CHRONOS OMP-B Series

Fully automatic bagging stations for powdery products

Innovations for a **better world.**

BÜHLER

Make a difference with fully automatic packing
Elevate quality, speed and product safety with the best-in-class solution

Ensure that your valuable product is packaged safely, with high accuracy, and with minimal loss. The fully automatic bagging stations for powdery products, CHRONOS OMP-B Series, guarantee maximum productivity with minimum labor.

The fully automatic bagging stations of CHRONOS OMP-B Series are the powerhouse of the Bühler process solution, ensuring maximum productivity, bagging quality and operational safety. The core of the machine concept is the perfectly coordinated dosing, weighing and bag handling system and the concept for handling empty and filled bags, which has been optimized over decades and successfully validated in more than 800 installations. The bag closing system, sourced from leading manufacturers and seamlessly integrated into the overall system, completes the most reliable bagging station on the market.

Reliability
Carefree operation thanks to continuous bag top control at any time, backed by critical bag detection and reliable control algorithms.

Performance
Uniquely robust bagging process thanks to the combination of Bühler's unique powder dosing solutions and Premier Tech's expertise in the carefree handling of bags.

Profitability
Highly economical solution with low operating costs due to significant reduction of required labor and an outstanding bagging accuracy down to ±0.2 % at 2 sigma resulting in reduced giveaway.

Sustainability
Maximum yield of your product thanks to minimized powder spillage (-55 % compared to carousel concept) and repetitively and securely sealed bags.

Human & product safety
Highly safe operation and product protection thanks to the absence of operators in the bagging zone, given by a fully closed system.

Availability
Maximum uptime thanks to regionally available and competent after-sales service, including a worldwide service network of your preferred sewing station supplier.

CHRONOS OMP-B Series
Fully automatic bagging stations for powdery products

The CHRONOS OMP-B Series consists of two different machine sizes, a single-spout version with a capacity of 450 bags per hour and a two-spout version with a capacity of 900 bags per hour (at a reference bag weight of 25 kg).

		CHRONOS OMP-1045 B	CHRONOS OMP-2090 B
Bag specifications	Width	320 mm to 700 mm	
	Length	600 mm to 1,100 mm	
	Weight	10 – 50 kg	
	Closing type	Plain sewing, fold-over and sewing, double needle sewing	
Number of spouts		1	2
Bag magazine		Up to 400 bags	Up to 480 bags
Electrical requirement		3x 400 V (±10 %) @ 50 Hz or 3x 440 V @ 60 Hz	
Electrical power requirement		14 kW	33 kW
Operating pressure		6 bar, air must be dry, clean and not lubricated	
Aspiration		45 m^3/min, 800 pa	90 m^3/min, 800 pa
Ambient temperature		+5 °C to +50 °C	
Accuracy		±0.2 % at 2 sigma (σ) (95 % pass rate) for 25 kg bags	
Control system		Combined control and power cabinet, Siemens PLC, HMI with 9" color touch screen	
Control interface		TCP/IP	

Applications

Wheat flour | Fine semolina | Maize flour | Maize grits

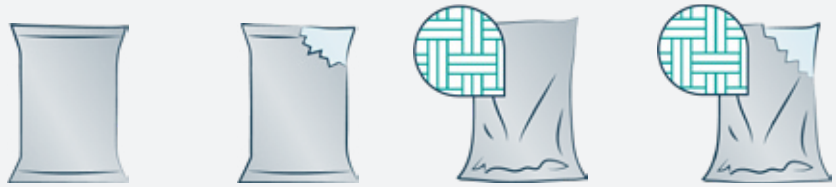
Product properties

High density powders
(0.45 – 0.65 t/m^3)

