Design Drawings for a Prototype of a ZPE-converter to the EMDR-Principle

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Abstract:

In [1] one of the authors developed the construction guidelines for a magnetic ZPE-converter, which he called Electro-Mechanic Double Resonance principle (EMDR). In [2] he gave a crucial explanation how to make this principle work with low speed rotation. Now we present technical design drawings so that every skilled mechanician can build up an experimental prototype.

Article body:

(1.) Fundamentals

The central idea, according to which the technical drawings have been developed, is the EMDR-principle presented in [1] in combination with the use of the magnetic multiple of order as high as possible, because a high-order multipole reduces the angular velocity necessary for the rotor. The idea was suggested already in figure 33 of [1].

The problem of the suggestion is, that the induction coil(s) for the interaction between the rotating magnet on the one hand and the LC-oscillation-circuit on the other hand has to be mounted rather close to the rotating magnet(s) in order to guide the magnetic fields flux lines in optimum way, so that the time dependent alteration of the magnetic flux through this coils will be maximal. The solution to this problem was presented in [2], by mounting the induction coils directly around the path of motion of the rotating magnet(s) as close as possible.

A simple bar magnet as presented in [1] has a multipole-order of n=2 (dipole), and the numerical example there was computed with very 30.000 rounds per minute. Such a large angular velocity is not very easy in practical operation. This is the reason, why a high-order multipole magnet-array has been suggested as mentioned above. Fact is, that the order of the multiple “n” has the consequence to reduce the angular velocity just by the same factor of “n”. So if we can for instance us a multipole magnet-array with 40 bar magnets (just to give a numerical example) instead of the dipole with an order of n=2, the angular velocity can be reduced by a factor of 40/2=20. For illustration, please look to figure 1, from where also the importance of the orientation of the bar magnets in the example can be understood. In the mentioned numerical example, the angular velocity of 30.000 rounds per minute is decreased down to 30.000 / 20 = 1500 rounds per minute, which is not very complicated in practical operation. In figure 1, the number of magnets defining the multiple-order is drawn with different values, in order to demonstrate that this number can be varied arbitrarily. By this means, the rotation of the magnet array can be varied rather easily in order to adjust the magnet to the requirements of the LC-oscillation-circuit. We can go so far, that even the orientation of the magnets can be varied from magnet to magnet, in order to guide the field flux lines according to the engineering-requirements. By this means, it is even possible to produce setups like Halbach-Arrays or others.

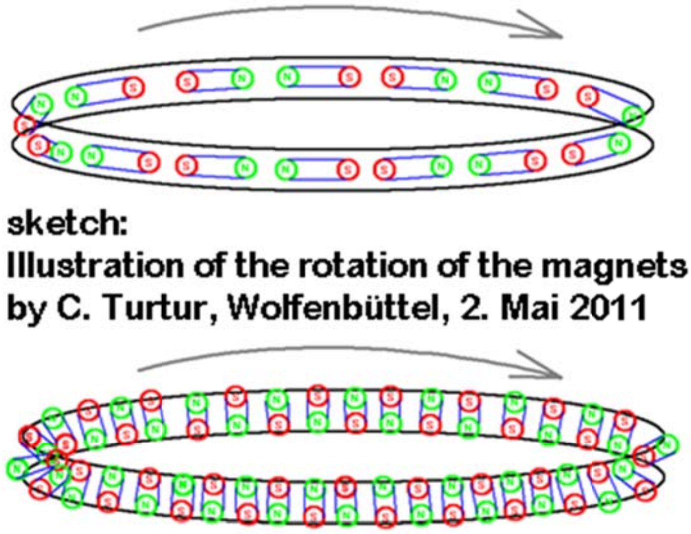


Fig.1:
A rotating ring, containing many magnets to define a magnetic multipole array.

