



# Krones filling systems for juice

Filling into glass and PET containers and cans

---



 **KRONES**

# Gentle systems for sensitive beverages



Juices and other juice-containing beverages require gentle treatment and filling in a first-class hygienic environment. Therefore, Krones systems place their emphasis on microbiologically safe design and gentle filling systems. In order to cover the entire range of products, Krones juice fillers master a range of processes. This processes include hot filling and cold filling as well as particle dosing and if you wish, even all of them on one machine.

## At a glance

- Processing of glass and PET containers, and cans
- Cold and hot filling
- Option FlexiFruit: Dosing of particles with a size of up to 10 x 10 x 10 millimetres
- Some models offer: Bottling of carbonated products possible without any conversion
- Possible as a single machine or blocked with the filler or cappers



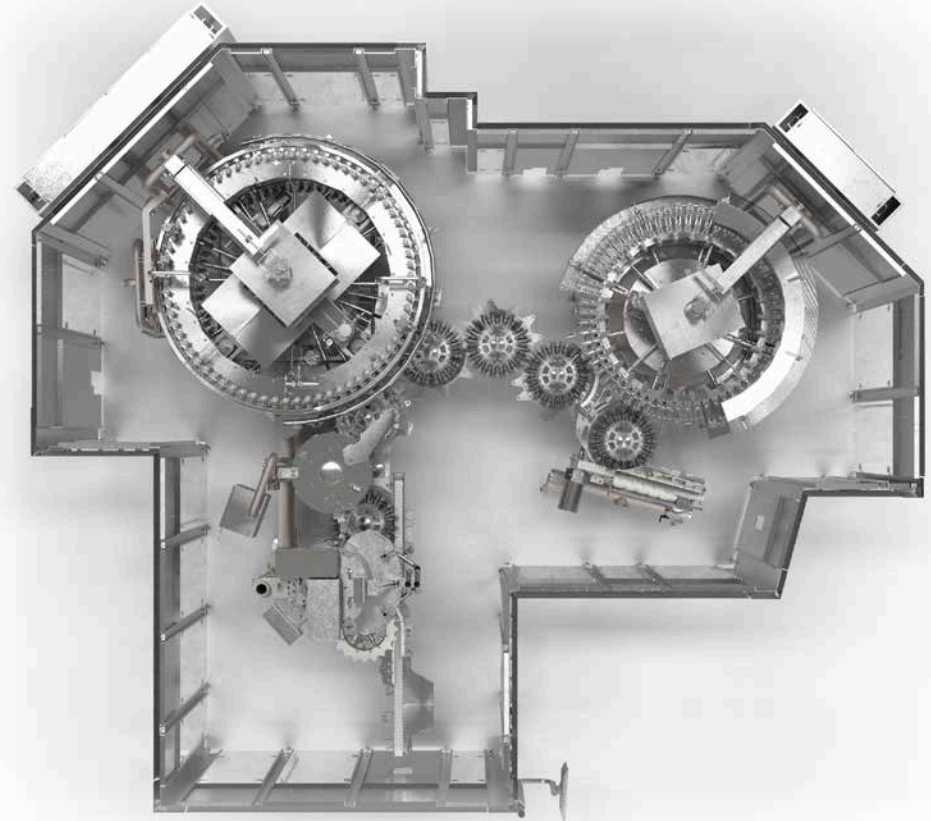
# The Krones Modulfill family



## Design features

---

- Design without table top thanks to the Monotec starwheel columns
  - Use from one side and with slanted table top possible if required
- Consistent use of servo motors
- Monitoring of the servo drives
- No lubrication of the drives required
- Stand-alone glass guard
- Main bearing in an oil bath
- High-precision pneumatic components with long service life
- Clean room enclosure as an option
- Modular design for easy expandability
- Possible as a single machine or blocked with the rinsers



# Die Krones Modulfill series

## Benefits to you



### Energy-efficient method of operation

Servo drives with individually adjusted motor sizes

### Hygienic design

- Little surfaces to clean
- Stainless steel design
- Easy accessibility for cleaning

### Modular design

- Can be expanded later with a rinser or several cappers
- If required: Block synchronisation with other machines possible



### Requesting a new machine

You can easily send a request for a non-binding quotation in our Krones.shop.





