



OKM

GERMAN DETECTORS



OKM PULSE NOVA MANUAL

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INTRODUCTION

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INTRODUCTION

1 INTRODUCTION

1.1 PREFACE

Dear customer,

our engineers, sales, training and support staff at OKM GmbH would like to thank you for your purchase of the Pulse Nova metal detector.

The Pulse Nova pulse induction detector works on the principle of a time sensitive oscillator which produces an alternating current that passes through a coil producing an alternating magnetic field. This alternating magnetic field creates an eddy current which can detect electrically conductible metal. It uses the induction of a high voltage energy pulse to identify the presence of metals.

The Pulse Nova is able to locate buried objects within various structures and vessels non-intrusively without having to excavate the area. The facile and flexible handling of the Pulse Nova can easily and quickly give reproducible results.

Our team of specialists guarantees that our products are under recurrent control. Our specialists try to implement new developments in terms of further quality improvements for you.

By purchasing or using one of our products, we cannot guarantee that during the course of your research you will be successful and have a find. The recognition of hidden and buried objects depends on various factors. As you well may know there are different soil types all over the world with different levels of natural attenuation. Variable soil properties can and will hamper and alter ultimate scan measurements. Areas with an extreme amount of ground water, varying clays, sands and wet soils will make scanning more difficult and may reduce the maximum depth capabilities of any and all detection equipment, regardless of brand or model.

For more information regarding where our equipment has been used and operated, please visit our website. Our equipment is constantly being tested and when improvements or upgrades are available, we will list them also on our website.

It is necessary for our company to protect our developments and all of the information learned during the "Research and Development" phases in creating our technology. We strive to stay within the given framework of legislation, patents and trademark registration.

Please take your time to read this User Manual and familiarize yourself with the operation, functionality and how to use the Pulse Nova. We also offer training at our factory and on-site. We strive to maintain a worldwide dealer network for assistance and support. Please visit our website for more information.

1.2 IMPORTANT NOTES

Prior to using the Pulse Nova and its accessories, please read the following instructions carefully. These instructions give information on how to use the detector and potential sources where precautions should be taken.

1.2.1 General Notes

Being an electronic device, the Pulse Nova has to be treated with caution and care as with any other electronic device. Any failure to observe the safety precautions given or any use for purposes other than the ones it is designed for may result in damage or destruction of the processing unit and/or its accessories or connected components.

The device has a built in anti-tampering module which will destroy the unit if it is improperly opened. There are no end user serviceable parts on the inside of the unit.

1.2.2 Possible Health Hazards

If used properly this device normally does not pose any health hazards. According to current scientific knowledge, the high-frequency signals are not harmful to the human body on account of their low power.

1.2.3 Surrounding Area

When moving this unit from a cold place to a warmer place, watch out for condensation. Do not operate the unit until possible condensation has evaporated. The unit is not weather or water proof moisture within the electronics can destroy the unit.

Avoid strong magnetic fields, which may occur in places where there are large electric motors or unshielded loudspeakers. Try to avoid using this equipment within 50 meters (150 ft) of this type of equipment.

Metallic objects on the ground such as cans, tin, nails, screws or debris can influence your scan data and present negative results regarding your scan data. Also it is a good habit to remove any metallic objects off of your person like cellular telephones, keys, jewelry, etc... Do not wear steel toe boots.

1.2.4 Voltage

The power supply can not be outside the indicated range of values. Use only approved chargers, batteries and rechargeable batteries which are included within the scope of delivery.



Never use the 115/230 Volt main supply directly!

1.2.5 Data Correctness

Data errors can occur if:

- the power supply of the device or the batteries are too low,
- the cables are too long,
- the unit is operating too close to devices which send out disturbances or
- atmospheric conditions (electrical storms, lightning, etc.).

1.3 MAINTENANCE AND SERVICES

In this section you will learn how to maintain your measuring instrument with all included accessories to keep it in good condition a long time and to get good measuring results.

The following list indicates what you absolutely should avoid:

- penetrating water
- strong dirt and dust deposits
- hard impacts
- strong magnetic fields
- high and long lasting heat effect

To clean your device please use a clean and dry soft rag or cloth. To avoid any damage you should transport the device and accessories always in an appropriate way.

Prior to using your Pulse Nova please be sure that all batteries and accumulators are fully charged. Also do not allow the batteries to completely discharge before recharging them. This way your batteries will have a long and durable life. When the unit is not in use, recharge the batteries every 3 months so that they retain their performance.

To charge the external batteries use only the approved chargers which are part of the scope of delivery.

1.4 DANGER OF EXPLOSION DURING EXCAVATION

Unfortunately, the last two world wars also made the ground in many places of the world a potentially explosive scrap heap. A host of those lethal relics are still buried in the ground. Do not start digging and hacking for an object wildly when you receive a signal of a piece of metal from your device. Firstly, you might indeed cause irreparable damage to a truly rare find, and secondly, there is a chance that the object reacts in an insulted way and strikes back.

Note the color of the ground close to the surface. A red or reddish color of the ground is an

indicator of rust traces. As regards to the finds themselves, you should definitely pay attention to their shape. Curved or round objects should be a sign of alarm, especially if buttons, rings or little pegs can be identified. The same applies to recognizable ammunition or bullets and shells. Leave ammunition where it is, do not touch it and, most importantly, do not take any of it home with you. The devices of war made use of rocker fuses, acid fuses and ball fuses. Those components have been rusting away in the course of time, and the slightest movement may cause parts of them to break and be triggered. Even seemingly harmless objects such as cartridges or large ammunition are anything but that.