On the basis of these explanations, the fundamental setup is defined:

It is helpful to mount a large number of magnets (in our example: bar magnets, because they are not expansive in price) in or on a rotating ring, so that the magnets can be moved or orientated arbitrarily, in order to adjust the magnetic fields not only to a high order multiple, but also to a stray-field as large as possible, so that the time derivative of the magnetic flux passing the induction coils, is maximal. For the orientation of the induction coils, defining the interaction between the mechanical rotation of the magnets and the LC-oscillation-circuit, please have a look to figure 2, where the induction coils are drawn in blue colour. It should be mentioned explicitly, that the number of these induction coils can also be varied arbitrarily, as it has been already pointed out in [2].

This leads to an additional requirement, also illustrated in figure 2: The rotation of the magnet-array shall fixed with a central bearing and radius arms (as we for instance know it from bicycle rims), because the rims would strike the induction coils. This means, that the top part of figure 2 is possible only, as long as one a large induction coil is applied, but the bottom part of figure 2 is possible also, if one or many small induction coils close to the path of the rotating magnets are applied.

Because the functioning-principle of the zero-point-energy converter has higher priority than the application of a central bearing with rims, we have two apply a special type of bearing, which allows the rotation of a closed ring containing several magnets, passing the induction coils as shown in the bottom of figure 2.

In principle, every bearing which fulfills these requirements can be used, as long as it does not disturb the necessary components of the EMDR-converter. On the following pages, we present an example for a technical construction, which is able to fulfill these requirements. Nevertheless it should be mentioned, that the construction can be altered, as long as the alterations do not disturb the requirements.

Important is, that the friction of the bearing is as low as possible. Therefore we could think about a hydrostatic bearing, as for instance using a ring swimming on the surface of a liquid (for example oil or water). If the rotation is not too fast, the coefficients of friction of water are rather low. If the angular velocity is increasing, the rotating ring could slide on the surface of the water (resp. on the surface of the hydrostatic liquid of the bearing). For this purpose, the surface of the ring, touching the surface of the liquid, can be organized in a special way (as we remember, if we regard a hydrofoil boat).

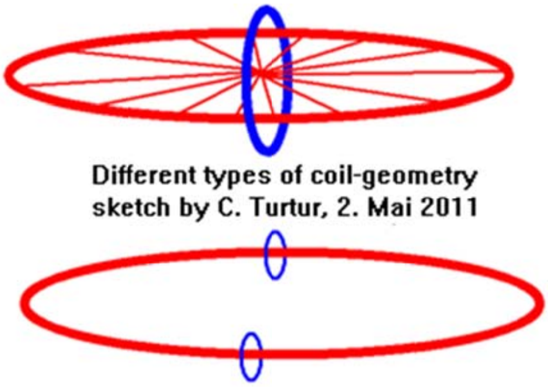


Fig.2:
The rotating ring containing the magnetic multiple array is drawn in red colour, the induction coils are drawn in blue colour.
The very efficient setup with small induction coils, close to the rotating magnets, requires to avoid leverage arms also drawn in red colour.

In the following sections, we describe an example for a construction of a practical prototype of such an efficient EMDR-converter.

(2.) The Magnets

It is very easy to find appropriate strong neodymium bar-magnets in Internet, which are not very expensive, even if many of them have two been bought. An example for such magnets is shown in figure 3, where each magnet provides a sticking force of more than 40 Newtons.

