

presents:

## Weighing, Bagging and Palletizing in a Modern Flour Mill

**Issam Baydoun**  
Regional Sales Manager

# CHRONOS RICHARDSON SYSTEMS

Parent company: Premier Tech Ltd, Canada

Employees worldwide 1500

Turnover 2006: 267 Mio USD

## Industrial Groups and Business Units

### Industrial Equipment Group • IEG

- Premier Tech Systems (PTS)
- Chronos Richardson Systems Europe (CRSe)
- Chronos Richardson Systems Asia (CRSa)



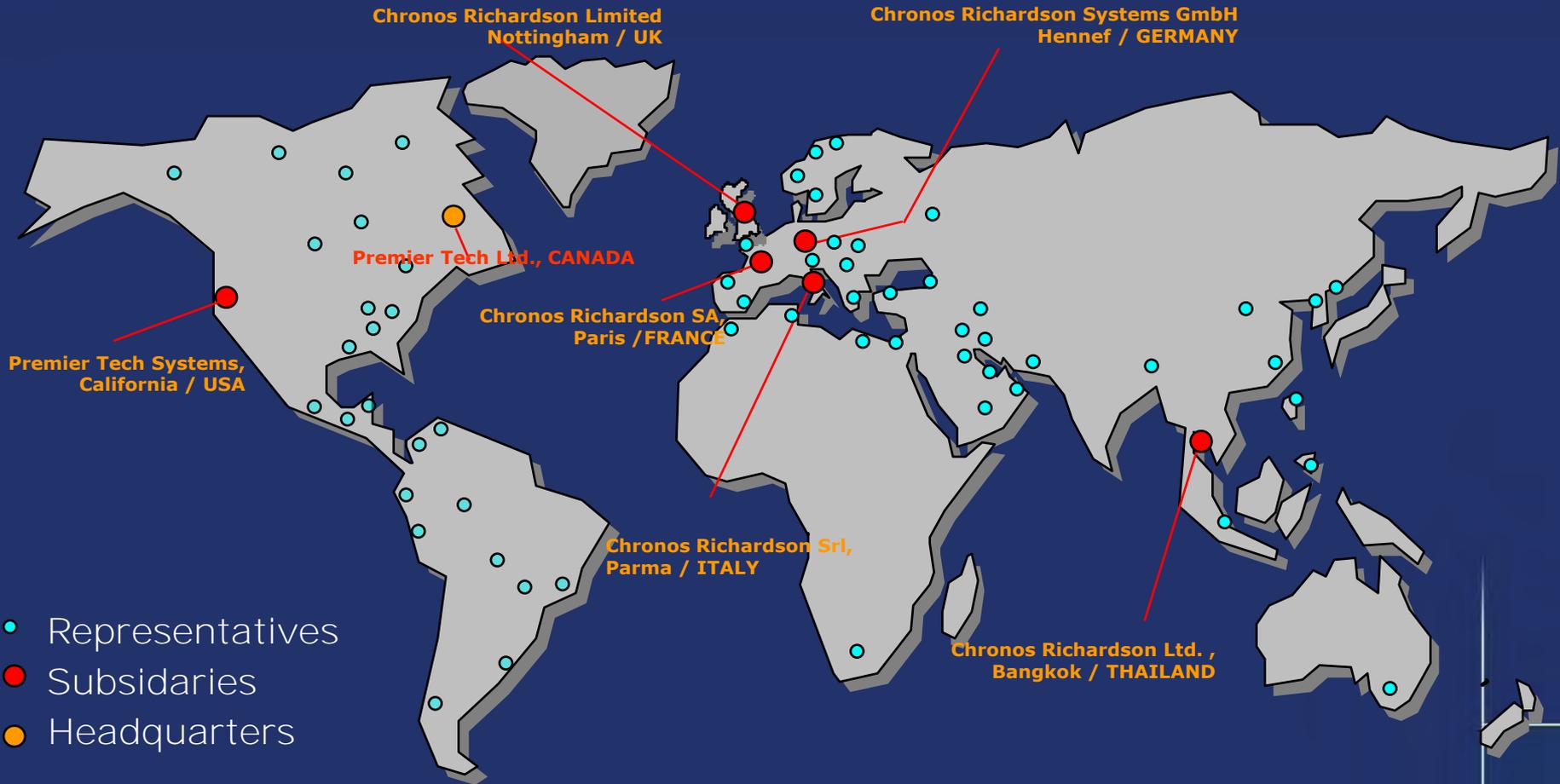
### Horticulture and Agriculture Group • GHA

- Premier Horticulture (PHL)
- Premier Tech Biotechnologies (PTB)

### Environmental Technologies Group • ETG

- Premier Tech Environment (PTE)
- Premier Tech Water France (PTWF)

# WORLDWIDE PRESENCE



## Worldwide Presence:



- Rivière-du-Loup, CANADA



- Brea, USA



- Hennef, GERMANY



- Viry-Châtillon, FRANCE



- Nottingham, UNITED KINGDOM



- Parma, ITALY



- Bangkok, THAILAND



# INDUSTRIAL EQUIPMENT GROUP



# INDUSTRIAL EQUIPMENT GROUP

The **Industrial Equipment Group** has worldwide about **650** employees:

- »» 120 in Europe
- »» 30 in Asia
- »» 500 in North America

# CHRONOS RICHARDSON SYSTEMS EUROPE

## INDUSTRIAL EQUIPMENT GROUP



# CHRONOS RICHARDSON: 125 YEARS HISTORY

**1881:** Foundation of „Hennefer Maschinenfabrik Reuther und Reisert“ Hennef

**1982:** The „Chronos-Werk Reuther & Reisert“ is renamed in Chronos Richardson GmbH

**2002:** Acquisition by Premier Tech, Canada.

**2007:** company is renamed in Chronos Richardson Systems GmbH



# 125 YEARS: INNOVATION & EXPERIENCE

**Chronos =**

**Time**

**Accuracy**

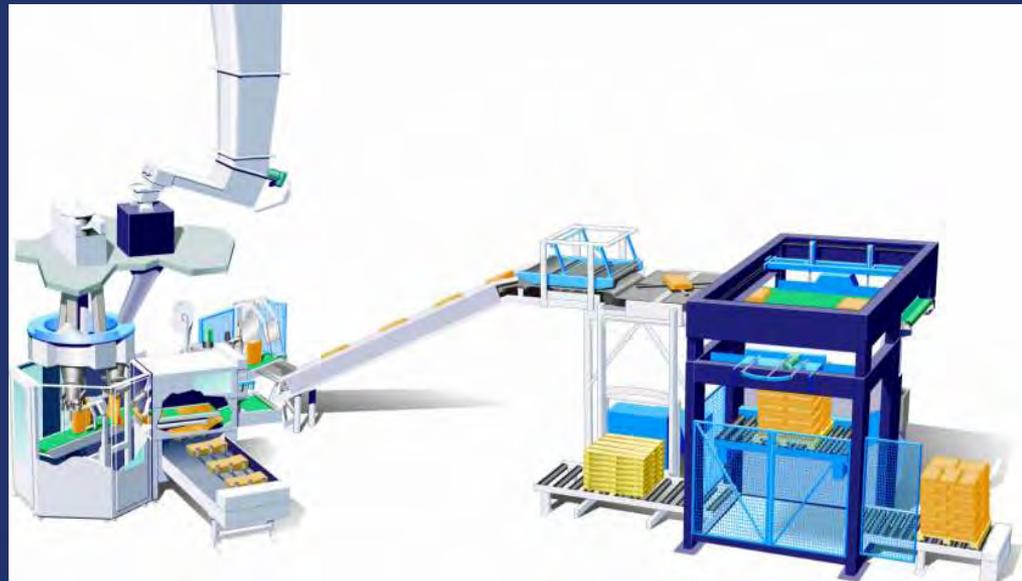
**Speed  
Reliability**



Chronos Weigher as the **world's first automatic Weigher** to be calibrated

# CHRONOS RICHARDSON SYSTEMS IN THE MILLING INDUSTRY

- Since more than 100 years supplier in the milling industry
- Systems supplier for weighing, bagging, palletising and load securing systems.
- Milling systems for extraction, monitoring and controlling.
- More than 300 references in the milling industry worldwide



# MILLING INDUSTRY APPLICATION



# MILLING PROCESS

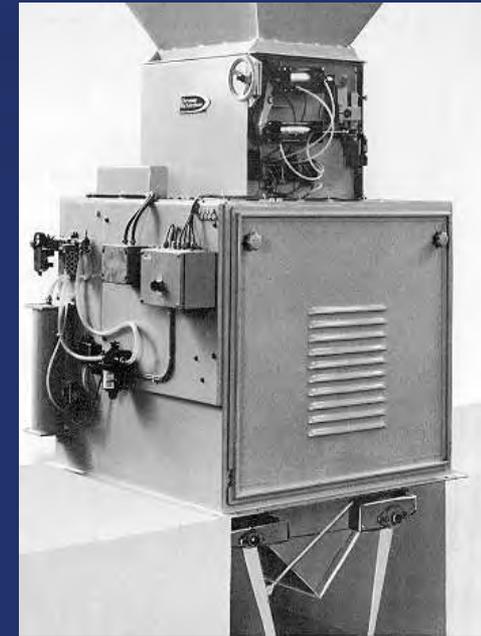
- Process 1: Receiving
- Process 2: Dirty & Clean Wheat Blending
- Process 3: First Break Weigher
- Process 4: Flour Extraction Rate Monitoring
- Process 5: Bran & Screening Weighing
- Process 6: Bagging, Palletizing
- Process 7: Shipping
- Process 8: Overall Mill Control

# PROCESS 1: RECEIVING

Receiving Scale      **CHRONO-WEIGH™ AW/VW**  
Control                **CHRONO-TRONIC™ Bulk 9**

Fulfill today's weighing requirements  
for accuracy, performance and reliability

Electronically controlled weighers for receiving &  
shipping bulk materials



Scale	Size	Weighing range (kg)	Performance	Net weight (kg)
AW/VW	101/220	5-100	50	280
AW/VW	201/400	10-200	100	600
AW/VW	301/500	10-300	140	620
AW/VW	501/750	25-500	180	750

# PROCESS 2: DIRTY OR CLEAN WHEAT BLENDING

Task: Controlling, recording and blending

Electronical Net Weigher CHRONO-WEIGH™ E55 G/K or  
Advanced Process Weigher Type APW



	Net weigher	
	E25	55
Weighing range	5-30 kg	10-50 kg*
Hopper size	30/50/80	50/80/120/160/220

\* on request up to 100 kg



## PROCESS 3-5: FLOUR EXTRACTION RATE MONITORING

### CHRONO-BULK™ APW



High accuracy weighing for optimum mill performance

Hygienic design for modern flour Mill

Neat compact design, minimum surface

Operation in extraction, monitoring, controlling or totalising modes



# WEIGHER CONTROLLER



- High accuracy
- High speed
- Reliable

# PROCESS 6: BAGGING & PALLETIZING FLOUR

## Open-Mouth Bagging

### Semi-automatic solutions

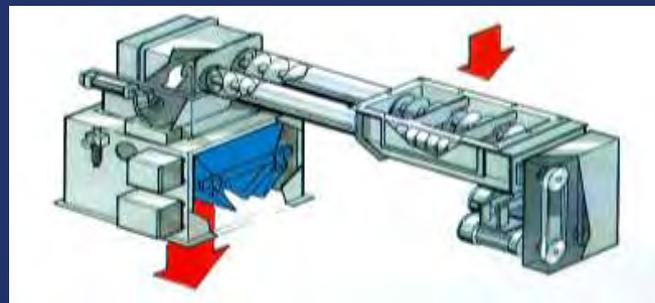
- Vibratory packer with manual bag placing
- Carousel with 4 or 6 spouts and manual bag placing

### Fully automatic solutions

- Vibratory packer with automatic bag placing
- Carousel with 4 or 6 spouts and automatic bag placing

## Screw Feeding

Single Screw Feeder SS  
Double Screw Feeder DS →



# BAGGING: VIBRATORY PACKER RV

Weighing System: CHRONO-WEIGH™ E 55 (Screw Feeder)  
Weigher Control: CHRONO-TRONIC™ SpeedAC NXT  
Output: max. 300 bags/hr.  
Product compaction: Vertical movement of spout  
Type: Semi automatic or fully automatic

- Compact design, fast, accurate, user-friendly
- Microprocessor weighing controller for scales
- 32 bit technology



# BAGGING: CAROUSEL CHRONO-FILL™ K4 / K6



**Available as 4 or 6-spout carousel**

**Bag types:**

open-mouth bags, pillow type

**Bag material:**

paper, PE or PP

**Bag sizes:**

Width: 430 – 600 mm

Length: 600 – 1200 mm

# BAGGING: CAROUSEL CHRONO-FILL™ K4 / K6

## TECHNICAL DATA:

**K4**

**K6**

Weighing:	one net weigher	two net weigher
Output:	up to 550 bags / hour	up to 950 bags/hour
Power consumption:	10kW	15 kW
Power supply:	3AC / 400V-50 Hz others upon request	3AC / 400V-50 Hz others upon request
Air consumption:	ca. 40 NL/min	ca. 50 NL/min
Operating pressure:	6 bar	6 bar
Operating temperature:	+5°C to +35°C	+5°C to +35°C
Noise level:	75 dbA	75 dbA