Moving such an object may cause those crystals to produce friction, leading to an explosion. If you come across such relics, mark the place and do not fail to report the find to the police. Such objects always pose a danger to the life of hikers, walkers, farmers, children and animals.

1.5 CARE AND USE

The Pulse Nova is a sturdy instrument, but it is not designed to withstand abuse. In caring for your Pulse Nova, there are several important DOs and DON'Ts to remember.

- DO NOT use to get rid of bushes, flatten area by swinging wildly or pry rocks loose.
- DO NOT drop the machine into water or use it while it is raining or wet.
- DO NOT leave it exposed at night where dew could form on it.
- DO NOT store it in places that could get extremely hot.
- DO NOT leave it in the trunk of a car where high temperatures could build up.
- DO NOT spray lubricants, or any type of cleaners, solvents, sealants or other chemicals into or onto the electronic parts, switches or controls.
- DO NOT attempt to modify or repair the detector's electronics as this will void your detector's warranty.
- DO clean your unit with a soft dry or slightly damp cloth to remove dust and residue from the previous use.
- DO use the device within the proper operating guidelines.
- DO use the detector with the proper OKM Power Pack as to not cause damage to the unit.

The warranty does not cover damage resulting from an accident, neglect or abuse.

1.6 PROTECTING YOUR INVESTMENT

Often detector users become disappointed when their new detector becomes less and less responsive and seems to have lost some of its original peak performance. You can help prevent this from happening to your detector by following these basic care and protection guidelines:

- Operate your detector exactly as recommended in this User Manual.
- Use only the OKM Power Pack or other approved power supplies.
- The search coil cable is hard-wired to the search coil and protected by a stress relief. Inspect the stress relief frequently to make sure it is firmly attached and intact.
- Keep cables properly wound around the extension pole and protect them during use. Floppy, pinched, or damaged cables may short, causing unnecessary replacement of the search coil.
- Sweep the search coil carefully, especially when using around rocks and building foundations. Avoid hitting the search coil against hard, solid objects and surfaces.
- Keep your search coil slightly off of the ground during the sweep, especially when using in gravel or hard, rocky dirt.
- The search coil is waterproof and can be submerged in either fresh or salt water. After the search coil is used in salt water, rinse it and the lower stem assembly well with fresh water to prevent corrosion of the metal parts.
- The search coil is waterproof but the electronics are not. Thus, always prevent any moisture or water from entering the control housing and never allow the cable connectors to become submerged in water.
- If working in or near water, or if there is a possibility of rain, use a protective weather resistant pouch or plastic bag to cover the control housing. Make sure it can "breathe" in order to ensure against condensation buildup inside.
- After each use, clean the detector with a soft cloth to remove dust, moisture or other contaminants.
- When transporting the detector in a car during hot weather, store it on the floor of the passenger compartment if possible. Using a carry bag gives additional protection. In any case, never allow the detector to roll around unprotected in the trunk or back of a pickup truck.
- Protect your detector from dust, moisture, and extreme temperatures during storage.
- When shipping, use the original factory carton or similar heavy-duty container and provide sufficient padding around all parts.
- Treat your detector as you would any sensitive electronic instrument. Though it is designed to withstand the demands of normal treasure hunting, proper care is essential.

2 TECHNICAL SPECIFICATIONS

The technical specifications are medial values. During operation slight variations are possible.

2.1 CONTROL UNIT

Dimensions (L x W x H)	180 x 115 x 70 mm
Weight	0.64 kg
Input (max)	4.8 - 20V DC, 3.16A, 20W
Safety Class	IP40
Operating Time (fully charged, 25°C)	approx. 8 hours
Charging Time @ 19V	approx. 3 hours
Feedback	acoustic
Operating Temperature	0° C to +40° C
Storage temperature	-20° C to +70° C
Waterproof	No

2.2 TELESCOPIC ROD

Dimensions (L x W x H)	630-1023 x 115 x 200mm
Weight	0.90 kg

2.3 SEARCH COIL DELTA38 / OMEGA38

Diameter	Ø 375mm
Height	45mm
Cable Length	approx. 1.50 m
Weight	approx. 0.80 kg
Technology	Bifilar Mono Coil, High Voltage Pulse Induction
Waterproof	Yes

2.4 SEARCH COIL DELTA18 / OMEGA18

Diameter	Ø 175mm
Height	45mm
Cable Length	approx. 1.50 m
Weight	approx. 0.38 kg
Technology	Bifilar Mono Coil, High Voltage Pulse Induction
Waterproof	Yes

2.5 FRAME COIL XI104

Dimensions, disassembled (D x L)	Ø 130 x 1120 mm
Weight (with shipping tube)	approx. 3.26 kg
Dimensions, assembled (L x W x H)	1040 x 1040 x 60mm
Weight (without shipping tube)	approx. 2.35 kg
Technology	Mono Coil, High Voltage Pulse Induction
Waterproof	No

