DETECTORMODS

Detector Troubleshooting Guide

Is it the control box, or something else in your kit?

ALL DETECTORS

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1 · Read this first

OK, so your detector is misbehaving. This guide should help you work out: is it actually the control box? Or something else in your kit?

This guide is a beta. If something in it is wrong, or doesn't match what your detector actually does, email us and we'll sort it out: david@detectormods.com. Tell us which detector and which part of the guide.

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We've had detectors go back and forth in the post multiple times because the unit came up with "Coil Overcurrent". You would think that's a coil or control box issue. Well, after numerous trips in the post, we found the problem was a curly power cable… We don't have the time for another one of those!

We also don't have time to give free phone support for 30 minutes helping you work out that you have a dodgy speaker.

So this guide should help you narrow it down. Is it the detector? Is it another piece of equipment? Is this a problem you can solve, or do you need to contact us?

What this guide will do for you

- Tell you which checks to do, and in what order, for what your detector is doing.
- Show you how to prove which part is at fault, by swapping one thing at a time.

- Point you at the part that fixes it, when it's something we make.
- Tell you when to stop and email us, and what to put in the email.

The same checks are in our free Detector Troubleshooter. Pick your detector, answer a few questions, and at the end it writes the email summary for you: detectormods.com/tools/detector-troubleshooter.

Before anything goes in the post

Every detector that comes in costs us time before we find anything: booking it in, the paperwork, and the diagnostic itself. That fee is unavoidable. If the job isn't a warranty job, or there's nothing wrong with the detector, the fee is for our time — we've been sent on a wild goose chase for a problem that isn't there. So do these checks first, and email us rather than ringing: david@detectormods.com.

2 · Which detector have you got

This guide covers the Minelab detectors we work on: the SD, GP and GPX series (including the GPX 6000), the GPZ 7000 and the GM 1000. They don't all work the same way, and the differences matter when something goes wrong.

SD SERIES

SD 2000, 2100, 2200, 2200D and 2200v2. Knobs and switches only, so everything is done by ear: the threshold, the coil ring and the target sounds.

Power and sound. An external battery and a power cable. Your headphones plug into the socket in the battery cap, and the power cable carries the detector's sound back to that socket as well as the power. There's no headphone socket on the control box.

Speaker. On an SD a speaker needs an external amplifier, such as our LT-Booster. ("Booster" just means an amplifier: someone used the term once and it's stuck ever since.)

Our battery goes on an SD only through the SD/GP Power Adapter. Never a Minelab GPX battery.

GP SERIES

GP Extreme, GP 3000 and GP 3500. Knobs and switches only, so everything is done by ear. The GP 3500 has a ground-balance button (Quick-Trak) on the handle.

Power and sound. As on the SD: your headphones plug into the socket in the battery cap, and the power cable carries the sound back to it as well as the power. There's no headphone socket on the control box.

Speaker. A speaker needs an external amplifier, such as our LT-Booster. ("Booster" just means an amplifier: someone used the term once and it's stuck ever since.) Minelab's "Boost" switch is a sound-processing setting, not an amplifier.

Our battery goes on a GP only through the SD/GP Power Adapter. Never a Minelab GPX battery.

GPX 4000 TO 5000

GPX 4000, 4500, 4800 and 5000. A screen and a menu, so the detector can tell you a few things, though the only error screen Minelab's manuals name is Coil Overcurrent.

Power and sound. An external battery and a power cable. Your headphones plug into the battery, not the control box, and the power cable carries the sound to the battery as well as the power.

Speaker. The original Minelab GPX battery (at least on the 4500, 4800 and 5000) has a built-in amplifier — that is what drives a speaker. ("Booster" just means an amplifier: someone used the term once and it's stuck ever since.) Our batteries have no amplifier, so with ours a speaker needs a booster.

Upgraded GPX. Never use Auto Tune. Step around interference with a click or two of Manual Tune instead.

GPX 6000 AND GPZ 7000

GPX 6000. A screen, a removable battery on the detector (no power cable), a built-in speaker, a wired headphone socket and Bluetooth.

GPZ 7000. A screen and a removable battery on the detector, but no built-in speaker: headphones plug into the detector, or you listen through the WM 12 wireless module.

These are the careful ones, and chapter 12 has the whole story. If it's under Minelab's warranty and unmodified, Minelab comes first for anything to do with the coil or the inside.

GM 1000

GM 1000. Minelab's Gold Monster 1000: a screen, a built-in speaker and a 3.5 mm headphone socket. Only two coils fit it, the 5″ GM05 and the 10×6″ GM10, and depending on when it was bought your kit has one or both. It runs on a rechargeable Li-ion pack, or on 8 AA cells in the AA holder. Your whole path is the GM 1000 short list in chapter 15, then chapter 13 before you send anything.

GPX 6000 AND GPZ 7000

Never fit a normal pulse-induction (SD/GP/GPX) coil to a 6000 or 7000 by any adapter — a mono coil in an X-coil adapter can destroy a GPZ 7000 instantly. The 6000's and 7000's front-end modules are not something we can repair.

Something else? If it's an SDC 2300, an Equinox, a Manticore or another brand, please don't send it to us or email us about it: we don't know those circuits, and learning a new detector from scratch is an enormous job. Go through Minelab (or the maker) or your dealer.

3 · The three rules

Whatever your detector is doing, these three come first. A lot of the faults we see are found by one of them.

Rule 1: connectors first

Is there anything in the connectors that shouldn't be? Check every single connector for dust, dirt and fluff: anything that is not a part of the connector should not be there. If there's something in the hole of the connector, or on the part that plugs in, clean it out.

- Every plug and socket: power, coil, headphones, and the handle button's plug where there is one.
- Look for dust, dirt, fluff, moisture, green corrosion and bent pins.
- **Switch off before you plug or unplug anything** — coil, battery, cable. Pulling a coil out while the detector is running can damage it.

Fine dust raises the resistance of the contacts, and that can make a detector noisy. Clean, dry, straight pins are what you want. Never use graphite, oil, grease or WD-40: dirt sticks to it. That's the honest reason we make DM-50 and our coil connector lubricant.

FROM THE SHOP

DM-50 — a protectant and lubricant for coil, power and audio connectors. It's non-conductive, so it won't bridge pins. For after you've cleaned a plug.

detectormods.com/shop/90/dm-50

Coil connector lubricant — made for coil plugs and sockets: it cuts wear on the gold plating when you change coils, and evaporates so dirt doesn't stick.

detectormods.com/shop/62/coil-connector-lubricant

GPX 6000 AND GPZ 7000

Keep connectors clean and dry, and never put anything on the battery seal or o-rings. Minelab's GPZ 7000 manual says to wash connectors with distilled water, and not to use lubricant or grease on dust seals or o-rings.

Rule 2: known settings

Do a factory reset (GPX, 6000, 7000) or set the start positions (SD, GP), and run the machine as close to standard as possible, or use known settings that have been reliable in the past. A setting someone changed and forgot about sounds exactly like a fault.

GPX ONLY

Factory reset (GPX 4000 to 5000). With the detector off, press the On/Off switch down and hold it until the Reset Defaults menu appears (about 5–6 seconds). Turn the left knob (Function Select) to All Settings, then turn the right knob (Setting). The detector restores its factory presets and restarts. On a GPX 5000, the four Custom Search Modes are kept.

On a GPX we've upgraded, leave Manual Tune and RX gain where the reset puts them, then set up from your Setup Guide.

SD AND GP

Set the knobs and switches to the start positions in your Setup Guide (or, on a machine we haven't upgraded, the settings in your Minelab manual).

On an SD or GP we've upgraded, the frequency knob goes fully clockwise before you switch on; bring it down after start-up. On an SD, an MSD switch goes on S and a Normal/Deep switch on Normal before you switch on.

GPX 6000 AND GPZ 7000

GPX 6000. With the detector off, press and hold the power button for 7 seconds. When it's done you'll hear a confirmation tone and see FP (Factory Preset). Pair your Bluetooth headphones again afterwards.

