



A TECHNICAL GUIDE TO MOULDING

CONTENTS

03

Introduction

05

Chocolate
mouling process

06

Moulding pain
points

08

Moulding
machinery

16

Safety and
hygiene

19

Storage and
disposal

19

Contact Premier
Forrester



Chocolate moulding is one of the most critical control points in industrial confectionery production.

It directly determines product shape, weight, surface finish, and consumer perception of quality.

Beyond aesthetics, moulding plays a central role in line efficiency. Throughput, consistency, and waste levels are all heavily influenced by how effectively moulding systems are designed, integrated, and operated.

This guide explores chocolate moulding from an industrial perspective – covering equipment, line design, process control, and optimisation strategies. It also highlights common technical challenges and how they can be addressed through better system integration and maintenance practices.



What defines industrial moulding?

Industrial moulding differs from small-batch production through the scale, automation and integration of the production process. Rather than relying on individual manual stages, industrial systems are designed to move moulds and chocolate continuously through the line while maintaining control over key process variables.

Key characteristics of industrial moulding include:



Continuous, high-speed production



Integrated, automated processing across the line



Precise control of temperature, viscosity, and dosing

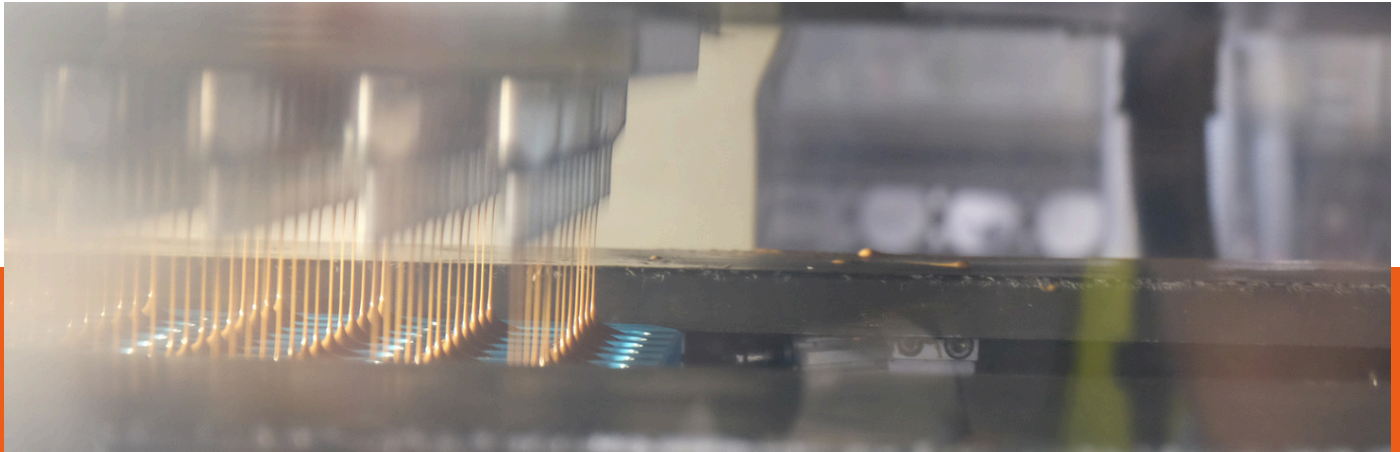


Quality control and reliable handling

Chocolate moulding process

- 1 Mould preparation** Moulds are cleaned, fully dried, and always pre-heated to ensure optimal flow and release
- 2 Tempering** Chocolate is taken through controlled heating and cooling stages to establish stable crystallisation for the required gloss, snap and flow
- 3 Depositing** Tempered chocolate and, where required, fillings are accurately dosed into each cavity to achieve consistent weight and fill
- 4 Vibration** Moulds pass over vibration stations to remove air bubbles and evenly distribute chocolate
- 5 ColdPress[®] shell forming** Create precise, hollow chocolate shells with an automated method that replaces traditional, messy "fill-and-flip" inversion techniques with a highly controlled, mechanical alternative
- 6 Cooling** Controlled cooling enables proper crystallisation, setting the chocolate with the desired finish and structure
- 7 Demoulding** Finished products are released cleanly from the moulds without damage or surface defects

