

NaviTrack[®] Brick

5 Watt Pipe and Cable Line Transmitter

Operator's
Manual



WARNING!

Read this operator's manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

RIDGID[®]

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NaviTrack[®] Brick Line Transmitter



NaviTrack[®] Brick Line Transmitter

Record the Serial Number of your unit below and retain for your records.

| | |
|------------------|--|
| Serial Number | |
|------------------|--|

General Safety Information



WARNING

Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury

SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered benches and dark areas may cause accidents.
- **Do not operate electrical devices or power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.** Electrical devices or power tools create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating tool.** Distractions can cause you to lose control.

Electrical Safety

- **Do not attach the leads to a high voltage line.**
- **Do not operate the system with electrical components removed.** Exposure to internal parts increases the risk of injury.
- **Avoid exposure to rain or wet conditions.** Keep battery out of direct contact with water. Water entering electrical devices increases the risk of electric shock.

Battery Precautions

- **Use only the size and type of battery specified. Do not mix cell types (e.g. do not use alkaline with rechargeable).** Do not use partly discharged and fully charged cells together (e.g. do not mix old and new).
- **Recharge batteries with charging units specified by the battery manufacturer.** Using an improper charger can overheat and rupture the battery.

- **Properly dispose of the batteries.** Exposure to high temperatures can cause the battery to explode, so do not dispose of in a fire. Some countries have regulations concerning battery disposal. Please follow all applicable regulations.

Personal Safety

- **Avoid traffic. Pay close attention to moving vehicles when using on or near roadways. Wear visible clothing or reflector vests.** Such precautions may prevent serious injury.
- **Stay alert, watch what you are doing, and use common sense.** Do not use tool while tired or under the influence of drugs, alcohol, or medications. A moment of inattention while operating tools may result in serious personal injury.
- **Gloves should always be worn for health and safety reasons.** Sewer lines are unsanitary and may contain harmful bacteria and viruses.
- **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment.** Always wear eye protection. Dust mask, non-skid safety shoes, hardhat, or hearing protection must be used for appropriate conditions.
- **Use proper accessories.** Do not place this product on any unstable cart or surface. The product may fall causing serious injury to a child or adult, or causing serious damage to the product.
- **Prevent object and liquid entry.** Never spill liquid of any kind on the product. Liquid increases the risk of electrical shock and damage to the product.

Line Transmitter Use and Care

- **Use equipment only as directed.** Do not operate the transmitter unless proper training has been completed and the owners manual read.
- **Always transport the transmitter in the hard case provided.** This helps prevent product damage due to shipping.
- **Do not immerse the antennas or case in water. Store in a dry place.** Such measures

reduce the risk of electric shock and equipment damage.

- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care.** Properly maintained tools are less likely to cause injury.
- **Check for breakage of parts, and any other conditions that may affect the transmitter's operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your tool.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
- **Keep handles dry and clean; free from oil and grease.** Allows for better control of the tool.
- **Protect against excessive heat.** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Service

- **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified repair personnel could result in injury.
- **When servicing a tool, use only identical replacement parts.** Follow instructions in the Maintenance Section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electrical shock or injury.
- **Follow instructions for changing accessories.** Accidents are caused by poorly maintained tools.
- **Provide proper cleaning.** Remove battery before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- **Conduct a safety check.** Upon completion of any service or repair of this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- **Damage to the product that requires service.** Remove the batteries and refer servicing to

qualified service personnel under any of the following conditions:

- If liquid has been spilled or objects have fallen into product;
- If product does not operate normally by following the operating instructions;
- If the product has been dropped or damaged in any way;
- If the product exhibits a distinct change in performance.

CAUTION

Remove batteries entirely before shipping.

If you have any questions regarding the service or repair of this machine, call or write to:

Ridge Tool Company
 Technical Service Department
 400 Clark Street
 Elyria, Ohio 44035-6001
 Tel: (800) 519-3456
 E-mail: TechServices@ridgid.com
www.ridgid.com

In any correspondence, please give all the information shown on the nameplate of your tool, including model number and serial number.



