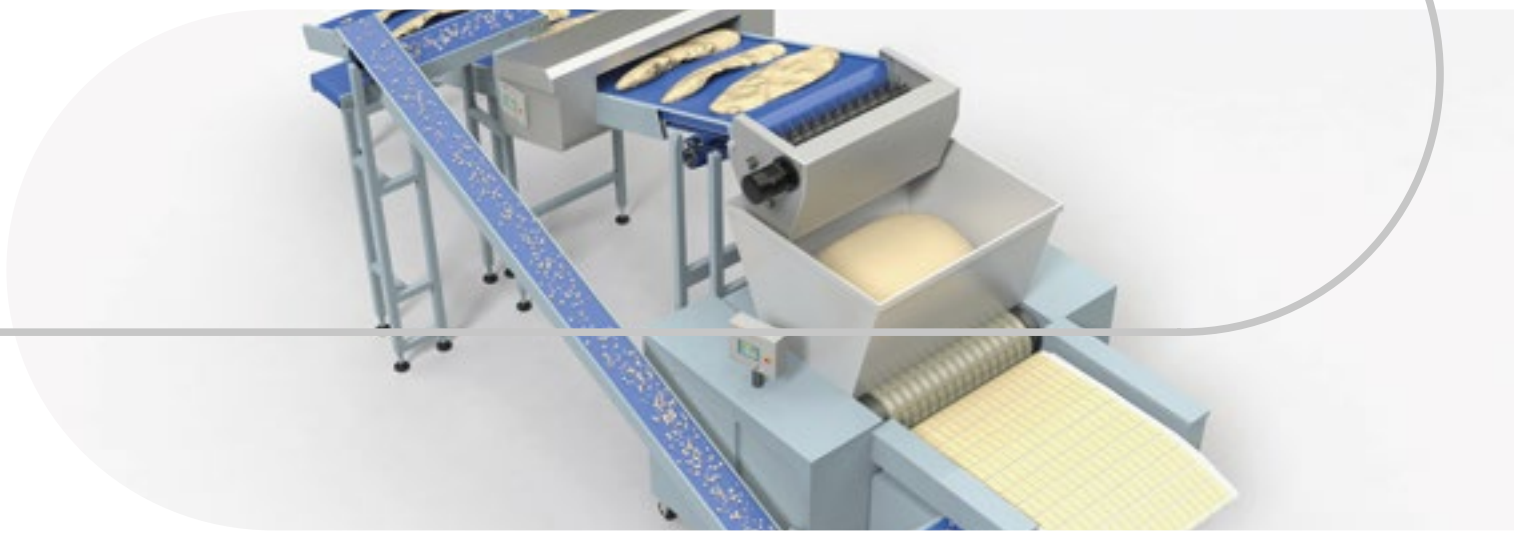
Selection and Handling of Habasit Rotary Molder Belts



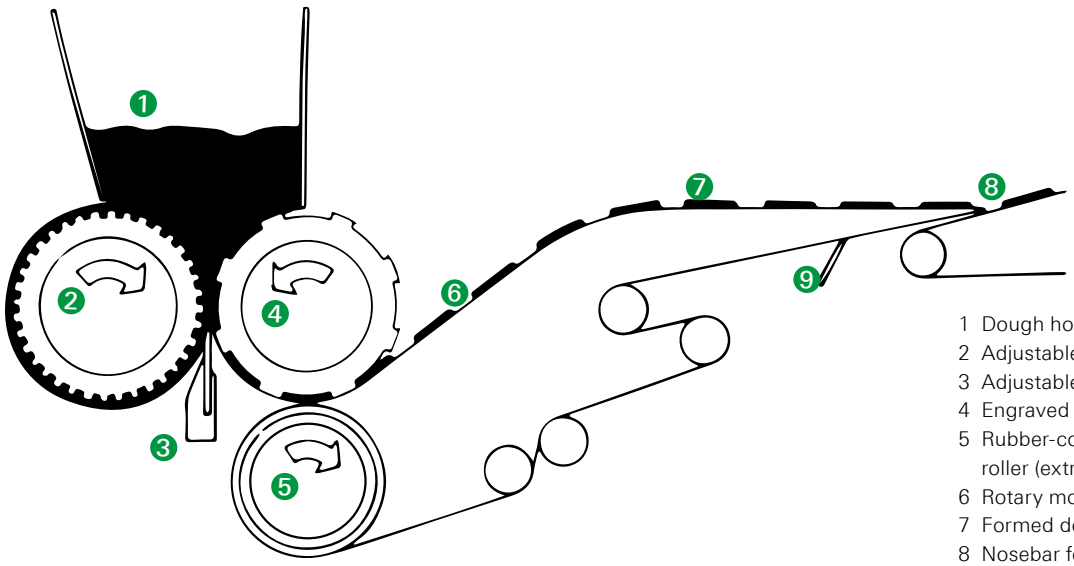
Rotary molding is a key process in shaping biscuits Engraved rollers are used to shape biscuits from dough. The rotary molder belt (also called the extraction web) extracts the raw biscuits from this roller, supported by the forces of the pressure roller driving the belt.