Common industrial challenges when moulding



Depositing inaccuracies

Incorrect amounts of chocolate or filling can cause leakages, shortages and incorrect product composition, affecting final product quality

Line efficiency

Cooling tunnel capacity limiting throughput, demoulding failures causing stoppages, and poorly synchronised equipment restricting overall line speed

Mould performance

Surface wear affecting release and finish quality, along with alignment issues in automated handling systems

Product quality

Air bubbles from insufficient vibration, blooming due to poor tempering or cooling, and incomplete shells caused by incorrect viscosity or drainage

Common industrial challenges when moulding

Hygiene systems

Ineffective cleaning and drying can leave residue, moisture or allergens on moulds and equipment, increasing contamination risks and potentially affecting product quality between production runs

System challenges

Poor integration between machines, inconsistent line speeds, and reliance on manual intervention, reducing overall efficiency



In many cases, these issues are interconnected. Resolving them requires a holistic approach, ensuring process consistency, maintaining equipment performance, and optimising how systems work together across the entire production line.

What moulding machinery to use?



Moulding machinery isn't one-size-fits-all. The right solution is shaped by a range of factors, including the type of product, required throughput and how the moulding stage integrates with upstream tempering and downstream cooling and demoulding processes.

Some businesses need a fully integrated moulding system. Others need a single, well-specified machine that works seamlessly within a line they already have.

Your production scale, available space, and budget are just as important as the technical specification when it comes to choosing equipment.

This is where working with a business like Premier Forrester is valuable. We understand your business first, then apply our expertise to find the right fit for your production process. Whether that means a single machine or a fully integrated line, we work with you to make it perform as part of your wider process.

1. Moulding Lines

Moulding lines from the likes of Trikno bring together multiple machines into a fully integrated system, synchronising each stage from tempering through to demoulding and transfer.

These systems are engineered for efficiency, ensuring smooth product flow, minimal waste, and consistent output across high-volume operations.

