System 770549900

Alternator for Moto Guzzi Le Mans

- Only for models equipped with this BOSCH alternator with a 105 mm mounting!

- The alternator replaces the original Bosch alternator and regulator. Upgrades your system to 12V/180W. No modifications to your engine housing are required. The original points ignition system continues to be used.

Advantages over the old system:

- All parts are new
- significantly brighter light
- No more wear on carbon brushes and commutator

Installation instructions for System 770549900	March 23, 2026

- If you know how to install and adjust the original ignition system and have general mechanical skills, you can also install a VAPE system. If you've never worked with one before, it's best to have the system installed by someone who is familiar with it.

- VAPE cannot monitor compliance with these instructions, nor with the conditions and methods for the installation, operation, use, and maintenance of this system. Improper installation may result in property damage or even personal injury. We assume 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

Be sure to read the entire manual carefully before you begin installation

Keep in mind that unauthorized modifications, including repair attempts, to the parts may void your warranty. This also applies to cutting cables, which very often results in the loss of reverse-polarity-protected connectors and, consequently, to short circuits or reverse polarity that can damage the components.

Please note the **instructions on the system information page**. Make sure that the system configuration shown actually meets the requirements of your engine. Incorrect ignition settings, for example, can damage the engine and/or cause injury when starting (kickback from the kickstarter). Special caution 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 parts of the system therefore look different from the original parts, and in particular, the ignition coil and regulator may have different mounting points that require adjustments on your part. This system is intended **exclusively** for replacing 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 it does not result in significantly higher engine power. However, it does improve the vehicle's roadworthiness and safety through better lighting, more visible turn signals, a consistently loud horn, and greater overall reliability compared to the aging original systems. Since our systems do not cause any significant change in engine characteristics, exhaust and noise emissions do not deteriorate. In most cases, exhaust emissions may even improve, as combustion becomes 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 conducted regularly by the competent authority

- The charging system is **intended solely for use 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.

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

Improper use will void the warranty. Furthermore, the system may not perform as you expect, and we will be unable to assist you with our support services because we are unaware of the situation. In the worst-case scenario, improper use may even result in the revocation of the operating permit.

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- When installing the parts, **be sure to start with the engine-side components** (adapter, stator, rotor) to verify that they fit properly before installing the parts that go outside the engine. Unfortunately, it is often the case that people start by installing the regulator, ignition coil, and, if 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 the lighting and ignition systems on older motorcycles is not like picking something off the shelf at the 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 unfortunately also lead to errors.
- Our systems have **NOT been tested for use with other electronic components (such as aftermarket ignition systems, navigation devices, cell phones, LED lights, etc.)** and may cause damage to such components under certain circumstances. Any existing tachometers are not supported by the system. However, we do offer a tachometer solution. Similarly, any circuit breakers or ignition-controlled exhaust control systems are not supported. It is also possible that your original ignition system had a speed-limiting device installed for legal reasons. The new system does not have such a device. Therefore, please check the legal requirements beforehand.
- If you do not have the necessary expertise to install the system, please have it installed by a qualified professional or a specialized workshop. Improper installation can damage both the new system and the motorcycle, or even result in injury to the rider.
- Before ordering a system, please check whether the **rotor puller** we recommend is included in the package. If not, it's best to order it at the same time! If the rotor is damaged by using other tools or aids, the warranty will be void!
- The rotor is extremely sensitive to impact (e.g., even during transport). Be sure to inspect 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. After being subjected to impact, some of the glued-in magnets may have become loose and are now held in place only by their magnetic force. This could 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's best to view this documentation online. You can click on most of the images to enlarge them, and you'll find more—and possibly more up-to-date—information. System list available at: *http://www.powerdynamo.biz*

You should have received these parts

- Pre-assembled stator unit
- Rotor for alternator
- Regulator/rectifier
- Small parts for installation

- Make sure your Moto Guzzi is securely positioned on its stand, preferably on a raised work platform, and that you have easy access to the front of the engine. You will need to move the fork several times.