DANGER

Important Notice

The NaviTrack Brick is intended for use with a NaviTrack locator/reciever. The locator is a diagnostic tool that senses electromagnetic fields emitted by objects underground. It is meant to aide the user in locating these objects by recognizing characteristics of the field lines and displaying them on the screen. As electromagnetic field lines can be distorted and interfered with, it is important to verify the location of underground objects before digging.

Several utilities may be underground in the same area. Be sure to follow local guidelines and one-call service procedures.

Exposing the utility is the only way to verify its existence, location, and depth.

Ridge Tool Co., its affiliates and suppliers, will not be liable for any injury or any direct, indirect, incidental, or consequential damages sustained or incurred by reason of the use of the NaviTrack Brick transmitter.



ALWAYS HOOK UP LEADS FIRST BEFORE POWERING THE UNIT ON TO AVOID SHOCK.

ALWAYS TURN UNIT OFF BEFORE DISCONNECTING LEADS.

ELECTRIC SHOCK MAY RESULT FROM FAILURE TO CONNECT LEADS BEFORE POWERING THE UNIT ON.

Do not handle the transmitter while you are connected directly to ground yourself.

Wear appropriate heavy soled footwear as you would when working with any high-voltage equipment.

Note: The unit must be disconnected from any external conductors before attempting to access the battery case or change the batteries. The NaviTrack Brick is protected by an interlock which isolates the unit when the battery case is opened, but standard safety awareness dictates disconnecting the leads rather than relying solely on this feature.

Note: The line transmitter is normally powered by internal batteries, and is designed to protect the user from voltages up to 250 VAC that may be accidentally encountered. Battery power is the sole power option available on the NaviTrack Brick. The High Voltage LED will light if the unit encounters more than approximately 62 VAC (RMS).



In compliance with Federal Standard EN-50249, the ST-305 line transmitter is designed to withstand up to 250 VAC 50/60 Hz excitation between the two leads.

The user is cautioned not to deliberately connect to live power lines. If the transmitter indicates the presence of high voltage, use high voltage precautions to carefully disconnect the line transmitter from the high voltage source.

