INNOVAS+

Drop Chocolate Production Line

500 kg/h capacity

Compact, hygienic and reliable production system for chocolate drops and chips.

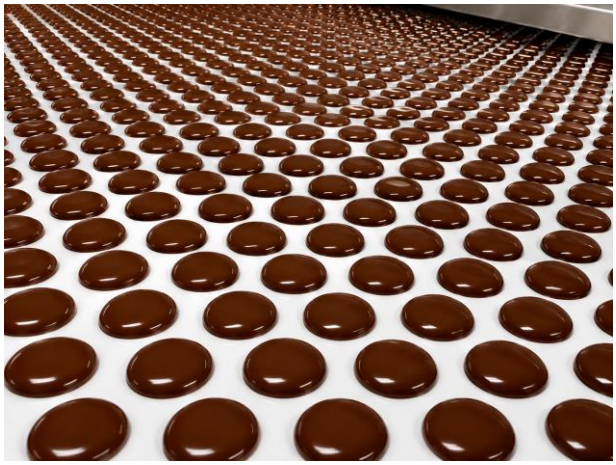
Full line concept for continuous chocolate drop and chip production

INNOVAS+ | DROP CHOCOLATE SOLUTIONS

Performance, Reliability and Innovas Service

A compact and serviceable production system for repeatable chocolate drop production.

The Innovas Drop Chocolate Production Line is developed for continuous, hygienic and repeatable production of chocolate drops and chips.



Built for reliable day-to-day operation.

Dependable processing

Robust mechanical structure and hygienic stainless-steel surfaces support long-term operation.

Consistent production results

Synchronized rotary speed, belt speed and chocolate feed help stabilize product weight and shape.

Easy maintenance

Accessible guards, removable parts and clear adjustment points reduce cleaning and maintenance time.

Innovas service support

Operator training, spare parts and remote/onsite support can be organized according to project needs.

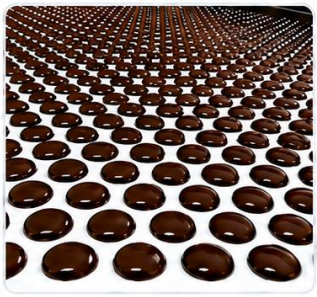
Consistent Product Quality

Uniform drops, clean release and repeatable appearance are the main production targets.

Chocolate Drop and Chip Product Forms

Chips / Drops

Stable chip shape for baking, inclusions and industrial use.



Fresh Deposited Drops

Glossy deposited drops on PU or steel cooling belt.

Coin Type

Flat coin geometry can be created by recipe and line settings.

Rows on Belt

Uniform distribution across the operating width.

Recipe dependent
Viscosity, yield value and fat content influence drop shape.

Adjustable size
Drop diameter and height are adjusted by nozzle set, speed and line settings.

Product quality
Specifications may vary and ease depend on tempering and cooling.

Different product forms and production results can be reached by recipe and line parameter control.

Uniform size Consistent drop diameter across the full belt width.	**Free-flowing product** Stable product shape suitable for baking, inclusions, snacks and industrial use.
Clean release Controlled belt surface and cooling profile help minimize tailing and sticking.	**Gloss and appearance** Correct tempering and controlled cooling improve product shine and surface quality.
Recipe flexibility Dark, milk, white and compound chocolate recipes can be handled after validation.	**Capacity focus** Target capacity depends on product size, recipe, cooling time and line speed.

How the Process Works

From tempered chocolate mass to formed drops: every stage is controlled for shape, capacity and consistency.

