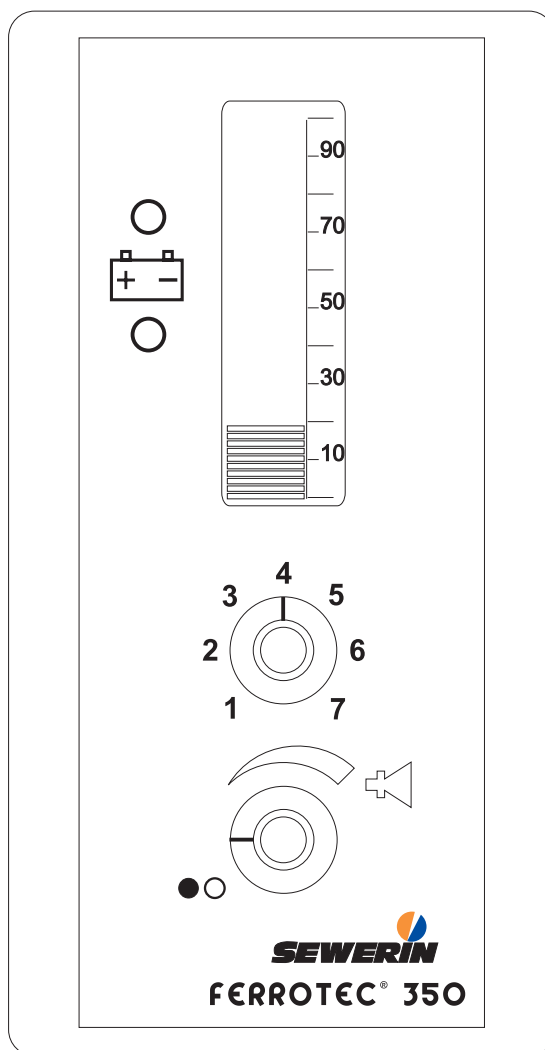


FERROTEC® 300 FERROTEC® 350 (with Display)

Operating- Instructions




SEWERIN

GB

102661

Measurable success by Sewerin equipment

You settled on a precision instrument.

A good choice!

Our equipment stands out for guaranteed safety, optimal output and efficiency.

They correspond with the national and international guide-lines.

These operating instructions will help you to handle the instrument quickly and competently.

Please pay close attention to our operating instructions before usage.


In case of further queries our staff is at your disposal at any time.

