



CLAUDIUS PETERS



# Packing & Dispatch **TECHNIK**

We know how

## About

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Since its founding in 1906, Claudius Peters has become one of the world's most respected engineering houses and an innovative world leader. Its German engineering excellence continues to set benchmarks for the design, manufacture and commissioning of materials handling and processing systems for the gypsum, cement, coal, alumina and bulk-handling industries. From conception and installation through to commissioning and after-sales support, Claudius Peters provides world-class service to the world's biggest manufacturers.

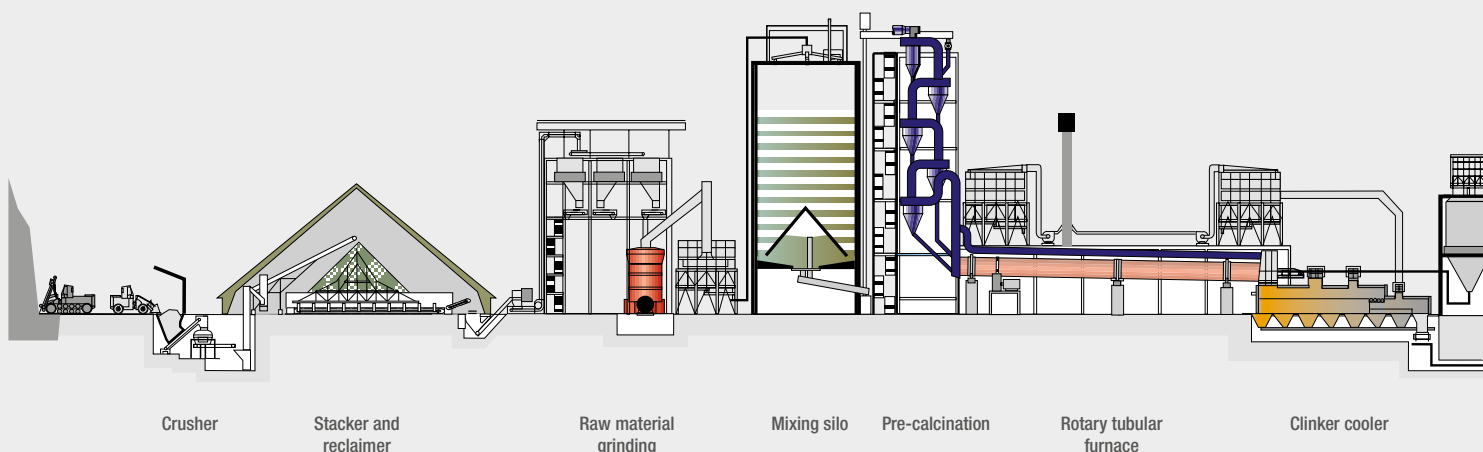
The company is part of the Claudius Peters Group GmbH, headquartered in Buxtehude near Hamburg, Germany, with regional offices in the Americas, Asia and Europe.



Claudius Peters' headquarters, Buxtehude, Germany.

### It all started with bulk material

Claudius Peters is a well respected name in the construction of cement terminals, including all components such as silo facilities, conveying and dispatch systems. Based upon knowledge gained in over a century of experience, Claudius Peters are specialists in all areas of bulk materials handling, many of which require packing and dispatch systems.



# packing & dispatch

It is crucial an automated packing plant is installed in the process operation without disruption to the plant. That's why Claudius Peters works closely with the client taking into consideration all aspects of the plant's operation. The Claudius Peters packing plant is customized to fit into an existing system; compact and modular it is easily and quickly installed as an integral component.

## Everything from one source

From a standard control technique to a comprehensive automatic dispatch system, Claudius Peters technology provides total control. Clients can record, control and evaluate the production capabilities of individual packing lines with loading alleys, palletisers and material logistics as well as all important plant data.

Installed in  
hundreds of  
plants globally



Claudius Peters packing terminal.



