BRUNEL RACING UPDATE
2008-09 Season - Issue 4
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The Launch

Over the last four months there has been a huge amount of commitment from everyone at Brunel Racing, balancing work on BR-X with exams and dissertations.

The finished product is outstanding, and the team anticipates excellent performances at the Formula Student competitions.

A programme of testing, combining our recently commissioned rolling road and a number of test track sessions, will ensure we fully understand the performance of the car and are able to further refine it prior to the events.

BR-X will be unveiled at the Brunel University Motorsport Launch on July 9th.

Nick John

Competition

Brunel Racing will be competing at two Formula Student events this summer: Silverstone (July 16th-19th) and Hockenheim (August 5th-9th).

Entry is free of charge at SIlverstone, and we hope many of our UK-based supporters will be able to attend for a first -hand look at the car, and to support the team.

Dynamic events including the acceleration and endurance races take place on the Saturday and Sunday. This will be the best opportunity for fans to see BR-X in action on track.

For regular updates on our progress at both competitions, please check our website www.brunelracing.co.uk.

For more information on the competitions, please visit www.formulastudent.com and www.formulastudent.de. ▪

BR-X Manufacture

The manufacture and assembly of BR-X is complete. The finished car is the result of a year's hard work by everyone on the team.

Chassis

Once welding of the rear spaceframe had been completed, the aluminium honeycomb monocoque was built in our workshop by members of the team to ensure a perfect fit between the two parts. The monocoque was then cured in a high-temperature oven to ensure proper setting of the adhesive.

The end result is an elegantly simple and highly stiff chassis, weighing only 46kg.

Suspension

The completed chassis was positioned at ride height on the workshop floor and jigs were set in place to precisely align BR-X's suspension pickups.

With the wishbones bolted to the chassis, suspension rockers could be bonded together and assembled with the dampers and pullrods. Wheel hubs and uprights could then be pressed together and mounted to the car, enabling the wheels to be bolted on and the car to support its own weight.

Drivetrain

BR-X's differential was held in a jig and laser-aligned to the gearbox output sprocket before its mounting assembly was welded to the chassis.

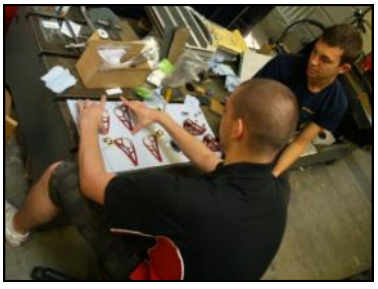
With the differential and the rear wheels attached, the exact driveshaft length was measured and shafts were machined accordingly.

Bodywork

CNC-machined moulds for the sidepods, along with an in-house produced MDF mould for the nosecone, were used to lay up sheets of carbon fibre pre-preg material for BR-X's bodywork.



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The composite laying up was completed by members of the team, and then cured at high temperature and pressure in an autoclave.

The finished bodywork panels are secured to the chassis using quick-release fittings for easy removal and maintenance.

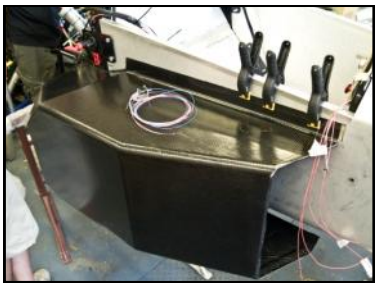
Driver Controls

BR-X features a semi-automatic gear shifter with steering wheel-mounted controls, programmed in-house.

Engine speed is displayed using an LED rev counter, and various warning lights alert the driver to any problems with the car.

Engine

The Yamaha R6 engine as used on the dyno for development throughout the year has been fitted to BR-X, with management functions performed via a MoTeC control unit.



Intake, exhaust and cooling systems were then fitted to the engine to replicate performance achieved in testing.

Before final assembly of the car, the chassis and bodywork were painted in BR-X's colours.

With assembly complete, the team has checked every part of the car to ensure conformity with the Formula Student regulations.

For more pictures of the build, please visit our website, www.brunelracing.co.uk. ▪

Other News

RAeS Presentation

In May, the Brunel Racing management team delivered a presentation on the design and management of BR-X to a group of engineers and aerospace professionals at the Oxford branch of the Royal Aeronautical Society.

We were pleased to have the opportunity to exhibit our work, and would like to thank the RAeS for their invitation. ▪

Rolling Road

Following its commissioning in June, the team was able to use our rolling road for test purposes.

The Dyno Dynamics chassis dynamometer will prove an incredibly useful tool for the design and development of Brunel Racing cars, particularly in terms of engine mapping, for many years to come. ▪

Sponsors

We would like to thank all our sponsors and technical partners whose help has made the design and manufacture of BR-X possible.

For more information on our current sponsors, or if you are interested in working with Brunel Racing, please see the Partners section of our website, www.brunelracing.co.uk/partners ▪

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