



## Conveyors that pay attention



## Efficiency and harmony in your line

Modern high-speed lines also demand intelligent system components for their intermediate sections. Being an individually customised conveyor, the SynCo container conveyor contributes to a trouble-free production at a large degree.

### At a glance

- Conveyor for cans, glass or PET containers
- Distributes, combines and stores up to 120,000 containers per hour
- Individual conveyor design due to flexible functional modules
- Intelligent solutions for control systems
- Energy-saving components



## Components

### Flexible functional modules – separation of containers



#### Inliner

- Pressureless separation of the containers onto one lane
- Gradual increase of the chain speed: guarantees a continuous stream of bottles



#### Twinliner

- Pressureless separation of the containers with a discharge on two lanes
- Parallel arrangement of two Inliner systems

## Components

### Flexible functional modules – distribution of containers



#### Flowliner

- Safe and pressureless distribution of round and angular PET containers
- Gentle and reliable container conveyance thanks to a lateral belt guide
- Low space requirement via quick reduction of the transportation speed on a short distance



#### Roof Divider

- System for the distribution of containers onto two lanes via servo-motor controlled flaps
- Transportation of the container in groups of any small or large size

## Components

### Sensor-controlled buffer system: Accuflow



A fixed component of the conveyance concept comes in the form of sensors which continually measure the conveyors' efficiency. If necessary, our sophisticated buffer systems are employed: No matter, if the bottles displace themselves or if the conveyor distance is simply extended – the top priority is gentle bottle treatment.

#### Accuflow

- If required, this system buffers via the displacement mechanism
- Uniform storage period for every container by means of the first-in-first-out principle
- Low-pressure buffer system with a high capacity on short transport sections
- Ideal for confined spaces or large buffer time requirements
- Facilitated spare parts management through the use of well-proven standard chains

#### Application:

- Cans as well as cylindrical glass or PET containers
- Gassed and non-gassed containers
- Up to 100,000 containers per hour (depending on the container type and characteristics)



## Components

### Sensor-controlled buffer system: Accuflow Pro



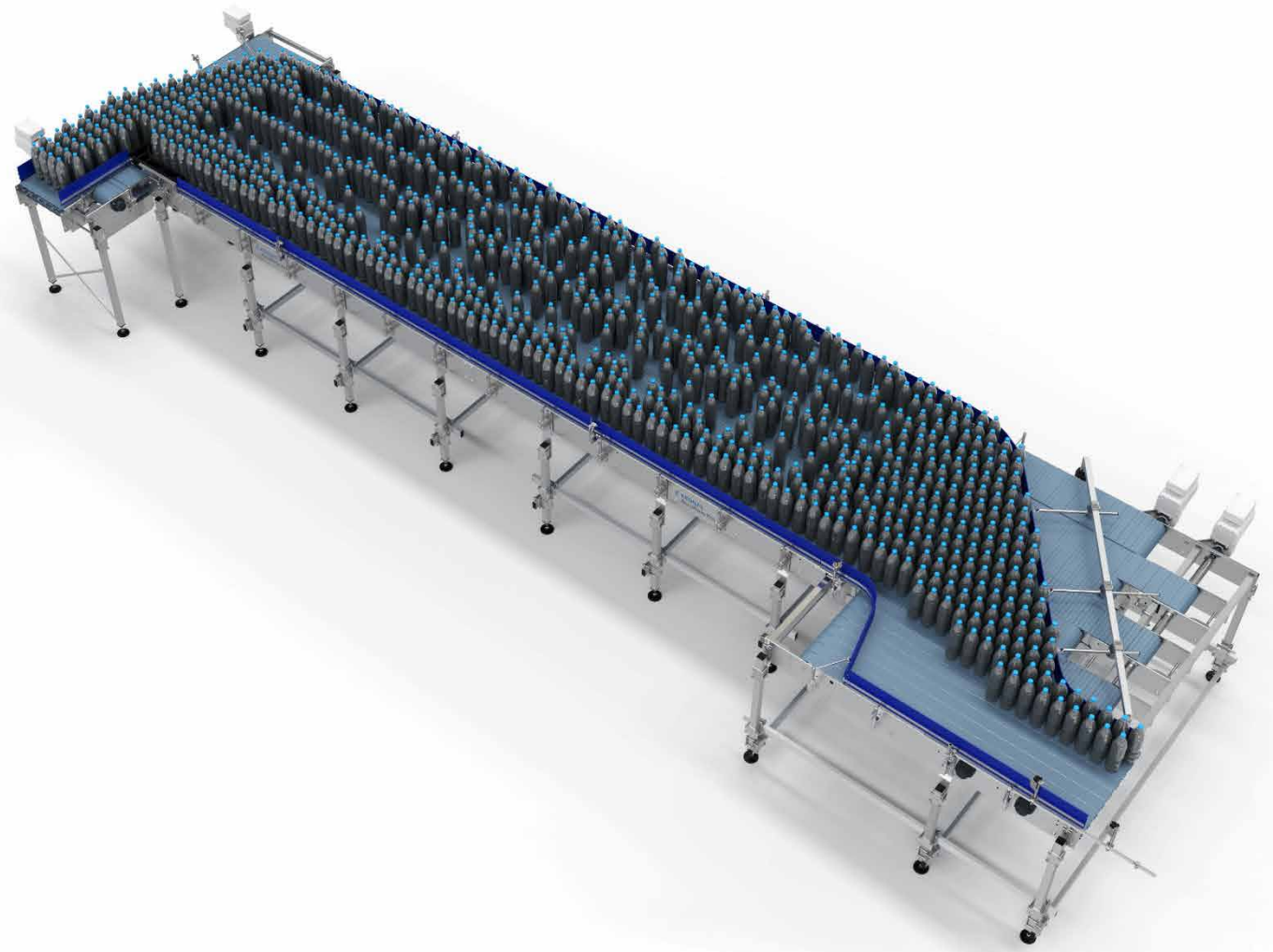
The Pro version of the Accuflow container buffer system is characterised by particularly gentle container handling.