Yours

Hermann Sewerin GmbH

Robert-Bosch-Straße 3

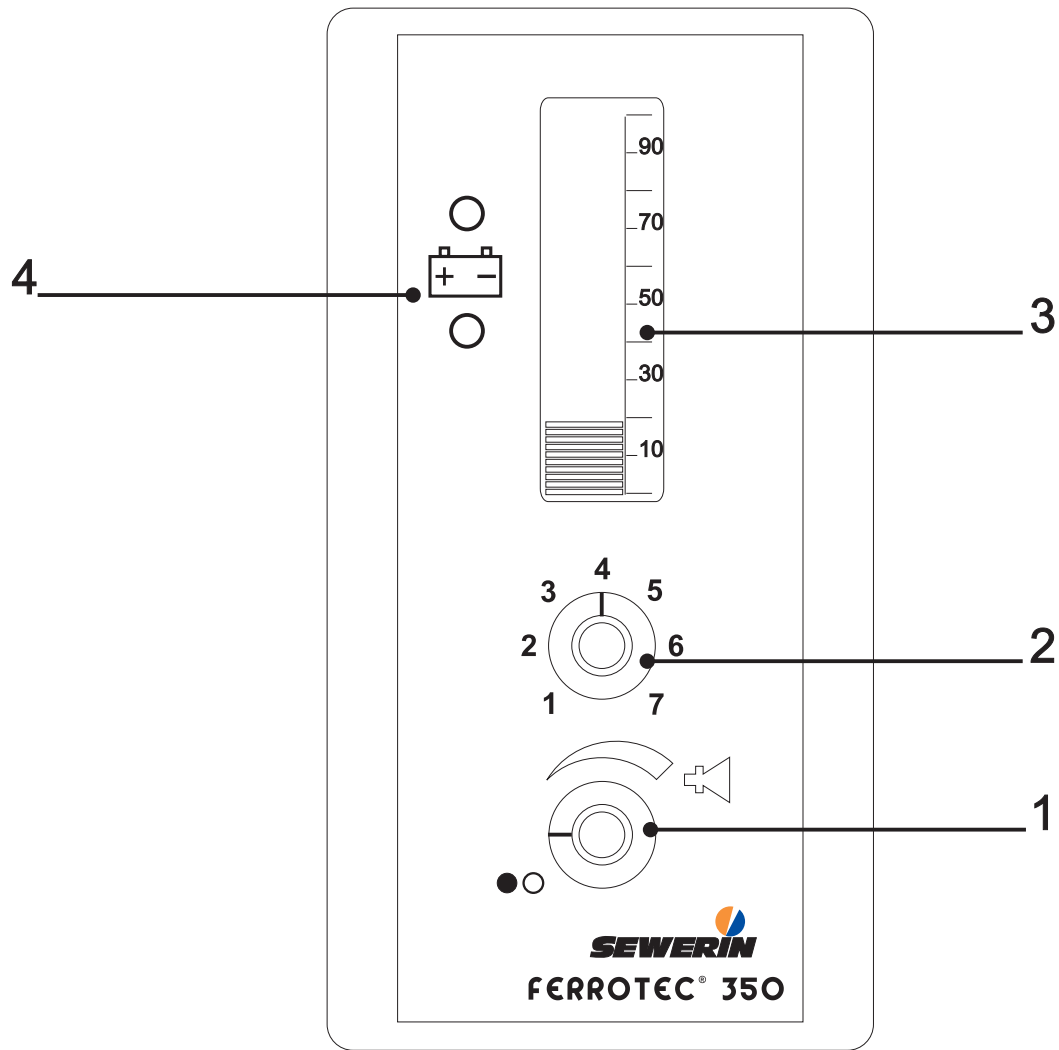
D-33334 Gütersloh

 : +49 - (0) - 52 41/9 34-0

FAX : +49 - (0) - 52 41/9 34-4 44

<http://www.sewerin.com>

Design of the: FERROTEC® 300 and FERROTEC® 350 (with Display)



Notes

FERROTEC[®] 300

FERROTEC[®] 350

(with display)

Operating Instructions pages 3 - 12



102661 - 02/28.05.1999

For your Safety *

The law governing technical equipment (the Law on the Safety of Appliances) of 24.06.1968 (BGBl.I, page 717) as amended by the Amendment Law of 13.08.1979 (BGBl.I, page 1432) requires the following matters to be drawn to your attention:

Comply with the Operating Instructions.

Before operating or adjusting the appliance you must be thoroughly familiar with this operating manual. You must comply with it in every respect.

The appliance is designed only for the application described and for industrial (commercial) use.

Liability for Function and/or Damage

Liability for the functioning of the appliance passes to the owner or operator in all cases in which the appliance has been improperly maintained or repaired by persons not associated with SEWERIN Service or if it has been used for a purpose not in accordance with its designated application.

You should therefore always use original SEWERIN accessories with the **FERROTEC® 300** and **FERROTEC® 350** .

Hermann Sewerin GmbH accepts no responsibility for damage due to a failure to comply with the foregoing instructions. The guarantee and liability terms of the Hermann Sewerin GmbH terms of sale and supply are not extended by the foregoing.

We reserve the right to make technical changes in the course of continued development.

HERMANN SEWERIN GMBH

* All references to laws, statutes and norms relate to the legislation of the Federal Republic of Germany.

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1.0 Designated purpose and function

The **FERROTEC**[®] is designed to locate concealed ferromagnetic objects (steel, iron, cast iron). It is particularly suitable for the location of valve rods, cap sills, metal shaft and tank covers, marking nails and marking magnets.

