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Company History

In 1995, Automotive Engineer Brad Howell-Smith invented the CCE design and applied for a patent on the engine.

Brad looked at the company's long term future and decided to form a public unlisted company REVETEC Limited to fund further development. This then steered the company to relocate to Sydney Australia due to the industry presence and support in that area. The company then displayed its technology and 96-5.3-01 Prototype at the Sydney International Motor Show, which drew big crowds and proved to be a good success which attracted good media coverage.



Soon after the Company was established, a Research and Development Facility in Sydney was where the CCE 2001-01 Prototype project started. After market research was conducted the company felt the best way to enter the world engine market was through the pump and generator market. The 2001-01 engine was initially going to be an air cooled engine.

After interest from the automotive market in the Middle East it was decided to steer the development at main stream automotive. The engine was already being prototyped which meant that custom water cooled billet heads had to be made. This slowed down the prototyping process but the final result shown above was worth waiting for. In late 2001 the CCE2001-01 Prototype was fired up. The fuel consumption was less than predicted which proved to be very exciting and a huge win for the company.

REVETEC again needed to relocate into larger premises and did so in early 2002. The CCE 2003-01 Prototype project was then started to further streamline the design. The CCE2003-01 450cc four cylinder Prototype was under half the physical size of the CCE2001-01 Prototype, dimensions being 295mmX680mmX550mm. This engine features quad camshafts, four valves per cylinder; sequential fuel injection and a direct fire waste spark ignition system. This engine was fitted to a trike which was tested for performance and fuel economy. The trike has travelled overseas and has been demonstrated to a several major automotive companies.

The company then expanded and the new engineering team built the RLE4 1.3 litre prototype in 2004. This engine was based around Subaru EJ20 cylinder heads. After initial build the engine has gone through several major changes. The engine has been tested by a major automotive company which showed a very flat torque curve without the aid of technology such as variable valve timing and/or variable intake systems. In 2006, the company relocated back to Queensland.

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The company was evaluating the aircraft industry which has resulted in a major change to the Revetec engine's layout. The coded "X4" design has resulted in the lodging of a new international patent or PCT. We are currently developing a 2.4 litre water cooled X4 engine. This engine is planned to be tested in 2007. The newly patented designs have reduced the engine size 40% of most automotive engines of similar capacity. The new design is also about half the weight of existing conventional engines of similar capacity. The engine is very shallow in depth (engine block 200mm) which results in very structurally strong components. Image to the left is a side view of the 2.4 litre X4v2 prototype engine.

We modified the X4v2 engine to increase fuel efficiency focusing around the 2,000rpm range where most driving occurs, then sent the engine to Orbital Australia Pty Ltd for independent Certified testing. After the engine was setup on their dynamometer, Brad travelled to Orbital for the testing.

We tested the engine under the standard air/fuel ratio of 14.5:1 and also at our desired air/fuel ratio of 15.2:1 which maximizes the efficiency of the current configuration.

The X4v2 engine achieved a repeatable Brake Specific Fuel Consumption (BSFC) figure of **212g/kW-h (38.6% engine efficiency)** with a best figure of **207g/kW-h (39.5%)** at our requested target test of 2,000rpm with a BMEP load of 450kpa (approximately 75% load) and an air/fuel ratio of 15.2:1 using 98 RON petrol and a 10:1 compression ratio. We also achieved a BSFC figure under the same rev and load conditions using an air/fuel ratio of 14.5:1 of **238g/kW-h (34.4%)**.

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