Bag types

Pillow | Gusseted | Block bottom | Cross bottom

Bag material



Paper | Paper with inner liner** | Woven PP* | Woven PP* with inner liner**

* Laminated or non-laminated
** The inner liner must be fixed to the bag top

Increased profitability
Reducing labor cost through automation

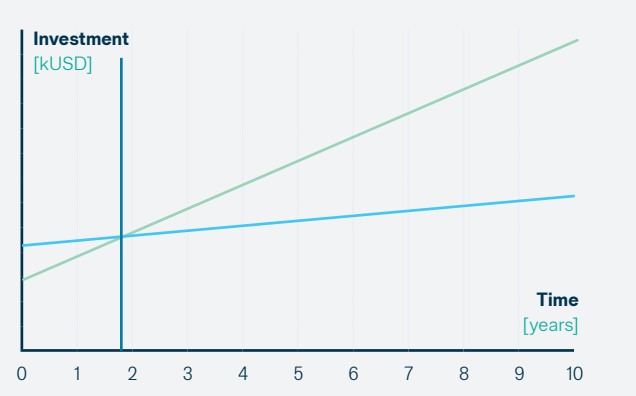
Fully automatic operation

The fully automatic working principle enables a major reduction of labor cost compared to manual solutions, as **only one operator is required to run two fully automatic bagging stations**. Further, the high speed of up to 900 bags per hour ensures even further savings as less operation hours are required to achieve the same amount of bagged flour.

Exemplary calculation

Mill capacity	500 t/d	Bag size	25 kg
Flour to pack	400 t/d	Monthly cost by labor	1,125 USD

	2 x OMP-2090 B	2 x carousel MWPM
Daily operation hours	9 h	12 h
Operators	1	min. 4



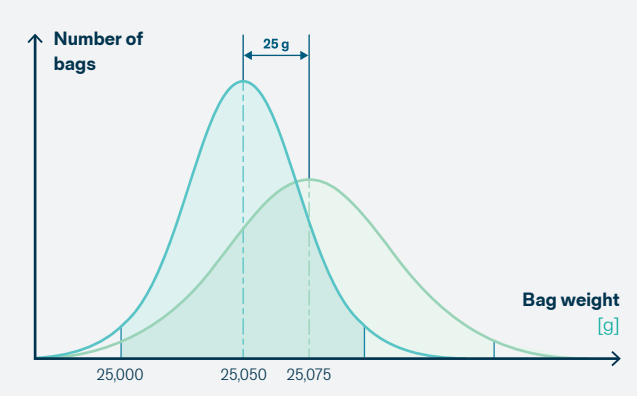
Increased yield

Thanks to our precise double screw feeding system in combination with the powder-optimized highly accurate batch bagging scale, the system is able to operate at an accuracy of ±50 g at 2 sigma for a 25 kg reference bag weight. This means that the average bag weight is reduced by 25 g per bag compared to the industry benchmark of ±75 g at 2 sigma.

Thanks to this, **OMP-B technology increases yield by 0.1 – 0.2 %**.

Exemplary calculation
25 g x 900 BPH x 8,000 h = 180 t

Potential yield increase of around 45,000 USD per year per machine (at 250 USD/t)

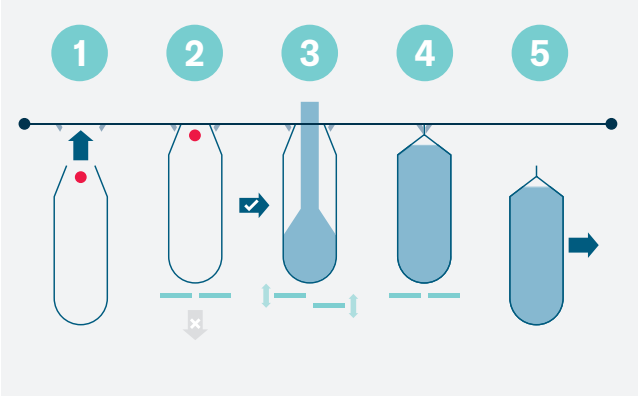


Continuous bag top control

Ensure precision and efficiency with our state-of-the-art continuous bag top control system. Overseeing every step from empty bag pick-up to filling and closing, this system guarantees that each bag is handled correctly.