# Neck-handling of PET containers



# Modulfill VFS with PFR valves for the hot filling and standard filling of carbonated beverage



## The most important features

- Infinitely variable control of the filling speed by the Krones Proportional Flow Regulator (PFR)
- Precise determination of fill quantity via inductive flow meter
- Recirculation channel for heat retention of the product
- Cleaning in a closed system using automatically positioned CIP cups
- Version in hygienic design
- Product feed from top via adjacent product tank
- Bottling of carbonated products possible without any conversion

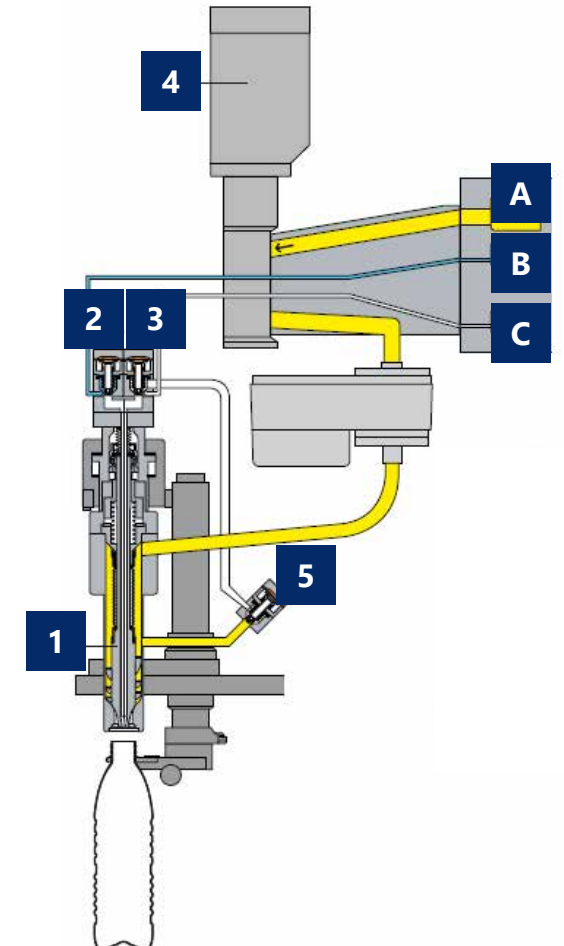
## Output

Up to 78,000 containers per hour

VFS Volumetric filling system, flow meter, short tube

### Basic position

- 1** Product stem
- 2** Pressurisation and return gas valve
- 3** Snifting valve (CIP relief valve)
- 4** PFR control valve
- 5** Hot return valve (CIP return valve)
- A** Product channel
- B** Pressurising and return gas channel
- C** Snifting and hot return channel (CIP return channel)



# Modulfill VFJ for cold filling



## The most important features

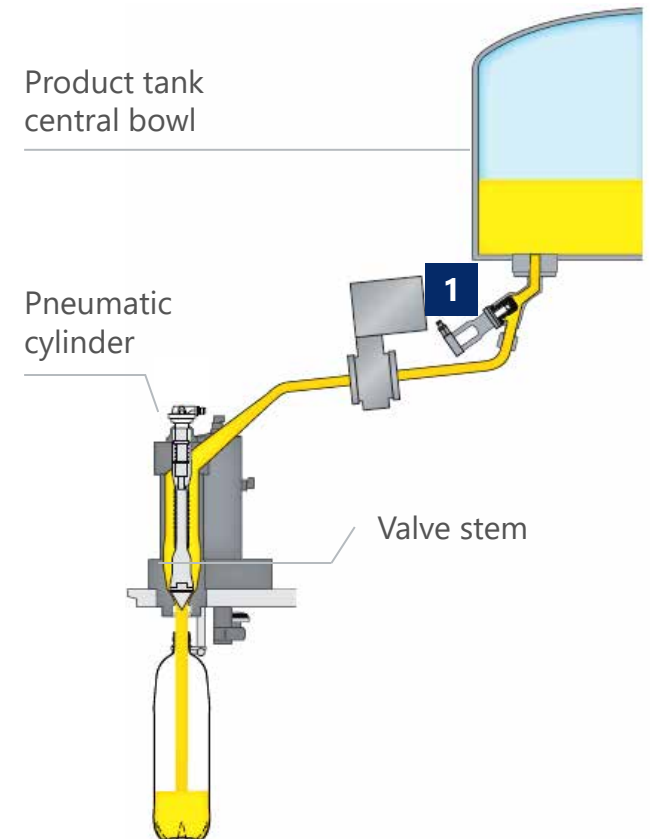
- High microbiological safety through contactless filling
- Precise determination of fill quantity via inductive flow meter
- Perfect flow characteristics through two filling speeds
- Turbulence-free switching between speeds thanks to diaphragm valve technology
- Cleaning in a closed system using automatically positioned CIP cups
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions

## Output

Up to 78,000 containers per hour

VFJ: Volumetric filling system, Flow meter, Full jet

**1** Switching valve fast/slow



# Modulfill NWJ for hot filling



## The most important features

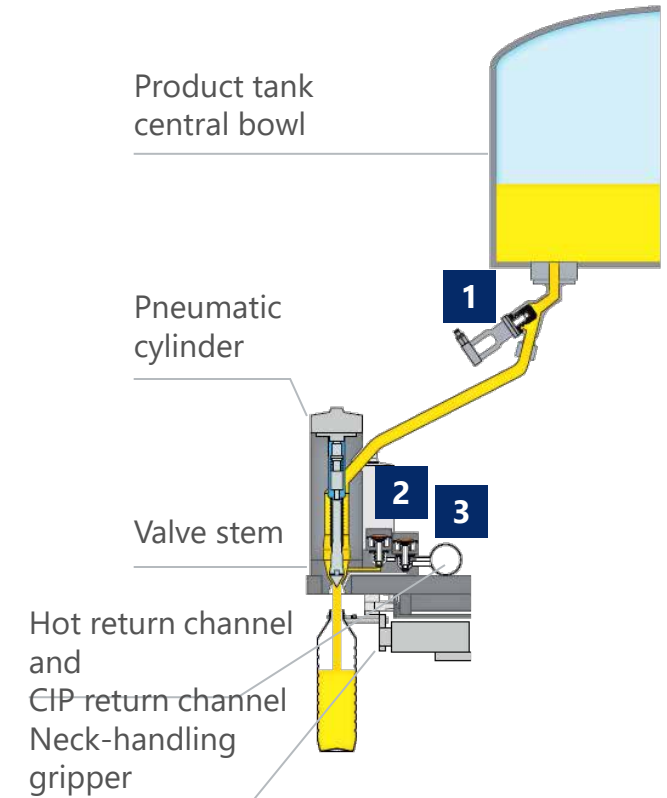
- High microbiological safety through contactless filling
- High-precision determination of the fill quantity with load cells
- Perfect flow characteristics through two filling speeds
- Turbulence-free switching between speeds thanks to diaphragm valve technology
- Recirculation channel for heat retention of the product
- Cleaning in a closed system using automatically positioned CIP cups
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions

## Output

Up to 78,000 containers per hour

NWJ: Net weight filling system, Weighing cell, Full jet

- 1 Switching valve fast/slow
- 2 Hot return valve
- 3 CIP return valve







# Base handling of glass containers



# Modulfill HEL for hot filling and for bottling carbonated beverages



## The most important features

- Minimum oxygen intake and foam creation via the bottom filling method
- Microbiological safety by filling in a multi-chamber mode and separate return gas channel
- Precise determination of fill quantity via a probe
- Recirculation channel for heat retention of the product
- Perfect flow characteristics through two filling speeds
- Closed CIP circuit
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions
- Filling of carbonated beverages possible

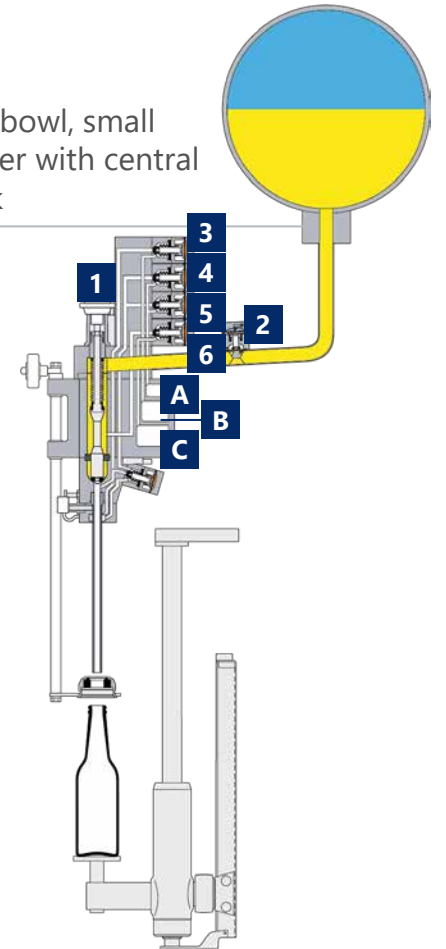
## Output

Up to 78,000 containers per hour

HEL: Height filling system, Electronic fill height measuring, Long tube

- 1** Valve stem open/closed
- 2** Switching valve fast/slow
- 3** Pressurisation and return gas valve, CIP return valve
- 4** Snifting and CIP return valve
- 5** CIP return valve
- 6** Hot return valve, CIP return valve
- A** Snifting and CIP return channel
- B** Pressurisation channel
- C** Hot return channel and CIP return channel