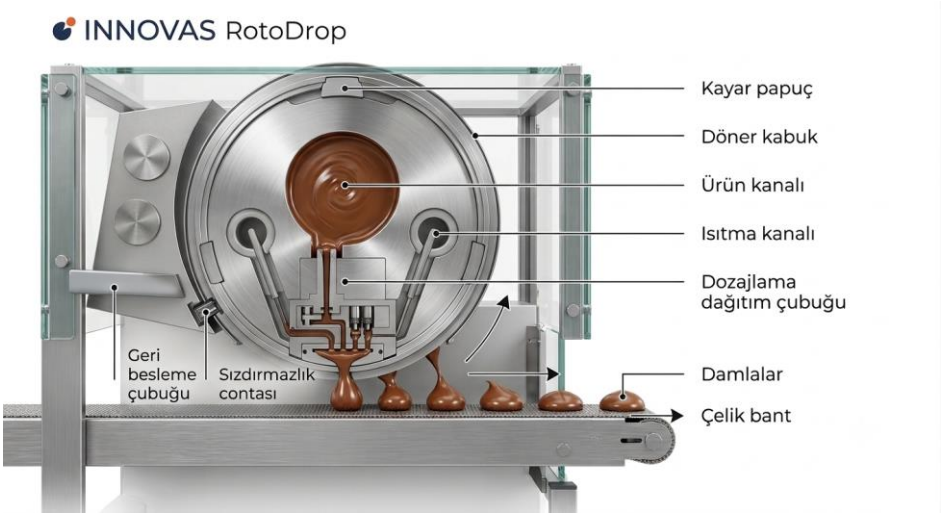
Chocolate Drop Production Flow

1. **Tempering Machine** — stable crystal structure
2. **Chocolate Pump** — constant product feed
3. **Inlet Filter** — 500-1000 micron protection
4. **Rotary Depositor** — synchronized dosing
5. **Cooling Tunnel** — controlled solidification
6. **Discharge Collection** — ready for packaging

Process control focus

Capacity and product shape are controlled by the relationship between product viscosity, rotary speed, belt speed, depositor height, vibration, scraper setting, chocolate temperature and cooling profile.

Chocolate process flow adapted for a 500 kg/h drop chocolate production line



Rotary depositor principle: heated product channel, perforated rotating shell and synchronized moving belt

Rotary Depositor and Nozzle System

The rotary depositor converts a stable tempered chocolate flow into uniform drops or coin-type products.

Heated rotary assembly

Temperature-controlled rotary depositor keeps chocolate in fluid condition during continuous production.

Nozzle shell

Hole diameter and nozzle layout define product size, pitch and row distribution.

Synchronized speed

Rotary speed and belt speed are adjusted together for stable drop shape.

Scraper / refeed effect

Scraper setting and shell cleaning influence product shape and production continuity.

Manual height adjustment

Distance between rotary drum and belt must be set without touching or damaging the belt.

Chocolate Recipe and Shape Factors

Drop and coin quality is strongly affected by recipe, viscosity and yield value.

Product Shape Factors: Drop vs Coin

Recipe and line parameters work together. Change one parameter at a time and observe the result.

No Tail / Rounded Drop

Smooth, rounded shape with no tail. Slight base spread.

Tail Formation

Tail is forming. Indicates higher viscosity or faster drop-off.