Through the combination of **timing-based control algorithms** in combination with **only two sensors at the most critical process steps**, the bag top control system **ensures the most reliable operation**.

1. Check if only one bag has been unstacked and if bag is properly opened
2. Check if bag has been correctly attached to the bag spout
3. Bag gets filled and product inside is settled with the bag shaker
4. Bag is closed
5. Bag top control ends and bag gets distributed



CHRONOS OMP-1045 B
Scope and options

Estimated production capacity of **450 bags per hour** (at 25 kg bag weight)

Exemplary configuration of CHRONOS OMP-1045 B

1. **Layout**
   Basic: Bag magazine right inwards
   Alternative 1: Bag magazine right outwards
   Alternative 2: Bag magazine left inwards
   Alternative 3: Bag magazine left outwards
2. **Cooling system cabinet**
   Basic: None
   Option: Cooling of control cabinet
3. **Bag magazine & placer**
   Basic: Up to 240 bags / magazine
   Alternative: Up to 400 bags / magazine
4. **Bag opening device**
   Basic: Pneumatic bag opening device
   Alternative: Bag opening device for partially welded (woven PP) bags
5. **Product feeder**
   Basic: 1x double screw feeder
   Alternative 1: 1x double screw feeder with cleaning door
   Alternative 2: 2x double screw feeders
6. **Bag spouts**
   Basic: 230 (bag widths 500 – 620mm)
   Alternative 1: 150 (bag widths 320 – 450mm)
   Alternative 2: 200 (bag widths 400 – 580 mm)
   Alternative 3: 260 (bag widths 550 – 700mm)
7. **Bag weights**
   10 – 50 kg
8. **Aspiration**
   Basic: Individual connection points
   Option: Ducting to single connection
9. **Sewing station supplier***
   Basic: Dechao
   Alternative 1: New Long
   Alternative 2: Fischbein
   Alternative 3: Union Special
   Alternative 4: Customer supply
10. **Bag closing**
    Basic: Plain sewing
    Alternative: Double needle sewing
    Option: Fold-over and sewing
11. **Conveyor height**
    Basic: Manual height adjustment
    Alternative: Motorized height adjustment
12. **Bag exit**
    Basic: Standing bag
    Option 1: In-line turner
    Option 2: Bag kicker 90° left or right

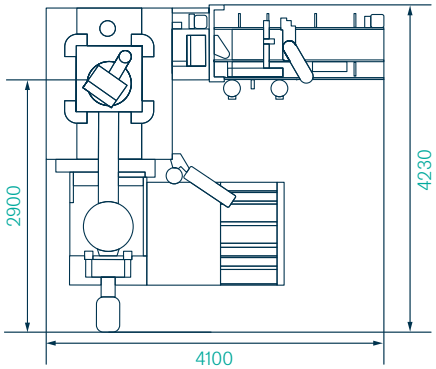
Machine conformity
Basic: None
Alternative 1: CE
Alternative 2: CCC

Explosion protection
Basic: None
Alternative 1: ATEX Zone 22
Alternative 2: CCCEx Zone 21

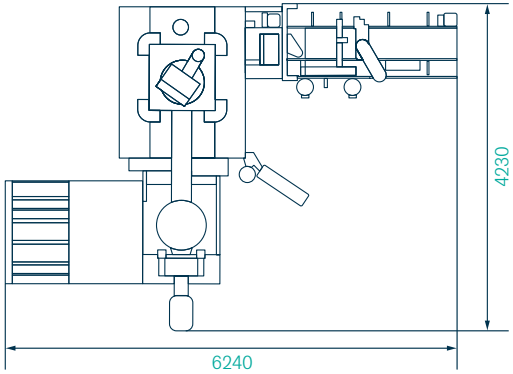
* Double needle sewing only available for New Long & Union Special

