A Report
On

Detachable battery system

SUBMITTED TO: -

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Submitted By

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AND

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INTRODUCTION

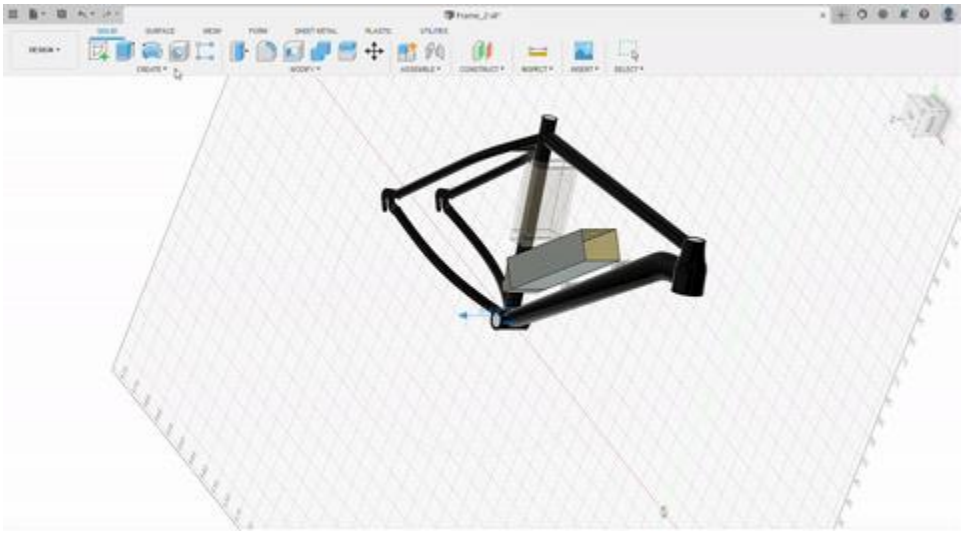
We have successfully completed the retro fitting process for a two-wheeler bicycle. But when we look into the usage of the bicycle, we found that it is used only for 2-3 hours in a day and for the remaining all the time the bicycle is parked outside, where the vehicle is subjected to different environmental conditions which affects the battery's performance and life.
To avoid this, we came up with a solution that will have a Detachable battery system where we can detach the battery from the vehicle and carry it with ourselves and keep it in a controlled environment. When the battery is in the controlled environment then it will have good performance characteristics along with battery life.