TECHNICAL SPECIFICATIONS

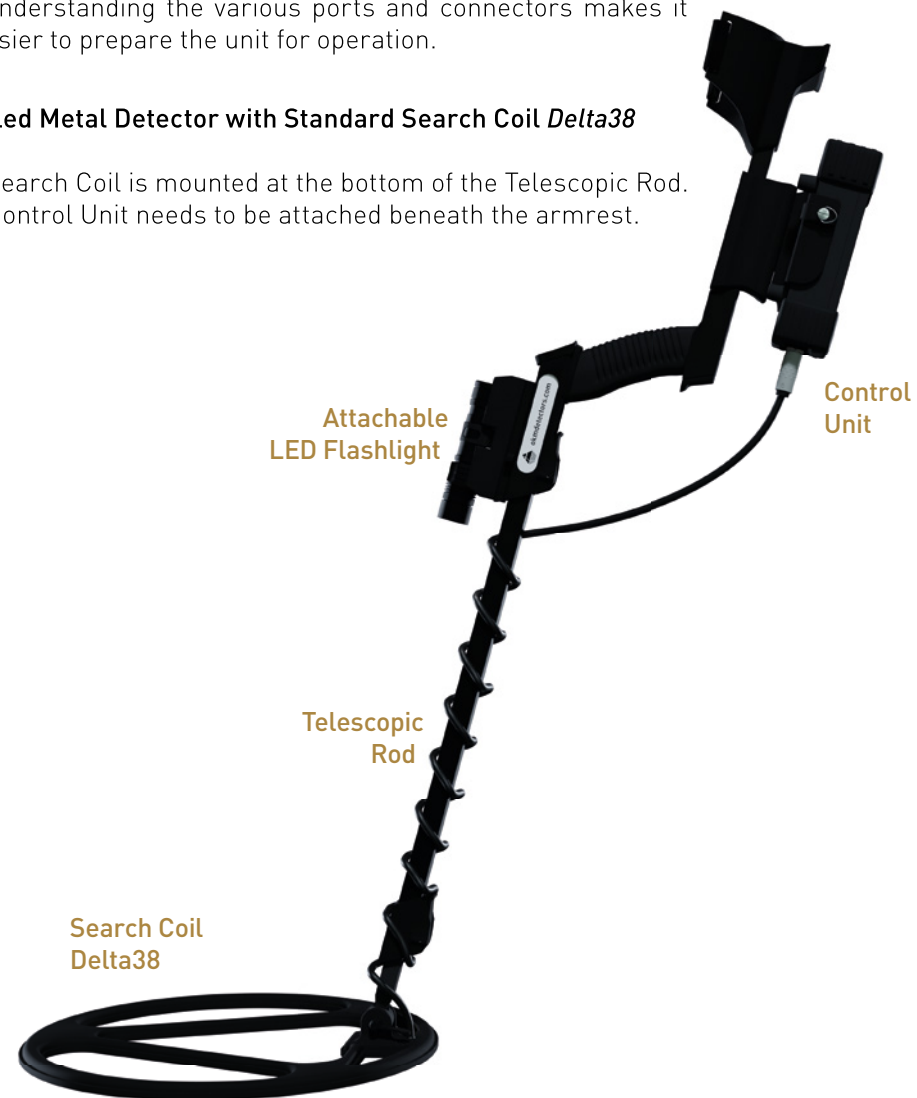
CONTROL ELEMENTS

3 CONTROL ELEMENTS

In this section we explain more about the fundamental use of all control elements for the Pulse Nova metal detector. All connectors, inputs and outputs are explained in detail. Understanding the various ports and connectors makes it much easier to prepare the unit for operation.

Assembled Metal Detector with Standard Search Coil *Delta38*

- The Search Coil is mounted at the bottom of the Telescopic Rod.
- The Control Unit needs to be attached beneath the armrest.



3.1 CONTROL UNIT



Charger Socket / Charging LED: When the internal battery is too low – which is signaled by a low triple tone at increasingly shorter intervals – you have to recharge it by connecting the appropriate Power Charger to the Charger Socket. As long as charging is in progress, the Charging LED is **orange**. As soon as the Charging LED turns off, the battery is fully charged. Complete details about charging the unit you will find in chapter “4.1 Charging the Control Unit” on page 13.

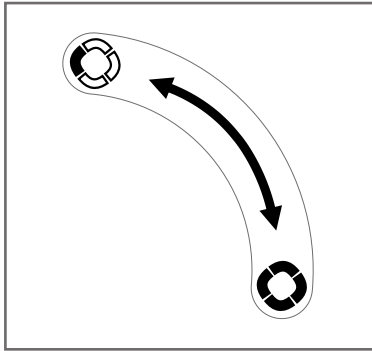
Search Coil Socket: Plug the Connector of the Search Coil into this socket before using the detector. No matter if you are using the standard Search Coils or the Frame Coil, this is the place where it gets connected.



Slider Plate: This part is used to mount the Control Unit to the Telescopic Rod. Thanks to the embedded magnet, the Control Unit will keep in place when attached. Read chapter “4.2 Mounting the Control Unit” on page 14 to learn more about assembling and disassembling the Control Unit to the Telescopic Rod.

Headphones Socket: If you don't want to use Bluetooth Headphones you can also use wired headphones by plugging them into the Headphones Socket. As soon as the headphones are connected, the internal speaker will be disabled.

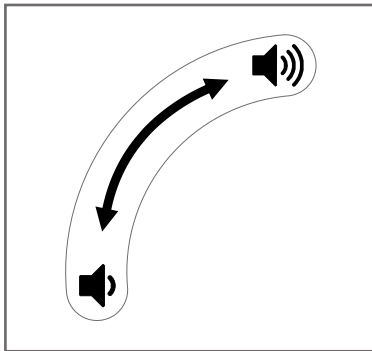
Loop for Carrying Strap: When using the Frame Coil it is recommended to detach the Control Unit off the Telescopic Rod and attach the Carrying Strap instead. To do so, simply hook the carabiner into both loops and carry the unit around your neck (see chapter “4.6 Assembling the Frame Coil” on page 17).



Sensitivity Knob (gray cap): This knob is used to regulate the sensitivity of the Search Coil. The higher the sensitivity the deeper you may find underground objects but the more noise and disturbances you may receive alongside metal signals.

Turning the knob to the left lowers the sensitivity, turning it to the right raises the sensitivity. If the value reaches its minimum or maximum, additional turning in the same direction will have no decreasing or increasing effect. In this case, you will hear a double tone that indicates you reached the end of the adjustment range.

