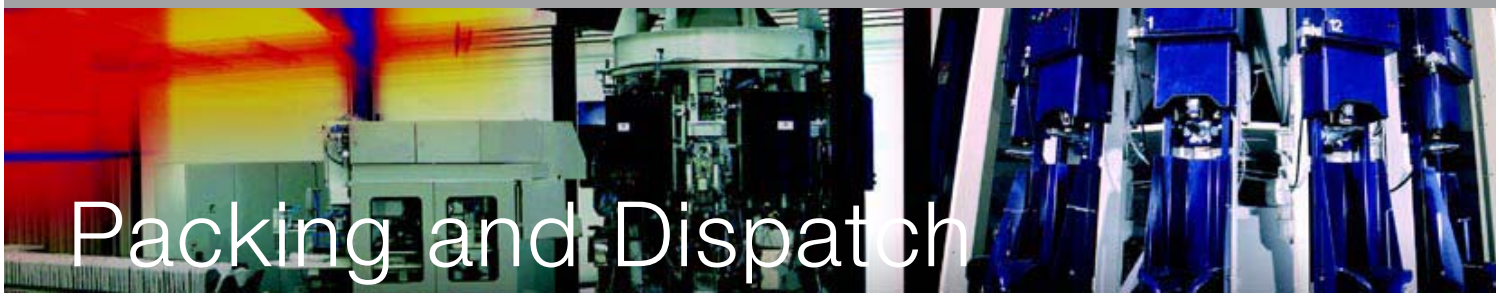
CLAUDIUS PETERS
TECHNOLOGIES



Packing and Dispatch

Technik

Technology you can trust

www.claudiuspeters.com

Comprehensive know-how

Claudius Peters Technologies GmbH, Germany and Claudius Peters Technologies S.A., France are part of the Technologies Division of Claudius Peters Group GmbH, headquartered in Buxtehude, near Hamburg, offering technologies in the field of materials handling and processing, providing turnkey and semi-turnkey systems to a wide range of industries. Claudius Peters Group GmbH is a wholly owned subsidiary of Langley Holdings plc, a privately controlled UK engineering group, with regional offices in the Americas, Europe, China and the Far East.

It all started with Cement

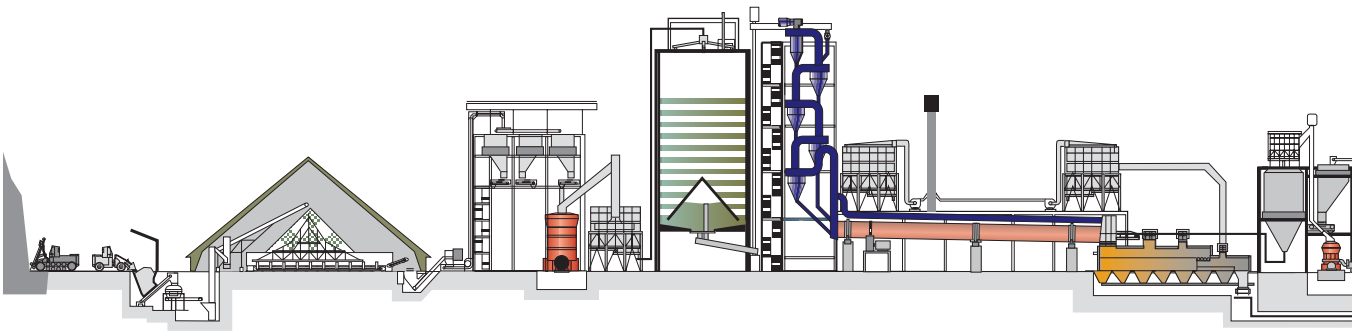
Claudius Peters is a well respected name in the construction of cement terminals, including all components such as silo facilities, conveying and dispatch systems. Based upon knowledge gained in over a century, Claudius Peters are specilists in all areas of bulk materials handling - limestone, gypsum,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