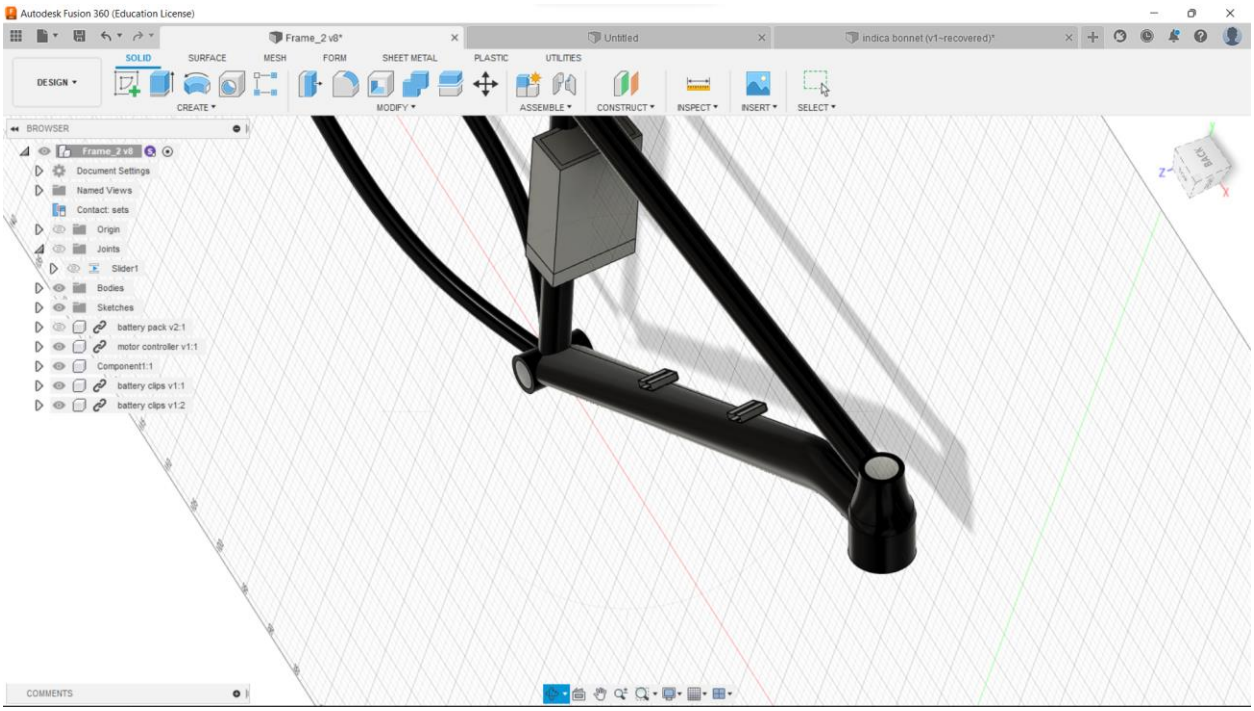
DEVELOPMENT

To develop the Detachable system for the bicycle we followed the following path.

MODELLING

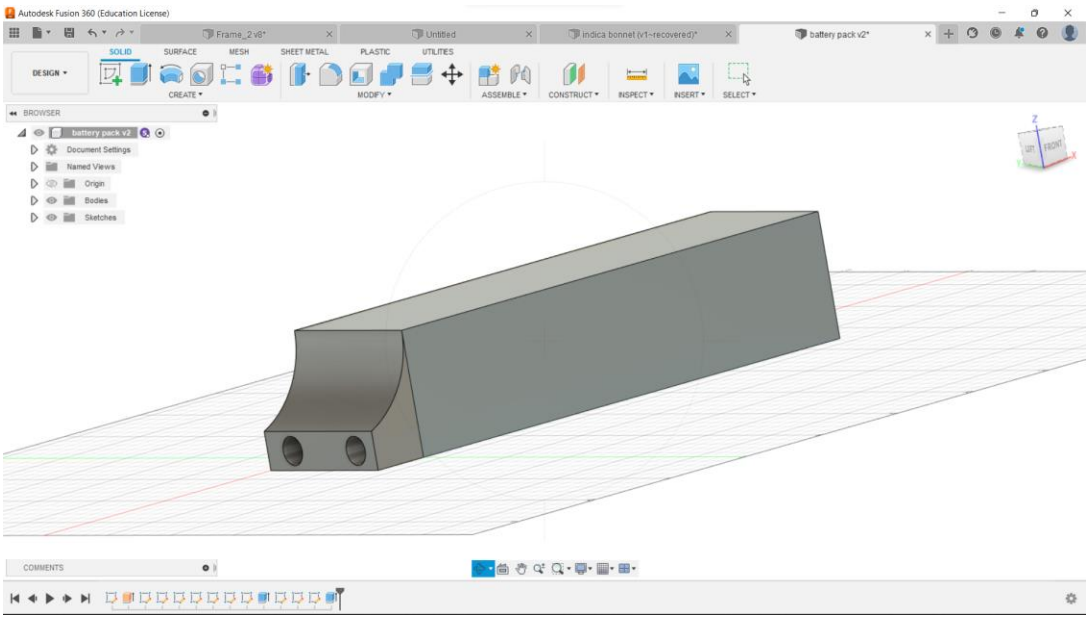
We modeled and simulated the detachable system as shown in the above system. So the battery which is covered with an envelope(closed) will have a slider with locks. The cycle's frame will also have a pair of sliders on which the pair sliders of the battery's envelope will slide. While we were turning to avoid sliding, we provided the locks on both sides to the slider with a hinge. When we want to detach the battery, we can unlock the lock by rotating and then we can slide the battery's envelope towards the outside and remove it. We have provided the envelope for the motor controller as it should not be exposed to the external environment like a sunnier and hotter environment, rain, humidity etc.… This motor controller's envelope is rigidly mounted onto the cycle's frame.