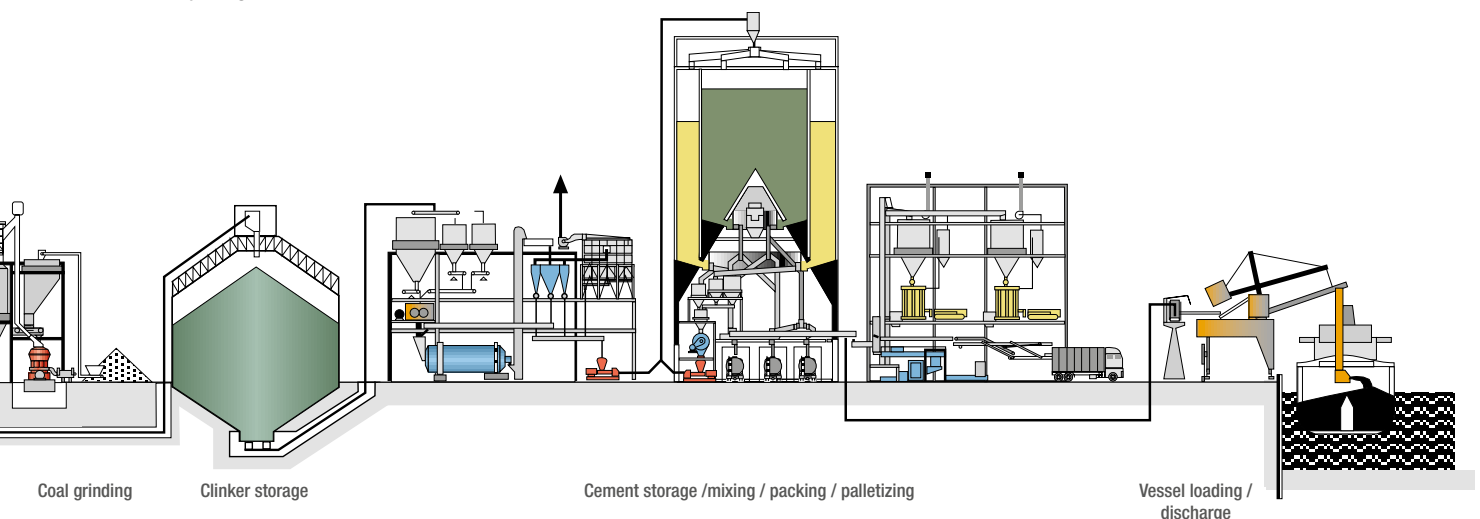
Packer in Claudius Peters workshop, Germany.

## Filling plants with:

- Rotary or In-Line Packer
- Turbine or Air Packer

## For industrial sectors:

- Cement
- Limestone
- Gypsum
- Building materials



# tailored solutions



Local control panel.

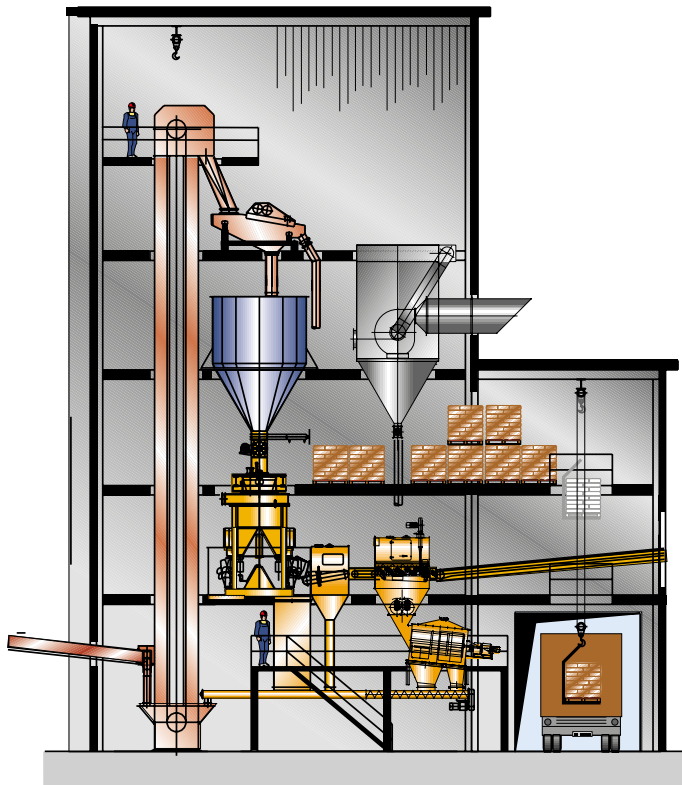
The working method of each Claudius Peters packing plant can be individually tailored to the customers specific requirements. Equally the specific properties of the materials to be packed are of vital importance.

The packing plants are either fed via mechanical or via pneumatic conveying systems with a protective screen removing all foreign components. By means of a preceding bin, the material is vented and a constant pre-pressure for controlled material feeding to the packing machine is achieved.

After filling the bags, they are distributed via belt conveyors and distribution systems to the dispatch terminal for palletizing or direct truck loading.

## The Claudius Peters Packing Plant comprises:

- Bucket elevator
- Vibrating screen
- Pre-bin with level indicator
- Feeding system
- Packing machine with automatic bag application and empty bag transportation
- Bag discharge, system for transportation and removal
- Spillage return system
- Dedusting filter system
- Electrical control and automation



Rotary packer with automatic bag applicator.



Bag applicator with cassette magazine.



Bag transportation route.

# packing systems

The Claudius Peters range of products offers rotary packers with up to 16 spouts and in-line packers with a maximum of 4 spouts. The size of the packer is mainly determined by the packing capacity and the available space for the plant.

