8' for the Czech Republic), 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 charging system is strictly **intended for use only with rechargeable 12V (6V systems 6V) lead-acid batteries with liquid electrolyte or sealed lead-acid batteries, AGM, and gel.** It is not suitable for use with nickel-cadmium, nickel-metal hydride, lithium-ion or other types of rechargeable or non-rechargeable batteries.

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- 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.

- **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 (210 mm diameter disc)
- Retaining disc for cover
- Rotor
- Regulator/rectifier
- Electronic ignition coil
- Ignition cable
- Relay with cables
- Various bolts and nuts
- Puller

- You can remove the new rotor using a puller (included!).

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

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

- Now disconnect all cables from your old alternator and remove these parts. To remove the rotor, you will need a suitable puller. (See the Ardie workshop manual.)

- Remove the dowel pin on the crankshaft that fits into the groove of the old Limo rotor. Don't worry, it doesn't serve as a retaining pin; it's only there to aid ignition timing. If you forget to remove the pin, the rotor won't fit onto the shaft later and you'll have to dismantle the stator again to get at the pin.

- Remove the spark plug and set the piston to the ignition timing position. According to the manual, this should be 4.5 mm for the ZDB201; however, due to modern carburettor fuels and this ignition system, it is better to set it to 3.5 mm – 4 mm before TDC.

- To make it easier to turn the shaft, place the new rotor loosely on top and use it as a turning handle (do not screw it in). Once the correct position has been found, carefully remove the rotor again.

- Refit the rotor onto the crankshaft so that the red notch (ignition mark) points roughly towards the **threaded hole** at **the top left** of the engine block (see image). Secure the rotor in this position using the original rotor screw.

- Click on the images to enlarge them

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- Now place the pre-assembled stator plate onto the motor. When doing so, ensure that the hole for the ignition timing (see picture) also faces the screw hole at the top left.
- The cable outlet should now be positioned at approximately 2 o'clock.

- Loosely secure the plate using the 3 M6 screws and washers supplied.

- First, check that the motor is still in the ignition position.
- Now turn the stator plate in the slotted holes so that the red notch on the rotor aligns exactly with the points in the ignition adjustment hole.
- Now tighten the stator plate securely to the motor housing. This completes the ignition adjustment.

(The pictures show a similar motor with the plate in a different position!)

- Finally, fit the original cover. The disc is held in place by two spacer sleeves on each side and can be secured using the M4 screws supplied.

- The disc is marked with a ‘K’, which points towards the cable outlet.

- Please note that the ignition pin is no longer functional. However, the ignition pin assembly can still be screwed onto the new adapter plate, even if it is not working. This allows you to use the ignition pin to maintain the original appearance.

- NOTE:

Depending on the cover, it may be necessary to shorten the 2 stud bolts by 1.5 mm so that the cover sits flush.

- This completes the work on the engine. Screw the spark plug back in.

- Mount the new electronic rectifier/regulator and the new ignition coil in a suitable location. This could, for example, be in an empty battery compartment, as the system can operate without a battery. On the KR25, this could also be the toolbox, and the components could certainly be fitted in the tunnel beneath the fuel tank.

- First, connect the high-voltage cable to the ignition coil. Using the cable ties provided, route the new alternator cable along the frame so that it ends up alongside all the other cables at the level of the regulator/ignition coil. Make sure that nothing can rub against it.

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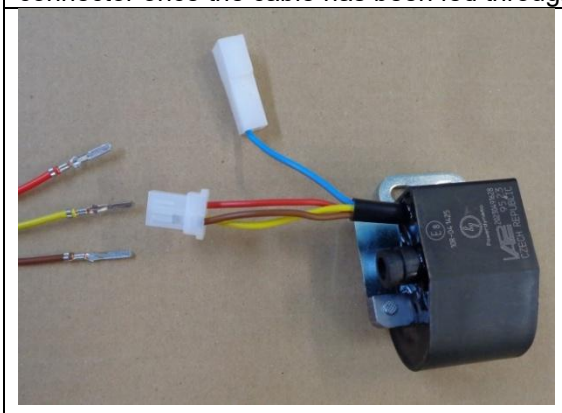
vape@vape.cz

Connect the cables as shown in the relevant wiring diagram!

