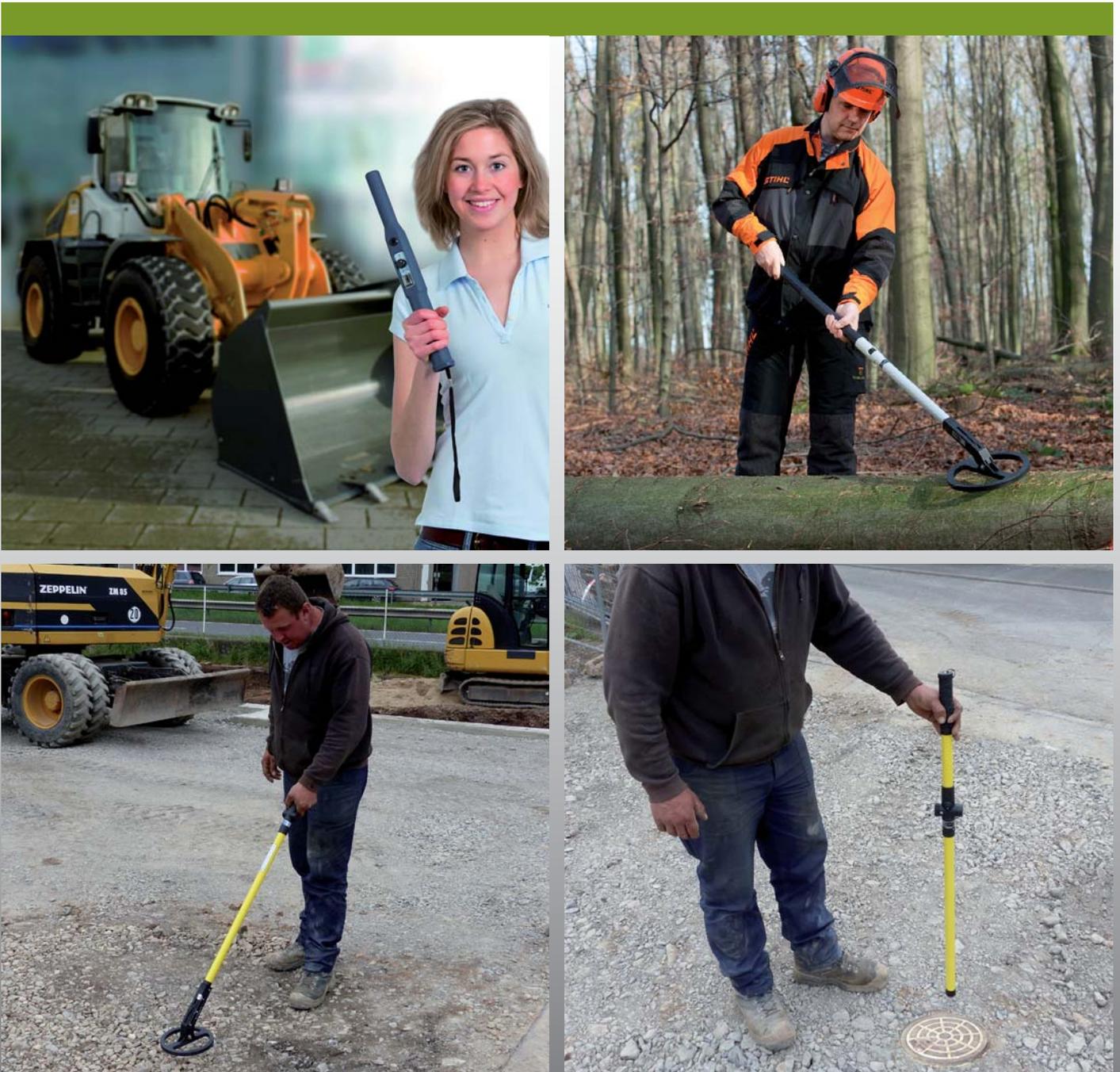


Search and locating systems for cities and municipalities

- Localization of metal objects
- Pipe and cable locating
- Solutions for forestry and construction industry
- Solutions for commercial industrial sectors



Search and locating systems

Ebinger location technique

Your partner for location technique

- BAC and ERW clearance
- Security technique
- Detection systems for construction and forestry
- Developed and produced in Germany
- Your reliable onsite partner

Ebinger develops and produces a comprehensive range of metal location and detection devices for humanitarian Mine Action and munitions clearance, for law enforcement, security and industry applications, civil engineering, for the timber and forestry industries, for the locating of pipes and cables and for scientific use. One focal point for the company lies in the researching of innovative methods and the development of efficient and reliable detection techniques for professional large-scale and long-term use.