GPZ 7000. Reset Settings, on the Reset page, puts your settings back to factory and keeps your GeoStore data. Reset All does that too, but it also empties the GeoStore and restarts into the first-time setup. Reset All is also in the System menu: hold the power button with the detector off. Listening through the WM 12? Wireless is Off by default, so after a reset set it to On and select Connect WM 12 again.

Rule 3: swap one thing at a time

Ideally we swap the power cable for another, then the battery, then the audio, then the coil. We need to know if one of these items alone is the culprit, so swap one at a time and see whether the fault goes with it. Borrow if you don't have a spare: a mate's battery or headphones prove just as much as your own.

- **Use a newish, healthy, charged battery,** and swap in a known-good one as part of the swap test.
- **Switch off, wait at least 30 seconds, then switch on once — don't flick it.** Flicking it off and on can cause trouble of its own.
- **Strip the audio back** to plain wired headphones: no wireless set, no booster, no speaker.
- **Take out any of our old in-line boosters** that sit between the battery and the box.

SD, GP AND GPX

On these machines the headphones plug into the battery, and the power cable carries the sound from the box to the battery as well as the power. So “plain wired headphones straight into the detector” really means wired headphones in the battery’s socket, with a known-good power cable.

If you have our small battery system, the cables are integrated, so if you have two of those and two sets of headphones you can check this end of the machine really quickly and reliably. Our battery has no amplifier and its own cable, so one swap to it replaces the battery, the cable and the amp at once. If that fixes it, put your old cable back on a known-good Minelab battery to split them.

FROM THE SHOP

Double lightweight battery kit — two of our batteries in one kit. With two pairs of headphones, it’s the fastest way to test the whole power and audio side.

detectormods.com/shop/67/double-lightweight-battery-kit

On an SD or GP, our lightweight battery goes on through the SD/GP Power Adapter. For the sound tests, borrow a known-good battery made for your model: it has the headphone socket in its cap.

GPX 6000 AND GPZ 7000

There’s no power cable on these two. The swaps are a charged, known-good battery, another pair of headphones (or wired instead of wireless), and your other genuine coil if you own one. Chapter 12 comes first.

4 · It won’t turn on at all

What “won’t turn on” looks like depends on your detector.

SD and GP: no threshold and no coil ring (chapter 5 explains the ring).

GPX 4000 to 5000: the screen stays dark.

GPX 6000 and GPZ 7000: nothing on the screen, no start-up.

1. **Fit a charged, known-good battery.** Switch off first. Use a newish, healthy battery of your own, charged, or a borrowed one you know works. Take out any of our old in-line boosters. Wait at least 30 seconds, then switch on once — don’t flick it. If it comes on, your battery or its charger is the fault: flat, dead or not charging. Try it on another charger before you give up on it.
2. **Check the power plugs and pins.** Switch off, unplug the power cable and look into every plug and socket. Clean and dry anything that shouldn’t be there. Plug it back in firmly, wait at least 30 seconds, then switch on once — don’t flick it. Gently flex the cable just behind each plug. The first time it cuts in or out, stop and switch off: you’ve found it, and it’s the cable. Don’t keep making it cut in and out, and never twist or pull a plug while it’s on.
3. **Don’t force a bent pin.** A bent or broken pin, or a plug that won’t lock, is an email to us with photos (chapter 11).
4. **Swap the power cable.** Our lightweight battery has its cable built in, so fitting it swaps the battery and the cable in one go.
5. **Still dead?** Then it points at the control box. Email us (chapter 13).

GPX ONLY

Screen dark? Listen for the coil ring. With it switched on, put your ear close to the coil. A faint, high-pitched ring means the box is on to some degree, even with a dark screen. Tell us either way in your email.

The Minelab GPX battery’s light. Solid green means charged. Slow red blinking means it’s too hot. Continuous orange blinking means the first phase of charging timed out: if it does that every time, the battery isn’t working properly. Solid red is a battery fault: disconnect and reconnect it, and if it stays red, see your dealer.

Battery won’t charge? Minelab’s list: check there’s power at the car’s accessory socket, check the fuse in the 12 V charger plug (M205–5A), and check the battery’s light. Not holding charge? Try another charger adaptor, check the power cable, and change the battery.

SD AND GP

Use the battery made for it, or ours through the SD/GP Power Adapter. Never put a Minelab GPX battery on an SD or GP: its voltage is above the GP's safety cut-out, and it can damage an SD or GP. And never a 12 V battery: Minelab's GP 3500 and SD 2200v2 manuals both say it can damage the detector.

Coil rings, but no threshold? Then it is on. Go to chapter 5.

GP 3500: the on/off switch is part of the Threshold knob.

A wet SD that won't turn on has usually had moisture take out a small part in the power supply. Dry it out properly first (chapter 11), then email us.

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question and the coil warning come first. Then:

GPX 6000. Charge the battery on its own charger: the light flashes green while it charges and stays steady green when it's full, in about 5–6 hours. From a vehicle, charge it only from a normal 12 V car system. Then press the locking lever, take the battery out, check its contacts and the detector's are clean, dry and undamaged, and refit it firmly.

GPZ 7000. Charge it on the BC 10 charger until its Battery light stops flashing and stays steady green. Minelab's manual says that can take up to four hours and its FAQ says five to six, so allow six before you decide it won't charge. Make sure the battery is fully in and latched, the contacts and the seal are clean, and the detector isn't too hot; if it is, let it cool in the shade. Comes on, then switches itself off? Check the coil cable is connected with the retaining ring done up firmly.

Won't charge at all? Look at the BC 10's Power light first: off means no power is reaching it, and fast-flashing red means the input voltage is wrong, so check the plug pack, its switch or the car socket. If the Power light is steady green but the Battery light flashes red fast, the charger has found an error. Then it's the battery or the charger: borrow another to tell which. Both are Minelab parts, and Minelab's warranty on batteries is 6 months. Still dead with a charged battery: Minelab first if it's under warranty and unmodified, otherwise email us first.

FROM THE SHOP

Lightweight battery kit — our battery with its cable built in, plus a car and mains charger. It has no amplifier, so a speaker needs a booster.

detectormods.com/shop/63/lightweight-battery-kit

Battery charger — a spare charger for our lightweight batteries, with car and mains leads. If one of ours won't charge, the charger may be the fault.

detectormods.com/shop/69/battery-charger

FROM THE SHOP

SD/GP Power Adapter — connects an SD or GP to our lightweight battery: the only way to run one on ours.

detectormods.com/shop/88/sd-gp-power-adapter

5 · It’s on, but there’s no sound

Your detector is on, but nothing is coming out of the headphones or the speaker.

First: listen for the coil ring

If your detector is on and no audio is coming out, you should still be able to hear a high-pitched ringing if you’re close to the coil. If you have some hearing damage this may be too hard to hear, but the coil will make an audible ringing sound: check it with your ear, or borrow someone’s who has good hearing. Most children will be able to hear this easily.

If there is a ringing, the detector is on to some degree.

If there isn’t, power isn’t getting to the machine: go to chapter 4.

GPX ONLY

If your machine has a screen and it is on, we know power is getting to the machine, but we don’t know if the coil is receiving pulses unless you can hear that ringing.

Screen on, but no ring? Switch off and check the coil plug: dry, clean, pins straight, retaining ring done up firmly. Then try another coil. Still no ring with either coil: the box isn’t driving the coil, so email us.

Then the swaps, one at a time

1. **The simple checks.** Threshold turned fully clockwise. Headphones pushed fully into the socket on the battery, because that’s where the sound comes out. Volume up on the headphones, if they have a knob. Our headphones go silent if their noise-cancelling switch is on and the AAA cell inside is dead, and a half-seated curly cord can cut out one side.
2. **Strip it back.** If you have other external audio gear, strip everything back to plain wired headphones in the battery’s socket: no wireless set, no booster, no speaker. If it works now, the fault is in what you took out (see the speaker notes below).
3. **Known-good headphones** in the same socket. Borrow a pair if you have to. If the sound comes back, it was your headphones.
4. **Swap the power cable.** It carries the sound from the box to the battery as well as the power. Power cables can be tricky when you end up with an intermittent fault, but for now, if replacing it gets you audio back, then that was the problem.