NaviTrack Brick Components



Figure 1: Components of the NaviTrack Brick

Keypad and Display

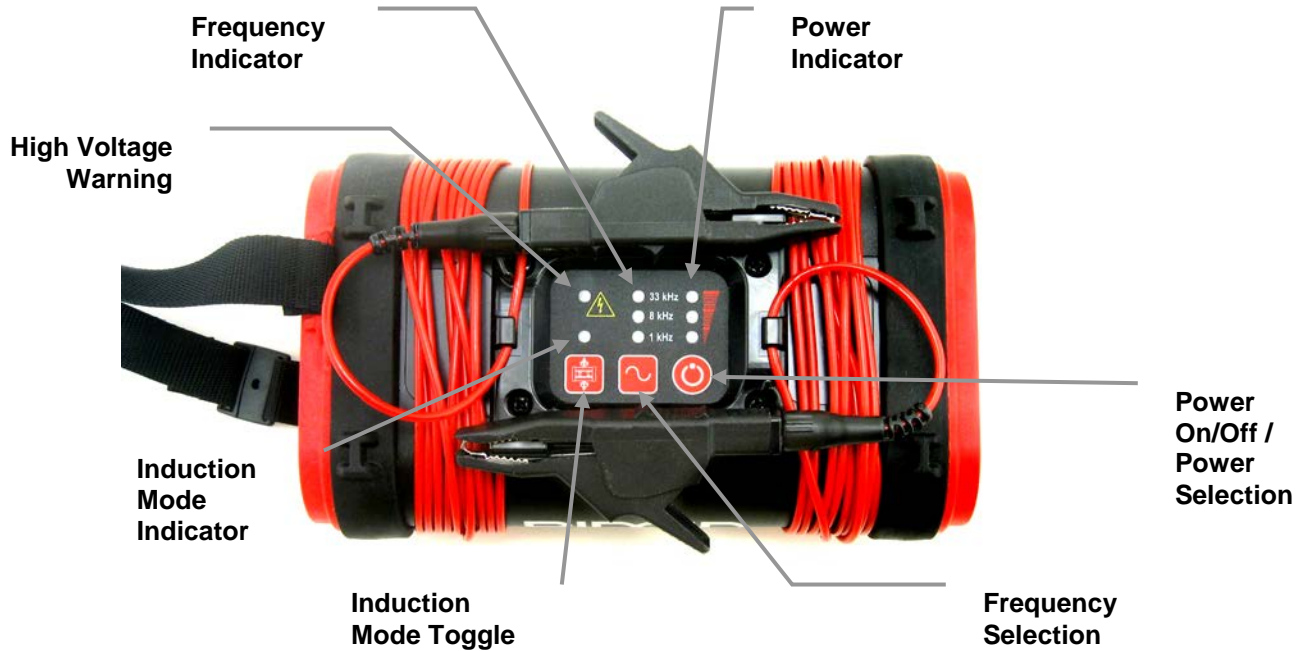


Figure 2: Keypad and Display

- **Frequency Indicator:** Indicates frequency in use.
- **Power Indicator:** Indicates the relative level of output power; displays estimated battery power level on start-up.
- **Frequency/Mode Selection:** Selects desired frequency; used to initiate high-frequency mode.
- **Power On/Off:** Used to power the NaviTrack Brick on and off, and to set current level.
- **Induction Mode Toggle:** Used to switch the NaviTrack Brick into Inductive Mode.
- **Induction Mode Indicator:** Illuminated when unit is in Inductive Mode.
- **High Voltage Warning:** Warning light when high voltage is encountered (> ~62V AC RMS).

Getting Started

Installing/Changing Batteries

To install batteries into the NaviTrack Brick line transmitter, rotate the knob on the battery holder counter-clockwise until the battery holder door unscrews. Pull straight back on the knob to remove the cover. Insert the 6 “C” batteries as shown on the inside decals .



Figure 3: Battery Orientation and Cover

Fit the cover into the case and push down firmly while turning down the knob clockwise to close. Ensure the cover is firmly screwed into place.

Note: When replacing batteries use 6 C cells that are the same type. Do not mix Alkaline with NiCd (NiCad or Nickel Cadmium) for example. Be sure to replace with batteries where all of the cells have the same amount of charge. Do not use half used alkalines with brand new.

CAUTION

Always remove batteries entirely before shipping the Brick.


Operation Time


Typical operation time varies for the Brick line transmitter, depending on factors such as load, and current transmitted. Other factors that affect the operation time will include chemistry of the battery (many of the new high performance batteries, such as the “Duracell® ULTRA” last 10%-20% longer than conventional alkaline cells under high demand

applications). Operation at low temperatures will also reduce battery life.

Batteries often recover after being subjected to high loads. If time is allowed, batteries may recover enough to offer additional hours of operation.

Powering Up / Down

Turn the power ON by depressing the Power  key on the keypad. The current frequency and power-level LEDs will light up. A beep will sound.

Power the unit OFF by depressing the Power  key on the keypad for 2 seconds. Three tones will sound.

Automatic Shut Down

To save energy, the NaviTrack Brick will automatically shutdown after an interval which varies with the power setting:

- Low Power 4 hours
- Medium Power 2 hours
- High Power 1 hour

Battery Check

At start-up, the Brick will check available power and will indicate estimated battery levels by lighting one, two, or three LEDs in the right hand column (power level) on the control panel. One LED indicates low batteries, two indicates medium charge, and three LEDs indicates full battery charge is available. These levels are only estimates based on a rapid internal check. A rapid series of beeps will sound if the battery levels run low in operation.

Sounds of the NaviTrack Brick Transmitter

Sounds are associated with specific events.

They include:

- Beeps – Beeps when current is flowing; rate increases with current increase.
- Beeps – Turn ON (4 beeps)/OFF (3 beeps).
- Short Double Tone – Inductive Clamp connected.
- Long-Short-Short Tone – Inductive Mode.
- Rapid series of beeps – Low Battery Warning

The sound may be toggled on or off by pressing the Frequency and Power buttons simultaneously.