If the sound output gets to noisy, you may apply a ground balance by pushing the Sensitivity Knob downwards. Read chapter "Ground Balancing" for more details about balancing your metal detector.



Volume Knob (black cap): This knob regulates the volume of the acoustic output. Turning the knob to the left lowers the volume, turning it to the right raises the volume. If the value reaches its minimum or maximum, additional turning in the same direction will have no decreasing or increasing effect. In this case, you will hear a double tone that indicates you reached the end of the adjustment range.

In case you need to connect Bluetooth Headphones, the Volume Knob can be utilized for pairing purposes. Please read chapter "Pairing new Bluetooth Headphones" for more information.



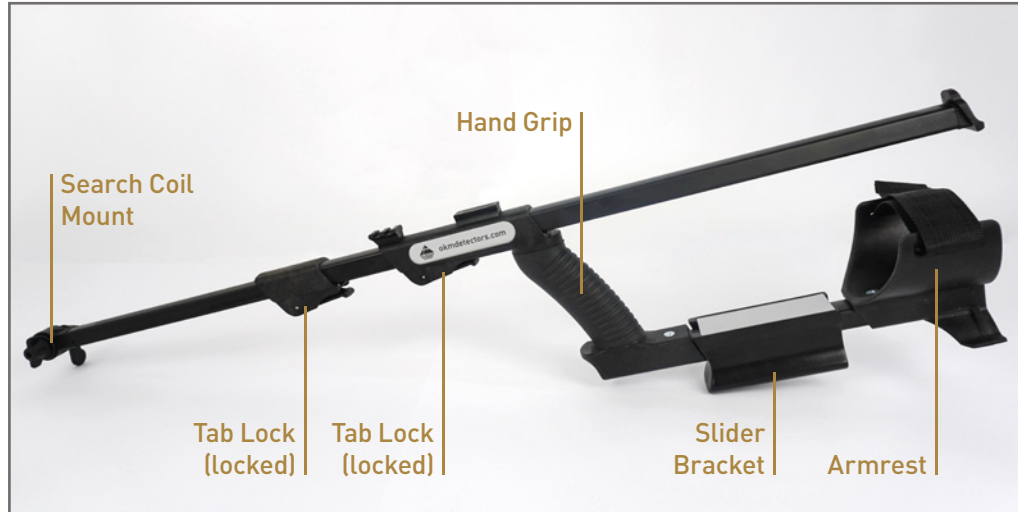
Power Button with Operating LED: Push the Power Button to switch on the Control Unit. At first, the Operating LED starts blinking for about 2 seconds before it remains **green** permanently. If the LED blinks rapidly before turning off, the internal battery is too low and must be charged (see chapter "4.1 Charging the Control Unit" on page 13).

If you are using Bluetooth Headphones, you see its pairing state by looking at the Operating LED. If the LED is **blue** the headphones are properly connected and ready to use as output source for any acoustic signals. More details about Bluetooth Headphones and the LED indications can be found in chapter "3.4 Bluetooth Headphones" on page 12.

To switch off the Control Unit, push the Power Button for at least 3 seconds until the Operating LED turns off.

3.2 TELESCOPIC ROD

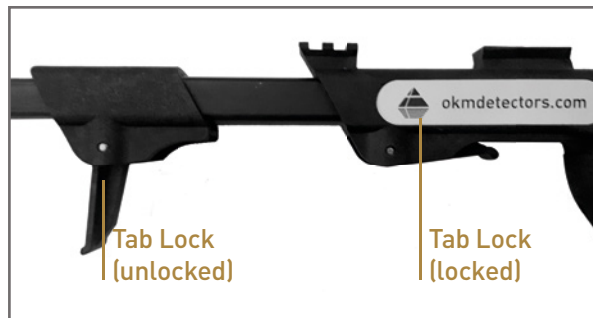
The Telescopic Rod - also called Telescopic Shaft - is the link between Control Unit and Search Coil. Only the Frame Coil is used without Telescopic Rod.



Search Coil Mount: Here you mount your preferred Search Coil to the Telescopic Rod. Read chapter "Mounting the Search Coil" for details.

Slider Bracket: The Slider Bracket serves as a mount for the Control Unit. Read chapter "4.2 Mounting the Control Unit" on page 14 to learn more about mounting the Control Unit to the Telescopic Rod.

Hand Grip / Armrest: While your hand is grabbing the Hand Grip, your arm should rest in the Armrest. Tighten the Velcro for your own comfort.