Tubular ring bowl, small pitch diameter with central product tank



# Modulfill HEL for hot filling



## The most important features

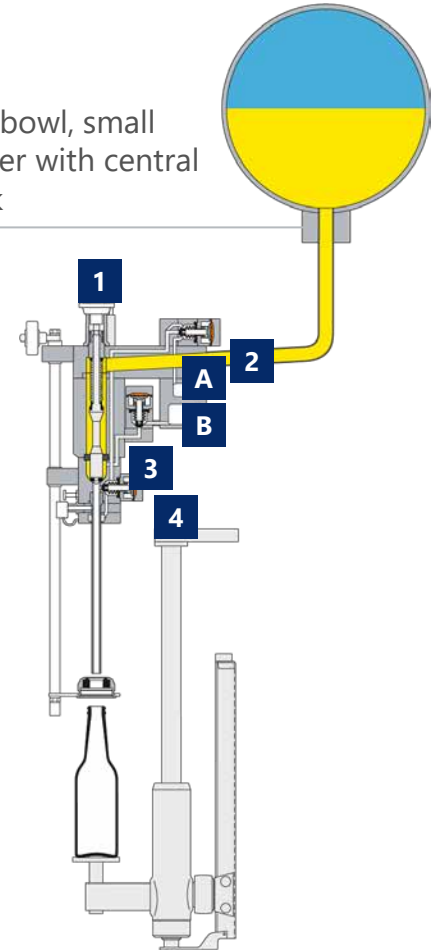
- Minimum oxygen intake and foam creation via the bottom filling method
- Microbiological safety by filling in a multi-chamber mode and separate return gas channel
- Precise determination of fill quantity via a probe
- Recirculation channel for heat retention of the product
- Perfect flow characteristics through two filling speeds
- Closed CIP circuit
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions

## Output

Up to 78,000 containers per hour

- 1** Valve stem open/closed
- 2** Return gas valve, CIP return valve
- 3** Hot return valve, CIP return valve
- 4** Pipe emptying valve
- A** Return gas channel
- B** Hot return channel and CIP return channel

Tubular ring bowl, small pitch diameter with central product tank





# Can base handling



# Modulfill VFJ-C for hot filling



## The most important features

- High microbiological safety through contactless filling
- Precise determination of fill quantity via inductive flow meter
- Recirculation channel for heat retention of the product
- Closed CIP circuit
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions

## Output

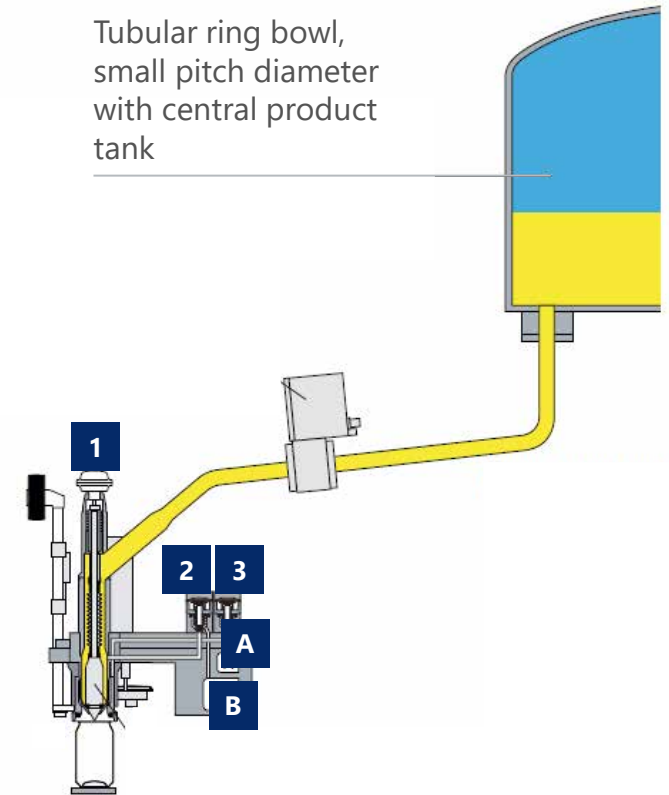
Up to 78,000 containers per hour

VFJ-C: Volumetric filling system, Flow meter, Full jet, Can

### Basic position

- 1** Valve stem open/closed
- 2** Hot return valve, CIP return valve
- 3** Return gas valve, CIP return valve
- A** Return gas channel
- B** Hot return channel and CIP return channel

Tubular ring bowl,  
small pitch diameter  
with central product  
tank



# Modulfill VFJ-C for hot filling and for bottling carbonated beverages



## The most important features

- High microbiological safety through contactless filling
- Precise determination of fill quantity via inductive flow meter
- Recirculation channel for heat retention of the product
- Closed CIP circuit
- Version in hygienic design
- Electro-pneumatically controlled filling valve functions
- Filling of carbonated beverages possible

