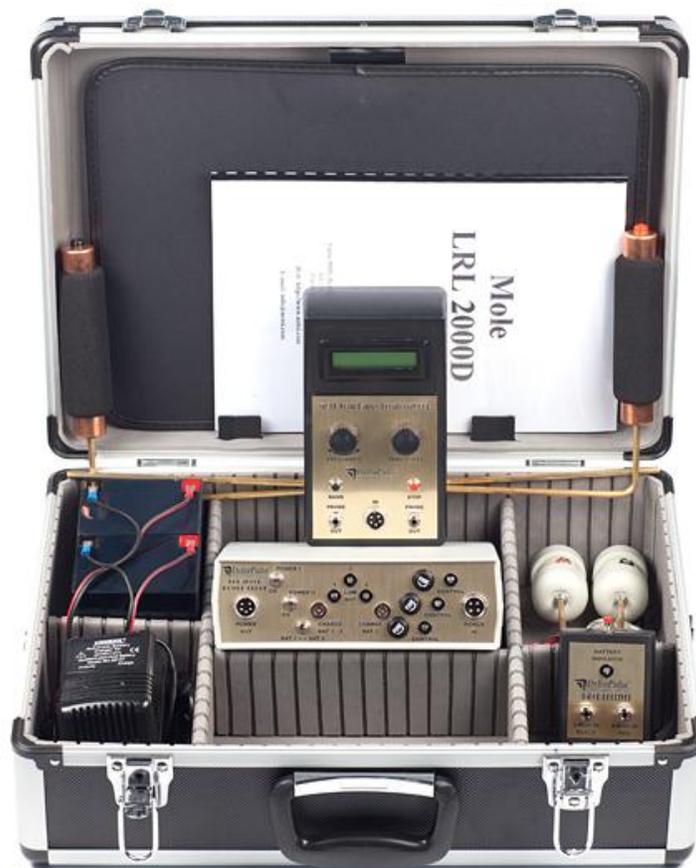


Mole LRL 2000D

Operation manual



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This unit works on the method of “Molecular-frequency discrimination”. This unit can scan 4000 to 5000 dka. in 20-30 minutes from someone that is not even a big specialist. If the unit finds metal, this object will be found with accuracy. This depends from the depth of the buried object and how long it has been in the ground. This unit saves a lot of money and walking and if you cannot find anything then, there is no object that you are looking for. If the machine finds a trace line, it has to be checked, registered and reaffirm. It is almost impossible for a professionalist to miss a real target if the conditions are OK. This unit finds also a ion fields from already taken out objects. The ions from the object are still there even after the object has been taken out. For this purpose you need the help of the Eliminator, which will eliminate the ion field in the ground. If the object has been taken out the trace line will diappear. Also you can check that place with machine with Pulse-Induction, with receiver-transmitter. If the object is there the trace line will move just a bit off from the original place of trace.

LRL 2000D finds the frequencies resonance for the different metals to a depth of 5000 meters and depth of 60 meters by a good operator. The registration of the object depends of the quantity of the metal, the soil’s minerals and dryness, the operator and how long the object has been there. **LRL 2000D** can find reefs and raw materials, and possibly gold areas. The metals can be registered under the water and through water. It is possible by the help of the two drill with are stuck in the ground in a distance of 60-90 cm between each other. They omitt electromagnetic field that goes in all directions. It is the strongest where the electrical resistance is the smallest. The field widens by the soil and the water in it. When the distance increases the power of the field decreases. If in the area of the detection there is a metal the unit will find it. Between the drills will accure resonance currents, which can follow and register. This resonance is between

the drills and the object. After it there is no trace line, even that the trace line goes on. If the soil is dry or rocky then the currents do not go in a straight line, following the water in the soil. The most important for the band area of the unit is the size of the object.