Filling plants with

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

for industrial sectors

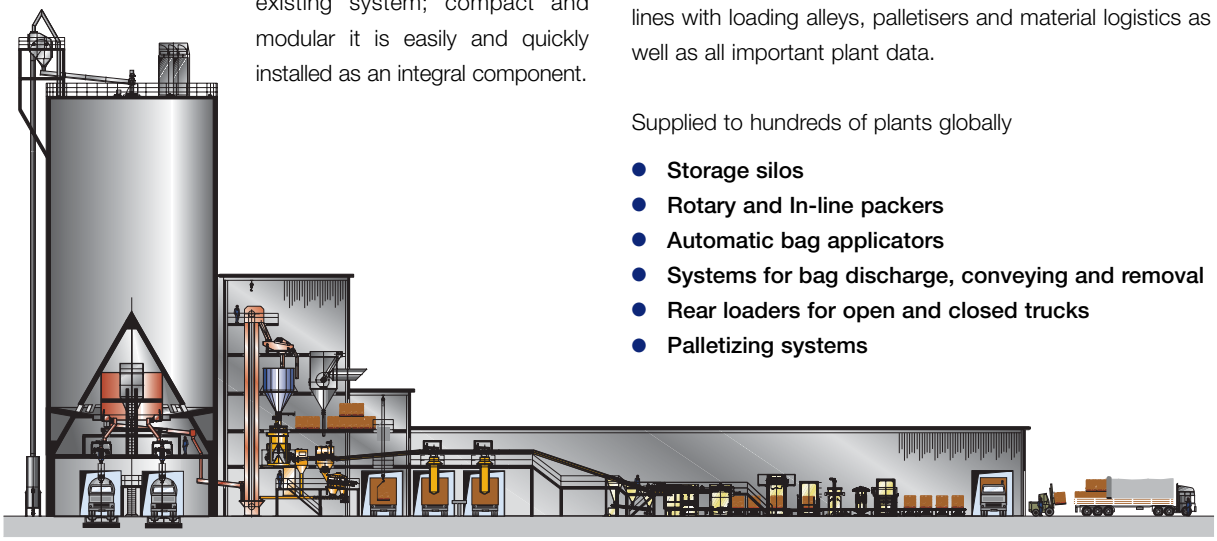
- **Cement**
- **Limestone**
- **Gypsum**
- **Building materials**



Crusher *Stacker and reclaimer* Raw material grinding *Mixing silo* Pre-calcination Rotary tubular furnace *Clinker cooler* *Coal gri*

Packing and Dispatching

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 customised to fit into an existing system; compact and modular it is easily and quickly installed as an integral component.

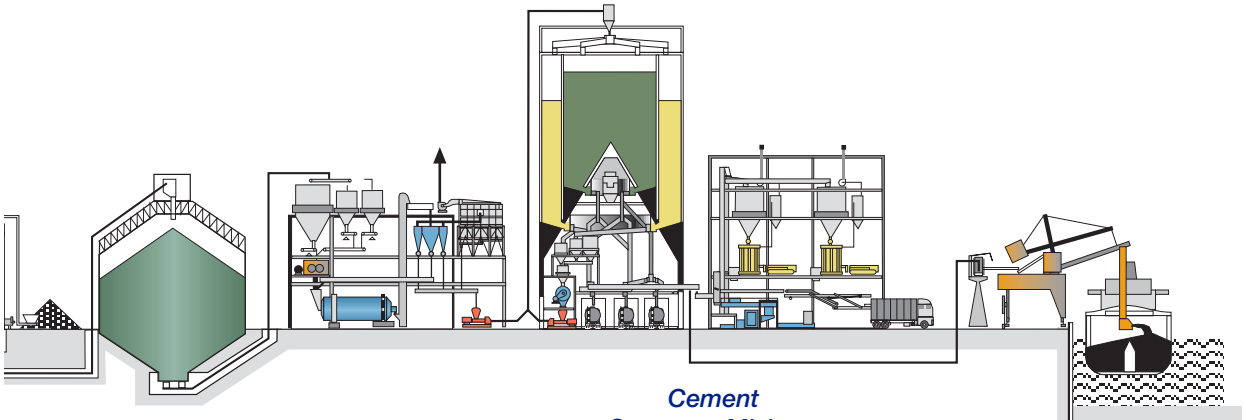


Everything from one source

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.

