Glasstec: OCMI-OTG does it again with vial production innovation

OCMI-OTG is to introduce its new tubular glass vial production line at Glasstec 2022 - complete with its FLA18 index rotation forming machine as well as its LF518 after-forming line with servo-driven stations and high-reliability dimensional controls.

FLA18 FORMING MACHINE

Developed with index rotation and twenty stations traditionally manufactured by OCMI -leading supplier of borosilicate glass tube processing lines for medical containers worldwide- the FLA18 forming machine can assure the same output as that of continuous-rotation forming machines. As such, it can assure a maximum output of 55 pcs/min. with 2R vials and the possibility of processing glass tube diameters from 10 mm to 30 mm. Tube-loading is performed by automatic equipment that picks the glass tube directly from the bundle. OCMI can offer two loader options of different bundle and tube manipulator positionings. Here there's no manual handling of the tubes, except during bundle loading of the machine, which means minimising the risk of cosmetic defects, cracks or glass surface marks caused by friction between the tubes. Customers can choose the most suitable loading option according to the space available in their plant. FLA18 machine burners are suitable for either natural gas or hydrogen alimentation. The hydrogen option can be especially interesting to customers after building 'green' factories that offer a safer environment for operators working around the machines. The fluid also assures a stabler flame - particularly important for operations like tube-cutting. The combination between 18 upper mouth forming crown stations and nine lower bottom finishing turret stations allows maximum productivity to be sustained - even when a lower station goes out of service for some reason. Machine rotation is driven by a torque-motor that's supplied with a water chiller for cooling, which can also be used for cooling the forming plungers. Forming operations are performed via three dedicated servo-driven stations following rotation of the upper chucks and removable where maintenance operations are required. Parameters related to positions and movements of forming tools, plungers and rollers can be set from the touch panel and saved as dedicated recipes linked to each type of manufactured vial. From this same touch-panel the operator can manage all parameters associated with the movement of setting plates when loading the column and cutting station, machine and spindle speed, loading stations and dimensional control by camera.

OPTIVIAL CAMERA INSPECTION SYSTEM

Placed after mouth forming operations with its new generation camera, the Optivial camera inspection system can take up to 15 pictures of the same rotating vial while getting a more precise average value for each dimension. This camera inspection system software allows for control statistics saving - including rejections for each defect type and each spindle. In the lower machine turret bottom, after the cutting operation, the vial bottom is finished by fire-polishing burners and a special flattening buffer. Nine lower chucks, driven by independent motors, are equipped with blowers enabled by solenoid valves - all aimed to remove smokes from the inner side of vials in order to keep alkalinity within the limits fixed by ISO standards.

LF518 AFTER-FORMING LINE

Take-out, via servo-driven transfer system, has been developed for connection with OCMI's LF518 after-forming line. Here servo-motors drive the main after-forming line mechanisms - even in the completely-renovated printing station, which is available on customer request. Immediately after forming-machine unloading, the

conveyor chain V-carriers are covered by insulating plates to protect hot glass from contact with the cold metal needed to avoid thermal shocks and consequent marks upon the glass surface. The same protection is applied to packing conveyors following annealing lehr vial unloading. After the cooling chain, vials arrive at the dimensional control section, which includes a check of the total length and inner mouth diameter. Contact gauge total length control is made by pushing the vial against a bottom guide to detect the measure needed. Inner mouth diameter is detected via camera - which takes both minimum and maximum diameters with just one picture. The average value is taken into consideration for acceptance or rejection of the vial. Data from both control stations is displayed on a dedicated control panel via software that follows the same, user-friendly Optival concept. The new, electrically-powered vial annealing lehr version is alimented by a feeding manipulator with six mechanical grippers that picks vials from the line chain and places them in a horizontal position upon drilled metal trays. The design of vial lodging trays, e.g. that of lehr width and length, can be modified according to the vial specifications to be processed and the vial number to be conveyed. The pick-place manipulator, which has adjustable gripper jaws, allows for vial processing at a minimum length of up to 30 mm. Main annealing lehr parameters, too, can be set via a dedicated control panel from which the operator can fix temperatures and keep control of all heaters while setting oven chain, feeder and unloader synchronisation parameters. Before the packing station, the length of the vision/packing conveyor can be adjusted should the other camera inspection system be installed.

PM-V PACKING MACHINE

Available with four or five box-filling stations placed upon a rotating table, the automatic PM-V packing machine can replace the traditional manual packing operation. With this option there's no contact between vials, since they're directly picked from the line chain by way of vacuum cups. This minimises the risk of scratches or breakages during packing. The automatic PM-V packing machine software allows for recipe-saving while also memorising the specifications of ampoules/boxes, the number or rows to be positioned within the box as well as the number of ampoules per row. The job change in this packing machine is very easy for the operator, thanks to the modular vacuum picking arm - with blocks added or removed according to box length and ampoule number to be picked from machine racks. OCMI's new line comprises both the FLA18 forming-machine and the LF518 after-forming line. It represents the best option for automated vial production and it includes the most accurate dimensional and quality controls: a first choice for certain leading European multinationals that manufacture different vial types - some of which exceed the standards typically requested by the market. ■