



Titan Enterprises Ltd.

Coldharbour Business Park
Sherborne, Dorset DT9 4JW

Tel: 01935 812790

Fax: 01935 812890

Email: sales@flowmeters.co.uk

www.flowmeters.co.uk

www.atratoflowmeters.co.uk

VAT No. GB 365 9701 23

3-D Printing Expedites Titan Enterprises' R&D in Flow Meter Technology

"3D printing technology

is fundamentally changing the way we design, prototype and test flowmeter devices within our R&D, particularly when developing specialist designs for OEM applications," says Neil Hannay, Senior R&D Engineer with Titan Enterprises.



Titan's [research, development and design](#)

advancements are focused around finding innovative solutions for [OEM customers](#), pushing the boundaries of both the physical properties and performance of the products.



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Titan started incorporating 3-D printing technology for design over 5 years ago, at the time using a state-of-the-art FDM (Fused Deposition Modeling) printer. New advances in 3D printing have seen this printer become redundant against Titan's R&D investment in a new printer, purchased at a fraction of the cost yet capable of so much more!



With improved technology

and an increased range of engineering materials available, this 3-D printing technique is taking a greater role in Titan's research and development activities, allowing for quick and cost-effective prototyping.

Although more expensive per cubic volume of model,

the precision, detail and durability of Titan's new UV resin printer allows greater fidelity and facilitates highly iterative design. The other advantage of the resin printer is that it enables printing of replacement parts and own tools to use.

"Being able to make small, precise changes

to designs along the development route to test functionality and performance enables us to fast-track through the design process," states Neil. "This gives our R&D design engineers more freedom to experiment with novel designs at a lower cost, both in time



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and money, and rapid prototyping. Models and components can be tested, pushing the boundaries of concept design, durability and size in a short amount of time. As such, a tested and performing prototype that we have a good level of confidence in, can then go out to our injection moulding suppliers to produce a customer prototype.”

For example, for a recent OEM turbine

development, the 3D printer enabled Titan to size and fit the flowmeter’s externals to the customer’s equipment and run preliminary integrated performance tests. Also, using transparent materials, Titan’s R&D engineers could visually examine the internal manufacture, fit and operation of the flowmeter, all of which sped up the product development dramatically. Historically, early prototypes were produced by CNC, which takes time and is expensive. By having an in-house 3D printer, new versions can be quickly modified, and novel designs tested even the same day as conception.

Titan’s non-metallic flow meters,

such as the [NSF-Approved 800-series turbine meters](#) and [Beverage flowmeters](#) used widely in the medical, food and beverage industries, lend themselves to the 3D printing process for development, progressing and enhancing designs.



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To discuss

an optimised flow measurement device for your specific application or process please contact Titan Enterprises on +44 (0)1935 812790 or email sales@flowmeters.co.uk. Or visit our [website](#) for further information.

Drawing upon over 40-years

of flowmeter innovation - Titan Enterprises Ltd is a leading manufacturer of high-performance flow measurement solutions, including the Atrato® ultrasonic flowmeter, Oval Gear flowmeters, low flow Turbine flow meters and a flow instrument range. Titan's company philosophy of "pushing the envelope by trying to do things a little different and better" has resulted in sales of over 2 million flowmeters and components into 50 countries worldwide and a repeat purchase percentage of 95%. All flow meters produced by Titan Enterprises are designed and manufactured to ISO9001 and calibrated to an uncertainty of $\pm 0.25\%$.

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For more information please contact:

Media: Mrs Samantha Hannay, Marketing Manager, Titan Enterprises
+44 (0)1935 812790 / marketing@flowmeters.co.uk