Using the NaviTrack Brick Line Transmitter

The NaviTrack Brick transmitter is part of Ridgid's NaviTrack cable and pipe locating system. The NaviTrack Brick is used to energize a pipe or line with an "active" electrical signal, so that the underground line may be traced with a compatible receiver (such as the NaviTrack II). This allows the line's location to be correctly marked so it can be exposed for repair or avoided during excavation.

The NaviTrack Brick line transmitter can apply an active tracing signal to a target conductor in three ways:

Direct Connect – The transmitter's leads are connected directly to the target conductor and a suitable ground.

Inductive Clamp – The jaws of the inductive clamp encircle the target conductor; there is no metal-to-metal contact. The inductive clamp is connected to the transmitter via the jack at the transmitter's right end. (The inductive clamp is an optional accessory. See page 10).

Inductive Mode (internal coils) – the transmitter is placed over, and in-line with, a conductor. Its internal antenna broadcasts a signal to the target conductor below ground, inducing a current into the target conductor. See page 11.

DANGER

Always connect leads before turning the transmitter on to avoid electrical shock. Ensure transmitter is well grounded.

Direct-Connect Method

1. Attach the NaviTrack Brick line transmitter to ground and to the target line.

Remove the ground spike from the right end of the unit and insert it into the ground. Connect one of the cable leads to the grounding spike. The leads are universal, so either may be used for the ground.



Figure 4: Connecting the Ground Stake

2. Connect the other lead to the target conductor.



Figure 5: Connecting to a Line



Figure 6: Alternative Connection Method



WARNING

NEVER CONNECT TO LINES KNOWN TO BE ENERGIZED WITH A POTENTIALLY DANGEROUS ELECTRICAL CURRENT. To increase safety, **the ground lead should be attached first**. If there were an unknown high voltage running through the target line, this would allow a means of redirecting the current away from the transmitter and operator.

Note: Installations which use plastic pipes will typically have a trace wire installed along the pipe for tracing purposes. Simply clip the transmitter lead to the trace wire.

Power the NaviTrack Brick up by pressing the Power Key. A multiple tone will sound on powering up. After a short silence, the unit will begin beeping regularly, indicating current is flowing.

3. Select a Frequency on the Brick.

The NaviTrack Brick line transmitter offers four choices of frequency. Frequency is chosen by pressing on the Frequency Select key which will light the LEDs in sequence.

Available frequencies are:

- 1kHz
- 8kHz
- 33 kHz
- 262 kHz
- European version: 93 kHz (93,623 Hz.)



Figure 7: NaviTrack Brick Showing 8kHz, Medium Power

To set the unit on 262 kHz, press the Frequency Key four times in a rapid succession. The 33 kHz LED will flash rapidly to indicate that the 262 kHz (European version: 93 kHz) frequency has been set.

4. Check the Circuit and Adjust Power Level

Confirm the circuit is grounded by ensuring that the connection to the ground stake is secure and the stake is firmly embedded in the ground. To adjust the power level, press the power button briefly. The Brick will cycle through the low, medium, and high power levels.

Note – Higher power settings produce more current, which gives a stronger signal. Less current prolongs battery life. Signal strength measured by the receiver is directly proportional to the amount of current on the line. More current will produce a stronger signal received by the receiver.

Use only as much current as is needed to get a strong reading on the receiver.

Power Settings

There are 3 power settings that the user can choose from:

- **Low** power (approximately .5 watt)
- **Medium** power (approximately 1.5 watts)
- **High** power (approximately 5 watts)

Low power will provide the least current with the longest battery life. Actual power output will vary with circuit resistance and frequency used. These values assume a nominal 320-ohm load.

CAUTION

If the transmitter is producing low or no current due to poor circuit conditions, the signal may be *too low to be detected* by the receiver locator and inadequate for tracing.

5. Check the Receiver.

Confirm that the transmitter and receiver are set to the same frequency. Hold the receiver near the transmitter cables and confirm a signal is being received.

FCC Limits

47 CFR 15.213 requires that from 9kHz up to (but not including) 45kHz, peak output power shall not exceed 10W. From 45kHz to 490kHz, it must not exceed 1W. When the ST-305 is set to 262 kHz (European version: 93 khz), the power output levels are limited:

Low: 0.3 watt
Medium: 0.6 watt
High: 1 watt

These values assume a nominal load of 320 ohms.