## Rotary Packer and In-Line Packer:

- **Modular structure**
- **Filling system controlled by weighing electronics**
- **Filling of fine and coarse flow**
- **Check weighing on the spout**
- **Valve welding with ultrasonics**
- **Automatic bag seat adjustment**
- **Central dedusting system**

## Turbine or Air

Depending on the existing bulk material, different filling systems can be used with both packing machines. Turbine packers are well-

proven in applications where bulk materials are capable of flowing and have a maximum grain size. For materials with variable flow properties and grain sizes of more than 4 mm (for example specialist building materials) compressed air filling systems are more suitable. Both turbine and air systems comply fully with modern bagging technology.

## Turbine Packer and Air Packer:

- **High filling capacity**
- **Highest weighing accuracy**
- **Optimum availability of the plant**
- **Fully automatic adjustment of the bagging unit to different building materials, bag sizes and bag weights**
- **Locking systems for valve bags**
- **Integrated bag cleaning systems after the bag discharge**
- **Realization of the EC-directive OIML R 61**

Packing systems  
for every  
requirement



4-spout in-line packer.



8-spout rotary packer.



8-spout turbine packer.



6-spout air packer.

Performance data Claudius Peters packing plants, in terms of cement (CEM I) with max. 3800 Blaine

	50kg bags		25kg bags	
	per spout	max. bagging capacity	per spout	max. bagging capacity
Rotary packer	300 bags/h	4800 bags/h	375 bags/h	6000 bags/h
In-line packer	300 bags/h	1200 bags/h	375 bags/h	1500 bags/h

# efficient integration

## Modular design and integrated systems for efficient operation

### Modular designs

Claudius Peters packers are made up of identical modules as a cost effective solution when exchanging the filling modules or retrofitting an existing plant with additional modules for an increase in efficiency. The modules are compact with easily accessible structural elements saving valuable operational time and thus reducing maintenance costs.

### Dustfree operation

The dedusting air is extracted via unique exhaust air pipes directly at the spout and is led upwards to the central dedusting hood at the packer head. From here, the air flows directly to the main filter system. Consequently, the arising dust quantity is minimized after the filling procedure and an almost dustfree, environmentally friendly operation is ensured.

### Integrated independent weighing systems

Each filling module in the packing plant is equipped with separate, independent weighing electronics. These weighing systems are connected externally via a data bus with the Claudius Peters PACTRON MASTER central terminal.

From this terminal, the operating staff can transfer individual control parameters for the different

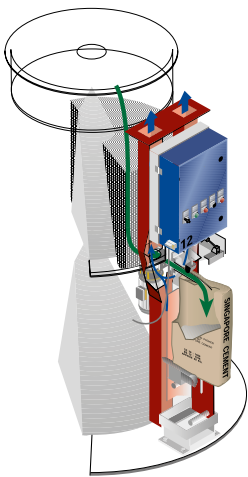
### Benefits:

- **Components easily exchangeable**
- **Extendable circumference**
- **Low maintenance cost**
- **Dust diversion directly at the spout**
- **Dedusting in the packer head**
- **Almost dustfree operation**

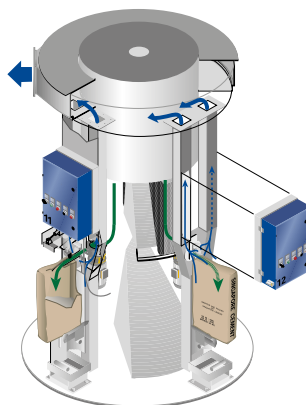
types of products to the weighing electronics by keyboard. This also allows a pursuance of the different metering procedures at the monitor.

The weighing electronics of each module control the metering course autogenously in all phases, from bag identification and zero taring to the start of coarse flow metering and bag discharge.

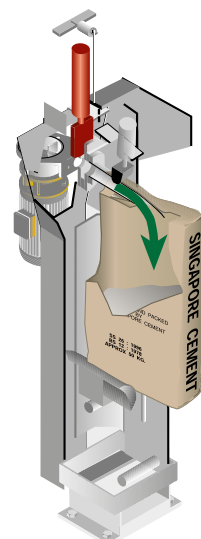
Ensuring permanent supervision of filling flow quantity, the system maintains high weighing accuracy and combines check weighing with simultaneous determination of the fine flow and after-run quantities, resulting in optimization of the switching-off points.



Easily exchangeable: Frame with filling spout and weighing electronics.



Unique with Claudius Peters: the dust suction upwards from the filling spout.



Claudius Peters integrated weighing system.

# system selection

Depending on your application and the specific filling properties of individual products, Claudius Peters are able to offer three different filling systems.

## Horizontally rotating turbine

The Claudius Peters horizontally rotating turbine is suitable for free-flowing bulk materials such as cement, limestone and gypsum, as well as fine building materials.

## Vertically rotating turbine

The Claudius Peters vertically rotating turbine is suitable for building materials with a higher proportion of coarse grain, and also for free-flowing bulk materials such as cement, limestone and gypsum.

