

# Kymco 2021 Like 150i, Where is the Battery ?

Revision 0, 25 June 2023

The User manual provided by Kymco has a page for Battery Maintenance (*page 46*) and a page Fuse Maintenance (*page 47*). What one can not find anywhere is any mention of where the Battery and Fuses are physically located on the scooter. I looked under the floorboard which is where the battery is found on many cheap 150cc Chinese scooters. What I found was the fuel tank. With apologies to Clara Peller: **“Where’s the battery”?**

The answer is that it is located under seat the behind the storage compartment (aka “*pet carrier*”).

## [01 Battery Compartment Screws.jpg](#)



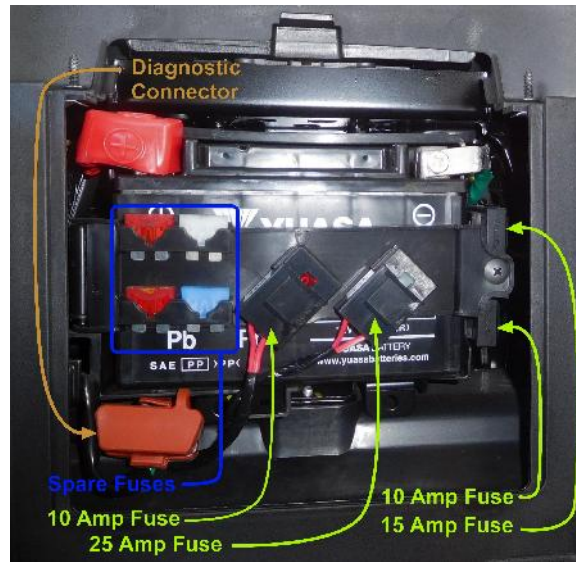
The two yellow circles indicate the location of the two Phillips head (*aka cross point*) screws that have to be removed to remove the cover.

## [02 Battery Compartment Snap.jpg](#)



One also needs to open the ‘snap-shut’ panel at the top of the cover. One should then be able to pull the cover up to expose the contents of this hidden compartment. Depending on the how the battery installed, one may need pull forward on the bottom of the cover as it pulled up. That will provide some additional clearance for the cover to pass by the fuses and the diagnostic connector.

[03 Fuse Locations.jpg](#)



The fuse locations are as indicated in the figure above. Underneath the battery on the left is the Orange connector for a electronic diagnostic tool (*only 4 of the 16 pin positions are populated*). When I took delivery of my scooter, those fuses and wires were twisted up and stuffed into the space at the bottom of the battery box. The fuses were provided in a separate plastic bag with the owners manual. I suspect the reason for that is because none of the above fit very well in their proper locations.

Kymco provides four (4) spare 19 mm wide 'blade' fuses (*blue rectangle above*):

AMPS	VOLTS	TYPE	COLOR	QUANTITY
10	32	ATU	Red	Two (2)
15	32	ATU	Blue	One (1)
25	32	ATU	White ( <i>aka Natural</i> )	One (1)

[04 ATU 15 Amp Fuse.jpg](#)



One can likely use ATO (*regular*) fuses as well but the OEM ones are marked 'ATU'. As far as I can determine 'ATU' fuses only exist in equipment originating in mainland China.

[05 Battery Strap Screw.jpg](#)



Here is another view of the compartment. Note the screws shown in the upper corners of the picture. Those are the two screws that were removed so that the cover could be removed. The yellow circle indicates the Phillips Head (*aka cross point*) screw that has to be removed to access and remove the battery. Before one attempts to remove the battery the two terminals should be disconnected starting with the Negative terminal on the right side. These bolts normally have 10 millimeter hex heads.