There are 2 sensors in the sensor rod which react to changes in the earth's magnetic field caused by ferromagnetic materials. The change in the earth's magnetic field does not reach maximum strength until the object has been motionless for several days or even weeks, so objects placed on the ground for testing purposes are often difficult to locate. The **FERROTEC** design excludes interference and mislocation due to non-ferrous metals.

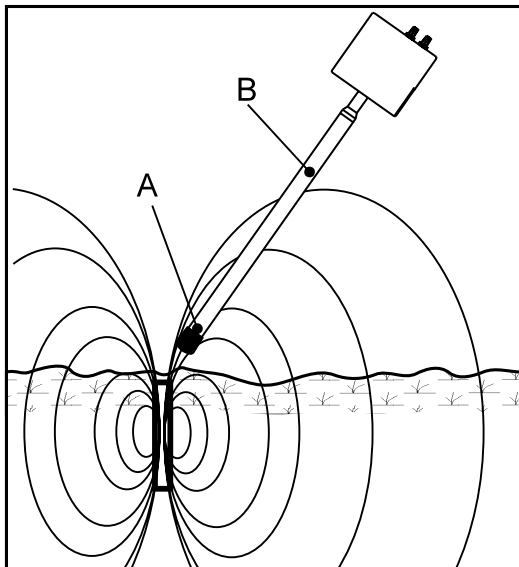


Fig. 1

Object in the ground, representation of magnetic-field lines. The magnetic field at the end of the sensor rod, sensor A, is not the same as at sensor B.

Differences in the earth's magnetic field increase with proximity to the object. This causes an indication in the form of a rise in the loudspeaker frequency. With the **FERROTEC**[®] **350** this increase is also shown in the bar-graph display. When the pitch is highest or the bar largest, the sensor rod is pointing at an object.

2.0 Operation

1. The device is switched on with the on/off switch (item 1). This also sets the required volume.
2. Sensitivity is then set with the knob (item 2). The default setting is approximately "4".
3. Check function by placing the **FERROTEC® 350** close to a suitable object (e.g a car, an iron post or a hydrant cap which is not concealed). This must cause a rise in the pitch of the sound, plus (on the **FERROTEC® 350**) a clear increase in the size of the bar-graph display (item 3). See "Battery display / Changing the battery" and "Function testing".
4. After use the **FERROTEC® 350** is switched off with the on/off switch (item 1).

3.0 Carrying

This illustration shows how the device should be carried:



The sensor rod should be kept as close as possible to the ground.

Once the presence of an object has been detected the **FERROTEC®** should be held vertically. The exact location of the object is now determined by passing the device over the ground in the form of a cross.

4.0 Notes on operation

4.1 Sensitivity

If the object to be located is small or at a great depth, select a higher sensitivity (5-7 on the scale). If you wish to avoid interference from small objects, a low sensitivity (1-3 on the scale) should be selected.

Valve rods and street caps show up well at a depth of 30 cm when the sensitivity is set to “4”.

Practical tip: when attempting to locate a concealed manhole cover, first set the sensitivity by checking it against a similar visible cover.