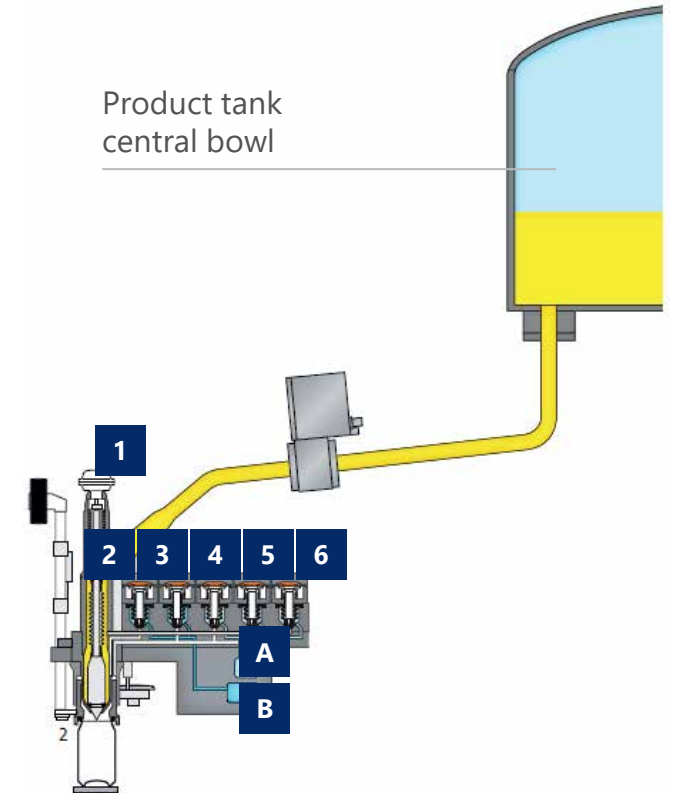
## Output

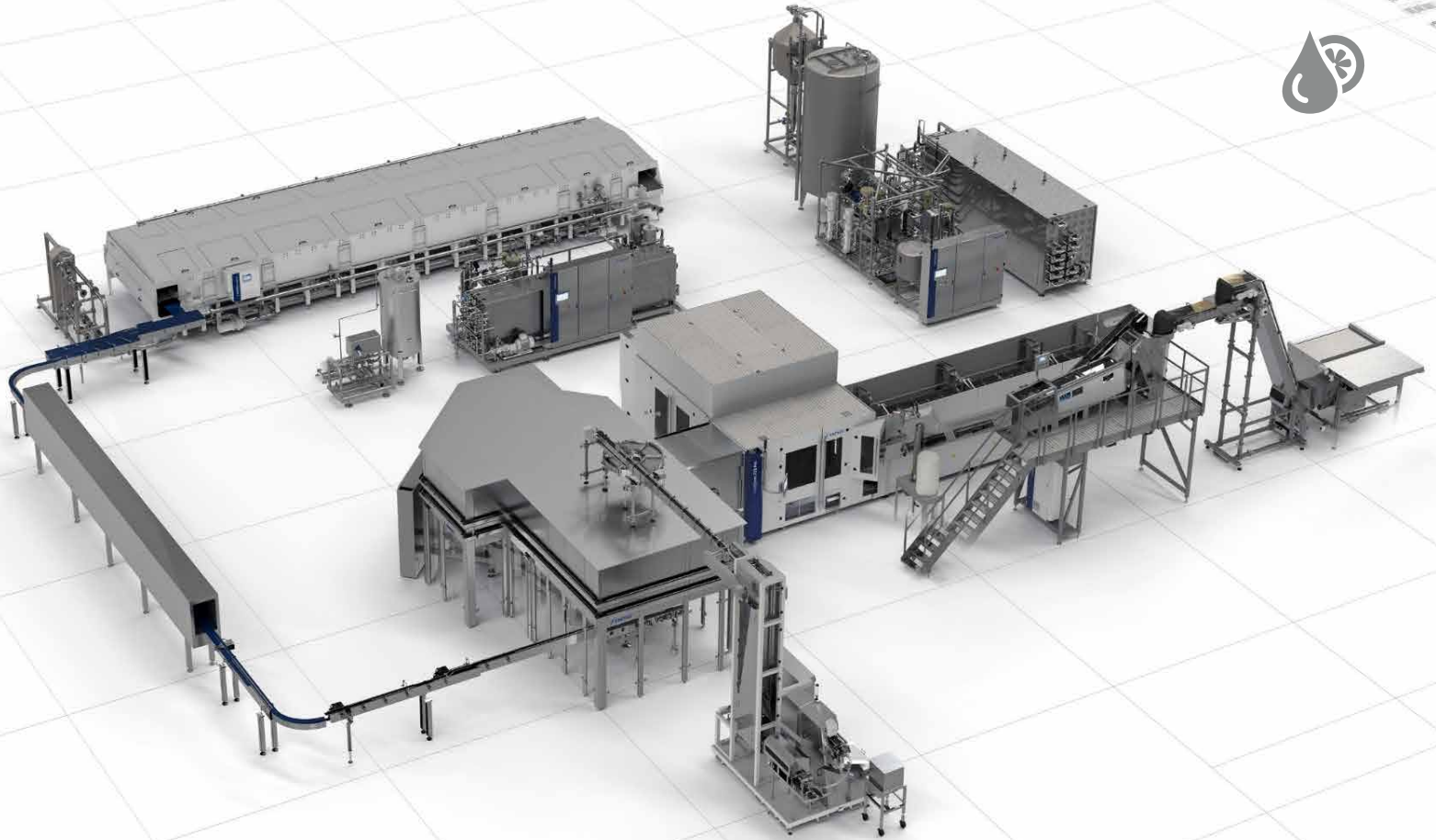
Up to 78,000 containers per hour

VFJ-C: Volumetric filling system, Flow meter, Full jet, Can

### Basic position

- 1** Valve stem open/closed
- 2** Flushing valve
- 3** Pressurisation valve
- 4** Snifting valve
- 5** Snifting valve, rinsing
- 6** Hot return valve, CIP return valve
- A** Hot return channel and return gas channel
- B** CIP return channel





# FlexiFruit

Dosing fruit pieces as if picked by hand

