Unofficial Handbook

Setup, maintenance, troubleshooting and hints

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Disclaimer: some of this info originally came from Lymow but most is ideas, information and suggestions shared by owners from direct experience. Errors and dated info are inevitable! **Apply at your own risk.** *Thanks to all those who have shared ideas or helped others.*

Colour codes: orange = applies to One model only, blue = Plus only, black = any model

AI Assistant: ChatGPT users may find this handbook-trained AI helpful: https://chatgpt.com/g/g-69c2763b4f508191ba1db4963de99940-unofficial-lymow-assistant

Tommy Sharp's Community Suggestions List: https://lymowone.fider.io

Contents

Planning

Account

- Decide how you're going to connect in the Lymow app – Google account, Apple ID or regular email address.
- ***Keep a note of which method*** in case you need to log in again or uninstall/reinstall the app – things get quite confusing if you later try to use a different method - you won't be able to log in. So be sure to note the specific email address and method you use to register your mower, as there is no way to determine/recover this later, other than contacting Lymow support. You won't be able to manually control your mower once you are logged out of the account.
- Note that this account is not necessarily the same as the one you might use to log into the Lymow website or for other communications with Lymow. Note also that using your GMail address is *not* the same as selecting "Google account".
- You *shouldn't* use Google account or Apple ID if you intend to share the login with someone else so they can control the mower from their phone - unless of course you're totally happy sharing those logins.

RTK placement

If you're not familiar with RTK, you should find Javan's visual guides a helpful introduction:
https://www.facebook.com/groups/2003868720545530/posts/2094446248154443

https://www.facebook.com/groups/2003868720545530/posts/2093963691536032

…and also read Nick's RTK primers (hosted on Reddit) for a deep dive. The best analogy for how RTK works is probably Jim Holman's comment in this post:
https://www.facebook.com/share/p/1cZPWBXWKc/

The RTK is *essential* for reliable navigation of the mower. Therefore:

- During planning, use a GNSS/GPS app on your phone (e.g. "GPS Status & Toolbox" by MobiWia on Android, GNSS View for iPhone) to confirm the best location for your RTK. The more satellites the phone app – and thus later the RTK – can "see" at relevant times of day, the better.
- Satellite visibility is *far* more important than height, line-of-sight, *or* closeness to the mower or dock – the radio the RTK uses to broadcast to the mower can go through walls or even entire houses, and cover a good long distance - 500 metres or more. The RTK *will* need reliable power. Try to keep it at least a handspan or two above or away from metal surfaces, as that can cause unwanted signal reflections.
- Lymow uses the five main GNSS satellite clusters: GPS, GLONASS, BDS, Galileo and QZSS - the chip in the RTK can spot up to roughly 60 satellites. The RTK uses LoRa (low power radio) to broadcast to the mower, which needs to get that signal clearly enough to precisely resolve its position. If the RTK signal and its own satellite reception is strong, the mower uses it. But as a fallback, e.g. when the mower is under heavy tree cover, the mower uses VSLAM (Visual Simultaneous Localization and Mapping) for up to 10 minutes, with varying effectiveness. The RTK needs **five minutes or more** after power on to pinpoint enough satellites to get to its best precision.
- Satellite count alone is not a reliable indicator of positional integrity. A mobile application displaying 25–30 satellites in view does not confirm that the mower is maintaining stable RTK-fixed positioning.

- L1, L2 and L5 counts are not the same thing as satellite count. Satellite count is how many satellites the mower or RTK can currently use. L1, L2 and L5 are the different GNSS frequency bands those satellites may be transmitting on. A single satellite may contribute signals on more than one band, so band counts are really a measure of signal depth and quality, not simply “more satellites”. L1 is the basic signal; L2 and L5 are especially useful for RTK stability because they help with ionospheric correction, multipath rejection and maintaining a more reliable fixed solution. A mower with fewer total satellites but strong L1/L2/L5 reception may perform better than one with a higher satellite count but weak multi-band lock.
- If you’re using the app’s RTK diagnostic screen, don’t judge the system by one number. RTK Status, Location Precision, satellite count, band counts, SNR, Data Error Rate and Differential Age all tell different parts of the story. “Fixed” is the state you want during mowing. “Float” means the mower is still using corrections but has not fully resolved its highest-precision RTK solution. “Single” or other lower states are degraded. Location Precision around 0.01m is excellent, under 0.02m is very good, and anything climbing toward 0.10m or more should be treated with suspicion in areas where boundary precision matters.
- Most of the diagnostic screen reflects what the mower is seeing, not what the RTK base itself is seeing. The mower is the rover. It receives satellites, receives corrections from the RTK, and calculates its own position. Values such as satellite count by band, SNR, location precision and primary antenna gain are mower-side measurements. The screen does not directly tell you the RTK base antenna’s own satellite count or signal gain. So if two mowers show different numbers in the same spot, you are probably seeing differences in their GNSS hardware, antenna design, firmware state or RF performance, not differences in the sky.
- The fields that tell you most about the correction link are Base Station Status, Data Error Rate and Differential Age. Base Station Status simply tells you whether the mower is receiving corrections from the RTK. Data Error Rate reflects the LoRa communication link between the RTK and mower. Ideally this should be 0%, or very close to it. Differential Age tells you how fresh the correction data is. Under 2-3 seconds is generally good. If Data Error Rate stays near zero but RTK precision gets bad in one part of the yard, look first at the mower’s sky view, multipath and local obstruction. If Data Error Rate rises or becomes unstable, then suspect the RTK-to-mower correction link, LoRa interference, distance or obstruction.
- Primary Antenna Gain should be treated as a supporting signal-strength reference, not a stand-alone diagnostic. Per Lymow, a normal reading is roughly 20 to 100. Below 20 may indicate signal interference or poor reception. Above 100 may indicate an abnormal or disconnected antenna. It should be read alongside SNR and fix stability. Good SNR, normal antenna gain and a stable Fixed solution are reassuring. Low SNR, poor band counts, abnormal gain or frequent Float states mean the mower is struggling to maintain a clean GNSS solution.
- The mower’s navigation system depends on sustained carrier-phase lock with continuous correction data from the RTK. It is the quality and continuity of the correction link, not simply the number of satellites tracked, that determines centimeter-level accuracy.
- Smartphone GNSS applications differ significantly in antenna design, chipset architecture, filtering algorithms, and correction handling. As a result, they may not be a close diagnostic proxy for mower RTK performance.
- When troubleshooting navigation instability, verify RTK accuracy status and correction continuity, rather than satellite quantity.

- The mower gets its worst LoRa signal when it is directly under the RTK – so try to avoid placing the RTK above/near crucial pathways. Also ensure the RTK antenna points down.
- Some have had success mounting their RTK in an attic or shed so that it can stay installed year-round. This may work if there aren't metals or meshes in the enclosure or walls which will reduce the RTK's satellite reception or LoRa broadcast – again, you can test ahead of time with a GPS status app. Before doing a lot of mapping, you *should* test with the actual mower by creating some small zones at opposite ends of your property - behind any relevant obstacles such as slopes or buildings - and testing at different times of day.
- The RTK system and mower navigation in general does **not** use WiFi, Bluetooth or 4G. It needs reliable power (cable length: 10m), the ability to see lots of satellites, and no major impediment to its LoRa broadcast.

Charging dock placement

Choose a permanent location which is:

- firmly supported by something like pavers, plywood or concrete – this matters for charging due to the contact pressure required to start and keep charging.
- dry and flat – with a slight slope down towards the QR codes, if easy to arrange.
- protected from the elements if possible - perhaps by an overhang or dog kennel (dock is 350mm high) – but don't put it in a tight corner such as an "L" of the house. Garages have been used with success but beware of unexpected clutter, obstruction by doors (open or closed), and poor lighting for reading the QR codes. Don't put it where puddles can form!
- has relatively easy access to power, using a good-quality extension lead if you need one.
- has a wall or some kind of heavy mass right behind it, so it isn't moved when the mower bumps around and pushes firmly while trying to dock. A grippy rubber mat underneath can have the same benefit.
- preferably able to "see" some GNSS satellites so the mower can get near the dock. It doesn't need perfect GPS reception at the dock but will need open sky access several feet/meters from the dock location. You can experiment with the maximum distance possible under cover in your specific circumstance. Using a short channel from the dock to a large "dummy" zone will help keep the mower from assuming it is "out of bounds" when GPS accuracy is initially low after the mower leaves the dock. But if you want to put it deep inside a garage or elsewhere where satellite reception is limited or nil, you can manually drive the mower in and out if you wish.
- A dock location can work for weeks and still be marginal. "It worked before" is useful history, but it does not prove the dock location is good. Satellite geometry changes through the day **and season**, firmware can change docking behavior or tolerances, trees leaf out, wet surfaces reflect differently, and the mower may approach the dock under slightly different conditions. A dock deep under cover, tight against a wall, or inside an "L" of a building may work when conditions are favourable and fail when those margins disappear.
- The mower needs its best positioning at the worst possible time: when it is leaving or entering the dock and trying to line itself up precisely. If the dock is beside a brick wall, under a roof, in a narrow side yard, or close to reflective surfaces, the mower may struggle to initialize even though it works perfectly once it gets into open sky. See if startup errors disappear after manually driving the mower a few metres into the open, waiting for accuracy to settle, then starting the mow. If it's fine in that case, the dock area is the likely problem.

- The easiest dock location is not always the best dock location. A dock should be convenient for power and shelter, but it also needs a forgiving approach path and enough nearby sky view for the mower to get oriented. If a dock is placed where the mower has to leave under cover, squeeze through a narrow area, then immediately make a precise turn, expect occasional trouble.

Unlike the RTK, you *can* move the dock later on if you need to - it won't require full remapping, just a simple repositioning action in the app. And like the RTK, the dock does **not** use WiFi, Bluetooth or 4G – it only communicates with the mower by supplying current, or not. This is controlled by the micro-switches in the dock's contacts and the moisture sensors in or under the dock.

The mower's dock position is stored relative to the RTK itself. Any movement of the dock or RTK, even if minor, can introduce misalignment relative to the previously-saved map. If the dock is relocated without fully re-validating its position, the mower may navigate toward the prior stored coordinate, misalign during docking, or drive over the dock structure as though it were an obstacle.

After relocating a dock - even just a little - delete the dock's channel on the map and re-add the dock and its channel in the new physical location. Then test for a successful manual docking prior to resuming automated operation. Failure to get it fully reestablished may show up as navigation or docking faults.

Try to avoid placing the dock or any navigation channels in areas with a crushed-stone base – these get into the tracks increasing track tension, which is a Bad Thing.

If you're considering solar power, the dock will need a sustained 250W when using the 2.5A charger; the RTK would need at least 1W measured/sustained - higher during power on. Power supply cable length including supplied extension: 5m.

Even with regular AC power, *RTK reliability is what makes your mower's navigation reliable*, therefore consider a UPS with power surge protection for it!

Finally, the mower does **not** need WiFi, Bluetooth or 4G to mow – for this it only needs satellites and a reliable RTK signal. You *do* need to be close *and using Bluetooth* to map or manually drive the mower. You need WiFi or 4G to see its camera view and – most importantly – you need WiFi, 4G or Bluetooth to configure the mower, set up schedules, manually start/end mowing and to get and clear error notifications. WiFi (best) or 4G are also needed for firmware updates.

Read the information - primers, tutorials, FAQ, manual - and **watch** the videos in the **Lymow Help Centre**: https://lymowtechsupport.zendesk.com/hc/en-us . Your life will be much easier if you do this now. There are also numerous "how-to" videos on YouTube from actual users, such as HandyDadTV - look for them.

Arrival and initial setup

It's heavy! Have help handy for any box moves.

Cut the box straps, poke small holes in corners to allow air to flow as you lift the lid straight up – this reduces the chance of accidently breaking the dock's rear upright during unpacking.

Do these things, in order of importance, before you do anything else

- **Check track tension** – they usually arrive with the tension far too tight, which is bad for both battery life and wheel hub life. Aim for 20-30mm of play when depressing the top track in the centre. *Lymow's official recommendation is the distance between the bottom edge of the tread and the frame should be approximately 40mm (1-1/2 inch) – many users still regard this as too tight*. You

can remove the battery and use the Allen keys Lymow provides to make tension adjustments without removing the mower's floor plate - this matters in mowers where the floor plate screws are firmly anchored. See https://www.youtube.com/watch?v=1Yu6V5v6Xx8 for a good how-to.

- Take a photo of the mower and charging-block serial numbers, and the RTK QR code - **especially the last**, as you need it to bind the RTK to the mower, which is tricky if it's already installed on the roof of your house!
- Connect to your mower and update its firmware to the latest before doing an RTK bind. Also note that the RTK bind is not actually verified, meaning a typo will be silently accepted but the RTK *won't* be seen by the mower until it is corrected.
- **Mow your lawns with your regular mower** not long before starting with the Lymow. While some have used theirs to break in new lawn from weeds, weeks of growth or even rough pasture, you'll get best results – and learn the normal behaviour of your mower much more quickly – if you start it in "lawn maintenance mode", just as you intend to go on.
- Remove the plastic film over the LCD screen, otherwise it will be difficult to view the screen in low light. It's only there to protect the screen during shipping. NB: the backlight for this LCD goes on if Settings|Vehicle Lighting is on in the app.
- **Run a simple test plan**. A little time playing before you commit to mapping lots of lawn can save you much time in the long run. Example plan:
    - Set your RTK and dock up *temporarily* in your preferred locations.
    - Add the dock in the app, then create a couple of small test zones in the most remote/obscured areas of your lawns - watching that the ".01m" navigation precision remains low throughout - certainly under "0.05m", but lowest is best where you have tight edges or narrow areas to handle
    - Perhaps create a dummy no-go zone around a wheelbarrow or similar, in the middle of one of the test zones.
    - Finally, create a channel back to the dock.
    - Starting from the dock, send the mower to work on your test zones using zig zag and chessboard patterns, testing movement speeds and heights, perimeter lap counts etc, verifying that it navigates and cuts ok.
    - Also ensure it returns safely to charge at the end.
    - Once you're happy with all that, make your dock and RTK placement permanent, delete the test zones and start real mapping.

Other early checks, and upgrades that may improve or resolve issues

- Make sure you mount the RTK with the antenna pointing *downwards;* preferably tape its power connection and add a support loop in the power lead so the weight of the lead isn't directly on the connector. Power security matters!
- The battery should arrive with some charge, though there have been reports of none. Remember to connect it internally (open the back of the mower and firmly connect the green twist connector). Then test it by powering the mower on – hold the power button for **just two seconds** and release it the moment you hear the fan start - then wait 15 seconds or so for it to come to life. If you hold it down longer than 2 seconds, it powers off again.
- A 4G mobile data SIM is installed above the battery in its compartment. If you want, you can remove it to check what plan it has via https://www.eiotclub.com/pages/refill. But be *very* sure to replace it in the correct orientation for its notch - see diagram on roof of mower – most easily read if mower is upside down. NB: 4G isn't needed for mapping, manual driving/mowing

or scheduled operation of the mower - just as WiFi isn't. But both 4G and WiFi add value to short-range Bluetooth operation, such as camera streaming, as well as allowing for firmware updates. 4G use is off by default but can be turned on in the Lymow app - contact Lymow if you're not seeing an "Activated" 4G service once it's been on for a day or so.

