

System 764699900

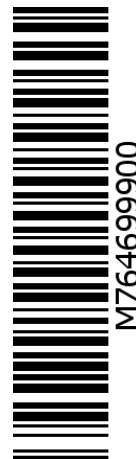
**Alternator/electronic ignition for MV AGUSTA Checca 90/100 and MV 150 RS "S" (1971-72) with 94 mm mounting on the engine**


- Light magneto ignition system with integrated speed-dependent fully electronic ignition, light output 12V/100W DC. Contactless electronic ignition with its own power supply within the system. Replaces the old alternator and all ignition parts (centrifugal governor, breaker, ignition coil). No modifications to your engine housing are required. Technically speaking, the system is capable of running completely without a battery.

- **Please note:** does not fit earlier (1959-64) 150RS models that had a 110 mm mount.

Advantages over the old system:

- All parts are new
- Significantly brighter light
- Very stable ignition with high-energy spark
- Better starting and better combustion
- No more wear on the breaker
- No more vulnerable centrifugal speed governor



Assembly instructions for system 764699900	13.10.2025
<p>- If you can install and time a stock ignition and possess basic mechanical skills, you can install a VAPE! If you never have worked on your ignition, better have it done by someone who knows.</p>	
<p>- VAPE can not monitor the compliance to those instructions, nor the conditions and methods of installation, operation, usage and maintenance of the system. Improper installation may result in damage to property and possibly even bodily injury. Therefore we assume no responsibility for loss, damage or cost which result from, or are in any way related to, incorrect installation, improper operation, or incorrect use and maintenance. We reserve the right to make changes to the product, technical data or assembly and operating instructions without prior notice</p>	
<p style="text-align: center;"><u>IMPORTANT</u></p>	
<p>- Please read these instructions fully and carefully before starting work on your motorcycle Please bear in mind that any modification of the material as well as own repair attempts which have not been agreed with VAPE may result in a loss of warranty. Do not cut off wires. This leads to a loss of reverse polarity protection and often results in damage to electronics. Also, please take note of the information provided on the information page for this system. Check that what you have bought really corresponds to the motorcycle you have. Wrong ignition settings may damage your engine and even hurt you during kickstart (violent kickbacks). Be careful during the first test runs. If needed change settings to safer values (less advance). During assembly check carefully that the rotor (flywheel) does not touch the stator coils or anything else, which may happen due to various circumstances and lead to severe damage.</p>	
<p>Designated use - This system is designated to replace stock dynamo/alternator & ignition systems in vintage and classic motorcycles whose engine characteristics have not been modified aftermarket. This system is not a tuning system and it will not bring significant increases in engine output. It does however significantly enhance roadworthiness and comfort by offering better lighting, better function of side indicators and horn and, compared with the aging stock systems, increased reliability. As our system does not tamper with engine characteristics it does not increase emission of gaseous pollutants and noise. In most cases emission of pollutants should even be reduced due to better combustion. If used as designated the system therefore will not normally infringe the existing legal status of the motorcycle. (Please check your local legal regulations!) This system is not suitable for use in competition events. If used other than the designated way, your warranty will be voided and it might well be that you do not obtain the desired results or, worst you loose legal roadworthiness.</p>	
<p> - VAPE guarantees homologated products marked with the “E” mark in the ring (E8 specifically for the Czech Republic), thereby ensuring a consistent conformity of the product properties with the relevant ECE homologation regulations (especially ECE R10.05). Inspection is regularly carried out by the competent authority.</p>	
<p>- The charging system is only suitable for use with rechargeable 12V (6V systems 6V) lead-acid batteries with liquide electrolyte or sealed lead-acid batteries, AGM, Gel. It is not suitable for use with nickel-cadmium, nickel-metal-hydride, lithium-ion or any other types of recharchable or non rechargeable batteries.</p>	
<p>- This is a replacement system and not a copy of the stock material. The parts in this system therefore look different and might fit differently (notably ignition coil and regulator) requiring some adaptation by you.</p>	
<p>- During assembly imperatively start with assy of engine based parts to see that those really fit before you start fitting the external parts. In many cases customers assemble those first and thereby often modify them in breach of warranty which renders them unfit for renewed sale. Replacing old ignition systems is not a matter of taking something from a supermarket shelf as there have been very many types, versions and possibly unknown aftermarket modifications which harbour plenty of room for error.</p>	
<p>- Our systems are NOT tested for use with third party electronic devices (such as GPS, mobile phones, LED lighting etc) and may cause damage to such parts. Possibly existing electronic tachometers will not work with the new system. Possibly existing safety switches and electronic valve controls are not supported. It might be that your motorcycle was originally equipped with an ignition that did limit top speed for legal reasons. The new system does not have such a facility, so check your legal situation beforehand.</p>	

- If you have no expertise for the installation have it done by an expert or at a specialist's workshop. Improper installation may damage the new system and your motorcycle, possibly even lead to bodily harm.