- 90 degree Freeflow chain for optimal container distribution over the entire width
- Low pressure due to the alternating arrangement of conveyors operating at normal speed and conveyors operating at slower speed
- Gentle shifting of the containers during accumulation

#### Can be used for full containers of any type:

- PET:
  - Hot filling; with champagne base: up to 55,000 containers per hour\*
  - Hot filling; with petaloid base: up to 43,200 containers per hour\*
- Glass: up to 66,000 containers per hour\*
- Cans: up to 132,000 containers per hour\*

*\* depending on the tilting angle and the container diameter*



## Components

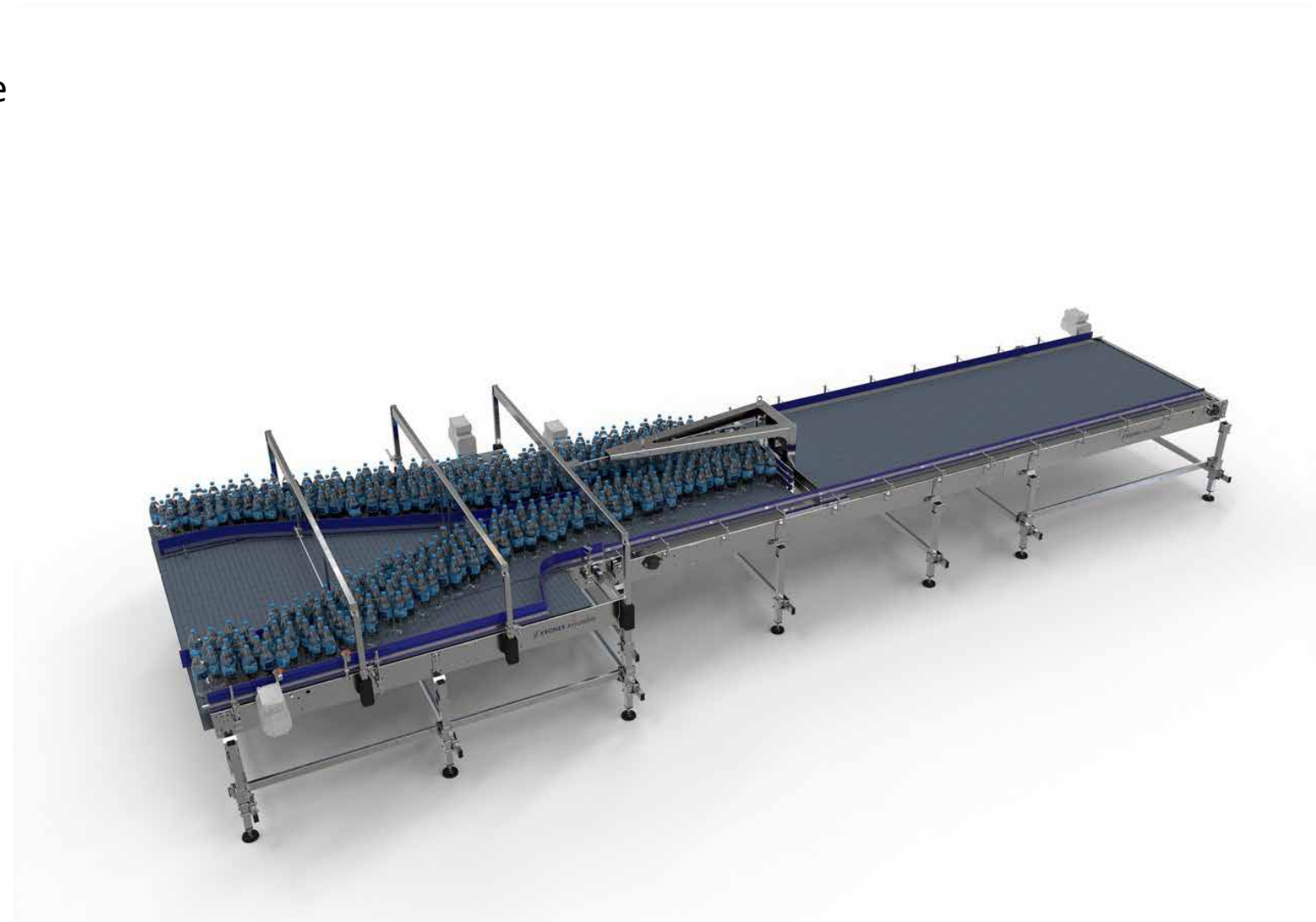
### Sensor-controlled buffer system: Accutable



- Dynamic mass flow buffer system
- Uniform storage period for every container by means of the first-in-first-out principle
- Pressureless container conveyance
- Can be expanded with modules of 2 metres or 3 metres
- Maximum buffer length of 36 metres
- Facilitated spare parts management through the use of standard chains

#### Application:

- Cans and glass or PET containers
- Cylindrical, rectangular, oval and conical containers
- Gassed and non-gassed containers
- Up to 90,000 containers per hour



## Components

### Sensor-controlled buffer system: Accutable



Benefits to you:

#### **High operation safety**

Thanks to the inherently safe design of the buffer system, no safety devices are required.