CHRONOS OMP-1045 B
Dimensions and layouts

Top view

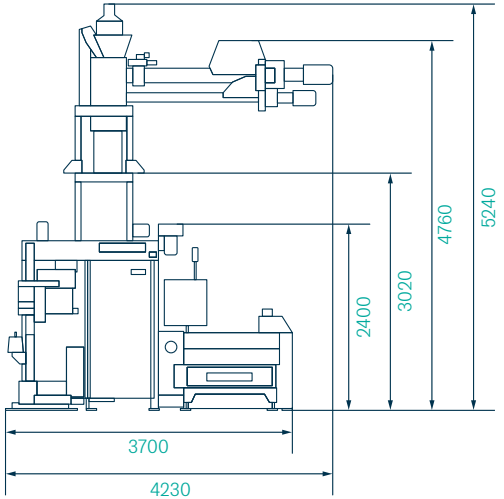


Layout A

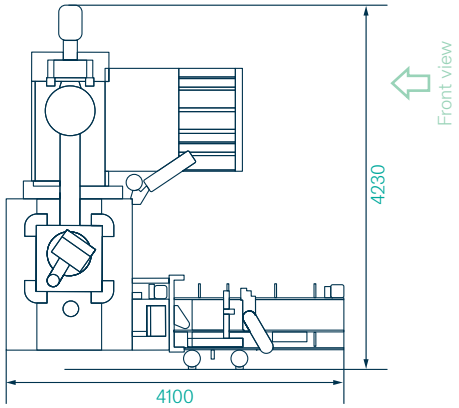


Layout B

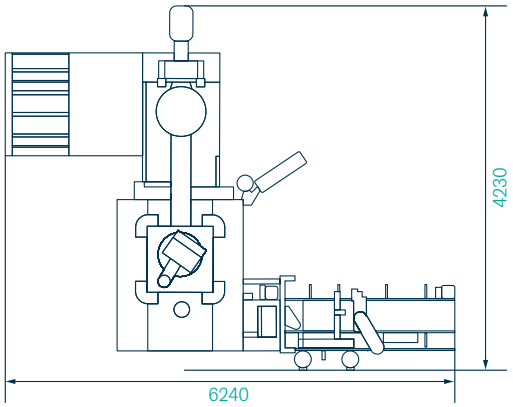
Front view



Layout C

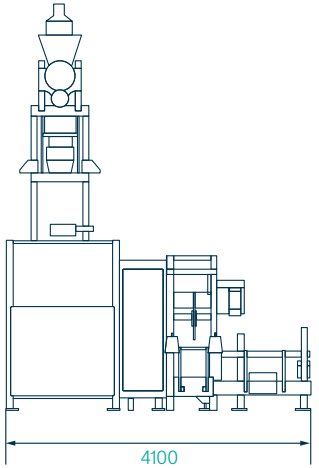


Layout C



Layout D

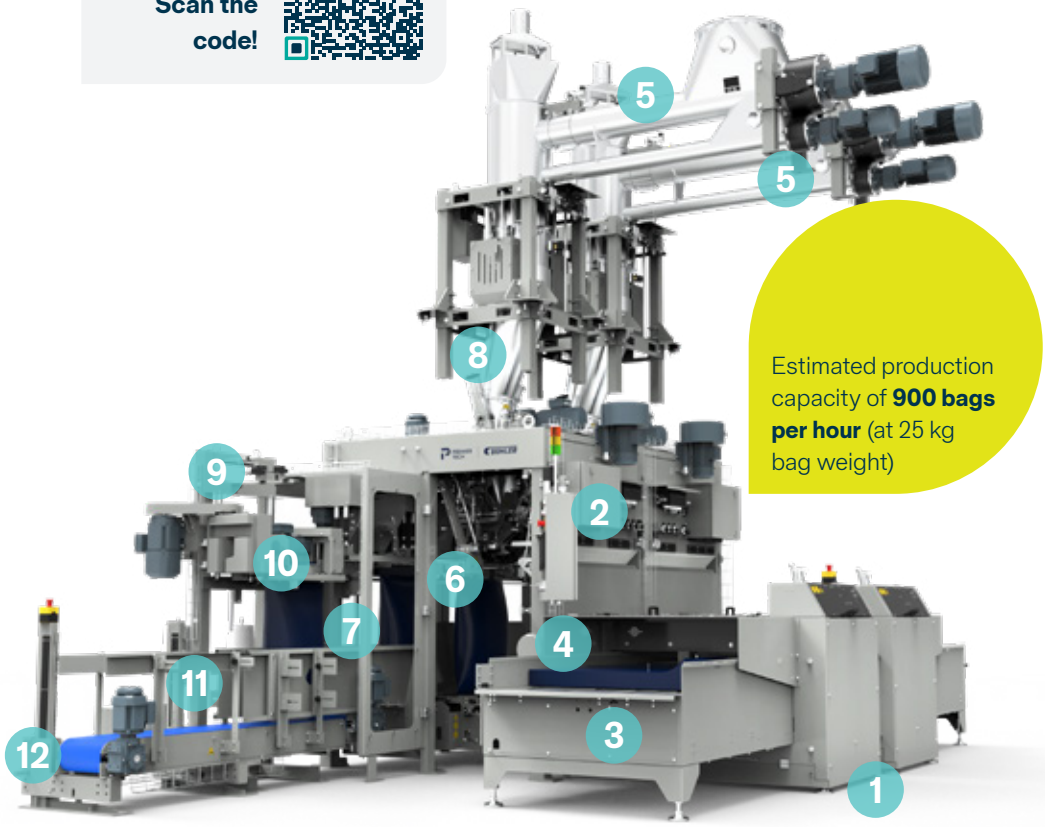
Side view



Layout C

CHRONOS OMP-2090 B
Scope and options

Want to see it in action? Scan the code!



Estimated production capacity of **900 bags per hour** (at 25 kg bag weight)

Exemplary configuration of CHRONOS OMP-2090 B

1. **Layout**
   Basic: Bag magazines right
   Alternative: Bag magazines left
2. **Cooling system cabinet**
   Basic: None
   Option: Cooling of control cabinet
3. **Bag magazine & placer**
   Up to 240 bags / magazine
4. **Bag opening device**
   Basic: Pneumatic bag opening device
   Alternative: Bag opening device for partially welded (woven PP) bags
5. **Product feeder**
   Basic: 2x double screw feeder
   Alternative 1: 2x double screw feeder with cleaning door
   Alternative 2: 4x double screw feeders
6. **Bag spouts**
   Basic: 230 (bag widths 500 – 620mm)
   Alternative 1: 150 (bag widths 320 – 450mm)
   Alternative 2: 200 (bag widths 400 – 580 mm)
   Alternative 3: 260 (bag widths 550 – 700mm)
7. **Bag weights**
   10 – 50 kg
8. **Aspiration**
   Basic: Individual connection points
   Option: Ducting to single connection
9. **Sewing station supplier***
   Basic: Dechao
   Alternative 1: New Long
   Alternative 2: Fischbein
   Alternative 3: Union Special
   Alternative 4: Customer supply
10. **Bag closing**
    Basic: Plain sewing
    Alternative: Double needle sewing
    Option: Fold-over and sewing
11. **Conveyor height**
    Basic: Manual height adjustment
    Alternative: Motorized height adjustment
12. **Bag exit**
    Basic: Standing bag
    Option 1: In-line turner
    Option 2: Bag kicker 90° left or right