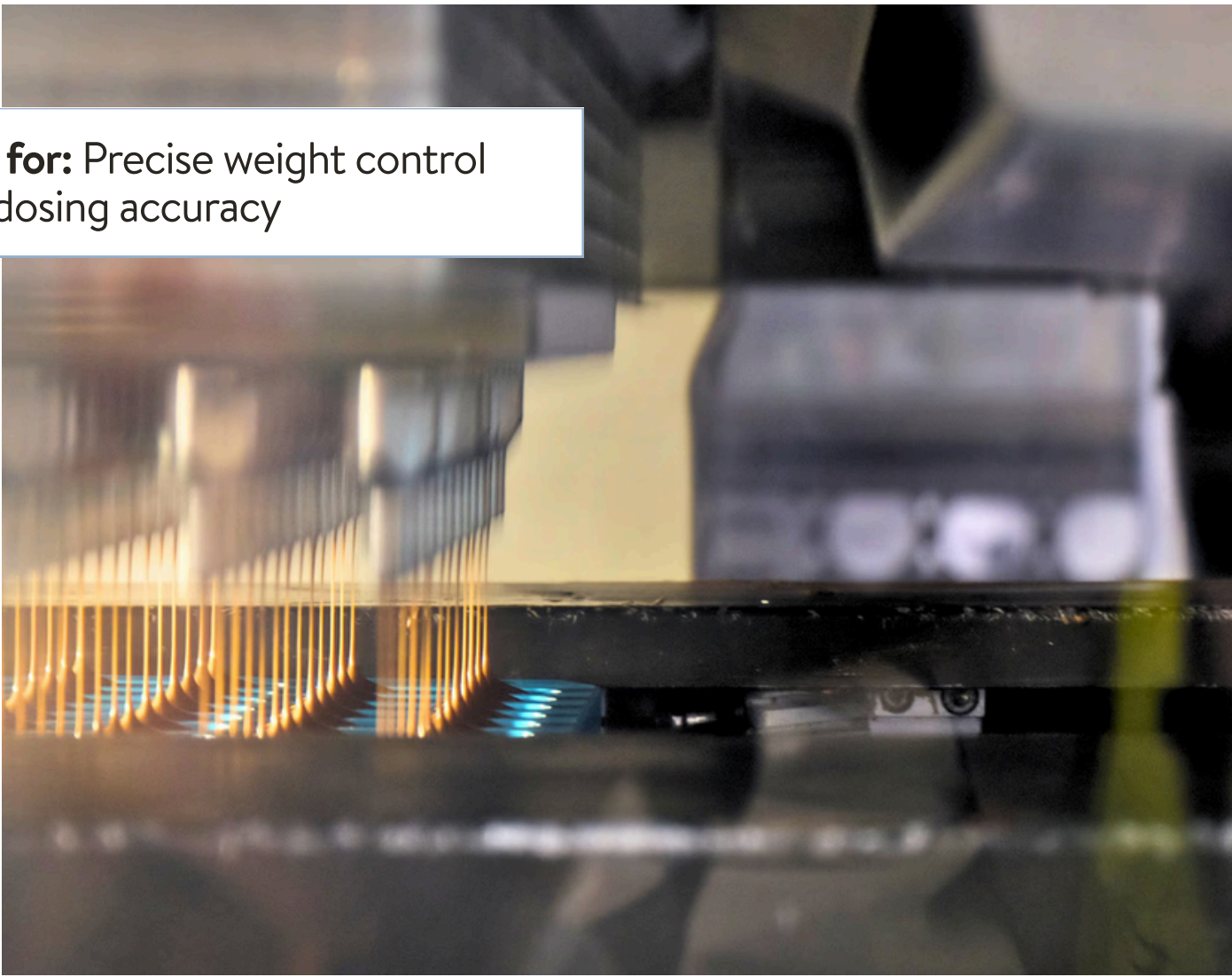


Best for: High-volume, end-to-end, continuous production

2. Depositors

Depositors are responsible for accurately dosing chocolate into moulds or onto belts, making them critical for product consistency and raw material control.

Modern systems offer flexibility to handle everything from solid bars to multi-layered or filled products with precision and repeatability.



Best for: Precise weight control and dosing accuracy

3. Vibration Stations

Vibration stations help settle deposited chocolate and fillings evenly within mould cavities while releasing trapped air.

Correct vibration settings are important for achieving clean surfaces, complete cavity filling and consistent product structure without disrupting the deposited product.