#### **Low operating costs**

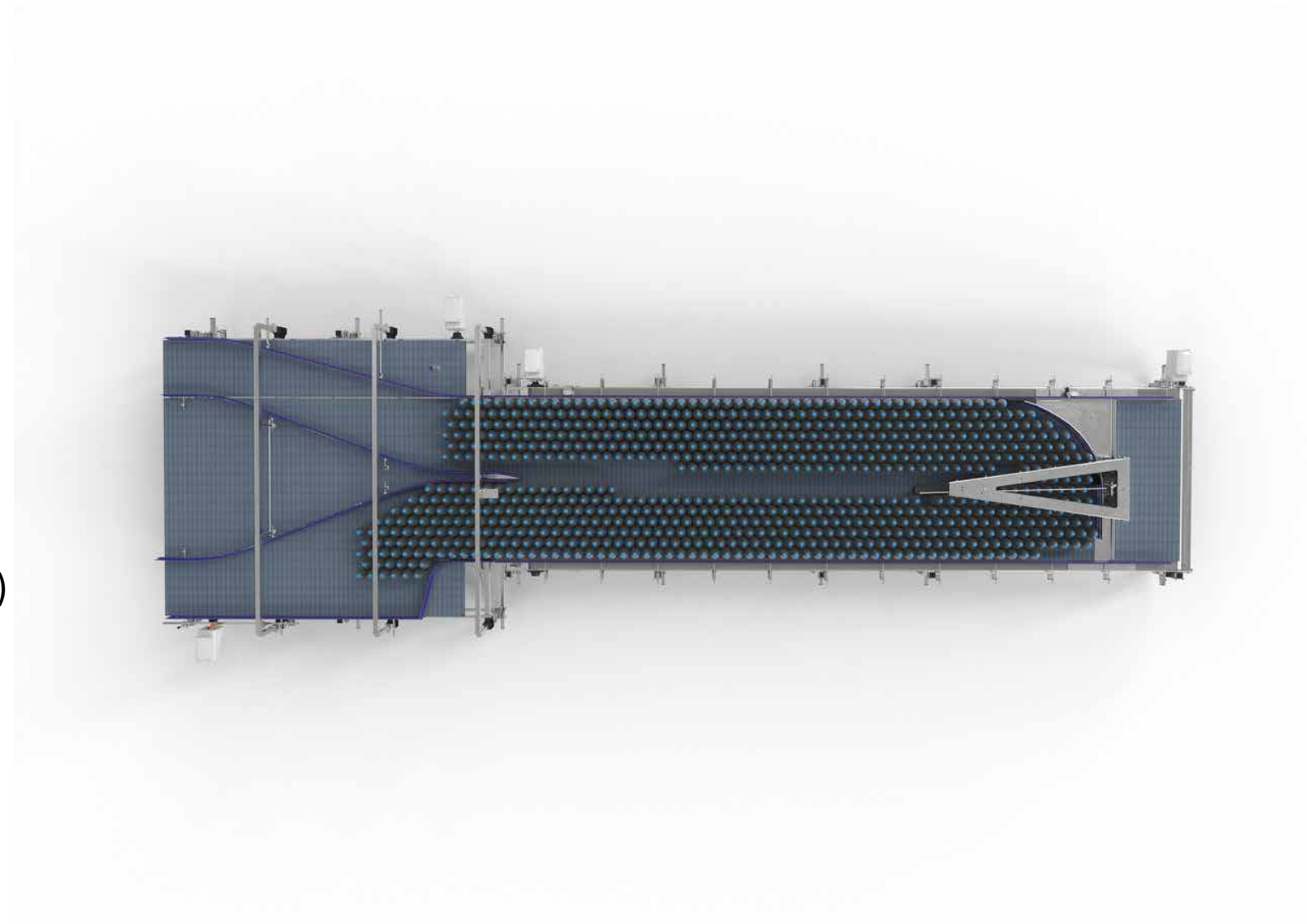
By dispensing with a gripper chain – and thus with an additional drive on the carriage – operating costs are reduced and failures are avoided at the same time.

#### **Highly automated**

A unique emptying mechanism (e.g. when changing products) eliminates the need for manual intervention.

#### **Low maintenance requirement**

The use of durable belts as well as high-quality PM drives reduce maintenance requirements to a minimum.



## Components

### Dynamically controlled buffer system: Acculoop Advanced



- Dynamic buffer system for containers with a single-lane conveyor (first-in, first-out principle)
- Particularly gentle transport
- Output: up to 48,000 containers per hour
- Buffering in/out via travelling return carriage
- Modular design: modular buffer expansions are available
- Table length up to 20 metres, buffer length up to 100 metres
- Own controller and visualisation system
- No guards required



## Components

### Dynamically controlled buffer system: Acculoop Advanced



#### Application:

- PET container (full), glass bottles and cartons
- Cylindrical containers and specially-shaped containers with diameters from 27 to 155 mm
- Petaloid and champagne bases
- Typical fields of application:
  - Applications where there is not enough space for the distribution system, mass-flow conveyor and separation system
  - Products that do not permit mass transport (specially-shaped containers)
  - Emptying and buffering at medium and high output ranges