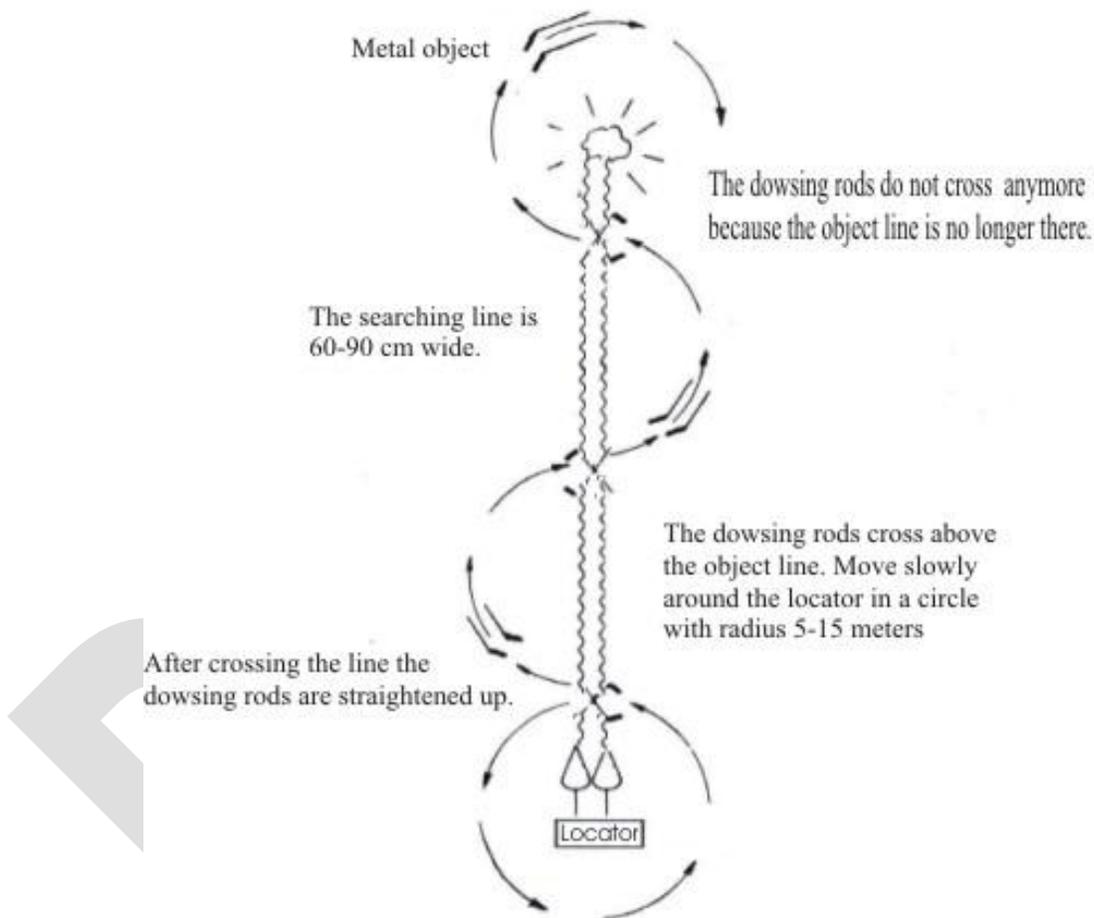


Fig.1 – Method of searching

The big objects are found at big distances and the small ones up to 40-50 m. The time the object has been there and its chemical analysis are also important. The longer the object has been there the easier will be to find it, because there are more ions and the field is stronger. The ions are created by the electrolytes in the soil and they are around the object. Therefore even objects from thousands of years old are found easier than some from recently buried. The type of metal is also a factor. Bronze, copper, lead and silver are easier found. Gold is found the hardest, because it has small chemical activity with the other objects in the ground. For example 5 kg. of gold are carried in one palm and that small area and small active process makes it hard for ions to go around it and it is very small field. It is very interesting how the LRL 2000D registers. The operator holds

metal rods, which move around their own radius a bit. The antennas are connected with wires to the receiver, which has its own power supply and it is carried on the belt of the operator. The rods must be held in a parallel manner and a bit to the ground. After the drills are in the ground and unit can be turned on and you have to wait for about 10-15 min. and the operator should move around in a circle in a distance of about 3-10m. If there is a metal in this area, which we are searching for, then there will be a trace line. After you go over the trace line the rods are crossing and then uncross. This effect is created by the resistance of the human body with the induction of the receiver module and creates a circle, which is in a resonance and the rods attract each other and cross. It is possible for the unit to find signals in different sides when scanning fast areas. Then you have to use the Collector. It is a unit that looks like the drills but it is empty on the inside and there you put a bit of the metal that you are looking for. The Collector is stuck in the ground right between the drills and

the operator right over the trace line. If then the rods uncross that means that the signal is not real for that metal or it is very small. If the rods remain crossed the scanning continues. The Collector also eliminates objects, which are smaller in weight 10 time bigger than what is it in the Collector. Example: if in the Collector has a piece of gold that weights 20gr. you will distriminate all objects smaller to 200 gr. If you put 1gr. you will eliminate object of 10 gr.