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6

## FEATURES & BENEFITS

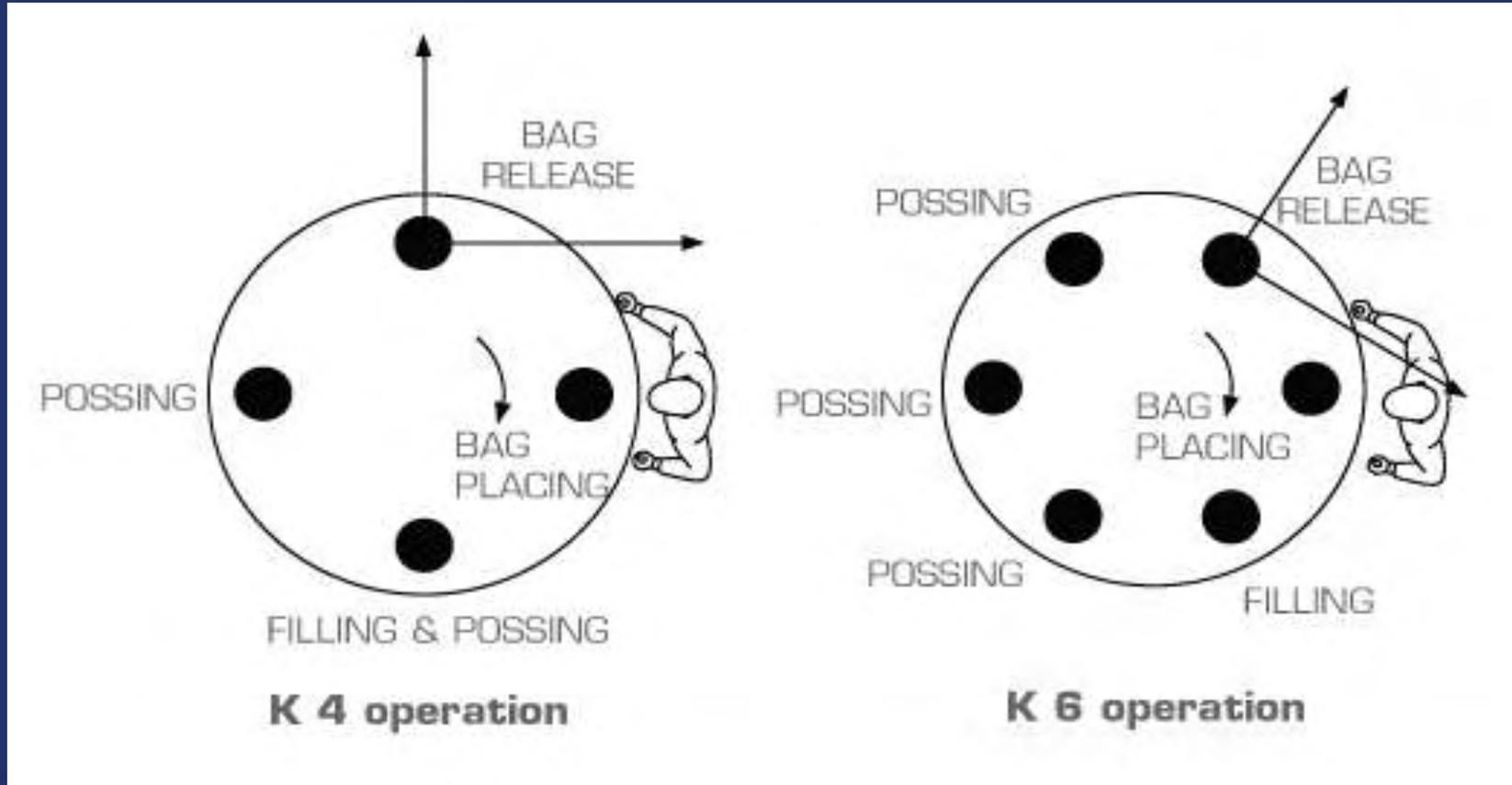
- Ability to handle different types of bags
- Solid construction
- Easily interchangeable bag spouts
- PLC control system with user-friendly operator interface
- Precise net weighing technology using the SpeedAC controller
- Low-maintenance components and assemblies
- Clean working conditions due to limited dust escape in the filling area

## OPTIONAL MODULES

- Sweeping device in carousel area
- Powered height adjustment of the outfeed conveyor
- Automatically adjustable passing device
- Automatic bag placer

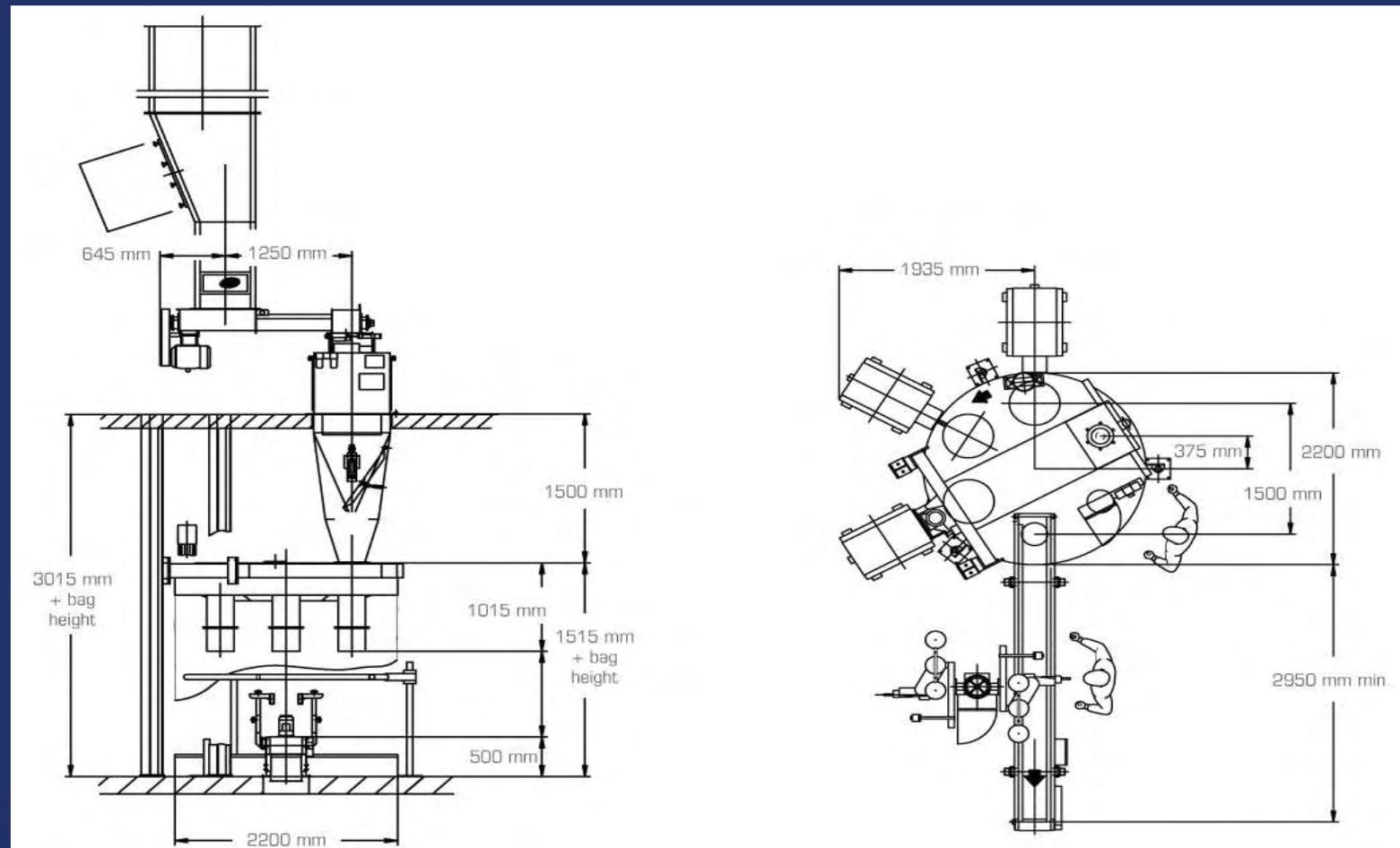
# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6