## Air filling system

The Claudius Peters air filling system is suitable for free flowing bulk materials including coarse building materials with a maximum particle size of 10mm.

### Claudius Peters Turbine (Horizontally rotating):

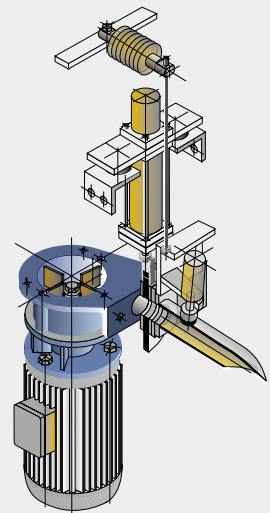
- Conical material feeding
- Horizontal impeller directly coupled with the motor
- No drive via v-belt required
- Sealing of housing via labyrinth seal with scavenging air
- Solid impeller construction
- Smooth dismantling in case of inspection
- 4.0kW motor power
- Optional frequency-controlled turbine speed and wear-resistant design.

### Claudius Peters Turbine (Vertically rotating):

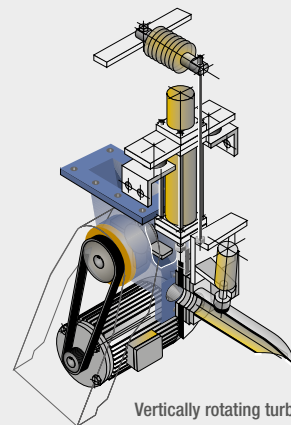
- Conical material feeding
- Vertical impeller driven via v-belt
- Solid turbine bearing
- Sealing of housing via labyrinth seal with scavenging air
- Solid impeller construction
- Smooth dismantling for maintenance
- Inspection of the turbine through cover opening
- 5.5kW motor power
- Optional frequency-controlled turbine speed and wear-resistant design.

### Claudius Peters Air Filling System:

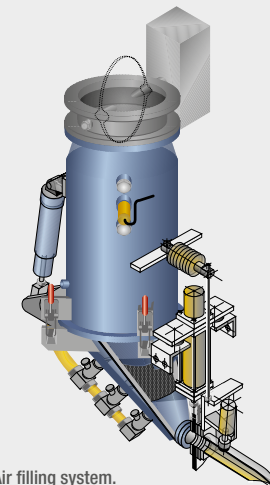
- Edge-free pressure chamber
- Separate aeration via upper and lower air
- Automatic chamber venting
- Pneumatically operated shut-off flap with inflatable sealing collar
- Folding filling chamber bottom for cleaning
- Wear-resistant high-grade steel fabric aeration bottom
- Pressure shock aeration of the filling duct at the beginning of the filling procedure
- Automatic self-cleaning with pressure shock aeration of the filling duct
- Optional with cutter valve for very coarse materials.



Horizontally rotating turbine impeller.



Vertically rotating turbine.



Air filling system.

# ultrasonic bag sealing



Ultrasonic sealing device.



Ultrasonic sealing device.

## Absolutely dust-tight

Claudius Peters has developed ultrasonic welding technology for bag valves to conform to the stringent requirements for cleanliness, when storing and handling individually packed bulk materials.

Here, the valve is sealed hermetically and is dust-tight following the filling of the bag. The special valves are internally coated with a fusible synthetic material. For welding, the valve is clamped between the sonotrode and the anvil. At the same time, a generator is creating ultrasonic vibrations which are transmitted to the fixed valve by the sonotrode. The heat arising from the ultrasonics forces the synthetic material to melt and the valve is glued. Subsequently, the bag is fed to the bag discharge.

## Benefits:

- Locking rates almost 100%
- Shortest locking times
- Sealing directly at the module
- Maintenance-friendly structure
- Protects the filled material from moisture and environmental impact
- Subsequent plant components remain clean



The bag is filled...



...is pulled out and held tight...

