

Hot end handling... doing the dirty work

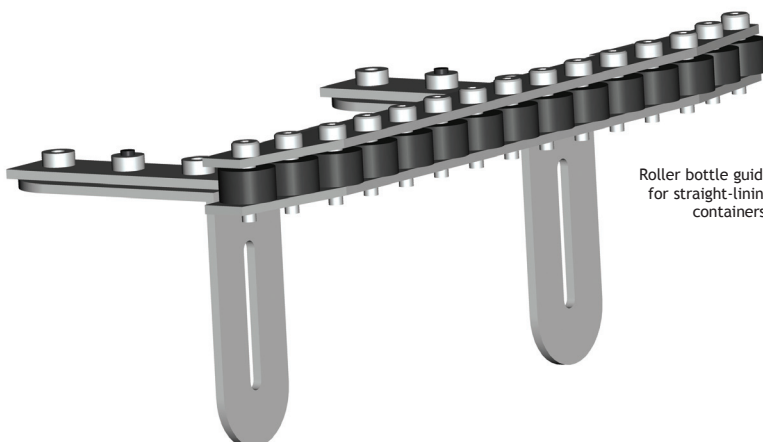
Dave Rollins considers the importance of hot glass handling materials in glass container production and the key responsibilities of companies supplying them.

The hot end of a glass factory is noisy, oily, sometimes a little dirty and well, it's hot! When glass factory decision makers attend industry tradeshows, they often spend a lot of time evaluating items like forming machinery or intricately designed moulds. While these high-tech pieces of equipment are interesting to understand, the managers and technicians who perform the dirty work at the hot end know all too well that the best formed or designed containers will never reach the customer if they fall over or develop checks before they reach the Lehr. Proper hot end handling is one of the most fundamental requirements for efficient glass production.

MANY FACTORS

Proper and efficient hot ware handling must take into account many different factors. One of the most important is bottle shape. A round beer bottle has to be handled very differently than a flask or square bottle. Add in other factors including size, weight and colour of glass and there are a whole range of challenges to getting the container from the take out area to the Lehr efficiently, without generating checks or having containers end up on the floor.

Good hot ware handling starts at the take out mechanism. Removing the bottle from the mould without



Roller bottle guide for straight-lining containers.

checks and without excessive swing onto the deadplate is critical. There are several materials used for take out inserts, with graphites and polyimides being common. Dura Temp offers Protatherm take out inserts and deadplates.

Moving the bottles/containers to the conveyor requires pusher fingers for the sweepout area. Bottle shape is a major consideration when selecting the proper sweepout finger. Having the correct fingers and pockets along with proper spacing provides for efficient ware handling. Dura Temp offers a variety of sweepout pockets to give the best fit for a wide range of containers since 'one size really does not fit all'.

The contact material used for sweepouts needs to move ware without friction or thermal shock. Dura Temp offers materials that safely contact the glass, while also providing good wear life.

BEND, DON'T BREAK

Eliminating checks and efficient handling is critical all along the machine conveyor, through the transfer wheel and the stacker bar, to the Lehr entrance. Ware handling parts for this section include straight-lining guides, paddles for the transfer wheel and pockets for the Lehr bar which need to be shaped properly to keep the containers moving.

Having appropriate contact material is only one consideration for parts in this section. As jam-ups occur sometimes, it is important also to have the proper type of metal for holding the contact material. Parts need to be strong enough to survive jam-ups. However, they must not be so strong that they cause greater damage to transfer wheels or the Lehr loader as they jam-up with hardening glass. Metal parts that are too hard, instead of bending, may eventually break into pieces, causing machine



Lightweight stainless steel universal Lehr bar pocket.



HW Series sweepout pocket, designed for harsher hot ware handling environments. The HW Series parts are available as sweepout pockets, transfer paddles, bottle guides and Lehr bar pocket assemblies.

damage and potential operator injury. Replacing a transfer finger is much easier than replacing a transfer wheel/machine. Offering 'unbreakable' parts sounds good but something has to give in the manufacturing process. Determining the proper strength for parts is not an easy process for ware handling product suppliers and should be the result of testing, product knowledge and experience supporting the glass industry.

KNOW YOUR SUPPLIER

Ensuring consistent and efficient hot end handling requires more than just the proper shaped parts and correct contact material. It also requires that ware handling products are in stock and readily available for delivery. To ensure this happens, good hot end managers need to have a reliable supplier, who should deliver on-time, with products that offer consistent quality.

Suppliers need to be committed to the glass industry and develop product innovations. Quick-change parts represent one of the concepts developed by Dura Temp, which allow either no or little interruption

while being replaced, eliminating costly downtime. Other recent innovations are HW Series parts, designed for use on harsher jobs like wine bottles and jars. HW Series parts provide longer life than standard equipment and are more cost-effective compared to high cost materials like stainless steel braid.

As with all Dura Temp parts, HW Series parts, which are made from a combination of contact materials, do not cause checks to the bottles. They do not require special welding required for stainless steel braid and because of their design, they can be easily used in Dura Temp's 'systems approach', which includes a selection of backplates, assemblies and pockets that work easily together for sweepout pushers, transfer wheels and lehr loaders.

Hot end managers also need suppliers who provide good technical support. Using a great product incorrectly can reduce the part's true benefits to production. Dura Temp has a team of technical specialists who work directly with customers to recommend the correct solutions for proper ware handling. Suppliers should also make product information readily available through a variety of means such as company websites, printed catalogues and CDs.

PULLING IT ALL TOGETHER

For efficient and profitable glass production, proper hot end handling is a critical and fundamental process. It requires consideration of many factors to determine the correct application.

Keeping the various shaped containers moving without checks or falling over is a must. The parts that touch and

move the ware need to have the right materials for actual glass contact. They also need to be constructed from the correct material for the manufacturing process itself.

Once these parts are selected, they should be available for use and backed by trusted suppliers who are reliable and provide consistent quality. These suppliers need to provide technical support, as well as product innovations and solutions for improved hot ware handling. Most importantly, for those managers and technicians who have responsibility for the hot end, they need a supplier who is committed to the glass industry and is not afraid of doing the dirty work. ■

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