Tight transfer to the next processing belt ensures biscuit shape integrity.

A seamless belt is preferred over products with a joint in order to achieve uniform suction (a.k.a. ‘extraction’). The uniform belt thickness leads to continuous biscuit molding quality.

Seamless belts with a “real” woven edge = selvedge design are superior to belts with cut edges due to higher belt stability and less edge fraying.

Rotary molder selection guide



1 Dough hopper
2 Adjustable forcing roller
3 Adjustable scraper
4 Engraved molding roller
5 Rubber-coated pressure roller (extraction roller)
6 Rotary molder belt
7 Formed dough pieces
8 Nosebar for tight transfer
9 Scraper

Belt selection advice
If the belt design in use is unknown:

1
For dry dough and thin biscuits
Plain weave (P)
→
2
For fat dough and thick biscuits
Cross twill (BH)
→
3
To increase cotton
Check use of PET yarns or use Herringbone (H)

Extraction behavior:

P **BH** **H**

Low suction High suction

If the belt design is known, check any shortcomings:

- Insufficient suction → select a different fabric design or contact our Technical Support for help
- Insufficient release → select a different fabric design or contact our Technical Support for help
- Short lifetime due to stress from nosebar → use a thinner, more flexible weave
- Belt elongation → use a thicker belt (if the nosebar allows) or replace linen by polyester for more stability
- Edge wear → review tracking in line; polyamide-reinforced edges are possible, but reduce the area of use and do not add real edge protection

Rotary molder installation guide

Belt pre-treatment
Rotary molder belts frequently need pre-treatment to make suction work properly. Common approaches by customers:

- Use of dough = put dough on the belt during start-up
- Use of fat/slurry = typically fats used in dough, or a combination of fats, or a dough/water slurry
- Use of water = uncommon, as dough running on rotary molder lines is usually quite fatty

Habasit belts work well with any of these pre-treatments. They depend on customer-specific dough and line habits.

Belt start-up
When running-in rotary molder belts, several parameters need to be monitored:

- Tensioning
  Provide proper tensioning to ensure good tracking. Over-tensioning risks elongating the belt. Typically 0.3% – 0.5% pretension is fine.
  During the running-in period (up to a few weeks after start-up) rotary molder belts tend to elongate due to their high natural fiber content. Make sure when dimensioning the belt that enough take-up is available.
  The pressure roller pushing the belt against the molding roller has a strong influence on belt tension. This pressure impacts the suction capacity of the belt as well as the biscuit shape and weight.
- Scraper position and pressure
  Scrapers are installed after biscuit transfer in belt return. Over-pressure will abrade the belt, while too light a pressure leaves too much dough residue and so limits biscuit suction.
- Speed and roller alignment to avoid tailing
  The belt speed needs to be properly aligned to the rotation of the engraved roller and pressure roller. Speed differences can lead to belt abrasion and – even worse – impact dough suction and release, thereby leading to misshaped biscuits (a.k.a. tailing).
- Monitoring of suction and release
  This needs to be done by the user during running-in until a satisfactory result is achieved (belt shape, release, suction). All the above parameters contribute here and need to be adjusted gradually.

Belt maintenance
To ensure good belt performance over the belt lifetime, we recommend setting up proper processes as follows:

- Relax the belt after stopping the line
  It is important to slacken the rotary molder belt after use, including for shift interruptions. This reduces the risk of elongation.

- Choose the right cleaning option to prevent shrinkage
  Most ongoing cleaning is done by the installed scraper, so belt function is not impacted by moisture or cleaning agents.

  In cases such as belt changes for different doughs, dry cleaning is preferred. If wet cleaning must be done, proper drying under tension is recommended (or the belt might shrink).

  Do not use any chemicals!

  After taking belts out of use, pre-treatment is recommended at restart. If a belt is fully cleaned and stored, pre-moistening helps to prevent yarn breakage.

- Prevent edge fray
  It is essential to check belt tracking and the conveyor design to ensure a long lifetime for belt edges. Running properly square also supports belt design stability and thus a longer service life than if the belt is allowed to run off and become misshapen.