Coin / Flat Product

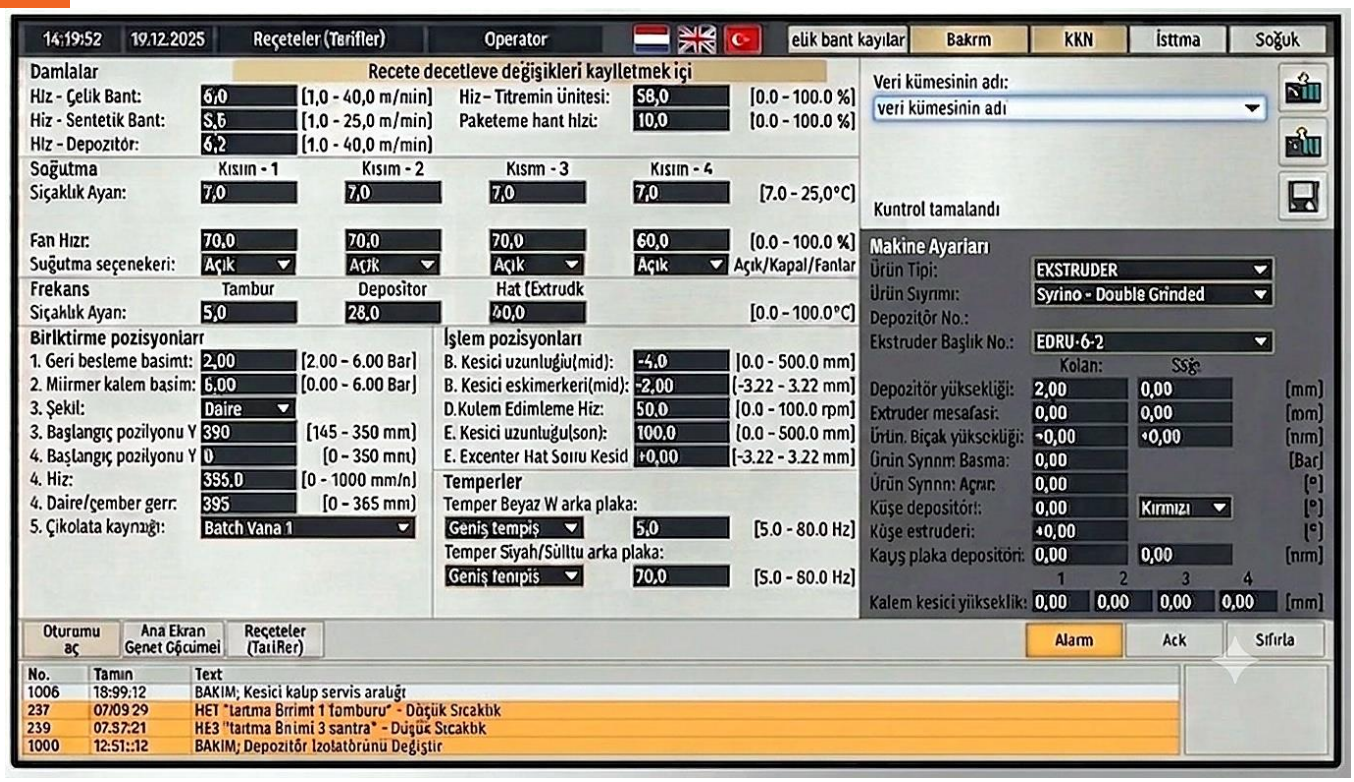
Flat, coin-like shape. Higher spread due to lower viscosity or warmer mass.

Main influences: viscosity, yield value, oil content, chocolate temperature, rotary speed, belt speed, vibration

Viscosity High viscosity can prevent proper dropping and may pull the chocolate upward instead of releasing cleanly.	**Yield value** Higher yield value helps the product resist flow and can support sharper drop structures.
Oil / fat content Fat content is one of the most effective parameters for flow behavior in rotary applications.	**Inlet filtration** A 500-1000 micron inlet filter helps prevent hard particles from blocking small depositor holes.
Temperature control Chocolate and rotary temperatures should be kept stable to maintain flow and tempering quality.	**Continuous running** Short stops and frequent start/stop cycles should be avoided whenever possible.

Line Parameter Control

Change one parameter at a time and observe the impact on product shape and capacity.



Example HMI recipe screen for drop line parameters, temperatures, speeds and alarms

Parameter	Typical operator effect	Production note
Belt speed	Defines product pitch and residence time	Increase together with rotary speed after observing drop shape.
Rotary speed	Controls depositing rate and release behavior	Usually adjusted close to belt speed for balanced production.
Vibration	Improves rounding and levelling	Keep active for rounded drops unless product trials show otherwise.
Scraper	Influences shell cleaning and product release	Can be switched according to product behavior and capacity target.
Rotary height over belt	Affects drop tail and landing shape	Never allow the rotary drum to touch the PU belt.
Pump frequency	Increases product feed volume	Large changes may affect tempering stability and product quality.

Cooling Belt and Tunnel System

Controlled cooling is essential for gloss, shape stability and clean release from the belt.