- Remove the plastic side-covers on the tracks and perhaps even the metal that supports those side covers. Users have reported that side-cover removal *doesn't* seem to cause increased accumulation of debris – the opposite in fact – and inspection/cleaning is much easier. However, the occasional stick, nut, stone or pine-cone will get in, whether or not you remove covers. Since the added track tension from those objects may lead to hub damage, do inspect regularly!
- Install scrapers against the front track wheels to reduce grass build-up there. *Grass accumulation between the hub wheel and track increases track tension, which can cause the track to start shedding reinforcing wires, and can ultimately detach the wheel hub completely.* Self-made scrapers can be 3D-printed or easily hand-fashioned from stiff plastic, such as the right-angles used under the straps on the Lymow's outer cardboard box. See User Projects for more.
- Add an extension to the soft mud-flap behind the mower blades, so that it folds back covering the contacts during mowing and hence they get less grass "juice" and detritus. Experiment with folded duct-tape to get the height right, so that it at least partially covers them at your normal mowing height, then is lifted enough out of the way when the deck is raised just before docking. Examples: https://www.facebook.com/groups/966125058388950 8/posts/2533217180637080 0/ and https://www.facebook.com/groups/2496904209603743 0/permalink/25576718058 603161/
- Dock contact reliability can be improved by wrapping them with wire - see William Carver's setup guide online. Or, easier, support each dock contact with a 25mm light foam cube. Ensure they can still be easily pressed to activate their micro-switches - no charging happens until *both* those switches are firmly pushed by the mower contacts.
- A couple of users have found that the contacts self-clean well if the rubber strip in front of the contacts is *removed*, especially if there's a little dew on the grass: https://www.facebook.com/story.php?story_fbid=4658940290984062&id=395156 9995054432 - the effectiveness of this fix may depend on season etc.
- Another has found that extending the strip helps: https://www.facebook.com/story.php?story_fbid=25576718058603161&id=24969 042096037430
- Fit upward-facing brushes on the dock where the mower contacts pass as the mower approaches the dock's contacts. See https://www.facebook.com/story.php?story_fbid=4506968399514586&id=395156 9995054432 or https://www.facebook.com/groups/lymow/permalink/4718975638313860/ or https://www.facebook.com/groups/lymow/permalink/4721636368047787/
- Some have found that liberally applying conductive carbon (not lithium) grease on the dock brushtips helps keep the contacts clean and working well for weeks. A similar approach to the smaller Plus brushes also helps that model, though there's less need. Examples: https://www.amazon.com.au/FOTU-Electrical-Conductive-Connections-Corrosion /dp/B0CJ92NLT8 - or smaller but same kind of thing: https://a.aliexpress.com/_m0KauYR or https://a.aliexpress.com/_mNS62Hp
- Ceramic-coat or dry-PTFE spray the mowing deck body above/around the blades; elsewhere if you like. Makes cleaning easier. But it's a lawnmower - you should be cleaning it to lawnmower standards, not showroom or lounge!
- Consider fitting a plastic flap over the LCD screen and emergency STOP button to minimise possible water and debris intrusion

- To lessen condensation/cleaning for the cameras and perhaps the five ultrasonic sensors: use RainEx or the juicy side of a potato skin - wipe off after 10 minutes or so!
- Storing your mower under cover will increase its life and reliability. Consider buying a dog hutch, or Lymow's garage when they release it, or building something custom. There's an example and various dimensions below.
- If you don't much need extra mulching functionality (i.e. no leaf litter), remove the side mulching plug (on the Plus it's a flap) and also consider not adding the insert Lymow provides, as the discharge openings become clogged much easier with them - and almost never clog without them. They are not needed for any structural or functional purpose, and leaves can be mulched effectively without them. **Some One and Plus owners remove *all the removable/screwed plastic parts* under the deck, with good results**, especially if they need to mow dense, damp or large areas. For example, for the One: https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4722550007956423
- If you're in a noticeably wet or windy locale, it won't hurt your RTK signal at all if you carefully put a light shower cap on it to help with weather-proofing.

Mapping hints

- Before creating your first zone, place the mower in the dock and add the dock in the app.
- If close boundary accuracy is important then, ideally, map in the *best possible sky conditions* - dry, clear weather etc. Mowing conditions will always vary but you get some control over core map accuracy by deciding when to make them.
- Tap the mower's "+" button a few times to raise the mowing deck a little before mapping, also for manual docking. You can also change this and speed in the app by tapping the remote icon when already in remote driving mode - you may sometimes have to set and save these twice for them to "take". Set speed to slowest when you need to map with precision - this usually means it's a good idea to mow that zone slowly! If the Plus doesn't start charging after a manual docking, check the deck is at the right height.
- The mower may tend to drift to the right during mapping and manual driving/mowing. Though annoying, this is apparently normal behaviour with no indication of a future firmware fix for it. The suggestion below can obviate it.
- For looong perimeters, cart the mower around in a wheelbarrow or trolley - much easier than driving it, so long as you don't need high precision. As best we can tell, the centre of the mower defines its location while mapping. See **https://m.youtube.com/watch?v=ywiSe2gbF8A**
- After each significant change or addition to your maps, **do a backup** in the app! You should routinely backup your map, even after changing mow settings of zones. That way if anything ever gets changed you can restore the map how you originally wanted it.
- Start out small – with a non-complex smallish zone near the dock. Get that zone working with scheduling, mowing parameters and docking. Once that's going well, incrementally add other or more-complex zones, testing the mower in each new zone after it's added. This incremental approach gets you familiar with the mower with much less pressure than trying to do it all at once.
- Think about mapping as designing the mower's working environment, not just drawing grass boundaries. The mower will not reason through the yard like a person. It follows the geometry you give it. Clean zone shapes, clear transitions, realistic margins and simple channels make the mower look smarter because they give the software fewer awkward decisions to make.

- Avoid making one large, complicated zone if the yard naturally breaks into simpler areas. A front yard, back yard, narrow side yard, orchard, rough section or awkward corner may work better as separate zones. The mower usually behaves better when it can complete one clean area at a time instead of repeatedly transitioning through narrow or messy geometry during the same job.

- Don't over-segment simple open grass either. Too many tiny zones can create extra turns, transitions, docking decisions and reorientation. Wide open areas often mow best as one clean zone. Tight, irregular or obstructed areas often mow better when separated. The aim is not to create the most zones, but the most logical zones.

- If a small section keeps getting left until the end and the mower cuts across nice stripes to reach it, there currently isn't a setting to force the mower to take the perimeter route instead. The pathing is trying to finish coverage, not preserve stripes. Sometimes the only fix is to smooth the boundary, adjust stripe angle, or split that leftover section into a separate zone so the main area can finish cleanly.

- Be careful with small zones entirely inside larger zones, nested zones, and odd overlaps. These can create confusing routing or hidden transition logic, especially if a smaller zone, channel or overlap sits inside a larger mapped area. If you get repeatable navigation errors in one area but the RTK numbers look good, simplify the map first. Delete suspect channels, remove unnecessary overlaps, or remap the area with cleaner separation between zones.

- Though this has been improved, the logic has tended to prefer zone overlaps rather than channels for navigation around your property. Therefore zone overlaps should be started nearest to your desired path as it creates a hidden (virtual) crossing point where you first overlap them. Linking key channels from a dummy "home" zone near the dock can also improve navigation efficiency.

- You might want to map a complex zone quite simply or conservatively at first, then use the Modify Edge function to progressively add finer details, testing via short "Perimeter first" mows as you go.
- Channels, including to the dock, are regarded as ***safe* paths** by Lymow. Therefore, try to run them in areas where there won't be clutter or unexpected obstacles in the direct path of the mower, ditto for the area it needs to perform docking manoeuvres.
- At present, the narrowest path you can map in a zone is 1.3 metres (4.3 feet). Any less and that part of the map will be ignored/deleted. The mower currently needs that much width to get down the path, turn safely, and come back. However, where you don't have solid walls or drop-off edges, you can cheat to get extra width. For example, a narrow grass strip alongside a path can be mapped if you're happy to include part of the path in the mapped width.
- If need be, you can later move the charging dock and then easily re-add its location in the app. But aim to *not* relocate the RTK unit once you're into serious mapping, as moving the RTK *will* require all maps to be re-made! NB: so long as the RTK's *mount* never moves, you can remove the head - e.g. to store it inside for winter – then carefully replace it back on the mount before mowing. This also applies if you need to use the RTK at a different, distant property – keep rigidly-fixed mounts at both places. NB: it's currently unknown if one mower can support two distinct RTKs, e.g. for a secondary place a long way off. Just down the road is easy: use the same RTK without moving it, as its range is up to 1km.
- **Always** check that the RTK error shown in the app is nice and low during mapping – e.g. 0.01m (metres = 10mm or roughly half an inch). A higher error such as 0.1m (4 inches) or more may be a clue you need to relocate your RTK. That's best done *before* you make lots of maps!

- To make life easier, consider making a small dummy zone (high deck, no blade speed) to interconnect or replace channels to the dock. However, a firmware update in December 2025 added support for multiple channels to the dock, so a dummy zone may be unimportant for most users now.
- Lightly overlap zones where possible so you don't need to create channels between them – the first point where two zones touch when you're mapping the overlap is typically where the mower will cross from one to the other when moving between zones - it seems to use this in preference to any channels you explicitly create. Any overlapped area will be mowed during each zone's turn, with that zone's settings. Current Lymow movement algorithm prefers moving between overlapped zones vs. zones connected via channel - even if the channel route is far simpler/shorter - so plan accordingly.
- You need every zone to be linked by channels or zone overlaps before you can send it out to start mowing, but it's ok to take it to a unconnected zone and tell it to mow that one.
- Avoid creating channels or zone edges across a crushed-stone base – these get into the tracks increasing track tension, which is a **Bad Thing**.
- Generally, **do** create no-go zones around permanent/long-term obstacles such as trees, drains, hydrants etc., as this makes for much more efficient mowing. The easiest way to map a small no-go zone, e.g. around a shrub, is to carry it around, if you're able. Note that no-go zones shouldn't touch or overlap the edge of a mowing zone, and that (in earlier firmware versions at least) perimeter mows around them only happen for no-go zones that are more than roughly 1m diameter. A downside of no-go zones, especially near boundaries, is that they can create some "interesting" behaviours as it tries and sometimes fails to plan a path through, trying to get converging slivers of grass as it goes. In that scenario, skipping not adding a no-go is sometimes less confusing for it
- Smaller zones can be easier for charge management or other reasons, but they do create more turning wear on the lawn.
- If the bumper hits when going up onto or down from a steep slope, first try changing the stripe angle so it mows along the transition. If that doesn't work, define a small zone that covers the transition with a high deck height set, so the bumper doesn't hit. If you can't resolve it any other way, some users have found that re-mounting the bumper upside down reduces strikes in this situation. Others have added simple extra (stiffer) springs to the outside edges of the bumper to make it less likely to depress for minor situations, e.g. https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2103753037223764

- To configure or delete a small zone that's entirely inside a larger zone, touch the edge line of the small zone to select it.
- If you can't modify a zone because the app says the change would make a channel invalid, just delete the channel and put it back when you're done.
- Seasons matter. The most accurate maps are (re)made in good weather when there's no leaves on the trees - and not during a coronal mass ejection event!
- After each significant change or addition to your maps, **do a backup** in the app!

Regular Maintenance and inspections

Good practises to avoid possible issues

- Any time you power on the mower, wait for full cloud sync before starting to do anything in the app. Sometimes issuing commands too quickly after boot keeps the last software state engaged. Give it a few minutes.

- ***Don't* leave the battery connected without charging it regularly!** Even with the mower powered off, the battery will run down in a week or two if it's connected. And a deeply-discharged battery left in the mower can lead to rare-but-fatal hardware failures. If you aren't using the mower for a while and don't want to leave it charging, **disconnect the battery**.
- **Before** any firmware update, back up your maps! If you have issues getting an update to happen, turn off "prefer 4G" (if its selected) and move the mower as close as possible to the best WiFi router it's currently bound to, then restart the update process.
- **After** a firmware update, disconnect the battery for **an hour or more** before using it. This is also a useful early technique for *any* troubleshooting - akin to rebooting your phone or PC after an OS update. Also restart the app on your device and clear its cache. Turn on the mower first, wait for the "Hello" message, and then start the app on your device.
- **Cleaning** is best done with an air blower, brushes (such as the horse one shown in https://www.facebook.com/groups/lymow/permalink/4716203405257750/), plastic scraper and damp cloth. **Forced-spray** cleaning is undesirable because the unit's waterproofing (i.e. electronics!) will not withstand a strong spray. This is especially true in the handles area, which you might want to explicitly seal, and also take care to avoid water getting into the upper portion of the mower deck. Moisture intrusion into the mower may result in temporary internal fault codes or charge stoppage. After washing of the underside, allow sufficient drying time prior to docking or initiating a charge cycle. Cleaning should prioritize manual scraping of grass buildup and low-pressure rinsing with a hose, rather than forced spray.
- If you need to scrape grass from under the mowing deck, also run a wet dish brush around the blade hub perimeter/join to get any grass juices there that may otherwise build up and perhaps lead to friction or jams.
- If the wheel brakes are on, preventing easy turning during simple maintenance, hit the STOP button twice. For complex maintenance, power off and disconnect the battery first!
- Set lockout times so the mower doesn't resume a mow at night, unless you want exactly that.
- Sharpening blades: the surface you grind to sharpen the blade should be UP, facing the mower deck – at 30 degrees for a regular blade. You don't need fancy tools or techniques like blade-balancing, as these are small blades made from light metal – a hand-file will do, and you may not even need to remove the blades (but do disconnect the battery first!). If you have an angle grinder, flap discs work perfectly as well. A little and often is best.
  https://youtu.be/K04B4gJRoVU?si=95ruvOMbkORC7LIH
- If you have major hazards such as a public road, pond, high drop-off, or *Items Which Must not be Mowed* - then be conservative and supervise the mower in those areas, *especially* after new firmware updates. The RTK-based navigation is very accurate - **except** when RTK power glitches or interference affects satellite signals or interference affects the RTK's LoRa radio, or a solar flare hits Earth or the mower software glitches or the bumper sensor sticks, or there's a mechanical fault…. If the mower is near an important hazard when any of those things happen, you could end up with a dead mower, or worse. Consider creating special zone(s) containing such hazards and only mow them under supervision.
- Set at least two perimeter laps so the zig-zag phase of mowing is less likely to accidentally penetrate the perimeter (rocks, wall, edge) while manoeuvring. Note: perimeters are mowed at the slowest speed, regardless of the zone speed.
- Mow slower so it handles bumps, edges and narrow areas better.
- To lessen grass wear, consider placing some kind of protective mesh in grass right in front of your dock: https://www.mitre10.co.nz/p/297698 and at any

heavily-trafficked locations where it makes turns. Other things you can do is manually swap perimeter vs direct navigation from time to time.