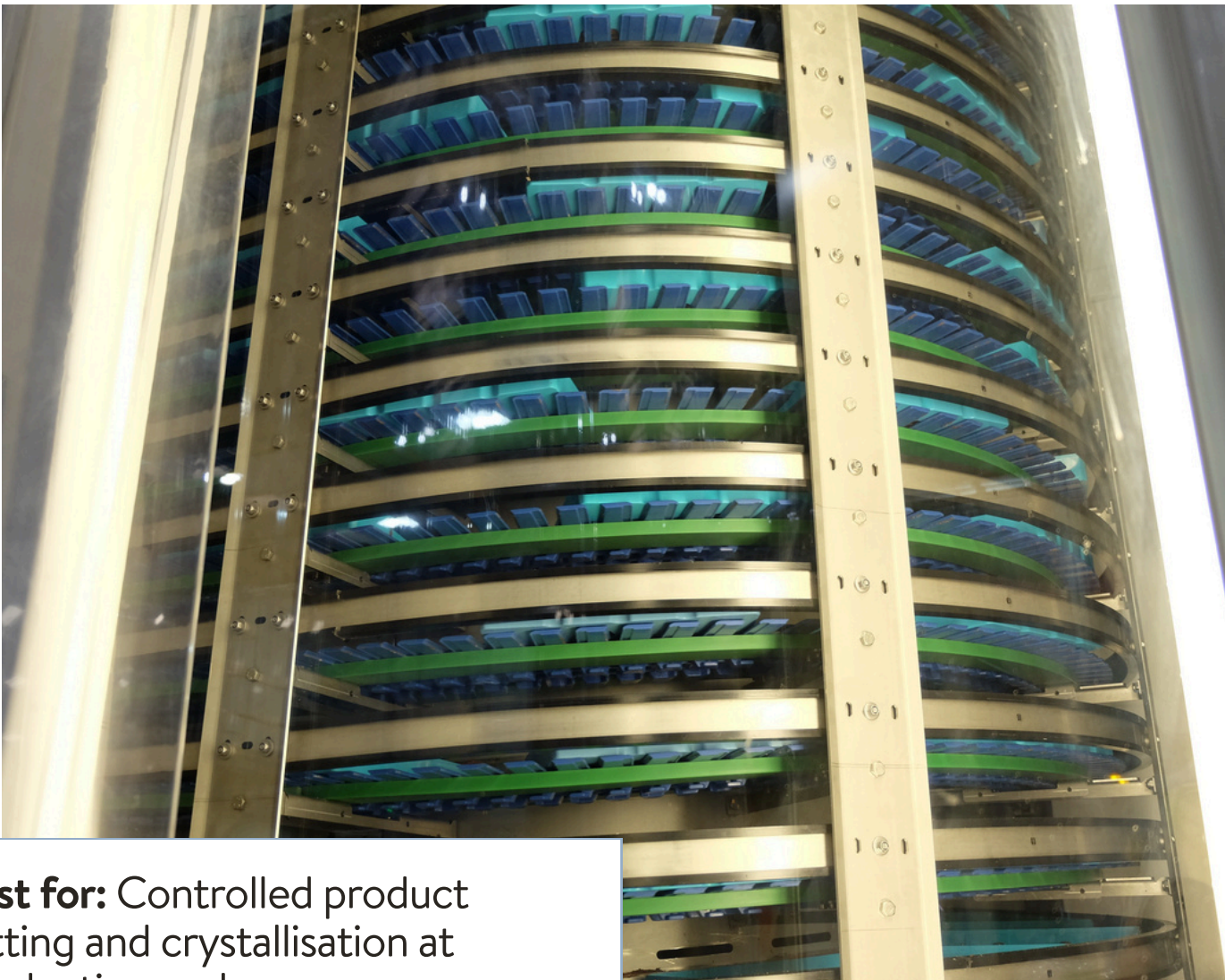


Best for: Removing trapped air and improving product distribution within moulds

4. Cooling Spirals

Cooling helps control the temperature profile of moulded products as they move through the line. Cooling spirals use the least floor-space and ensure even cooling from both sides.