Useful Operating Tips

- The lower the resistance, the more current will be put on the line. A good circuit is one that allows enough current to flow so that the locator gets a solid, clear signal.
- To help lower the resistance of the circuit, scrape away dirt, paint, and corrosion before connecting to the target conductor or to the grounding spike.

- A good ground has lower resistance, which allows more current and a stronger signal. For a better connection to ground, insert the grounding spike as far as possible. Moist ground is a better conductor than dry soil, so try wetting the area if necessary.
- The transmitter's leads can act as antennas, broadcasting a strong signal. If locating close to the transmitter, keep the leads short by stowing the excess length on the transmitter's body. This will reduce the amount of interfering signals from the leads. Where possible, place the transmitter away from the area of the intended locate. This is especially true in Inductive Mode, to avoid coupling through the air with the receiver.
- Start by using the lowest frequency and the least amount of current needed to effectively illuminate the line. Lower frequencies travel farther because they do not dissipate as quickly. Higher frequencies generally make it easier to illuminate a line, but they don't travel as far. They are much more likely to couple onto other utility lines, distorting the signal and reducing the accuracy.

Inductive Clamp Method



Figure 8: NaviTrack Brick with Inductive Clamp

When using an inductive clamp, plug the inductive clamp jack into the receptacle provided at the end of the transmitter. The induction-mode LED will flash when a clamp is connected. Note that for a clear signal using an inductive clamp, both ends of the utility should be grounded.

Clamp the inductive clamp around an accessible portion of the line chosen to trace. The clamp will induce a signal into the conductor when the transmitter is powered on.

Select frequency and power as with the Direct Connect Method. Operational frequency choices for use with an Inductive Clamp are 1 kHz, 8 kHz, and 33 kHz.



Figure 9: Inductive Clamp Attached to a Conductor

Inductive Mode

1. Be sure that the transmitter is positioned correctly over the line.

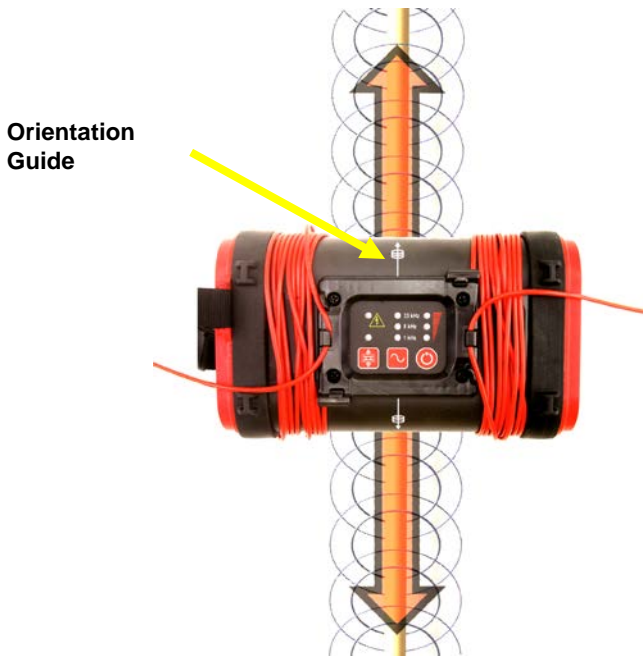
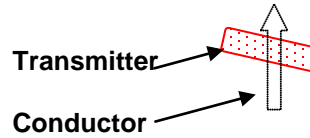


Figure 10: Orientation to the Line – Inductive Mode

Note: A slight tilt to the axis of the conductor can help reduce the probability of air-coupling:



2. Power the transmitter on. Push the Inductive Mode switch to induce a signal onto the line without a direct connection. (A long beep will sound when entering Inductive Mode.) The Inductive Mode LED will light .
3. Clips and leads are not used. Note that for a clear signal using induction, both ends of the utility should be grounded.
4. The transmitter will emit a series of regular beeps as long as it is in Inductive Mode.