- Before you order a system, please check whether a puller tool for the new rotor is included in the kit. If not, better order it at the same time. Never use anything other than the recommended puller tool to pull the new rotor again. Damage to the rotor as a result of use of other tools or methods is not covered by your warranty.

- The rotor is sensible to blows (including during transport). Before assembly, please always check for damage (on rotor without magnet plastification try to push the magnets aside with your fingers). After impact the glued in magnets might have broken loose, sticking to the rotor solely by magnetic force, so that one does not notice right away. During engine run the damage would be considerable. Before placing the rotor onto the engine, please make sure that its magnets have not collected any metal objects such as small screws, nuts and washers. That equally would lead to severe damage.

- **If you have access to the Internet, best view those instructions online.** You get larger and better pictures by clicking onto them and possibly updated information. System list at <http://www.powerdynamo.biz>



You should have received the following parts:

- The pre-assembled stator plate
- the rotor
- the regulator/rectifier
- the electronic ignition coil
- the control unit (black box)
- High-voltage (ignition) cable
- Small parts



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

- **CAUTION:** When using a claw puller, the magnets in the rotor will come loose!

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

- Disconnect the battery and remove it from the motorcycle. At this point, you should say goodbye to your old battery, because from now on you will have a 12-volt electrical system and will need a 12-volt battery if you want to install one. Technically speaking, the system is capable of operating without a battery. However, unless your motorcycle is considered a classic car, the StVZO (German Road Traffic Licensing Regulations) requires that a parking light be in working order.



- Remove the alternator and all ignition components, including the ignition coil.



- Remove the key on the crankshaft cone with pliers. It is no longer needed. Please do not forget this step, otherwise you will have to remove the alternator again later. From now on, the ignition will be integrated into the alternator.



- Unscrew the pre-assembled coil core from its base plate (3 M4 screws).
- Place the now free base plate on the motor, where the old base plate was also fixed. The small red mark on the circumference should be positioned on one of the 3 retaining screws at approximately 10 o'clock.
- Place the stator back on the plate and screw it back in place with the three M4 screws. Make sure that the stator is not tilted. The cable points towards the cable outlet on the motor.



- Take a look at the new base plate with the pre-assembled stator. You will find a red mark on the circumference, centered on one of the three mounting holes. This is the ignition mark.

- Caution: If you ever remove the stator completely from the base plate, be sure to note its position. Changing the position will inevitably result in a 120° change in the ignition setting, rendering the mark invalid.
(Image shows a similar engine!)



- Now look at the rotor. You will find a small mark (notched line) on its outer circumference. It is highlighted in white in the picture for better visibility.

- It may be a good idea to make this line clearer with a felt-tip pen so that it is easier to see on the engine. This is also an ignition mark.



- Remove the spark plug and move the piston to top dead center. It does not matter which stroke the engine is in. Since this is complicated with a kick starter, loosely place the new rotor on the crankshaft stub to use it to turn the crankshaft.

- Once the TDC position has been found, carefully remove the rotor again (do not change the position of the crankshaft!) and place it so that the small line mark on the rotor is aligned with the red mark on the base plate.

- Carefully screw the rotor into place. Be careful not to move the crankshaft or twist the rotor, otherwise the ignition will not be correct. Screw the spark plug back into the cylinder.



- Attach the new ignition coil in the same place where the original coil was attached. Leave one of the two screws loose at first. A ground cable will be attached here.

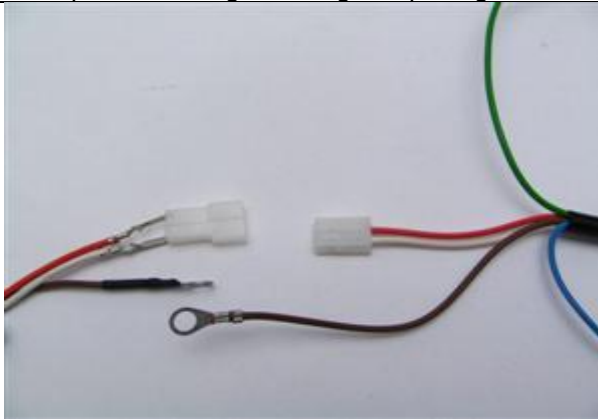
- Mount the control unit in a suitable location, e.g., under the seat or on the rear fender. When installing the control unit, please take a look at the small blue switch block on the upper narrow side of the black ignition timing unit. Here you will find 4 small switches, preset by us, which select different ignition timing curves.



