GOLDEN MASK

PROFESSIONAL SERIES

# H120

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# User Guide

*Golden Mask H120 User Guide - ver. 1.0 (last updated: February 2026)*





# About the H120

The Golden Mask H120 (GM-H120) is a PROFESSIONAL deep-seeking metal detector designed primarily for professional survey and exploration activities. Based on innovative bipolar pulse-induction (PI) technology, the device enables detection of both single and clustered metallic objects at exceptional depths.

# H120 Overview

The main advantage of the GM H120 is its ability to detect high-conductivity targets (single and grouped targets with high VDI values) at depths significantly exceeding those of existing comparable detectors on the market. This makes it a tool with no direct market equivalent.

Most deep-seeking pulse-induction detectors achieve optimal results mainly with low-conductivity targets such as native gold, thin coins, thin-walled metal objects, etc. The GM H120 extends these capabilities to massive, high-conductivity objects as well.

The device features analog controls and does not use automated processor-based operating modes. This requires basic technical qualification and knowledge of fundamental metal-detecting principles. For this reason, the GM H120 is not intended for hobby or recreational use.

The detector is supplied as standard with a 32 cm search coil (antenna) and supports the use of coils of different sizes depending on soil conditions and target types.

Operator feedback is provided through dual-tone audio indication (via built-in speaker or headphones). The high and low tones identify the two main metal categories:

- Non-ferrous metals
- Ferrous metals

Due to the lack of a visual interface, the detector does not perform additional sub-category discrimination. Signal analysis and interpretation are performed entirely by the operator, which requires good training and experience.

In areas with heavy contamination from iron debris, wire, and slag, productivity will be lower compared to modern digital coin detectors.

## IMPORTANT! PLEASE READ!

The H120 is a very deep PROFESSIONAL metal detector. As such, it has a prolonged learning curve - you will need some time to get used to the detector and it's behaviour. Please, do NOT expect that you will reveal the machine's full potential in a day or two. We would say a week would be normal, but it is strictly individual - some people learn fast, other people - not so fast. So, have patience and try to understand how your machine behaves on different spots and with different settings. We are sure you will be more than happy with your H120 after you get used to it.





# Recommended Applications

The Golden Mask H120 is most suitable for:

- Areas where standard detectors have reached their depth limits
- Uncultivated land
- Mountain and forest regions
- Fields with low to moderate metal contamination

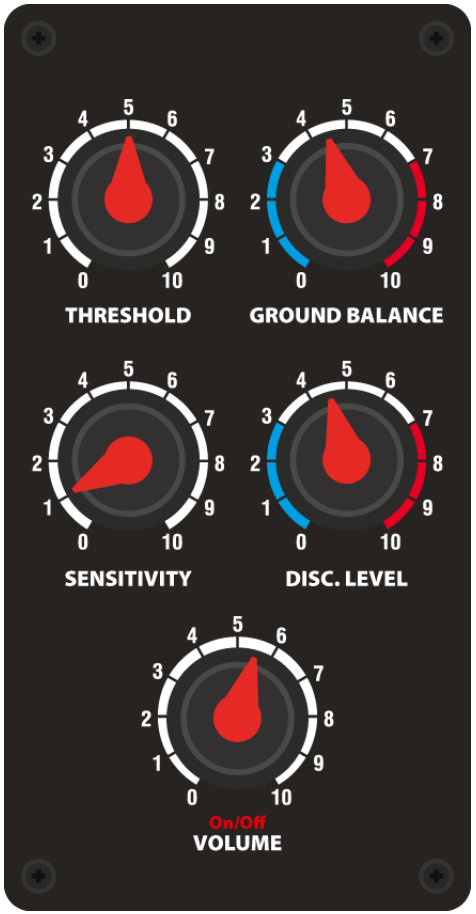
# Coils and Compatibility

The H120 operates exclusively with Golden Mask BPI-series search coils. These coils are proprietary and specially tuned for the H120 BPI platform.