- If you plan to turn the charger off for several days, *disconnect the battery too*. If the mower stays on, the battery will completely discharge in a day or so - and even *powered off*, it won't last much more than a week. At present the power needed to keep the mower on, cooled and connected to WiFi & satellites etc so it's ready to mow on demand is 15-35W. See Stats and Specs for more.
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Maintenance checklist

- Check your charging contacts regularly and clean as required, then optionally coat with very thin lithium grease. For many, contact cleaning will be a minor & infrequent task; for others an onerous one. Grass type is ***the*** major factor affecting this, and that isn't really under anyone's control. Apart from the mud-flap and brush enhancements listed under "Early Upgrades" above, the main mitigations are avoiding mowing when damp and not taking too much off in one go. The latter is much easier once your lawns are in "maintenance mode" - as opposed to using the Lymow to break them in from "not mowed in weeks". If you have major problems keeping your contacts clean after trying other ideas in this handbook, including those in User Projects, this post describes a way to relocate them fairly easily:
https://www.facebook.com/groups/lymow/posts/4644091949135563/
- **Even if the contacts seem clean**, a light spray and finger-wipe of them and of sensors like the cameras, rain sensors and ultrasonic sensors (front and back) after each mow is a good idea. Have a spray bottle handy for this chore. For more serious accumulation on the contacts, a brass-bristle brush is safe to use - it's softer than the contacts so won't scratch them.
- A strong blower such as the one below will quickly blow dry debris out from the tracks and blade area: https://www.aliexpress.com/item/1005008671245984.html However, if you open the mowing deck cover, per below, a gentle vacuum is better than a blower, to avoid blowing dust into motor bearings etc.
- Debris *does* accumulate under the mowing deck cover and can affect deck lowering and raising, potentially charging and even the blade motor bearings. Thus, it's essential to **check and clean it out regularly**. Also check the blade motor mounts (hub bolts) – even more often if you use super-swing blades. You may need to add more thread-lock to the motor mounting screws. Removing the deck cover involves removing eight screws, per
https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4718343721710385 and https://www.youtube.com/watch?&v=RQ6H5_F0cj4 and
https://www.youtube.com/watch?v=ct3cwJB-nf4 If you get a lot of debris in there, consider adding a light pre-filter to the deck's mesh intakes. Even if you don't, check the screws on the side intake are all tight.
For the Plus, see https://www.facebook.com/share/p/1auue98P9q/
- and check the internal mounting bolts per
https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2074276186838116 and
https://www.facebook.com/groups/2003868720545530/posts/2083619429237125/ - very important if you notice your mowing deck is getting floppy. You can check the bolts by tilting the deck up and looking at the backside of the deck to see if the rear bolts are tight. To see the front bolts, you need to remove the cover.
More on bolt checking: https://www.facebook.com/share/p/1Dbhb35zYQ/ - at least one user found there was loctite on the bolts but not in the best place - they added more in the right place via a syringe, to avoid full disassembly that would otherwise be required.
- Boris Jalov's very comprehensive Plus mowing deck maintenance video:
https://m.youtube.com/watch?v=w9hkNNdnHBs

- Per a FB post by Roland De Campugna - a seal like this reduces dirt accumulation in the blade bearings: https://www.amazon.com/dp/B0FLZ6N55D
  As Matthew Vetera noted in his FB post below: "took out the inner spring, clipped off that inner lip, lubed it a bit on the outside and pressed it into the bearing well (after taking off the blades of course) fit right in."
  https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2102215294044205
- Some owners have found the standard Plus blade bearings fail quickly, and some even pro-actively replace them with high-quality bearings like these on their first major clean:
  https://www.amazon.com/TIMKEN-15x32x9mm-Pre-Lubricated-Performance-Effective/dp/B088NGT5GK
  Here's an excellent write-up of cleaning under plus deck and bearing replacement: https://www.facebook.com/share/p/197p9vfHUj/
  ...and a thorough bearing replacement video by Ryan Schneider:
  https://youtu.be/VEaPoCfvkq0?si=h3ovdRft9s7Ulsz
  Additional comment by Karl: - the six bolts on the bottom and the two or three screws holding the shrouds in place under the deck cover is pretty much all you have to remove to have the motors in your hands. Remove the snap ring and two brass washers from the shaft, then you can pull the motor apart. It's held together with magnetism so you have to put in a little effort. Once apart, getting the bad bearing off can be as simple as it can slide right off or it can be a PIA and need a bearing puller.
  If you want to disconnect the charging wires under the deck on the Plus while cleaning it, the connectors are under some shrinkwrap about 100mm/4" back from where they solder on the cover.
- Check your track wheel nuts regularly! If any are loose or missing, sort them out *before* you mow again. You may also be able to remove four bolts from the wheel hub to inspect the planetary gear inside for damage. **However**: don't force-remove any hub bolts, as they are not strong and Lymow has adopted a strong thread-locker in more recent builds. (Inner hub screw size: M3x8mm, though you could upgrade to M3x12mm). To fix, see:
  https://www.facebook.com/groups/lymow/permalink/4718010648410359/
- Check blade nut tightness at least once a month. Also check the omni wheel nuts - add loctite and a washer if they are loose. **This is when you should also check inside the mowing deck cover.** Don't overlook the latter.
- Re-check track tension regularly – aim for 20-30mm of play. You can remove the battery and use the right-angle Allen keys Lymow supplies to make tension adjustments without removing the mower's floor plate. The first time you do this, the inner hex bolts will be very hard to get moving – persist, carefully.
- Lymow has suggested the tracks be lubed with lithium grease where they contact the cogs. Others have pointed out this will cause grass to stick, and some have suggested dry PTFE spray instead. Regardless of whether and how you decide to lube, focus on track tension, track condition, and blowing out loose grass – keep grass from building up between the wheels and the track!
- If you get a lot of track clogging, consider permanently removing their side protectors.
- The omni wheel spring on the Plus looks easy to replace if broken. It's still possible to run the mower in this situation while awaiting a new spring.
  https://www.facebook.com/share/p/1HdXpgXRqv/ Wheel spring specs:
  https://www.facebook.com/share/p/18JkFjkJr8/
  For a temp fix: *I unwound one coil from the broken spring-straightened it out with two strong pliers. Note: the side tab is offset by 180°. Then I bent the spring slightly inward to compensate for the missing coil, and that's it.*
  Related post including notes on the wheel height sensor:
  https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2121985305400537

- If a small wheel pops off the full omni-wheel: https://www.facebook.com/story.php?story_fbid=4708404412704316&id=3951569995054432
- More omni-wheel maintenance info: https://www.youtube.com/watch?v=ct3cwJB-nf4
- A few users have seen track failures where reinforcing wire ends up protruding from the track. So far, in all cases these have been tracks which were left at the too-high tension shipped from the factory. If this happens to you, contact Lymow for replacement tracks. In the meanwhile you can clip protruding wire off and apply a little rubber sealant so you can keep using it. And reduce track tension!

Troubleshooting

General

- **Early/effective troubleshooting steps for many issues:**
  - Have you looked at the error logs? Tap the notification icon on the app's main screen to see them. This is especially useful if the indication on the mower itself isn't clear.
  - Check/clean *and dry* all sensors: cameras, ultrasonic sensors (front and back), rain sensors, bumper microswitches, …
  - Force-restart: Home+Power for about 10s. Then just power.
  - Disconnect the mower's battery for an hour or more - this resolves lots of unexpected glitches - even more so if done after a firmware update
  - While you're doing that, reboot the phone and power cycle the RTK (the RTK then needs a few minutes to see enough satellites for precision)
  - If still unresolved, force-close the app and clear its cache. An app uninstall/reinstall has resolved even-more-persistent issues – you won't lose your maps but do have your original login method handy.
- If it has stopped mowing unexpectedly, it may have stopped for an error, *or* you may have inadvertently pressed the big red STOP button, which stays on indefinitely once pushed. In either case, red LEDs should show on top instead of green (unless you've disabled those LEDs via the Vehicle Lights setting in the app) - and you should also get a notification in the app. Get it ready to Resume in the app by pressing the big red STOP button! If the button doesn't seem to work, check for debris or moisture under it.
- Disconnect the battery for an hour or more for any issues that aren't resolved by a normal power off/on, and also after a firmware update.
- If the map in the app doesn't update to reflect live mowing or is in some way scrambled, exit the map screen and come back in to see where it's at.
- When you encounter interesting or intractable issues, *do* use the app's "Report logs" feature *provided you haven't already powered off since the issue arose.* You can find it in mower settings on the map screen or under "Me" on app's main device screen. Then follow that up with a Zendesk request (notes below) or an email to support@lymow.com which includes at least the last six digits of your mower's serial number – optionally charging block and RTK serial numbers too, where relevant. In your message, mention the logs report and explain what your issue is – with two or three photos, map screenshots and/or a link to a video where possible/relevant. Response time is typically 1-2 working days, in China's time-zone and with reduced service on weekends and Chinese public holidays.

  Note: You may find it *much* better to report and track issues via

https://lymowtechsupport.zendesk.com/hc/en-us - create an account with them, use Submit a Request (top right) to get started. Then go to Requests after logging in to view and update existing requests.

- If you don't get any email response from Lymow (including in spam) in a couple of working days, **try sending from a *different* email account.** Email is much less reliable than it was even a few years ago and your emails may have been unexpectedly blocked before reaching them.
- If you see "Location service not initialised", ensure STOP hasn't been pressed and that you have a good connection from your phone via Bluetooth. Then just drive the mower back and forth as advised. If the mower's position remains stubbornly wrong on the map screen, power cycle the mower.
- If you start the app and it's logged out or wanting you to Add Device, ensure you log in again with the *original* login method you used when you first created your account. Using a different method can lead to this confusing condition, e.g using your email address when you originally connected via Apple ID. As a matter of security, this account cannot be changed once it is registered, though Lymow support may allow you to do so once proper ownership is confirmed.
- At the beginning of your first OTA firmware upgrade, don't skip the country selection if you see one. Otherwise, you will later get the error message "Your account region doesn't match this device's supported regions. Clearing the cache will allow you to start the update again.
- If a problem starts right after a firmware update, don't assume the update definitely caused it, but don't ignore the timing either. Firmware can change tolerances, error handling, docking behaviour, pathing, startup timing or how strictly the mower accepts a positioning solution. It can also expose a setup that was already borderline. After any update, do a deep power cycle, let the mower fully sync, and be cautious around hazards until you've seen it behave normally again.
- "It never happened before" is useful information, but it is not a diagnosis. Satellite geometry, leaves, heat, moisture, dock alignment, grass buildup and weak electrical connections can all change at the same time as a firmware update. Sometimes the update is the cause. Sometimes it is just the recent event people remember before a marginal condition finally crosses the line.

Communications

- Lost Bluetooth access? Try:
  - Persisting – it has worked
  - Reboot your phone and mower and ensure the phone isn't connected to other BT devices during troubleshooting
  - Force-close then clear cache on the app
  - App uninstall/reinstall has also worked for some.
  - Stand right above the mower - if this works but not when you're more than a metre or so away, check your WiFi too, and work through its troubleshooting below if it also has issues. This may solve BT also.
  - There is a chance the internal BT antenna is disconnected - at least one user has disassembled their mower enough to find and fix this: https://www.reddit.com/r/Lymow_Official/comments/1sk3z1s/partial_and_temporary_fix_for_bluetooth/h
- If you can't link to WiFi with your brand-new mower, make sure your phone is on the network you're trying to link the mower to. And give it time - several minutes. In some cases, the first WiFi connection is harder if your 4G SIM isn't activated -

see Eiotclub to check, and ask Lymow support to activate it if necessary. And see all issues below.

- Lost WiFi access?
    - You can see WiFi strength under Settings|Status bar in the app – something like -50 is fine, anything below about -95 won't be enough to use pause/cancel etc.
    - Try toggling the app's Handbrake setting - yes, oddly, this has been known to resolve WiFi issues in a few cases.
    - Ensure the configured access point(s) are available and broadcasting 2.4GHz SSIDs.They should not broadcast a 5GHz signal with the same SSID as the required 2.4GHz signal. Some with Google mesh networks encountered WiFi issues until they'd updated the firmware for the first time. To get this happening, they created a 2.4Ghz guest network just for the mower and connected to it from 10-15 feet away. After the update, all was well with the mesh.
    - A router reboot, or changing the router's 2.4g channel, or changing the router channel bandwidth from 40Mhz to 20Mhz have all resolved some WiFi connection issues.
    - Check whether your router has auto-updated some protocols, e.g. WPA3 security instead of the WPA2-AES security that the mower requires. Unexpected changes like this can prevent your mower from connecting.
    - To be certain your router setup remains ok, **run through Nick Carter's very thorough checklist in this FB comment** - this stuff matters!
    - Force-close then clear cache on the app
    - Use the app to disconnect and reconnect the mower to the WiFi access point
    - Uninstall/reinstall the app
    - Disconnect mower's battery for an hour or so
    - Force network priority reset (info from Lymow): While connected via Bluetooth:
        - Go to Network settings
        - Disable Wi-Fi
        - Enable 4G only
        - Save → wait 2–3 minutes
        - Power OFF mower → wait 1 minute → power ON
        - Check if 4G turns green without Bluetooth
        - Then try the reverse (Wi-Fi only).
    - Backup maps, then factory reset the mower which erases all user data – you can restore maps later. Lymow has recommended this in a few cases to restore WiFi. Lymow advised to first check Settings|Device in the app, and to factory reset if there isn't an IP number showing after repeated (re)connection attempts.
    - If the app's factory reset does not help or isn't available, try a physical-button reset per Deeper Knowledge requiring extra care - this is not a factory reset.
    - **If you encounter unresolvable WiFi problems**, two other possibilities are worth exploring.:
        - If your battery had been fully discharged for a while just before problems arose: this *may* result from a "Low power mode" hardware bug common to many robotic devices - once it arises, it greatly limits the mower's comms range. First do all the router checks in Nick Carter's FB comment, then do this extra step and

contact Lymow with details of everything you tried: Turn on your phone's mobile hotspot in 2.4GHz mode (not 5GHz) and place it on your mower. If the mower can see that hotspot but not your WiFi AP that it previously detected, there's a chance the mower's radio is locked into a low power mode and the mower may need replacing. Telling them the results of your router checks and of this test will speed that process.