- For our DC (standard) regulator (952269906), use wiring diagram **73ir12:**
- If the DC regulator is supplied with a built-in smoothing capacitor (730079950), also use wiring diagram **R_102:**

- To make it easier to feed the cable through narrow openings, or indeed to make this possible in the first place, the connector on the cable leading to the new ignition coil from the new alternator has not yet been fitted to the terminals at the end of the cable. You should only connect the connector once the cable has been fed through the engine opening. To do this ...



... take the female connector from the ignition coil with the red, brown and yellow wires.

- Fit the loose 4-pin connector sleeve supplied with the kit onto this plug and insert the loose alternator cables (red, brown and white) into the plug, with the terminals facing inwards. Ensure that the terminals click into place inside the plug housing. It is essential to ensure that these cables are positioned correctly within the plug:

- yellow to yellow
- red to red
- brown to brown

- If you want (or need) to remove the cables from the connector housing, it is best to use a paperclip that has been bent open and use it to push the barbs on the contact tabs to one side so that the connectors can be released.

Connecting the alternator to the electrical system:

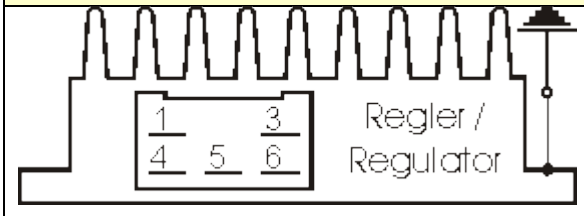
- The two black cables coming from the alternator supply power to the lights, horn, indicators, etc. Like the regulator itself, they have nothing to do with the ignition.

- This voltage must first be stabilised (regulated) and, for most applications, rectified, as it is initially alternating current.

- **There are 2 different regulator variants available for this:**

Warning: Any **mix-up of positive and negative terminals** will result in **immediate destruction of the regulator, which is not covered by the warranty!** (You can clearly tell it has been destroyed by the smell of burning!). Please note that there are batteries on the market where the positive terminal is where the negative used to be!

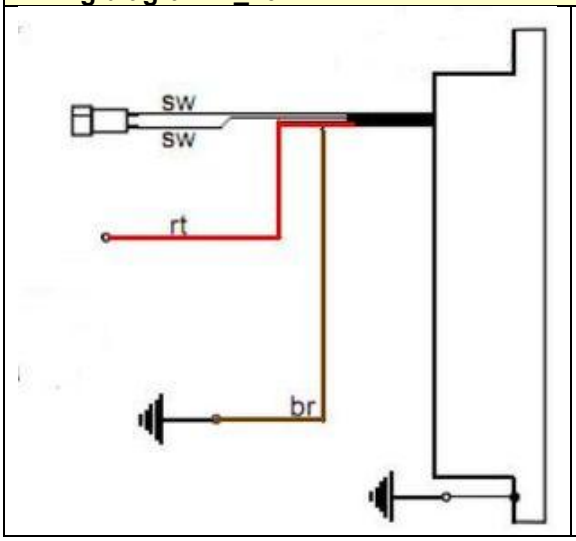
Controller variant 1: with DC (standard) controller (95 22 699 06), use circuit diagram **73ir12**:



- The new regulator/rectifier has a compact connector with six sockets, *one* of which is free. A matching connector is supplied with the regulator; the cables must be inserted into this and click into place.