**Using non-BPI or third-party coils will damage the electronics of your detector and void warranty.**

# Controls overview

- Ground Balance – adjusts the ground noise filter.
- Threshold – adjusts the audio background threshold level.
- Disc. Level – adjusts iron sensitivity for tonal discrimination.
- Sensitivity – adjusts the overall detector sensitivity.
- ON/OFF + VOL – power on/off and volume control.








# Initial Setup and Commissioning

The following settings provide maximum stability and facilitate operator training. They do not represent the maximum depth capabilities of the device but are strongly recommended for initial operation.

## Step-by-Step Setup Procedure

- Charge the detector battery (see page 11). After the charging cycle is completed (the charger indicator turns green), assemble the detector.
- Select an area with minimal metal contamination and low electromagnetic interference (away from power lines, machinery, etc.). This is especially important during training.
- Set Disc. Level to an increased position (approximately value 5).
- Set Sensitivity to the minimum position (1).
- Place the detector in a stationary position (on the ground or supported securely) and switch it on using ON/OFF, selecting an appropriate volume level.
- Adjust Threshold so that a very faint, continuous background hum is heard in the headphones. Excessively loud or completely absent sound indicates incorrect adjustment.

## Ground Balance Adjustment

Hold the detector and perform smooth up-and-down movements with the coil (amplitude approximately 15–20 cm above the ground).

Slowly rotate the Ground Balance control until ground noise disappears:

When set too far right (9–10) – the detector signals when the coil is lifted away from the ground.

When set too far left (0–1) – the signal appears when the coil approaches the ground.

The correct setting is the intermediate point where no ground response is detected

**Important: During Ground Balance adjustment, ensure that there are no metal objects under the coil. The presence of metal will result in incorrect calibration and a significant loss of depth performance.**

### Ready for Operation

After correctly completing all initial setup steps, the detector is in operational condition and ready for use.

It is recommended that the operator work for some time with these basic settings to develop proper operating habits and signal recognition skills. At a later stage, gain levels can be gradually increased and settings adjusted experimentally to achieve maximum detection depth.

# Controls Detailed Description

### 1. Power & Audio – ON/OFF VOLUME

Powers the unit and adjusts speaker/headphone volume. Rotate clockwise to switch on and increase volume.

Higher volume makes target signals easier to hear in noisy environments, but it does not increase detection depth or sensitivity. Always use the lowest comfortable loudness to avoid ear fatigue and signal distortion.

### 2. Discrimination – DISC. LEVEL

Discrimination determines how strongly the detector ignores iron and other unwanted metals.

• Low settings allow more target signals through and provide maximum depth. You may hear iron responses.

• Medium settings balance depth and iron rejection for general searching.

• High settings reject most iron and low-conductive metals, but reduce overall depth and may eliminate small, thin, or low-conductive targets such as small gold items.

Higher discrimination always = more filtering and less depth.

### 3. Threshold Level – THRESHOLD

Threshold sets the faint background hum of the detector when no metal is present. This hum acts as a reference point:

• A low, stable threshold allows you to hear weak, deep targets more clearly.

• If set too high, the constant noise will mask faint signals and cause listening fatigue.





• If set too low or silent, you lose sensitivity to very deep or tiny targets.

Proper threshold setting improves both depth perception and response speed.

### 4. Ground Balance – GROUND BALANCE

Adapts the detector electronics to the current soil response to eliminate the signal, produced by the soil. Essential for stable operation in mineralized soils.

Ground Balance Steps

1. Locate soil spot free of metal.
2. Pump the coil 5–20 cm above the surface.
3. Adjust GB until coil movement produces minimal or no response.

For difficult ground, reduce sensitivity and repeat the process.

### 5. Sensitivity – SENSITIVITY

This control regulates the detector's amplification and response to weak signals.

• Higher sensitivity increases detection depth and reactivity to small objects

• Too high makes the detector unstable in mineralized soils or EMI-rich areas

• Lower settings improve stability but reduce depth

The goal is to run sensitivity as high as possible while keeping the detector stable.

# Operating Conditions

### Outdoor Use

The H120 is designed for open terrain. In urban settings, electrical noise and metallic structures may cause instability, false tones, or reduced depth.