Humankind and environment are at the heart of our development activities. Our technology has to prove itself worldwide in use on land or under water. Just as example our search equipment is widely used to locate weapons and munitions, which put people at risk. We consider this as our challenge and we identify ourselves with this job.

We are specialised in submitting problem orientated solutions to our customers. As change is the only form of permanence we constantly and substantially invest in research and development.

- We analyse problems, tasks and possible options
- We develop concepts for a customer orientated innovative solution
- We give impulses and develop strategies hand in hand with our customers
- We supply missing Know-how
- We train our customers employees in new techniques and principles
- We keep preventive production capacities for rapid response

EBINGER technology center Wiesbaum/Eifel



Production and training facility

Pipe and cable locators

Handheld detector WFD 1050

Cable detector for civil engineering and road construction

- For finding and locating active power cables
- Simple to use
- Good directivity
- Handy and robust

The battery-powered WFD 1050 AC field detector is used in civil engineering, before geophysical drilling and in soil remediation. Whenever excavation or civil engineering work is predeprived, the location of underground power cables should be executed beforehand. The effects from damage to buried cables represents a considerable risk for life and loss of material. Using the WFD 1050 handheld detector is a quick and easy way of avoiding accidents and interruptions to operations

The WFD 1050 detector is a cylindrical, compact and handily shaped device. It is of rugged design and simple to use. Detection signals are displayed by visual and audible indication. An LED monitors the battery status. The built-in signal generator produces a pulsed alarm which rises in frequency as the device is approaching the cable to be located. Even in a noisy environment the pulse signal is strong enough to make headsets obsolete.

Active power cables are surrounded by an alternating electromagnetic field. Its extent is determined by the strength of the flow of current. This alternating field is detected by the WFD 1050 and indicated by an audible signal. The detection range depends on the the fieldstrength of the current in the underground cable. In favourable conditions the range can be up to 5 m. If only a weak flows, detection is successful only in the close proximity of the cable.



Handheld detector VLF 950

Cable detector for civil engineering and road construction

- To locate active and inactive buried cables
- To find metal pipes, etc
- Passive VLF principle
- Optional cable transmitters available

The VLF 950 handheld detector is a battery-powered tool to support the detection of electric conductors, power cables and pipes that are buried underground. The handheld detector is used in civil engineering, before geophysical drilling and in environmental remediation. It can be used with or without a cable transmitter, available as optional accessory.

The VLF 950 detector is a handheld detector of ergonomic shape. It is of ruggedly design and is simple to use. The VLF 950 transmits the detection signals by a visual and an audible alarm. The visual signal is provided through an LED. Another LED is used for monitoring of the battery power. The built-in signal generator produces a pulsed audio alarm.

The operation principle consists in the detection of VLF (very low frequencies), which is induced into cable networks by many long-wave transmitters. These very low frequencies which propagate as a secondary field around cables and conductors are detected by the VLF 950 handheld detector. The advantage of the VLF technique consists in the fact that it finds active and passive cables and pipes. If there is insufficient VLF induction onto underground metal infrastructures an inductive coupling can be set up with a 60 kHz cable transmitter (in preparation).



Metal search systems

SC 602 PI

Slide valve cap detector for civil engineering and road construction

- Fast locating of concealed slide valve caps, manhole covers, manholes and metal markers
- Detects all metals
- Simple to use
- Automatic adjustment

The SC 602 PI is a robust and user-friendly metal detector with high detection sensitivity used for general detection tasks. It is applied in the construction industry and in roadmaking as well as by public services such as municipal gas and water authorities. It detects all metals including small objects of non-ferrous metals. The SC 602 PI eases the finding of slide valve caps and manhole covers, slide rods, metal pipes laid near the surface and marking nails often covered under asphalt.

When switched on, the device adjusts itself automatically to the ambient conditions. The effect of highly magnetic layers of asphalt and earth magnetism can be suppressed by the electronic compensation system within certain limits. In addition disruptive effects caused by conductivity, moist soil or saltwater can be suppressed to a large extent.

The robust SC 602 PI metal detector consists of a watertight search head connected with a hinged joint to the tubular handle in yellow signal colour. The top of the handle contains the electronics, signal transmitter, ON/OFF switch and battery compartment. A lockable slider at the hinged joint allows to optimise the sensitivity setting in difficult search operations. The SC 602 PI operates on the Ebinger microprocessor controlled pulse-induction process (PI).