## OPERATION PROCESS



# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6

## TYPICAL LAYOUT



# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



View on the entire carousel bagging system.

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



The empty bag is placed onto the spout.

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



**Product  
compaction:**

Possing devices

The bag is filled and passed.

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



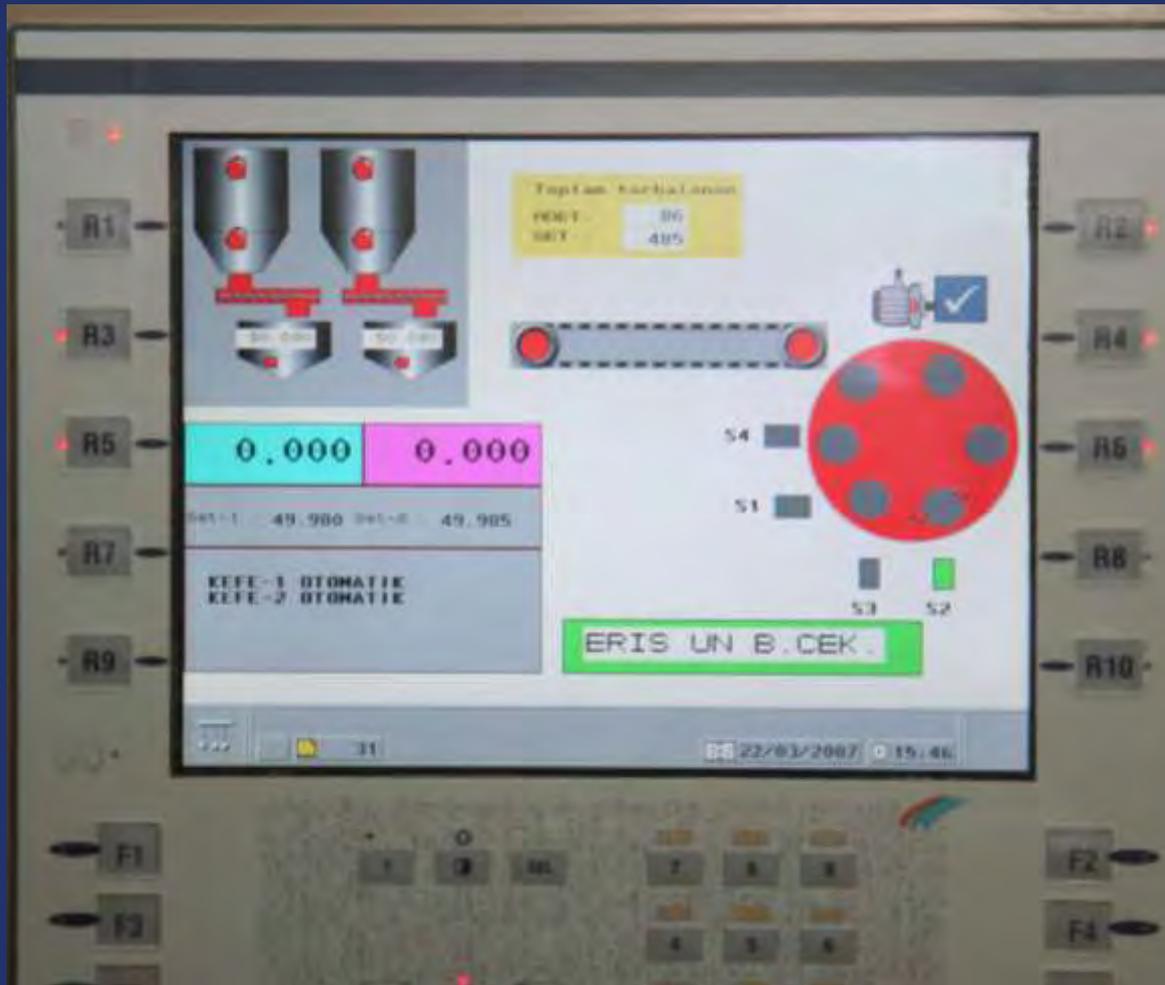
The filled bag is placed onto a belt conveyor.

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



The bag is transferred in upright position into the bag closing device.