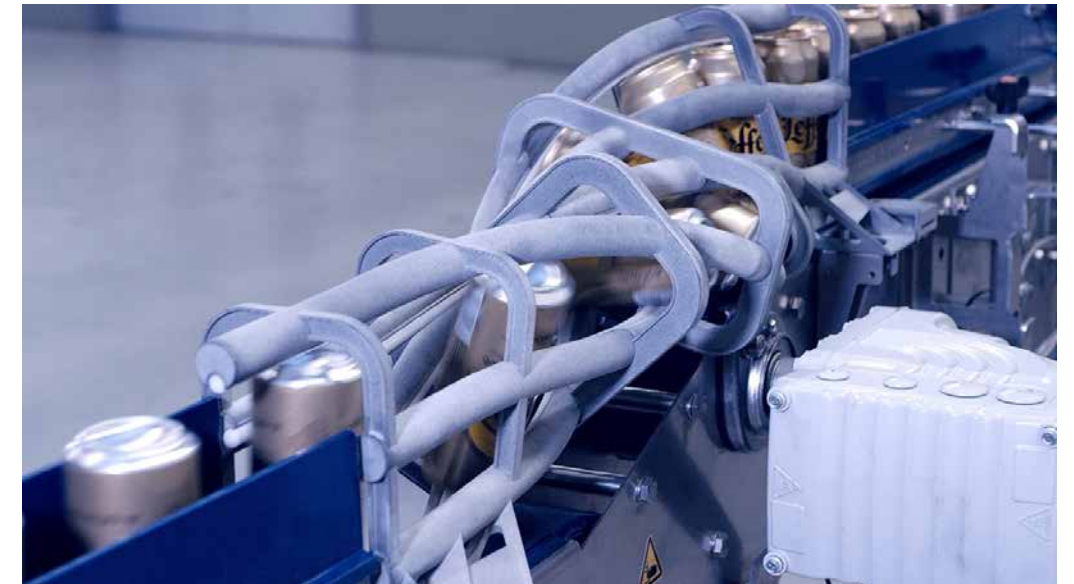
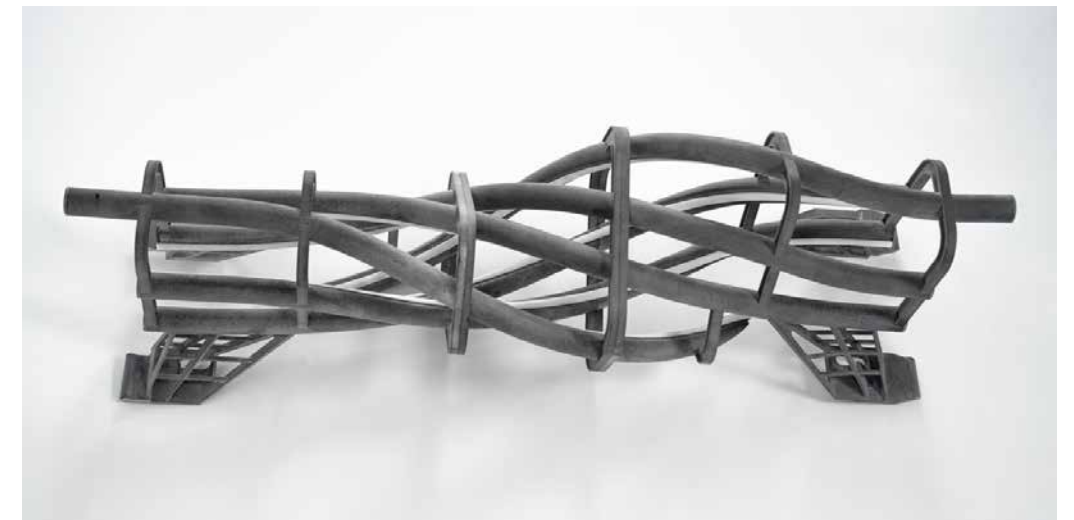
## Components

