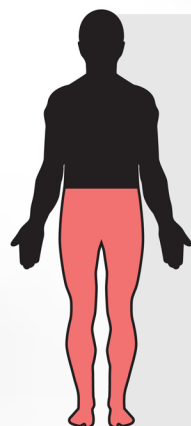


GIVING INDIVIDUALS WITH LOWER LIMB DISABILITIES THE OPPORTUNITY TO RIDE A MOTORCYCLE



DESIGN INTENT

Riding an off road motorcycle is an incredible experience plus it's something that I'm deeply passionate about. As a result, I decided as my 4th year project to pursue the idea of making off road motorcycle accessible to more people. Specifically individuals with lower limb disabilities. The main design challenge consisted of developing a solution that would give a disabled rider complete control of the motorcycle as well as the ability to ride independently without the need of someone else holding the motorcycle upright when starting and coming to a stop.

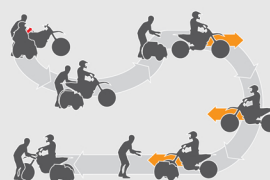
The design solution consists of a system that bolts to an existing motorcycle. This system's main function is to hold the motorcycle upright when stopping/starting. Once the motorcycle is in motion, the system then retracts in order to provide the rider full control over the motorcycle. The design solution also incorporates a roll bar that prevents the rider getting trapped under the motorcycle in case of a tip over.

The design solution uses 12v linear actuators to retract aluminium legs that support the motorcycle when stopped. These actuators are powered by the motorcycle's battery. The moment of retraction is automatically controlled by a computer based on the speed of the front wheel. The system can also be manually overridden by the rider through a small thumb control mounted on the handlebar.

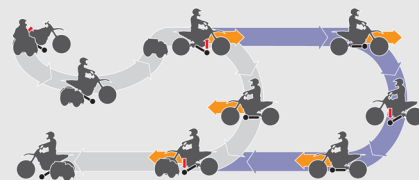
- Full Use
- Limited to No Use



USE-CYCLE



USE-CYCLE (WITHOUT DESIGN)



USE-CYCLE (WITH DESIGN)