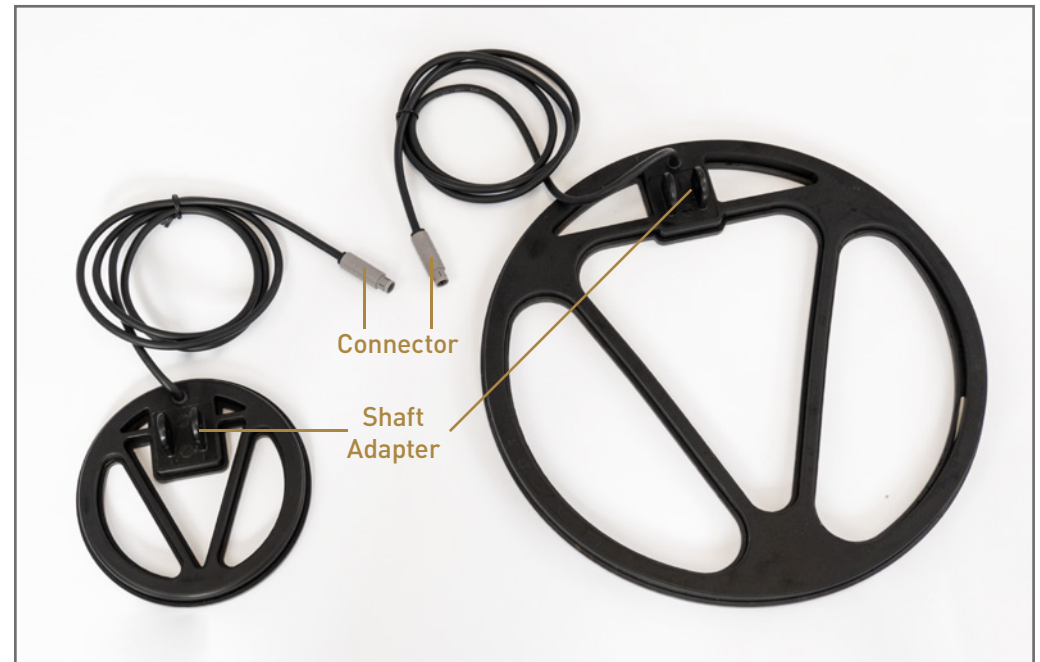
Tab Locks: Use these locks to extend or shrink the Telescopic Rod. Open the tab to loose the connected shaft of the rod and tighten it after adjusting the length accordingly.

More details in chapter "4.4 Adjusting the Telescopic Rod" on page 15.

3.3 SEARCH COILS

The Pulse Nova metal detector comes (depending on the purchased pack) with several Search Coils in different sizes:

- 38 cm Search Coil: for standard purposes
- 18 cm Search Coil: to detect small objects near the ground surface
- Frame Coil: to detect large objects at greater depths



Connector: The connector of the designated Search Coil has to be plugged into the Search Coil Socket of the Control Unit.

3.4 BLUETOOTH HEADPHONES

The Pulse Nova metal detector can be operated with any OKM Bluetooth Headphones that is supporting A2DP (Advanced Audio Distribution Profile) with either SBC or aptX LL (Low Latency) Codec. Your Pulse Nova metal detector comes with preconfigured OKM Bluetooth Headphones.

The original OKM Bluetooth Headphones, which belong to the scope of delivery of your Pulse Nova, are already paired. To successfully connect your headphones with the Control Unit place the headphones close to the detector and follow these steps:

1. Power on the Control Unit and wait until the Operating LED is permanently **green**.
2. Switch on your OKM Bluetooth Headphones.
3. After a short time the Operating LED changes from **green** to **blue**, to indicate a successful Bluetooth connection.

As soon as the Bluetooth connection between Control Unit and headphones has been established, the internal speaker will be disabled. The Headphones Socket will not be disabled, so any wired headphones that are connected to the Control Unit are still working independently.



3.4.1 Pairing new Bluetooth Headphones

To operate the Pulse Nova metal detector with any other wireless OKM Bluetooth Headphones, you have to pair your new headphones with the Control Unit first. Place the headphones close to the detector and follow these steps:

1. Power on the Control Unit and wait until the Operating LED is permanently **green**.
2. Switch on your Bluetooth Headphones.
3. Activate the pairing mode of your new Bluetooth headphones (see headphones manual).
4. Push and hold the Volume Knob of the Control Unit until the Operating LED flashes **blue**.
5. As soon as the Operating LED is permanently **blue** it indicates a successful Bluetooth connection.



4 ASSEMBLY

After unpacking your Pulse Nova metal detector for the first time, you assemble and prepare it for the first use. Here are the steps to follow to get it ready for operation.

4.1 CHARGING THE CONTROL UNIT

The Control Unit contains an internal battery that must be recharged regularly to guarantee a proper function of the detector. The metal detector has two ways to indicate a low battery:

- After powering on a fully charged Control Unit, the Operating LED will be permanently **green**. In case the internal battery is too low, the Operating LED flashes **green** and then switches off again. You will not be able to power on the detector at all.
- When the internal battery gets low while working with the detector, a low triple tone at increasingly shorter intervals will sound on your acoustic output. This very unique tone will repeat to inform you about the low battery condition until the Control Unit switches off.

Recharge the battery by connecting the Power Charger or an OKM Power Pack.



The Charging LED indicates the status of the charge process:

- Charging LED is **orange** while charging is in progress.
- Charging LED switches off as soon as the charging process has finished.

When the metal detector is powered with an OKM Power Pack, the internal battery will automatically be recharged while working with the metal detector. It may happen that the Charging LED is **orange** most of the time, since the charging process takes place continuously.

ASSEMBLY

4.2 MOUNTING THE CONTROL UNIT

There are two ways to carry the Control Unit while metal detecting:

- attached to the Carrying Strap
- mounted to the Telescopic Rod

Both methods will be explained in the following sections.

4.2.1 Attaching the Carrying Strap

The Carrying Strap is attached to the Control Unit when using the Frame Coil, since there is no need of the Telescopic Rod at all.

Hook the carabiners of the Carrying Strap into the Loops of the Control Unit.



4.2.2 Mounting the Control Unit

When using the 18 cm or 38 cm Search Coil, the Control Unit may be mounted to the Telescopic Rod.



1 Place the Slider Plate of the Control Unit directly into the Slider Bracket of the Telescopic Rod.



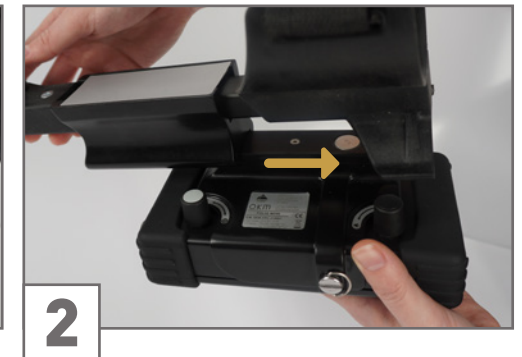
2 Push it completely into the bracket until it snaps into place.

