

## Team CZAR – PDPU mBAJA Team

Baja SAE is an international intercollegiate competition powered by the Society of Automotive Engineers (SAE) wherein the objective of the competition is to simulate real-world engineering design projects and their related challenges, mainly involving planning, designing, fabricating and testing the vehicle for manufacturing and sale by a fictitious firm.

The 12th season of Baja SAEINDIA 2019 was held between 23rd & 29th January, 2019 & was organized at NATRIP facility, Pithampur, near Indore. A whopping bulk of 400 teams accounting from IITs, NITs, RECs and private engineering institutions, had registered for this season of Baja SAEINDIA.

The team has been participating in the competition since the past six years and was the first team from Gujarat to break into Top 10 teams in the nation, which was then followed by the team being ranked 1st in the Virtual BAJA from amongst 400 teams from around the nation the past season. The team participated in the event for the seventh time this year, and their buggy was named as the CZR04.

### Dimensions of the vehicle

Dimensions	Front	Rear
Overall Length, Width, Height	(80") long, (56") wide, (57") high	
Wheelbase	(57")	
Track Width	(48.5")	(44")
Kerb Weight	158 kg	
Weight Bias with 70 kg driver seated	39%	61%
Weight with 70 kg driver seated	87.6 kg	131.4 kg

### Features

The CZR04, a single seat ATV, is powered a Briggs and Stratton single cylinder, 4 stroke, air cooled 305cc engine that produced 19.2 lbs-ft of torque at 2800 rpm. The transmission system included a variable ratio CVT and a custom-built single speed gearbox, along with customised CV axles for power transmission. The ATV also included custom wheel assemblies along with Air Dampers and an anti-dive suspension geometry in the front. The Ackermann steering system used in the vehicle gave the vehicle a turning radius of 2 metres. The team incorporated a few Data Acquisition Systems that included a GPS module that provides the position, map of the

track and the speed of the vehicle. Along with that, the system also included RPM sensors and accelerometers for developmental purposes.

CZR04 weighs 158 kg and is able to reach a top speed of 55 kmph and can cover a distance of 150 ft in 5.8 seconds.

## **Overall Performance**

The team stood overall **AIR 46th** among the teams participated in the mBaja. Team performed well in the statics and dynamic events and placed as

1. **16<sup>rd</sup> position** in Suspension and Traction event.
2. **18<sup>th</sup> position** in the Rock Crawl event.
3. **25<sup>th</sup> position** in cost presentation.

## **Photo Gallery:**



The Car During the Event.



The Team with CZR04 during the unveiling of the ATV.



Team Photograph after the grueling four-hour long endurance race.