

Press Release 29/2015

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Start with BOY into the 3D world

Produce 3D printed mould inserts quickly and cost-efficiently

Shorter times to market, increasing the variety of products with small production quantities are current challenges for product development and production. BOY, the manufacturer of injection moulding machines with clamping forces up to 1,000 kN, offers together with the 3D printing specialist Stratasys a fast and cost-efficient solution. The advantages of additive production are combined with the possibilities of injection moulding.

Increased interest in 3D technology

At K show 2013 in Düsseldorf, the additive part production using a 3D printer was presented for the first time. But in the following two years, most of the plastic processors were rather reserved. In contrast, the presentation of a new BOY 3D production concept at the 2015 Fakuma exhibition awakened the interest of 3D technology users.

New approach provides advantages

Designed especially for prototype construction for small quantities, the mould inserts rather than the plastic parts are produced on a 3D printer. The plastic parts can then be injection moulded and have the same physical characteristics as a part produced using a conventional mould. Virtually all plastics including glass reinforced fiber and / or flame-protected plastics can be processed with this 3D production philosophy.

Precisely 3D printed mould inserts

With a 3D printer, the mould inserts can be produced in only a few hours depending on the size of the component. The mould inserts for the snap-hooks, which were made at Fakuma 2015, were cost-efficiently printed in only 2.5 hours. The mould changing system on BOY injection moulding machines is advantageous here, since the printed inserts can be installed into the mould base within a few minutes.

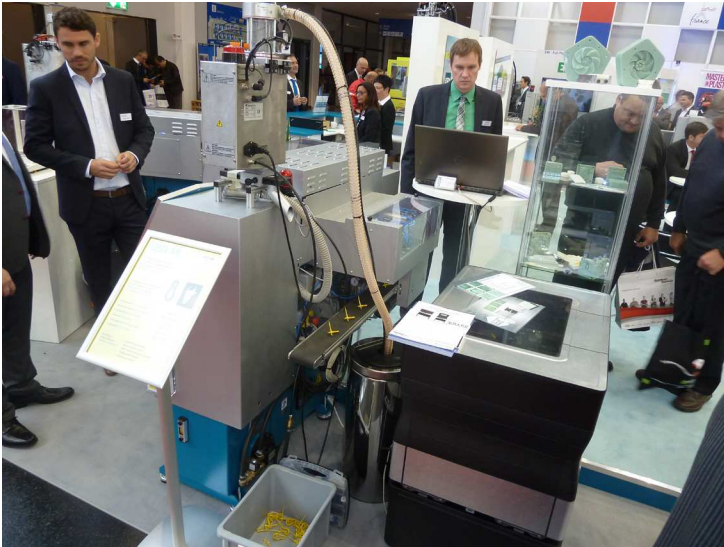
The 3D printer (Objet 30 Pro) achieves a resolution of 600 dpi in the X/Y direction and 900 dpi on the Z-axis. The extremely clean and plane surfaces of the mould inserts enable the immediate use in the injection moulding machine.

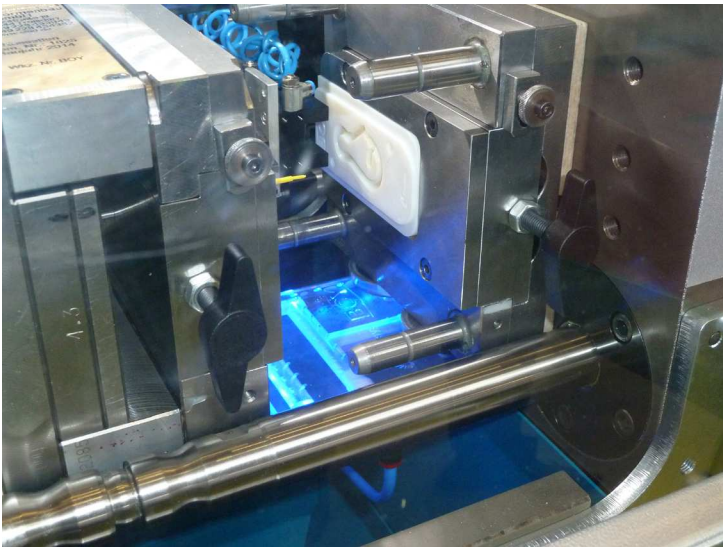
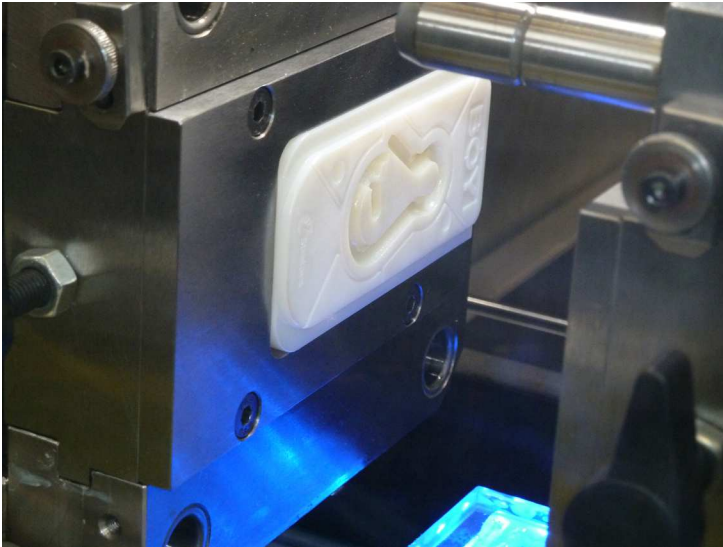
When producing 3D mould inserts, different raw materials can be used. The material Rigur is especially good for injection moulding (max. processing temperature 300°C). Using the example of the snap-hook made of POM on a BOY XS, clearly higher quantities were achieved with one mould insert than the quantity of 80 to 200 shots indicated by Stratasys. When higher amounts are required, new mould inserts can be printed and installed into the mould base in a short time. The material costs for the mould inserts of the snap-hook are about 30 €.

“The diversity of application possibilities are not limited and still do not end with the part production”, explains Klaus Geimer, BOY Deputy Managing Director and continues: “That way components for peripheral devices of injection moulding machines can also be produced. For example, during Fakuma 2015 using a 3D printer we produced a gripper hand with internal air ducts for our pneumatic driven handling device.”

Injection moulding of prototypes with extremely short runs using conventional plastics in mould bases with 3D printed mould inserts opens up new possibilities in the 3D world beyond injection moulding. The production concept developed by BOY and Stratasys

provides the user an efficient method to produce prototypes or plastic parts in small quantities fast, cost-efficiently and with the quality of a standard injection moulded part.





Photo(s) > BOY booth 3D production unit consisting of BOY XS and Stratasys printer.
3D printed mould insert in the mould carrier of a BOY XS.
Klaus Geimer (on the right) under discussion with Bastian Weimer, Sales Manager of Encee CAD/CAM Systeme GmbH (Stratasys Gold Partner)