# BAGGING CAROUSEL CHRONO-FILL™ K4 / K6



PLC control system  
with user-friendly  
operator interface

# FULLY AUTOMATIC BAGGING CAROUSEL

## CHRONO-FILL™ K 1000

High-speed carousel, up to 1.000 bags/hour

6-spout system, places, fills and densifies at the same time

Bag placer with high volume blower and suction cup

3 vertical passer for densification

### **Bag types:**

Paper, mixed textile, PE or woven PP

Bag magazine capacity:  
Up to 400 bags (10 piles)



# FULLY AUTOMATIC BAGGING CAROUSEL

## CHRONO-FILL™ K 1000

### FEATURES & BENEFITS

- Fully automated system reducing direct labour costs
- Reliable system due to its rugged construction and clean production
- Can handle various open-mouth bag materials and sizes
- Quick changeover of bags
- Precise bag top control from filling to closing
- Retaining of lateral gussets throughout the operation
- PLC with user-friendly operator interface
- Hygienic version

# FULLY AUTOMATIC BAGGING CAROUSEL K 1000

## OPTIONAL MODULES

- Enhanced dust control and aspiration
- Motorized height adjustment of vertical passer
- Sweeping device in carousel area
- Labelling or marking device
- Manual bag placing for bags being not suitable for automatic bagging
- Suction cups for bag placer

# FULLY AUTOMATIC BAGGING CAROUSEL K 1000



Filling and  
compacting



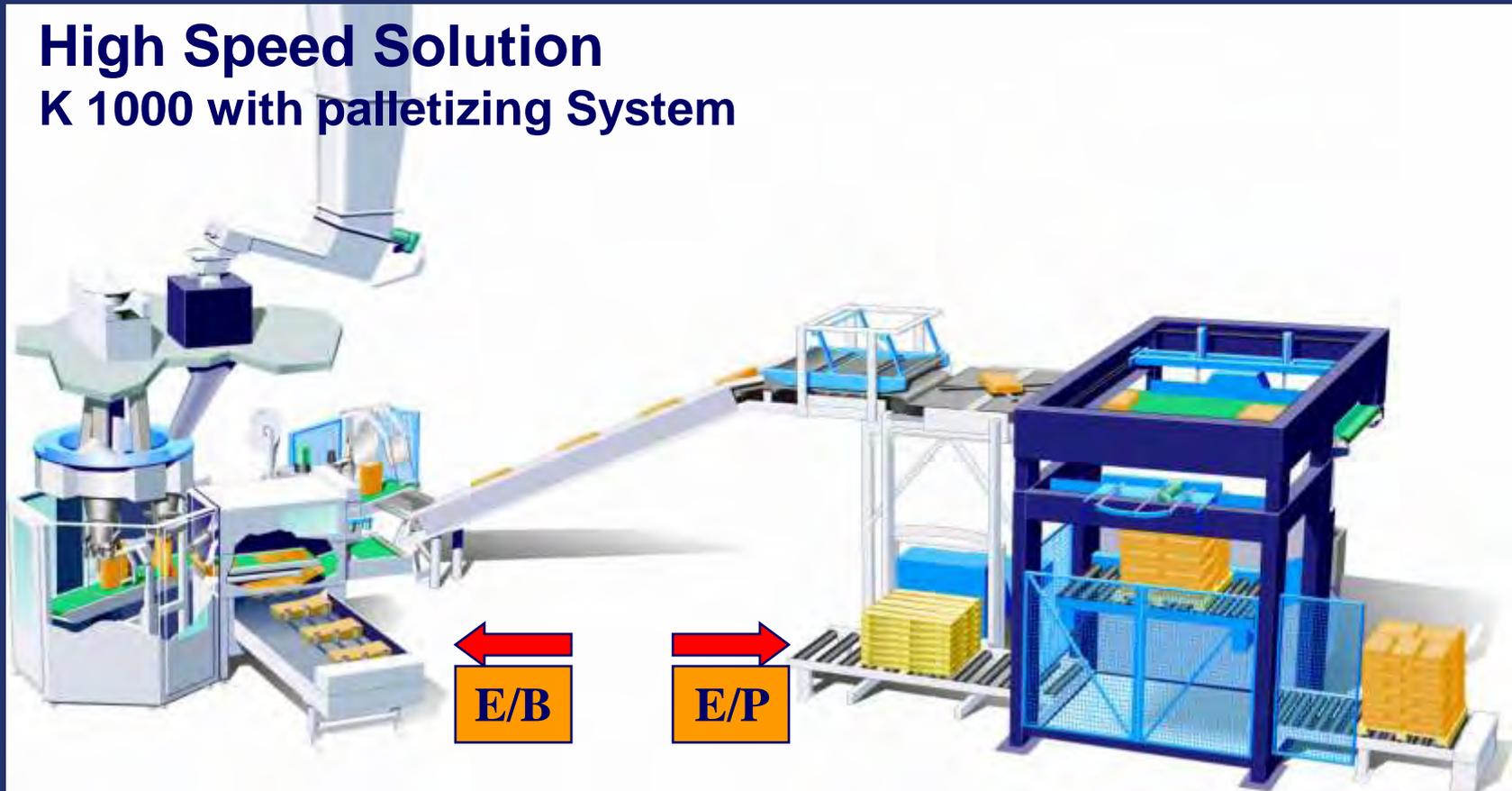
Release  
of bag



Bag  
transfer

# BAGGING CAROUSEL

## High Speed Solution K 1000 with palletizing System



# BAGGING & PALLETISING FLOUR

## Valve Bagging

### Semi-automatic Solutions

Valve bagger with **manual** bag placing

Valve bag **pressure** **air flow** **packer** with **manual** bag placing



### Fully automatic Solutions

Valve bagger with **automatic** bag placing

Valve bag **pressure** **flow** **air** **packer** with **automatic** bag placing