EB 450 S

Metal fragment detector for saw mills and timber industry

- High level of sensitivity
- Lightweight - robust – compact
- No inconvenient cable connections
- Simple to use
- Integrated setting device and loudspeaker
- Certified by KWF

EBINGER splinter detectors have gained an excellent reputation in the Forestry Industry with a proven track record. The EB 450 S splinter detector forms part of the modern equipment for organisations. Timber quality can be checked prior to selling or processing a tree with a simple scan of the cut trunk. Once the tree has been harvested, a check can guarantee the quality of the timber before it reaches the sawmill. The check of the timber ensures that there are no splinters within the trunk, therefore assuring the safety of the processing teams. Still today, complete forests of mature trees remain affected by fragments from explosive ordnance from previous wars or military training although appearing to be in good condition for processing. Metal splinters in tree trunks pose a serious threat to chainsaws, axes, band-saws, gang-saws, veneer lathes and slicing machines. The presence of such metallic contamination in a trunk may have changed the fibre course or caused discoloration and decay, therefore the wood is often unsuitable for further processing. The EB 450 S detects all electrically conducting media, thin metal foil and small splinters of iron as well as non-ferrous or noble metals. The EB 450 S is a hand-held metal detector with audio detection signal. It is easy to handle and due to its compact and modern modular tube-based design, is extremely robust. All functionally important components are accommodated inside the handle, this means that there are no critical, easily damaged cable connections which could hinder work when carrying out a rapid check! In noisy environments a single sided headset can be connected to the detector.



EB 610 DV

Digital hand-held metal detector

- Digital functions:
 - Self-test, audio/visual
 - Automatic adjustment
- Digital, inherently stable signal evaluation
- Dynamic/static search operation
- Loud audio signal, tremolo-modulated audio alarm on larger target objects in surroundings with large metalarm installations, e.g. iron reinforcements

EBINGER handhelds are in the security field known for their reliability and quality for more than 40 years. The EB 610 DV is the latest development and provides a 'tremolo' tone and vibration alarm for detecting different metals in close proximity. For example, it will detect a blade behind a metal buckle or a metal object hidden in the sole of a shoe when standing on a metal deck.

The search characteristics of the hand-held metal detector EB 610 DV can be modified within wide limits to suit the operator's needs, i.e. it permits operators to work close to each other without there being any mutual interference.

The internal rechargeable battery can be charged via the headset socket or via the fixed mounted ball contacts on the upper end of the search head. The second method avoids all related cable and socket problems.



UPEX® 740 M

Large loop metal detector

- Deep search
- High productivity of up to 2.5 ha per device
- Digital surveys, QA/QC
- Suitable for use on land and on/in water
- Detects ferrous and non-ferrous metals and alloys
- Datalogger, software and additional accessories

The UPEX® 740 M PI large-loop detection system supports a fast search of large areas after metal objects of substantial size, which may be buried deep in the ground. The UPEX® 740 M is fitted with a DELAY adjuster so that unwanted signals from small metal scrap can be suppressed. This means a serious increase in productivity as no time is wasted for excavation of small fragments / slivers of metal.

Target acquisition is indicated in realtime by an audio alarm and a galvanometer or optionally a watertight and shockproof LED bargraph. For a digital survey detection data/results can be recorded by means of the EPAD® data logger. The detection data can be downloaded later onto a laptop or PC for visualisation and processing by the EPAS® software. This version meets the requirements of GIS systems and greatly supports QA/QC and ISO 9000 alike QM systems.

UPEX® 740 M is by far simpler to use than magnetic anomaly locators and compares in most features to a usual metal detector. Detection signals are easy to interpret and no advanced operator training is required. UPEX® can be operated by two or by one operator, depending on the accessories chosen. The system is available in single loop or multiple loop configuration and can be hand carried or mounted to a vehicle. The search loop is watertight and can be operated in or on shallow waters.