4.2 Location and shape of an object

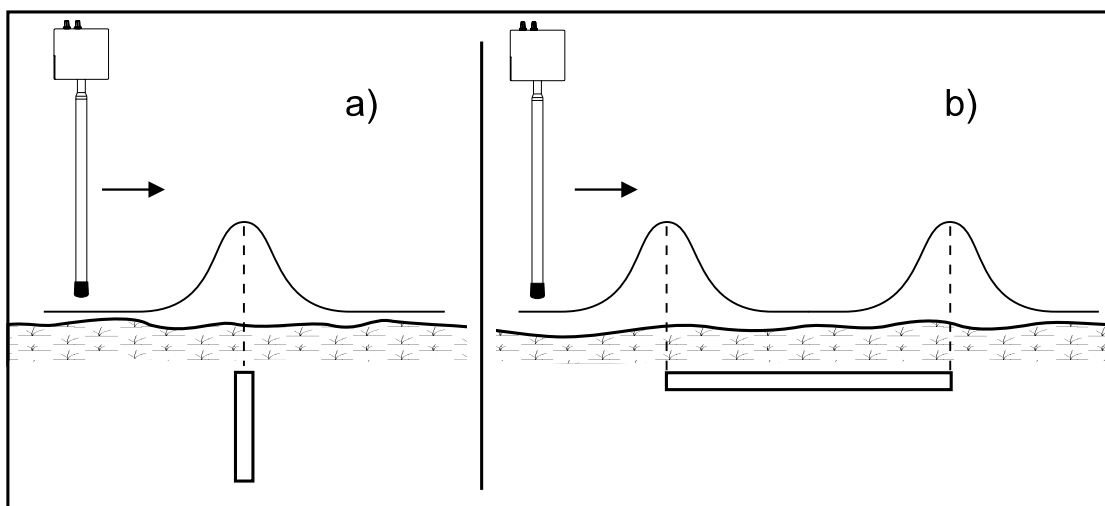


Fig. 2

Differing signals:

a) a maximum for a vertical object (e.g a marking pipe)

b) two maxima for horizontal objects (e.g a pipe or cover) at the edges or ends.

4.3 Distinguishing between large and small objects

This is important, because small objects like nails, screws and the like are displayed.

There are two ways of distinguishing between them.

1. With small objects the display decreases more markedly as the distance increases than it does with larger objects.

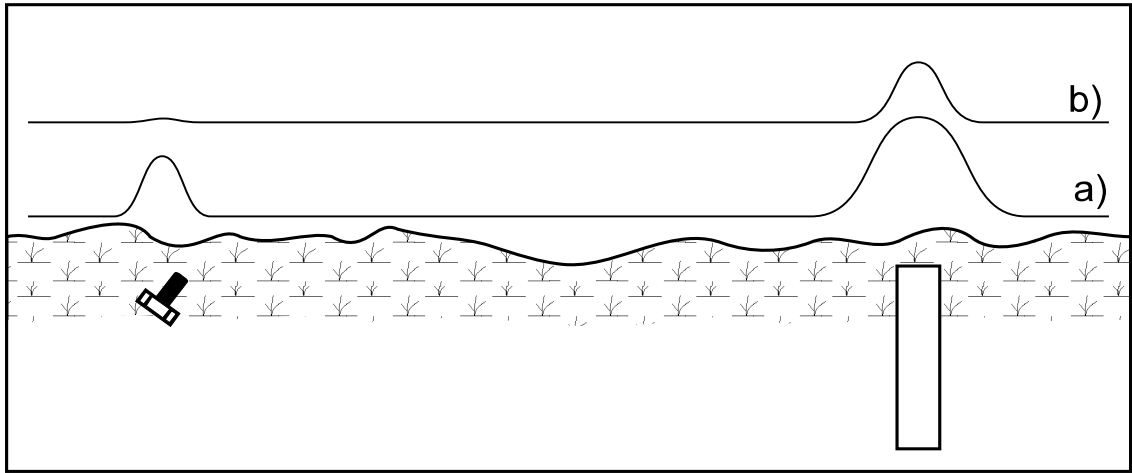


Fig. 3

Example: a screw and a boundary-mark pipe are displayed when the sensor rod is passed over the ground at a distance of 5 cm (a). At a distance of 30 cm - with the same sensitivity - only the boundary-mark pipe is displayed (b).

2. Larger objects appear broader in the display than smaller ones.

You should therefore vary the sensitivity setting and the distance of the sensor rod from the ground depending on the size of the object you are looking for.

4.4 Highly magnetised objects

With highly magnetised objects (for example marking pipes or permanent magnets) the **FERROTEC**[®] may give apparently misleading readings. The following illustration shows the signal curve (C) of a highly magnetised object.