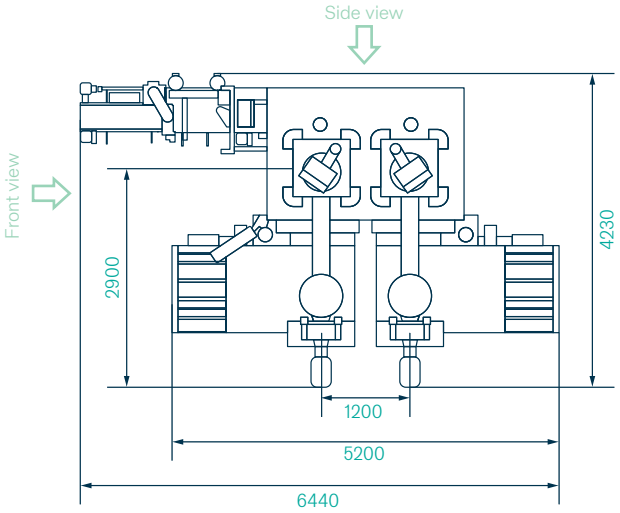
Machine conformity
Basic: None
Alternative 1: CE
Alternative 2: CCC

Explosion protection
Basic: None
Alternative 1: ATEX Zone 22
Alternative 2: CCCEx Zone 21

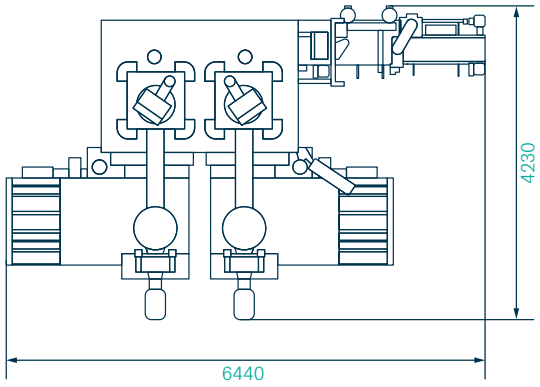
* Double needle sewing only available for New Long & Union Special