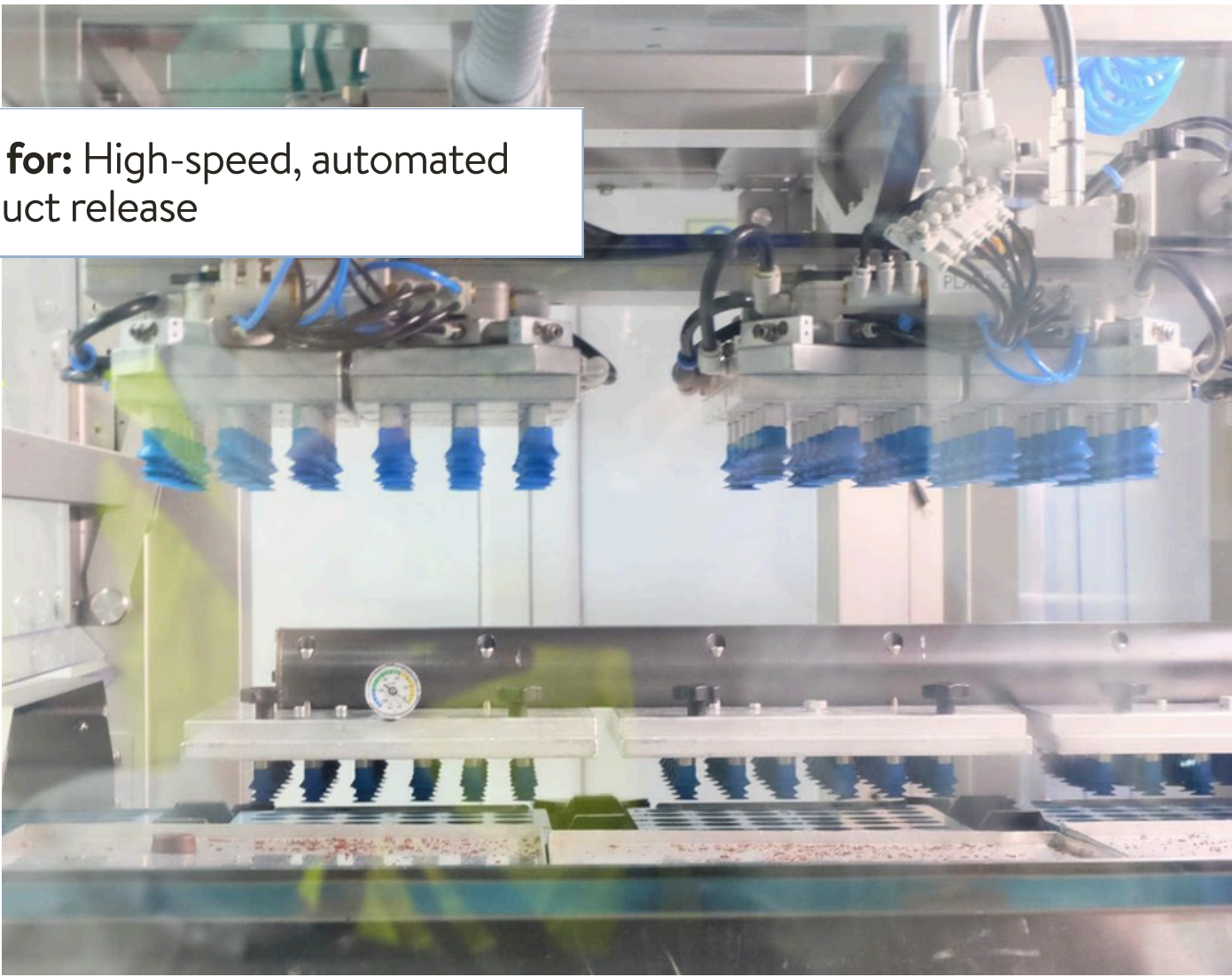
Effective cooling supports correct crystallisation and product setting while helping manufacturers balance cooling time against the throughput requirements of the wider line.



Best for: Controlled product setting and crystallisation at production scale

5. Demoulding Systems

Demoulding systems automate the release of finished products from moulds, ensuring clean separation without damaging the product surface. By reducing manual handling and maintaining consistent cycle times, they help keep production lines running efficiently.