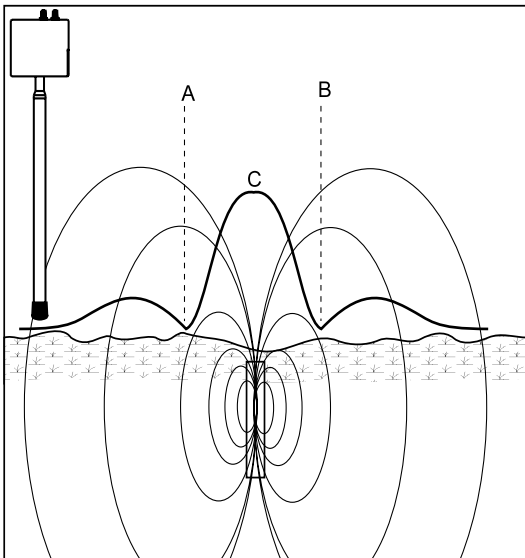


Fig. 4

The superimposition of the magnetic field of the object on that of the earth produces zones in which the effects cancel each other out. As a result the signal curve shows a minimum next to the object at A and B.

In practical use care should therefore be taken that the first change in pitch is not taken as an indication of the precise location. It is advisable to subject areas which have given the first indication to an extensive and critical search.

4.5 Searching in the vicinity of interference sources

In the vicinity of steel fences, grilles, vehicles and the like, interference naturally makes location difficult - if not impossible. Care should be taken to hold the device vertical and to set a low sensitivity.

4.6 Cast-iron pipes

It may be possible to locate cast-iron pipes if there is no interference and if they run more or less from north to south. They generate the strongest signal at the joints (sleeves). Proceed as follows:

1. Select maximum sensitivity.
2. Hold the sensor rod vertically at a distance of 30-40 cm above the ground. Slowly walk the terrain, moving the sensor rod slowly.
3. Approximately mark the display maxima.
4. Search again directly above the ground with the sensor rod vertical.

The more the orientation of the pipe diverges from the north-south line, the more the location result may differ from there actual position.

4.7 Snow and water

The sensor rod is waterproof, so it can be used in snow or water.

5.0 Battery display / Changing the battery

The battery display (pos. 4) next to the battery symbol shows the battery capacity with two LED:

| | |
|------------------------------------|---|
| Green LED (above) flashes: | battery is in good order. |
| Red LED (below) glows permanently: | battery is discharged, the battery has to be changed. |

A heavily discharged battery may reduce the sensitivity and dynamics of the acoustic signal. The battery should therefore be changed regularly.

The slotted-head screws on the side of the device are released by rotating them half a turn. The battery compartment under the cover is extracted for the battery to be removed. Make sure the cover is properly replaced to protect the battery from water.

6.0 Maintenance, malfunctions

No maintenance is necessary apart from changing the battery. In the event of malfunctions (no display, interrupted display), check the battery condition and make sure the battery is making proper contact with its holder.

6.1 Function testing

A function test may be carried out under the following conditions. An iron rod 10 mm in diameter and 300 mm long, which has been in the ground in a vertical position for at least a week, must be detectable at a distance of about 50 cm at the maximum sensitivity setting.

7.0 Accessories

CASE with foam lining and headphones

8.0 Technical data

| | | |
|---|---|---|
| Operation- and storage temperature | : | -20° to +70° C |
| Length | : | app. 130 cm |
| Detection | : | up to 1,5 m depth |
| Power supply | : | Block battery (9V, 1200 mAh), operating time up to 18 hours |
| Protection type | : | according to IP 54, Sensor rod IP 68 |
| Visual display | : | LCD bar-display (with the FERROTEC® 350) |
| Acoustic display | : | integrated loudspeaker or headphones |

*Hermann Sewerin GmbH
Robert-Bosch-Straße 3 · D-33334 Gütersloh
Telefon +49 - (0) - 52 41/9 34-0 · Telefax +49 - (0) - 52 41/9 34-4 44
<http://www.sewerin.com>*