Leica LEICA DD120

Leica DD120 Underground Utility Locator Instruction Manual

Model: LEICA DD120

1. Introduction

This manual provides comprehensive instructions for the safe and effective operation, setup, and maintenance of the Leica DD120 Underground Utility Locator. This device is designed to accurately locate metallic wires and pipes with or without an electric charge, aiding in the prevention of accidental damage to underground infrastructure.

The Leica DD120 is a robust and reliable tool for professionals requiring precise utility detection, featuring auto-power up, self-test functions, and depth estimation capabilities when used with a compatible transmitter.

2. Safety Information

Always prioritize safety when operating the Leica DD120. Failure to follow these safety guidelines may result in serious injury, property damage, or inaccurate readings.

General Safety Precautions:

- Before commencing any excavation, always verify the location of all underground utilities using the locator and other available methods.
- Wear appropriate personal protective equipment (PPE) as required by site regulations.
- Do not operate the device in hazardous environments unless it is specifically rated for such conditions.
- Keep the device clean and free from debris.
- Ensure batteries are correctly installed and replaced when low to maintain optimal performance.
- Avoid direct contact with live electrical circuits. The locator is designed for detection, not for direct contact.
- Do not modify the device in any way. Unauthorized modifications can compromise safety and performance.

Electrical Safety:

- Be aware of the risks associated with live electrical cables. Always assume lines are live until proven otherwise.

- Maintain a safe distance from detected electrical lines.
- In case of accidental contact with an electrical line, immediately cease operations and follow emergency procedures.

3. Product Overview

The Leica DD120 is a handheld receiver designed for efficient and accurate detection of underground utilities. Its robust construction ensures durability in various field conditions.

Figure 3.1: Leica DD120 Underground Utility Locator. This image shows the main unit of the locator, which is primarily yellow with a black handle and top section. The Leica logo and "DIGICAT 550i Cable Avoidance Tool" are visible on the yellow body. A small display area is present on the black top section.

Key Components:

- **Receiver Unit:** The main handheld device for detecting signals.
- **Display:** LED Signal Strength Display provides peak readings and indicates signal strength.
- **Controls:** Buttons for mode selection and other functions (specific button functions are detailed in the Operation section).
- **Battery Compartment:** Located typically at the base or handle for AA alkaline batteries.
- **Speaker:** Provides audible alerts for detected signals.

4. Setup

4.1 Battery Installation:

1. Locate the battery compartment, typically on the underside of the handle or main body.
2. Open the battery compartment cover.
3. Insert six (6) AA alkaline batteries, ensuring correct polarity (+/-) as indicated inside the compartment.
4. Close the battery compartment cover securely.

4.2 Initial Checks:

- Upon power-up, the device performs self-test functions. Observe the display for any error indicators.
- Ensure the display is clear and readable.
- Verify audible alerts are functioning by testing in a known signal area or by activating a test tone if available.

5. Operation

The Leica DD120 offers multiple operating modes to detect various types of underground utilities.

5.1 Power Mode (50/60 Hz):

This mode detects electromagnetic fields radiated by loaded power cables. It is ideal for quickly identifying live electrical lines.

1. Select "Power Mode" on the device.

2. Hold the locator vertically and sweep it slowly across the area of interest.
3. Observe the LED signal strength display. A peak reading indicates the presence of a power cable.
4. The audible alert will increase in pitch and volume as you approach the utility.

5.2 Radio Mode (15 to 60 Hz):

Radio mode detects re-radiated radio signals that are often present on metallic utilities such as pipes and cables, even if they are not carrying an electrical current.

1. Select "Radio Mode".
2. Sweep the locator over the area, listening for changes in the audible tone and observing the display.
3. This mode is useful for initial sweeps to identify potential utility paths.

5.3 Transmitter Mode (8 and 33 kHz):

For precise location and depth estimation, use the DD120 with a compatible transmitter (e.g., Leica DD120 Transmitter, sold separately). The transmitter induces a specific signal onto the utility, which the receiver then detects.

Direct Connection:

- Connect the transmitter directly to the utility (e.g., a metallic pipe or cable).
- Select the corresponding frequency (8 kHz or 33 kHz) on both the transmitter and the DD120 receiver.
- Sweep the receiver along the expected path of the utility.

Induction:

- Place the transmitter on the ground above the utility to induce a signal without direct connection.
- Select the appropriate frequency on the receiver.
- Proceed with sweeping the receiver to locate the induced signal.

5.4 Depth Estimation:

When used with a compatible transmitter, the DD120 can estimate the depth of the detected utility. This feature is crucial for safe excavation planning.

1. Ensure you are in Transmitter Mode and have a clear, strong signal.
2. Position the locator directly over the utility for a peak signal reading.
3. The estimated depth will be displayed on the screen. Note that accuracy can be affected by soil conditions and signal interference.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your Leica DD120.