5. **Swap the battery.** If you swap batteries and the detector starts working, then obviously it's the battery. It could be a "not holding charge" situation or, on a GPX, a "the amp is really stuffed" situation.
6. **Still nothing?** If after all of this you can't find any way to get the machine to put audio out, then we need to look at the control box: the issue must be in there. Email us (chapter 13).

But if you send us the control box without troubleshooting all of the above, you'll get the bill for booking it in and the diagnostic whatever we find — and if there's nothing wrong with it, that bill is for our time chasing a problem that isn't there.

GPX ONLY

Minelab's first checks. Threshold fully clockwise; Volume Limit up to maximum (20 on the 4800 and 5000, 40 on the 4000); headphones plugged into the battery; the volume control on the headphones; then a different set of headphones or a different battery.

Speaker, booster, amp. The original Minelab GPX battery (at least on the 4500, 4800 and 5000) has a built-in amplifier — that is what drives a speaker. Try a speaker, then a set of headphones. If you find that headphones work and the speaker doesn't, we can be pretty sure the amp in the Minelab battery has gone down to some degree.

Before you blame it, check the speaker is wired the way that battery needs (across the tip and ring of a ¼″ plug, with the sleeve not connected), and remember Volume Limit may need re-adjusting when you switch between headphones and a speaker. Then prove it: the same speaker on another original Minelab GPX battery.

If the amp has gone, you can use headphones until you're ready to have it repaired. Or skip the repair: our lightweight battery has no amplifier, so pair it with our LT-Booster for a speaker. Minelab doesn't recommend a booster on its own battery, which has its own amplifier.

When the amp in a Minelab GPX battery fails, the sound from its headphone socket can go too. That's why the battery swap matters even when you only use headphones. If the battery that failed is one of ours, it's the socket or the built-in cable: email us.

SD AND GP

The headphone socket is in the battery cap, and the power cable carries the sound back to it. There's no headphone socket on the control box.

A speaker needs an amplifier, and on an SD or GP that's an external booster, such as our LT-Booster. (Minelab's "Boost" switch on the SD 2200v2 and GP 3500 is a sound-processing setting, not an amplifier.) If headphones work in the battery but the speaker doesn't, it's the booster or the speaker. Fit fresh AA cells, check the booster is switched on, and check its leads: its plug goes into the battery's headphone socket and the speaker into the booster, never the booster into itself. Then try headphones in the booster: if they work there, it's the speaker.

For the battery swap, borrow a known-good battery made for your model, with its own headphone socket in the cap. If that brings the sound back, it's your battery's cap socket or its wiring: have it repaired or replace it.

GP 3500: Minelab's list also says to turn the Volume control clockwise.

Booster checks, any detector. Turn the booster off when you're not using it, or it drains its AA cells. Fresh cells fix a lot of "dead boosters".

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question and the coil warning come first. Then Minelab's own checks:

GPX 6000, wired. Start-up finished; headphones pushed fully in (the ML 100 cable locks with a quarter turn anti-clockwise); volume up. Unplug the headphones and listen to the built-in speaker. Try another pair.

GPX 6000, Bluetooth. Headphones on and charged; detector Bluetooth on and paired; volume up on both. Try other Bluetooth headphones, then wired. A flat ML 100 still works on its cable. After a factory reset of either one, pair them again.

GPX 6000 speaker muffled or scratchy. Detector off, remove the screw at the rear and the speaker cover, and gently clean the speaker with a soft damp cloth or a rinse of clean water. No sharp tools on compacted dirt.

GPZ 7000, headphones in the detector. Start-up finished and the Detect page showing. Headphones plugged into the socket on the headphone module at the rear. Volume, Threshold Level, Threshold Pitch and Volume Limit not wound right down. Try another pair.

GPZ 7000, WM 12. On (press its power button for a second) with its lights flashing, and charged. Wireless set to On, then select Connect WM 12. A red light that blinks now and then is normal; blinking red all the time means the link is lost. Sound from the WM 12's speaker but not its headphones? Check the headphones. Headphones work in the detector but not through the WM 12? It's the WM 12 or the link: reset the WM 12 with the end of a paper clip on its Reset button, then connect again.

Then a factory reset (chapter 3); with a WM 12, set Wireless to On and select Connect WM 12 again afterwards. Still nothing: Minelab first if it's under warranty and unmodified, otherwise email us first.

FROM THE SHOP

LT-Booster Series 3 — an audio amplifier on two AA cells, made to drive a speaker from a ¼″ headphone socket. On a GPX, pair it with our battery rather than a Minelab one.

detectormods.com/shop/75/lt-booster-series-3-asc

6 · It's noisy, won't settle, or gives false signals

If your detector is making unreasonable noise, won't ground balance and is just being a pain to work with, these are the things to look at.

First, hold the coil dead still for a few seconds and listen. Noise that carries on with the coil still is usually interference from outside (EMI); the checks below rule out the rest. False signals that only come

as you swing are usually the coil, its cable or the ground.

Noise that comes and goes is usually a plug or a cable, and the wiggle test below finds it.

SD AND GP: CHIRPING

On an SD or GP we've upgraded with the variable frequency control, the frequency knob must be fully clockwise when you switch on; you can turn it down after start-up. On an SD, an MSD switch goes on S and a Normal/Deep switch on Normal before you switch on.

If it ever starts chirping or going "bwarp-bwarp" after a frequency change: switch off, turn the frequency knob fully clockwise, wait at least 30 seconds, and start again.

Noisy even with the coil still

1. **Swap the coil, like for like.** If you're using a mono, swap for another mono if you have one, and see if that fixes it. If so, that was an easy diagnosis. If one of our mono interference filters is fitted, take it out for this test.
2. **Is it outside interference?** See the box for your detector below.
3. **Swap the power cable.** If that's the fix, again that's an easy solution.
4. **Swap the battery.** It's part of the swap test.
5. **Strip the audio back.** If you're using wireless gear or boosters, strip it away down to bare basics: plain wired headphones straight into the battery's socket. If you only have one set of headphones, borrow someone else's, or a speaker — but the speaker will need a working booster or amp.
6. **Still noisy?** Email us (chapter 13).

Signs it's the coil, not the box. It gives a signal from wet grass or green vegetation (the shielding inside the coil is breaking down, or the lead has broken strands in its shielding). The noise has crept up slowly over months and keeps getting worse. Or it screams when you touch the cable near the plug.

GPX ONLY

A DD coil in Cancel. Fit a DD coil, set the Coil/Rx switch to Cancel, and re-ground-balance (you need to after any Coil/Rx change). Cancel only works with a DD coil: with a mono it detects nothing. No DD coil? Walk well away from power lines, fences, buildings and other detectors, and try again.

In Cancel the detector will have diminished performance, but it should be able to cancel most of the typical EMI you'd find in the bush, up to a point. If you're really close to a generator, a car, an electric fence, a radio tower or power lines you could still get a little noise, but it should almost completely disappear. In your house it can cancel almost everything except things like washing machines and microwaves. Really, you shouldn't be doing this in your house: that alone could be the issue.

If your detector was noisy with mono coils and quiet with a DD in Cancel, the noise is almost certainly external EMI.

Then step around it. On a GPX we've upgraded, never use Auto Tune. Re-balance first, then try a click or two of Manual Tune either side, and if that doesn't do it, ease the gain down a touch: the "If it turns noisy mid-session" routine in your Setup Guide. Working near other detectors? Take turns tuning, and don't tune two at once.

The battery's amplifier. It is very rare for the integrated amp in the Minelab battery to just cause noise — and we do mean very, very rare, 2 units in 15 years rare — but check it regardless with the battery swap.

Overload is a sound near big metal, not a fault. Move the coil away; it doesn't harm the electronics.