### From state-of-the-art generative manufacturing: 3D-printed can inverter



#### Benefits to you:

- Trouble-free production for maximum efficiency
- Output of up to 120,000 cans per hour
- Processes even very light cans
- Safe handling of individually designed cans with matt lacquers or embossing
- Emptying during product change-over without operator intervention
- Fast and ergonomic replacement during change-overs
- Sustainability throughout the entire value chain
- 100 percent reproducible manufacture



## Components

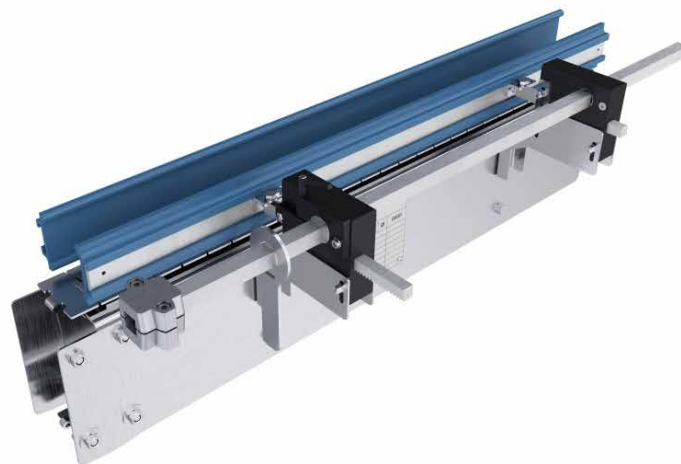
### Individual rail adjustment system – for a trouble-free conveyance



Well guided is half the battle – this goes also for our conveyors. In order to be able to transport your containers as gentle and friction-free as possible, the perfect rail adjustment is just as important. Depending on the containers size, the rail can also be adjusted individually.

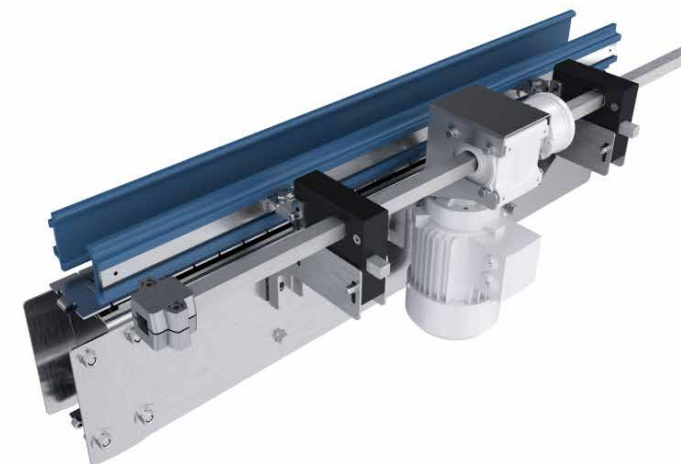
#### Central manual rail adjustment

- Infinitely variable fastening of the rails via clamping systems
- Width adjustment for change-overs within short time
- Easy adjustment via integrated adjusting keys



#### Motorised rail-guide adjustment system

- It reduces the adjustment time by up to 90 percent (compared to a decentralised manual adjustment system)
- Motorised adjustment of the rail width after entry of the different sizes on the touch-screen
- Safe rail adjustment from the subordinate operator panel for the area visible from there



## Components

### Adjusted conveyor lubrication system – ecological container conveyor



The friction between the container and the chain and also between the chain and the wear strip is reduced due to an individually adjusted conveyor lubrication system.

This results in:

- an increased service life of the individual components,
- a reduced energy consumption of the drive motors and
- increased efficiency and availability of the conveyor.