After the Control Unit has been attached to the Telescopic Rod, you can continue to mount the Search Coil.

To dismantle the Control Unit, first pull the Control Unit downwards and then pull it out of the Slider Bracket:



1 Pull the Control Unit downwards.



2 Pull the Control Unit out of the Slider Bracket.

4.3 MOUNTING THE SEARCH COIL

Assembling the Search Coil to the Telescopic Rod is very simple.



Unscrew the bolt from the Search Coil Mount of the Telescopic Rod. Make sure the rubber washers are seated next to the shaft before attaching the Search Coil.

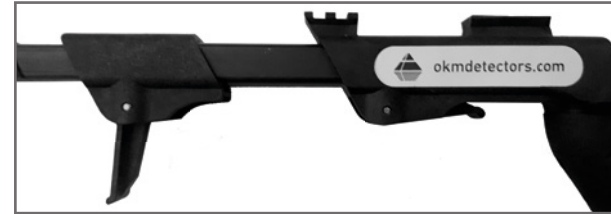
Insert the Search Coil Mount of the Telescopic Rod into the Shaft Adapter of the Search Coil. Fix it with the bolt and tighten it so that the coil does not move.



Plug the Connector of the Search Coil into the designated Socket of the Control Unit.

4.4 ADJUSTING THE TELESCOPIC ROD

The length of the Telescopic Rod can be adjusted according to your own body height. Adjust the length according to your own comfort.



Use the Tab Locks to loosen and tighten the single segments of the Telescopic Rod.

To adjust the rod length, the Tab Locks needs to be opened.



Extend the shaft to your desired length.



To fix the length, lock the lever down.

Adjusting the Telescopic Rod is important: To avoid straining any muscles and to allow for more comfort while working with the detector, a properly adjusted Telescopic Rod is essential.

The Search Coil should be close to the ground surface without touching it.



4.5 MOUNTING THE LED FLASHLIGHT



1

Place the LED Flashlight in the Holder ...



2

... and fix it with the rubber band.



3

Place the LED Flashlight holder onto the
Mounting Plate on top of the Telescopic Rod ...



4

... and push it gently to fix it.

The Pulse Nova metal detector includes an LED Flashlight that can be attached on the Telescopic Rod. This is very helpful for night searches or investigations in dark rooms or chambers.

You can remove the flashlight via the rubber band (see steps 1 and 2), e.g. for charging.



4.6 ASSEMBLING THE FRAME COIL



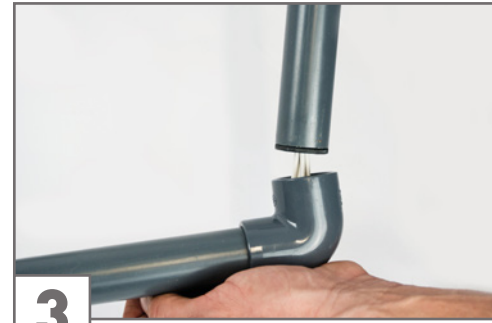
1

Remove the disassembled Frame Coil from the shipping tube. Unpack all components and place them on the ground.



2

Unfold the Frame Coil segments carefully and place the segments on the floor to form a square with the belt clips pointing up.



3

Assemble the coil by putting each end into the adjacent corner piece.



4

Each segment is equipped with a belt clip to mount the carrying straps. You may change the position of the belt clips to adjust it to your individual needs.

The carrying straps must be attached to the Frame Coil in order to carry it.



The coil can be carried by 2 people, whereas each person carries one single strap,



or by 1 person by criss-crossing the straps and carrying them over the shoulders.

5 MEASUREMENT

This chapter gives practical instructions about the general procedure of scanning an area. The different scanning methods and procedures will be explained in detail.

In this section you will learn more about the different operating modes of the Pulse Nova. Every function is explained in the following subsections.

The Pulse Nova metal detector is a pulse induction metal detector. The Pulse Nova is fully automatic in terms of knowing which search coil is attached. No matter if the small coil or the large coil is attached, the unit knows where to set many of the automated processes.

The process of detection is done by using an eddy current. An eddy current uses an electromagnetic induction to create a reaction within metals. This reaction within the metal object creates electrical conductivity or an anomaly which actually disturbs the flow of the current. When this disturbance is realized, the detector reports the anomaly.

The surface of the material being detected must be accessible to the current. Various finishes and coverings may cause bad or weak readings.

An alternating current in the coil generates a changing magnetic field. The larger the coil, the larger is the field. In fact, with a large field only larger items can be found. When using a smaller coil the field is also smaller allowing the detection of smaller items. All of this is done by reporting the variations within the magnetic field which is created by the coils. After an item is detected, allow for a recovery time or enough time for the creation of another magnetic field.

5.1 DETECTION DEPTH

In theory, the larger the item is and the longer it has been in the ground, the deeper it can be detected. With a pulse induction detector, there is a high voltage surge sent into the ground creating a large magnetic field. Items with an electrical conductance will distort the magnetic field causing the detector to react. This in combination with the size of the coil will affect the ultimate possible depth.

Varying soils and layers within the soil will also affect the ultimate depth of the detector. Using a pulse induction metal detector enables you to search in soils with a higher magnetic permeability (highly mineralized) or susceptibility than other soils.