Indirect entrance cooling

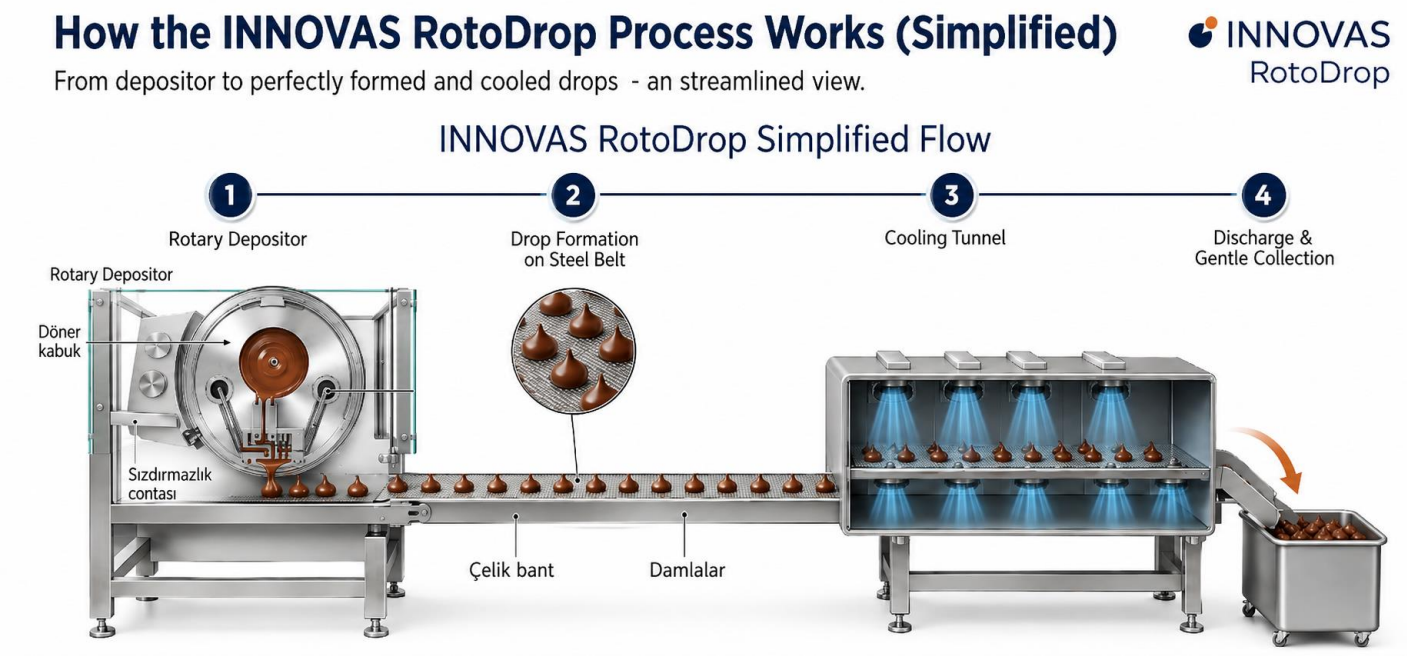
Gentle entrance cooling helps avoid surface stress and unstable gloss.

Direct main cooling

Main zone cooling removes latent heat and stabilizes the final drop shape.