Figure 11: NaviTrack Brick in Inductive Mode at 33 kHz

5. Lower frequencies couple poorly; therefore the NaviTrack Brick transmitter in Inductive Mode defaults to 33KHz. Higher power is usually required for a clear signal in Inductive Mode. Pressing the power button will cycle through the three available power levels: 1 kHz, 8 kHz, and 33 kHz.

To avoid tangled cords, wrap the cords back around the ends of the NaviTrack Brick when storing, lead end last, and secure the ends under the prongs provided on the transmitter.

NOTE: If using the Brick in Inductive Mode, be certain to switch Inductive Mode off if you are going to use the unit in direct connect mode. Air coupling can create very confusing signals if you inadvertently have the unit set to Inductive Mode and are trying to use it in direct connect mode.

Coupling through Air

When a line transmitter is set to Inductive Mode, it energizes a wire or pipe under it by emitting a pulse of energy at the selected frequency. This pulse forms an electromagnetic field which induces a current into the conductor (the pipe or wire) underneath it. The field builds and collapses at the frequency at which the pulse is generated by the transmitter.

A secondary field is set up around the pipe or wire by the current induced into it. This secondary field is normally round in shape, just as it would be if you connected the transmitter directly. But the primary field from the transmitter, which does the inducing, is not round, and is not the same as the field set up on the pipe or wire.

The field generated by the transmitter in Inductive Mode has a shape something like a football. When the transmitter is sitting on the ground, roughly half of that field extends below it. The ends of the “football” extend out past the central axis of the transmitter in the same direction as the pipe or wire under it.

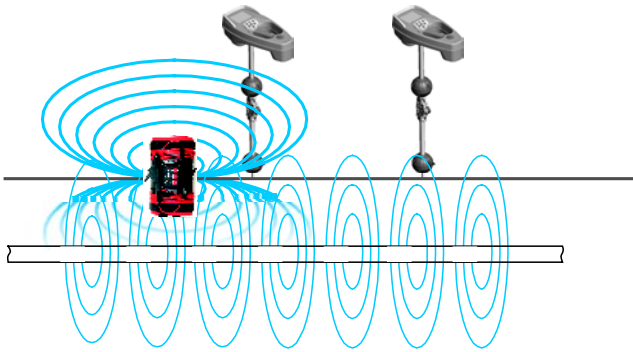


Figure 12: Air-Coupling in Inductive Mode

Near the transmitter, the receiver reads on the local dipole field around the transmitter.

If the receiver is within this field, it will read clearly and well on the transmitter, rather than on the pipe or wire being traced. The transmitter and the receiver will couple through the air for a limited distance around the transmitter. This problem does not occur with direct coupling, and is not important when using an inductive clamp. But it can be an issue when using the transmitter in purely Inductive Mode (i.e., without a clamp.)

It is important to set up the transmitter, when using the Inductive Mode, a good 30 feet (10m) away from the region where tracing occurs, and to be aware of the difference between the transmitter’s field and the induced field being traced. They will both have the same frequency, but the transmitter’s field is limited to the region around the transmitter itself.

Note: The inductor core of the ST-305 emits the signal when the unit is transmitting in Inductive Mode. A hard hit or a drop could possibly damage the core. To test that the core is intact using a SeekTech SR-20 receiver:

1. Power transmitter on.
2. Set frequency output to 33kHz.
3. Set power level to high power.
4. Power receiver on.
5. Set to receive 33kHz.
6. Move receiver 12 inches from transmitter.

If the inductor core is undamaged, the receiver should show a Signal Strength reading larger than 2000.

High Voltage Indicator

Whenever the line transmitter encounters voltage higher than 62 VAC, it will flash a red LED at the top of the keypad. Should this occur carefully disconnect the transmitter using high-voltage precautions.



Figure 13: High Voltage Warning LED

Useful Information

Resistance and Impedance

A circuit has a certain amount of resistance to current; this is measured in ohms. (Ω) Higher resistance reduces the amount of current that can be put on an underground line. Factors that affect resistance in the transmitter circuit are conductivity of the line itself, breaks or faults in the line, insulation problems with the line, and how well the transmitter is grounded. (Poor grounding makes the return path of the circuit more resistive).