- Disconnect the battery and remove it from the motorcycle. At this point, say goodbye to your old battery, because from now on you'll need a 12-volt battery—or you'll have to ride without a battery at all. The system allows for this. However, keep in mind that your ignition system may rely on a battery!

- Remove the original Bosch alternator and pull the rotor off the crankshaft.

- (The image on the left shows only the housing without the crankshaft!)

- Place the pre-assembled stator unit onto the motor block. Secure it using the 3 M5x12 screws and washers provided.

- The cable should point upward so that the original cable outlet can be used.

(The image shows a slightly different base plate from the pre-production series!)

- Now place the new rotor on top. Be careful not to let it fall. A fall could damage the magnets! Secure it with the included M8x60 screw and washer.

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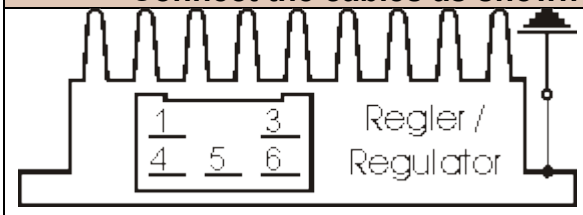
Connect the cables as shown in the g-only wiring diagram, i.e.:	
	- The new regulator/rectifier has a compact connector with 6 ports, one of which is free. A matching connector is supplied with the regulator; the cables must be inserted into this connector and snap into place.
- The two black cables from the new alternator ...	...are connected to terminals 1 and 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 and 4), as alternating current is fed in here.
The new brown cable with the ring terminal on one end ...	... connect 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!
Connect 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 where the power cable from the old alternator was connected (on German motorcycles: terminal 51).
- Make sure 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 wire of the new regulator to terminal 6 ...	... is for connecting the charge indicator. This is where the indicator light (if present) is connected. Of course, this only works if a battery is present. If the indicator light is connected even without a battery, it will glow dimly while the engine is running, even though power is being generated. In short, leave the connection open if there is no battery. The same applies if there is no indicator light.
Notes for 6-volt systems:	* The 6V regulator has no connection for the charge monitor. * The negative cable between the connector and the regulator housing is not brown, but white!
- Finally—**before installing the battery and before the first start**—please take your time to check all fasteners and wiring. Remember to replace all bulbs from 6 to 12 volts. Also keep in mind that you will now need a 12V battery. The horn can remain at 6 volts. - If the system does not work right away, please consult our troubleshooting page. As a first step, disconnect the blue cable between the relay and the ignition coil (disconnect the connector); most faults are hidden in the shutdown circuit.	
- IMPORTANT: Please note that if **the crankshaft** has been (previously) **reconditioned**, its alternator journal has been over-machined and is therefore shorter. As a result, the rotor sits lower, which can cause contact between the rotor (the rivets are the lowest point) and the stator coil. This results in a damaged stator and subsequent loss of ignition.	

Important safety and operating instructions for alternator-only systems
- Observe the safety instructions and requirements prescribed by the vehicle manufacturer and the automotive trade. Installation requires technical expertise.
- After installation, be sure to check that the stator mounting screws are tight. If the parts come loose, they will be damaged. We only tighten the screws loosely during pre-assembly!
- Remember, this is only a power generator. It has nothing to do with the ignition. If you have a battery ignition system, a fully functional battery must also be present.

- First, give the system you just installed a chance to supply power while the engine is running before you start measuring everything and checking whether it actually works. Or worse yet, making changes right away without first getting the system up and running. All our parts are tested before shipment. Aside from the voltage output by the regulator, there's hardly anything else you can measure on them anyway. If you're not getting any power, check the ground connections and the wiring from the regulator to the ignition switch first and foremost. This important connection is often cut and overlooked during installation!
- Never perform 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.
- Electronics are sensitive to reverse polarity. After making any changes to the system, always check that the battery is connected correctly and that the wiring is correct. Reverse polarity and short circuits will destroy the regulator. This regulator is **ONLY for vehicles with negative ground**.
- 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; 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 can cause the magnets to come loose. Always use only a screw-in puller M27x1.25 (see installation instructions).
- If your vehicle will not be used for an extended period, you should disconnect the battery (if equipped) to prevent any slow discharge through the rectifier diodes. However, even with the battery disconnected, you may notice that it has discharged after a long period of time; this is normal.
- Please follow these instructions, but don't let them unsettle you. Thousands of customers have already successfully installed our systems before you. ***Good luck, and enjoy the ride!***