**Closing Device:**  
Ultrasonic closure

# VALVE BAGGING SYSTEM CHRONO-FILL™ E-VAL

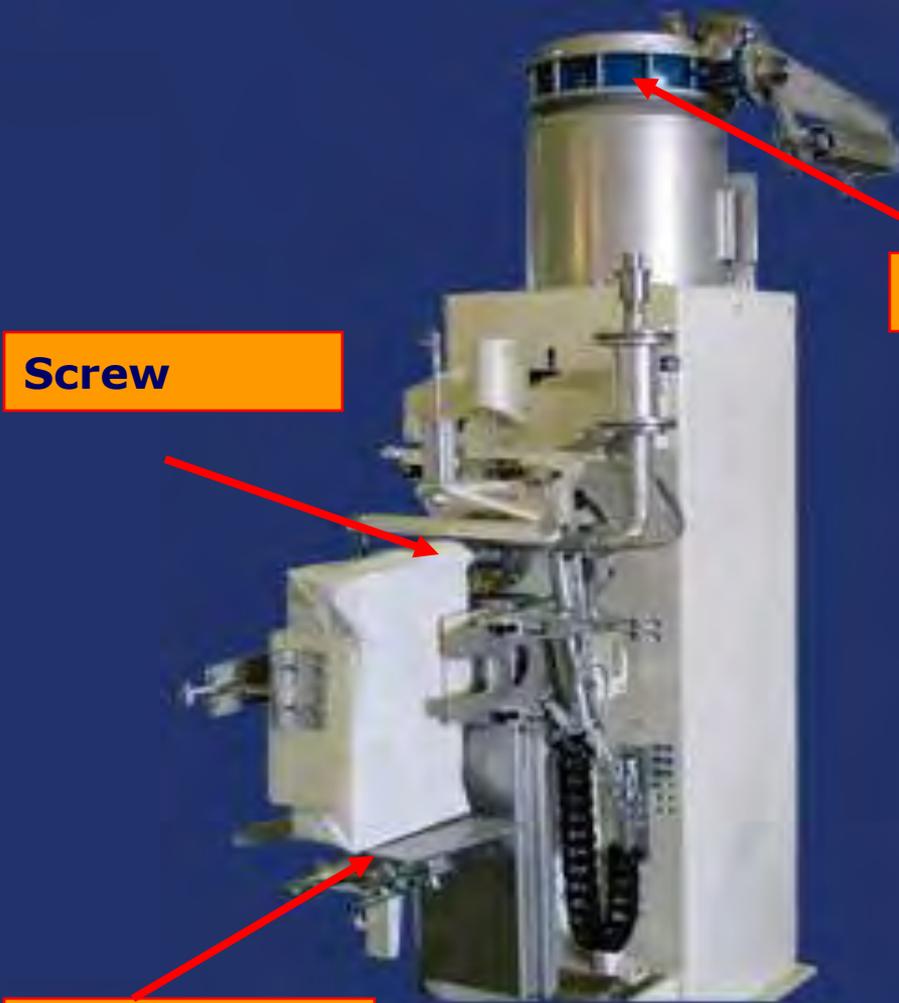


Valve packer for filling valve bags with using air pressure .

Ectronically controlled weighing system and a lowpressure air filler.

Weighing range from 10 to 50 kg  
production rate of up to 500 bags  
per hour for 25 kg bags.

# VALVE BAGGING SYSTEM CHRONO-FILL™ VSP



**Auger packer for filling valve bags**

**Turbine**

**Screw**

**Basic components:**

infeed screw, impeller and packing device.

Single and multiple arrangements possible.

**Passing**

# VALVE BAGGING SYSTEM CHRONO-FILL™ VSP

Weighing System	CHRONO-WEIGH™ E 55 (Screw Feeder)
Control	CHRONO-TRONIC™ SpeedAC NXT
Output	max. 240 bags/hr. with 1 spout max. 800 bags/hr. with 4 spouts
Product compaction	integrated vertical compacting device
Type	Semi-automatic or fully automatic
Sealing	CHRONO-SEAL™ VVU

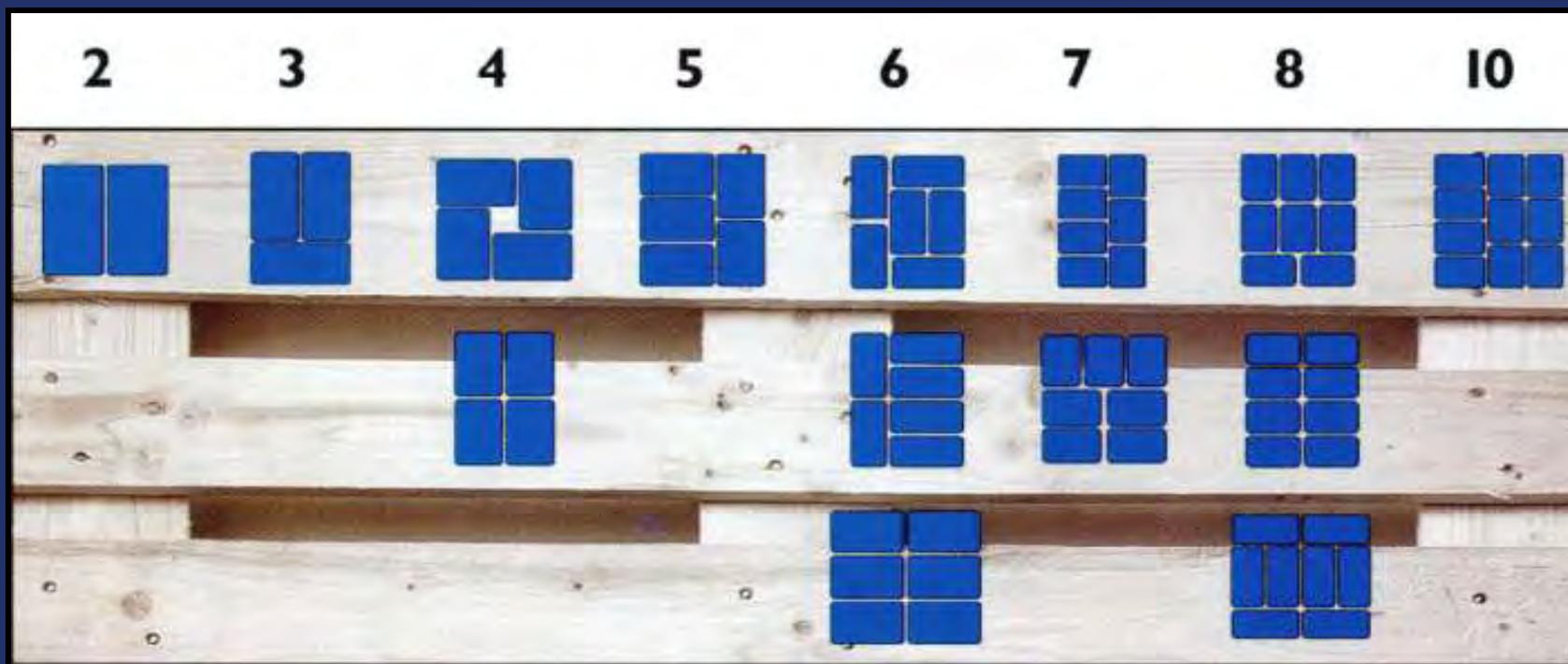


## Palletizing Systems

- High Level Palletizer
- Compact Palletizer
- Robot Palletizer



# PALLETIZING



# PALLETIZING

## **CHRONO-PAL™ PL 1200H, 1600H, 2500H**

High Level Palletizer for capacities up to 2,500 bags per hour.



