

# SHORAI BATTERY INSTALL GUIDE

**Do not throw away the box or any foam packaging until after installation is complete!! Please also be sure to read the included User's Guide for cautions and information on care and charging...**

You'll need a 10mm wrench or a #3 Philips screwdriver to install the LFX battery, possibly scissors, and whatever tools are needed to remove and reinstall bodywork and to access the battery box.

## EXAMPLE – BMW G450X



The factory-installed battery in the BMW G450X is Yuasa lead-acid YTZ7S. Our standard recommendation for Shorai Lithium-Iron is LFX09A2-BS12. The LFX09A2 weighs 3.5 lbs less than the original YTZ7S (or 1.59Kg, ~73% lighter), has less than 1/4 the self-discharge rate, and turns the engine 20% faster!

## LET'S GET STARTED - CHECK CONTENTS...

- Shorai LFX Starter Battery, with one set terminal screws/nuts pre-attached
- Spare set terminal screws/nuts (A3 steel, tin plated)
- Five Shorai Decals, in three sizes
- Various sheets of high-density, adhesive-backed foam sheets for LFX fitment to stock battery box (if needed)
- Outer packaging, with specs and dimensions
- User's Guide



## CHECK POLARITY & SIZE

First, remove the original lead-acid battery from your vehicle, according to the maker's guidelines. **BE SURE to Remove the NEGATIVE terminal bolts and cables first**, then the Positive, to avoid possibility of shorting from positive to grounded vehicle parts...

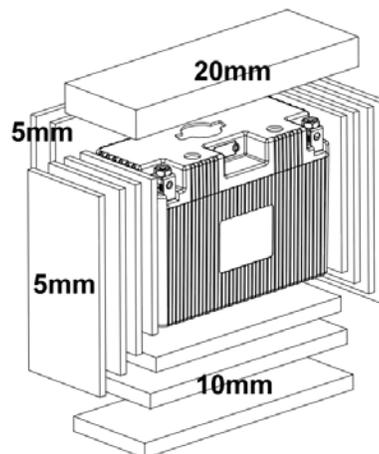
Compare the original battery side-by-side with the new LFX battery. First check that the Polarity (+/- terminals) arrangement is the same on both. If not, contact Shorai directly for advice. Next check that the LFX battery does not **exceed** the size of the original in any dimension (length, width, height). If the LFX is larger in any dimension such that it cannot be made to fit into the stock battery box, please contact Shorai directly.



Pictured above note that the LFX battery is identical in length to the original battery behind it, and below you can see the LFX is the same width as well, but a bit shorter. We've used one sheet each of 5mm and 10mm thick spacer foam to make up the height difference.



The included self-adhesive foam spacers are sized as below.





In this example, we only needed to shim the height. Do the same if the original battery is significantly larger in width or depth, and trim the selected spacers to fit with scissors.

**Note!** You will find the four terminal nuts (2 are spares) come with foam blocks attached on the nut bottoms. This helps keep the nuts in place during install, and up high where they can catch the bolt threads.

The G450X has a truncated battery box floor, so we've trimmed to fit the diagonal shape, then applied the sticky side of spacer to the battery box, as shown below.



The LFX batteries can bolt cable eyelets to either the top or front sides of the terminals. **Be sure to install the POSITIVE terminal cable first**, then Negative, to avoid short circuits.



Max torque for the terminal screws is 30kg/cm (26 inch/pound). Do not over-tighten. We recommend the use of a #3 (big!) Phillips screwdriver, as this allows you to apply downward pressure on the terminal screw. That helps the threads catch, and reduces torque on the terminals. Note that the terminals are not anchored at back, and may twist slightly during install. If so, performance is not affected.

CorrosionX anti-corrosion spray is recommended for the terminals whenever the battery will be subjected to water, or especially salt water. It is available from Shorai and most Shorai dealers.



Check that the positive terminal of the LFX battery cannot short against any part of the vehicle; and be sure that the original positive terminal cover, if any, is re-installed on the LFX battery before the battery box cover is fitted.

Weight Savings... Nice!



Shorai LFX batteries are pre-charged to approximately 90% of capacity. Therefore it is not required – nor generally recommended – that the batteries be charged before use in your vehicle. However, owners of Shorai BMS01 charger systems may use the CHARGE mode to fully top the battery, as the BMS01 will insure ideal cell balance and perform diagnostics to guarantee best performance.

Enjoy your Shorai LFX battery!

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See <http://shoraipower.com> for full product details and much more... Please use the on-site CONTACT form to ask us for help with installation, if needed.