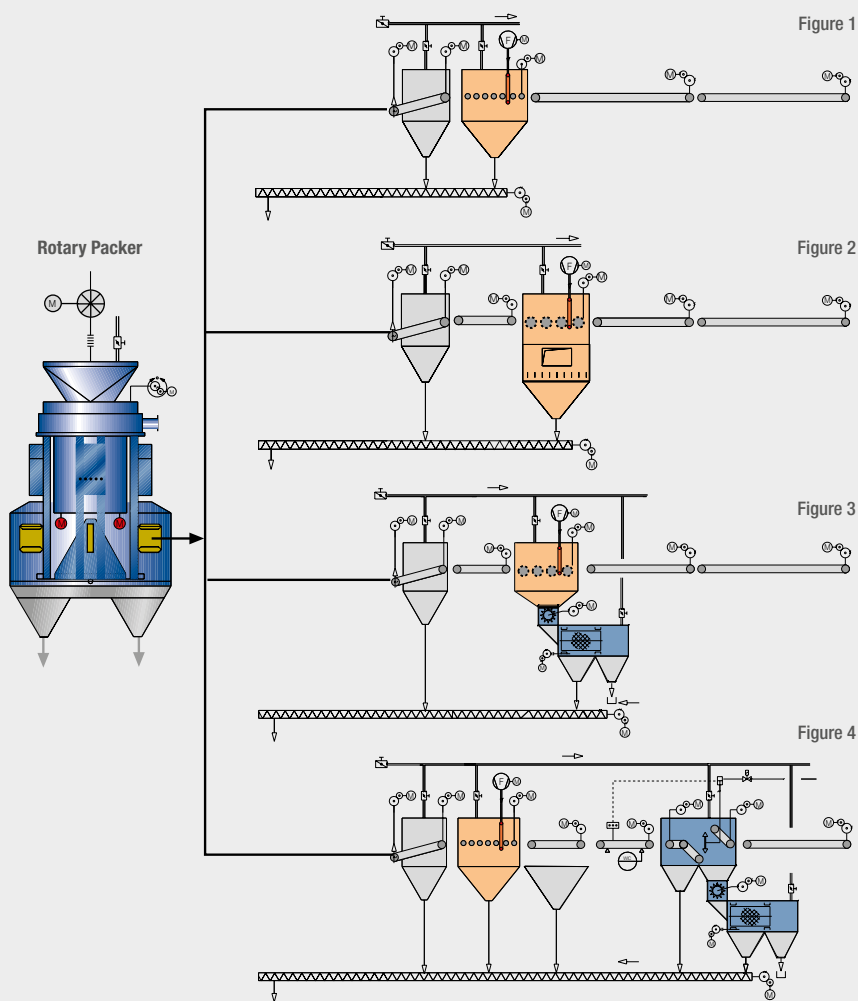


...welded and hermetically sealed.

# bag handling

For every type of application, Claudius Peters offers tailor-made bag handling systems. From simplified bag discharge belt conveyors

with integrated bag cleaning, right up to systems that allow for the removal of under or over-weight bags.



## Different bag discharge systems

Figure 1:

- Bag discharge
- Cleaning of the bags

Figure 2:

- Bag discharge
- Rejection of damaged bags
- Cleaning of the bags

Figure 3:

- Bag discharge
- Rejection of damaged bags and separation of material and paper
- Cleaning of the bags

Figure 4:

- Bag discharge
- Cleaning of the bags
- Check weighing with removal of damaged or under/overweight bags and separation of material and paper



1. Bag discharge with belt conveyor, manual or optionally motorized height adjustment. 2. Bag stressing line with integrated bag cleaning. 3. Bag trap – driven or pneumatic. 4. Removal of damaged bags and pneumatic bag cleaning. 5. Check weigher for continuous weighing and sorting of filled bags – flat belt conveyor with bag reversing station and 90° chute. 6 & 7. Bag roller conveyor with integrated bag cleaning, failed bags cutter (6), rotary screen for separating bulk material from the cut paper bags (7).

# automatic empty bag handling



Bag transfer from magazine to applicator.

The automatic bag applicator from Claudius Peters offers you an even application performance with less operating staff. With a capacity of up to 4500 bags per hour, empty bags can be fed to the applicator head by different methods:

- **From cassette magazines for bundled bags**
- **From reel magazines in single or double roller design**

## **Retrofit made easy**

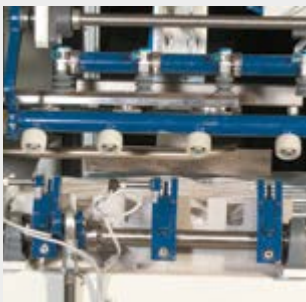
A specially constructed turntable allows a variable arrangement of the bag magazine and facilitates the subsequent installation into an existing packing plant. The bag applicator is suitable for most different bag sizes and specifications. The changeover to the respective size can be achieved automatically.



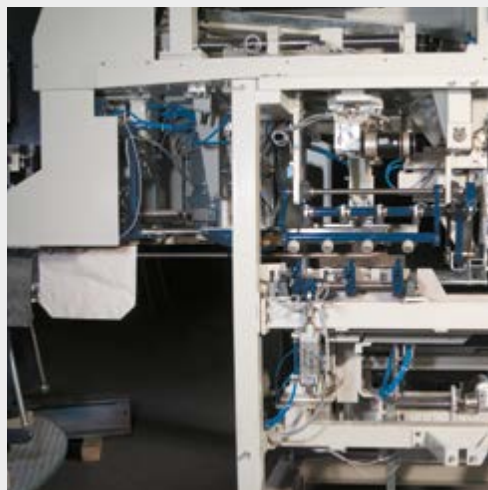
Positioning of empty bag package.



Fully automatic feeding of the empty bag bundles – high productivity is guaranteed.



Positioning of empty bag.