GP ONLY

Cancel, if your GP has it. The GP 3500's coil switch has Double-D, M (Mono) and Cancel. Fit a DD coil, switch to Cancel and re-balance (you need to after any coil-switch change). Cancel only works with a DD coil and limits depth a little, and it's on Minelab's own list for a very noisy threshold. Noisy on monos but quiet on a DD in Cancel means outside interference. No Cancel, or no DD coil? Walk well away from power lines, fences, buildings and other detectors, and try again.

GP 3000: use the coil-switch position that matches your coil (Double-D or Mono), as in your manual.

GP Extreme: Normal is the position for DD coils and Enhance is for mono coils. Run a DD coil in Enhance and only half of the coil is working, as a mono. Don't mix that up with "Enhance" on a GPX.

Then step around it on a GP we've upgraded: re-balance, a small nudge of the frequency knob either way, then ease the gain down a touch.

SD ONLY

Move, rather than cancel. On an SD the interference test is to move: walk well away from power lines, fences, buildings and other detectors and try again. (Minelab's SD 2200v2 list says to check for interference and try a new location.) Then the routine from your Setup Guide: re-balance, ease the gain down a touch, and if yours has our frequency switch, try the next position and re-balance again.

If you think, "but my detector has always run quiet in this location", maybe someone has installed something? If you're in a location with an electric fence and it's off, it's not going to do anything; if they turn it on, it's going to make a racket. Same goes for any and all other powered human creations.

And interference can steal depth without sounding bad at all: see chapter 9.

False signals as you swing

- **Coil cable loose or slapping the shaft.** A cable that can move about, especially near the coil, gets "seen" by the detector and makes random noises. Hold it down firmly.
- **Coil bolt loose.** Snug it up.
- **Dirt packed under the coil cover.** Clean it out.
- **A crack in the coil, or damage where the cable goes in.** That's the coil (chapter 11).
- **Dry grass.** Static off the grass is a classic cause of false signals.
- **A big coil can detect the battery.** Move the battery as high up your back as is comfortable.

FROM THE SHOP

Coil clips — six clips to keep the coil cable organised and tight to the shaft.

detectormods.com/shop/76/coil-clips

Anti-static coil spray — anti-static treatment for the coil cover: static from dry grass is a classic cause of false signals.

detectormods.com/shop/80/anti-static-coil-spray

It comes and goes: the wiggle test

With the detector switched on and the coil still, gently flex each joint in turn and listen: the power plug at the box and at the battery, the coil plug, where the cable goes into the coil, and the headphone plug. A crackle, or a scream, when you flex one points at that plug or its cable. We've had one where just touching the coil cable near the plug sent the detector into a high-pitched scream.

Stop at the first one. The first time it cuts out, crackles or screams, stop and switch off: you've found it. Don't keep making it cut in and out. At the coil plug, keep the retaining ring done up and flex the cable just behind it; never twist or pull the plug while it's on.

At the coil plug: switch off, clean the plug and socket, dry them, check the pins are straight, and do the retaining ring up firmly. Wait at least 30 seconds, then switch on once — don't flick it — and flex the cable again. Still noisy when you flex it? It's the coil. At the headphone plug: chapter 7.

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question and the coil warning come first.

Never fit a normal pulse-induction (SD/GP/GPX) coil to a 6000 or 7000 by any adapter — a mono coil in an X-coil adapter can destroy a GPZ 7000 instantly.

Hold the coil still. Noise with the coil dead still is usually interference (EMI). Move away from power lines, fences and other detectors, and out of the house.

GPX 6000 Noise Cancel. Hold the coil still about 100 mm above the ground, press Noise Cancel, and wait for the confirmation tone (about 5 seconds). Still noisy? Minelab's manual has a second noise-cancel procedure for its own GPX 14 Double-D coil.

GPZ 7000 Auto Noise Cancel. It can take up to 55 seconds, and ends with three long beeps.

Then: the coil plug (clean, dry, fully home, and on the 7000 the retaining ring done up firmly), a factory reset (chapter 3), and your other genuine coil if you own one. Still noisy: Minelab first if it's under warranty and unmodified, otherwise email us first.

7 · The sound is crackly, distorted, or cuts in and out

Crackles, distortion and cut-outs are nearly always in the sound path: the headphones, their plug and lead, a wireless link, or a socket. Start there.

1. **Strip it back to known-good wired headphones,** straight into the battery's socket: no wireless set, no booster, no speaker. Wiggle the plug and run the lead through your fingers as you listen. Clear now? Then it was your headphones, or what you took out.
2. **Wireless dropouts.** A wireless set that's low on charge drops out and crackles, so charge both parts fully before you blame anything else. (Our wireless set runs about 5 hours on the transmitter and 7 on the headphones.)
3. **Wiggle the socket, flex the cable.** With known-good headphones in, wiggle the plug in the battery's socket, then gently flex the power cable just behind each of its plugs. The first time it crackles or cuts out, stop and switch off: you've found it. Don't keep making it cut in and out, and never twist or pull a plug while it's on.
4. **Swap the power cable, then the battery.**
5. **Still crackly?** Vibration can break wires and joints inside the box: internal wires fall off the board, solder joints crack, and on the GPX 4500 and 5000 the switch connections can break away. Email us (chapter 13).

GPX ONLY

Volume Limit sets the loudest a target can get. Minelab says it may need re-adjusting when you switch between headphones and a speaker.

The two-kit trick works here too (chapter 3): two of our batteries and two pairs of headphones test the whole power and audio side in a minute.

SD AND GP

The headphone socket is in the battery cap, so that's where to wiggle the plug. For the battery swap, borrow a known-good battery made for your model, with its own socket in the cap.

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question comes first.

GPX 6000. Wired: refit the plug fully (the ML 100 cable locks with a quarter turn), wiggle it and the lead, and try another pair. Bluetooth: charge the headphones and pair them again, then try wired. Speaker muffled or scratchy: clean it as Minelab shows (chapter 5).

GPZ 7000. Refit the plug fully at the rear socket, wiggle it and the lead, and try another pair. WM 12: charge it; blinking red all the time means the link is lost, so select Connect WM 12 again; then try headphones straight into the detector.

Still crackly: Minelab first if it's under warranty and unmodified, otherwise email us first.

8 · It won't ground balance

Whichever way your detector balances:

- Balance over clean ground, never over a target or a hot rock.
- Keep the coil moving while it balances.
- Re-balance after any switch change, and whenever the ground changes.
- Start from your Setup Guide's start positions.

The handle button and the "bloop"

If your detector won't ground balance, make sure the handle is working first, then use the switch, then look at your technique and the ground. When you push the button on the handle you get what we call a "bloop" and Minelab calls a short beep. With the Fixed/Tracking switch on Tracking, pump the coil up and down over clean ground and press and release the handle button: you should hear a short beep as a fast balance runs (three seconds on a GPX). That tells you the button reached the box.

Then you can initiate a fast track with the switch: set Fixed, pump the coil, and flick the switch to Tracking. Keep the coil moving before you flick it, because the very fast balance only lasts a short time.

Rinse and repeat until it's stable.

If the switch works every time but the button never does, the handle button is the fault, not the balance. The button reaches the box through its own cable and a small plug in the Smart Point socket on the control box. Switch off, reseat that plug (clean, pins straight, pushed fully home), and tape a loose cable to the shaft. Still dead: email us, and we'll say whether to send the handle, the box or both.

GPX ONLY

Quick-Trak, two ways. With the switch on Tracking, press and release the Quick-Trak button while you pump the coil: a short beep, a three-second fast balance, then back to Tracking. With the switch on Fixed, press and hold the button while you pump, then release: that's the same as flicking the switch to Tracking, and Minelab mentions no tone for it. In Fixed, pump with small, even movements, and don't release the button while the coil is moving or twisted.

Technique and ground. Re-balance after any change to the Coil/Rx or Soil/Timings switch. On salty ground, try the salt timing: Salt on the 4000, Salt-Coarse on the 4800, Salt/Gold on the 5000. On really bad ground, a DD coil can make life easier. Still fighting it? Factory reset (chapter 3) and balance again.

GPX 5000: the first Specific Ground Balance must be done with the Ground Balance switch, not the Quick-Trak button.