[06 Battery 8 Ahr.jpg](#)

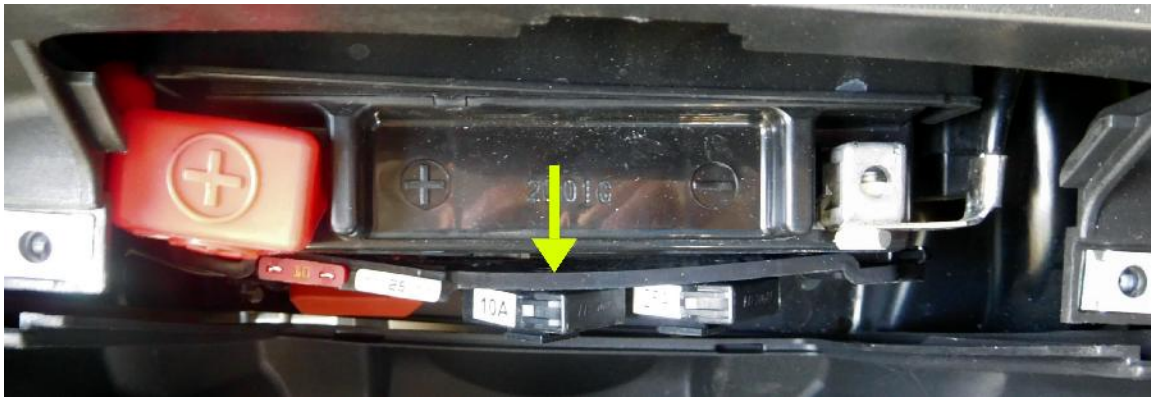


My Like 150i came with a 8.4 Amp Hour battery (YUASA YTX9-BS) as shown above. I believe that this is a lead-calcium technology battery. The 'Service Manual' specifies an 8 Amp Hour battery. The Kymco parts list for the "New Like 150 (2019)", model code TE30AA(US), also specifies a YTX9-BS.

YTX9-BS dimensions = 150 x 87 x 105 millimeters (5.9 x 3.43 x 4.23 inches)

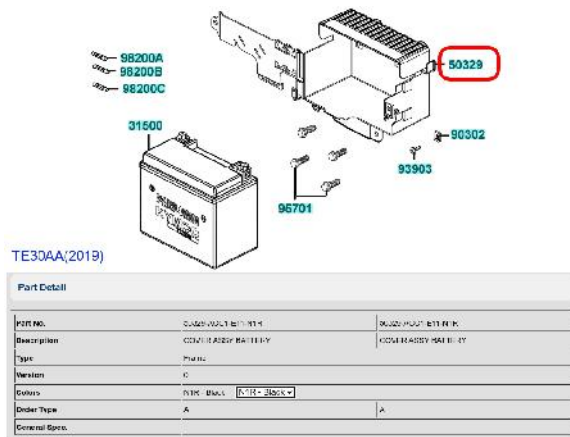
The 'Owners Manual' specifies a 6 Amp Hour battery. Either one will fit and why Kymco is incapable of getting their documentation in order appears to be another result of having moved their manufacturing to mainland China (*i.e. right hand has no clue what left hand is actually producing*).

[07 Bent Battery Strap.jpg](#)



Note how the battery retaining strap is pushed out and curved. It should be straight along the front of the battery. That curve forces the fuses forward such that they interfere with inserting and removing the battery cover. Thus the battery cover has to be removed prior to removing the underseat storage compartment as well. I had to remove the battery box to sort out the problem.

[08 Battery Box TE30AA\(2019\).png](#)

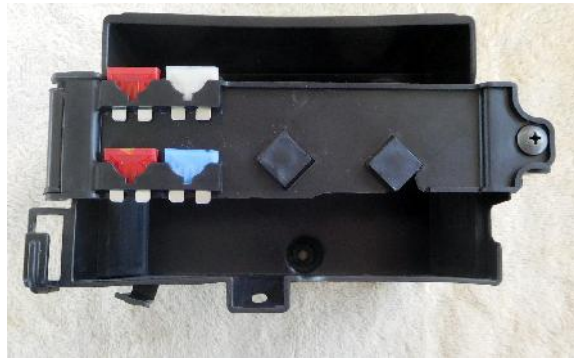


Point of interest: in the illustration above from Kymco's on-line parts list, the battery is turned the wrong way round. As far as I can tell from that on-line resource, Kymco has used the same battery box and battery for all the Like 150 series scooters as far back as 2019 and through the current model year (2023).