Position of empty bag for application onto spout.

## **Automatic Bag Applicators:**

- **Feeding capacity of up to 4500 bags/h**
- **Feeding of cassette magazines in standard lengths of 3m, 5m or 7m**
- **Feeding of single reel magazines or double reel magazines**
- **Automatic bag size adjustment**
- **Lift for bag bundles possible**
- **All bag sizes and types customary in the industry applicable**
- **For bags with ultrasonic sealing**
- **Free access to loading**

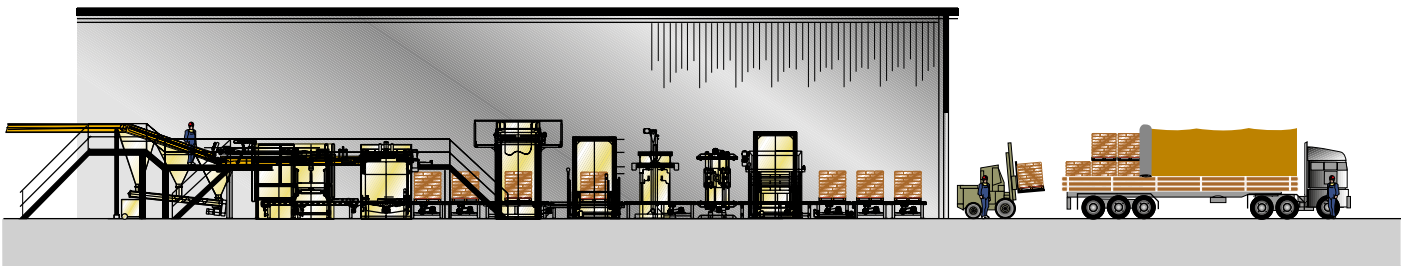
# palletizing & wrapping systems

For the protection of, for example, prepacked building materials, applying a film safeguard is considered to be standard practice today. Winding, stretching or shrinking – Claudius Peters can supply the appropriate system for optimizing each part of the palletizing and wrapping process.

## Palletizer and Wrapping Systems

- Palletizer with a capacity of up to 4500 bags/h
- Bag transportation systems
- Tubular wrapping machines for up to 100 pallets/h
- Combined tubular wrapping and winding machines
- Electrical control and automation

Reliable  
palletizing and  
wrapping solutions



Palletizer with pile-up line for filled pallets, served by forklift.



Palletizer with empty pallets magazine and bag conveyor.

