

## System 72 90 499 00

**INFO** [price](#)

## generator for [wartime BMW R75](#), generator only, no ignition

This is a follow up system for [70 85 999 00](#). Main difference is that the difficult to adjust pickup in the tower was done away.



Magnet based generator, output at 12V/180W DC. Replaces old Noris dynamo with regulator. The system is technically capable of running [without battery](#). No changes on engine casing needed.

Regulator has to be mounted outside the engine.

### Advantage over original system

- all parts are new
- solid state ignition and advance
- more light output ([with light bulb 40/45W](#))
- very stable ignition with solid spark
- better starting, better fuel burning
- no wear anymore on collector, governor and points

### please note

This is a replacement system, not a 1:1 copy of the stock material (if you want this you will need to address BMW). We use the main components also in other similar systems as only multi use material enables us to offer a reasonable price, especially on such rather complex constructions.

The housing is made of aluminium, hence alu-coloured. The seat area for the (not delivered) front cover is different. See [dimensions here](#). Fastening holes for the cover are (from oct 18th on) [M5 and are horizontally spaced by 76mm](#). The [wire exits the tower at rear](#).

The system can not be used in KS750, even though the stock systems may be same. Our systems differ in one critical dimension.

### Documentation

- [assembly instructions \(for 72 90 499 00 and for 73 14 499 00\)](#)
- [wiring diagram](#)
- [parts in the pack \(photo\)](#)

### Photos

- [the installed open system](#)
- [new system with stock cover](#)
- [system on engine](#)



**assembly instructions for [system 73 14 499 00](#) and [system 72 90 499 00](#)**

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**If you can install your stock dynamo/alternator and possess basic mechanical skills, you can install a VAPE system!**

**If you never have worked on your electrical system, better have it done by someone who knows.**

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.

**IMPORTANT:****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. 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.

**Designated use**

This system is designated to replace stock dynamo/alternator in vintage and classic motorcycles. As it is a voltage generating unit only, it will not change your engine characteristics. In most cases it will supply more electric power and hence enhance roadworthiness and comfort by offering better lighting, better function of side indicators and horn and, compared with the aging stock systems, increased reliability.

The system does not replace your ignition. **Ignition must be either a completely selfsupplying magneto or there has to be a battery in the system.** The system has not been tested to work with a third party electronic ignition. It may work with it, but also may not and even may damage it. At any rate the system will charge your battery well.

**The charging system is only suitable for use with rechargeable 12V (6V systems 6V) lead-acid batteries** with liquid 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 rechargeable or non rechargeable batteries.](#)

	<p>This is a <b><u>replacement system and not a copy of the stock material</u></b>. The parts in this system therefore look different and might fit differently (notably ignition coil and regulator) requiring some adaptation by you.</p> <p><b>During assembly imperatively start with assy of engine based parts</b> to see that those really fit before you start fitting the external parts. In many cases customers assemble those first and thereby often <b><u>modify them in breach of warranty</u></b> which renders them unfit for renewed sale. <b><u>Replacing old electrical 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.</u></b></p> <p>Our systems are <b><u>NOT tested for use with third party electronic devices (such as GPS, mobile phones, LED lighting or electronic ignition)and may cause damage to such parts.</u></b> Possibly existing <b><u>electronic tachometers</u></b> will not work with the new system. Read our <b><u>information for suitable solutions</u></b>. Possibly existing safety switches and electronic valve controls are not supported.</p> <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.</p> <p>Before you order a system, please check whether a <b><u>puller tool</u></b> for the new rotor is included in the kit. If not, better order it at the same time. You might want to order light <b><u>bulbs, fuse, horn, flasher unit</u></b> etc. 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 warranty.</p> <p>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.</p>
 <b>Internet</b>	<p><b>If you have access to the Internet, best view those instructions online.</b> You get larger and better pictures by clicking onto them and possibly updated information. System list at <b><u><a href="http://www.powerdynamo.biz">http://www.powerdynamo.biz</a></u></b></p>



The new rotor may be pulled again with the supplied puller M27x1,25 (part 70 85 899 99) to prevent damage to the M12x1 threading.