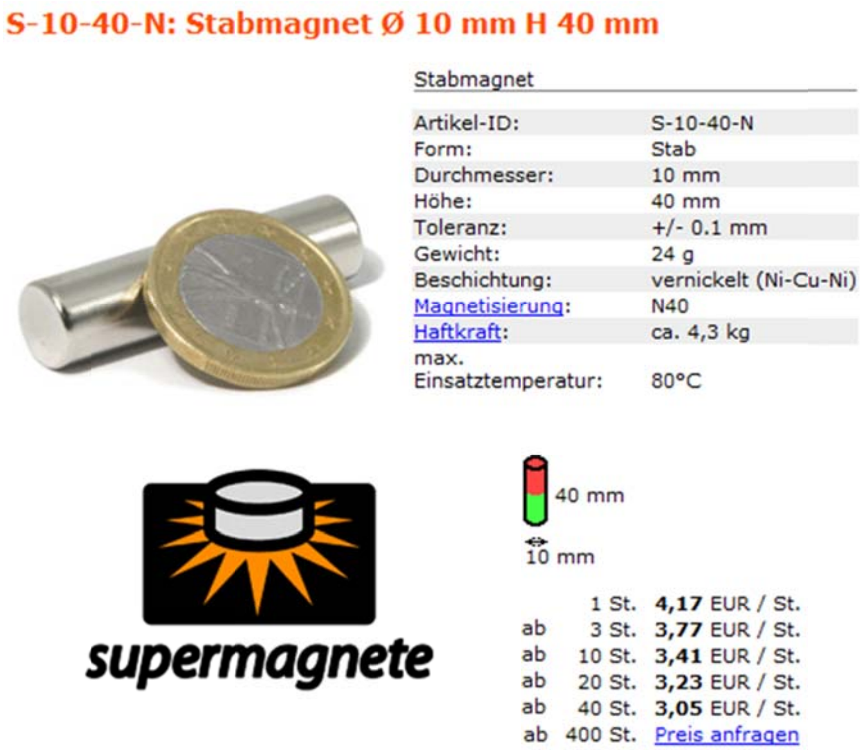


Fig.3:
Example for neodymium bar-magnets, which can be applied for the construction of an EMDR converter.

(3.) How to mount the magnets on the rotational ring

With regard to the prototype, the magnets have to be fixed in a very special way, so that their number and their orientation can be altered, in order to get enough degrees of freedom, to adjust and to optimize the setup, according to experimental findings and results, during the phase of the analysis of the prototype. This allows, to adjust the system parameters while the experimental test and development of the EMDR-converter is conducted. (Just have the Coler-apparatus in mind, where even the inventor, Hans Coler, need several days of work, to reproduce his will known adjustment of the system parameters.)

A technical drawing for the suggestion of the magnet carrier is shown in figure 4. A discussion of the details follows subsequently to this figure.