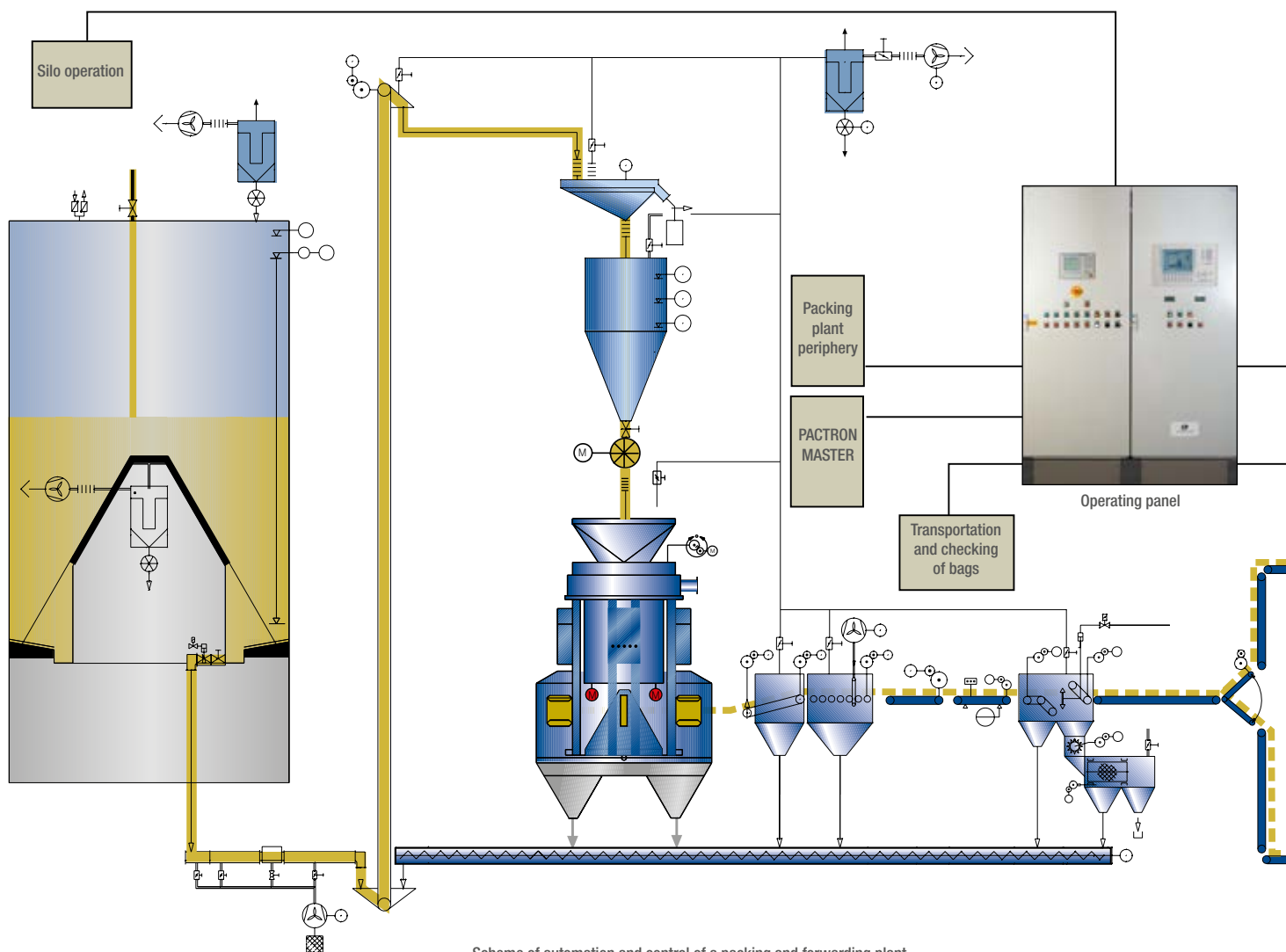
# automation & control

## Integrated automation for optimum efficiency

Claudius Peters uses advanced technology to perfectly co-ordinate the control of a packing plant and more importantly, accelerating the operation of each procedure. These complex control solutions comprise the latest in instrumentation and control as well as process technologies. All control systems can be integrated into existing systems.

### Current information online

Additionally, the latest in communication technology allows remote maintenance and diagnosis providing optimum support for the smooth operation of a packing plant.

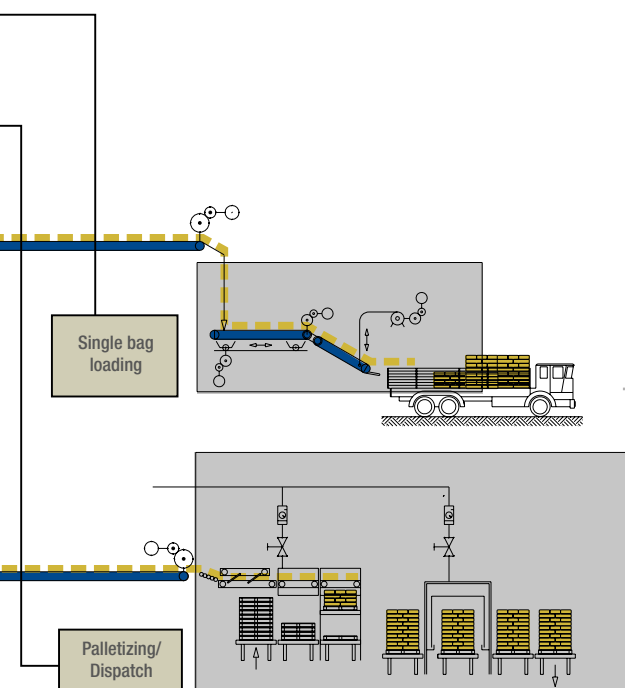


Scheme of automation and control of a packing and forwarding plant.

## PACTRON MASTER

The weighing systems of each of the individual packing plant modules are connected with the PACTRON MASTER central terminal via a data bus that is located in the control desk next to the packing machine. It consists of a 5" monitor, a numeric keyboard and function keys. It is here that the operating staff transfer single control parameters for the different types of product to the weighing electronics. All the functions are displayed in clear text, and the settings can be made online with the machine running.

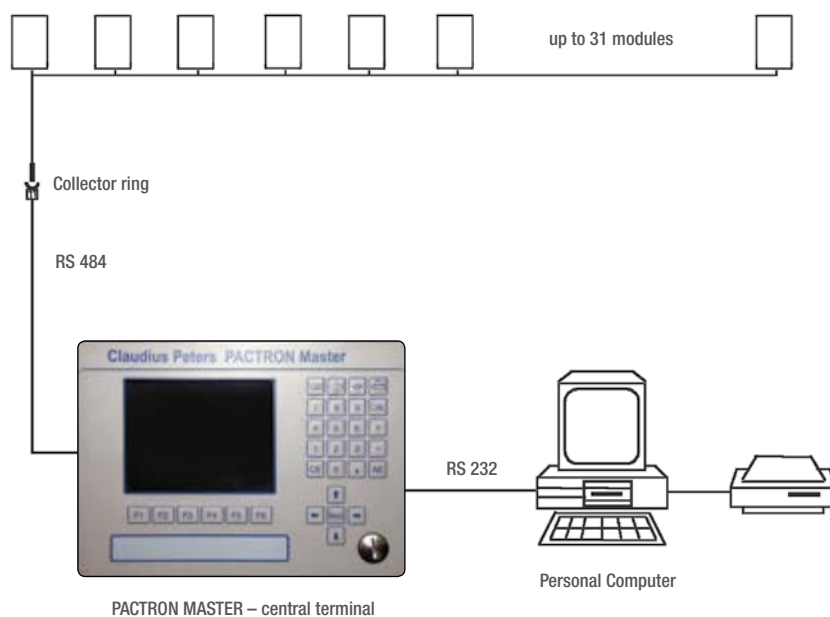
PACTRON MASTER can be integrated into a central guidance system through different data transmission systems. Via the special evaluation program PACTRON DATA, all the gathered data from each of the individual modules can be shown as a statistical evaluation graph and tabulated on one computer.