Grounding can be affected by soil conditions, length of grounding rod, or how the line transmitter is connected to the grounding rod. Good grounding improves your signal by reducing the total resistance the transmitter encounters.

Impedance is a form of resistance which is caused by a back-force in the electrical field caused by alternating current (AC). Impedance can be thought of as “AC resistance”, and adds to the resistance in the circuit in proportion to the frequency being used (i.e., higher AC frequencies add more impedance than lower ones).

Using High and Low Frequencies

Understanding the behaviour of different frequencies under different conditions can be important in doing effective and accurate locates.

In both direct-connect and Inductive Mode, the Brick is essentially doing the same thing – imposing a wave of traceable energy onto the target pipe or line. This electrical energy rises and falls a certain number of times per second, which in turn causes a *magnetic* field to build and collapse around the conductor at a regular rate. This rate is known as the *frequency* of the generated current and of its consequent magnetic field.

Frequency is expressed in terms of hertz, which means cycles per second, or kilohertz, thousands of cycles per second.

Low Frequencies

The Brick will generate frequencies as low as 1 kilohertz. Low frequencies are especially useful for several reasons. First, they will travel farther at a detectable level along a continuous pipe or wire

conductor than a high frequency will. Secondly, lower frequency fields lose less energy to the area around the conductor. If you can get a clear signal on your receiver using a low frequency it is generally preferable, because you will be able to trace it further and it will tend to confine itself to the original conductor more than a high-frequency signal will. But a low-frequency signal is more likely to be interrupted by gaps in the line or poor insulation, or hidden by other magnetic fields in the area. It is a “weaker” signal in that respect. While it doesn’t jump as readily onto other lines, it will dissipate if traveling on a line with poor insulation, bare-concentric cable, or bare pipe exposed to earth, and will follow the path of least resistance, which is not always the path intended by the operator. This can make tracing the original conductor difficult.

High Frequencies

The Brick will generate frequencies as high as 262 kilohertz. (European versions are limited to 93 kHz.) There are certain conditions where only higher frequencies will serve. High-frequency signals are especially valuable when you are tracing a line that has some sort of interruption—such as a gasket, or decayed insulation – in the continuity of the conductor. The reason is that a high-frequency signal can “jump” some barriers and continue without dissipating as much signal as a lower frequency would.

A high-frequency signal can also be valuable in getting a signal on a receiver when there is a poorly grounded circuit, compared to the signal the same receiver will detect at a lower frequency. While all currents tend to follow the path of least resistance, a high-frequency current will “buck” this tendency to some degree, reaching across incidental barriers.

The disadvantage to higher frequencies is that they also jump onto other conductors. If you have two wires side by side in a trench, a higher frequency used to trace one of them may illuminate both of them. Additionally, nearby metallic objects, or even highly metalized soil, may pick up a higher frequency and distort the picture at the locator. If a gas line is being “illuminated” with a high frequency current, it may bleed over onto a water line or a power cable running nearby, confusing the picture of where the original line is.

As a general rule, detecting with lower frequencies is more reliable for the reasons given above, IF you can get a good signal.

Transportation and Storage

To avoid tangled cords, wrap the cords back around the ends of the Brick when storing, lead end last, and secure the ends under the prongs provided on the transmitter.

Before transporting make sure that the unit is turned OFF to preserve battery power.

Also make sure that the NaviTrack Brick line transmitter is secure and does not bounce around or get bumped by loose equipment.

CAUTION

Always remove batteries entirely before shipping the NaviTrack Brick.

The NaviTrack Brick line transmitter should be stored in a cool dry place.

Note: If storing the NaviTrack Brick line transmitter for an extended period of time, the batteries should be removed.

Maintenance and Cleaning

1. Keep the NaviTrack Brick line transmitter clean with a damp cloth and some mild detergent. Do not immerse in water.
2. When cleaning, do not use scraping tools or abrasives as they may permanently scratch the display. NEVER USE SOLVENTS to clean any part of the system. Substances like acetone and other harsh chemicals can cause cracking of the case.

Locating Faulty Components

For troubleshooting suggestions, please refer to the trouble shooting guide at the end of the manual. If necessary, contact NaviTrack Technical Service at 866-733-5832.