- The two black cables from the new alternator ...	... are connected to terminals 1/4 of the new rectifier (black cables then run from there into the regulator). It does not matter which cable is connected to which of the two terminals (1/4), as alternating current is fed in here.
- The new brown cable with the ring terminal on one end ...	... connects terminal 3 of the regulator/rectifier (a brown cable also runs into the regulator from there) to the negative terminal of the battery or a solid ground. Caution: do not reverse the polarity!
The new red cable with the ring terminal on one end ...	... connects terminal 5 of the regulator/rectifier (a red cable also runs into the regulator from there) to the positive terminal of the battery or to the terminal on the fuse box to which the power cable from the old alternator was connected (on German motorcycles: terminal 51).
- Ensure that a **15A fuse** is used between the battery and the vehicle electrical system. If there is an old, higher-amp fuse (from the original 6-volt system) at the ignition switch, please replace it.	
- Connect the green/red cable of the new regulator to terminal 6 ...	... is for connecting the charge indicator. This is where the indicator light (if fitted) is connected. Naturally, this only works if a battery is present. If the indicator light is connected without a battery, it will glow dimly whilst the engine is running, even though electricity is being generated. In short, leave the connection unconnected if there is no battery. The same applies if no light is fitted.

Regulator variant 2: with DC regulator with built-in smoothing capacitor (730079950), also use **wiring diagram R_102:**



- the two black cables are connected to the black cables coming from the alternator
- the red cable is the 12V DC output
- The brown cable is the negative terminal and is connected internally to the regulator housing

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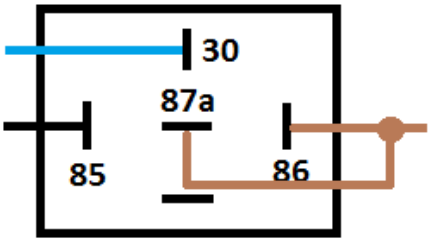
- That leaves the blue/white cable from the ignition coil – the cut-off cable. **- If it is connected to earth,** **the ignition will cut out!** **- Note:** If you experience ignition problems, disconnect this cable first (pull the plug). In most cases, you will then be able to continue your journey	**- Switching off via a separate switch:** The relay is not fitted. The blue (/white) cable from the ignition coil is connected to a switch that cuts the circuit to ground (e.g. a push-button switch to be mounted on the handlebars). Further details can be found in the information on switching off. Alternatively, you can use an ignition switch that cuts the circuit to ground. **- Battery type:** Connect the brown cable of the relay with the ring terminal to earth. Route the longer black cable of the relay to a live terminal on the main switch (ignition switch; on German motorcycles: terminal 15 or 54) in the 'On' position. Connect the blue cable (coming from terminal 30 of the relay) to the blue (/white) cable of the ignition coil. In the event of a battery failure whilst on the road, this cable should be disconnected to allow you to continue your journey. (However, the engine cannot then be switched off!)

- Relay pinout (if this option is used)**:**  	- The brown cable with the ring terminal from terminals 87a and 86 is connected to earth. - The black cable from terminal 85 goes to the ignition switch terminal 15 (live terminal when 'On').
- The high-voltage cable (ignition cable) ... Please **do not use** "Nology Super Cables" ("hot wire"). These cause interference in VAPE systems and can 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 change 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.	

Important safety and operating instructions – YOU MUST read and follow these in full!
- Observe the safety instructions and requirements prescribed by the vehicle manufacturer and the automotive trade. Installation requires specialist knowledge. The ignition markings applied to the material are for guidance only during installation. After installation, please check the correctness of your settings using suitable methods (stroboscope) to rule out 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 testing, 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 properly 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.