- With all switches set to OFF, the engine reaches full early ignition of 3,000 rpm, depending on the setting, at 38°, as it should.

Connect the cables as specified in the respective circuit diagram Circuit diagram 91ik_102!

- To make it easier to pass the cable through narrow openings, or to enable this in the first place, the plug on the cable leading to the new control unit has not yet been connected to the contact tabs at the end of the cable from the new alternator. You should only attach the plug once the cable has been passed through the engine opening. To do this...



... take the female connector of the control unit with the red and white cable colors.

- Plug the loose 2-pin connector sleeve supplied onto this connector and insert the loose cables from the alternator (red and white) with the contact tabs into the rear of the connector. Ensure that the connector tabs snap into place in the connector housing. It is essential to ensure that these cables are positioned correctly in the connector:

- white goes to white
- red on red

- If you want (or need) to remove the cables from the connector housing again, it is best to use a bent paper clip to push the barbs on the contact tabs to the side so that the connectors can be detached.

- The brown cables from the alternator and the control unit with the ring terminals are screwed to the ignition coil on its ground (retaining bracket). The system will not work without these connections! Please do not rely on the ground of the frame. Paint, dirt, and oil residues often prevent good ground contact of the coil.

<p>- The blue/white cable of the control unit - the switch-off cable.</p> <p>- Note: In the event of ignition problems, disconnect this cable first (pull out the plug). In most cases, you will then be able to continue your journey</p>	<p>- If it is connected to ground, the ignition will switch off!</p> <p>- We use this circuit variant in vehicles that originally had magneto ignition (pole wheel) and therefore also switched off due to a short circuit to ground.</p> <p>- These vehicles have a terminal on the ignition switch (on German vehicles: terminal 2) which is connected to ground in the "OFF" position. The blue/white cable is connected to this terminal. This switches off the ignition as before.</p> <p>Alternatively, an extra short-circuit (kill) switch can be used.</p>
<p>- The green or gray cable of the control unit ...</p>	<p>...is connected to the plug contact of the new ignition coil.</p>
<p>CAUTION! If possible, do NOT extend the green cable of the control unit. This can lead to ignition faults.</p> <p>Under no circumstances should you lay the ignition cable(s) and the control unit cable(s) together in a common sheath or otherwise parallel to each other over a long distance. This will cause feedback and thus malfunctions in the ignition, and may even destroy the control unit.</p>	

Connecting the alternator to the light current supply:

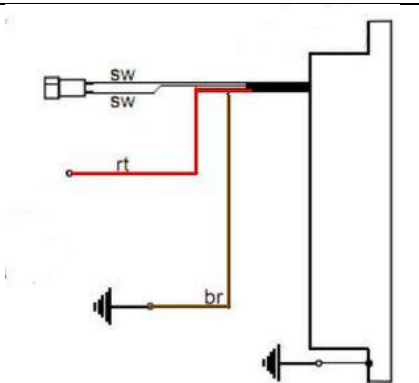


- The two black cables coming from the alternator carry the voltage for the lights, horn, turn signals, etc. They have nothing to do with the ignition.

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

Caution: Any **confusion between positive and negative** will result in **immediate destruction of the controller, which is not covered by the warranty!** (The destruction can be clearly detected by the burnt smell!)

Regulator variant: with DC regulator with built-in smoothing capacitor (73 00 799 50), use circuit diagram **91ik_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 negative and connected internally to the regulator housing.

- The high-voltage cable (ignition cable) ...

Please **do not use** "Nology Supercables" ("hot wires"). These cause interference in VAPE systems and can damage the electronics

... Screw it into the ignition coil and place the rubber cap over it. This is easier to do before installing the coil on the vehicle. Please also use the ignition cable supplied and not an old, undefined cable.

- You will be doing yourself a favor if you replace your motorcycle's spark plugs and spark plug connectors (preferably with 1-2, but no more than 5 kilohms) at this point. More than enough malfunctions can be traced back to "apparently good" cables, spark plugs, and connectors (including brand new ones)!

- **Do not use** spark plugs with internal interference suppression resistors **together** with interference-suppressed spark plug connectors (this results in double resistance). Always use only one interference suppression method.

- Finally, **before installing the battery and starting the engine for the first time**, please take your time to check all fastenings and wiring. Remember to replace all bulbs from 6 to 12 volts. Also remember that you will now need a 12V battery. The horn can remain at 6 volts.

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

- **IMPORTANT:** Please note that if **the crankshaft has been reconditioned** (at an earlier date), its alternator pin has been over-turned and is therefore shorter. This causes the rotor to sit lower, which may result in contact between the rotor (the rivets are the lowest point) and the stator coil. This will destroy the stator and cause ignition failure.