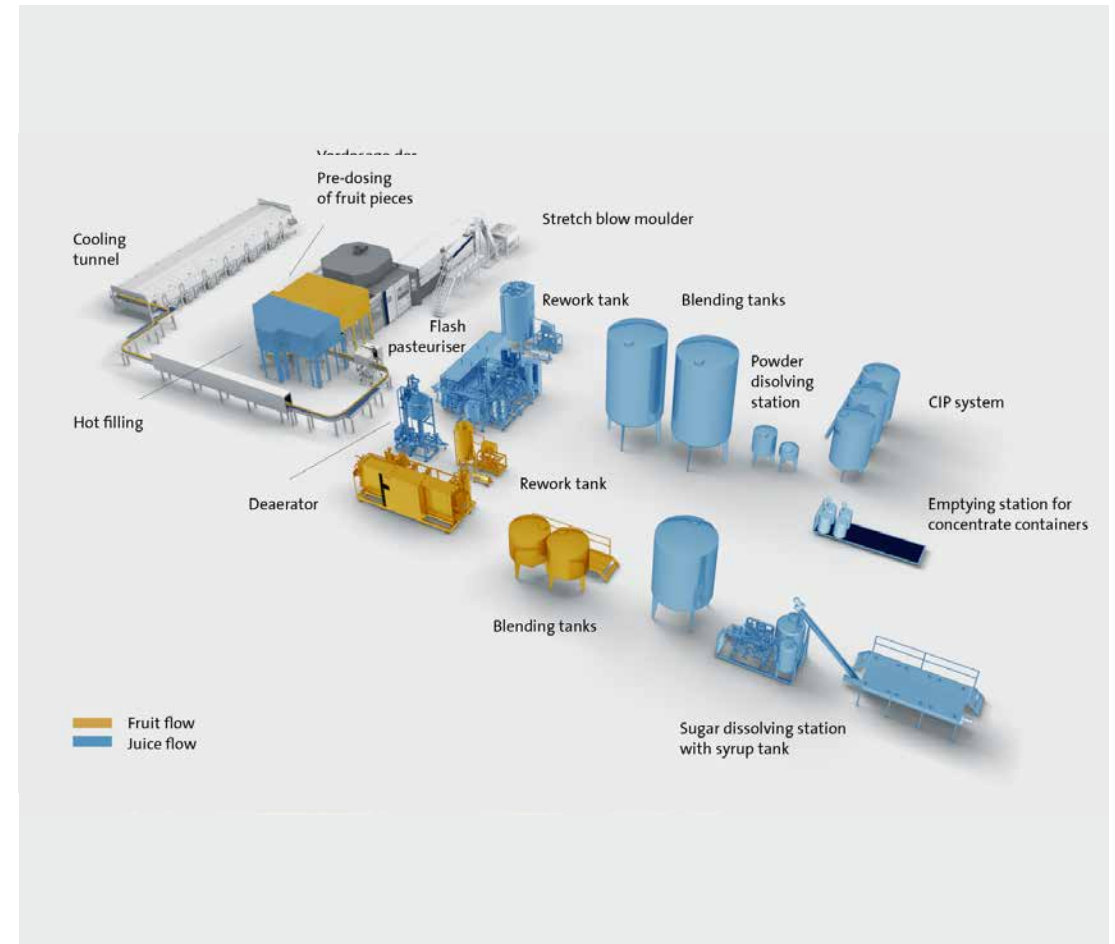
# FlexiFruit

## Your option for highest fruit quality

The Modulfill and FlexiFruit systems are an unbeatable team for premium beverages containing fruit pieces. Thanks to their task sharing, they safely fill sensitive beverages. First, the FlexiFruit doses the fruit pieces into the PET container and only after that step is the hot product filled. The FlexiFruit is suitable for fruit pieces with an edge length of up to 10 millimetres and processes even sensitive citrus fruit pockets with the right feel.