Important Safety and Operating Instructions - Be sure to read and follow them completely!
- Follow the safety instructions and requirements specified by the vehicle manufacturer and the automotive trade. Installation requires technical expertise. The ignition marks applied to the material are for orientation purposes only during installation. After installation, please verify the correctness of your settings 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—danger of death! 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 perform any work on ignition systems. Always maintain a safe distance from the electrode and exposed high-voltage cables, and during testing, firmly press the spark plug connector to ground with an insulating object to safely dissipate the voltage. Never disconnect a spark plug wire to synchronize the carburetor! Never disconnect or touch the ignition wires while the engine is running or at starting speed. Wash the vehicle only when the engine is off.
- If your VAPE ignition cable came with rubber spark plug connectors *(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 should you use both suppressed spark plugs AND suppressed spark plug connectors at the same time. This would cause interference, particularly making it difficult to start the engine).* The total resistance of the spark plug-spark plug connector combination should not exceed 5 kΩ. - Keep in mind that spark plug wires age and their resistance increases over time. If an engine only starts when cold, the cause is almost certainly a faulty spark plug wire or spark plug. Do not use so-called spark-enhancing cables (e.g., Nology).
- After installation, be sure to check that all retaining screws are tight. If the parts loosen, they will be damaged. We only tighten the screws loosely during pre-assembly!

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- First, give the system you 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 shipment. You can hardly measure anything on them anyway. Under no circumstances should you measure the electronic components (including the ignition coil, except for its high-voltage output). You risk destroying them and will still not get usable results!
Keep in mind that if the engine doesn't run right away, the problem is often due to the carburetor, the intake hose, and especially the spark plug wires and spark plugs (unfortunately, even brand-new ones). (As a rule, after installing a Lima alternator, its settings must also be adjusted.) If the system doesn't run right away, check the ground connections first and foremost, particularly between the chassis ground and the engine block.
Before you immediately remove the parts and send them to us for inspection, check our knowledge base to see if there is already an answer to your problem there. If not, use our service ticket system to request specific assistance.

- If your vehicle has a dual-coil ignition system, be aware of some specific features of this coil. The ignition will only function properly if both spark plugs are connected to the coil. This means you cannot simply remove one spark plug to test it, because each output is grounded through the other spark plug. If you really want to test only one side, the other coil output must be grounded.

- The spark from conventional breaker systems has a low energy level of approximately 10,000 volts and therefore appears yellow and thick. The spark from our systems is a high-energy spark of up to 40,000 volts and is therefore very sharply focused and blue, which makes it harder to see. In addition, the spark is only generated at engine speeds reached by kicking the starter. Simply pushing the kickstarter lever by hand does not produce a spark.

- Most of our systems combine the ignition and the alternator into a single unit. You can tell this by the presence of a regulator. You can measure almost nothing on the regulator except for the voltage it outputs. If you are not getting any power, check the ground connections and the wiring from the regulator to the ignition switch first. 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 considerations that must be taken into account.

- Never perform 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. Solder only with soldering equipment powered by series transformers, or unplug the soldering iron before soldering to prevent overvoltage damage to the components. Never use copper paste on connectors or spark plugs.

- Electronics are sensitive to reverse polarity. After making any changes to 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 regulator and the ignition coil! As a general rule, wires of the same color should always be connected to each other. Any exceptions are explicitly mentioned in the manual. 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;** 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).

