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Blow injection moulding on BOY- injection moulding machines – two processes on only one machine

Whereas injection moulding and air-blowing processes were used on different machine designs up to now, BOY now combines both processes on a BOY injection moulding machine. With the support of the European Regional Development Fund and the State of Rhineland-Palatinate, the development of this combined process was completed. As a pilot project, small bottles for eye drops were manufactured on a BOY 60 E in clean room design.





In the first step, four preforms are injection moulded, rotated 180 degrees around an index plate and then inflated with compressed air to produce the finished bottle contour in the same mould. The finished eye drop bottles are packaged directly after demoulding in the clean mould area of the clamping unit and carried off by a conveyor belt.



Air-blowing on an injection moulding machine is suitable for smaller hollow bodies, such as cosmetics, food or pharmaceutical bottles. The cost of the production machine – in this case a BOY injection moulding machine – is significantly below the cost of a pure injection moulding machine. One benefit of air-blowing is the possibility of manufacturing even more complex contours at the bottle neck extremely precisely, which is only possible to a limited extent in traditional blow mould processes.

Using a manifold system developed specifically for this application, the preforms are injected without sprue so that no waste is produced in bottle production. Unlike with blow moulds, the bottle is finished at the end of the blowing process. No material used to seal the mould body needs to be cut and removed.

Photo(s): > Illustration of the injection moulding tool Illustration of the preform and fully blown eye drop bottle