### The concept

- FlexiFruit: Dosing fruit pieces with a size of up to 10 x 10 x 10 millimetres
- Modulfill: Hot filling of the juice portion into the bottles which already contain the pre-dosed fruit pieces





# FlexiFruit

## Method of operation

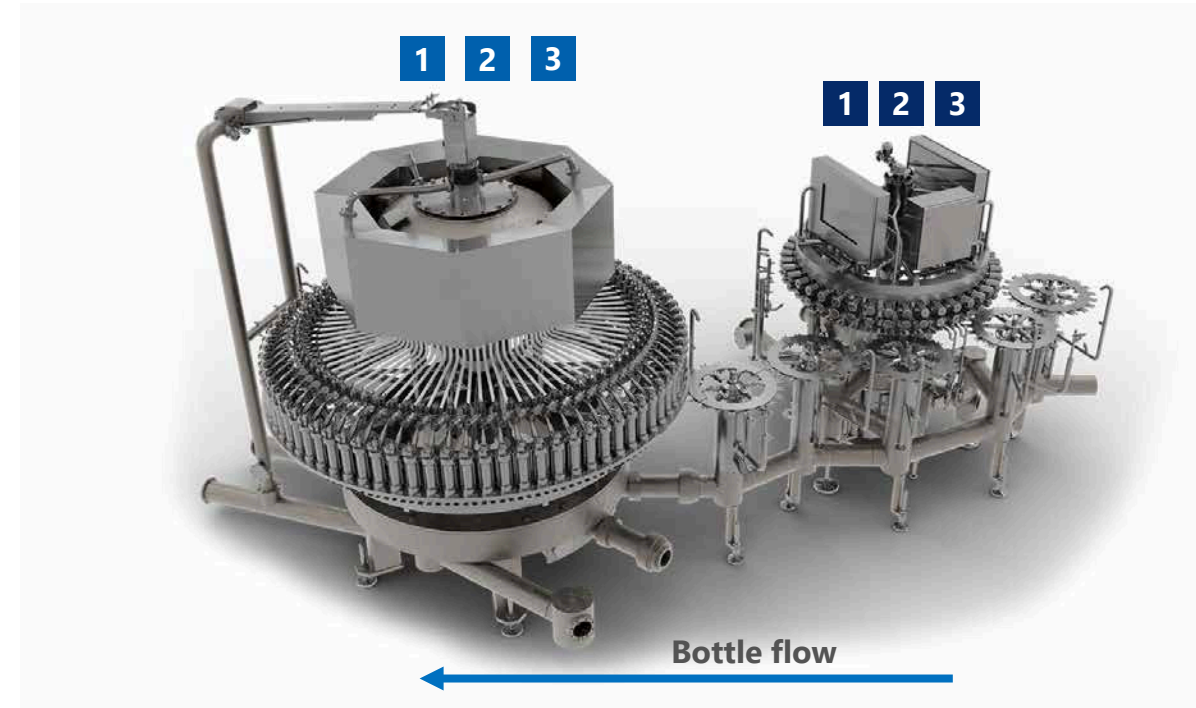


### FlexiFruit pre-dosing system

- Fills fruit pieces with diaphragm valves that are gentle on the product
- Keeps the fruit pieces in their original shape and structure - even for highly sensitive sacs
- Contact-free filling in accordance with hygienic principles
- Supplements the hot-filling process for fruit-juice products with particles

### Modulfill filler

- Fills the hot flow of juice
- Inspects the pre-dosed fruit pieces in the filler carousel
- Achieves an accurate fill level accuracy with minimum standard deviations and if required, automatic correction of every filling valve during operation
- Enables fast retrofitting and cleaning because there is no need for mechanical change-overs
- Suitable for easy maintenance and preventive maintenance



#### FlexiFruit pre-dosing system

- 1** Dosing of fruit pieces
- 2** Pipe draining
- 3** Drip-off time

#### Modulfill filler

- 1** Settling
- 2** Pre-dosing inspection
- 3** Filling

# FlexiFruit

## Fact and figures



Thanks to the separate processing of the fruit and the juice, any damage to the fruit particles is reduced to a minimum. This way, costs for obtaining the basic fruit juice ingredients can be reduced significantly.