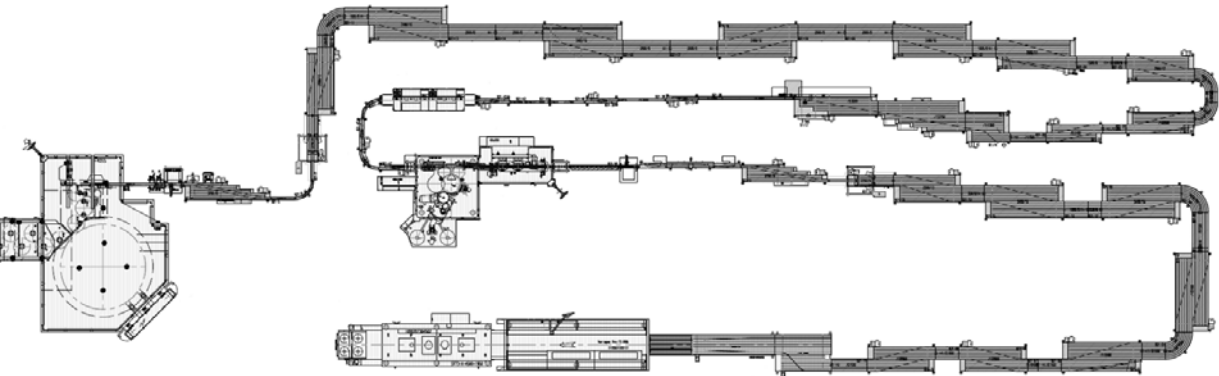
#### Installation options

- Plastic hoses
- Stainless steel pipes (optional)



# Components

## Adjusted conveyor lubrication system – ecological container conveyor



### Saving fresh water

- Use of dry or water-reduced wet conveyor lubrication for most of the container-chain combinations possible
- Significantly reduced consumption of fresh water

| Conveyor lubrication systems | Water consumption                                |
|------------------------------|--------------------------------------------------|
| Wet                          | Approx. 480 l/h<br>(water and lubricant mixture) |
| Reduced water consumption    | Approx. 120 l/h<br>(water and lubricant mixture) |
| Dry                          | No water consumption                             |

Required water for the conveyor lubrication system of a PET line with an output of 36,000 containers/h and a container size of 0.33 and 0.5 litres

## Components

### PM drives – trendsetting and high performance

Our conveyor systems operate exclusively with high-performance PM drives (motor and gears in one housing). As a result, even legal requirements with regard to energy efficiency are significantly exceeded.

Saving energy and high performance through the use of SEW Movigear PM drives (IE5)

- High efficiency rate of 90 percent and therefore a low power consumption
- Savings potential of about 1,000 kWh per drive and year (compared to IE2 drives)\*

Worldwide spare parts availability due to the use of a well-proven SEW drive technology

- Constructed in hygienic design
- No need for fans and cooling fins
- Protection class IP65 for optimal cleaning