        - There may be an antenna connection fault or a burned out WiFi amplifier, per erp042's comment here: https://www.reddit.com/r/Lymow_Official/comments/1t6sgqu/comment/olxmwb1 - includes non-intrusive ways to test.

- 4G connection problem?
    - You can check the 4G SIM's status in the app via the Settings|Device Info screen – it should show "Activated". And the Settings|Network|Preferred network should be 4G.
    - You can also check the SIM's status yourself via the method documented in Other early checks above.
    - Lymow have also suggested removing and re-seating the SIM card.
    - Lymow noted: "If you select 4G priority, the mower will attempt to use 4G as the main connection right after powering on. However, if the mower cannot successfully ping the network within the first 5 minutes after start-up, it will stop trying to use 4G for that session. Even if the 4G signal becomes available later, the mower will not automatically reconnect via 4G until it is restarted. This behaviour can cause 4G to appear unavailable after some time, especially if the network was unstable during the initial start-up period."
    - When the mower power's on, it tries 4G and if it can't connect it never retries. So a power cycle will force a retry if there wasn't a good 4G signal where it was originally powered on.
    - If 4G problems persist, check whether your WiFi is operating normally and, if not, run through the WiFi troubleshooting section.
- Problem seeing FPV view? Including via VLC per below? Make sure you don't have stream-blocking of some kind set up on your WiFi network. NB: FPV *does* work under 4G but uses more data/bandwidth than normal mower use.

- If Bluetooth only works within a metre or two and WiFi only works right next to the router, especially on a new mower, think beyond app permissions and router settings. Try a second phone, a simple 2.4GHz hotspot placed right on or near the mower, and a known-good 2.4GHz network. If all behave the same way, this is much more likely to be an internal antenna, antenna lead, short-range radio or board problem than a normal setup issue.

- Strong 4G and stable RTK do not rule this out. Bluetooth, WiFi, 4G and GNSS may use different antennas, modules or RF paths. A mower can have excellent 4G and RTK while still having a bad Bluetooth/WiFi antenna connection. If the range is only a couple of feet after basic checks and a second phone test, document it with video and ask Lymow for repair or replacement rather than trying to work around it.

- A tool for monitoring Bluetooth connections: https://www.reddit.com/r/Lymow_Official/comments/1sbcxt9/bluetooth_connection_monitor_and_logger - see also BT finder and radio strength: https://play.google.com/store/apps/details?id=com.pzolee.bluetoothscanner

- If the mower reports Base Station Offline while the RTK is powered and bound, separate satellite reception from the LoRa correction link. The RTK may have

good sky view and still not be sending usable corrections to the mower. Check RTK power, re-check the QR binding carefully, power cycle the RTK first, wait a few minutes, then restart the mower. If it still shows offline in a known-good location where another mower/RTK works, suspect the RTK radio, mower-side LoRa receiver, binding state, antenna connection or firmware communication issue.

Charging

- **The quick charging checklist:**
  - is the dock on a firm, dry surface - level, or with a slight slope towards the QR codes?
  - have you cleaned mower and dock contacts - even if they look clean?
  - have you lightly buffed all the contacts with steel wool?
  - are the dock LEDs flashing correctly?
  - is the LED on the charger power block red?
  - are ambient temperatures in the correct range?
  - is the moisture sensor (still adequately) taped?
  - have you pushed the + button briefly?
  - have you pressed down on the dock contacts?

  If you've already checked all that carefully, read on.
- Don't be fooled – the switch on the back of the dock only controls whether the dock LEDs light up - it does *not* control actual charging.
- Dock LEDs: Solid green = waiting, both sides flashing = moisture issue; left-middle-right = contacts issue; "step-increase" style (e.g. left constant, middle flashing) = probably charging – see the app for confirmation. Also, the 10A power supply brick's light will turn red when it is charging. These videos are very useful reminders of the LED patterns on the Plus - the One uses the first three sequences and the centre (only) flashing means "charging error": https://m.youtube.com/watch?v=0LjsNzB3Wi0&t=43s&pp=2AErkAIB or https://imgur.com/a/w8I8MCG
- Plus charging issues have some of the same root causes as the One - poor dock support or damp area etc - though the Plus moisture sensors are in the tower, not the base. Here are some Plus-specific things to check if it doesn't start charging once docked:
  - Dock not recognising mower (loose jumper on its circuit board): https://www.facebook.com/share/p/1B85q1qRRf/
  - Touch the + button briefly to raise the deck and see if that makes a better contact - particularly if you manually docked the mower instead of letting it set its correct height beforehand
  - Use steel wool to gently buff both mower and dock contacts
  - Wipe all contacts with isopropyl, even if they seem clean
  - Press down on the dock contacts - if it this works, the brushes may be too long and stiff. They can be temporarily unscrewed and popped off to test this.
  - If the mower tries to dock with the deck raised 90 degrees, cancel the job and then power cycle the mower - you'll need to do both.
  - If the middle LED is a solid green and the others unlit, this means there is no charging handshake from the mower. Lift the dock contacts up and down until you get the "running light" sequence. The underlying cause is the hall effect sensors not detecting the magnets on the contacts.
- If you hear a "brake" hum when it's on the charger, bump or shift it gently so it stops. Brakes can be turned off in Device settings if you don't need them.
- If no charging is happening, make sure the green battery connector inside the mower is fully seated and not partially backed out. Confirm the dock's power supply itself is actually functioning and hasn't failed. Also check that the dock

contacts are truly compressing and making solid contact not just showing voltage with a meter and no power draw.

- Under Device Settings you'll find Charging Handbrake. This controls whether the motors run slightly to keep it firmly parked on the dock, hence charging reliably. If you have a perfectly level stable area (i.e. pavers, garage floor) and you don't want a little power being used during charging to keep the brakes engaged, you can turn this option off. Even better if you have a small slope towards the QR codes.
- The battery won't charge in very high temperatures or near freezing - the BMS protects it. Bring it inside if you need to do that. See Stats for charging temperature ranges.
- Power cycling the mower or disconnecting/reconnecting the charging brick can resolve some charging issues.
- If the 10A power supply has ever been used and there are unresolved charging issues, the spade connector to the dock contacts might be bad or loose *under* its shrink wrap! (See notes under Additional setup steps, above).
- If you recently received an upgrade to the 10A power supply and you need to use the extension cords, ensure you are using the extension cords that came with the 10A power supply. **Do not use the 2.5A power supply extension cords with the 10A power supply**.
- It's also worth checking those spade connectors and reconfirming the firmness of their connection to the dock contacts for any other intermittent/non-charging issue, regardless of what charger you're using - *after* you've tried all easier checks. This has solved charging problems for several people.

- Voltage at the dock contacts proves only that voltage exists. It does not prove the mower is accepting charge. A dock may show about 39V when charging is active, or a low standby voltage when waiting, but the real test is whether the mower is seated normally, the contact switches are compressed, and current actually flows under load. A no-load meter reading can look fine even when a crimp, spade connector, spring contact or dock sensor ultimately fails once several amps are involved.

- Pressing the Stop button twice has reverted constantly discharging back to charging for multiple users. NB: this is also the way to turn off the mower's parking brake when you want to push or pull it.

- If charging starts sometimes, stops randomly, or only begins after clearing E51 or repeated retries, think handshake and contact pressure, not just dirty contacts. The mower and dock have to agree that the mower is seated, the contacts are compressed, and charging is allowed. Slight dock misalignment, weak contact pressure, a sensor issue, a high-resistance connector or firmware logic can all cause repeated retries. If gently pressing the mower forward or down changes the dock status or starts charging, suspect mechanical seating or contact pressure.

- A resistance test on a suspect spade connector can find an obvious failure, but it may miss a marginal one. With power disconnected, a good crimp should read almost the same as touching the meter probes together. If the reading jumps around when the wire is moved, replace the connector. A better test is voltage drop under load, but that requires care because the circuit is live. A good connection should show almost no voltage drop across it while charging. A bad connection acts like a resistor, wastes power as heat, and is what melts or discolours spade connectors.

- Charging errors every time it rains usually point to moisture detection, standing water, contact contamination or drainage around the dock. The mower should be able to return and charge after rain, but water pooled under the dock, wet debris

around the contacts, damp sensors or a low/soft dock surface can trigger errors. Put the dock on a firm surface that drains well, clean and dry the contacts and moisture sensor area, and check the dock LED pattern before assuming a bad battery or charger.

- If the maximum value when charged is sometimes only 95% or 98% instead of 100%, don't worry - that's normal - modern LiPo batteries protected by good battery management systems (BMS), are robust and are likely to comfortably outlast the mower around them. But if the max charge drops much below 90% and isn't fixed by simply pressing Dock, you should reset/recalibrate the BMS (battery management system). To do this, run the battery **down to 0%, i.e. dead** - *don't* settle for 1%. Do this by manually mowing or leaving it powered-on but off the dock for a while. Once it's dead, fully recharge it, **then leave it on the dock at least 20 minutes after it reaches full** to allow for battery balancing. Doing this full process once or twice should be enough to recalibrate ok. See Nick's battery/charging primer.
- Currently, there is a setting for the mower to return to recharge once it hits 15% and to resume mowing when the battery is recharged to 75%. In the current software, these levels cannot be modified - the feature is either on or off. If you notice that the mower automatically returns to recharge or resumes mowing at a different percentage than these levels (or dies completely while mowing!), then this also suggests a BMS reset/calibration may be needed.
- Most other charging issues seem to be related to contact pressure, as no charging will happen if there isn't enough pressure to push both contact micro-switches. Hence the recommendations for **a firm dock foundation**, slight slope down towards the QR codes, and raising the mower deck a little with taps of the "+" button if manually placing it on the dock. At least one person greatly improved charging reliability by adding soft packing foam under the dock contacts to keep them more firmly raised - the microswitches *must* still operate, of course. Others have found a steel wool buff of both sets of contacts helps.
- If you have no battery power to raise the mower deck for servicing, firmly press down the silver tab that looks like a bolt head on the right (facing forward) of the mower's right-hand deck support, near the brushes where the support enters the mower body. This will let you raise the deck - consider propping it up on small blocks to keep it raised:

- Battery not charging after being fully discharged while sitting in the mower? Disconnect it completely for a couple of hours, then try again. Same if you see a “Mower overheat” error.

- Do not try to revive a deeply discharged lithium mower battery with jumper wires or an improvised charger. If a battery has been sitting discharged for months, or more, you do not know whether the cells are simply asleep behind the BMS or have fallen below a safe recovery voltage. Forcing current into it can damage the BMS, create a fire risk, or wake up a battery that should not be used.

- A battery that hit zero yesterday is not the same as one left discharged for a long time. These batteries still have small parasitic loads when connected, and over time they can drift into a protection state or below safe recovery. Use only the correct Lymow charger/dock or approved external charging method and let the BMS decide whether charging is allowed. If it will not wake that way, treat it as a bad battery and take it up with Lymow.

- Detailed guide for checking power contacts on charger, dock and mower with a multimeter: (Google Lens etc on your phone can translate the diagrams) https://lymowtechsupport.zendesk.com/attachments/token/sppZ7inPksHOagYu9oiBDJgBQ/?name=Not+charge+EN.pdf - this is relevant to the Plus also, but dock contacts are in a different location.
- If the mower won't power on at all, even briefly, that often points to the battery protection circuit being tripped rather than a dock issue. If it's been sitting deeply discharged for a while, the BMS can go into protective shutdown. In some cases it needs a sustained connection to the charger to wake up. But if it has been on the dock for days with no signs of life, that isn't normal behavior. If all else fails, there may be a burned wire to the power switch under the power button on the keypad.
- Measurement of nominal dock voltage with a voltmeter confirms power supply is working but doesn’t confirm charge acceptance by the mower’s BMS.
- “Battery unexpectedly stopped charging” message - the BMS may inhibit charging under the following conditions:
    Temperature outside acceptable range - 3°C (37.4°F) - 57°C (134.6 °F)
    Moisture detection or electrical anomaly
    Protection state following internal fault
    Cell balancing stabilization

- Following blade jams, internal errors, abrupt shutdowns, or moisture exposure, the BMS may temporarily restrict maximum charge level. This commonly presents as charging halting near 20–30 percent, despite dock voltage being present. This reflects protective logic and cell balancing safeguards rather than battery degradation. In many cases, a complete power-down cycle and adequate drying period will restore normal charging behavior.

- Persistently-low percentage after it’s been back in a normal situation for a while warrants further troubleshooting.

- Voltage testing must be performed while the mower is seated normally on the dock and actively attempting to charge. Testing with jumper wires bypasses normal mechanical compression, contact resistance characteristics, and dynamic load behavior. That means it doesn’t fully replicate real docking conditions. The mower doesn’t initiate charging solely based on voltage presence at the contacts. Dock engagement is determined through a combination of microswitch activation, electrical contact continuity and charge handshake validation between the dock and the internal BMS.
- Repeated docking attempts without charging commencing typically suggests protective logic engagement rather than software or positional failure.

- Additional check for a mower with consistently unreliable charging (any dock, any battery) - check the charging contacts on the mower after you've checked the dock contacts. Here's an overview for a One:
    - I took the bottom off the unit and then removed the charging plate to inspect it more closely. Once I had it apart, I could see the negative spade connector to the charging plate had expanded slightly, the black insulation around it had crumbled, and when I pulled the plate off the spade connector, the inside of the connector was blackened.
    - Step 1: Remove the belly pan from the mower.
    - Step 2: To inspect the mower-side charging contacts, remove the four Allen-head screws on the front charging plate assembly.
    - Once those are removed, you can rotate the charging contact plate forward and see the spade connectors on the underside of it.
    - So far, in my experience, every charging issue I have seen has involved the negative terminal or negative-side connection.