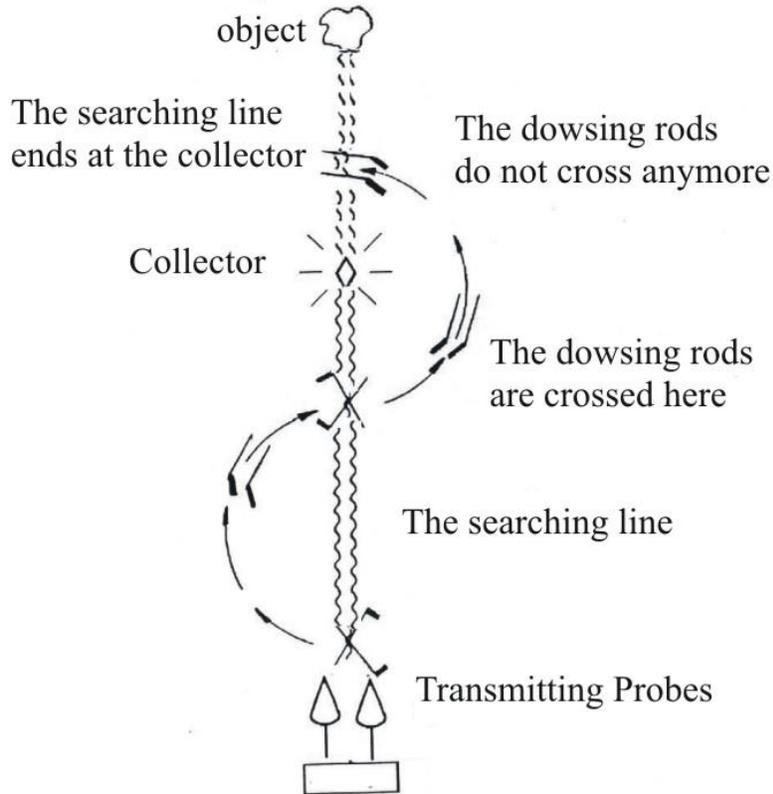


Fig.2 – Eliminating of a certain quantity of metal by a collector

By this way operator alone can found out how big the object is (Fig.2). It is better if you have one than one Collectors or different weights of the same metal in order to find out more precisely the found object. When you measure the distance and the exact place of the object we can miss the trace line but then you can cross it later you can go back and draw it in your mind (fig.3). When we go on the second trace line and we head towards the first trace line when they cross, the rods will cross too. After we reach that point and we are exactly over the object, please mark the place and keep going and we will see that later there will be no more trace lines or possible ion fields. Now you know the place of the object, the older the object the bigger is the ion field and the bigger is the difference between the electronic signal, which follows the ion field and the real object. Look at fig. 6 to get a better idea.

Most used frequencies are:

- Led– 4,5 kHz
- Gold– 5,0-5,5 kHz
- Alluminium– 7,0 kHz
- Silver– 8,7-8,9 kHz
- Bronze– 11,3kHz
- Copper– 11,7 kHz
- Diamonds– 12,7 kHz
- Iron– 17,0-17,8 kHz

LRL 2000D is a very precise digital locator for the use of search of all types of metals under the ground. The work frequencies can be adjusted of encoder and

can be seen on the digital display. The knob for the sensitivity is put on 5 position. Then the distance for location is ahead and it is 50% of the maximum. Most cases the knob should be on 10, but it is up to the operator.