**Note:** Never use a claw puller, a hammer or any other device, that will shake the magnets off.



**You should have received those parts:**

- complete housing mit installed stator coil
- rotor (flywheel) / puller tool
- regulator/rectifier
- fastening screws



**Do not take the stator coil off**, you only risk to damage the wires underneath it.

The new dynamo (now actually magneto) body is ready assembled.

You will have however to take the holding device for the cover off. This is a set of 2 rings. Loosen the 2 screws and lift the top ring off. Than turn the lower ring by 90 degrees (clockwise or anticlockwise until its notches come clear. Take the ring out.

For the KS750 and the BMW R75WH there are 2 spacer bolts M5 spaced horizontally at 76mm. They are screwed in and secured by loctite. With this arrangement you may continue to use the [stock cover screws](#). Should you not have those stock screws, you may use lenti shaped countersunk screws M5x16 (not longer than 16mm! as they otherwise might conflict with the rotor).



(Photo shows engine of the Zündapp KS601)

Make sure your motorcycle is secured, preferably on an elevated work bench and that you have good access to the dynamo side of the engine.

Disconnect your battery and take it out of the motorcycle. Note that you will be installing a 12 volts system, so you will either need a 12 volt battery or you can use the option of driving without. You will still have to replace all lightbulbs to 12 volt ones. The horn may stay at 6 volts. For driving without a battery, please observe our [information on driving without battery](#).



**The first step, old parts will be taken off the bike!**

Disconnect the wires from the old dynamo.

Unscrew the dynamo housing and take it off. Pull the rotor off the crank. (Insert a 8mm pin into the rotor and screw the original holder screw behind. It will pop off the crankshaft.)

The magnet on top of the engine will no longer be used. It may remain for optical reasons or can be removed.





Disable the functioning of the magneto. When you completely remove it, make sure to cover the engine opening to prevent oil spillage.

Place the new housing onto the dynamo seat at the front of the engine. Fasten it with the 2 flathead screws provided. No worry, the 2 screws will do, even if before it had been 4 of them.



Now place the cover holding device back into position. Place the bottom ring (the one with the external nodes) into the groove of the housing and turn it until it is back in its original position. Then place the second plate on top and screw the 2 tight together. This will block any movement of the device. It is now ready to take the cover.



Remains to place the stock cover on front of the housing and fix it with the 2 stock screws M5.

If you don't have the stock screws, use countersunk screws M5x16.  
Should you use a cover different in height to the stock cover check length of screws as needed.



With the new regulator/rectifier has to find a place on the motorcycle. The regulator is well dimensioned and does not need to get direct airflow.

An easy option (if you opt for [driving without battery](#)) is to place them in an [empty battery casing](#).

As the system may work without battery, its an easy place to hide this part.

Connect the parts as shown in [wiring diagram g-only](#):

<p>*</p>	<p>The new regulator/rectifier has a compact plug with 6 positions, of which <u>one</u> is not used. A female plug cover fitting to this plug is delivered. Into this female plug you have to insert the following wires (which have terminals that snap into the plug):</p>
<p>The two black cables leading from the generator ...</p>	<p>... connect to pins 1/4 of the new regulator (from there equally black wires lead inside the unit). It does not matter which wire connects to which of the both terminals (1/4) as they carry alternating current.</p>
<p>The new brown cable with the round eye terminal ...</p>	<p>... connects pin 3 of the regulator unit (from there equally a brown wire goes inside the unit) with the negative pole of the battery or</p>