GP ONLY

GP 3500. The Quick-Trak button is on the handle. With the switch on Tracking, press and release it while you pump the coil 20–100 mm above the ground: you'll hear a short beep as a quick balance runs. With the switch on Fixed, hold the button down while you pump: it starts with a 5-second very fast balance.

GP 3000 and GP Extreme. Use your handle button if your model has one. Otherwise flick the Fixed/Tracking switch to Tracking while pumping the coil.

Salty ground (GP 3500). Try the Salt position on the Soil switch. Re-balance after any coil-switch change.

SD ONLY

SD 2200 and 2200v2. Move the coil up and down 20–100 mm above the ground and, while it's moving, flick the Balance switch from Fixed to Tracking. The fast balance lasts about five seconds. The 2200v2 remembers its last ground balance when you switch it off.

SD 2000 and 2100. Re-balance both channels as in your Setup Guide. Channel 1 is commonly the deep channel and Channel 2 the shallow one, but on some units they're reversed: check on your own machine.

SD 2200 with our M1·S·M2 switch. Hot ground that won't settle? Try M1 or M2, then re-balance.

Still won't balance from known settings, with good technique on clean ground? Email us (chapter 13), and tell us the ground and the coil you were using.

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question comes first.

GPX 6000 Quick-Trak. Press and hold the Quick-Trak button and keep it held the whole time. Raise and lower the coil 10–100 mm and swing it over clean ground. Release once the ground noise is at a comfortable level or won't drop any further. Ground Type: Difficult is the default and Normal the other, so try the other one.

GPZ 7000 Quick-Trak. Minelab says to balance with its yellow ferrite ring every time. Lay the ferrite on clean ground, away from metal. Press and hold the trigger and sweep the coil low, side to side or in a figure-8, passing over the ferrite straight away and on every sweep, for about 10–12 seconds. Release the trigger once the tone over the ferrite stays smooth and quiet. No ferrite? Swing back and forth over the same clean ground with the trigger held, and release once the audio has stabilised; ask your Minelab dealer for a ferrite. Don't pump the coil up and down the way you would on a GPX. Ground Balance Mode is Auto by default.

Then a factory reset (chapter 3). Still won't balance: Minelab first if it's under warranty and unmodified, otherwise email us first.

9 · It won't find gold, or seems to have lost depth

If the detector picks up metal, it's going to pick up gold. Gold in the ground can be in numerous different states, and we have videos about nuggets that are harder to hear even though, given the weight, you'd expect them to be glaringly obvious. For example, "California undetectable nugget now

easy to hear” and “The undetectable gold is now detectable part 1”, both on our YouTube channel: youtube.com/@DetectorMods.

Weight isn’t depth

If you’re using multiple pieces of gold and you think “this weighs one gram, I should get one gram of depth”, that’s wrong. The detector doesn’t detect cumulative pieces of gold well: it will see the largest piece that is exposed to it. That’s true for all the pulse induction machines, and not as true for the VLF units.

If you want a demo, take a tiny loop necklace, loose in your hand, and detect it. Then try again with it squeezed together tight, and watch the depth increase!

And don’t test with lead: its weight doesn’t tell you anything useful about how it behaves electrically.

The proof test

Test the machine before you blame it.

1. Hold the coil off the ground, away from metal, power lines and buildings.
2. Pass a known target across the coil at a measured distance: one of our test targets, or a nugget you know.
3. Compare with what this detector did before, or with a mate’s detector of the same model.

We don’t print distances: every machine, coil and setting is different. What matters is the comparison.

> FROM THE SHOP
>
> **Test targets** — gold-plated spheres sized against real gold, from 0.1 g to 2 g — a known target to test with.
>
> detectormods.com/shop/82/test-targets-01-to-2g

It hears it like it should? Then the machine is fine. Look at how it’s set up and used:

- Known settings: a factory reset, or your Setup Guide’s start positions, then set up from the Setup Guide.
- The timing or mode to suit the ground.
- Coil size to suit the gold: small coils for small gold.
- Coil low and level, and a slow, steady swing.
- Some nuggets are hard to hear, whatever they weigh.

Weaker than before? Interference can steal depth without sounding bad at all. In some cases it can swamp the front of the detector while it seems to run fine, and cost up to 70% of its depth. So before you blame the machine, repeat the test somewhere else, well away from power lines, fences and buildings. Test where you actually intend to detect, not in the shed at home.

On a GPX, or a GP with a Cancel position, run the comparison with a DD coil in Cancel as well (chapter 6).

Only hears big metal, very close? If your machine won't pick up anything at all, and maybe it will only detect your car bonnet from a foot away, this is most likely the coil or the detector control box. You can swap coils, but if you get no joy, then it's probably the front end of the machine. The tell-tale sign of that: the detector has a threshold tone, very smooth, and won't hear anything unless it's huge and very, very close to the coil. Email us (chapter 13).

GPX ONLY

Leave Iron Reject Off, as in the standard factory presets, unless you know why you want it: it only works with a DD coil, and it blanks the threshold over anything it rejects. On a GPX we've upgraded, never use Auto Tune. The DD-in-Cancel comparison is in chapter 6.

GPX 6000 AND GPZ 7000

Start with chapter 12: the warranty question and the coil warning come first.

Never fit a normal pulse-induction (SD/GP/GPX) coil to a 6000 or 7000 by any adapter — a mono coil in an X-coil adapter can destroy a GPZ 7000 instantly.

Use the same proof test. Weaker than before? Move well away from interference, run Noise Cancel (6000) or Auto Noise Cancel (7000), do a factory reset, and test again. Still weaker, or it only hears big metal close up? Your other genuine coil, if you own one: on the GPX 6000, a Minelab GPX 6000 coil or one of the Minelab-approved coils from Coiltek or Nugget Finder; on the GPZ 7000, a genuine Minelab GPZ coil or one of the Minelab-approved Nugget Finder coils. Then Minelab first if it's under warranty and unmodified, otherwise email us first.

10 · The screen says something

SD AND GP

Your SD or GP works entirely by ear, so there's nothing in this chapter for your detector. Go back to the chapter for what it's doing: won't turn on (chapter 4), no sound (chapter 5), noisy (chapter 6), crackly (chapter 7), won't ground balance (chapter 8), won't find gold (chapter 9), or wet and damaged (chapter 11).

GPX 4000 to 5000: Coil Overcurrent

The one error screen Minelab's GPX manuals name is Coil Overcurrent. A low battery is a series of alarm pulses at one-minute intervals, and overload is a sound: neither is a screen message. Anything else on the screen? Write it down word for word, take a photo, and email us.

Minelab's cause for Coil Overcurrent is switching the detector off and on too quickly. We've also had detectors back and forth multiple times because the unit showed Coil Overcurrent. You would think that's a coil or control box issue, but after numerous trips in the post, we found the problem was a curly power cable. So, in this order:

1. **Switch off, wait at least 30 seconds, then switch on once — don't flick it.** On a GPX 4000 or 4500, switching back on within 30 seconds can damage a part in the power supply.
2. **The power cable.** That's the curly-cable story. Switch off, unplug it, check the plugs and pins, and plug it back in firmly. Wait at least 30 seconds, then switch on once — don't flick it. Then flex the cable just behind each plug. If it cuts out or the message comes back, stop and switch off: you've found it. Don't keep making it cut in and out, and never twist or pull a plug while it's on.
3. **The coil plug and socket.** Switch off and unplug the coil. Is the plug dry? Clean? Pins straight? Plug it back in and do the retaining ring up firmly. Each time: switch off, wait at least 30 seconds, then on once — don't flick it.
4. **Swap the coil.** Each time: switch off, wait at least 30 seconds, then on once — don't flick it.
5. **Swap the power cable,** or fit our lightweight battery, which swaps battery and cable in one go. Each time: switch off, wait at least 30 seconds, then on once — don't flick it.
6. **Still there?** Coil Overcurrent can be a fault inside the box: we've seen it as a loading fault that only showed with the coil connected. Email us (chapter 13).