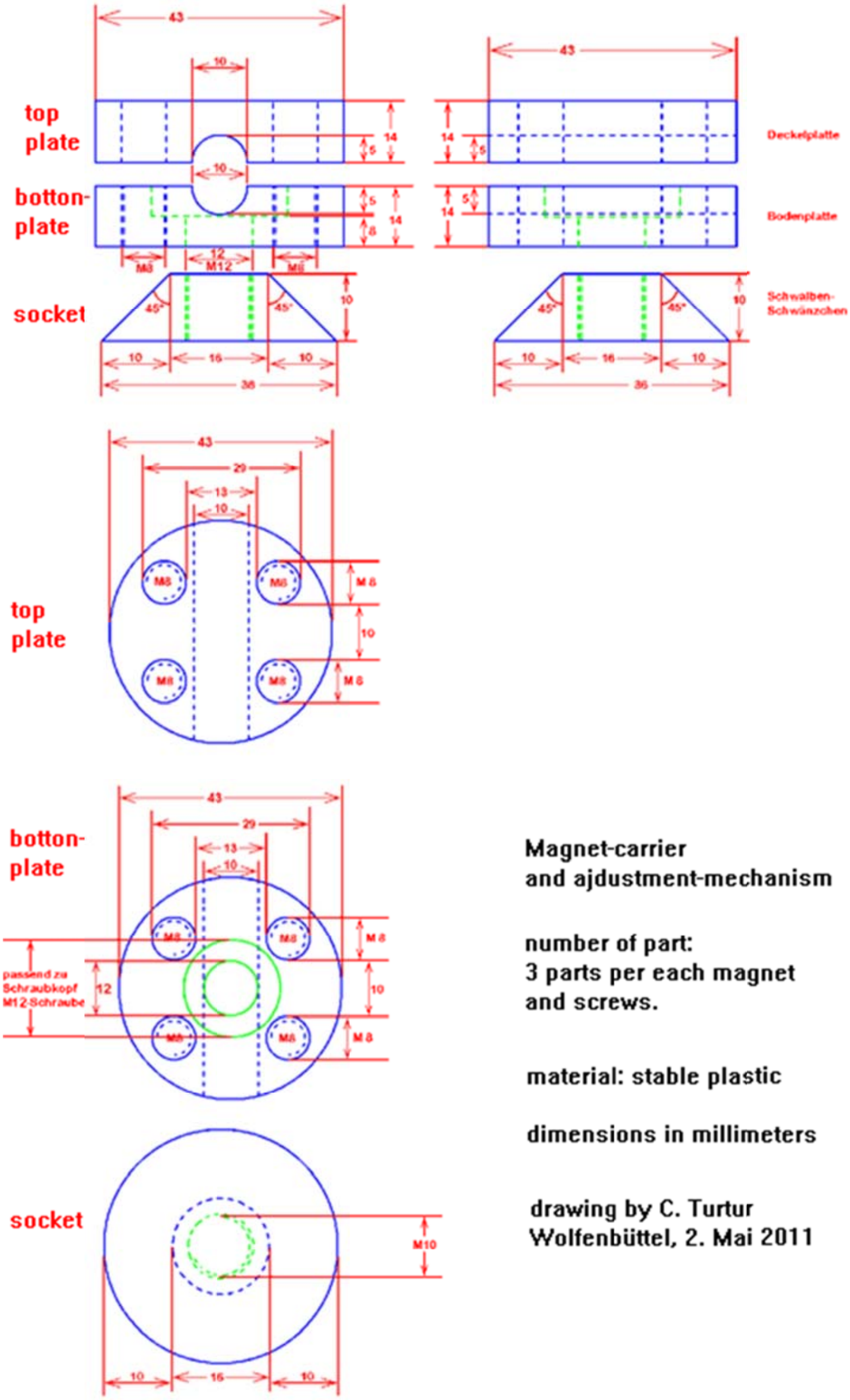


Fig.4:
Design of the carriers to mount the magnets in such way, that they can be adjusted and orientated according to arbitrary requirements.

For each magnet, one carrier has to be manufactured, consisting of three parts per each carrier (in our example), together with appropriate screws. In figure 4 we see that the top-view, the front-view and the side-view of these carriers, as usual in technical drawings. In the top-view, the three parts mounted on top of each other, are displayed next to each other, in order to avoid confusion within the drawing.

There are two parts defining the top of the carrier, which have the purpose to hold the magnet. They are fixed to each other with screws, so that the magnet cannot glide away.

Each carrier with its magnet is mounted with a stable screw (M12) on a base plate with rotational symmetry, so that it can be orientated arbitrarily within the channel. This variability is necessary for the purpose of experimental research now, but later, the position of the magnets can be fixed, as long as the fixation allows the adjustment procedure of the ZPE-converter.

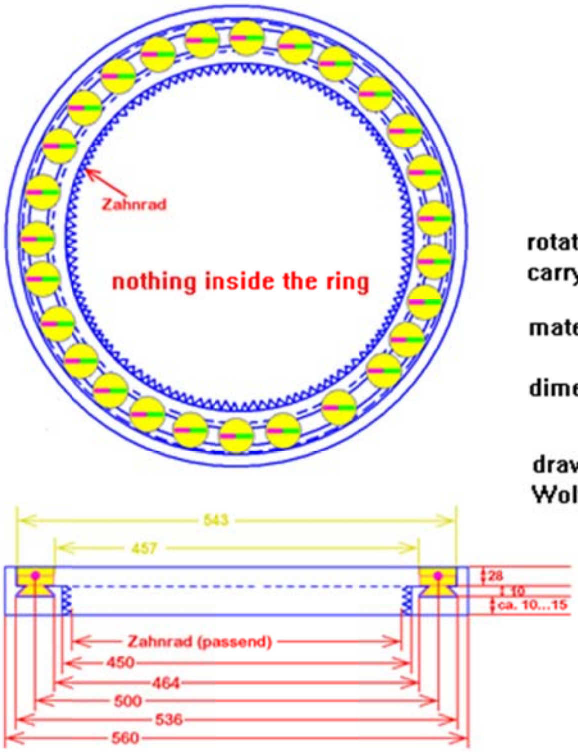
The carriers as described are drawn in figure 5 yellow colour, and they are mounted within the circular channel, so that the magnets can not only be orientated arbitrarily, but also their number and their positions can be changed arbitrarily. This screw in the middle of the base plate has the purpose to fix the carrier together with the magnet at its position within the channel. This type of construction allows a large variability, in order to adjust and to optimize the ZPE-converter not only to experimental findings, but also to practical requirements within applications. Later, for well-defined given applications, the setup can be chosen less variable, according to special load requirements being applied. The EMDR-converter is designed to convert the zero-point-energy of the quantum-vacuum into electrical and mechanical energy at the same time. An alteration of the technical design can for instance allow, to vary the relation between the electrical and the mechanical power output.

