

Project Name – “Cov19-ATV” (An all terrain vehicle built during covid)

Problem Statement- A budget vehicle capable of taking on rough terrains while being economical and also affordable. If only we could make it road legal.

Project Budget- INR 60,000

Description-

During the lockdown of Covid 19, me and my cousin decided we need to build a car, both being mechanical engineers building a car is considered a right of passage. So, we got to brainstorming as the budget was tight and part availability scarce. We tried to design the complete chassis from scratch but faced a lot of issues. Fortunately, the internet is ripe with resources. We found a CAD file for an ATV and modified that according to our liking, we increased the wheelbase and increased the ride height.

We purchased a rundown motorcycle to use its engine and suspensions and other chassis and lighting components which were still functional. We machined a lot of custom parts ourselves and procured go kart parts from various vendors. From design, procurement & final assembly it was a long journey but a fruitful one.

After 4 months of arduous work, the project finally came to be, we faced a lot of issues during runtime. The brake was not clamping properly, the sprocket kept throwing the chain of the chassis nut bolts had to be chuck nutted with thread lockers to prevent loosening during operations, the fuel tank used to swivel a little, the chassis needed a roll cage in case of a crash etc. After working on these issues our ATV became the talk of the town.

It reached speeds up to 80-90 Km/h, but its true limit was not tested due to safety limitations. This project serves as an example of what can be done even when the whole country has shut down.

Materials Consumed-

1. 1"by 1" square mild steel pipes
2. Nut/Bolts
3. Weldments
4. Recycled Bajaj Pulsar Bike (For Engine, Suspension & Wiring Harness)
5. Stainless Steel Axle
6. Bearing Mounts
7. Rack & Pinion Steering
8. Steering wheel & Rods
9. Disk Brake (Master Cylinder, Brake line , Calliper , Disc , Disc Hub , Slotting Key)
10. Recycled Car Seat
11. Switches
12. Wires
13. Necessary Tools (Hand Grinder , Drill , Arc Welding)