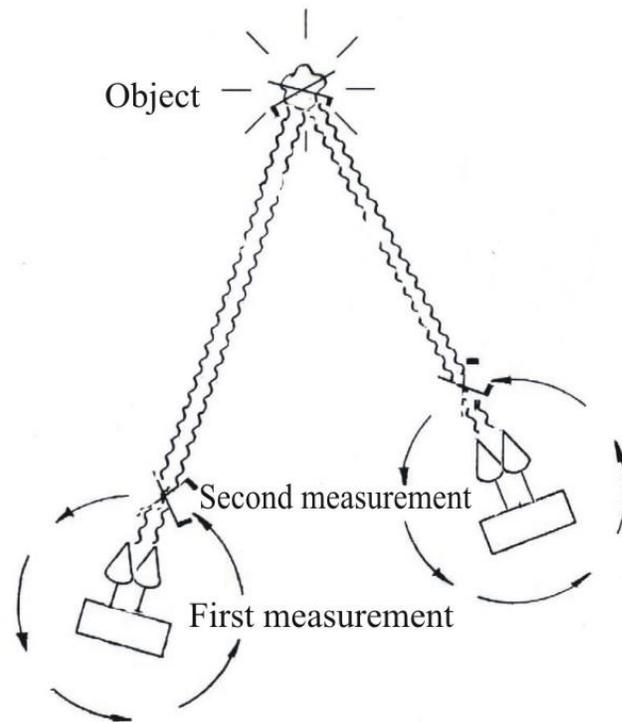


Fig.3 Measurement

The digital **LRL 2000D** has 15 programs- 8 of these are factory set to most used

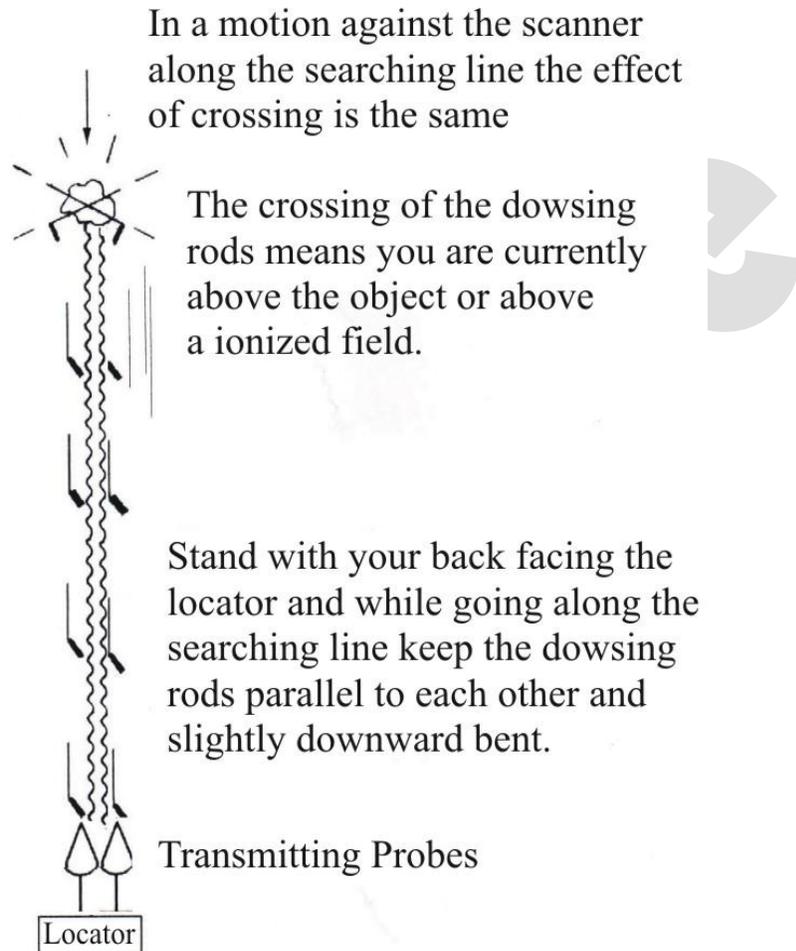


Fig.4 – Localization of the place of the underground object

metals, and 7 of them are personal that you can set yourself.

The operator can choose other frequencies except for “lead, alluminium, bronze, copper-brass” and “diamonds”. All other frequencies of “gold, silver” and “iron” can be changed in their borders. Example: if you want to changed the frequency of “gold” from 0,005000MHz to 0,005125MHz turn the encoder (frequency) to

the right until the you get to the wanted frequency. The step is 1Hz. If you turn the knob faster it will step by 10 or 100 step. The other way is to press and hold “step” button and under the scale a cursor will appear, then turn the encoder to the left and it will get you to the decimals and let the step button off. From here on every step will be with 10Hz.

The same will happen if you press and hold Step and move it the the hundreds or the thousands. Then you adjusted as you wish. After the frequency is found wait for 5 sec. to accept the adjustment. If you want to search for other metal press “Band” button.

Drills- they are stuck in the ground where you have put water before you stuck them for better work. Be careful when you take them out of the ground not to brake them.