RTK

- RTK antenna should be pointing **down.** And remember, RTK placement is all about maximal view of the sky – not height, not proximity to the dock or mower. Also best not to put it near a metal wall or overhang such as a shed. And you shouldn't put the dock directly under it, as that's where the LoRa signal is worst..
- The RTK precision reading in the app, such as "0.01m" is in **metres -** so that excellent reading is about 10mm (just under ½ an inch), and something like 0.5m (1.6 ft) is very bad!
- If the mower can achieve a stable Fixed solution with around 0.01m precision anywhere in the yard, the RTK placement is probably capable of excellent performance. Poor accuracy elsewhere is then more likely to be caused by the mower's local satellite reception, multipath, obstruction, or the correction link degrading in that area. The RTK sets the reference frame, but the mower still has to see enough clean satellite signal where it is working.
- To separate mower-side GNSS problems from RTK-to-mower communication problems, watch Data Error Rate while the problem is happening. If accuracy gets bad but Data Error Rate remains near 0%, suspect sky view, trees, buildings, metal roofs, fences, nearby walls or reflected satellite signals at the mower. If Data Error Rate rises or jumps around, suspect the LoRa correction link between the RTK and mower. That can be caused by distance, terrain, buildings, interference, antenna placement or a weak antenna connection.
- A single tree branch is rarely the whole problem, but a branch can matter if the area is already marginal. The real question is how much useful sky the mower can see in that spot. Dense canopy, low branches, buildings, walls and reflective surfaces can combine to push the mower from stable Fixed into Float or poor precision. Wooded properties are not automatically impossible, but heavy continuous canopy is always more challenging for any GPS or RTK mower.
- Support the RTK power connection with tape and a support loop so the weight of the power supply cable isn't all on that connector. RTK cable length: 10m.
- If you don't trust your RTK's power reliability, add a UPS with surge protection.
- If you move the RTK, power cycle both it and the mower and give both a few minutes to re-see satellites. Note that all maps must be redrawn *any time you move the RTK to a new location.* Your old maps *will* show up until you delete them, but won't be usable.

- An “IMU signal lost” error has been resolved at least once by checking/fixing RTK power, even though IMU means “Inertial Measurement Unit”, which is a multi-sensor component on the mower itself.
- Bad RTK? Power cycle the RTK and look for the *faint* red power LED near its USB connector. You may need to shade it to notice it’s on. Power cycle the mower too.
- Also double-check you have bound the correct QR code from the bottom of the RTK, not from the mower. At present the Lymow app doesn’t flag typos or other code errors, the mower simply silently fails to bind.
- If RTK binding is lost, place the mower on the dock and try a bind from there. Remember that the app doesn’t verify RTK typos so type carefully!
- For persistent RTK connection issues, try powering it from the dock if possible, or via its USB connector - just to eliminate its regular power supply as a possible cause.
- If still unresolved, carefully disassemble the RTK - there are two levels, four screws initially and four screws on the second level. Ensure the internal connectors are firmly connected to the circuit board, especially the gold one! Good images here: https://www.facebook.com/share/p/1E58XoYZwx/
- If you suspect LoRa range issues are affecting your mowing, consider a replacement antenna such as https://www.amazon.com/dp/B0DLKTZ66P or https://www.amazon.com/dp/B0F9WMTMD4 - it’s a simple swap and won’t require reconfiguration. See https://www.reddit.com/r/Lymow_Official/comments/1trjwfs/there_is_hope_for_my_lymow/ for more.
- If you’re considering a LoRa repeater, it’s unlikely to help: https://www.facebook.com/groups/lymow/permalink/4684013615143396
- You can swap a new RTK into the same location as an old one without needing to re-map - you’ll just need to rebind. And yes, you *can* have many mowers using the same RTK - including mixtures of One and Plus units.
- Weather and seasons can affect RTK reliability, especially if it’s already marginal.

Mowing and navigation

- If your mower won’t mow or quickly stops mowing, this may be because it detects rain incorrectly, via the sensor on top of the mower - the two small metal nubs about 10mm apart on the main body next to the left camera. Don’t just wipe them, use a strong blower or cool hairdryer to make sure there's no residual moisture there. If they’re dry, disconnect the battery for an hour or so, restart your app, then the mower. If it recurs, contact Lymow support. In the meanwhile, you can turn off Settings|General Settings|**Rain sensor** mode.

- W27 “Camera Signal Lost” should not be treated as a normal RTK placement problem. W31 “Location signal lost” can follow poor positioning, but if W27 appears repeatedly, the mower’s vision system may not be reporting properly. Clean the camera lenses, check for film, condensation, mud or packing residue, then do a deep power cycle. If W27 returns after restart, send logs and a short video to support. It may be firmware, a loose internal camera connection or a failed vision module.

- If camera errors and location errors appear together, the mower may be losing one of the positioning inputs it expects to combine. RTK can be fine and the mower may still refuse to operate normally if the vision side is offline. Don’t keep remapping or mowing until the camera error is resolved.

- Another cause of refusing to mow is because at least one of your zones isn't connected to the others via a channel or overlap.
- If it ignores no-go zones or similar behaviour, disconnect the battery for an hour or so, then check the zones are all still registered.
- Lost maps can arise after firmware or other glitches. Generally resolved by a factory reset and restore backed-up maps.
- If your mower is stored inside - e.g. a garage that you manually drive it out of - give it a minute or two under open sky to attain full GPS accuracy before you start mowing. Wait for its GPS error indication in the app to reduce under .05m.
- Getting persistent out-of-bounds errors, and clearing each error doesn't help? Try restoring a backed-up copy of your maps from when it was working ok. This may clear any glitch in its working/map memory caused by firmware bugs.
- Good-looking RTK precision numbers do not always mean the mower is actually safe near a hazard. Rarely, the mower may appear to have acceptable accuracy while its actual position is offset by several feet. If it suddenly mows parallel to the correct path but several feet out of place, treat that as a temporary positioning failure or false confidence state. Pause it, move it away from hazards, and let it reacquire a clean position in open sky. If it happens repeatedly, do not keep running near roads, ponds, retaining walls or neighbouring property until the cause is understood. If this kind of offset persists and a simple power cycle doesn't help, try rapidly powering the mower off then back on about five times - this process was originally recommended by Lymow to deal with an E32 camera error but has also resolved the offset issue for some owners.
- If the mower is jumping from 0.01m to 0.20m or worse while sitting still, something in the positioning solution is becoming unstable. That may be firmware, GNSS quality, multipath, or correction data dropping in and out. Boundary violations should be treated seriously. Send Lymow screenshots of the RTK screen before and after the jump, the firmware version, the exact error codes, and a short video if possible.
- If a navigation error appears right after pausing, resuming, changing runtime settings, or restarting a partly completed mow, cancel the task and start a fresh one before remapping. Sometimes the mower seems to get its job state, runtime settings or path state out of sync. If a fresh task behaves normally, the map may be fine. If the same area fails repeatedly, then suspect map geometry, a bad transition, a hidden channel or a local positioning issue.
- If the mower is stored in a garage or docked under cover, don't send it straight into a job the moment it wakes up. Give it time in open sky to settle into a good Fixed solution. The mower can behave badly if asked to navigate while its initial position is still poor. This is especially true where a dock channel starts inside or near a covered area.
- If you find it leaving too much of an un-mown gap compared to your original perimeter, consider changing the Safe-Margin Mode in zone settings to "Precise Edge" instead of "Offset Edge".
- If the mower persistently reports out of bounds when it isn't, or has a persistently high RTK error, or is missing from map even though the RTK error looks fine (e.g. 0.01m): manually drive the mower back and forth in the open until the RTK error corrects to a sensible figure and/or it reappears on the map. If that doesn't get it showing in the right place, power cycle the mower.
- If the mower throws an "out of bounds" error while in the narrow channel from the dock because of an initially-poor view of satellites, try making a very short channel to a wider non-mowed zone, assuming your terrain allows. The larger zone won't throw spurious out-of-bounds errors while GPS accuracy is still improving.

- If the mower starts persistently backing up at the start of a mow, see Nick's answers here: https://www.facebook.com/share/p/1CRwGt87XY/ (in this case, a thorough bumper disassembly and clean worked).
- For a persistent E71 “Internal navigation error”, a better LoRa antenna has helped at least one owner: https://www.amazon.com/dp/B0DLKTZ66P
- If the mower suddenly starts going backwards for no reason - check and recheck the bumpers, even if their sensors are not showing up in the engineering screen! You can find the Engineering Screen in Miscellaneous tips and notes below. Tap the bumper a few times and see if it resolves for a while. If the issue returns, disassemble (8 screws) and clean the bumper microswitches, and spray them with contact cleaner. Contact-cleaner on the bumper micro-switches has helped resolve sticking switches. If you can’t resolve a bumper error (E44), check the bumper itself for a bend, per https://www.facebook.com/groups/lymow/permalink/4634762500068508/ …and also consider a factory reset. An alternate approach for the One is noted in: https://www.facebook.com/share/p/1BLTsPLTZx/ and a drop-in replacement switch at https://www.reddit.com/r/Lymow_Official/comments/1tf73g5/fixing_e44_bumper_stuck_error_on_lymow_one/

  Should you wish to disconnect and bypass the One’s microswitch because of weak springs, corroded wires to the switches or similar, the resulting circuit must be joined for “switch is off”, i.e. open circuit is “on”. Extra switch info: “model is KA5 for a refrigerator, correct way to remove is removing the rubber boot (now looking for where to buy those from) as that’s the only way the switch can come out with 2x objects down the side to release the arm clips.”

- Although the mower uses smart detection in channels, it’s **up to you** to ensure the channels and dock area are wide enough (Lymow says 1.25m) and consistently free of the kind of obstacles that could get damaged by or cause damage to the mower. This includes vehicles!
- If the mower angles too aggressively into a rigid perimeter (e.g. wall) and “bounces” repeatedly as it goes along, try approaching that barrier at a shallower angle when mapping, to lower the chance of an initial bounce. Then ensure you’ve selected the same mowing direction for the perimeter as the direction you mapped it, e.g. clockwise. Hopefully, later firmware will improve this – it’s due to a “Perimeter Protection” feature Lymow introduced in August 2025, which should be optional.
- March ‘26: Note that vision currently seems to be active for all channels, including when docking, regardless of settings.
- If it unexpectedly goes out of bounds while mowing, try changing from Smart to Touch-only mode. If it helps, this is likely a firmware issue which will be resolved in time.
- If the map won't open in the app, and waiting hasn’t worked, try manually moving the mower 2-3 metres a couple of times - may come right as comms improve.
- If the mower just randomly stops mowing, try a reboot - power button 2 seconds to turn off, same on - then resume.
- If you see the mower showing strange repeating behaviour in a confined or narrow part of a zone (“donuts”), try slowing down its speed or raising deck height for that zone and also try changing from “smart” to “bump only” sensing. Lymow also suggested increasing blade speed and raising mowing height to resolve such behaviour. Other users have noticed this behaviour in an area with old channels/zone-overlaps, and removing extraneous channels (hidden under zones) has helped, as has redrawing the zone boundary or channel in this area and also changing perimeter or mowing direction - or the number of perimeter laps if it’s happening while mowing a perimeter.

Do Report Logs when this happens - even better with an emailed video link too - so they get an opportunity to improve the firmware.

- To mow manually: touch the remote icon in the app. Then touch it again to select blade height, blade speed etc. Sometimes you may have to edit and save the settings twice to get the change to “take”. Stop manual mowing by pushing the “Stop cutting” button at the bottom of the screen or changing the blade speed to zero again.
- To start a mow without your phone, enter the PIN to get to the mower’s home screen, then press the Home button once, and again to stop. Press it twice to return to dock. To clear an error, press the STOP button twice, then Home again to unpause mowing.
- A useful post illustrating how to troubleshoot track/wheel issues (most relevant for mowers built before August ’25): https://www.facebook.com/story.php?story_fbid=4522883524589740&id=3951569995054432
- If the mower reports that it can’t find the dock, try placing the mower on the dock then go to the app’s map editor, touch + and add the dock by selecting the Adjust charging button. If that doesn’t work, place it 1-2m in front of the dock and try again. Then manually add a channel from the zone to the dock. When you’ve moved the dock, always test docking at its new location a couple of times before sending it out to mow again.
- If getting strange offsets of dock or mower location that *aren't* resolved by moving the mower a few metres out in the open - including at max speed - and you’ve already given it 10+ minutes to re-acquire satellites after it was powered on: try power cycling the RTK. Then wait a few minutes for that to regain precision, and repeat the mower-moving process.
- If you want to start mowing at a particular spot or portion of a zone, currently, all you need to do is manually drive the mower to the place in the zone where you want to start and then hit "mow". It will start mowing from that spot and continue through the zone. Be aware that depending on if you have “perimeter first” set or “main area” set, it will proceed to follow that part first, and then the other part second. If you're worried about a portion of the perimeter near water or some other danger and wish to observe it mowing, make sure you start with perimeter first - otherwise it will mow the main portion of the zone and then head to the perimeter after that's done, when you're not watching.
- Mower thinks it’s out of bounds so you can’t send it to dock? Clear the error and start a new mow job elsewhere. Once it thinks it’s back in bounds, send it to dock.
- If docking is slow or awkward, or you get an “E29 Charging tag not detected”, **first clean the camera lenses and ultrasonic sensors and the QR tag also**. Look for cobwebs or grass in the way, and also consider issues like sun angle, glare or reflections from the roof of any shelter or other nearby surfaces!
- Other docking issues can arise if there is low light around the dock, or strongly-contrasting sunlight and shadows across the QR codes, making them hard for the mower to identify. Also ensure the mower’s cameras can see most of the QR code when approaching the dock, especially if there’s a slope on the approach – you can drive it nearby and use the mower’s camera view to check.
- If you get a navigation error transitioning from channel or zone to another zone, especially if it’s repeatable: this is likely a tiny RTK/mapping error - delete the channel or remap the zone boundary near the transition, and retry. See NIck's longer comment in https://www.facebook.com/groups/lymow/posts/4692017141009710 Note that an error may arise while the mower is still well away from the tricky transition - but nonetheless affected by it because you’re sending it to a zone that’s beyond the transition.

- If deck height stays up instead of lowering to mow, try to change it by tapping the +/- buttons – it has been known to come right with persistence. Also try pressing firmly down the silver tab on the right hand support of the mower deck, near to the brushes where it enters the body (see photo earlier). This allows you to lift the deck up and down manually. Then try again with the buttons.
  Lymow have recommended a reset process involving holding down the mower's minus button for ten seconds (after entering the PIN), and then power cycling if needed. See Jeff's reply to Nick in this post:
  https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4719518701592887

- If the deck won't set at correct mowing height: 1) Check global vs custom settings. 2) Ensure your selected height has saved by going back in 3) Try toggling from metric to imperial and back again.
- If an E7 "lifting motor jam" is spurious, you should be able to manually adjust the deck height to its lowest setting using the remote control on your phone, then resume mowing.
- If deck height doesn't change – perhaps even though you can hear a motor - disassemble the mowing deck and remove accumulated grass and debris – see Maintenance checklist.
- If the deck remains up after that, try this: Power mower off. While off, press the power button once (just a quick press and release). If you hear the lift motor make a small noise, it will be lowering the deck slightly. If so, repeat until the deck bottoms out and the wheels retract. Then, power on.