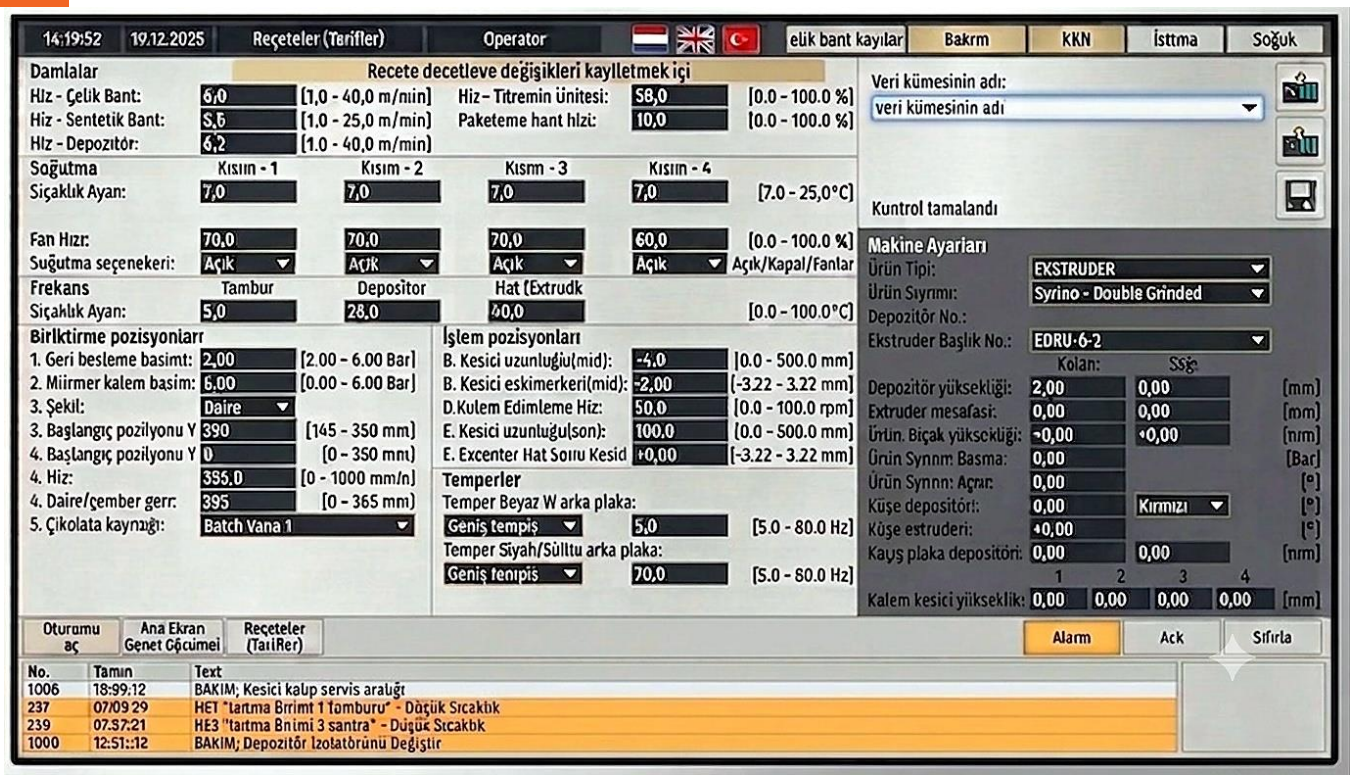
Exit temperature

Product should not leave the tunnel too cold to reduce moisture absorption risk.



HMI Control and Recipe Management

Production recipes keep critical parameters together for repeatable operation.



Operator interface for recipe, cooling, speed, depositor and alarm management

Recipe-based operation

Belt speed, rotary speed, cooling zone setpoints, fan speed and product type can be stored by recipe.

Alarm tracking

Operator can follow alarms, service intervals and production warnings from the HMI.

Parameter visibility

Speed, temperature, frequency, height and depositor settings are visible for controlled adjustment.

Multilingual interface

The sample screen includes Turkish, English and other language selection buttons.

Technical Data

Preliminary catalog data for a 500 kg/h chocolate drop production line.

Category	Item	Specification
Line overview	Product	Drop chocolate / chocolate drops / chips
Line overview	Nominal capacity	Up to 500 kg/h*
Line overview	Product type	Dark, milk, white and compound chocolate after recipe validation
Line overview	Typical product size	Recipe dependent; approx. 5-16 mm range
Construction	Frame and body	Food-grade stainless steel design, hygienic access
Construction	Product-contact parts	AISI 304 / AISI 316L or food-compatible materials according to application
Depositing system	Depositor type	Rotary depositor with optimized nozzle shell and heated product channel
Depositing system	Adjustment parameters	Belt speed, rotary speed, product feed, rotary height, vibration and scraper
Cooling system	Cooling method	Controlled tunnel cooling with zone temperature and air-flow management
Cooling system	Belt system	Food-grade PU or compatible cooling belt according to line design
Control	PLC / HMI	Recipe management, alarms, temperature and motion control
Utilities	Electrical supply	400 VAC, 3Ph + N + PE, 50 Hz; final load list after engineering
Utilities	Compressed air	Dry and oil-free air supply for pneumatic functions
Options	Possible options	Metal detector, checkweigher, extended cooling, automatic cleaning, remote access

* Performance depends on product recipe, chocolate formulation, drop size, cooling time and operating conditions.

INNOVAS+

Reliable technology for consistent chocolate drop production.

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