Important:

The complete setup must be made from non-(ferro)magnetic material (i.e. diamagnetic or paramagnetic, with low susceptibility), which furthermore is an electrical isolator. Probably wood does not have enough mechanical stability, ceramic might be too brittle, but plastic should be a good choice (duromer). This has the consequence, that all parts described in the figures 4, 5 and 6 have to be made of non-(ferro)magnetic and non-conductive material, not only the parts being machined and milled, but also the screws and the other parts being used. Ball-bearings can be made of ceramic, because it is very easy to buy such ball-bearings. Only the active components, such as magnets, induction-coils, electrical connections (wires) and the capacitor banks, do not have to follow this restriction of non-(ferro)magnetic and non-conductive materials.

(4.) The rotating ring

The part, which we denominated the rotating ring, is responsible for the rotation of the magnets, which is necessary for the conversion of the vacuum-energy. A possible suggestion for the setup is shown in figure 5. The discussion of the technical details follows subsequent to this figure.



rotating ring, carrying magnets

material: stable plastic

dimensions in millimeters

drawing by C. Turtur Wolfenbüttel, 2. Mai 2011

Fig.5:
Plastic ring to carry the magnets and keep them on their rotation in order to organize the conversion of zero point energy.

In the top part of figure 5, we see the Top-view, and in the bottom part of figure 5 we see the side-view of the rotation ring, carrying many magnets. The magnet-carriers, as we know them from figure 4, are drawn in yellow colour. Their position and their orientation can be arranged in figure 4, and they are fixed with stable (for instance M12-) screws as mentioned above.

At the outside border of the rotating ring, there is a stable wall, absorbing the centrifugal forces acting on the magnet-carriers and the magnets during rotation. This has the purpose, that the screws are not stressed too much during the rotation of the rotation ring.

In the inside of the rotation ring, we provide a mechanism to extract mechanical energy. This can be for instance a Crown gear (or some other appropriate mechanism), which drives an electrical generator, converting mechanical energy of the rotation into electrical energy. The mechanism for the extraction of mechanical energy can also be mounted on the outside of the rotating ring, or somewhere else - just following the optimum way of technical requirements.

By the way, the electrical generator for the extraction of energy can also be used as a starter engine for the initialization of the rotation of the rotation ring. The point is, that the EMDR-converter has to be started once, and after it arrived at its angular velocity necessary for conversion of zero-point-energy, it runs without any supply of classical energy. This starting-process can be done with an electrical starter, as well as by hand (if necessary with a little gearbox and perhaps a crank handle). We shall keep in mind, that the EMDR-converter has to be started with an angular velocity not very far below the angular velocity of permanent operation.

In practical operation, we have to be sure, that the starter-mechanism does not disturb the process of converting zero-point-energy. This means, that the starter-mechanism must not interfere with the magnetic AC-field of the EMDR converter.