6.1 Cleaning:

- Wipe the device with a soft, damp cloth after each use.
- Do not use abrasive cleaners or solvents, as these can damage the casing or display.
- Ensure no moisture enters the battery compartment or other openings.

6.2 Storage:

- Store the locator in its carrying case when not in use to protect it from dust, dirt, and physical damage.

- Store in a cool, dry place, away from direct sunlight and extreme temperatures.
- Remove batteries if the device will not be used for an extended period to prevent leakage.

6.3 Battery Care:

- Always use fresh, high-quality AA alkaline batteries.
- Replace all batteries simultaneously; do not mix old and new batteries.
- Dispose of used batteries according to local regulations.

7. Troubleshooting

This section addresses common issues you might encounter with your Leica DD120.

Problem	Possible Cause	Solution
Device does not power on.	Dead or incorrectly installed batteries.	Check battery polarity. Replace all batteries with new AA alkaline batteries.
No signal detected.	No active utility present; incorrect mode selected; weak signal; interference.	Ensure a utility is present. Switch between Power, Radio, and Transmitter modes. Reduce interference sources. Use a transmitter for stronger signals.
Inaccurate depth reading.	Poor signal strength; interference; non-uniform ground conditions.	Ensure the locator is directly over the utility. Minimize interference. Recalibrate if possible (refer to advanced manual if available).
Audible alert is weak or absent.	Low battery; speaker malfunction.	Replace batteries. If issue persists, contact customer support.

8. Specifications

Feature	Detail
Model	LEICA DD120
Locator Type	Utility Line Locating Receiver
Maximum Locating Depth	Up to 10 ft (3 meters)
Operating Frequencies	Power Mode: 50 Hz, 60 Hz Radio Mode: 15 to 60 Hz Transmitter Mode: 8 kHz, 33 kHz
Circuit Connection Type	Direct, Induction (with compatible transmitter)
Display	LED Signal Strength Display (Peak Reading)
Features	Auto-Power Up, Depth Estimation (with transmitter), Self Test Functions
Audible Alert	Yes

Feature	Detail
Battery Type	6 x AA Alkaline Batteries
Item Weight	7 pounds (approx. 3.17 kg)
Product Dimensions	14 x 4.5 x 30.8 inches (approx. 35.5 x 11.4 x 78.2 cm)
Includes	Receiver Unit, Carrying Case

9. Warranty and Support

For detailed warranty information, technical support, or service inquiries regarding your Leica DD120 Underground Utility Locator, please refer to the official Leica Geosystems website or contact their authorized service centers.

It is recommended to register your product with Leica Geosystems to ensure you receive important updates and support.

Leica Geosystems Official Website: www.leica-geosystems.com

Please have your model number (LEICA DD120) and serial number ready when contacting support.

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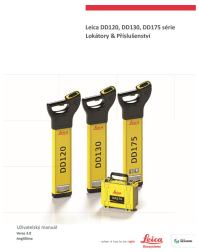
Related Documents - LEICA DD120

	Uživatelský manuál Leica DD120, DD130, DD175 série: Lokátory a Příslušenství Tento uživatelský manuál poskytuje podrobné bezpečnostní pokyny, pokyny pro nastavení a provoz lokátorů Leica DD120, DD130, DD175 a souvisejícího příslušenství.
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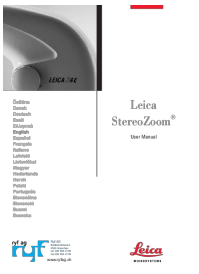
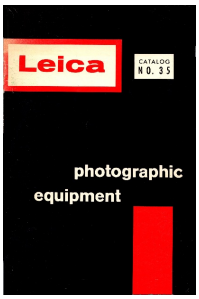
	Leica StereoZoom Stereomicroscope User Manual: S4 E, S6, S8 APO Guide Comprehensive user manual for Leica StereoZoom stereomicroscopes (S4 E, S6 E, S6, S6 T, S6 D, S8 APO). Covers features, operation, maintenance, and technical specifications for scientific and industrial applications.

	Leica Photographic Equipment Catalog No. 35: Cameras, Lenses, and Accessories Explore the comprehensive Leica Catalog No. 35, featuring a wide range of Leica cameras, precision lenses, projectors, darkroom equipment, and accessories. Discover the legendary Leica System for professional and amateur photographers.
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	Mise à Jour Firmware Leica M11 2.6.0 : Nouveautés, Corrections et Guide d'Utilisation Guide complet de la mise à jour firmware 2.6.0 pour les appareils photo Leica M11, M11 Monochrom, M11-P, M11-D et M EV1. Découvrez les nouvelles fonctionnalités, les corrections d'erreurs, les instructions d'installation, le formatage du stockage, le réglage de la balance des blancs et la gestion des objectifs.