### Case example

---

- Line output: 36,000 bottles/h at 0.5 litre bottles and 6,000 operating hours/year.
- Savings of raw material due to reduced damage rate and standard deviation by 2.25 g/bottle
- Savings potential\* at 1,000 €/tonne: 486,000 €/year

\* With optimum product process capability



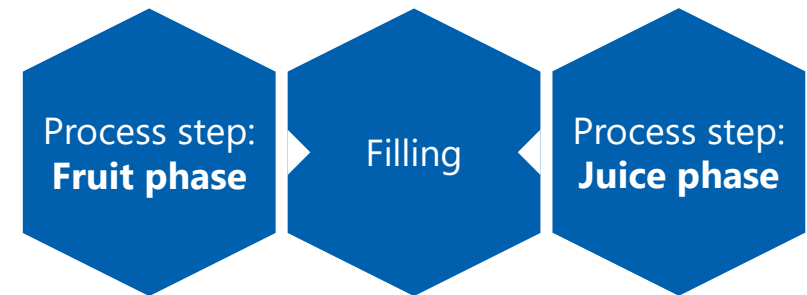
# Numerous options for filling particles



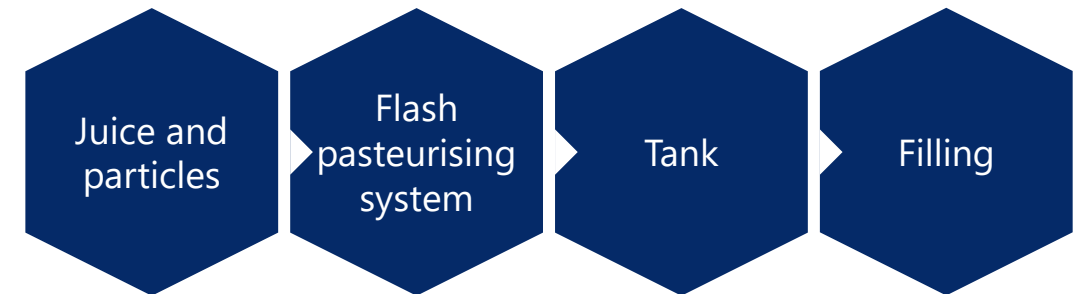
Regardless of whether hot filling or aseptic filling – Krones offers a range of solutions for filling particles:

Particle size of up to max.	
Process sequence	0 mm                      5x5x5 mm                      10x10x10 mm
Single-flow filling Single-flow process	Conventional filling (e.g. with preserving media)
	Hot filling
Single-flow filling Single-flow process	Aseptic filling
	Twin-flow filling Twin-flow process
	Aseptic: double filling valve (filling valve with particle inline-dosing)
	Hotfill: Krones FlexiFuit (pre-dosing system)

## Twin-flow process



## Single-flow process



# FlexiFruit

## Benefits to you



### Top product quality

Separate processing of fruit and juice: only the most minimal mechanical damage to the particles

### Gentle product treatment

Minimum thermal stress on the particles thanks to well-adjusted processes

### Optimum total cost of ownership

- Cost reduction during the provision of the raw materials of the fruit juice
- Media, raw-material and energy-efficient production

### Complete solution from a single source

Equipment with an overall software solution



### Requesting a new machine

You can easily send a request for a non-binding quotation in our Krones.shop.



# VarioFlash H flash pasteuriser



Processes aimed at preservation and safe hygienic processes are key factors in the manufacture of a product. The Krones VarioFlash flash pasteuriser guarantees the microbiologically safe filling of your product. Since every product has its own requirements, Krones adjusts the machines individually to their respective applications.

## At a glance

- Output range: 4,000 to 60,000 litres per hour
- Fields of application: Juices, juice drinks, energy drinks
- Processing of fruit pieces/inclusions possible
- A range of rework concepts available
- Intelligent use of excess energy, e.g. from the bottle return cooler



# Everything from a single source



## Training courses at the Krones Academy – trained personnel will increase your line efficiency

---

The multifaceted offer by the Krones Academy ranges from operation, servicing and maintenance courses through to management training. We will gladly also create your individual training programme.

## KIC Krones cleaning agents make your machine shine

---

An immaculate production environment is essential if your product is to shine. KIC Krones provides you with the optimum cleaning agents and disinfectants for each individual production step.

## KIC Krones lubricants – for each production step

---

Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

## Krones Lifecycle Service – Partner for Performance

---

It goes without saying that also after the purchase of new machines, Krones takes care of your lines: The Krones LCS experts are always there to help you reaching your goals and turn your wishes into optimal LCS solutions.

## High-quality components from Evoguard and Ampco

---

Are you looking for shut-off, separation or control valves? For hygienic or aseptic applications? Would you like to have pump technology that perfectly fits into your machines? You will find exactly what you are looking for at Evoguard and Ampco Pumps. The two Krones subsidiaries cover the entire spectrum of process technology components that you need for high-quality production.

**SOLUTIONS  
BEYOND  
TOMORROW**