### PACTRON MASTER – main functions

- Selection of the filling weight
- Display of the current filling weight, either for each individual filling module or for all the modules
- Adjustment of the filling parameters for each weighing module
- Calibration of the weighers
- Tracing of the whole metering process

State-of-the-art  
weighing system  
control



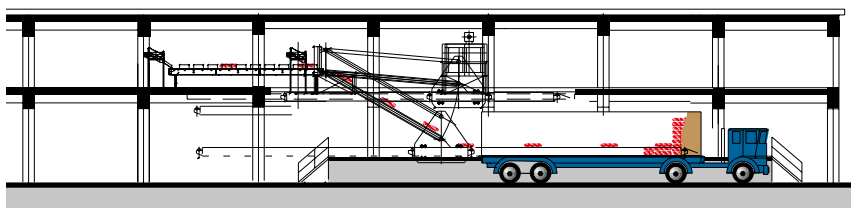
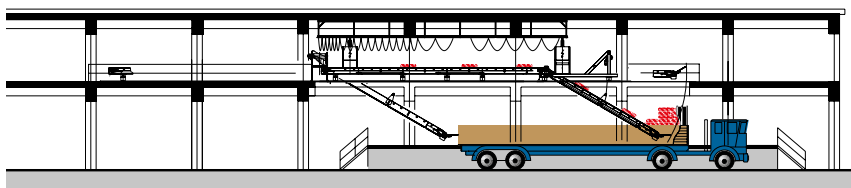
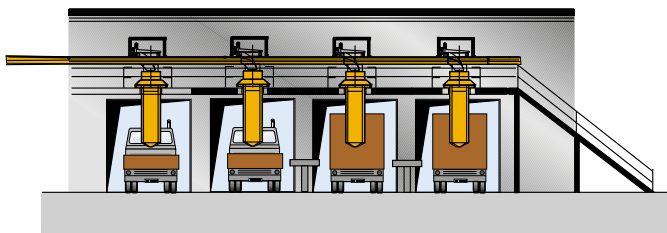
# rear loaders

Loading  
solutions to  
meet your  
every need

Claudius Peters are well equipped to supply all the main aspects of a turnkey plant and the necessary components relating to 'dispatch'. The bags can be loaded individually into open or closed trucks, vessels or railway wagons and can be made available for dispatch via palletizing systems with modern transportation fallback systems. Also during this phase the configuration of the plant is adjusted to individual needs and requirements.

## Loader:

- Rear loader for open trucks
- Rear loader for closed trucks
- Electrical control and automation
- Drive 10m - 12m
- Loading capacity of up to 3000 bags/h



Rear loader for open trucks.



Rear loader for open and closed trucks.

# total solutions

Claudius Peters continues to remain at the forefront of materials handling and processing technology by maintaining in-house a substantial manufacturing facility and a vigorous research, development and test program at headquarters Technikum (Technical Center) in Germany.

The Technikum has proven the characteristics of approximately 13,000 different bulk materials.

Specific testing on the filling parameters of different materials is undertaken in the Technikum. This data guarantees a practical and optimal solution during the planning phase of a packing plant.

Furthermore the Technikum is well-equipped with testing installations to examine the aeration of paper bags. Continuous development is what makes Claudius Peters the ideal partner for packing and dispatch plants.

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The ideal  
partner for  
packing and  
despatch

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Bag placing test arrangement.



Overall survey of the different test tracks.



Fabrication and installation of a turbine packer.



Bagging test station horizontal / vertical turbine / air filling.



The Claudius Peters Technikum works closely with universities, engineers and scientists.

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DISPATCH  
DOSING  
DRY BLENDING  
DRYING  
GRINDING  
PACKING  
PNEUMATIC CONVEYING  
PULVERIZED FUEL SUPPLY  
SILO SYSTEMS  
STOCKYARD SYSTEMS  
ALUMINA HANDLING SYSTEMS  
MARINE POWDER HANDLING  
TURNKEY PROJECTS

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**We know how**

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