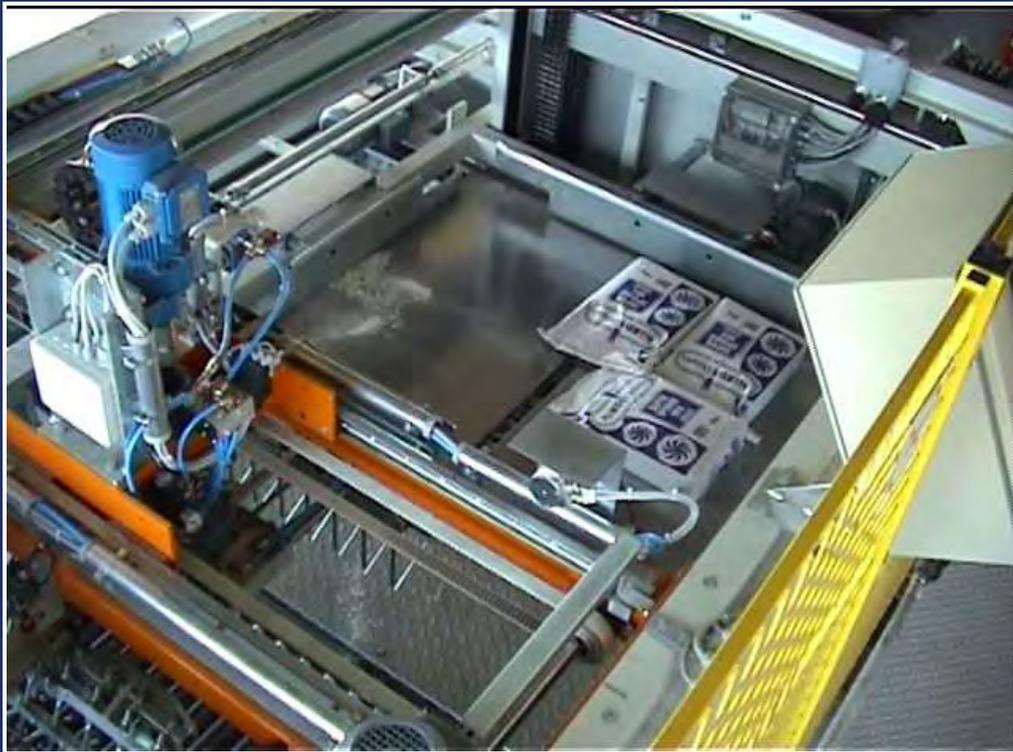
# PALLETIZING

## CHRONO-PAL™ PL 400C, 600C, 900C, 1200C

Compact Palletizer with an integration of a standard palletizer and a robot palletizer.  
Capacities up to 2,400 bags per hour.



Windows Media  
Player



# PALLETIZING

## CHRONO-PAL™ PL RP-Series

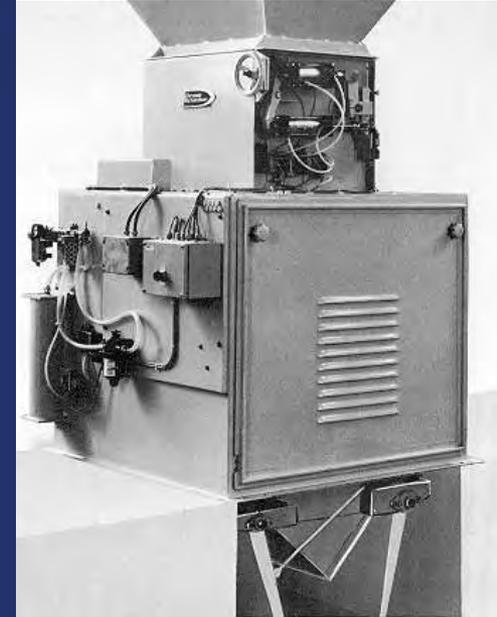
Flexible Robot Palletizing system for flour bags



# PROCESS 7: SHIPPING

Shipping Scale: CHRONO-WEIGH™ AW/VW  
Control: CHRONO-TRONIC™ Bulk 9

- Electronically controlled Weighers for receiving & shipping materials
- Stainless steel contact parts with pure load cell system reduces maintenance cost
- **Fulfills today's weighing requirements for accuracy, performance and reliability**



# PROCESS 8: OVERALL MILL CONTROL

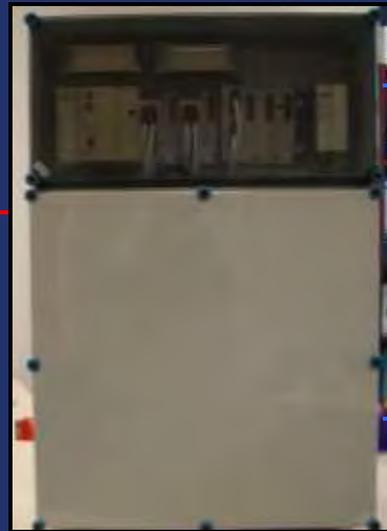
## EXAMPLE



Ethernet Connection



Central control board



Weigher 1



Weigher 2



Weigher 4



Weigher 3



Weigher 5



Bagging System

# PROCESS 8: OVERALL MILL CONTROL

## CHRONO-TRONIC™ PC 555

Function: Monitoring and Controlling Milling Processes



## PROCESS 8: OVERALL MILL CONTROL

**Process control system** for computer aided supervision, control, data acquisition in milling operations.

To record data in mills generated by Weighers and other peripheral devices.

Processes are supervised and monitored directly through digital network.

Central data processing provides clear information

**Improved plant operation efficiency!**

# PROCESS 8: CHRONO-TRONIC™ PC 555

PC555      CR Foods       

Line Overview      Software V1.0      Build 1601

**First**      Second

**Status**

chk\_dde\_link\_2  
chk\_gareco\_status\_1  
inkjet printer off 1  
chk\_dde\_link\_1  
chk\_gareco\_status\_2  
checkweigher off 1  
speedac 7 no2 bags per minute  
metal detector on

