Plastic production by injection moulding faces special challenges. Customized weighing and inspection technologies offer reliable solutions and help to increase the efficiency and safety of production processes.

Five Challenges in Injection Moulding Production
Introduction

The use of injection moulding machines in plastics production poses particular challenges when it comes to ensuring product quality, purity and machine safety. In the production of plastic components, for example, heat is generated as a result of fabrication. Temperatures can vary in the production department depending on the time of day and season. Ventilation is often used to reduce the temperatures, but this in turn causes drafts and impairs weighing processes. At the same time, electrostatic charge disrupts the weighing result. Apart from the weighing processes, small metal parts, e.g. equipment abrasion or vibration loosened bolts, can impair product purity and machine integrity. This paper names five challenges of the plastics industry where injection moulding machines are used in production processes and provides weighing and inspection solutions, which have a direct positive impact on product quality and production safety.

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Foreign body contamination

In plastic production, small foreign bodies can cause a big problem. The possible consequences are manyfold - from production stoppages due to defective injection moulds to customer complaints due to poor product quality. Metal detection systems are able to exclude the worst contaminants.
How metal contamination occurs

The risk of foreign body contamination starts well before the production line. Often raw materials in particular are already contaminated with foreign bodies. As well as this, the working environment also contains a number of possible foreign body contamination risks. Frequent contaminants are made of metal, for example:

- **Screws, bolts, nuts, cables, etc.**
  - loosened by vibrations in processing machines
- **Rings, ballpoint pens, etc.**
  - loss of personal objects of employees
- **Particles of all sizes**
  - due to abrasion or defective equipment

Particularly in recycled raw material, the possibilities of contamination are increasing and foreign object detection is the key to securing the subsequent production process, starting with the degranulation of the recycled material. Reliable metal detection systems enable to detect and separate all metal foreign bodies, including ferrous and non-ferrous metals and even non-magnetic stainless steels from the production line – regardless of whether the product is made of polypropylene, polyethylene, polyamide or any other injection moulding material.

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