Service and Repair

Tool should be taken to a RIDGID Independent Authorized Service Center or returned to the factory. All repairs made by Ridge service facilities are warranted against defects in material and workmanship.

If you have any questions regarding the service or repair of this machine, call or write to:

Ridge Tool Company
Technical Service Department
400 Clark Street
Elyria, Ohio 44035-6001
Tel: (800) 519-3456
E-mail: TechServices@ridgid.com

For the name and address of your nearest Independent Authorized Service Center, contact the Ridge Tool Company at (800) 519-3456 or <http://www.ridgid.com>.

Trouble Shooting Guide

| PROBLEM | REMEDY |
|---|---|
| LEDs appear completely dark, or completely light when unit is ON. | Try Powering the unit OFF and then back ON. |
| | Allow the unit to cool if it has been exposed to excessive heat from sunlight. |
| Receiver will not pick up the line transmitter's signal. | Check that the correct frequency has been selected on both units. (See manual for the specific receiver.) Higher or lower frequencies may be tried. |
| | Check to make sure that the receiver and the line transmitter are in the same mode. |
| | Make sure that the proper functions are activated on the receiver. e.g. activating the line trace function for line tracing.(See manual for the receiver.) |
| | Adjust power upward if possible. |
| | Ensure grounding is adequate. |
| | If using inductive mode, check for core damage using the test on page 12. |
| Unit will not turn ON. | Check orientation of batteries. |
| | Check that the batteries are fresh or charged. |
| | Check to see that the battery contacts are OK. |
| 93 kHz signal not received | Check that receiver is set to the actual 93kHz frequency of 93,696 Hz. Some receivers use a different frequency for 93 kHz (93,622.9). Update locator software. |

Specifications

Weight:

1.6 lbs (.772 Kg) w/o batteries, 2.5 lbs.(1.1 Kg) w/batteries.

Dimensions:

Depth 4.7" (11.9 cm)
Width 7.75" (19.6 cm)
Height 3" (7.6 cm)

Power Source:

6 Alkaline or rechargeable batteries.(C-Cells).

Power Settings:

25 mA to 5W.

Output Power:

Nominal 5 watts.

Default Settings

42V Maximum (RMS).
1 kHz, 8kHz, 33 kHz selectable.

Standard Equipment

| <u>Item</u> | <u>Cat. #</u> |
|-------------------------------|---------------|
| NaviTrack Brick Transmitter | 20168 |
| Direct connect leads w/ clips | 22753 |
| Operator's Manual | None |
| 6 C-cell batteries (Alkaline) | None |

Standard Replacement Parts

| | |
|-------------------------------|-------|
| Ground Spike | 22528 |
| Alligator Clip | 18443 |
| Cable | 22743 |
| Battery Holder Cover Assembly | 22748 |

Notes



What is covered

RIDGID® tools are warranted to be free of defects in workmanship and material.

How long coverage lasts

This warranty lasts for the lifetime of the RIDGID® tool. Warranty coverage ends when the product becomes unusable for reasons other than defects in workmanship or material.

How you can get service

To obtain the benefit of this warranty, deliver via prepaid transportation the complete product to RIDGE TOOL COMPANY, Elyria, Ohio, or any authorized RIDGID® INDEPENDENT SERVICE CENTER. Pipe wrenches and other hand tools should be returned to the place of purchase.

What we will do to correct problems

Warranted products will be repaired or replaced, at RIDGE TOOL'S option, and returned at no charge; or, if after three attempts to repair or replace during the warranty period the product is still defective, you can elect to receive a full refund of your purchase price.

What is not covered

Failures due to misuse, abuse or normal wear and tear are not covered by this warranty. RIDGE TOOL shall not be responsible for any incidental or consequential damages.

How local law relates to the warranty

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary, from state to state, province to province, or country to country.

No other express warranty applies

This FULL LIFETIME WARRANTY is the sole and exclusive warranty for RIDGID® products. No employee, agent, dealer, or other person is authorized to alter this warranty or make any other warranty on behalf of the RIDGE TOOL COMPANY.

Ridge Tool Company

400 Clark Street

Elyria, Ohio 44036-2023



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