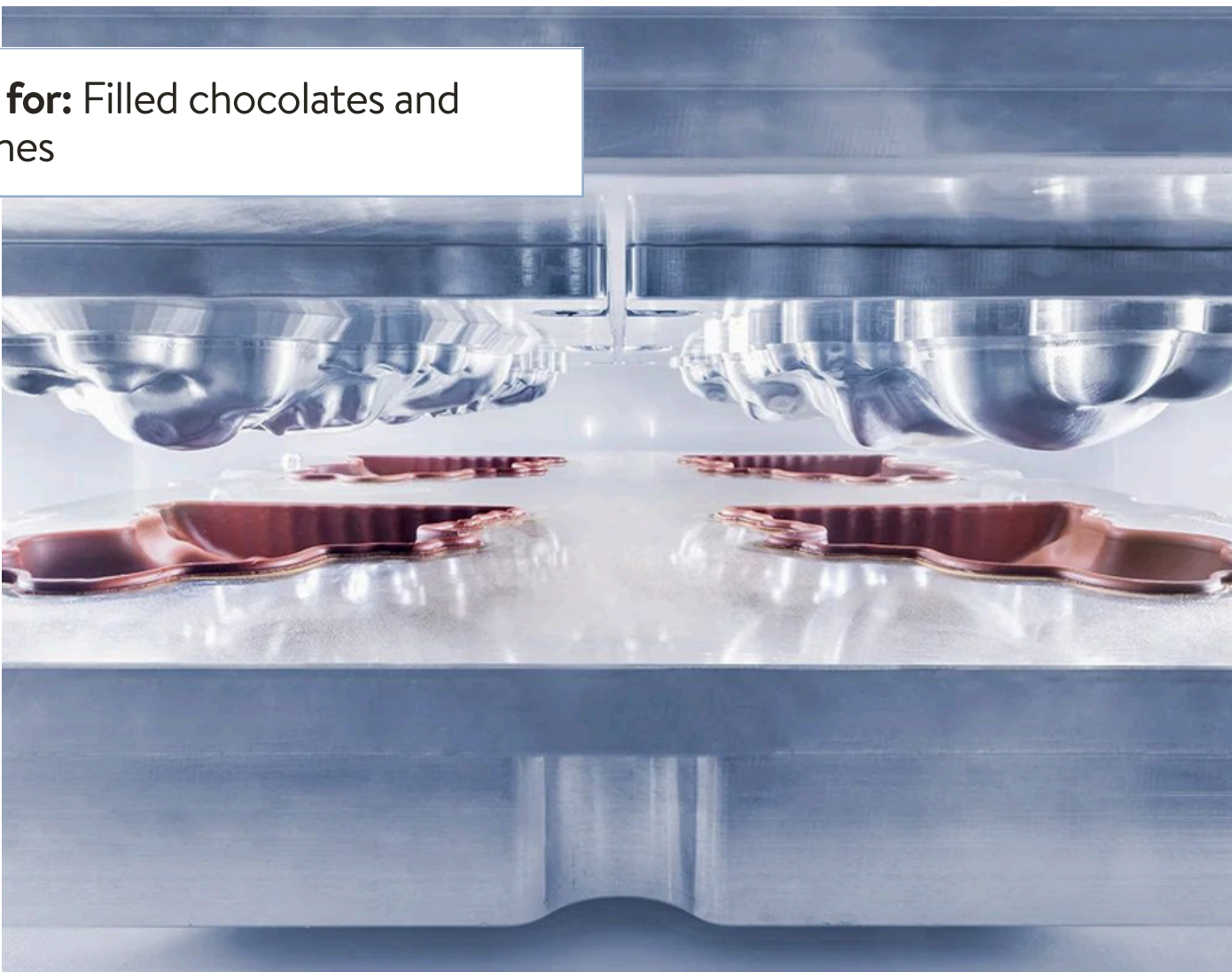
Best for: High-speed, automated product release

6. Shell-forming systems

Shell-forming systems create uniform chocolate shells for filled products by controlling thickness, drainage, and structure.

Advanced systems, such as ColdPress®, allow manufacturers to produce consistent shells while optimising chocolate usage and maintaining flexibility across different product types.