Additional remark:

The rotating ring has to be manufactured in such a way, that it can be dismounted into several separate parts, for instance such as for instance 2 with parts with 180° per each or 3 parts with 120° per each. This is necessary, because it provides the possibility to insert the magnet-carriers with the magnets into the rail track. And furthermore it provides the indispensable possibility, to bring the induction coils around the rotating ring and into their position.

(5.) The bearing

The very first and most important requirement to the bearing, on which the rotating ring can rotate, is the minimization of the mechanical friction !

We see a possible example of such a bearing in figure 6 and speak about details subsequently to figure 6.

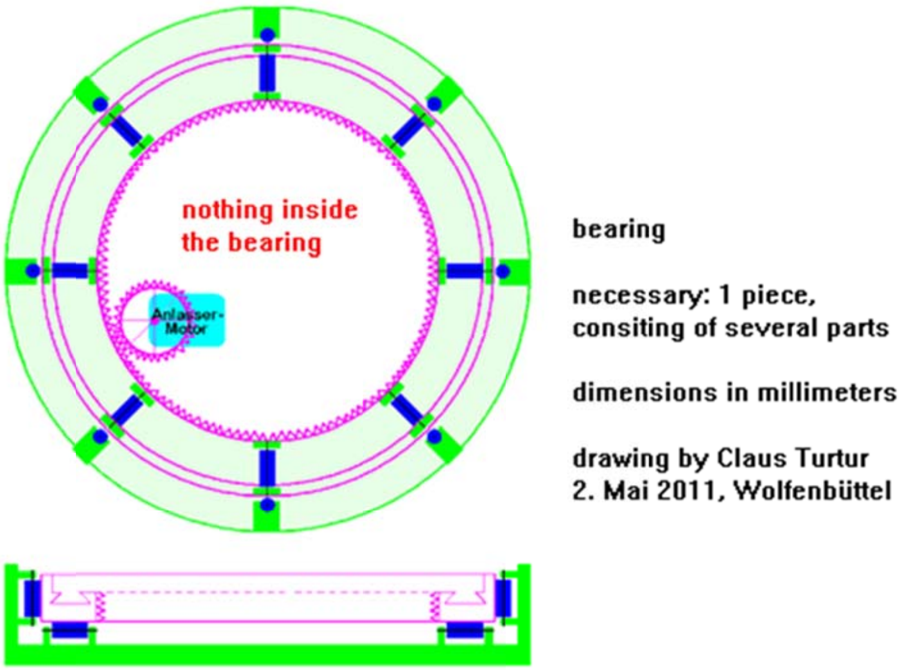


Fig.6:
Possible example for a bearing, on which the rotating ring can rotate.

The lowest possible friction imaginable could be achieved for instance with a type of bearing such as electrostatic bearing, such as aerodynamic bearing. (Magnetic bearing is excluded due to interactions with the EMDR-principle.) For we do not want to have input energy for the system, and aerodynamic bearing might be organized by a special profile of the surface of the rotating ring. The aerofoil (wing) of an airplane is an example for such a type of bearing, where the profile allows to support the mechanical position of the parts in motion. For the very first prototypes (of the EMDE-converter), such a type of bearing seems rather laborious, thus probably such a high-tech solution should be realized later.

The next possible variant would be a hydrostatic bearing, which could be discussed seriously. The rotating ring could have special profile, so that it can glide on the surface of water (or on the surface of some other liquid) with very low friction losses. In principle this would be very fine, as soon as the manufacturing of the profile as possible (for instance at the bottom of the rotating ring). But this type of bearing has to be organized in such way, that the liquid of the hydrostatic bearing is not lost due to splashing.

Not too difficult is the use of very many very, small glass- or ceramic- spheres, so that the rotating ring might glide on thousands of such little spheres. This might be worth trying.

