

PoP Centre News

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A new one-stop shop for Powder Metal Prototypes

One of the Power of Powder (PoP) Centre's prime roles will be to help customers reduce time, risk and cost in new application development projects. Our second newsletter focuses on the rapid prototyping service.

"We recognize that end users and customers trying to realize new conversion opportunities can face a number of challenges in developing new PM applications. Comparably high costs and long lead times for off-tool initial samples and the risk of further tool design iterations prior to component design freeze are only a few of them. That is why the PoP Centre will provide a range of services to help deliver advanced PM prototypes for new application developments – fast and cost-effectively," says Eckart Schneider, Marketing Manager PM Components.

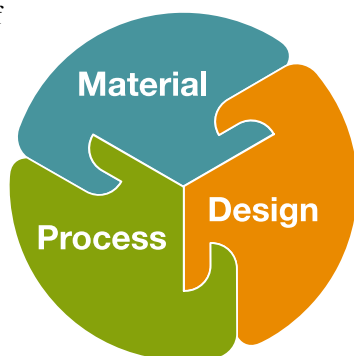
The PoP Centre in Höganäs, which will officially open on October 15, will offer customers integrated support and capabilities in the key areas of material selection, application engineering, component prototyping and process optimization.

"We think that end users and customers will benefit in many ways, not least from being able to get their hands on rapidly prototyped components with close to tool-made



properties at the design concept stage," continues Eckart. "They can use these samples to carry out necessary analysis – check the design, test the materials, verify component performance – and get quick answers they need on the design and material concept prior to investment in production tooling."

"The Centre can provide the whole package; it will be a one-stop shop for application development support that encompasses materials, process conditions and design aspects. However, it is a fully flexible service, we see it as a toolbox from which customers can select exactly the capabilities and support they need to progress in their application or process development projects," states Eckart.



Rapid prototyping: steps and options

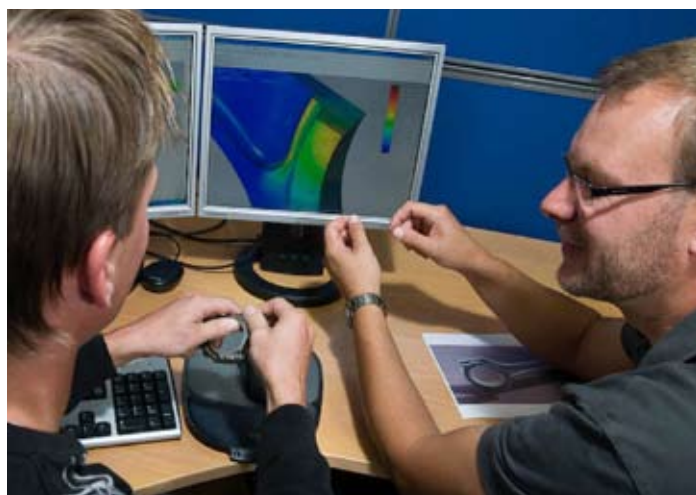
1. Fast samples. With new press capability, the Centre can now provide larger green and sintered PM pucks for material testing, sintering trials or component prototyping purposes at the Centre or customer's site. All common PM materials or customized powder concepts can be provided and various processing conditions simulated.

2. Advanced CAD design support, interchangeable with most common CAD formats, gives us the possibility to support new conversion opportunities and to have a dialogue with our customers on the important aspects of PM component design and material data. FEA capability (Finite Element Analysis) offers possibilities for additional design optimization and for reducing weight and operational stresses.

3. CAM (Computer Aided Machining) capability will connect the jointly optimized CAD solution to our new 5-axis CNC machining centre to machine prototypes from the sintered pucks for component testing or design verification purposes in a rapid and cost-effective way.

4. Finish Machining support. Our partnership with Swepart Transmission, a well-known Swedish-based gear machining specialist, will cover any additional intricate prototype-related machining jobs that may be required, particularly the creation of functional surface conditions for PM gearing applications.

5. System tear down and "PM-ification". We can support our customers and end users with hands-on mechanical engineering competencies to tear down "promising-looking" systems, to identify potential PM conversion opportunities. We can then help to redesign for PM, prototype, retrofit and selectively test with the optimized "PM-ified" solution.



6. Tooling support. If a customer needs assistance on PM tooling aspects, we can utilize our partnership with leading tool designer and manufacturer, Alvier AG PM-Technology.

7. New state-of-the-art CNC press technology gives us a new possibility to better simulate a very important customer process step in order to optimize the interaction between the compaction cycle, tooling aspects and our advanced powder/lubricant concepts. However, the new 800-ton Dorst CNC press in combination with our existing press capabilities also offers our customers an option to gain access to external compaction time/capacity for their own new product and process developments or off-tool sampling, without having to trouble their own manufacturing shop floor.