Air tests typically will be able to detect a metallic object twice the distance as the size of the coil. Here are some object depths according to measuring in air:

	Search Coil <i>Delta18</i> and <i>Omega18</i>	Search Coil <i>Delta38</i> and <i>Omega38</i>	Frame Coil <i>Xi104</i>
Gold nugget ø 5mm	18 cm	17 cm	-
Gold coin ø 20 mm	23 cm	25 cm	-
Gold ring ø 22 mm	17 cm	34 cm	-
Silver coin ø 24 mm	22 cm	35 cm	-
Silver coin ø 40 mm	31 cm	45 cm	-
1 EUR coin	28 cm	43 cm	-
Beverage can 0,5l	65 cm	110 cm	155 cm
Gas can 20l	115 cm	180 cm	255 cm
Steel barrel DIN EN 210	115 cm	180 cm	310 cm

5.2 GROUND BALANCING

The ground balance of the Pulse Nova detector is mandatory for the proper operation of the unit. Most of the balancing is done automatically, the rest by simply pushing a button.

When the sound signals of the metal detector are getting noisy and start to flutter, even if there is no metal underneath the Search Coil, then you should apply a ground balance. A new ground balance is also necessary when the ground conditions change rapidly.

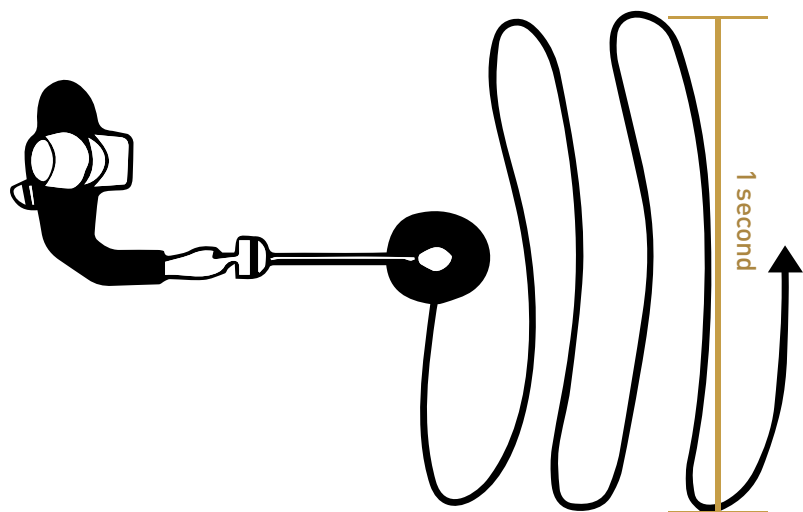


Push and hold the Sensitivity Knob of the Control Unit to start a new ground balance.

Keep the knob pushed down until the detector gets silent again without any noisy sounds. You may repeat this procedure from time to time to get the best detection results.

5.3 OPERATION

The unit needs to swing slowly over the ground or area to be scanned. It is important not to change the height of the coil during the scanning procedure. If the unit is too close to the ground it is possible that the coil will receive feedback from the ground itself. If this happens, simply swing the coil a little higher above the ground.



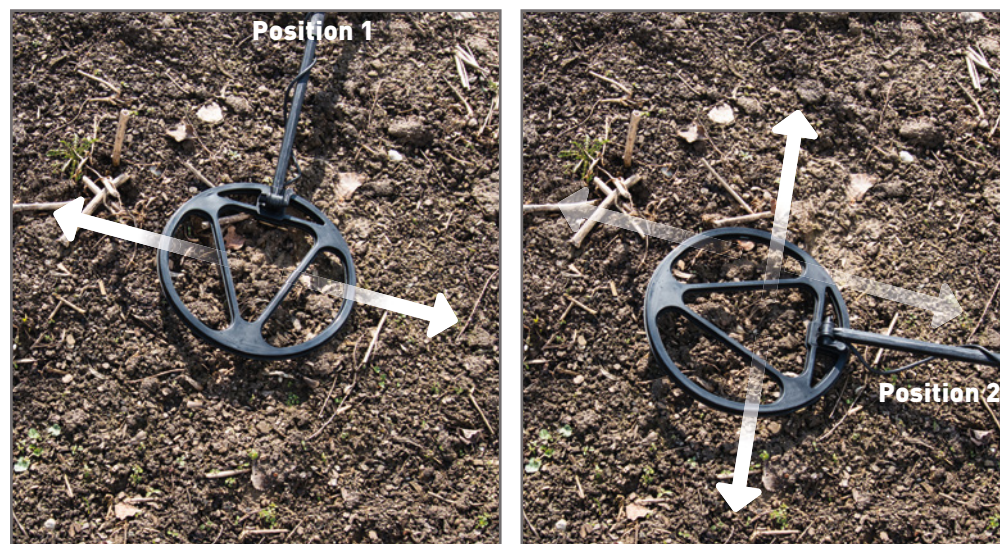
1 second = approximate time required to sweep from one side to the other.

Practice a smooth sweep of the search coil from side-to-side keeping the coil close to the ground throughout the swing. Each pass of the coil should take approximately 1 second from right to left, 1 second to return from left to right. Walk forward slowly. Take small steps no greater than half of a normal stride. Make sure each pass of the coil overlaps the last one by at least half the length of the loop. Do not lift the coil at the end of each swing. Keep it close to the ground and at the same height at all times.

To become comfortable sweeping the loop does take some practice. Relax, loosen up and find a comfortable grip on the handle. Premature fatigue may result from gripping the handle too tightly, an improperly adjusted rod or elbow support, and limited body movement. Hold the handle loosely. Adjust the rod and elbow support for comfort and keep the elbow strap loose. Use your arm, shoulder and even your back a little to allow for a smooth even sweep of the coil.