Very easy for the practical manufacturing (although not with the lowest possible friction) would be a bearing without fluids (such as gases or liquids). This is a bearing, were solid surfaces are moving relatively to each other. Due to the easiness of manufacturing (with regard to the very first prototypes), we developed figure 6 with the use of ball-bearing, roller-bearings and toe-bearings. The rotating ring is mounted on rotating cylinders (rolers), and the rotation of the rotating cylinders is organized with ball-bearings or toe-bearings or some other appropriate bearings. The number of this bearing should not be too small, so that the rotation is stabilized properly, but it should not be too many bearings, so that the friction is not enhanced more than necessary. There are some bearings below the rotating ring, and additionally some bearings on the side around the rotating ring, because the rotating ring has to be fixed with regard to two degrees of freedom (of mechanical motion), and only one degree of freedom (the rotation) is allowed. The roller-bearings are drawn in blue colour, their axis in black colour, and the friction of the rolling cylinders is minimized by the use of additional bearings.

Important: All these bearings are made from non-ferromagnetic and non-electrically conductive materials, in order to avoid magnetic disturbances and eddy-currents. This is recommendable for the very first prototypes. As soon as the prototypes are working properly, we can later try, if some of its parts can be made of metal (as for instance to provide good fatigue life of the machine).

The Crown gear for a possible starter engine, as well as for a possible electrical generator to extract electrical energy, is drawn here (as an example) and the inner side of the rotating ring. If the electrical generator disturbs the operation of the ZPE-converter, the rotating axis of the generator can be made long enough, to provide large distance between the ZPE-converter and the electrical generator, so that the magnetic fields of both engines will not disturb each other. As an alternative, also some driving belts or some other mechanisms could be used to gain the necessary geometrical distance between the ZPE-converter and the electrical generator.

If it is helpful for the application, there should be a mechanism, which allows to disconnect the starter-motor / electrical generator for energy extraction, from the rotating ring. This can be organized for instance with a clutch of some other device.

As soon as the EMDR converter comes close enough to the operation angular velocity, it is expected to be a self-running engine, not requiring any classical energy input, but being driven from the energy of the quantum vacuum.

(6.) Capacitor banks

Of course, the construction according to sections 1 to 5 can not work as a ZPE converter by alone. As we know from [1], the induction coils (see blue colour in figure 2) have to be connected with capacitors / capacitor-banks in order to achieve the electrical component of the electro-mechanical double resonance (principle).

For the adjustment of the system parameters, the capacitor has to be variable. For the practical operation of the motor in series-production, an electronic circuit might be used, which permanently readjusts the optimum adjustment of the capacitor.

For the very first prototypes of an EMDR-converter, a very simple realization of the variable capacitor, which requires rather large electrical current (as for instance up to several hundred Amperes), not too low voltage (some hundred volts, in some cases even more than thousand volts) and very low Ohm's resistance (some 10 milliOhms, maximum few hundred milliOhms), can be manufactured with a capacitor bank, such as for instance shown in figure 7: Two metallic rails (red colour in figure 7, material such as for instance copper, iron or aluminum) are electrically isolated against each other with a plastic bar between each other (green colour in figure 7). Each red metal bar will have to be electrically connected to one and of an induction coil of the EMDR-converter. We could for instance drill some holes into the metal bars, coming from the top (as drawn in yellow colour), into which the electrical connections of the capacitors can be inserted. Each capacitor can be fixed with a screw or with a metallic spring or with some other appropriate devices. In our example, three capacitors (drawn in purple colour) are connected, and the other connections are without capacitors. The number of capacitors in position is used to determine the capacitor of the capacitor-bank. In reality we need a capacitor-bank maybe somewhere in the range of 100 or 200 µF (or perhaps even more), but capacitors with the requested voltage, current and Ohm’s resistance can only be bought (not expensively in price) with several hundred nanoFarads or in the range of one microfarad. Consequently the capacitor-bank has to be manufactured of several hundred capacitors, and this allows us, to adjust the capacitor in very small steps, this is with rather high precision - as it is necessary for the adjustment of the system, as we know from the publication [1].