CHRONOS OMP-2090 B
Dimensions and layouts

Top view

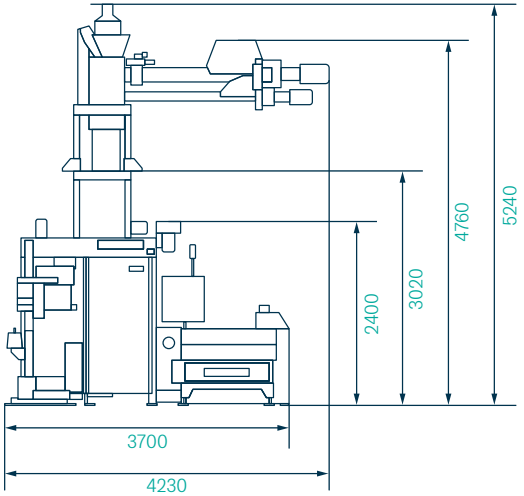


Layout A



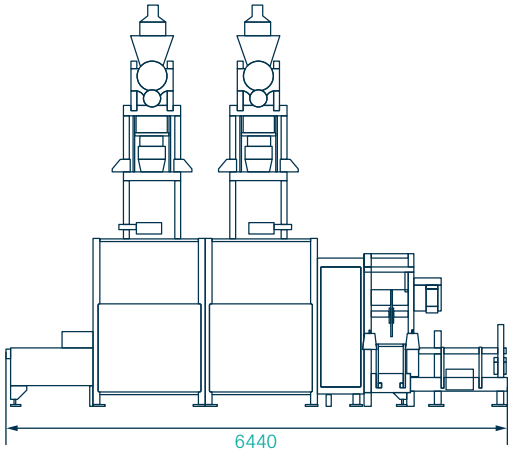
Layout B

Front view



Layout A

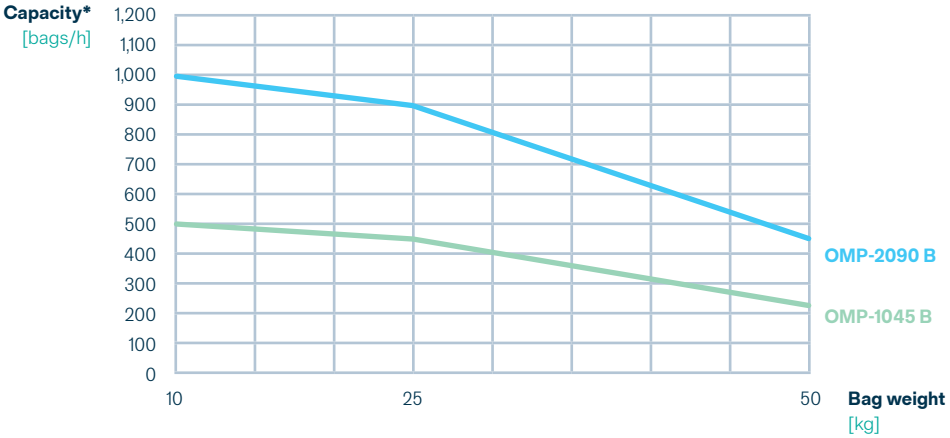
Side view



Layout A

Unleashing full potential
Performing at various bag weights

Estimated production capacity for high density products



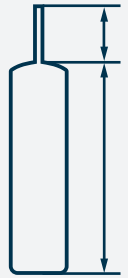
*Depending on the application, bag characteristics, and machine configuration

The estimated production capacity is the production capacity of the fully automatic bagging stations of CHRONOS OMP-B Series during normal operation throughout a shift of 8 hours. All planned down-times for cleaning, change of thread coil, etc. are considered in the estimated production capacity. Machine stops caused by up-and-down-stream equipment will negatively affect the estimated production capacity.

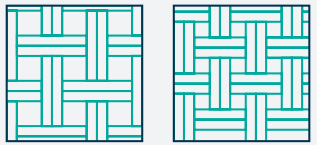
Essential factors for optimal performance

The performance depends on various factors, including the quality of the bag, its size and characteristics. More information can be found on Bühler's Requirements on bag specification CUA0000025531.

Freeboard of the bag
A crucial element is the freeboard – the unused space from the top of the bag – which should exceed 160 mm for plain sewing and 200 mm for fold-over sewing to ensure optimal performance, as less freeboard can decrease the production capacity of the bagging station.



Quality of the bag
The denier number measures the weight and density of the yarn used in the bags. Woven PP bags perform better with a denier number of 780 or higher. It is important to operate the station at full capacity to achieve optimal results. Lower numbers may reduce maximum production output.



Enhanced productivity
Benefit from maximum safety and process transparency

Human and product safety standards

Product safety

The systems enable a high product safety through:

- Fully automatic working principle without human interaction with the product during the whole bagging process
- Optimized discharge chute and bag spout design to reduce product spillage to a minimum
- Use of food-safe materials only for all product touching components
- Transparent safety covers for visual inspection of the machines cleanliness
- Wide safety doors for easy access to the bagging section for cleaning
- Minimized use of machine legs in the bagging section for easier broom operation while cleaning

High human safety standards

To ensure best human safety, the machines use:

- Closed machine frame including safety covers & doors surrounding moving parts
- Safety switches at the doors to stop operation when being opened
- Sound absorption panels to reduce noise level to a minimum
- Lockout-tagout (LOTO) optimized machine and control cabinet for highest safety also during servicing

Process transparency

Process and machine data transparency in packing are essential for achieving maximum uptime and output optimization. The CHRONOS OMP-B Series bagging stations provide an unlimited connectivity to a wide range of control- and analysis-systems to help you keep track of your most important KPI's.

- The bagging stations allow for seamless integration into Bühler Mercury MES or any other plant control system
- CHRONOS OMP-B Series enables connection to the digital services platform Bühler Insights or Bühler SmarT

Your partner for full-line concepts
Achieving packing and palletizing excellence

In partnership with

PREMIER TECH

CHRONOS OMP-B Series

Fully automatic bagging stations for powdery products

CHRONOS RPL-B & RPO-B Series

Robotic palletizing station for bags

Exemplary configuration

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MS CHRONOS OMP-B Series WOPA/WOPB EN 03/25 LS