*\* According to manufacturer's specifications*

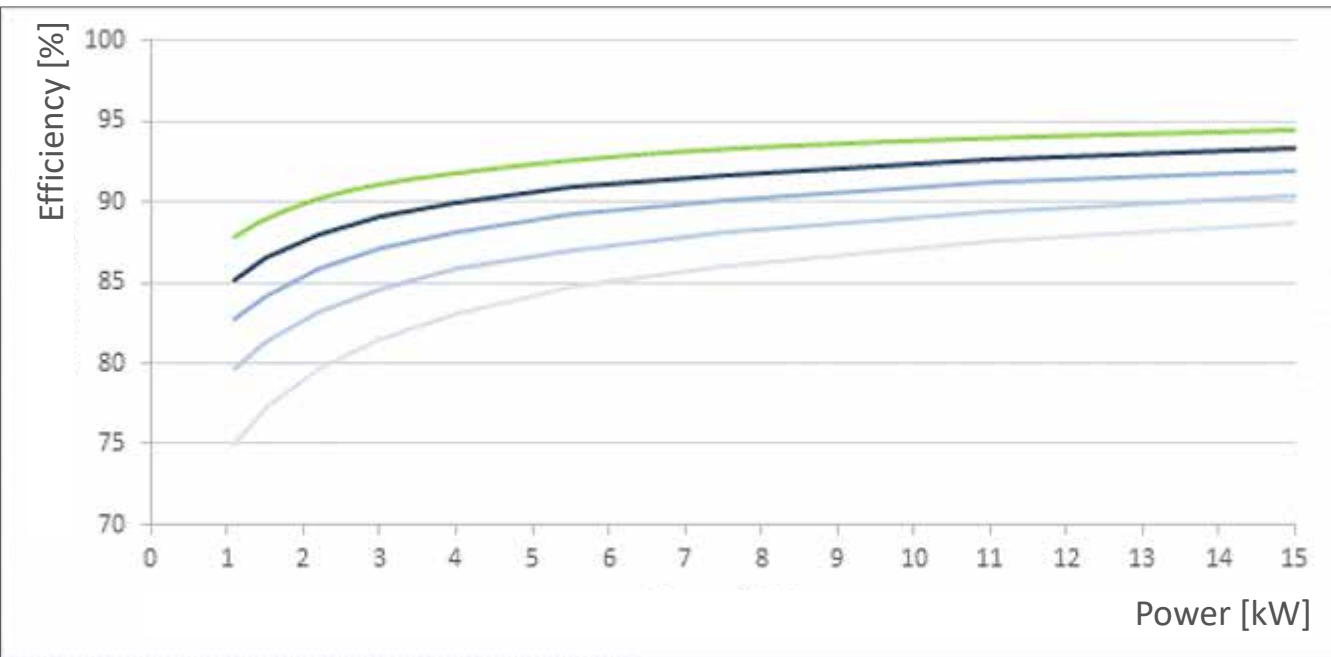


# Components

## PM drives – trendsetting and high performance



### Efficiency classes:



Projected to a total conveyor system distance in a bottling line with approx. 40 to 60 drives installed; this results in energy savings between 40,000 and 60,000 kWh at 6,000 operating hours based on the data of the drive manufacturers.

- Ultra premium efficiency IE5\*
- Super premium efficiency IE4\*
- Premium efficiency IE3\*
- High efficiency IE2\*
- Standard efficiency IE1\*

\* acc. to IEC 60034-30-1:2014  
\*\* acc. to IEC 60034-30-2:2016

## Method of operation

### Intelligent control – conveyors which pay attention



A special feature of the SynCo conveyors is their sophisticated control concept – which will be customised to your line, your products and to the conditions at the site.

#### Characteristics

- Function display and operation via touch-screen
- Frequency control of all drives
- Active back-up management via:
  - Continuous measurement of the buffer capacity via sensors
  - Adjustment of the machine output to current buffer capacities of the system
  - Dynamic adjustment of the conveyor speed depending on the extent to which the conveyor is filled



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



## Benefits

### Harmony and efficiency in your line

Our conveyor systems demonstrate more than 30 years of experience. Innovative technology provides a harmonic line flow, continuously high line efficiency and gentle product transportation.

### Modular design

The individual combination of our modules and a large selection of different product groups enable us to fit your conveyor optimally into the room conditions of your line layout.

### Intelligent connections

A continuous metering of your back-up situation, the signal exchange of the individual machines among each other as well as a suitable buffer system provide an efficient overall operation.

### Long service life

The rugged basic construction and a minimum requirement for maintenance ensure a long service life and a trouble-free function of the conveyor.

### Low energy requirement

Due to the exclusive employment of high-performance PM drives an efficiency rate of 90 percent is achieved. The power consumption is far below the one of asynchronous motors.

### Quick installation and commissioning

Almost all of the components are already pre-assembled in the factory. This ensures the conveyor is ready for operation within a very short time (»plug and play«).

## Certified ecological efficiency: Machines with enviro certification



At Krones, the blue enviro certification stands for excellent ecological efficiency. Products that bear the enviro label have proven in an objective test procedure that they use energy and media efficiently, and that they produce in an environmentally-friendly way. The requirements are defined by the EME standard that has been developed by the TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure has also been certified by TÜV SÜD as an independent expert. Therefore, you can be sure that: an enviro label stands for ecological efficiency.

### **This is why the SynCo is enviro-classified:**

#### **Energy efficiency**

- The highly efficient PM drives save up to 40 percent of energy as compared to conventional asynchronous motors
- Reduces the power consumption during a standstill by means of energy-saving circuit

#### **Environmental compatibility**

- Minimises water and lubricant consumption through the use of dry lubrication (where technically possible) and state-of-the-art plastics
- Consistent use of food-safe greases and oils for the lubrication of bearings and gears