Best for: Filled chocolates and pralines

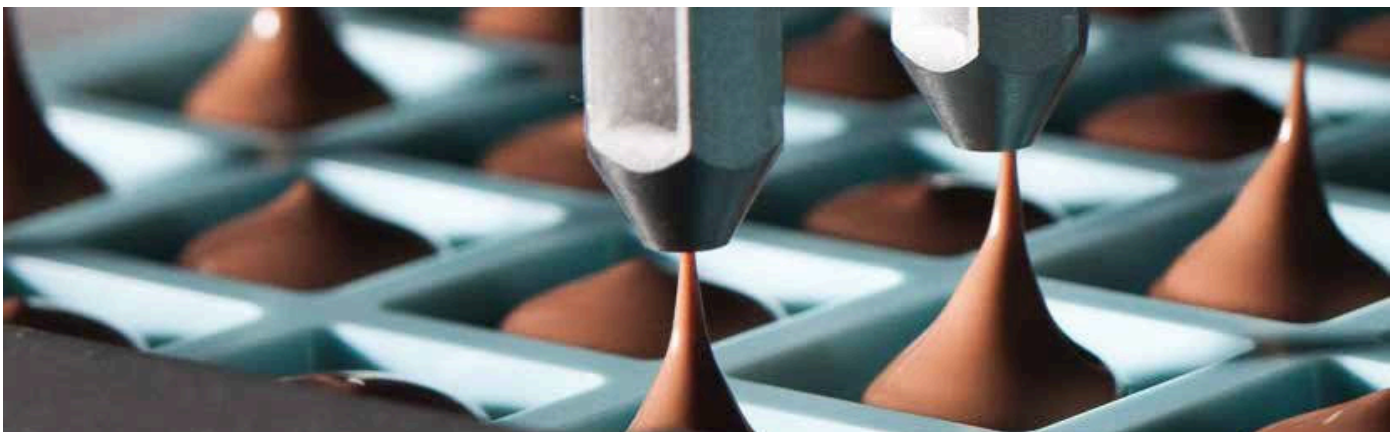


7. Supporting systems

Alongside the main moulding equipment, a production line may also require:

- **Mould heating and pre-conditioning:** Triknø designs and manufactures machines that prepare moulds to support continuous, high-efficiency production runs
- **Cleaning and drying systems:** Help maintain hygiene and prepare moulds for reuse with cleaning systems from the likes of Kerres Hygiene Systems.
- **Automation and control systems:** Coordinate equipment and provide greater visibility over process performance

Choosing between these systems depends on more than the performance of each individual machine. Line speed, available space, maintenance access and compatibility with existing equipment all need to be considered when determining the right combination for the wider production process.



Hygiene, safety, and regulatory compliance

01 Operational safety

Operational safety in moulding environments centres around the safe management of moving equipment and process conditions. Mould conveyors and automated handling systems operate continuously at speed, requiring appropriate guarding, monitoring, and operator awareness.

In addition, depositing systems involve pressurised chocolate at elevated temperatures, introducing both mechanical and thermal risks. Clear lockout and isolation procedures during maintenance are essential to prevent accidents and ensure safe access to equipment.

02 Food safety and compliance

Food safety is closely linked to how moulds and equipment are handled throughout the production cycle. Mould cavities represent hygiene-critical surfaces, so effective hygiene systems are essential for maintaining product integrity and reducing the risk of contamination.

Allergen control is particularly important when moulds are reused across different product runs, requiring strict cleaning and validation processes. Care must also be taken during storage and transport to prevent dust, moisture, or foreign material from compromising the mould surface.

Hygiene, safety, and regulatory compliance

03 Thermal and material considerations

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Every moulding operation has different needs, products, equipment and production constraints. That's why we look at your process as a whole.

Through our [Bespoke Process Engineering service](#), we can work with you to specify and integrate the right combination of machinery around your existing line, production targets and longer-term requirements.

Storing and disposing of used moulds

01 Storage best practice

Moulds should be stored in clean, dry, and controlled environments to prevent exposure to dust, moisture, and temperature fluctuations. Stacking should be carefully managed to avoid scratching or deformation, particularly for precision polycarbonate moulds. Ensuring moulds are fully cleaned and completely dry before storage is essential to prevent residue build-up and water spotting, both of which can affect product finish.

02 Lifecycle management

Over time, moulds naturally degrade through repeated use, cleaning, and handling. Tracking usage cycles and regularly inspecting surface condition helps identify when performance begins to decline. Early signs such as reduced gloss, poor release, or visible wear should be addressed promptly to avoid impacting production quality or efficiency.

03 Disposal and recycling

When moulds reach the end of their usable life, they should be removed from production and disposed of responsibly. Where possible, recycling options should be considered, particularly for plastic-based moulds. Proper disposal not only supports sustainability goals but also ensures that worn or damaged moulds do not re-enter the production process and compromise product quality.

Our experts can also advise on mould storage, lifecycle management and end-of-life considerations as part of the wider production process.

We draw on specialist knowledge from across the industry, including the expertise of our Principal, [Hans Brunner](#), to help manufacturers manage mould performance throughout the full mould lifecycle.



In the complex landscape of chocolate production, Premier Forrester stands out as a trusted partner with over 25 years of industry experience in end-to-end food production and consultancy solutions.

Whether you're scaling up production, modernising outdated equipment, or developing a bespoke chocolate line, Premier Forrester can provide high-performance tempering solutions suited to your needs.

Ready to talk?

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