FINAL OUTPUT

There is a hole provided for the motor controller's envelope (shown above) from which the electrical links come out which should be connected to the battery and motor. There will be a holder attached at the end of the sliders. The electrical links coming from the motor controller envelope will come connected to the holder (as shown below). When the battery's envelope is fitted in the slider locked then this holder will get in contact with the envelope where the envelope will have pins on its surface which will be connected to the holder such that the circuit completes there. In this way the electrical link connected and disconnected in a requirement manner when the battery attached and detached to and from cycle respectively.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SHEET METAL
PLASTIC
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MODIFY
ASSEMBLE
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battery pack v2
Document Settings
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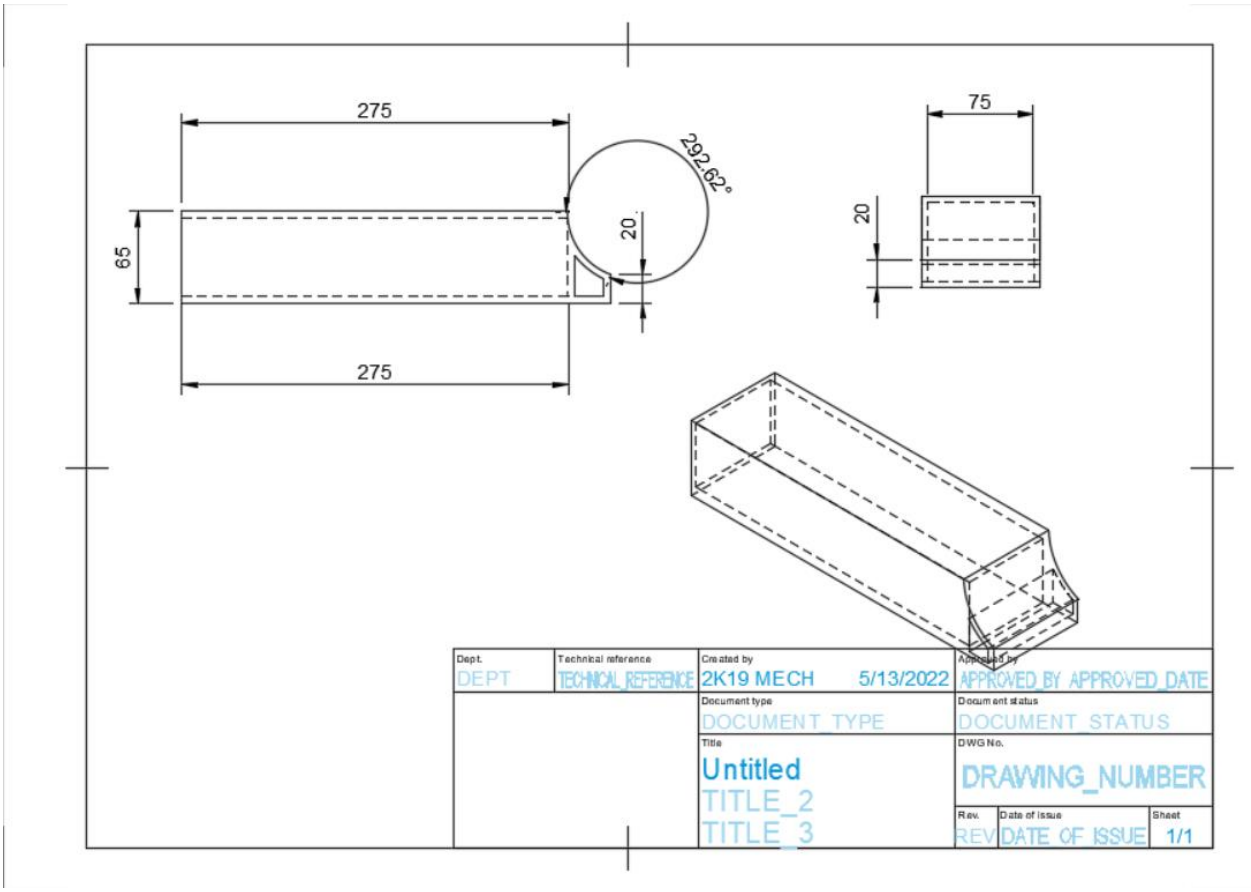
2D SKETCHES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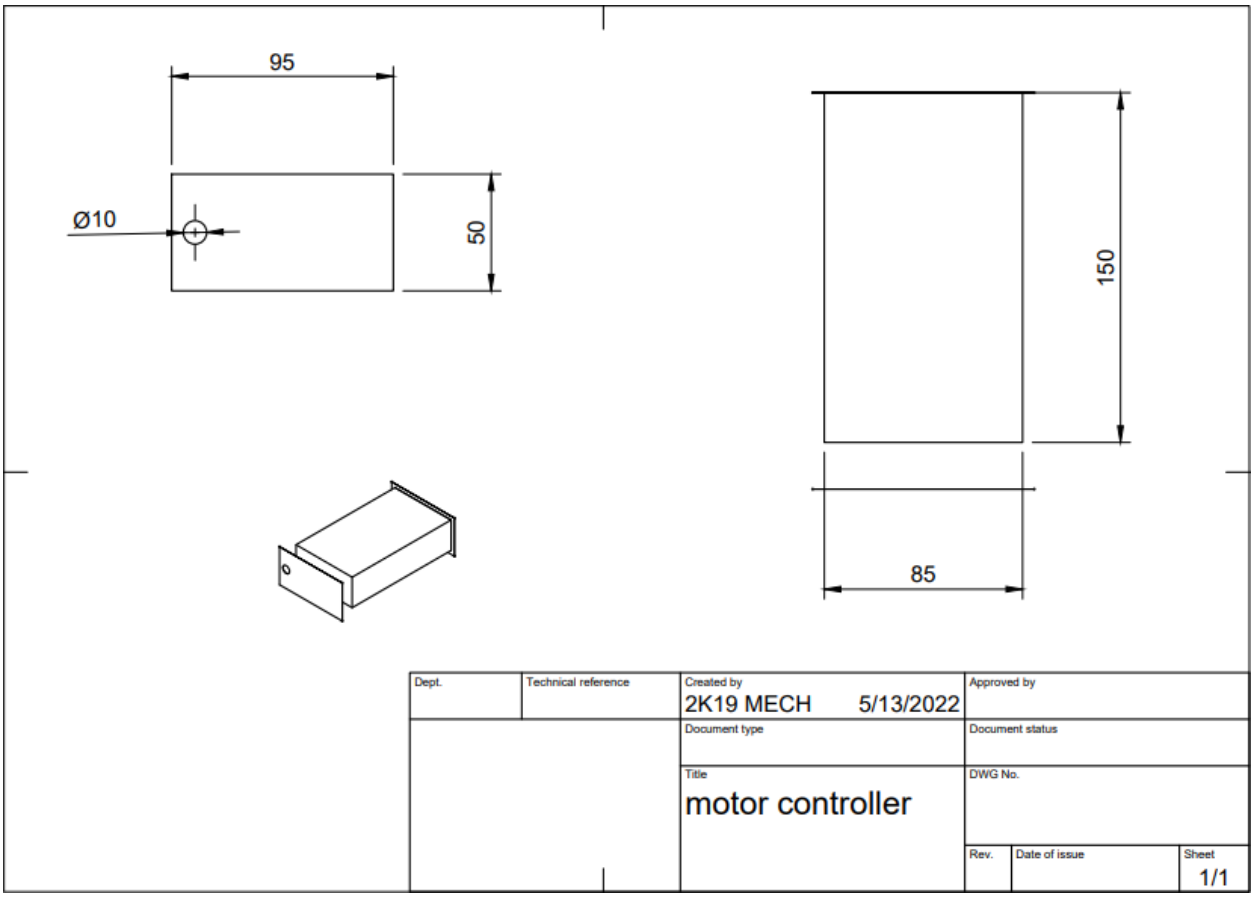

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Thank You