Fuses: they are three on the front panel on the power. For every battry there is one fuse. If one of them burns out you will not have frequency on the display or the work of the amp will not be right. For every fuse there is a control light, which is on until the fuse is working. They are with 2.5A.

Receiver with Rods- has 9V battery. Before use press the button and hold for 3-4 sec. The brightness should not be changed, if so please changed the battery.

Important:

1. The rods are coded. The handles are isolated.
2. Don't changed the frequency without to wait for about 15-20 min.
3. Don't change the frequency for the same metal. For Example: You search for gold at 5,25kHz and frequency cannot be changed to 5,5kHz, even that is also for gold, without waiting for the technological time.
4. Never turn off the drills (PROBE). The short curcuit can brake the electronics.

5. Every time you use the locator charge the batteries. After the work day charge the batteries. The charger is automatic and it is necessary to have some voltage left in the battery. If the voltage of the battery goes under 10V and after you put it to be charged the light will start to blink very fast even that the battery is not charged, that will happen when the battery is damaged and it will not be charged any more. You should replace it.
6. Follow the battery conditions by the lights of the batteries in the center of the power block. If the lights blink stop work and do not use the unit before you recharged it again. The above light control the inside battery.

To get ready for work.

1. Take out the drills and put them with the tops up.
2. Connect the cables from the drills to the **LRL 2000D** as you follow the colors of connection (black with black, red with red). This is at the most importance.
3. Connect the cable from the power block to the locator .
4. Connect outside two batteries by the two cables to the power blocks. Every battery should connect to one of the double cable.
5. If the soil over you are working is dry, make two holes at about 4mm. The distance between them to should not be smaller than 40cm and not bigger than 90cm, the standard one is 60cm. Throw about half of liter of water at that place but be careful not to short circuit it. Therefore do not work immediately after rain and even when you put the water around the drills. Be sure to let it dry out.

After you have done all this, follows:

- Put Sensitivity from 3-10.
- Turn the power 1 and 2 from the power block.
- Adjust the frequency to the desired metal.
- Stuck the drills in the ground at about 15 cm depth.
- Wait for about 100 sec. in order to scan of radius of 100m. If you wait for 200 sec. then you should scan for about 200m, for 1500 sec. – 1500 m. and so on.
- Put the receiver box on the belt and follow the colors of the cables to the rods.
- Keep away to at least 3m. from the locator and start to move in circle around it. The rods should be hold very lightly and do not hold them tight, just let them be. They should be parallel and a bit to the ground at about 3 to 5 degrees under the horizon.

Scanning

If in the scanning area there is a metal of our wish, the rods will cross. Exactly at that place put something to remember the place.

Go back 3-4 m. and 10-15 m. right from the locator and go towards the trace line. If the rods cross again and again, just place something again to remember the places. Keep doing this until the rods do not cross any more (fig.1). Then go back to the marked line. Stay with your back to the locator (Fig. 4), and go with the rods over the line. Then the rods will cross, when you reach the electrical metal object. After we have found the trace line of the object and we have marked them with 2,3 or 4 places we should turn off the unit and approach the

places from 90 degree and we start new measurement in the same fashion as the first (Fig 3). There should be at least 20 minutes between the two measurements. If you want to search for different metal at that same place just adjust the frequency for example from 8.7 to 8.9kHz. it is not necessary to take out the drills.

Turn off the unit.

- Wait for 15-20 min.
- Take out the cables for the drills from the side of **LRL 2000D**
- Turn on the unit
- Adjust it for gold at 5 до 5,6kHz.
- Connect the cables to the locator and wait for another 100 sec., which is for about 100 m. and start again to search
- These 15-20 min. for a break to zero the previous frequency and at least 100 sec. for the new frequency. If you have not changed the frequency and only move the 90 degrees you will find another cross point. Then just make a theoretical line from the locator, new point, and the old point, you will see the object location (Fig. 3). This is not all. Make some more measurements at that same place to find out the depth and the size of the object. Look at Fig. 6. There you will see the cross point and the second crossing over the object and third point in place 2. The way the object is checked is written and shown there (Fig. 6).