  One person noted they could get their mower working (while awaiting a replacement) by disconnecting the link to the omni wheels.
- If the front wheels or deck lift and lower continuously, including while the mower is sitting on the dock, suspect the height adjustment system rather than normal mowing logic. The mower may not be getting a believable position reading from the lift mechanism, so it keeps trying to find or correct the deck height. First check for packed grass, twigs, bent plastic or debris around the front lift arms and wheel/deck movement area. Make sure the deck can move freely through its full travel. If it still loops after cleaning and a deep power cycle, stop running it and contact Lymow with a video. It may be a height sensor, lift motor feedback, limit switch or firmware calibration issue.
- If the omni wheel stays at full height, use **+** on the mower to fully raise the deck, wait one minute, then use **-** to fully lower, and wait again. If the problem persists, report logs and follow up with an email or zendesk support request.
- If the mower is persistently circling, look at the front wheels. The iron strap supporting a wheel may be bent, with the wheel rubbing the side wall. This is easy to bend back to straight.
- If the mower goes into a little dance - back and forth, without escaping, this may be a navigation glitch - most common in narrow areas or where no-go zones are near the perimeter. Pause and resume will often allow it to escape, though sometimes you may need tell it to dock, then cancel that and restart the mow once it's out of the dance area. Long term, consider editing the perimeter if it's near a boundary or no-go zone.
- If one motor stops, try loosening both tracks evenly and re-check. Then see the Test menu with (among other things) hub calibration to try and fix that – see Miscellaneous tips and notes below.

- If you hear a grinding noise as one track moves, safely lift that side off the ground or put it on a bucket or platform so the track can spin freely and command movement. Listen for whether the noise comes from the track, roller, sprocket, bearing or drive unit. Then power off and spin that track by hand. It should have

some resistance, but it should not feel gritty, locked, uneven or like it catches in one spot. Look from the inside as well as the outside, since sticks, stones and packed debris can hide where they are not obvious.

If the grinding happens with the track lifted, suspect something in the drive assembly, sprocket, roller, bearing or gearbox. If it only happens with the mower on the ground, suspect load-related slipping, binding or a track shifting under weight. If comfortable, remove the track and test again. If the noise disappears, the problem is probably in the track, rollers, debris or alignment. If it still grinds with the track off, it is much more likely internal to the drive unit and should go to support.

- Slip errors can happen in soft or awkward terrain. Some have reduced slipping by wrapping some heavy zip-ties around the tracks so the heads are on the outside of the track. Another has successfully trialed screwing these into the tracks to create more friction: https://www.amazon.com/gp/aw/d/B0852FFY62?psc=1&ref=ppx_pop_mob_b_asin_title
- For a blade error – blade stopped & mower not moving, possibly also E10 errors: https://www.reddit.com/r/Lymow_Official/comments/1nuird8/fix_for_blade_error - basically this was caused by a loose internal connector, whose status is shown as the lower-left “dot” of the connections triangle on the mower’s LCD. Lymow sent an owner a PDF for how to check, which is linked from this thread: https://www.facebook.com/groups/lymow/posts/4538184919726267
- If it’s mowing but with no blades turning *and no obvious sticks etc blocking them*: do this, essentially a soft reset:
    - be next to the mower (Bluetooth), go into the app and hit pause
    - go to the remote control function
    - select Blade speed to Turbo & select start mower
    - move it a metre forward, then backwards
    - Select Stop Cutting in the app and back out to original mowing screen
    - hit resume... sometimes it takes 10 seconds all the way up to 2 min but it will continue to mow where it left off without cancelling and starting the mow all over
- Inconsistent mowing, especially where no-go zones or new growth is involved (see especially Nick’s comment): https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4727373554140735
- Dealing with frequent blade motor not starting (Nick's comment in particular): https://www.facebook.com/groups/lymow/posts/4687813514763406
- Track fitment or alignment issues, track coming off? See these posts (and associated comment) regarding diagnosis: https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4644610962416995
- If you get blade stalls on thick grass clumps, set the fastest blade speed and slowest mower speed and adjust from there. Note that a blade stall during manual mowing will automatically restart after a pause - you don’t need to do anything except maybe move the mower a little to prevent a repeat.
- If the blade motor seems noisy in normal operation, you can check the bearings more carefully by putting the mower on the edge of a bench - with the deck *down* so the bearings are in the correct orientation. Disconnect the battery and spin each blade by finger - they should feel the same. If you’re still unsure, leave it hanging off the bench and (with care!) run the blades up to full power to listen.

- On some Plus units, blade motors may stop during mowing while the mower continues to drive. This is a separate issue from RTK or navigation. Some owners have seen this more often in higher ambient temperatures, suggesting a possible motor temperature threshold, motor controller, motherboard or firmware issue. Lymow are actively investigating this. If it happens repeatedly with no high ambient temperature, grass jam, debris or obvious overload, report logs and describe it specifically as “blade motors shutting off while drive motors continue”. Possible mitigations to try in the meanwhile:
    - Putting dock in shaded area so it starts cool
    - Bearing seals (check bearings for for dirt first) - see Maintenance above
    - To lessen heat build-up in hot weather, white vinyl wrap or reflective tape on mowing deck definitely helps e.g https://www.amazon.com/dp/B08BHYQ7RY?ref=ppx_yo2ov_dt_b_fed_asin_title&th=1
    - adding input and exhaust vents can noticeably lower bearing temperature (by 30F/16C on a hot day), per https://www.reddit.com/r/Lymow_Official/comments/1tuy0v0/comment/oppdbey/ - but may have warranty implications
    - Replace the bearings in the blade motors (see Maintenance above)
- Newer Plus units may also intentionally shut off the blade motors when they hit heavy grass resistance, then continue forward for roughly 10 metres before reengaging the blades. This is different from the One, which tends to stop forward movement, tries to push through slowly, and then treats the area like an obstacle if it cannot continue. The Plus behaviour can leave long uncut strips. The One leaves small clumps of uncut grass. Until Lymow changes that strategy, the best mitigations are higher blade speed, slower travel speed, higher cut height for the first pass, and mowing before the grass gets heavy enough to trigger the behaviour.
- If blade jams happen mainly in damp, lush or cool-season grass, the problem may be “grass paste” rather than a hard obstruction. Wet fine clippings can pack into the deck and around the blades until the mower trips a jam. Mowing later in the day may not be enough if the grass still holds dew or the ground remains damp. Raise the deck, mow more often, avoid taking too much at once, and keep the underside clean so buildup does not snowball from one mow to the next.
- On rare occasions a frequent blade stop for the Plus could be a misbehaving blade temperature probe - see Thomas Jackson’s comment and photo in: https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2104044130527988
- Check this if you’re getting an E53 error: Navigation Internal Error (E53) and why it happened for me today. : r/Lymow_Official

Updating firmware

Backup maps before doing an update! The firmware update process has four main steps: (1) app-to-mower connection to start the firmware update, (2) mower downloads the firmware directly from Lymow via WiFi or 4G, (3) mower applies the update and reboots and (4) mower tells the app it’s done and the app tells you. Failures can happen at any of those steps, but generally only #3 could be serious. The app starts the process and monitors how it is doing, but the app *isn’t* sending the update to the mower itself, nor does a random app disconnection stop the update once the download has begun - it may just leave you uninformed about progress.

- **Handy hint:** turn your phone's BT *off* before running the app and starting the update - this means you'll already know the mower is communicating ok via WiFi or 4G, which it needs for the update to work.
- **If** the download portion of the update process fails - you never see the "percentage" count-up circle, or the count-up gets interrupted and you get a "fail" message in the app - that's not serious. Just be prepared to retry a few times, bringing the mower as close as possible to your WiFi router, and giving it several minutes after powering on before (re)starting an update. That gives WiFi a good chance to get established. If you don't have WiFi, ensure your 4G SIM is activated (Settings|Device Info) and place your mower where it can get the best possible 4G signal.
- **The download step can take** take 30m or more to get the full download if the mower's own WiFi-or-4G signal is poor. Don't get impatient and interrupt the process *unless* you think the connection has been wholly lost. On the other hand, if it's been stuck at (say) 70% for ages, bring the mower closer to good WiFi and restart the download process - if it doesn't resume by itself.
- I**f** the download counter has completed and the app is now showing the "wait 3-5 minutes" indication, the mower now has the firmware file and will be installing it, then rebooting - you should see "**otaing…**" on the mower's own screen for a while. If ten minutes or more have passed with the app sitting in that "wait" state, go check the mower's LCD. If it shows the normal PIN entry screen, it has most likely powered-on just fine after the update, and the app has simply lost track. You can check this by backing out of the update screen in the app and checking the Settings|Device Info to see if the new firmware version number is showing. If it isn't, go back to the OTA Update screen and try again.
- If the mower screen has been showing "**otaing…**" for 30 minutes, try powering off and, if that has no effect, disconnect the battery for an hour or so. Chances are the update was applied but the mower didn't complete its post-update reboot, so it should turn on ok. **If not, it's time to contact Lymow support.** Note: there is risk here if the mower is genuinely still applying the update when you interrupt it. But 30 minutes for the "**otaing…**" step is definitely abnormal so it's far more likely there's been a small reboot glitch **or** (less likely) a major update failure has already happened.

  Once an update has been installed ok and you can see the new version number in the app, **it's a very good idea to power off and disconnect the mower battery for an hour or more** to allow the new version to start with as clean a slate as possible. This *often* helps avoid or resolve strange post-update behaviour.

  Since the first Lymow was shipped, firmware and app updates have happened regularly, with plenty of useful improvements and fixes. So you'll likely get plenty of practice with installing them. If you don't see improvements in the release notes that matter much to you, it's worth waiting 5-10 days and monitoring the support groups to see whether owners installing the new version encountered any unwanted new behaviours before updating yourself.

Usage Hints

Ways to increase battery life

- reduce track tension - one of several benefits of doing this
- turn off parking brake

- alter mowing pattern - zig zag vs chessboard
- alter stripe angle - lots of turns and short runs use extra battery. Using “optimum stripe angle” is fairly good for long/large zones but for smaller or complex ones, or those with slopes, it’s best to set it yourself.
- lower numbers in the Path Spacing setting means more overlap between stripes, which means a better result but takes longer, hence uses more battery
- alter zone size or shape - longer straights are more efficient
- reduce mowing complexity - adding no-go zones is less complex than requiring it to rediscover trees and other fixed obstacles each time
- adjust mowing speed and blade speed - there’s a trade-off for the former but higher blade speed definitely uses more power
- sharpen your blades to lower mowing resistance

Note: the One and the Plus battery have the same specs but are *not* interchangeable due to differing shapes and connectors. Specs: 528Wh,3h runtime, 25000 sq ft or 2300 sq metres maximum mow area on once charge.

Stats, Specs and Admin

- **Date of manufacture:** deduce from the number on the packing label. For example, if it ends in 250814, it was manufactured on Aug 14, 2025.
- **Mower serial number:** under Settings|Device in the app, on a label on the mower and also the packing box label.
- **One dimensions:** length 29.4" width 22", height 12.6" (747x558x320mm)
- **Plus dimensions:** 750mm (3m longer) x 600 (42 wider) x 320mm
- **Charging dock dimensions:** length 31.6", width 27.6", height 13.9" (804x353x308 mm)
- **Lymow-supplied “garage” dimensions**: length 32.4", width 28.3", height 15.7. If making your own, Lymow recommends 1007x693x430mm
- **Blade speed** selections and estimated actual RPM blade speeds:

  Eco = 3000rpm

  Standard = 4000rpm

  Power = 5000rpm

  Turbo = Max (probably around 6000rpm)
- **Bolt sizes and torque specifications ex Lymow:**

  Blade nuts: 17mm on One, 13mm on Plus, 6Nm

  Front Hub Center Bolt M6x12mm, 4-5 Nm

  Rear Hub Sprocket Bolts M5x12mm, 5 Nm

  Rear Hub Inside Bolts M3x8mm, 1.2 Nm

  Track Adjustment Locking Plate M5x45mm cap head bolts, 5 Nm
- **Wheel hub bolt sizes:** outside M5-0.8x12mm, inside M3-0.5x8mm
- **Cut width:** 16”/405mm, less any overlap
- **Charging temperature** range 3°C (37.4°F) - 57°C (134.6 °F), *recommended* charging temperature range is 5°C (41°F) - 35°C (95°F), avoid operation below -10°C (14°F) or above 50°C (113°F).

- Charging dock voltage: 39V - note that the Plus dock typically only delivers a signal voltage (maybe 1.5V or thereabouts) until the mower is present.
- **RTK bracket:** Mounting plate is 90mm w x 110 high, hole centres are 60mm x 80mm. Minimum internal pipe diameter is about 20mm, outside diameter roughly 30mm. Pipe extends out 500m from the mounting plate, then bends 220mm up, ending in a screw fitting for the head.
  NB: the cable doesn't exit through a hole in the mounting plate where the pipe meets it - it comes out of a slot on the bottom of the pipe just before the mounting plate. The bolt hole used by the trident is M12x1.75.
- **Power & time usage for mowing:** this will vary a **lot** (see Ways to increase battery life) but one user estimated 230m2 per hour or 1000m2 per charge.
- RTK itself - **same** spec for both One and Plus - they can both share the same one if you want. Tracks are also the same and can be ordered from Lymow's site if it's normal wear rather than a warranty claim.
- **Power usage other than mowing:** Average battery power draw when already charged, still powered on, and not using the parking brake - about 15W, or .35kWh per day. If powered **off** and not charging but with the battery still connected, it loses about .04kWh per day, equivalent to a power draw of just under 2W. Note: after powering on or (especially) reconnecting the battery, ignore the battery reading in the app for a few minutes. It may show a reduced percentage on power-on but this generally recovers in 5-20 minutes - with little actual power draw if it had been disconnected. Maintenance power for the charger and dock alone are trivial, measured at under half a watt. Maintenance power for the RTK is 1w.
- A thread (opinions only!) on torques for mower screws and bolts: https://www.facebook.com/groups/lymow/permalink/4535700353308057/
- Mower warranty is transferable: https://www.facebook.com/groups/lymow/permalink/4682600205284737
- The logs reported by Report Logs don't survive a power cycle or battery pull. They are stored in temporary memory, so once the mower loses power, the logs are cleared. To report an issue, upload the logs before restarting the machine.
- The One and the Plus both use the same app, sharing a "compatible software platform", meaning the same firmware versions arrive for both at the same time.
- Lymow battery connectors - it seems to be very hard to find the right one for the One model without cannibalising a mower cable. For the Plus, the connector seems to be an M25 2+1+5 connector, per https://www.aliexpress.com/item/1005005754382700.html
  If you were going to use the battery with solar or to power external devices etc, you'd need a DC-DC converter or DC-AC inverter that can take 38V
- Some chip specs:
  - The GNSS (navigation) module seems to be the same for both One and Plus models. One+: M4 P Freq:863-870MHz 902-928MHz FCC ID:2BM2K-M4P S/N:D25C10002874, Survey Antenna Products Model:HX-CSX208A, S/N:C25120117169 Harxon Corporation
  - One chipset: 8GB storage module SiliconGo SGM8000C-S27B8G CPU: Rockchip RK3588S SBFYNXV22 2515 4M92603 000 RAM 2x 4Gb Modules, SEC 116, 4ADMGCL, G2Y2249C

Key "Plus" model differences

- Nearly 3x more powerful cutting motors - much more effective if you *must* cut wet
- Harder & better blades, no specific fitting orientation required
- 7cm ground clearance instead of 5cm so less slipping and getting stuck

- More durable wheel hub motors
- Charging contacts on top instead of underneath - they *can* get a little debris or grass juice in this location but in practice this isn't enough to prevent charging
- Cleaning brushes inside the tracks are standard, as are dock brushes for the contacts
- Roughly same weight, height and length, but the outer mowing deck of Plus is 42mm wider. Owners who mapped very close to edges on a One and then transfer maps to a Plus will find the deck is 20mm closer to any hard edge like a wall and hence that much more likely to bounce. No problem if they either make the map on the Plus or adjust the boundaries after importing it.
- "Compatible software platform with the base model" - same firmware, app, RTK (yes, you can share a One RTK with the Plus and vice versa).
- No microswitches in the bumper, so they don't get stuck
- "Pull to the right" during manual driving, mapping or manual mowing is much reduced.
- The grass discharge is on the right, meaning owners should give extra attention to checking the right track and wheels
- If you drive or place the Plus onto its dock *manually,* be sure the mowing deck is high enough to firmly push up the dock contacts as it docks. It can be high enough to *look* as though it's pushing them ok, but still low enough that it won't charge. Just hit the + key on the mower once or twice to fix this.
- Power c onnectors to the dock are the same so the same chargers can be used for One and Plus docks. **But** the battery connector inside the mower is different, so the batteries aren't interchangeable. The batteries for both models are LFP, even if labelled Li-ion.
- On the One, the green mower LEDs (if on in device settings) always flash, including during charging. On the Plus, they are solid when charging and flashing when it's waiting. Ignore any suggestion that solid means the Charging brake is on - that's not so.
- The Plus moisture sensor is in the "tower" part of the dock, not underneath.

