

making a brake



With 25 years of experience engineering brakes and clutches for specialist vehicles, including F1 and World Rally cars, armoured protection vehicles and prestige performance cars, UK specialist Alcon is now establishing a presence in the defence sector, where it is applying its rapid engineering skills in support of the UK MOD's Urgent Operational Requirements.

A good example is the partnership between Alcon and Ricardo's Defence Systems and Technologies Group on the Snatch Vixen and WMIK upgrade programmes. In both cases the addition of armour protection, onboard power and payload enhancement raises gross vehicle weight by as much as 34% – from 3.5 to 4.7 tonnes.

During testing Ricardo established that a brake upgrade would be required in order to achieve acceptable caliper burst strength and braking torque/pedal effort. Ricardo approached Alcon in early October 2008 asking for support to define a solution.

Alcon's engineering team immediately ran calculations on the vehicle data and established that a new cast SG iron caliper design would be required to meet performance targets in a very restricted installation envelope. A proposal for both prototype and production solutions was put forward and accepted by the end of that month, and prototype production was started immediately, with first supply being made just 4 weeks later.

Following the successful conclusion of on-vehicle prototype testing in January 2009 the go-ahead was given for full production parts. Over the ensuing couple of months the Alcon team worked under strict time compression to finalise the design and associated quality plans. Alcon's rapid response suppliers manufactured and commissioned new casting tools, cast first off samples of the new caliper body, and completed machining trials. All other parts were either procured or scheduled through Alcon's own manufacturing facility.

In March 2009, a mere 8 weeks after receipt of the purchase order, Alcon delivered the first batch of production calipers for the Snatch Vixen and R-WMIK programmes.

Since then Alcon has added to its range of cast iron calipers and brake discs with a larger six-piston specification and several other variants still at the design stage – all configured especially for the rigours of defence applications.

If you would like to discuss how Alcon may be able to support your vehicle programme with rapidly engineered brake or clutch solutions please contact our Sales Team.



The Alcon 4 x 48mm R-WMIK caliper

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