	(in case you drive without battery) to ground (chassis).
<p>The new red cable with the round eye terminal ...</p> <p><b>Take care:</b> Wrong polarity will damage the electronics!</p>	<p>... connects to pin 5 of the new regulator (from there equally a red wire goes inside the unit). Here your regulated positive voltage comes out to connect to battery plus, or (in case you drive without battery) to the voltage input terminal of the main switch (ignition lock, German bikes: pin 51/30).</p>
Make sure that you have a <b>16A-fuse</b> between battery and vehicle circuitry.	
<p>The green/red wire at pin 6 of the new regulator ...</p> <p><b>Remark:</b> Until November 2007 this wire has been a single wire outside the compact plug.</p>	<p>... is for the charge control light. You connect there the wire that formerly did run from the control light to the original regulator.</p> <p>Sure that this control only functions with a battery present. Should you drive without battery but still connect the wire, you will see that the light glows even as the generator generates voltage. So without battery, do not connect it.</p>
The charge light control function is based on a transistor switch and is an additional function. Even if that should fail, the regulator might still be in ok working condition. Simple check: have the engine running, turn lights on, disconnect the battery. If you have bright lights the unit is ok.	
<b>Remarks for 6 Volt systems:</b>	<ul style="list-style-type: none"> <li>There is no charge light control function in our 6 volts systems. Hence no green/red wire</li> <li>The ground wire between plug and regulator body is not brown, but white.</li> </ul>
*	<p>Finally - <b>and before installing the battery and before the first kickstart</b> - please re-check carefully all connections and fitments against the wiring diagram. Do check battery and light bulbs for correct voltage (12V).</p> <p>Should something not work, please consult our <a href="#">trouble-shooting guide</a> on our homepage. As a first step disconnect the blue wire from the coil and re-test.</p>
	<p><b>IMPORTANT:</b> During <b>crank shaft repair</b> the dynamo shaft is often machined and gets shorter. The result is a rotor sitting lower, possibly touching now with its rivets the stator coil. The result is a destroyed stator and ignition failure.</p> <p>For <a href="#">more detail and how to check see (online) here</a>.</p>
<b>Important safety and operating information for dynamo only systems</b>	
#	<p>Safety first! Please observe the <a href="#">general health and safety regulations motor vehicle repair (MVR)</a> as well as the safety information and obligations indicated by the manufacturer of your motorcycle.</p>



#	After installation, please <u>check tightness of all screws</u> . If parts get loose during run, there will be inevitably damage to the material. We pre-assemble screws only loosely.
#	Give the newly installed dynamo a chance to work, before you start to <u>check and test</u> . Our parts have been checked before delivery to you. You will not be able to check much anyway. At any rate do refrain from measuring the electronic regulator other than the output voltage. You risk several damages to the inner electronic there. You will not get any tangible results from the operation anyway. Check ground connections carefully and, to be on the safe side and for testing, put an additional ground wire from the regulator directly to the engine block.
#	Never do electric arc welding on the bike without completely disconnecting all parts containing semiconductors (ignition coil, regulator, advance) stator and rotor need not be taken off.
#	Electronics are very sensitive to wrong polarity. After work on the system, do check correct polarity of the battery and the regulator. Wrong polarity creates short circuits and will destroy the regulator which is <b>for negative earth only</b> .
#	When you handle the new rotor, take care not to damage its magnets. Refrain from direct blows to the circumference of the rotor. When transporting never put the rotor over the stator. <u><a href="#">Observe our information relative to transport of the material.</a></u>
#	It is a good idea to cover the rotor in a thin layer of oil to reduce the risk of corrosion.
#	Never use a claw puller or a hammer to disengage the rotor. Its magnets might become loose in the event. We offer a special puller screw for disengaging the new rotor again (see assembly instruction)!
#	Should the motorcycle not be in use for some longer period, please disconnect the battery (so existing) to prevent current bleeding through the diodes of the regulator. Though, even a disconnected battery will empty itself after a while.
#	Please do observe those remarks, but at the same time, don't be afraid of the installation process. Remember, that before you, thousands of other customers have successfully installed the system. <b><i>Enjoy driving your bike with its new electric heart!</i></b>

# Schaltplan ohne Zündung 12V (wiring diagram w/o ignition 12V)

