

# Marposs supports the quality of anti-COVID-19 vaccine vials

Eleonora Bordini\* describes how Marposs inspection equipment can help pharmaceutical glass manufacturers in their drive to produce vials for the Covid-19 vaccine.

**T**he COVID-19 pandemic dramatically changed our lives in the last year. The way to go back to a normal life passes through the so called 'herd immunity'. Herd immunity is achieved when a sufficient percentage, about 70%, of the entire worldwide population has become immune to the virus through infection or vaccination.

The majority of anti-COVID-19 vaccines needs two doses so, something like 11 billion doses of vaccine are necessary to defeat the virus. It's very likely that other booster doses will be required, in the near future, to guarantee the immunity also to the variants of the virus. All these vaccine doses have to be packaged in glass vials.

Last year drug makers warned of possible limited supplies of vials to bottle future anti-COVID-19 vaccines.

Manufacturers of primary glass packaging for the pharmaceutical industry took immediate actions to increase their production capacity and support their customers in this feat.

Glass vials for parenteral medication, either tubular or moulded vials, are made of Type 1 borosilicate glass. This material is chemically inert, highly resistant to enzymes and is suitable to withstand temperature variations, that is be heated for sterilization and frozen for conservation and storage.

Glass vials, as well pharmaceutical glass packaging in general, is 100% checked with in-line inspection machines, to detect cosmetic issues and reject defective containers.

To get information necessary to monitor the production process, with the purpose to optimise it, production batches needs to be periodically accurately controlled, especially for dimensional characteristics, in the quality control laboratory.

Required controls include:

- External dimensions on body and finish



- Inside mouth diameter and profile
- Wall thickness

These sample based controls, in most of the cases, are still carried out with manual gauges: go-no go, micrometers, profile projectors, etc...

External dimensions are checked with go-no go. Inside diameter and profile with profile projectors. Wall thickness by means of a micrometer, after cutting the container. It goes without saying that this working method has a lot of drawbacks.

All these gauging instruments (go-no go, profile projectors, micrometers) do not provide any quantitative information on the controlled characteristic. No data collection is possible and, therefore, identification of production trends or deviations is very difficult to achieve.

They are not accurate and results depend on the operator's skill. They require a lot of manpower, at least three operators per shift. This is not economically convenient.

Marposs, a specialist in precision equipment for measurement and quality control in production environment for different industrial sectors and with more

than 20-years experience in the glass industry, can support pharmaceutical glass containers manufactures in making a technological leap in the way of performing quality control.

Marposs can supply solutions with different level of automation, to match the need of any customer.

The solution with the highest level of automation and the widest number of available controls is VisiQuick, a fully automatic flexible machine, with automatic handling. It allows to measure, without any operator intervention, and without any job change, a wide range of containers irrespective of their dimensions, shape and colour.

VisiQuick can measure:

- external dimensions (height, verticality, mouth parallelism, diameters, finish parameters) with optical technology (cameras)
- weight
- push-up
- mouth inside diameter and profile, with Marposs proprietary contact technology

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- wall thickness with chromatic confocal technology
- labelling area profile (sinks and bulges), with a Marposs patented optical technology.

VisiQuick can be supplied with all the above mentioned measuring stations or only with one or some of them. Containers are fed to VisiQuick by means on one or more conveyors. Multi-conveyor solution is very convenient and efficient, because it allows to measure different batches of containers without operator's supervision.

VisiQuick can be also fed with samples diverted directly from the production line.

An alternative solution to VisiQuick is VisiQuick-mini a semi-automatic flexible system, with manual container loading/unloading. It can measure:

- all external dimensions (height, verticality, mouth parallelism, diameters, finish parameters) with optical technology (cameras)

Both VisiQuick and VisiQuick-mini are suitable to measure pharmaceutical as well as perfumery or food and beverage containers.

For small containers measurement, like pharmaceutical ones, a specific version of VisiQuick-mini is available also integrating, in addition to external dimensions measurement:

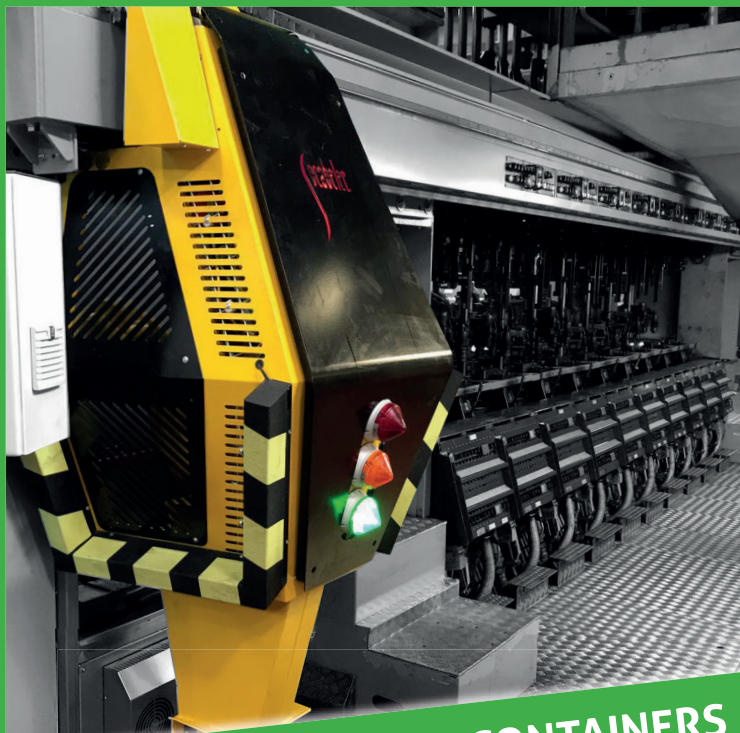
- inside diameter ad profile
- wall thickness

With a single system, glass containers manufacturers can perform accurately and automatically, all the controls that currently requires at least three people. With the additional advantage to collect data and detect in real time any production problem. Both VisiQuick and VisiQuick-mini are compatible with the most popular MES in the Industry.

In addition to these products Marposs can support customers with trainings, maintenance programmes and an unrivaled after sales service.

Marposs is present in 34 countries with its own sales and service organisation. ■

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<https://www.marposs.com/eng/application/pharma-and-food-industry-bottles-and-glass-containers>



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\* latest swabbing-robot installed in July 2017 in Germany