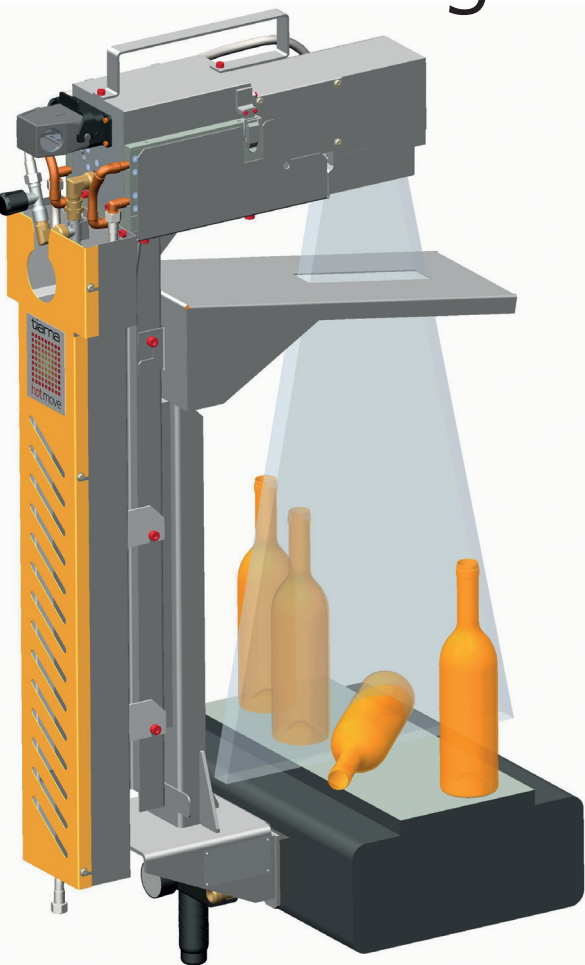


Handling hot glassware



Lucie Jouve* describes how the Tiama HOT move module can assist in the prevention of jams on the production line and improve operator safety.

HOT move captures the position of the containers on the conveyor and identifies each container with its original cavity.

This ability to read the container's thermal signature allows it to identify fallen and stuck articles and to reject them before they reach any critical ware handling. This is step one of ware positioning control. The Tiama HOT move is also capable of giving the exact position of the containers along the conveyor axis, the X position, and the distance to this axis, the Y position.

These values are given for any single container and therefore can build a statistical analysis per cavity and section.

The Tiama HOT move is located on the conveyor just after the IS machine. The system is directly fixed on the conveyor in order to limit its footprint. The Tiama HOT move has been designed to resist the harsh environment at the hot end and to ease its assembly on line.

Only one day is necessary to install and start the system. The Tiama HOT move requires little maintenance: simply clean the camera lens with a cloth just once every two weeks.

Thanks to this simple installation the system can easily be moved from line to line, and can then be dedicated to addressing specific transportation issues on a certain type of production.

The Tiama HOT move embeds a user-friendly and intuitive interface. A brief and efficient training session allows any operator to quickly be in control of the system.

Beyond process control, the Tiama HOT move aids with safety improvement and operators' protection. In the case of glass piling up, operators are subject to an increased risk of burns when they clear the lines.

By reducing the number of jams at the hot end, the Tiama HOT move contributes to operators' safety on the line.

The Tiama HOT move system also provides information on the angular

corrections that should be applied on pushers to improve conveying and avoid jams. This information is available for all sections. This way, the Tiama HOT move enables preventive actions on the IS machine to avoid transportation issues.

Through easy access to the Tiama HOT move interface, the operator can set and modify warning limits for the position of articles on the conveyor.

When articles are nearing these limits an alarm warns the operator, and when articles cross the limits they are automatically rejected. Thanks to the statistics per section, the operator is notified when articles from one or several sections are close to or outside the limits.

Through these alarms, the operator knows which sections cause transportation issues and can work on the concerned section to solve the issue.

The Tiama HOT move is a fruitful source of information for the operator and a dedicated assistant for line transportation improvement.

Beyond its technical features, Tiama believes its HOT move is an economic and efficient way to solve conveying issues at the hot end. Servo upgrade for IS machine pushers is often seen as a must for transportation issue solving.

This solution is interesting in many aspects, but is often delayed due to its high budget impact and its long lead-time for implementation.

It has been estimated that a Tiama HOT move costs about one-fifth of the price of a servo pusher update for one line, and so in that case the Tiama HOT move would be a real economic alternative.

Given its easiness to deploy and acceptance by operators, the Tiama HOT move is a simple choice when it comes to solving a hot end conveyor transportation issue.

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The concept of Tiama HOT Systems is a modular approach to answer the complex demands of process control at the hot end.

The Tiama Hot System is composed of four independent modules: the Tiama HOT mass; the Tiama HOT eye; the Tiama HOT form; and the Tiama HOT move, all sharing the same interface. Among these, the Tiama HOT move is designed to supervise the positioning of the containers on the hot end conveyor.

The main feature of the Tiama HOT move is to reject stuck and fallen articles so as to avoid jams in critical production areas before the annealing Lehr, such as the hot end surface treatment tunnel or the transfer wheel.

Jams are time consuming for operators and cause production losses. Glassmakers have to deal with several jams on their lines everyday, and some estimate that on a high speed line they can lose up to 600 minutes of production per month because of jams.

Jam solving is such a critical task that it keeps operators out of any other process control or IS piloting capacity.

Using an infrared camera, the Tiama