For accurate performance testing, operate the detector outside populated areas.

### Nearby Metal Detectors

When two metal detectors run close together on similar frequencies, interference tones are normal. Increase distance or adjust settings to reduce noise.

### Mobile Phones

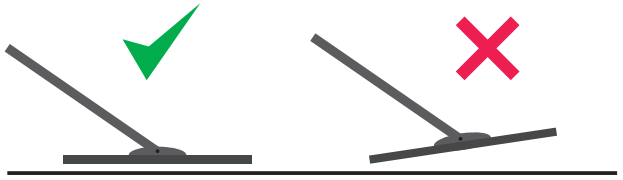
Mobile phones with weak network reception periodically increase transmission power, potentially causing strong EMI, resulting in false signals. In normal conditions, phones do not interfere with the H120.

## Searching for Metal Objects

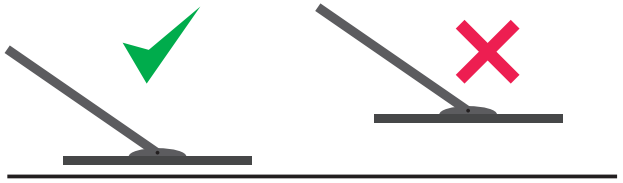
The Golden Mask H120 detector operates in MOTION mode, meaning it can identify a target only when the search coil is in motion. To perform an effective search, sweep SLOWLY the coil left–right just above the ground surface while moving forward at a steady pace. Maintain an overlapping, snake-like coil pattern to ensure complete ground coverage and avoid missing potential targets.

### For optimal performance:

• Keep the coil parallel to the ground throughout the sweep. This guarantees the best stability and maximum detection depth.



• Maintain a consistent sweep speed—not too fast and not too slow. With practice, you will determine the ideal pace, although slightly slower sweeping generally produces better results.



• Keep the coil as close to the surface as possible without touching it. Lifting the coil too high will significantly reduce detection depth.

When a metal object enters the detection field, the detector emits an audio response. The type of sound depends on the selected audio mode.





## Using Headphones

Using headphones can dramatically increase your search result, beacause of the possibility to hear the weakest signal that you won't hear on speaker. Thus, using headphones is recommended for best performance and for revealing the full potential of your detetctor.


The Altus can use ONLY wired headphones. The hedphones port is on the front side of the control box and is a standard 6.35 mm STEREO type.

You can use any standard STEREO headphones. Use a pair produced by reputable brand to avid problems. Avoid using headphones with 3.5 mm jack with adapter - most cheap adapters cause problems.

## Charging the Detector Battery

The Golden Mask H120 includes a factory-installed 8.4V 6000 mAh Li-Ion battery. Under normal conditions, the battery provides approximately 7 hours of continuous operation, depending on the sound volume level. If you use the detector on headphones, this could increase the working time with approximately 1 hour or even up to 2 hours in ideal temperature and usage conditions.

### Temperature Considerations

• At temperatures below 10°C, actual battery capacity decreases.

• Near or below 0°C, capacity may drop by up to 50%.

• As temperature rises again, the battery returns to normal performance.

### Before First Use

The detector is shipped with about 20% battery charge. You must charge the battery at 100% before operating the detector for the first time.

## Charging Frequency

Recharge the detector before every search day to ensure sufficient power. Li-Ion batteries do not suffer from memory effect—charging at any level is safe for the battery.

**When the battery reaches a minimum level, a continuous sound is emitted (sounds like an old mobile ring tone). You must charge the battery to continue using the detector.**

## Charging Procedure

1. Locate the charging socket on the front side of the control box.

2. Connect the charger to the charging port.

3. Plug the charger into a power socket.

4. The charging LED will turn RED during charging and switch to GREEN when charging is completed.

The detector charging system automatically disconnects charging once the battery is full. Although not required, unplugging the charger afterward is recommended for energy efficiency.

At room temperature, the battery is charged from 5 to 100% in approximately 3.5 hours.

Battery lifespan is approximately 1000 charge cycles with proper use and storage.