Underground marking

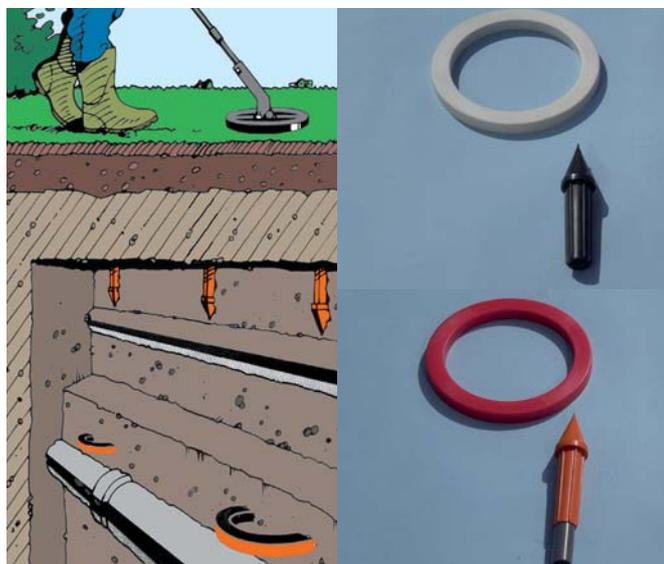
Underground markers for civil engineering and road construction

- Passive, electromagnetic subsurface markers
- Ring shaped or cylindrical
- For different marking applications
- 4 standard response frequencies
- Optional customer-specific frequencies upon request
- Watertight and resistant to weathering

In accordance with their intended use as durable markers, they are resistant to weathering and cannot rot. In addition to the 4 standard natural resonance frequencies, they can also be supplied with customer-specific ones.

The subsurface markers do not require any maintenance, have no batteries and are designed as purely passive devices. The markers are excited by the low-frequency transmission signal of the EBEX® 300 locator, which forces them to emit an own natural resonance signal which is of higher frequency.

This feedback is received selectively by the locator which converts it into an audio indication signal. The markers laid in the ground are frequency-coded for characterizing the line or point they are marking.



EBEX® 300 refined marking procedure with locator and Underground markers

- Detects underground markers
- Selective detection of targets
- Multi frequency locator
- Minimized interference

The locator can pinpoint the position of subsurface markers. The great advantage of the system consists in an object-selective location:

Thus, for example, the position of different pipe and cable lines concealed in the ground can be marked precisely and for an indefinite time. The different frequencies of these permit differentiation between several lines.

Scrap metal as well as the mineralization and ground conductivity have almost no effect on the location result. The subsurface markers can be detected even in the proximity of large masses of metal.

Since 40 years EBINGER passive subsurface markers are installed underground, quite a few within the framework of a scientific research program. Today the system enjoys increasing attention in civil engineering, by electricity distributors as well by municipalities responsible for public utilities. With its robust design the EBEX® 300 locator is built for longtime use in adverse conditions.



EBINGER data evaluation

EPAD® / EPAS®

Data evaluation and visualization

- Rugged PDA-type data logger
- Meeting MIL Spec 810F
- Available in numerous languages
- Easy to use – level for basic user or advanced users
- IMSMA supporting, GPS-compatible (NMEA 0183 protocol)

EPAD® data logger and EPAS® are a perfect match for recording, processing, visualization and evaluation of survey data. This system is very easy to use and can be supplied with multilingual resources and fonts.

The EPAD® data logger can be operated as single channel or multi-channel system allowing up to six data ports for technical surveys or QA/QC. in the field. Its hardware is based on a ruggedized mil. spec. PDA which meets the demanding requirements of MIL-STD 810 (temperature, shock, dust, vibration, humidity).

The EPAS® software allows the user to focus on the visualization and evaluation of data as it performs complex data preprocessing automatically in the background



MAGNEX® 100 B

Iron locator

- Robust and handy
- Lightweight
- Simple to use
- Audio coding of field polarity
- Dynamic /static detection steps

The MAGNEX® 100 B is a handy iron locator in longterm stable and innovative differential probe technology. The probe is moved in wide sweeping movements over the ground. As soon as the locator's probe is moved into the vicinity of a ferromagnetic object, the local field distortion is converted into an audible alarm. The audio coding of the field polarity (pulsating/continuous) indicates the magnetic polarity (north or south pole) of the object to be detected.

The locator is put into operation by switching the rotary adjuster into one of the 3 sensitivity steps (dynamic mode, low, dynamic mode medium, static mode high). The signal for target acquisition is provided by an audible alarm rising in intensity as the detector is moving and approaching the target.

The two dynamic detection steps are foreseen for fast subsurface localization of ferromagnetic parts. In this mode continuous magnetic interferences e.g. mineralized soil or fences can be auto-compensated and suppressed to certain limits.

The static mode is fore seen for maximum sensitivity even without the detector moving.

The compensation knob allows a compensation of magnetic signatures resp. the device adjustment via push button.





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