GPX 6000 and GPZ 7000

> **WARNING**
>
> Never fit a normal pulse-induction (SD/GP/GPX) coil to a 6000 or 7000 by any adapter — a mono coil in an X-coil adapter can destroy a GPZ 7000 instantly. The 6000's and 7000's front-end modules are not something we can repair.

Start with chapter 12: is it still under Minelab's warranty? Out of warranty, or upgraded by us: email us first, before anything goes in the post. Then:

GPX 6000 (icons).

- **Coil and error icons for 5 seconds, then it powers off:** a coil error. Minelab's steps: check the coil connector is connected properly at the front of the control box; check the coil cable for damage; check the coil for visible damage; try another genuine coil if you have one. If the error persists: Minelab first if it's under warranty and unmodified; otherwise email us first.
- **Error icon alone for 5 seconds, then it powers off:** a system error. Minelab first if it's under warranty and unmodified; otherwise email us first.
- **Coil icon flashing, with a repeating alarm:** overload. Move the coil away from the metal. The detector switches itself off after 60 seconds of continuous overload, and overloading doesn't harm the electronics.

GPZ 7000 (messages).

- **Coil Error:** check the coil is attached and its cable is connected to the control box with the retaining ring securely fastened. Then wait at least 30 seconds and switch on once — don't flick it — with the coil away from large metal objects.
- **Overload:** an overload message and an alert sound until the coil is moved away from the metal. Harmless.
- **Upgrade Failed:** Minelab's own fix first: switch the detector off and on again, then retry the upgrade from the start. If the power button doesn't respond, wait 10 minutes, then press and hold it for 10 seconds. Still failing: Minelab first if it's under warranty and unmodified; otherwise email us first.
- **Low battery:** the battery icon turns red and flashes with a low battery warning; when it's completely flat the detector shows a message and switches itself off. Charge it.

11 · It got wet, dropped, or damaged

It got wet

- Switch it off and disconnect the battery now.
- Don't switch it on again until it's completely dry: days, not minutes. Unplug the coil and the power cable so every plug and socket can dry too.
- Don't open the control box.
- When it's dry, check every plug and socket for water, grit and green corrosion before anything goes back together. Then switch on once, and if something's still wrong, go to the chapter for that symptom.

DO NOT POWER IT ON

If it's still wet, or it went right under, don't switch it on: not to check, not for a second.

If it went under water, email us before you switch it on.

The control boxes are water resistant, not waterproof, and the coils are only meant for light rain, not a dunking. Keep every connector clean and dry.

Dropped or knocked

Switch off and look it over before you switch on again (and when you do, wait at least 30 seconds, then on once — don't flick it): the coil for cracks, the cable where it goes into the coil, the coil bolt and the shaft, and every plug for bent pins or a cracked body. Knocks and vibration can also break wires inside the box, but check everything outside first.

A bent pin, or a plug that won't lock

Don't force it. Don't force a bent pin straight, and don't force a plug that won't lock: you can break the socket inside the box, and that's a much bigger job. Switch off, leave it unplugged, and email us with clear photos of the plug and the socket.

A cracked coil

A cracked or split coil needs replacing. The coil cable is wired into the coil, so it isn't a cable swap. Not sure? Email us first.

GPX 6000 AND GPZ 7000

GPX 6000. Rain-proof only: never under water. Its coils are waterproof to 1 metre, but not the coil plug, and the battery pack isn't waterproof.

GPZ 7000. Weatherproof, not waterproof, and it can't be submersed. The GPZ 14 coil is waterproof to 1 metre; the detector, the WM 12 and headphones aren't. Minelab says to wash connectors with distilled water, never to use lubricant or grease on dust seals or o-rings, to keep the battery seal clean and seated, and to replace damaged seals or batteries.

Water got inside, or it went under: battery out, don't switch it on, and take it to Minelab if it's under warranty and unmodified. Otherwise email us first. Dropped, cracked, or a bent pin: don't force anything, and the same applies.

12 · GPX 6000 and GPZ 7000 owners: the careful path

SD, GP AND GPX 4000 TO 5000 OWNERS

This chapter is for the GPX 6000 and GPZ 7000 only, and nothing in it applies to your detector. If you also own one of those, read the warning in chapter 2 before you lend it a coil.

These two are the careful ones. Their front-end modules are not something we can repair, Minelab will not repair a modified detector, and the wrong coil can destroy a GPZ 7000 in an instant. So every check in this guide for these machines starts with two things, in this order.

First: is it still under Minelab's warranty?

If your GPX 6000 or GPZ 7000 is still under Minelab's warranty and has not been modified, take it to Minelab first — they can check the front-end modules, and we can't repair those. If we have upgraded it, email us first and we'll tell you the best route.

Minelab lists the GPZ 7000 and its accessories under a 3-year warranty, and Minelab batteries under 6 months. For your GPX 6000's terms, or if you're not sure, ask your dealer.

In Minelab's own words: "Unauthorised modifications or repairs to your detector will VOID YOUR WARRANTY." And: "Minelab will not repair modified detectors."

Second: the coil warning

> **WARNING**
>
> Never fit a normal pulse-induction (SD/GP/GPX) coil to a 6000 or 7000 by any adapter — a mono coil in an X-coil adapter can destroy a GPZ 7000 instantly. The 6000's and 7000's front-end modules are not something we can repair.

Use only a genuine coil made for your detector. On the GPX 6000, that's a Minelab GPX 6000 coil, or one of the Minelab-approved coils from Coiltek or Nugget Finder. On the GPZ 7000, it's a genuine Minelab GPZ coil, or one of the Minelab-approved Nugget Finder coils. Switch off before you unplug a coil.

What you can safely do yourself

These checks come from Minelab's own manuals (on the GPZ 7000 the coil swap is ours), and they're the only ones we suggest on these machines:

- **Charge** the battery fully on its own charger (chapter 4).
- **Connectors** clean and dry; never put anything on the battery seal or o-rings.
- **Factory reset** (chapter 3).
- **Noise cancel** (chapter 6).
- **Headphones and wireless:** another pair, re-pair or reconnect, try wired (chapter 5).
- **Your other genuine coil,** if you own one.

Anything to do with the coil or the inside: Minelab first if it's under warranty and unmodified, otherwise email us first. Don't post anything until we've replied.

What we change on these two

Our GPX 6000 and GPZ 7000 upgrades are done inside, and they don't change the controls: the machine looks and drives exactly as it did. That's why the checks for these two follow Minelab's manuals.

The two side by side

	GPX 6000	GPZ 7000
Battery	removable; own charger; steady green when full (about 5–6 hours)	removable; BC 10 charger; Battery light steady green when full (allow up to 6 hours)
Sound	built-in speaker, wired 3.5 mm headphones, Bluetooth	no built-in speaker; ¼″ socket on the headphone module; WM 12
Factory reset	from off, hold power 7 seconds: tone and FP	Reset Settings keeps the GeoStore; Reset All empties it
Noise cancel	coil still, 100 mm up, press, about 5 seconds	Auto Noise Cancel, up to 55 seconds, three long beeps
Ground balance	hold Quick-Trak; raise and lower 10–100 mm and swing	hold the trigger and sweep over Minelab's yellow ferrite
Coil error	coil and error icons, then it powers off	Coil Error message
Water	rain-proof only	weatherproof, not waterproof

13 · Before you send anything to us

Every detector that comes in costs us time before we find anything: booking it in, the paperwork, and the diagnostic itself. That fee is unavoidable. If the job isn't a warranty job, or there's nothing wrong with the detector, the fee is for our time — we've been sent on a wild goose chase for a problem that isn't there. So do these checks first, and email us rather than ringing: david@detectormods.com.

Email first. We'll tell you where to send it and what to include. Please don't post anything until we've replied.

BEFORE YOU SEND ANYTHING

- [ ] I've done the checks in the chapter for what it's doing.
- [ ] I've cleaned and checked every connector.
- [ ] I've run it from known settings: a factory reset, or my Setup Guide's start positions.
- [ ] I've swapped one thing at a time, and written down what happened after each swap.
- [ ] I've stripped the audio back to plain wired headphones.
- [ ] I've taken photos of the connectors.
- [ ] GPX 6000 or GPZ 7000: I've checked the warranty (chapter 12).