**Warning: Do not turn on the detector while charging or while connected to the charger. This could damage the detector electronics.**

# Maintenance and Care

## Water and Rain Precautions

Detector electronics block is NOT water or rain proof, nor it has any water protection. You must keep it dry to avoid problems. Using a strong plastic bag on the electronics block is an effective way to protect it from rain drops, altought it may look/sound wierd.





## Cleaning

Use a soft, damp cloth. Do not use detergents and solvents. A drop of soft hand soap on a wet cloth is quite enough and will not harm the detector surface.

## Temperature Precautions

After sudden transitions from hot to cold environments—or vice versa—allow 5–10 minutes for the electronics to stabilize before switching on.

## Physical Impact

Be careful when using the detector to not hit the back side with the control knobs.

Do not strike the coil on stones, rocks, or hard surfaces.

## Coil protection

The H120 search coils have a Kevlar/Carbon bottom for strength. An additional protector is not needed and is not offered, since it adds weight, at least.

Avoid bending or pulling the coil cable where it enters the coil housing. Mechanical stress may break internal wires and cause malfunction.

# Battery Care Guidelines

Follow these recommendations to maximize battery health and lifespan:

• Do not charge the battery below 5°C. Allow the detector to reach room temperature for 3–6 hours before charging.

• Store the detector between 5°C and 25°C.

• Do not leave the battery unused for long periods. Check charge level every 6 months and recharge if necessary.

• Before long-term storage, charge or discharge the battery to about 50%.

• Recharge to 50% at least every 6 months during storage.

• Monitor older batteries closely. Typical Li-Ion life expectancy is 2–3 years or 300–500 cycles.

• Battery self-discharge increases at temperatures above 20°C.

# Li-Ion Battery Safety Rules

• Do not disassemble, crush, or puncture the battery.

• Do not short the external contacts.

• Do not dispose of a battery in fire or water.

• Do not expose to temperatures above 60°C (140°F).

• Avoid excessive shock or vibration.

• Do not use a damaged battery.

• If the detector has been stored long-term and the battery is completely depleted, consider it damaged—do not attempt to recharge. Contact your dealer for replacement.

• Replace the battery if runtime drops below 70% of original or charging time increases significantly.

• If battery fluid contacts the eyes, flush thoroughly with water for 15 minutes and seek medical attention.

• Follow all local regulations regarding transportation and recycling of Li-Ion batteries. Transporting damaged or end-of-life batteries may be restricted.

• For recycling: follow local guidelines or contact your regional battery recycling organization.

# Helpful Advice

• Do not test the detector indoors—houses contain numerous electromagnetic interference (EMI) sources that will cause instability and false signals.

• Sweep the coil close to the ground without touching it. Avoid overly fast movement. Practice will help you find the optimal speed.

• Always respect private property and obtain permission before detecting. Unauthorized detecting can result in legal and financial consequences.

• Follow all national laws regarding cultural heritage and archaeological sites. In all European countries, metal detecting on or near archaeological sites is strictly prohibited.

Good Luck!





| TECHNICAL SPECIFICATIONS | |
|---|---|
| Operating Principle | BPI (Bipolar Pulse Induction) |
| Operating Frequency | BPI Time-Domain |
| Audio Tones | Bi-Tonal |
| Audio Output | Speaker ot Wireless Headphones |
| Discrimination | Yes |
| Ground Balance | Manual |
| Search Coils | Golden Mask BPI |
| Weight | 2.1 kg with 13 inch BPI Standard coil |
| Shaft | Adjustable length, carbon fibre telescopic shaft |
| Battery (main) | Li-ION 6000 mAh |
| Power Authonomy on Speaker | Min. 7 Hours (temperature and sound volume depending) |
| Power Authonomy on Headphones | Up to 8 Hours (temperature and sound volume depending) |
| Warranty | 5 Year Warranty - the electronics<br>2 Year Warranty - the battery and the coil(s) |
| Charger | Dedicated charger |
| Operating Temperature Range | -10°C to +40°C (+14°F to +104°F) |