

Custom MechCaL Fan to Drive Volkswagen Research Facility

Pretoria, 16 October 2014: Local fan and ventilation manufacturer, MechCaL has taken on the challenge of building what could be the largest Vane Axial Flow fan currently in production for Volkswagen in Germany.

The fan in question is a Vane Axial Flow fan spanning 8 metres in diameter, destined for Germany, to be installed in Volkswagen's acoustic research wind tunnel. In its final application the fan will be installed in the wind tunnel for testing of full scale motor vehicles.

"I cannot be certain if this is the largest, but it is extremely large," says MechCaL Director and Spokesperson, Gavin Ratner. "It is certainly an engineering showcase. MechCaL has been contracted to manufacture the Nose Cone for the fan which is 4m in diameter, with a set of blades which have a 2m span and a chord of about 850mm at the base with a slight taper to the blade tip."

The fan blades will be manufactured using Carbon Composite – a lightweight material which is among the composite range of materials that feature predominantly in MechCaL's highly innovative patented fan designs.

The project was commissioned by German based ventilation company, TLT Turbo, with whom MechCaL has shared a collaborative relationship since 2013, following a signed distribution agreement to sell MechCaL's range of secondary mine ventilation fans. They have since joined forces on a variety of projects, while TLT gears up to distribute MechCaL products to Europe and Russia with the intent to soon expand into North and South America.

This project is the start of a major joint venture between MechCaL and TLT to develop a range of composite fan blades. "This venture is being entered into with the aim to support the idea of increasing the capacity of fans sold through a reduction of the mass of the blades, thereby allowing increased blade sizes to increase pressure ratios and delivery of the fans in general," Ratner explains.

A project of this magnitude has its fair share of challenges – the first of which was ensuring that MechCaL's current facilities were ready to take on the task. "The project required significant development in terms of our facilities. MechCaL has invested in a new clean room for the prepreg manufacturing which is climate controlled and pressurised to ensure that no contaminants find their way into the layup of the carbon structure," says Ratner. Added to this, because of the size of the parts such as the main blade spar, a new high temperature oven was also purchased to enable the full span of the blade spar to be heated evenly. Ratner adds that additional Jig tables were also specially designed and installed to ensure that the structure would be consistent in terms of the bonded structure tolerances.

The team assembled to complete the project includes Michael Minges, MechCaL's Engineering Director and Michael Schildhauer, their in-house Aerodynamicist and FEA engineer with Walter de Jesus as the composite engineer.

The estimated date of completion of the project is set for March 2015. A total of 20 blades will be manufactured at MechCaL's manufacturing facility in Pretoria – 18 to be installed in the VW Acoustic Wind Tunnel with 2 blades being kept spare.

– ENDS –

MEDIA CONTACT

Oxigen Communications

Nicola Weir

084 701 1753

nicola@oxigencomms.com

About MechCaL:

MechCaL Pty Ltd was established in 2002 to design and manufacture industrial fans. The company has developed proprietary software that allows for high efficiency designs to address the much-needed green economy to reduce CO2 emissions to the atmosphere through using less energy while providing the same performance. At their manufacturing facilities in Pretoria, MechCaL focuses on developing specialised fans made from advanced composite materials. Every fan is designed for a specification application tailored to suit the needs of each client by matching the required performance with maximum efficiency. MechCaL has been awarded the prestigious Technology Top 100 award five times and has been a runner up three times. We have also won the Enabling Award from Frost and Sullivan. All of this success was garnered from reinforcing the advances in technology to enable the savings.

Visit www.mechcal.co.za for more information.

Like them on Facebook at Mechcal.