Electronic halo of the underground object

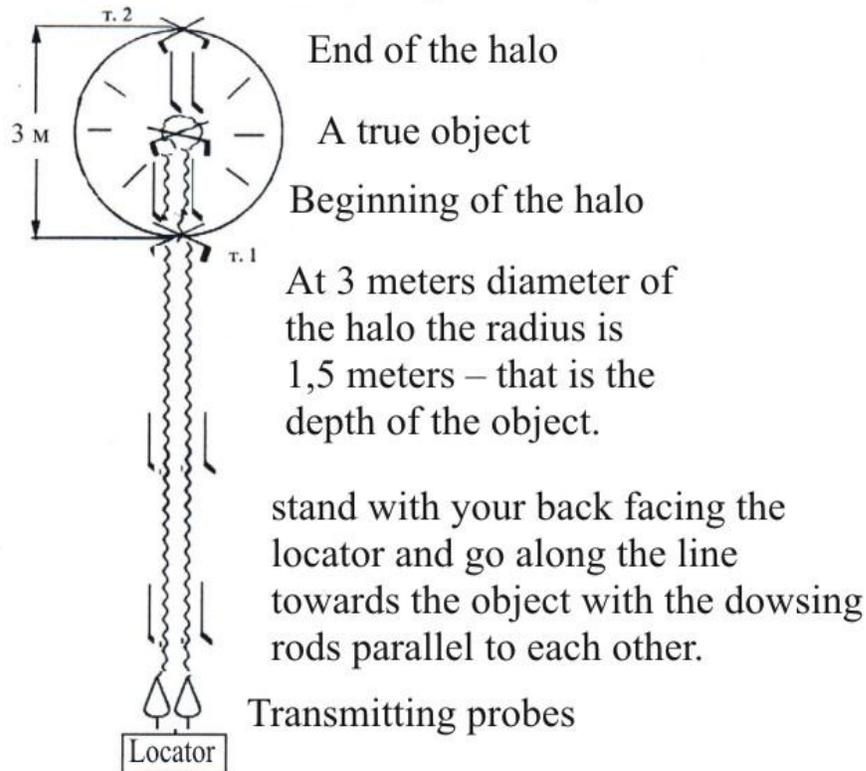


Fig.6 – Approximate depth of the object

Keep measuring the place with another detector for deep search, just keep in mind that still is the electrical signal and not the real object.

Bulgaria is located north from the Equator and the offset it will be to the south. If necessary use compass. Keep going with your back towards south and you should see the way to the object place to the north. If the object is small and it is not buried longer ago, in this case the electrical object is the real object. If one of the factors is missing, please check again with another detector, we can offer you a Mole Impulse for deep search. Its depth to 6 m. If that does not work that

means that the object is very deeply buried. In these cases you need to use eliminator for electrical objects, which we also can offer. The eliminator is used when there are underground holes, tunnels and corridors. Old objects have electrical block of 30 m. to the north (or south) of the real object. Therefore full check is necessary, in order to avoid digging for nothing. It is necessary for you to have long-range deep scanner and eliminator or at least one of the two. If you have deep search machine with 1x1 or 2x2 m coils, search to the north (or south) of the electrical point, and leave it to work for several hours, as every half an hour check to see if the point has moved to the north. The eliminator should stay turn on until the last two measurements have not changed. The last point is the real object. If the object is not deeply buried, it becomes easier with just normal detector, but for deeply buried objects the eliminator is the only right solution. It is possible to find an object and when you use the Eliminator that signal may disappear. Then that means that you have found just an ion field and no object is there. Many our users of the LRL use those old ion fields to train. This type of object stands at about 1-30 m. off from the real object. If you know such a place do not remove it with the eliminator. It will help you to find out your own condition for that day. Please try to remember all this information when and before you want to work in order to become a profesional metal operator.

Battery Charging- Put the jack of the charger in the place 1 of the control box and turn on the charger at 220V. Turn on the button to the left, at ON position. The light comes on at the charger. After one of the batteries is ready the light starts to comes off and on. Now turn that button to the right and the light should continue to be on with no blinking and it will charge the second battery. When the light starts to blink, now put the jack in place 2 and you will charge the inturm battery. Do not worry if you have charged only one of the batteries and now only one needs to be recharged. Just follow the directions and you will be OK.

Note: The light for the LDC of the control box will turn on from the button behind it. You should turned it off after you have found the right frequency, because it consumes power.

How to keep: The power and control unit are in plastic boxex and therefore do not use any chemicals for their cleaning. Use only water and rags. Keep them from direct water and falling.

We wish you luck!