

Safety products in the workplace

Bucher Emhart Glass develops equipment that makes work safe and creates ideal working conditions in the glass industry reports Inge Friberg*.

Bucher Emhart Glass (BEG) conforms to the Machine Directive 2006/42/EC, an EU agreement that seeks to unify health and safety regulations among the member countries and specifies requirements and responsibilities for suppliers of machinery. Moreover, BEG meets the Feeder and IS machine standards and designs its machines to meet both European and international standards.

Reducing risk

When we think about workplace hazards, we tend to focus on risks that can cause accidents such as tripping, pinching, burns and other mishaps.

However, a more common type of injury is that caused by repetitive strains. That is why BEG focuses on ergonomics, aiming to make it easier and more comfortable to work on its machines.

One of the best examples of an improvement in this area is the conveyor ladder on BEG's IS machines (**Fig 1**).

It has been designed to make it easier and safer to service mould halves, blow-head mechanisms, blow-head arms, bottom plates, takeout tongs and takeout head mechanisms.

The ladder itself is robust, housed in an insulated tunnel with a footstep and also fully integrated in the machine conveyor design on the blow side.

This design makes access to the blow side simpler and accessory exchange safer and more ergonomic.

BEG has also applied the principles of ergonomic design to its development of a blank side lifting device.

Carrying out accessory exchanges on the blank side usually involves difficult working positions and lifting heavy parts. Over the long term, working this way can result in repetitive strain injuries.

The blank side lifting device, with a lifting capacity of 125kg, is designed to help the operator avoid heavy lifts and cumbersome working positions.

Safer working near sections

Inevitably, the area around a glass-forming machine is harsh and hot, which makes visibility critical for safe working.

The better the operator can see the section they're working on, the less time they need to spend in the hot environment. Bright LED lamps for the blank side overhead panel provide excellent illumination, making it easier to carry out maintenance tasks such as job changes and accessory replacement.

One of the most dangerous times to be near a forming machine can be during a job change, when several technicians are working in and around the machine.

During these periods, it's essential that nobody can accidentally move a

mechanism by activating an override switch. Bucher Emhart Glass has developed several features that prevent accidental mechanism movement:

- A U-shaped channel covers override switches and minimises any unintended activation. The channels are standard on the BEG pneumatic valve block and can be retrofitted to the 26 l EPVB.

- Safety flaps on the EVPB valve block also alert the operator on the blank side to the risk of overriding mechanisms without first making sure that no operator is in the working area of these mechanisms. Safety flaps are available in different lengths for retrofit and on the standard EPVB invert/revert, blow head and blow moulds are covered by the safety flaps (**Fig 2**).

- Another risk is activating blow moulds or blow heads by mistake from the blank side, which can cause serious injury to someone working on the blow side. To eliminate this risk, the blow head and blow mould interlock lets the operator on the blow side control these mechanisms. The interlock switches lock the mechanisms in the 'up and open' position, and give a clear indication of their status.

- Activating the feeder, shear, or gob distributor causes the gob distributor to

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▲ Fig 1. Bucher Emhart Glass's conveyor ladder.



▲ Fig 2. Override cover.

retract, risking injury to an operator working in the area – either being hit by the mechanism itself, or getting pinched between the mechanism and the beam structure. The gob distributor guard, which Bucher Emhart Glass offers as standard, is designed to restrict access to the danger zone (**Fig 3**). It can be easily removed and assembled, and affixed with fasteners attached to the guard itself.

Future improvements

The improvements described above are already part of BEG's product portfolio.

The company is also working on further developments that will improve safety on the blank side of machines in its AIS, NIS and BIS lines.

The Blank Side Barrier (BsB) will help to improve safety during operation. During normal operation the barrier is in the UP position, reducing the risk that someone will reach into the operating section.

It also prevents 'swabbing on the fly', whereby the operator reaches into the running section to swab the blanks.

In conjunction with a swabbing cycle on the timing system, this helps to reduce risk while swabbing on the blank side by indicating clearly to the operator whether the section is in swab cycle or not.

During normal stop, having the BsB in the UP position also reduces the risk of an operator interacting with the section without activating a maintenance stop – the only stop that allows the operator to interact with the machine.

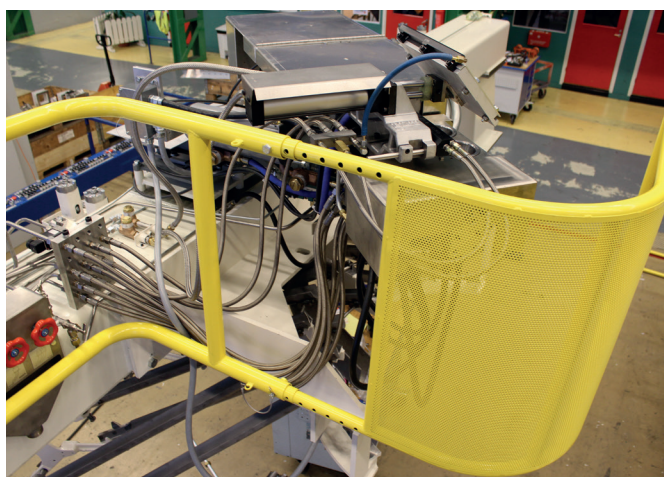
When the maintenance stop is activated, either on the blank or blow side, the BsB is Down, giving a clear indication that it is safe to work on the section.

When starting the section from the blow side, the BsB will be in the UP position once again, stopping the operator interacting with the section on the blank side.

However, BEG appreciates that technical improvements can only go so far. The best way to avoid accidents and negative health impacts is for operators to understand how to operate the firm's machinery as thoroughly as possible.

To this end, the firm has training facilities located in Europe and Asia, where customer staff can be trained to operate BEG machinery in the safest, most effective way. ■

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▲ Fig 3. Gob distributor cover.



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