What to write in the email

- **Your detector:** the model and the exact variant (GPX 4500, not just "GPX"), and whether we've upgraded it.
- **What it's doing:** the symptom, in your own words.
- **When it started,** and what you were doing at the time.
- **What you swapped, and what happened** each time.
- **What else is in the kit:** battery, power cable, coils, headphones, wireless set, booster, speaker.
- **Whether it has been wet** or knocked.
- **Photos of the connectors.**
- **Your postcode.**

GPX, GPX 6000 and GPZ 7000: anything on the screen, word for word, with a photo.

The Detector Troubleshooter writes most of this for you: at the end it gives you a summary to copy, and an Email us button. detectormods.com/tools/detector-troubleshooter

If you've been thinking about an upgrade, you can join the list for your model at detectormods.com/waitlist.

14 · The parts that fix most of this

We only point you at a part where it can genuinely be the fix, or the spare that proves the fault.

Power and batteries

- **Lightweight battery kit** — our battery with its cable built in, plus a car and mains charger. No amplifier, so a speaker needs a booster. detectormods.com/shop/63/lightweight-battery-kit
- **Double lightweight battery kit** — two of our batteries in one kit. With two pairs of headphones, the fastest way to test the whole power and audio side. detectormods.com/shop/67/double-lightweight-battery-kit
- **Single battery** — a second battery for our kit, so a flat or failed one doesn't end the day. The charger comes with the kit. detectormods.com/shop/68/single-battery
- **Battery charger** — a spare charger for our lightweight batteries, with car and mains leads. detectormods.com/shop/69/battery-charger
- **SD/GP Power Adapter** — connects an SD or GP to our lightweight battery: the only way to run one on ours. detectormods.com/shop/88/sd-gp-power-adapter

Sound

- **LT-Booster Series 3** — an audio amplifier on two AA cells, made to drive a speaker from a ¼″ headphone socket. On a GPX, pair it with our battery rather than a Minelab one. detectormods.com/shop/75/lt-booster-series-3-asc

Connectors and the coil end

- **DM-50** — a protectant and lubricant for coil, power and audio connectors; non-conductive, so it won't bridge pins. detectormods.com/shop/90/dm-50
- **Coil connector lubricant** — made for coil plugs and sockets: cuts wear on the gold plating when you change coils. detectormods.com/shop/62/coil-connector-lubricant
- **Coil clips** — six clips to keep the coil cable organised and tight to the shaft. detectormods.com/shop/76/coil-clips
- **Anti-static coil spray** — anti-static treatment for the coil cover: static from dry grass is a classic cause of false signals. detectormods.com/shop/80/anti-static-coil-spray

Testing

- **Test targets** — gold-plated spheres sized against real gold, from 0.1 g to 2 g — a known target to test with. detectormods.com/shop/82/test-targets-01-to-2g

For the GPX 6000 and GPZ 7000

Batteries and chargers for these two are Minelab parts. For coils, see chapter 12. Beyond the test targets, we don't point 6000 or 7000 owners at any part of ours.

Settings

- **Your Setup Guide** — the start positions and settings this guide keeps sending you to, on the Manuals page. detectormods.com/manuals

15 · Quick paths

The main lines of each chapter, in order. Stop as soon as one fixes it.

It won’t turn on at all

SD and GP

1. Switch off. Fit a charged, known-good battery (the battery made for it, or ours through the SD/GP Power Adapter). Wait 30 seconds; switch on once.
2. Listen for the threshold and the coil ring. Coil rings but no sound? Go to “no sound”.
3. Clean the power plugs and pins; flex the cable near each plug.
4. Swap the power cable.
5. Still dead: email us.

GPX 4000 to 5000

1. Switch off. Fit a charged, known-good battery. Wait 30 seconds; switch on once.
2. Clean the power plugs and pins; flex the cable near each plug.
3. Swap the power cable, or fit our battery (battery and cable in one).
4. Screen still dark? Listen for the coil ring, and tell us.
5. Email us.

GPX 6000 and GPZ 7000

1. Warranty first (chapter 12).
2. Charge it fully on its own charger.
3. Battery out; contacts and seal clean and dry; refit it (GPZ 7000: latched; let it cool if it’s hot).
4. Still dead: Minelab first if under warranty and unmodified, otherwise email us first.

It’s on, but there’s no sound

SD and GP

1. Listen for the coil ring. No ring: go to “won’t turn on”.
2. Threshold fully clockwise; headphones fully into the battery cap.
3. Strip back to plain wired headphones: no wireless set, booster or speaker.
4. Known-good headphones.
5. Swap the power cable: it carries the sound.
6. Swap the battery (a borrowed one made for your model).
7. Still silent: email us.
8. Only the speaker is silent? It’s the booster or the speaker: fresh AA cells, switch, leads, then headphones in the booster.

GPX 4000 to 5000

1. Listen for the coil ring. Screen on but no ring: the coil plug, then another coil.
2. Threshold fully clockwise; Volume Limit to maximum; headphones fully into the battery.
3. Strip back to plain wired headphones.
4. Known-good headphones.
5. Swap the power cable.
6. Swap the battery (ours replaces battery, cable and amp in one go).
7. Still silent: email us.
8. Only the speaker is silent? Try it on another Minelab GPX battery: works there, it’s the amp in yours.

GPX 6000 and GPZ 7000

1. Warranty first (chapter 12).
2. Wired: start-up done, volume up, plug fully in, another pair. GPX 6000: unplug them and listen to the speaker.
3. Wireless: on, charged, paired or connected; then try wired.
4. Factory reset (GPZ 7000 with a WM 12: then Wireless On and Connect WM 12 again).
5. Still silent: Minelab first if under warranty and unmodified, otherwise email us first.

It's noisy, won't settle, or gives false signals

SD and GP

1. Chirping or "bwarp-bwarp"? Switch off, frequency knob fully clockwise (SD: MSD on S, Normal/Deep on Normal), wait 30 seconds, start again.
2. Hold the coil still. Still noisy? Swap the coil, like for like.
3. Outside interference: a DD coil in Cancel if your GP has it; otherwise move well away and try again.
4. Swap the power cable, then the battery.
5. Strip the audio back.
6. Still noisy: email us.
7. False signals as you swing: cable, bolt, cover, cracks, static, battery height.
8. Comes and goes: the wiggle test.

GPX 4000 to 5000

1. Hold the coil still. Still noisy? Swap the coil, like for like.
2. A DD coil in Cancel, re-balanced. Quiet means outside interference: a click or two of Manual Tune (on a GPX we've upgraded, use Manual Tune rather than Auto Tune), then ease the gain.
3. Swap the power cable, then the battery.
4. Strip the audio back.
5. Still noisy: email us.
6. False signals as you swing: cable, bolt, cover, cracks, static, battery height.
7. Comes and goes: the wiggle test.

GPX 6000 and GPZ 7000

1. Warranty and the coil warning first (chapter 12).
2. Hold the coil still; move away from interference; noise cancel.
3. The coil plug: clean, dry, fully home.
4. Factory reset.
5. Your other genuine coil, if you own one.
6. Still noisy: Minelab first if under warranty and unmodified, otherwise email us first.

The sound is crackly, distorted, or cuts in and out

SD, GP and GPX 4000 to 5000

1. Known-good wired headphones in the battery's socket, nothing else in the chain.
2. Charge any wireless set fully.
3. Wiggle the battery's socket; flex the power cable near each plug.
4. Swap the power cable, then the battery.
5. Still crackly: email us.

GPX 6000 and GPZ 7000

1. Warranty first (chapter 12).
2. Plug fully in; wiggle it and the lead; another pair.
3. Wireless: charge it; re-pair (GPX 6000) or Connect WM 12 (GPZ 7000); try wired.
4. GPX 6000 speaker scratchy: clean it as Minelab shows.
5. Still crackly: Minelab first if under warranty and unmodified, otherwise email us first.

