Innovations in Inspection of the Smallest One Way Containers before Filling

After years of decline, glass containers are celebrating a comeback. Inline control of glass containers, prior to filling is becoming more and more common. But, compared to refillable glass containers, single use glass containers are sometimes very small and share a much bigger variety of shapes and finishes. Thus, the ideal empty bottle inspector offers highly precise and reliable fault recognition, to inspect smallest, as well as, non-cylindrical glass containers. In this field, miho Inspektionssysteme from Ahnatal, Germany, made a big leap.

Similar to refillable glass, from the point of view of a manufacturer of inspection machines, the defects in disposable glass must be evaluated according to the severity of the possible danger posed by the defect. On the other hand - in purely technical terms - according to the type of container, the position of the defect and thus the possible detection strategy must be considered.

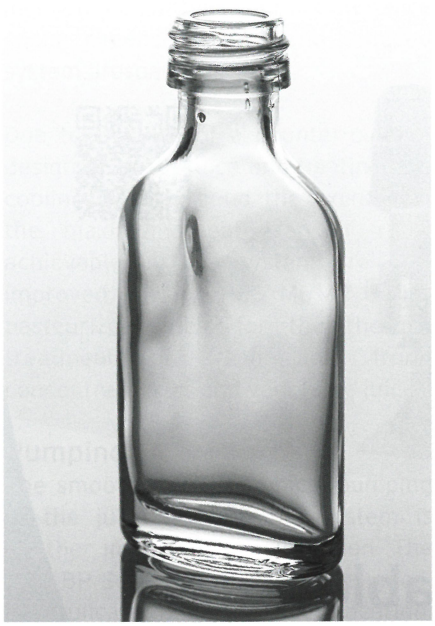
There are innumerable classifications of the defect types; common to all of them is the requirement that container defects that pose a health hazard to the consumer are evaluated as critical. For all glass container defects, one thing is common: it is better to look for the defect BEFORE filling rather than AFTER.

From a technical point of view, there is an accumulation of critical defects in the upper part of the container, which in the case of disposable glass is usually provided with a threaded structure for the closure. This is where the miho David 2 with the well-established finish side inspection FSI provides reliable detection of defects in the entire 360° area of the neck finish - thread transition. New glass defects such as blisters, seeds, cracks and chips can be reliably detected down to a range of 1 mm.

Actually paradoxical: the smaller the container, the greater the difficulties in inspection! With the innovative XS version of the David 2, miho now manages to inspect empty glass with high precision at minimal container dimensions of 65 mm container height and 30 mm container diameter and nominal volumes smaller than 50 ml!

For the safe handling of the smallest containers, the challenges may be compounded by the fact that the container does not have a cylindrical shape or that it features embossing. Miho has also developed tailor-made solutions for this, see illustration.

Disposable glass in the beverage industry: Deformed bottle body



The bottom with glass embossing of a non-cylindrical glass bottle with embossing (characters). For this purpose, the inspection area is exactly adapted to the shape of the bottle bottom and there are no restrictions in defect detection, even in the embossing (area framed in green).
This means that miho has adapted the David 2 for inspection in the filling of disposable glass in an excellent way. The device is just as perfect for bottlers of shots, smoothies or spirits as it is for bottlers in the food sector (baby food, jam, etc.).