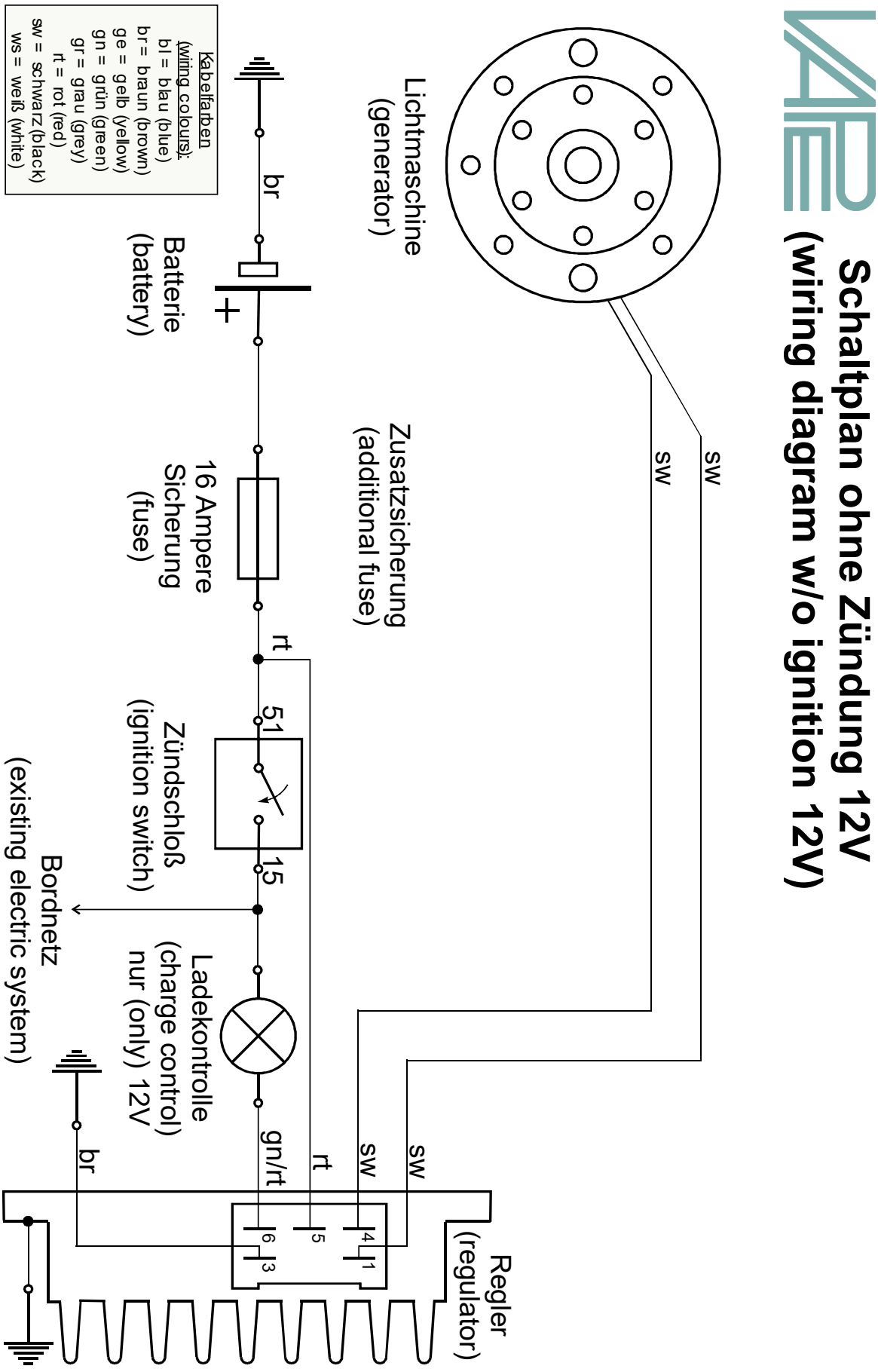
- Never use a claw puller or a hammer to remove the rotor. This can cause the magnets to come loose. Always use only a screw-in puller M27x1.25 (see installation instructions).

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

- Please follow 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 ohne Zündung 12V
(wiring diagram w/o ignition 12V)



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