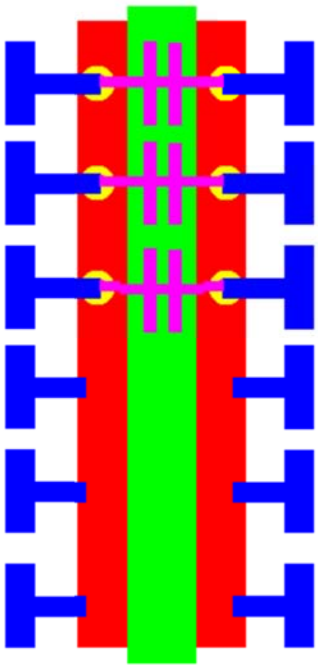


Fig.7:
Possible example for a capacitor bank, which allows a variable capacitor with large capacity, large electrical current, large voltage but very low Ohm's resistance.
The image is shown in top-view.

(7.) General remarks

The number of induction coils (see fig.8 in purple colour) is restricted by the distance of the magnetic poles, of which the magnetic multiple array consists. The distances between these coils have to be at least a little bit larger, then the distances of the magnetic poles. In the case, we use bar-magnets, this has the consequence, that the induction coils should be at least a bit more distant from each other, then the length and a distance of each bar-magnet. If this rule would not be respected, several different magnetic poles would pass one coil at the same moment, inducing voltages with opposite direction at the same moment into the same coil. The consequence would be remarkable energy loss, whose reason is the same as energy losses in eddy-current brake systems. But would be is exactly, what we do not want to have, and thus avoid this situation.

If we respect this limit, we can conclude: The more induction coils are mounted and connected to capacitor banks, the more vacuum energy can be converted per time, this means that the higher the power output we can achieve.

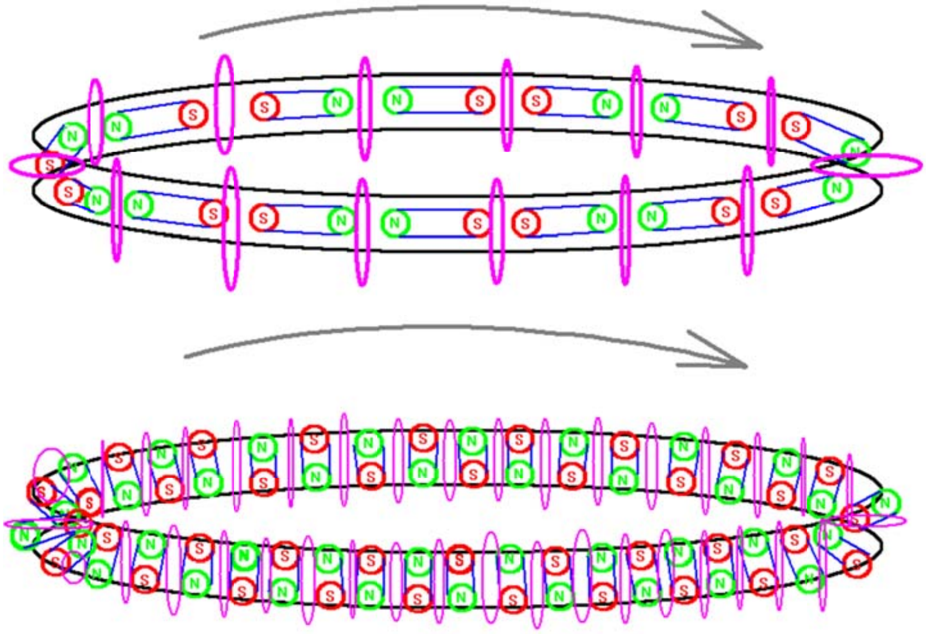


Fig.8:
The purple ellipses represent the maximum possible number of induction coils.
Each induction coil has to be connected with a capacitor bank.

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We apologize to all other people, to whom we gave only short explanations, or to whom we could not give detailed technical explications, due to our limited capacity of working time. We simply do not have the possibility to explain to everybody (who is asking), how to realize our EMDR-converter. There are too many people asking.

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