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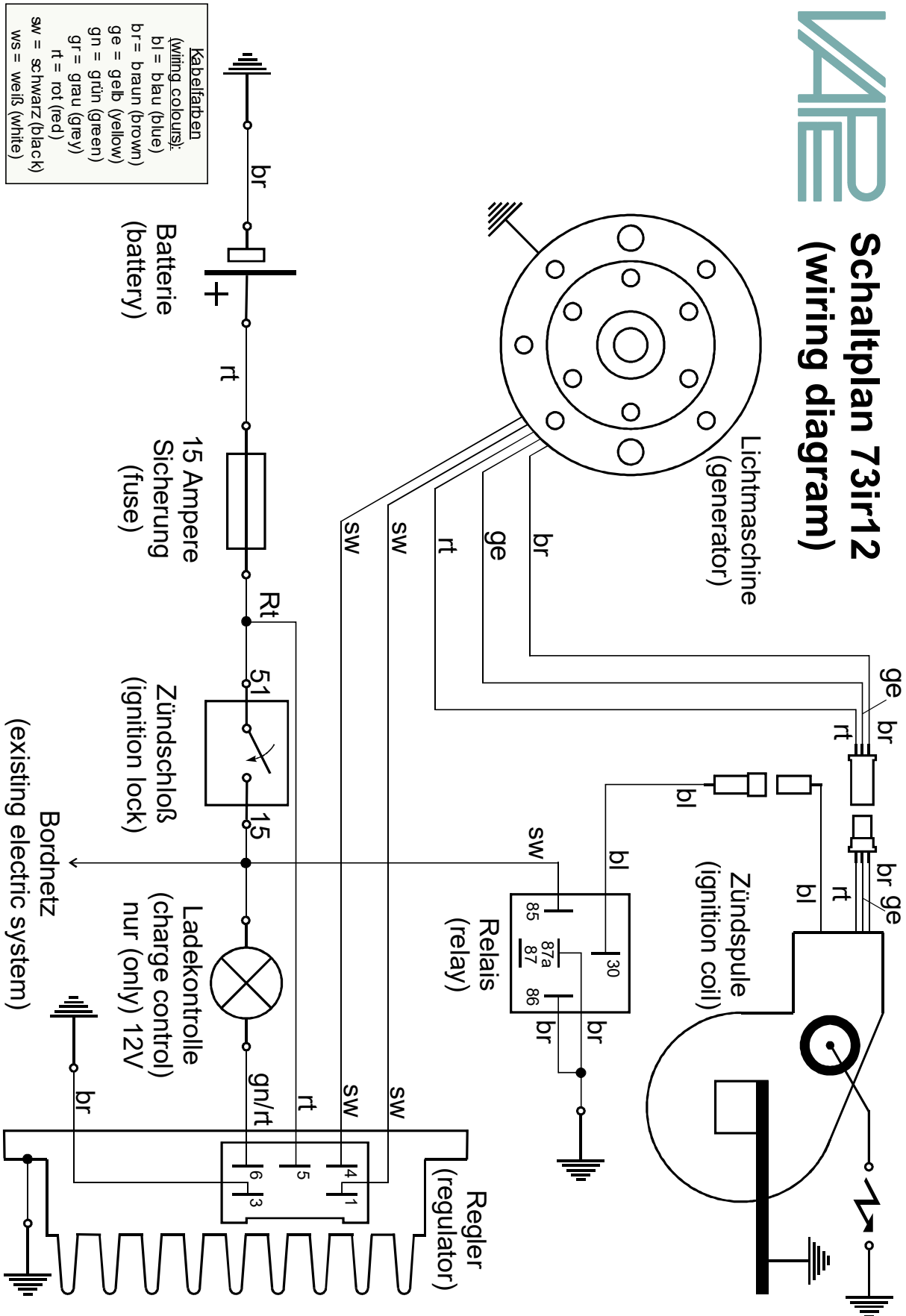
- Most of our systems combine the ignition and alternator functions. You can tell this by the presence of a regulator. Apart from the voltage output by the regulator, there is little else you can measure on it. If you are not getting any power, check the earth connections and the wiring from the regulator 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!***

Schaltplan 73ir12 (wiring diagram)



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Schaltplan Regler 102
(wiring diagram regulator)