- Store spare belts with care
  Store spare belts in their original packaging. Protect from sunlight and sharp objects to avoid any harm.

  Keep in a cool, dry place
  (not below –10 °C / *14 °F* or above +25 °C / *77 °F,* with relative humidity between 40% and 65%).
  Storage should not exceed two years.

Troubleshooting

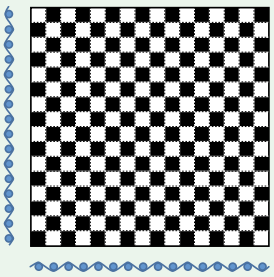
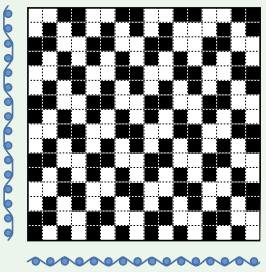
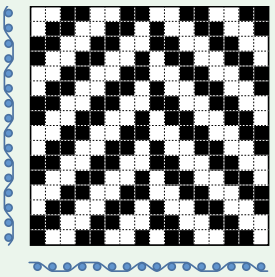
Helpful hints in case of belting issues

Issue with	What to do
Suction (extraction , tailing, weight accuracy)	• Check and adjust force of pressure roller • Check belt surface (completely covered = replacement needed) • Check belt tension • Check rubber surface of pressure roller • Adjust force of pressure roller • Adjust belt speed against rollers • Check cavity accuracy • Adjust pressure of forcing roller • Adjust scraper • Review belt selection
Wear	• Check relative speed of rollers and belt • Check scraper positioning • Check pressure roller (rubber, pressure) • Check surface of brass molding drum
Tracking (Real endless belts generally track well)	• Check parallelism of equipment • Check cleanliness of rollers • Avoid profiles, use automated correction
General advice	• Release tension after use, allowing relaxation of the belt • After long standstill, re-moisten the belt (to avoid yarn breaks) • Wet cleaning of dough-saturated belt is possible in order to extend belt lifetime – but only for a short while

Note
Rotary molder belts are woven to given dimensions. After weaving, relaxation leads to slightly wider belts, which can easily be tensioned out during installation.
Important: Order the belt in the required installed length and width!

Rotary molder selection guide
Product design overview and benefits

Common weave patterns
Seamless belts used in rotary molding are offered in three common weave patterns:

Plain weave (P)	Cross twill weave (BH)	Herringbone weave (H)
		
The versatile solution for most biscuits – commonly used	An enlarged surface to handle larger biscuits, or dough with a higher fat or moisture content	The ultimate solution for most short and heavy doughs with demanding extraction needs
		

Materials used
Natural fibers such as cotton are the standard materials used due to their excellent extraction behavior, based on the absorption of fat and moisture from the biscuit dough.

To improve service life, Habasit rotary molder belts are made not only using cotton, but also with polyamide and linen fibers to add wear resistance and lateral stability, and to improve the suction and release properties of cotton.

Solutions in motion

Comprehensive consulting and technical support
Profit from the best consulting and technical support in the lightweight belting industry. Local experts are always available to assist you with your belting needs. The Habasit team is proud to provide the highest level of support, together with top-quality products that have led the global market for decades.

Belt selection and calculation assistance
We are always glad to help you select the most suitable belt for any application for your convenience. We now also provide the free online tool 'SeleCalc' which allows you to easily make selections and calculations yourself.
Simply register online at selecalc.habasit.com.

Fabrication, assembly and local installation services
As a full-service belting provider, we offer joining and assembly services either at our own locations or directly on your equipment.

Habasit has over 30 affiliates worldwide, each with its own inventory, fabrication, assembly and service facilities.

Together with representative offices and numerous qualified distributors, we can react quickly and efficiently to meet all your needs.

Customer training programs
To ensure the optimal performance and maximum lifespan of all our products, we offer training programs and various support tools. This includes proper procedures for fabrication, installation, assembly, maintenance and belt repair, all of which take place at a Habasit site or at your location.

Belt monitoring, inspections, analyses and process optimization proposals
We organize and handle belt maintenance, inspections, analyses and surveys at customers' sites. Upon request, we are ready to develop optimization proposals to ensure you're getting maximum value from your machinery and process output.

Design assistance for customized solutions
Habasit believes in building partnerships with our customers. Our engineering team will work closely with your engineers on joint design developments from initial design to final implementation. This expert service can be invaluable for projects involving new technologies or large-scale modifications and adaptations.

For further information choose country selection Habasit Worldwide on:

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