**Mode**

PBS	COP	Pallet
<b>Run</b>	Div	<b>Auto</b>
E/stop	Chk	E/stop
Sew	Met	
	Ink	
	Rej	

**Batch Control**

 **SA7**

**Start Batch** 

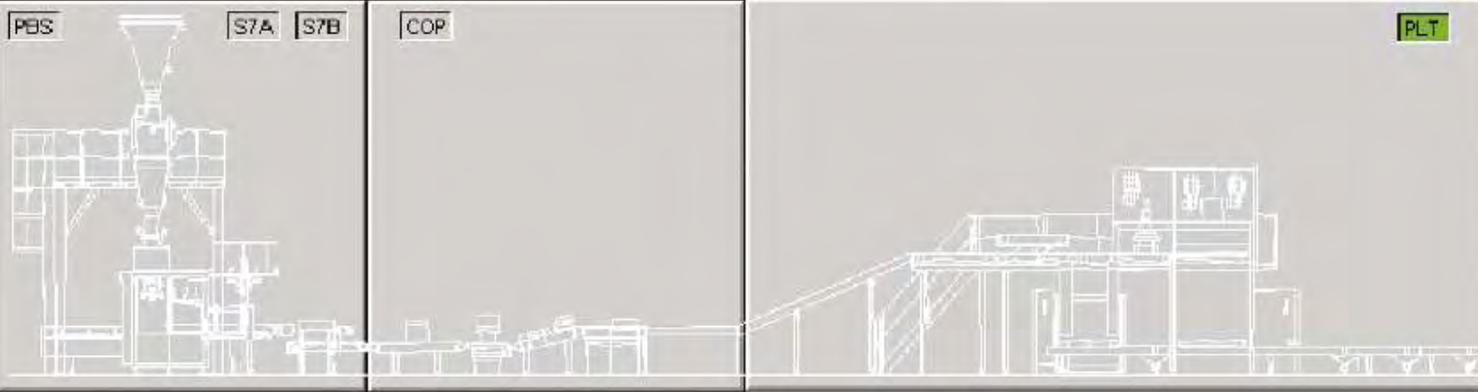
End Batch 

Speedac A sa7 1 

Speedac B sa7 2 

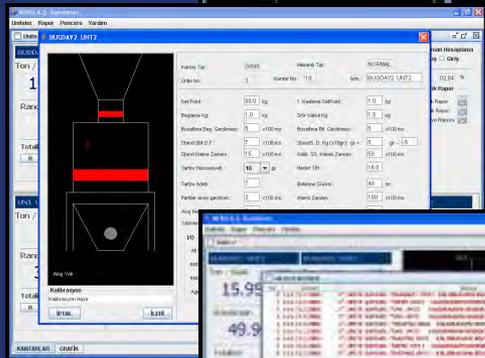
Check Scale **check wgh 1**

PBS      S7A      S7B      COP      **PLT**



    **SA7**   

# PROCESS 8: CHRONO-TRONIC™ PC 555



# PROCESS 8: CHRONO-TRONIC™ PC 555



# PROCESS 8: CHRONO-TRONIC™ PC 555

MEKD 4.5: Randıman

Uniteler Rapor Pencere Yardım

Uniteler BUGDAY2 UNT2

BUGDAY2 UNT2

Ton /

1

Randıman

Totallık

R

UNI U

Ton /

3

Randıman

Totallık

R

Kalibrasyon

Kalibrasyon Hazır

İPTAL İLERİ

KANTARLAR GRAFİK

Kantar Tipi: GIRIS Mekanik Tipi: NORMAL

Ünite No: 2 Kantar No: 10 İsim: BUGDAY2 UNT2

02,04 %

Man Hesaplama

05 Giriş

02,04 %

Man Rapor

Man Rapor

Man Raporu

5

56 %

907798

907782

YENİLE KAPAT

Set Point : 80.0 kg 1. Kaaleme SetPoint : 1.0 kg

Başlama Kg: 1.0 kg Sıfır Kabul Kg: 1.5 kg

Bosaltma Baş. Gecikmesi: 5 x100 ms Bosaltma Bit. Gecikmesi: 5 x100 ms

Stand Still D.T.: 7 x100 ms Stand S. D. Kg (x10gr): gr+ : 5 gr- : -5

Stand Kalma Zamanı : 15 x100 ms Kalib. SS, Kalma Zamanı : 50 x100 ms

Tartım Hassasiyeti : 10 gr Hedef T/H : 16.0

Tartım Adeti : 7 Bekleme Süresi : 40 sn

Partiler arası gecikme : 2 x100 ms Alarm Zamanı : 100 x100 ms

Akış Hatası Gecikmesi : 2 x100 ms Kalibrasyon Hassasiyeti : 30 %

Tolerans Yüzdesi : 20.0 %

I/O

Alt Seviye Input No : 28 Alt Kapak Kapalı Input No : 29

Motor Çalışıyor Input No : 0 Kesme Hızlı Çıkışı Output No : 29

Motor Çalış Output No : 0 Bosaltma Output Çıkış No : 31

Ağirlik Analog Bilgi Giriş No : 10

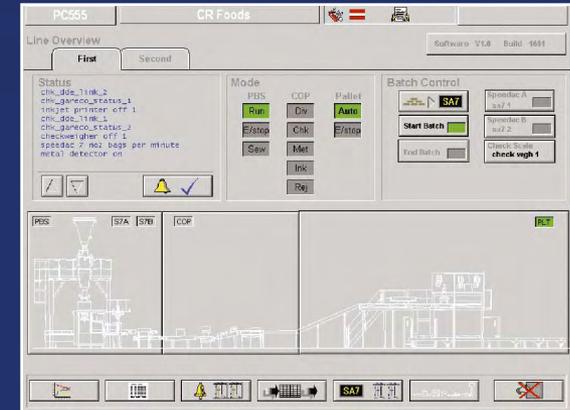


# PROCESS 8: CHRONO-TRONIC™ PC 555

## FEATURES & BENEFITS

Easy operation, convenient system control

- Central data processing for clear information
- Provides full data logging and trending
- Improved plant operation efficiency
- Reduced operational workload and errors
- Multi-lingual feature
- Online documentation
- Remote link via modem
- Up to 32 Weigher can be monitored per PC



## OPTIONS

Connection to plant PLCs

- Ethernet interface
- Touch screen monitor
- Multi-operation points
- Internet or plant Intranet connectivity
- Multi-line or milling sections
- UPS powder supply
- Bar-code reading or printing
- Recipe or formula management

# SERVICE PARTNERSHIP

**We are at your disposal - Worldwide.**

Our total capability includes:  
project management,

- design,
- manufacturing,
- installation,
- commissioning,
- full service back-up,



# SERVICE PARTNERSHIP

Service partnership with Chronos Richardson Systems.  
Your key to optimum equipment performance.



We can help you achieve your profit goals by increasing equipment availability and accuracy.

You can select from our extensive range of services, from complete maintenance to periodic support.

## Full Customer Services Back-up:

Long-term vision of support through extended hours, **spares deliveries** and all other services such as:

- System optimization service
- Training (on and off-site)
- Upgrades
- Retrofits
- Help desk assistance
- Preventative maintenance.....etc.





- An integrated modem in the packaging system provides connection with one of our technicians to give suggestions or modify the machine programme online.

# COMPLETE INTEGRATION CAPABILITIES

## From one supplier

Chronos Richardson Systems is able to provide the total Bagging solutions for its partners from raw product feeding to the wrapped pallet – 100% automated

Advantages -

Better communications/integration between pieces of equipment

Engineering services and 3D layout designing

One contact for service

Equipment monitoring capability



Thank you for your  
attention

Issam Baydoun  
Regional Sales Manager

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