According to my measurements the maximum inside volume of that box is 150mm wide by 86mm deep by 108mm high at the front of the box. The rear it is a bit smaller because there is a draft angle for the top, bottom and sides. I make the back of the box to be closer to 146mm wide by 86mm deep by 106mm high.

So why does the battery not fit in the box. My battery turns out to be a bit over size by about 1/2 mm ... maybe that is because it is 100 degrees outside. The battery does fit if one pushes it firmly to the back and holds it there. The problem is that there is nothing to hold it there except for that flimsy ABS strap across the front of the battery.

[09 Actual Battery Box.jpg](#)

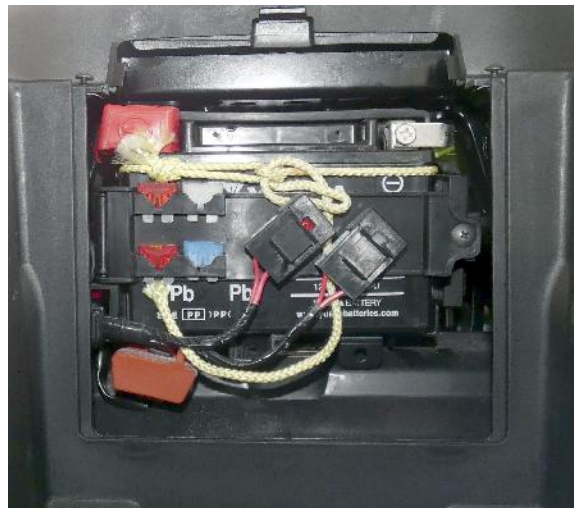


This is what the battery box looks like when removed from the scooter. There are some more pictures from different angles on my web site at the URL:

<https://www.keywild.com/scooter/Kymco150i/Electrical/Battery%20and%20Fuses/Other/>

Note there are some considerable variations from the illustration in the on-lines parts list. Also note that there are not any fasteners used for the bottom of box in either configuration.

[10 Pararcord.jpg](#)



A bit of para-chord is my temporary solution to the problem until I can design and fabricate something more appropriate. It does not work all that well because the designers really should have made that box a tad bit deeper and wider ... but that might have cost them another yen or two in ABS material. Mainland Chinese manufacturing engineers are experts at making things more cheaply ... not necessarily better. I would not want to go underwater in a Chinese submarine or submersible.

### [11 Battery Box Frame.jpg](#)



This is where the battery box mounts to the scooters frame. Those three yellow circles are the M6 threaded holes that the 10mm hex head bolts go into to mount the battery box. The two blue circles indicate the back side of the pop-rivets that hold the VIN plate underneath the frame. If these stick up too far then they can damage the bottom of the plastic battery box. The two red arrows at the bottom are the holes where the bottom of the battery box is supposed to be fastened. It should not be too difficult to use these holes to fabricate something to properly hold the battery in place.

The bike frame is negatively grounded. That gray arrow at the top left is the 'grounding' screw. If one gets this deeply into the frame then one should check to make sure that bolt is properly tightened. It has a 10mm Hex Head. One thing the manufacturing engineers did correctly was try to use fasteners with common head sizes. That reduces the number and cost of tooling needed in the manufacturing plant.

### [12 Battery Cover.jpg](#)



Lastly, here is the battery box cover that needs to be put back in place.

### *More to Come ...*

That still leaves the burning question of what circuit(s) each fuse is used for. I went through part of the Kymco wiring diagram trying to determine that. What I discovered was that it was appeared incomplete and in a some cases just plain wrong. Tracing the wires and correcting the wiring diagram is going to have to be a long term goal. I do now now have an area where I can remove all the plastic bits follow the wires from end to end. That will be somewhat more complicated by the 'black boxes'. The electronics have greatly improved fuel delivery and spark ignition of modern scooters. However their proprietary nature have also greatly complicated wiring diagrams and diagnostics.

Higher resolution files of the images in this document can be freely downloaded from the URL:  
<https://www.keywild.com/scooter/Kymco150i/Electrical/Battery%20and%20Fuses/>

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