Miscellaneous tips and notes

- It's an unfortunate but real fact that Facebook currently hosts the most active support and information groups for Lymow – by far. So if you're finding responses slow or sparse where you're hanging out, join Lymow Robotic Lawn Mower - Official Group and the Lymow One Plus Official Launch Group if you have a Plus - Lymow staff actively monitor both. The most active non-FB group is probably the Lymow Official subreddit – a Lymow person does read and sometimes responds there. The community is very helpful in all three forums.
- Special commands on the mower - also see Deeper Knowledge below:
    - **Force-restart:** Home+Power for about 10s. Then just Power.
    - **Clear the mower cache** - hold down Power button for 3 seconds
    - **Engineering screen:** hold down Home for a few seconds to see this. For example, the second digit after the FNT label is bumper sensor status – 0 for off, 1 for one sensor, 2 for the other or 3 for both. And the bottom-right number is power usage in Watts, typically -250 when sitting idle, and positive numbers such as 1600 (2.5A) or 7000 (10A) during charging. For more, see William Carver's **Lymow Engineering Screen** PDF in the Files section of the official Lymow Robotic Lawn Mower FB group, viz: https://www.facebook.com/download/2847169272317314/Lymow%20Engineering%20Screen%209NOV2025%20%283%29.pdf
    - **Start an "all zones" mow from the mower:** go to the Engineering screen, then touch the Home button for Start/pause/resume.

- Blade nut torque is 6nm – don't over-tighten, it is calibrated to prevent thread damage, and ensure safe disassembly during maintenance. The One blades have keyed inserts that should prevent you from re-installing them on the incorrect side or orientation, the Plus blades have no preferred orientation. With a hand-file, you can sharpen One blades without removal (disconnect battery first!)
- If the rain sensor isn't working, try cleaning with water and a little surfactant e.g. dishwashing liquid.
- Info on using multiple mowers on one property – see BobvSimon's comment in the thread below. Sharing an RTK is fine, even between One and Plus models: https://m.facebook.com/story.php?story_fbid=4584505821760843&id=395156999505443 2
- Troubleshooting WiFi access points - see especially David Gibb's comment in: Lymow Robotic Lawn Mower | Updated information about what I've experienced with WiFi and Bluetooth | Facebook
- A trick for setting chessboard mowing angles just how you want them: https://www.facebook.com/groups/lymow/permalink/4561952477349511/
- You can use VLC, ffmpeg or similar stream-capable apps to view the mower's live video stream – in VLC, open a variant of this URL: **rtsp://192.168.1.225:80/h264ESVideoTest** - alter the **IP number** to match your mower's IP on your local network, which you can see on the app's Device Info screen in settings. You may be able to do the same from a 4G connection if you know how to safely forward a port on your router. Some users view the stream in VLC in one window on their phone while remote-controlling the mower using the app in another window. Handy video showing how: https://www.facebook.com/groups/lymow/permalink/4562133380664754/ NB: Remote control is limited to Bluetooth-only for regulatory/safety reasons and this seems unlikely to change.
- Video settings for a QNAP NAS for recording the Lymow's camera: Generic model, Generic RTSP, your IP, http 80 and RTSP-port 80, RTSP-URL: h264ESVideoTest - no konto and no password.
- If you want to temporarily test an RTK location with no AC power, you can power it with a USB connector from a regular phone-type USB power bank - but do remember that the power bank won't be waterproof and won't power it for long.
- Replacing the spring under the emergency stop button: https://www.facebook.com/groups/lymow/permalink/4684791021732322
- Changing/adding a mower? You can backup the maps to the cloud in the app and then restore to the new mower - touch the three dots at the top of the Backup/Restore screen. You will have to delete the old dock channel and use Adjust Charger to add the correct one for your mower.
- The new Split feature can be used with delete to straighten drawn boundaries in the app. You can also use Split to define a small area for an immediate mow, then merge it back into the original zone afterwards (or restore a backup).
- Replacing the emergency stop spring: https://www.facebook.com/groups/lymow/permalink/4684791021732322/
- If you're considering solar power for charging, get the best solar converter that can output 39V at 5A. Measure if the converter is well-regulated enough to consistently deliver 39V in varying light conditions. Consider adding a good battery into the system. For more info, see https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4698102013734556
- Gibbs contact protectant significantly reduced grass juice build-up on the mower contacts. Another simple way to reduce build-up is to alter your mowing height - the sweet spot may differ from lawn to lawn. Some people have even found that

mowing damp grass is better for their grass type than mowing dry, as the return journey across damp grass after a mow can clean the contacts.

- Create your own garage from an old plastic 55-gallon drum, per https://www.facebook.com/groups/966125058388950 8/posts/2562520469706750 8
  Or create one using Lymow's own shipping box: trim one end down so it's 830mm long, then make approx 200mmx200mm cutouts at the front-bottom corners so the deck has room to swing left and right during docking manouevres. Fold up the bottom edges to make flaps to screw or stake down. *After* thorough testing, lacquer or paint it well, especially all edges.
- If you ordered a second battery, the cable that comes with it can be used to charge a battery from a second power supply (e.g. the 2.5A or 5A if you have one), while the mower is mowing using the other battery. Some owners do all their charging with just this cable and a 10A charger, swapping batteries into the mower as required.
- If you'd like more notifications from the mower, not just alerts when things go wrong, see https://www.facebook.com/groups/lymow/permalink/4548939625317463/ (basically, there's an "Alerts only" setting in the app that you can turn off).
- Mower has returned to charge before completion and you don't want it to resume automatically once it's charged? Hit Pause in the app until you're ready.
- Creative zone design for orchards and plantations: https://www.facebook.com/story.php?story_fbid=4625717344306357&id=395156 9995054432
- Resume-after-recharge is nice - but turn it off if you're parking your mower inside a garage or behind gates requiring human intervention, otherwise a little unexpected mayhem may ensue when it resumes. If it encounters a closed gate or garage door, you should ultimately end up getting a notification when it can no longer proceed, which can be handy.
- If you have a gate or hatch you need to open automatically as your mower approaches, generic, pet or home-automation solutions exist that can read an RFID tag you place on your mowing deck. Look for dog gates or similar.
- If you're planning on using your Lymow to "bush-bash" new territory that's currently in long/wild grass, the best advice is **don't**. Yes, you can do it - but it's not a great use of a multi-thousand dollar consumer-grade tool. If you *must* use your Lymow, start with a line-trimmer or similar to get the grass down to where the highest deck height is usable. *Then inspect carefully for wires, hidden stones, protruding posts etc.* Then work carefully: with blades at max speed, approach lumps of grass *slowly* and from *different angles* to take small nibbles. Some clumps work better if you take them backwards. If the mower is above a particularly heavy lump, move left and right a little bit so you're mowing it sideways to help reduce it.

  Actual mowing should be in slow mode, and fairly high at least initially. Lightly in-fill in any Lymow-sized depressions it seems to get briefly stuck in, otherwise its persistent attempts to escape will create wear - or a greater hole - over time.
- End of season: 70% charge and disconnect battery, store battery and mower in a not-cold and dry place. **Do** bring the RTK head inside in freezing or very wet seasons - thermal expansion and contraction of electronic circuitry is Bad. Leave the RTK mount (firmly) in place so you won't need to remap next season. Before removing the RTK to store for the season, use a permanent marker to mark "North" or some other easily-referenced fixed location. When reinstalling, get that mark aligned correctly, as otherwise maps may need to be remade even when you're reinstalling the RTK in the exact same pole fitting/location.
- After winter storage, if the deck lifter completes full upward and downward travel yet an E7 lift jam error persists, this may be caused by calibration drift rather than

a real jam. Extended storage may result in minor reference drift within the lift-position sensing system. To reset this: Place the mower on level ground. Perform a full power-down. Restart and allow the complete startup and self-check sequence to finish uninterrupted.

If normal deck travel is observed without binding, recalibrate first before considering disassembly! If needed, also see this temporary workaround: https://www.facebook.com/share/p/18NmouTZ7m/ and the comments from Charles Eakley in this post: https://www.facebook.com/groups/2003868720545530/?multi_permalinks=2082464766019258

- If you see a small .|. symbol on the far right of your mower's LCD home screen, ignore it - it's meaningless.
- You can migrate the mower between logins/accounts while preserving most important data. When deleting the device from an existing account and adding it to another account, the cloud based maps and mow history migrate with it. In general, you can shift the account to another user or email address with ease though Lymow should be told where you are transferring ownership i.e. warranty - see https://www.facebook.com/story.php?story_fbid=27126349356953027&id=9661250583889508
- If your phone has no internet, the app won't load for you, therefore you can't do anything to control the mower. If the *mower* has no internet, a fair few control and administration functions work via BT alone.
- There are now **un**official HomeAssistant integrations and also the equally **un**official Lymow Toolkit. These allow some degree of setup and control without the app, in some cases beyond what the app does - see User Projects.
- If you need the mowing direction to change regularly, you can set Automatic angle offset when creating a schedule.
- If you move the dock and find your map has flipped, it should be corrected after a mower and RTK power cycle.
- On rare occasions, Lymow may provide software to re-flash an RTK unit. The process is documented here: https://www.facebook.com/share/p/1CPM1a8n3U/
- If you're a One owner but want documentation on the new app, the Plus manual covers it fairly well: https://lymowtechsupport.zendesk.com/hc/en-us/articles/48128518872723-User-manual
- "Sync with phone" in Device settings has *nothing* to do with the mower's schedule timing, whose timezone is derived from the mower's GPS location. The Sync setting simply allows you to get the time shown in the camera view to match your phone's time if, for example, you're overseas when checking the camera.
- If you'd like to get readings directly from the RTK, you can connect to it via USB. See Jacob Curran's comment in: https://www.facebook.com/story.php?story_fbid=2060088484923553&id=2003868720545530
- The app can lose custom settings for a zone when you Edit perimeter - losing a custom stripe angle, for example. Check any custom settings for a zone after you finish any edit/re-mapping session, and reinstate if needed. Then do a backup!
- In the remote control screen (the one with the touchpads for driving), touch the ? Icon for more information about controls.

- Want to restore maps from your other mower(s) to this one? See the three-dot menu top-right on the Backup and Restore page. This is very handy if you've cleared the maps (including backups) from a given unit for any reason.
- Currently, if the first of two scheduled tasks isn't completed when the second comes due, the second won't happen - this may change in future.
- Just as was the case with the One, the power extension cable for the 10A charger on the Plus is thicker than the cable which comes with the 5A charger, and *should* be swapped out if you upgrade - it matters!
- The One has a low power mode it may enter to save battery if it's unable to dock - *though not necessarily with current firmware*. Once it's in low power mode, it can be manually turned fully off and back on again by holding down the power button for two seconds (which turns it off), counting to five, then powering it on again.
- Video on installing Lymow-supplied wheel brushes on the One: https://m.youtube.com/shorts/9vRbzjqkh-g (the hard part is carefully removing the screws supporting the existing fitting)

Deeper Knowledge requiring extra care

- **Reset** via physical buttons may be effective for certain situations, though Lymow has said this is *not* the same as a full "factory reset" in the app, which erases all user data. Regardless, *back up your maps first!* While the mower is charging and powered on, hold the Power and Home buttons simultaneously for about 10 seconds. If that has no effect, try holding just the "-" button for 10-15 seconds.
- **Test menu** (used below): power motor on, wait 40 seconds, press red STOP button once, hold down + and – buttons together until the Test menu appears. Press red STOP again before continuing – *the red LEDs on the mower need to be green again.* Navigate the menu with + and - and use HOME to select. **Use with care!** - for example, the hub calibration moves the tracks, hence requires the mower to be well supported with tracks slightly off the ground.
- **Hub motor calibration:** for when you have unmatched track movements resulting in major unexpected curving or turns to left or right – see Charles Guy's comment with photos in: https://www.facebook.com/story.php?story_fbid=4579404018937690&id=3951569995054432&_rdr - basically, support the mower so the tracks are off the ground, enter the Test Menu, select HUB CALI, watch the tracks move and stop, then restart, done.
- **Rain sensor calibration:** if your mower is aborting a mow due to spurious rain detection, and the sensors are clean and dry: enter the Test Menu, select RAIN CALI, watch the pretty flashing lights until they stop, then restart, done. To confirm it worked, look for a 4095 rain sensor value at the end of the SNC line on the Engineering screen which appears when you hold down the Home button. See also this post, including comments: https://www.facebook.com/story.php?story_fbid=4648196622058429&id=3951569995054432
  …and this document from Lymow: https://p19.zdusercontent.com/attachment/23550926/VRYplbGCrad82zcI9gYbaly78
- In case you need a replacement cable, the charger connector is an M16 3-pin - you need one rated for 10A. The third pin is also AC GND. Here is a non-Lymow power supply some users have installed: https://www.facebook.com/story.php?story_fbid=2525479435410854 6&id=966125058388950 8 and here's connector photo and details: https://www.reddit.com/r/Lymow_Official/comments/1o84e6a/comment/njvpoqj/