5.4 PINPOINTING

Once an object has been detected, move the coil off to one side of the target area and slowly swing the coil over the area until it beeps directly over the target. Make notes of the area where it begins to give an audio signal and where the signal begins to fade. Where the signal becomes stronger that is the point of where the edge of the anomaly is and where the signal begins to fade is the other side.



Sweep the detector from Position 1 over the anomaly, then go to Position 2 and repeat the process. **If necessary, repeat swinging from a third position.** When this is done from different sides, you will know exactly how long and wide the detected object is.

The different positions are necessary to properly pinpoint an anomaly.

6 TROUBLESHOOTING

In this chapter we will discuss frequently asked questions.

The most common problem is that the battery is low or in need of a charge. In every case, please make sure that the battery is fully charged.

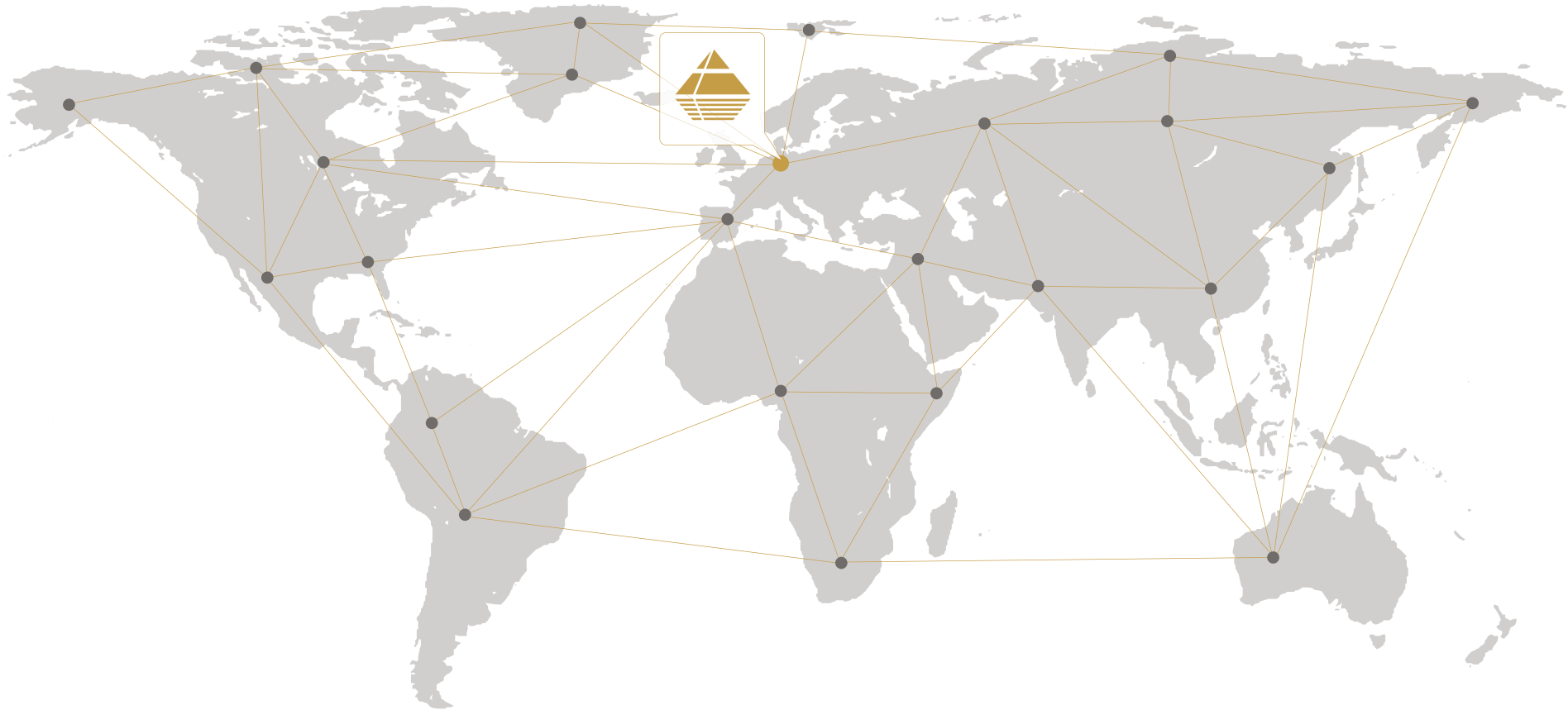
Question	Answer
Why is it so hard to balance the unit?	<ul style="list-style-type: none"> • The coil is directly on the ground as you are setting the sensitivity. • You may be too close to an electrical appliance or motor. • Be sure your area where you are balancing the unit is clean.
Why does it beep and there is no target?	<ul style="list-style-type: none"> • Your coil is too close to the ground and it is receiving feedback.
There is a signal, then it goes away, why?	<ul style="list-style-type: none"> • Check your ground balance, most likely you adjusted it in the field and have reset the unit and balanced it out. • The size of the item may be extremely small or it may lie just within the range of the detector.
I hear a signal, then I can't find it again, why?	<ul style="list-style-type: none"> • The coil may be touching or just about to touch the ground and give a signal that there is an anomaly.
I don't hear any tones.	<ul style="list-style-type: none"> • Check to make sure that the volume is loud enough and that there is a coil attached. If there is no coil then the unit will remain silent. • Check the coil to ensure that there are no tears in cable. • You need to ground balance the unit again, perhaps an adjustment knob was accidentally turned.

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Based in Altenburg, Germany, we are developing and manufacturing geophysical detectors since 1998. Our unique detection technology helps to visualize buried objects and structures.

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