



COBRA CASE STUDY

M Carbon Parts for the
BMW S 1000 RR

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COBRA Advanced Composites (CAC) has been delivering strong, light and beautiful serial production carbon fibre prepreg parts to premium automotive OEMs since 2006. CAC have worked with BMW Motorcycles on several projects since 2016, their latest collaboration with BMW seeing CAC carbon fibre parts supplied as factory options on BMW's top of the range superbike.

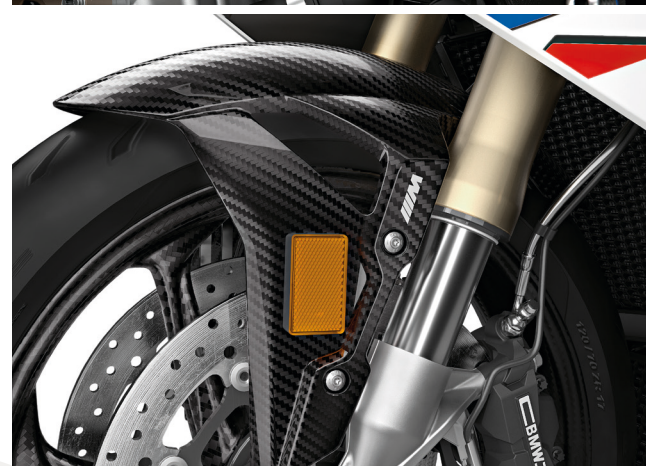
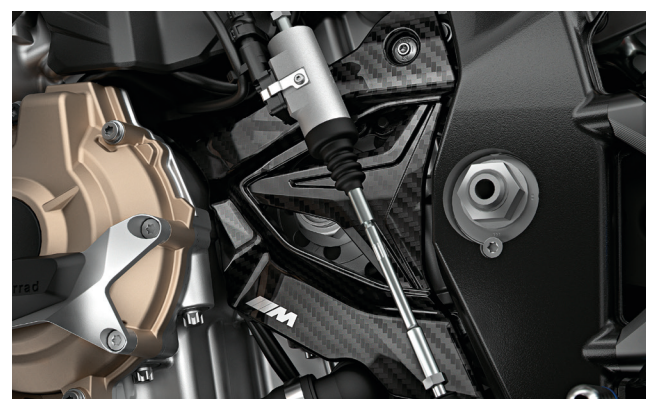


The New BMW S 1000 RR – Faster, Lighter and Easier to Control

The latest BMW S 1000 RR, launched in late 2018, is the second generation version of BMW's legendary superbike. Updated from front to rear, almost every component is new. Packed with the latest technology and providing unrivalled levels of performance, rider comfort and safety, the S 1000 RR is truly a superlative superbike. Designed for demanding and discerning clients, a key feature of the S 1000 RR is the ability to configure the bike to each owner's exact specification with a huge range of options, and this is where CAC comes on board.

CAC supplies BMW with a 9 piece set of M Carbon parts, allowing owners to customize their S 1000 RR, lightweighting the bike even further and adding a clear carbon finishing touch to this stunning motorcycle. The M Carbon options include front fender, rear wheel cover, chain guard, upper side fairings, airbox cover, pinion cover and tank trims. The carbon parts replace

less weight optimised injection molded parts and the complete assemblies are produced at CAC using autoclave cured epoxy carbon fibre prepregs.



CAC – A Complete Composite Package from Design Concept to Finished Parts.

CAC provides the customer with a fully integrated package from initial design concept to delivery of finished parts. For the S 1000 RR project, CAC took the existing injection molded part design and worked through a design for manufacture process, converting the component to an optimized carbon fibre composite version based on CAC's inhouse engineering, process and production expertise. CAC defined the component concept, suggesting the most suitable material options in terms of ply book, part mounting fixtures, bonding materials, lacquer materials as well as decals. As well as the component concepts, CAC also defined the complete tooling and process strategy. With all details signed off by the customer, the CAC project team could begin to work their magic.

Carbon prepreg mould tools for the S 1000 RR parts were produced in house at CAC from CNC machined aluminium masters. This composite tooling approach ensures excellent dimensional stability for the complex geometrical finished parts.

Plotter cut twill weave carbon fibre prepreg plies were laid up and autoclave cured followed by a final part CNC trimming operation on CAC's KUKA robot machining centre. All of the M Carbon components for the S1000 RR are clear coated visual carbon parts



demanding exceptional quality in the final finishing. BMW's audit team were particularly impressed with CAC's world class part finishing facility and the quality and consistency of the parts coming off the line.

Managing the Complete Supply Chain

As well as producing high quality carbon composite parts, CAC also manages component supply chains for other injection molded or metallic sub-components allowing it to ship complete ready to install assemblies direct to the OEM factory. For the S 1000 RR, CAC designed, monitored and controlled the production of several anodized aluminium components and injection moulded plastic carrier structures and brackets required to complete the M Carbon parts set.

After final inspection and packaging, complete vehicle sets of M Carbon parts are dispatched from CAC's production facility in Thailand to CAC Europe GmbH, CAC's office and parts distribution warehouse in Germany, where they are then collected by BMW for Factory Fitment, or After Sales demand.

CAC are proud to have supported BMW achieve their targets for the new S 1000 RR. Lighter, Faster, Easier to control - the latest model delivers on all counts - and with the CAC built M Carbon parts installed, its more beautiful too.



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