- To read the RTK's output, connect your phone or PC to its USB port and use Termv19b.zip, PuTTY or Termius, 115200 8,N,1,N. This **doesn't** prove the info is being properly broadcast to the mower though.
- Factory reset erases user data. It doesn't reset the firmware to an earlier version.
- If you have what you're almost certain is a dead battery, you may be able to recover it so it can take a charge normally. Maximum care required!
    - find thick terminal wires and put alligator clips on them
    - insert them in the two large battery connector holes and connect to a voltmeter set to mV scale to determine polarity (the battery doesn't normally supply full charge without a handshake from the mower)
    - apply 38.5V 1A from an external supply using the correct polarity
    - suggest only charging a small amount this way, then see if normal charging works from there

User Projects and other info

- **Want to suggest or vote for improvements?** See Tommy Sharp's Community Suggestion list: https://lymowone.fider.io
- Michael Burgos' excellent **Lymow Toolkit**, an unofficial app which installs easily on a Windows PC, Mac or in a docker container, and which can be accessed from any PC or phone browser to allow you greater control than the official app. Really simple to get going, really valuable. Software and docs: https://drive.google.com/drive/folders/1IMMaGcpJhWQclq7UpoleUVd9dz3Ba2qW and support forum: https://www.facebook.com/groups/1020555617289638
- David Gibb's mower setup and teardown video (long but nicely indexed): https://www.facebook.com/groups/lymow/permalink/4638346243043467/
- 3D printable wheel scrapers:

    #1: https://www.printables.com/model/1390236-lymow-scraper

    #2: https://www.facebook.com/groups/lymow/permalink/4608380686040023

- Wheel scrapers for the Plus: **https://www.facebook.com/groups/966125058388950 8/?multi_permalinks=2739527464006049 6**
- **3D printed contact covers for One:** https://www.facebook.com/groups/3951569995054432/?multi_permalinks=4706474462897311 and https://www.thingiverse.com/thing:7320299 . Comments and more info from happy users: https://www.reddit.com/r/Lymow_Official/comments/1s9sdh6/charging_contacts_sliding_flaps/ Notes from another comment: "Sunlu pla plus 2.0 , red color, printed at 210, 100% infill...so far about 30 recharges and still work. You MUST sand *well* where friction occurs, surface must be very smooth and use silicone oil to lubricate."
  Post from another person who tried the contact covers, with a mod to accept standard 100mm rods: https://www.reddit.com/r/Lymow_Official/comments/1tdfq64/i_did_the_lymow_one_charger_coverand_it/ - **very good printing and mounting hints therein**
- **Unofficial HomeAssistant integrations:**
  1. https://github.com/d3dfantasy99/Lymow-HA - *you'll need a full email/pwd login rather than Google or Apple ID login. When deleting the device from an existing account and adding it to another account, the cloud-based maps and mow history migrate with it.*
  2. https://github.com/Mortimer452/Lymow-One-MQTT
- Extra-phone hack for remote control via WiFi: https://www.reddit.com/r/Lymow_Official/comments/1tefgvp/remote_wifi_control/

- 3D printable roller attachment for added stripey pleasure: https://www.facebook.com/groups/lymow/permalink/4554314934779932
- 3D printable plug to cap the end of the RTK power lead when you take the RTK in for winter https://www.facebook.com/groups/966125058388950 8/permalink/2585391851086 2791/
- **Relocating your One charging contacts from underneath to the top:** https://www.reddit.com/r/Lymow_Official/comments/1s0u9un/top_side_mowing_mod/ https://www.facebook.com/groups/lymow/posts/4644091949135563/ https://www.facebook.com/groups/966125058388950 8/posts/2658223250803138 4/ https://www.facebook.com/share/p/17Cg3mzqLe/ and this good video: https://m.youtube.com/shorts/bvIbZbDjM74
- Setting up an external USB C Gamesir controller to use with the Lymow app instead of the app's virtual joysticks: https://www.reddit.com/r/Lymow_Official/comments/1pp9ukr/gamesir_controller_with_lymow_application/
- Experimenting with tempering One blade edges for increased hardness: https://www.facebook.com/groups/966125058388950 8/permalink/257914317137 78138/
- Blade motor teardown and bearing replacement: https://www.facebook.com/groups/966125058388950 8/?multi_permalinks=26437 967189124584
- Why Lymow doesn't support "automatic remap after RTK shift" - see Nick's comment: https://www.facebook.com/groups/lymow/permalink/4679887445556013

Regarding mods: there is a practical difference between repairing an original connection and modifying the mower's charging design. Re-crimping a burned spade connector in the One's dock is a repair intended to restore the original design; adding a bearing seal or a wheel scraper is arguably similar, and adding removable contact covers should be equally innocuous. Drilling the mower and adding a top-mounted charging system changes the charging interface, contact location, water-intrusion risk, current path and mechanical docking relationship. That does not mean the modification is bad, but it gives Lymow a much easier reason to deny warranty coverage for related problems - should they wish to do so.

Would a Lymow be good for you? – Our opinion (Dan, Nick)

Potential owners see all the above - plus the steady flow of posts asking for help on support groups - and ask: "is this a viable mower for me?"

Here's my personal view, based on a year of reading support forums and many months of ownership and active testing.

These are the first and second generation of a very capable class of robot mowers, priced low and launched by a start-up company. They have flaws but, for most owners, the mowers already satisfy most of the key promises made and are steadily improving via software updates, tweaks and add-ons from both Lymow and the active user community.

As a company, Lymow do have communication issues – especially around shipping. And their support response time during the northern spring - which coincided with the release of the Plus and lots of One bringing their mowers out of winter storage - was dismal. But overall, they support their customer base, send replacement units or components when issues can't be

diagnosed or fixed at long range, are making continual improvements to the mower, and certainly seem to be in it for the long haul.

It also helps to separate different categories of robot mowers. A smaller boundary-wire mower is usually a frequent light trimmer, using small razor blades and taking very little grass at once. A Lymow is closer to a small robotic brush mower, with tracks, larger blades, RTK, cameras, obstacle logic and more complicated routing. It will handle rougher work than a light-duty wire mower, and is not the same ownership experience - it should not be judged by exactly the same expectations.

Owners should not have to clean the deck, charge the battery externally or sharpen blades every day. If that becomes routine, something else is wrong. The grass may be too damp, the mower may be taking too much material at once, the schedule may not match the growth rate, or the property may be asking more of the mower than it can handle cleanly in its current form. Regular inspection is reasonable with this class of mower. Constant intervention is not a success condition.

VSLAM does not make satellite limitations disappear. It can help the mower understand parts of its environment, but it does not turn heavy tree cover into open sky. Under trees, near buildings, beside fences, and around retaining walls, the mower still needs reliable positioning and enough safety margin to be wrong without damaging itself or something else. A two-foot drop, pond, road, gravel edge or wall is not a place to map tightly just because RTK usually works well.

So ask yourself: *Am I comfortable with learning, setting up and properly maintaining a tool that's complex enough to work in a wide range of sometimes rugged and challenging environments?* ***Not*** *a consumer toy like most robot vacuums, for example?*

If you've just read much of this handbook, the answer is almost certainly "yes". And in that case, a Lymow should work out very well for you, improving your lawns and saving you loads of time in the long run.

Appendix One - Nick Carter's Primers

Firmware Reality Check

https://www.reddit.com/r/Lymow_Official/comments/1tefkd5/nick_carter_primer_firmware_reality_check/

The View from 30,000 feet

https://www.reddit.com/r/Lymow_Official/comments/1t6sgqu/nick_carter_notaprimer_the_view_from_30000_feet/

RTK Accuracy vs RTK Stability

https://www.reddit.com/r/Lymow_Official/comments/1t6s9bs/primer_rtk_accuracy_vs_rtk_stability/

Why Does My Mower Behavior Change Mid-Mow?
https://www.reddit.com/r/Lymow_Official/comments/1sriq3f/primer_why_does_my_mower_behavior_change_midmow/

RTK Screen Primer

https://www.reddit.com/r/Lymow_Official/comments/1sj7ugq/rtk_screen_primer

RTK Accuracy vs Mower Communication

https://www.reddit.com/r/Lymow_Official/comments/1scayho/rtk_accuracy_vs_mower_communication_a_primer/

Troubleshooting WiFi

https://www.reddit.com/r/Lymow_Official/comments/1sd1v0h/lymow_primer_troubleshooting_wifi

Dock and Battery Charging

https://www.reddit.com/r/Lymow_Official/comments/1scaq0o/dock_and_battery_charging_primer

Your RTK Can Be Perfect And Your Mower Can Still Be Lost

https://www.reddit.com/r/Lymow_Official/comments/1twq0ap/your_rtk_can_be_perfect_and_your_mower_can_still/

A Real-World Navigation Issue

https://www.reddit.com/r/Lymow_Official/comments/1uif6ha/nick_carter_primer_a_real_world_navigation_issue/

The App Screen is Not Always the Mower's Reality

https://www.reddit.com/r/Lymow_Official/comments/1uieyo9/the_app_screen_is_not_always_the_mowers_reality/

The First 30 Feet Matter

https://www.reddit.com/r/Lymow_Official/comments/1u46cr7/nick_carter_primer_the_first_30_feet_matter/

Keeping Your Lymow Running - a Practical Cleaning Primer

https://www.reddit.com/r/Lymow_Official/comments/1uie0tp/keeping_your_lymow_running_a_practical_cleaning/

Charging Troubleshooting Checklist:

https://www.reddit.com/r/Lymow_Official/comments/1uif9de/nick_carter_primer_charging_troubleshooting/

How to Talk to Support So You Don't Waste Two Weeks

https://www.reddit.com/r/Lymow_Official/comments/1uidwaf/nick_carter_primer_how_to_talk_to_support_so_you/

Appendix Two - Lymow Error and Warning codes

Errors

1. Mobile Platform MCU

E1 Wheel motor angle abnormal, or overheating → Clear error and retry

E2 Wheel motor temperature abnormal → Reboot

E3 Wheel motor communication lost → Power off for 5 minutes then retry

E4 Battery temperature abnormal

E5 Battery charging abnormal

E6 Battery voltage abnormal

E7 Main lift motor blocked → Clear debris and reboot

E9 Host communication lost (internal error)

E10 Deck communication lost → Power cycle and reboot

2. Deck Module

E8 Auxiliary lift motor blocked

E11 Deck motor speed abnormal

E45 Blades jammed → Power off and clear debris (magenta LEDs flash on mower)

3. Positioning Module

E12 Calibration file read failed (internal error)

E13 VIO internal navigation error → Move 3m away from obstacles, then reboot

E15 RTK initialization failed / weak signal → Move to open area

E16 Location service initialization timeout - power cycle and retry

E17 Machine lifted → Place on level ground

E18 Tilt angle too large → Place on level ground

E19 Machine slipping → Change position (yellow LEDs flash on mower)

4. Perception Module

E22 Model loading failed (internal error)

E25 Charging station not detected → clean/clear camera, QR tag and glare sources

E47 Perception communication error

5. Path Planning

E20 Out of map boundary → Return to working area

E21 Machine trapped → Check tracks and move to open area

E27 No available working area → Set working zone

E28 Zone not reachable → Check relevant channels and zone overlaps

E30 Dock failed → Clear error and retry

E44 Bumper sensor blocked → Clear debris, press repeatedly

E51 No charging signal detected → Check charging contacts

6. Platform & State Machine

E31 Low battery → Charge the mower

E32 Camera signal lost → Reboot

E33 IMU signal lost → Reboot

E34 GPS signal lost → Reboot

E37 MCU signal lost → Reboot

E38 WiFi not found → Check your WiFi service

7. OTA Upgrade

E40 Low battery for upgrade → Charge the mower above 20%

E41 Mower not in idle state → Set to idle mode

E42 Update package download failed → Check network connection

E43 Upgrade failed → Reboot and retry

Other (some may be unused/outdated)

E29 Charging tag not detected - see E25

E45 Blade jammed → carefully find and remove jamming objects

E46 Location service unstable → Reboot

E50 Navigation Internal Error

E52 Charging Station Not Reachable → See E28

E53 Navigation Internal Error

E54 RTK base station moved - can be spurious due to weather, coronal mass ejection event, actual micro-movement, satellites bunching…

E58 Charging station placement issue

E61 No ENU Base Point from RTK Base Station

E64 Out of bounds → drive into bounds if possible, clear error and resume

E65 Out of bounds → as above

E66 Mower Stuck → See E21

E67-E71 Navigation Internal Error - move to a new location and try again. If error persists, cancel the job

E72 Wheel motor control fault → Check wheels, reboot if necessary

E73 Navigation Internal Error → See E67

E74/E75 Channel Obstacle detected → Check for obstacles in path

E76/E77 Perimeter Obstacle Detected → Check perimeter for obstacles

E79 Navigation Internal Error → See E67

E80 Charging station tag not detected → See E25

E81/E82 Weak RTK Signal → Check RTK unit power and location

E83 Slipping in the channel → remove source of slip or manually drive past

E84 Slipping detected → See E83

E89 Blade stuck due to resistance, e.g. thick grass, accumulated clippings

Warnings

1. Mobile Platform MCU

W1 Software overcurrent (Hub Motor)

W2 Overvoltage (Hub Motor)

W3 Undervoltage (Hub Motor)

W4 Abnormal discharge current (Battery)

W7 Front ultrasonic lost (Sensor)

W9 Comm frequency drop >10% (Software)

W33 Communication abnormality

2. Cutter Head Module

W11 Overtemperature (Motor)

W12 Overcurrent (Motor)

W32 Cutter head jammed (Motor)

3. Localization Node

W14 Command error (VIO ignore cmd)

W31 Location signal lost

4. Perception Node

W23 Low light alarm

W27 Camera Signal Lost

Other

W43 zone shape is invalid - also displayed if you try to put a no-go outside a zone, and sometimes for too-small zones

Appendix Three - Useful things to remember

1. Facts don’t defeat propaganda. Self-interest does.
2. It’s all about RTK placement, really.

   Oh, and track tension.

   And clean contacts.

   But mainly: RTK.
3. If it works perfectly in open sky but fails at the dock, don’t blame the RTK first. Look at the dock location.
4. 0.01m somewhere means the overall system is capable. Bad numbers elsewhere usually mean the mower is struggling in that spot.
5. Data Error Rate on the RTK Diagnostic screen helps separate LoRa correction-link problems from mower-side satellite reception problems.
6. A firmware update can cause a problem, but it can also expose a setup that was already marginal. Also: disconnect the battery for an hour or so after a successful update.
7. The mower is not a person. Leave it room to be a robot.

8. Per Aldous Huxley: **Try to be a little kinder.**