It won't ground balance

GPX 4000 to 5000

1. Switch on Tracking: press and release Quick-Trak while pumping. You should hear the short beep.
2. Set Fixed, pump, flick to Tracking.
3. Switch works, button doesn't: reseat the button's plug at the Smart Point socket, then email us.
4. Technique, ground, salt timing, factory reset.
5. Still won't balance: email us.

GP series

1. GP 3500: switch on Tracking, press and release the handle button while pumping. You'll hear a short beep.
2. Set Fixed, pump, flick to Tracking.
3. Switch works, button doesn't: reseat the button's plug at the Smart Point socket, then email us.
4. Technique, ground, start positions.
5. Still won't balance: email us.

SD series

1. SD 2200: pump the coil, flick Fixed to Tracking. SD 2000 and 2100: re-balance both channels.
2. Technique, which channel is which, start positions.
3. Still won't balance: email us.

GPX 6000 and GPZ 7000

1. Warranty first (chapter 12).
2. Quick-Trak as Minelab says. GPX 6000: try the other Ground Type. GPZ 7000: sweep over Minelab's yellow ferrite with the trigger held; Ground Balance Mode on Auto.
3. Factory reset.
4. Still won't balance: Minelab first if under warranty and unmodified, otherwise email us first.

It won't find gold, or seems to have lost depth

SD, GP and GPX 4000 to 5000

1. If it finds metal, it finds gold; weight isn't depth.
2. The proof test: a known target at a measured distance, in air; compare.
3. Hears it: settings, ground, coil size, swing.
4. Weaker: rule out interference, then known settings.
5. Only big metal, very close: swap the coil. Same again: email us.

GPX 6000 and GPZ 7000

1. Warranty and the coil warning first (chapter 12).
2. The proof test.
3. Weaker: move away, noise cancel, factory reset.
4. Your other genuine coil, if you own one.
5. Still weak: Minelab first if under warranty and unmodified, otherwise email us first.

The screen says something

GPX 4000 to 5000: Coil Overcurrent

1. Switch off, wait at least 30 seconds, switch on once.
2. The power cable: the curly-cable story.
3. The coil plug and socket.
4. Swap the coil, then the power cable.
5. Still there: email us. Any other message: word for word, a photo, email us.

GPX 6000 and GPZ 7000

1. Warranty and the coil warning first (chapter 12).
2. Coil error: the coil plug, the cable, the coil. Overload: move away from the metal.
3. Upgrade Failed (GPZ 7000): switch off and on, then retry the upgrade (power button not responding: wait 10 minutes, then hold it for 10 seconds). Still failing, or a System error (GPX 6000): Minelab first if it's under warranty and unmodified; otherwise email us first.
4. Your other genuine coil, if you own one.
5. Still there: Minelab first if under warranty and unmodified, otherwise email us first.

It got wet, dropped, or damaged

SD, GP and GPX 4000 to 5000

1. Wet: switch off, battery off, dry it for days. Still wet: don't power it on.
2. Dropped: look over the coil, cable, bolt, shaft and plugs.
3. Bent pin, or a plug that won't lock: don't force it; email us.
4. Cracked coil: it needs replacing.
5. Dry and checked: switch on once, then go to the chapter for what it's doing.

GPX 6000 and GPZ 7000

1. Water inside, or it went under: don't power it on. Battery out; Minelab if under warranty and unmodified, otherwise email us first.
2. Rain or splashes: dry the connectors and the battery bay; check the battery seal.
3. Dropped, cracked, or a bent pin: Minelab first if under warranty and unmodified, otherwise email us first.

GM 1000: the short list

Won't turn on at all

1. Switch off and fit the other battery: the second Li-ion pack or the AA holder, whichever you have, with 8 fresh AA cells in the holder. Slide it fully home, twist the end cap to locked, and switch on.
2. Charge the Li-ion pack fully: Minelab says 5 to 6 hours. Use the mains plug-pack, or in a vehicle only a normal 12 V car battery. A red light on the pack means "Error": use the other pack or the AA holder.
3. Check the contacts on the battery and in the battery bay: clean, dry, no green corrosion.

It's on, but there's no sound

1. Turn the volume up. Unplug the headphones and listen to the built-in speaker, then try another pair of 3.5 mm stereo headphones.
2. In Gold (Iron Reject) mode, iron stays silent on purpose: test with a coin or a bit of brass, not a nail.
3. Switch off and screw the coil plug in securely at the back of the control box.
4. If you have both coils, swap them. Or borrow a mate's GM05 or GM10: no other coil fits.

Noisy, chattering or false signals

1. Keep the coil low: waved in the air, it picks up noise. A hand over the coil beeps, and that's normal.
2. On Auto+? Go to Auto, or a lower manual number.
3. Re-run noise cancel: switch off, hold the coil still in the air away from metal, switch on and give it about 10 seconds.
4. Move away from power lines, mobile towers, generators and other detectors. A loud, steady signal next to big metal is normal: move the coil away.
5. Screw the coil plug in securely and wind the cable closely round the shaft. With the coil still, gently flex the cable near the plug and the coil. The first time it crackles or cuts out, stop and switch off: it's the coil or its cable.
6. If you have both coils, swap them. Or borrow a mate's GM05 or GM10.
7. Factory reset: press and hold the Power button for about 10 seconds, then set your mode and sensitivity again. It can't undo our upgrade.

Won’t settle or ground balance

1. Ground balance is automatic. Pump the coil up and down over the problem patch, and lower the sensitivity, or use Auto instead of Auto+.
2. Later Getting Started Guides show a Quick Ground Balance on a long press; if yours has it, use it over a clean patch of ground.
3. Minelab designed the GM 1000 for moderately mineralised ground, so very hot or fast-changing ground can beat it: try milder ground.
4. Factory reset, as above.

Lost depth, or not finding gold

1. Air test: hold the coil off the ground, away from metal, and pass a known target across it at a measured distance. Do it where you detect, not in the shed at home, and compare with before or with a mate’s GM 1000. Only huge metal, very close? Stop there.
2. In variable ground Auto keeps winding the sensitivity back, so set it by hand: start low, bring it up until it chatters, then back off a touch.
3. In Gold (Iron Reject) mode? Try Deep All-Metal. The 5″ coil is for small gold and tight spots, the 10×6″ for coverage and depth.
4. Move away from power lines, mobile towers and generators, and test again.
5. Factory reset, as above.

The screen shows something

1. Gold Chance Indicator pointing right on junk: that’s normal. Brass, lead, aluminium and even big iron can read right.
2. Battery level low: charge it, or fit the other battery.
3. A warning triangle: switch off, screw the coil plug in properly at the back of the control box, fit the other battery (the second Li-ion pack, or the AA holder with 8 fresh AA cells) and switch on. If the triangle stays, stop there.

Got wet

1. The coils are waterproof to 1 m. The control box is only rain and splash proof, and must never go under.
2. If the control box got wet inside or went under: switch off, take the battery out and leave it all to dry for days, not minutes. Don't open the control box. Dry the coil plug and socket before you plug the coil back in.

Still playing up? If we modified your GM 1000, email us first (chapter 13), and please don't post anything until we've replied. If we haven't worked on it, it's a standard machine, and the right place is Minelab or your dealer. Minelab's warranty on a GM 1000 is 2 years from purchase (batteries 6 months).

Appendix · Your Setup Guide, and how to reach us

Your Setup Guide has the start positions and settings this guide keeps sending you to. Every edition is on the Manuals page: detectormods.com/manuals.

- **SD series:** the SD edition of the Setup Guide.
- **GP series:** the GP edition of the Setup Guide.
- **GPX 4000 to 5000:** the GPX edition of the Setup Guide.
- **GPX 6000, GPZ 7000 and GM 1000:** the GPZ 7000, GPX 6000 and GM 1000 edition of the Setup Guide.

Questions about a detector in this guide, or ready to send something? Email david@detectormods.com first, please, rather than ringing, and we'll tell you what to do next.