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

- Observe the safety instructions and requirements specified by the vehicle manufacturer and the automotive trade. Installation requires specialist knowledge.
The ignition markings on the material are for orientation purposes only during installation. After installation, please check that your settings are correct using suitable methods (stroboscope) to prevent damage to the engine or risks to your health. You are solely responsible for installation and correct settings.

- Caution Ignition systems generate high voltage, danger to life! Our ignition coils generate up to 40,000 volts! Careless handling can not only cause severe pain, but can also be harmful to the heart! People with pacemakers should not work on ignition systems. Always maintain a safe distance from the electrode and open high-voltage cables, and when testing, press the spark plug connector firmly to ground with an insulating object to safely discharge the voltage. Never pull a spark plug connector to synchronize the carburetor! Never disconnect or touch ignition cables while the engine is running or at starting speed. Only wash the vehicle when the engine is not running.

- If your VAPE ignition cable was supplied with rubber spark plug connectors attached (*which do not have a built-in interference 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 normal ones and use shielded spark plug connectors (*under no circumstances should you use interference-suppressed spark plugs AND interference-suppressed spark plug connectors at the same time. This would lead to interference, especially difficulty starting the engine*). The total resistance of the spark plug-spark plug connector combination should not exceed 5kOhm.

- Remember that spark plug connectors age and increase their resistance. If an engine only starts when cold, it is almost certain that the cause is a defective spark plug connector or spark plug. Do not use so-called ignition-enhancing cables (e.g., Nology).

- After installation, be sure to check that all retaining screws are tight. If the parts loosen, damage will occur. We only tighten the screws loosely during pre-assembly!

- Give the newly installed system a chance to start up before you begin measuring and testing everything. Please also note our instructions on how to check for sparks. All our parts are tested before delivery. There is hardly anything you can measure anyway. Under no circumstances should you measure the electronic parts (including the ignition coil, except for its high-voltage output). You risk destroying them and will still not obtain any useful results!

Remember that if the engine does not run immediately, the problem may often lie with the carburetor, the intake rubber, and, above all, the spark plug connectors and spark plugs (unfortunately, even completely new ones). (As a rule, the settings must also be changed after installing the Lima.) If the system does not run immediately, check the ground connections, especially between the ground of the chassis and the engine block.

Before you remove the parts again and send them to us for testing, check our knowledge database to see if there is already an answer to your problem. If not, use our service ticket system to request specific help.

- If you have a system with a double ignition coil, please note some special features of this coil. The ignition will only work correctly if both spark plugs are connected to the coils. This means that you cannot even remove one spark plug to test it, because each output draws power from the other spark plug's ground connection. If you really only want to test one side, the other coil output must be connected to ground.

- The spark produced by classic breaker systems has a low energy level of approx. 10,000 volts and therefore appears yellow and thick. The spark produced by our systems is a high-energy spark with up to 40,000 volts and is therefore very sharply focused and blue, which makes it less visible. In addition, the spark is only generated at kickstarter speeds. Simply pressing the kickstarter lever by hand does not produce a spark.

- Most of our systems are ignition and light current generators in one. This can be recognized by the presence of a regulator. Apart from the voltage output by the regulator, there is little else you can measure on the regulator. If you are not getting any power, check the ground connections and the wiring from the regulator to the ignition switch. 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 special features that need to be taken into account.
- Never perform electric welding on the vehicle without first completely disconnecting all electronic parts containing semiconductors (regulator, ignition coil, and control unit). The stator and rotor do not need to be removed. Only solder with soldering equipment that is operated via series transformers or unplug the soldering iron before soldering to avoid damage to the parts due to overvoltage. 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 destroy the controller and the ignition coil immediately! As a rule, color is always connected to color when wiring. Exceptions are expressly mentioned in the instructions. Damage caused by reverse polarity is not covered by the warranty.
- When installing the rotor, please take care not to damage the magnets. Avoid direct mechanical impact on the rotor. **Never place the stator in the rotor when transporting the Lima;** follow our shipping instructions (packaging).
- Lightly oil the outside of the rotor, otherwise it will rust quickly in aggressive environments (which is not harmful, but looks unsightly).
- Never use a claw puller or hammer to remove the rotor. This can cause the magnets to come loose. Always use only an M27x1.25 screw-in puller (see installation instructions).
- If your vehicle is not used for a long period of time, you should disconnect the battery (if present) to prevent slow discharge via the rectifier diodes. However, even with the battery disconnected, you will notice that it discharges after a long period of time; this is normal.
- Please note these instructions, but at the same time, don't let them unsettle you. Thousands of customers before you have already successfully installed our systems.

Good luck and enjoy driving!

VAPE Schaltplan 91ik_102 (wiring diagram)