Supplied to hundreds of plants globally

- **Storage silos**
- **Rotary and In-line packers**
- **Automatic bag applicators**
- **Systems for bag discharge, conveying and removal**
- **Rear loaders for open and closed trucks**
- **Palletizing systems**



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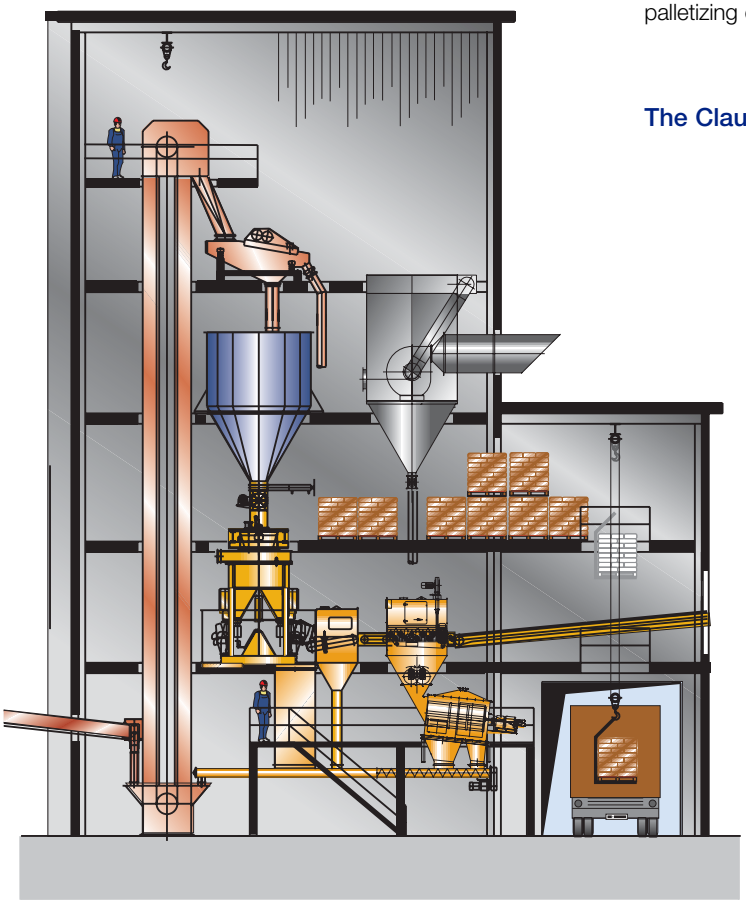
TECHNOLOGIES

The Packing Plant, optionally as ...

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.



Rotary packer with automatic bag applicator

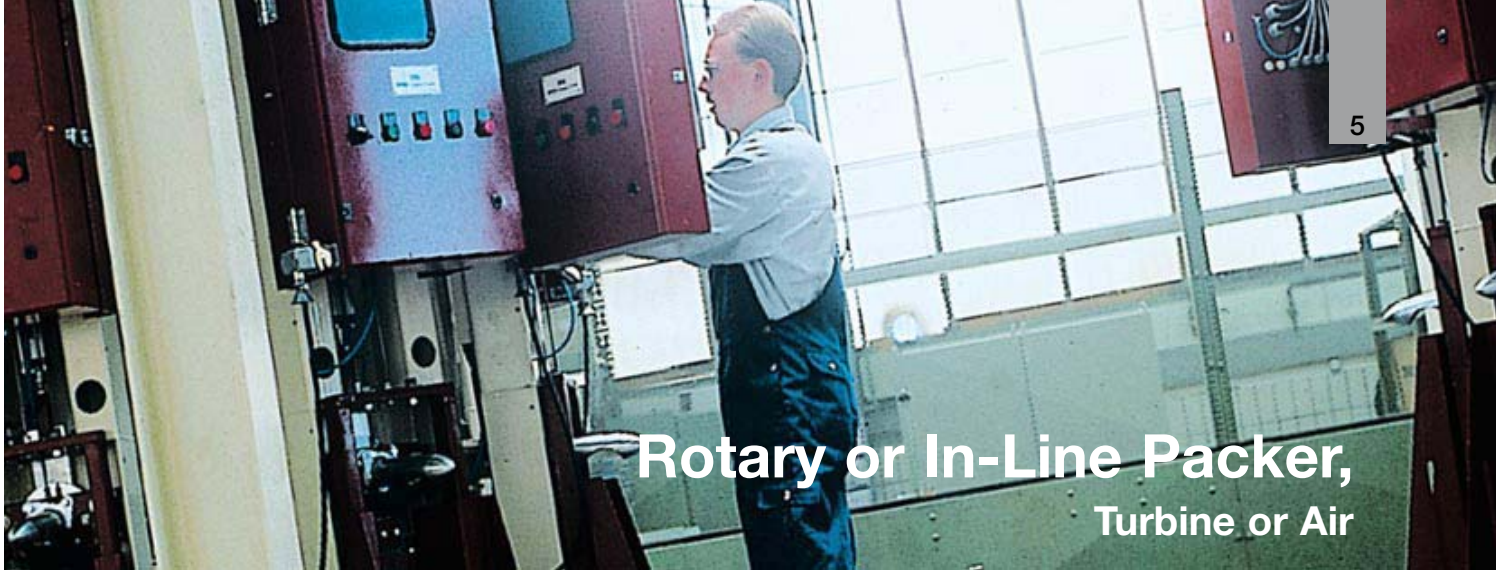
The Claudius Peters Packing Plant comprises:

- **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**

Bag applicator with cassette magazine

Local control panel

Bag transportation route



Rotary or In-Line Packer, Turbine or Air

The Claudius Peters range of products offers rotary packers with up to 16 spouts and in-line packers with a maximum 4 spouts. The section 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 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**

8-spout rotary packer

4-spout in-line-packer

8-spout turbine packer

6-spout air packer

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

	50-kg-bags		25-kg-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

Turbine or Air

Depending on the existing bulk material, different filling systems are used with both packing machines. Turbine packers are well-proven in application in the case of bulk materials capable of flowing with a grain size of up to max. variable flow properties and grain sizes of more than 4 mm (for example special building materials), filling systems working with compressed air are applied. Both systems comply fully with modern bagging technology.

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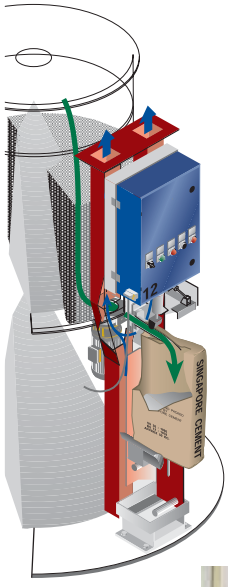
Modular Design
– offers many advantages

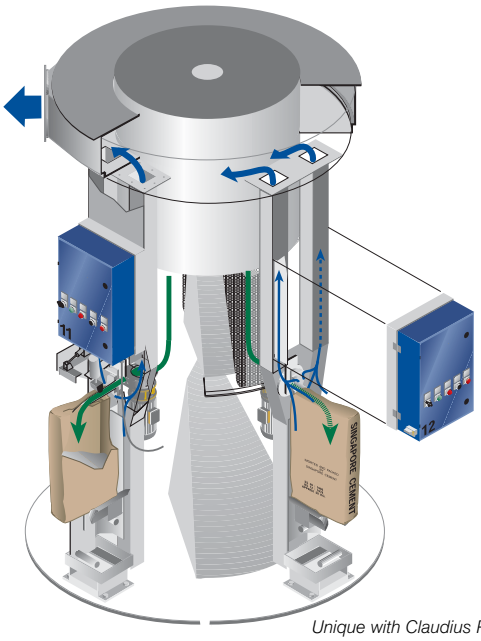
Claudius Peters packers are made up of identical modules as a cost effective solution when exchanging the filling modules or retrofitting an existing plant with additional modules for an increase in efficiency. The modules are compact with easily accessible structural elements saving valuable operational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



Benefits

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

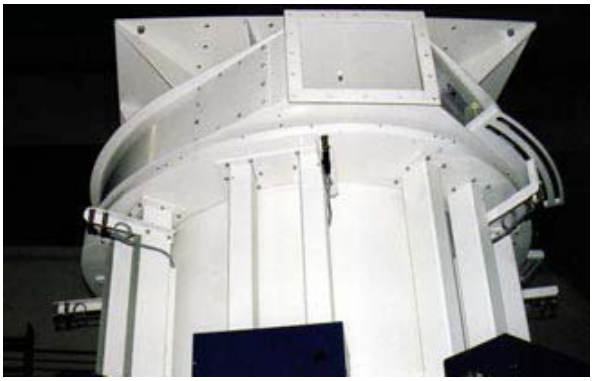
Easily exchangeable: frame with filling spout and weighing electronics

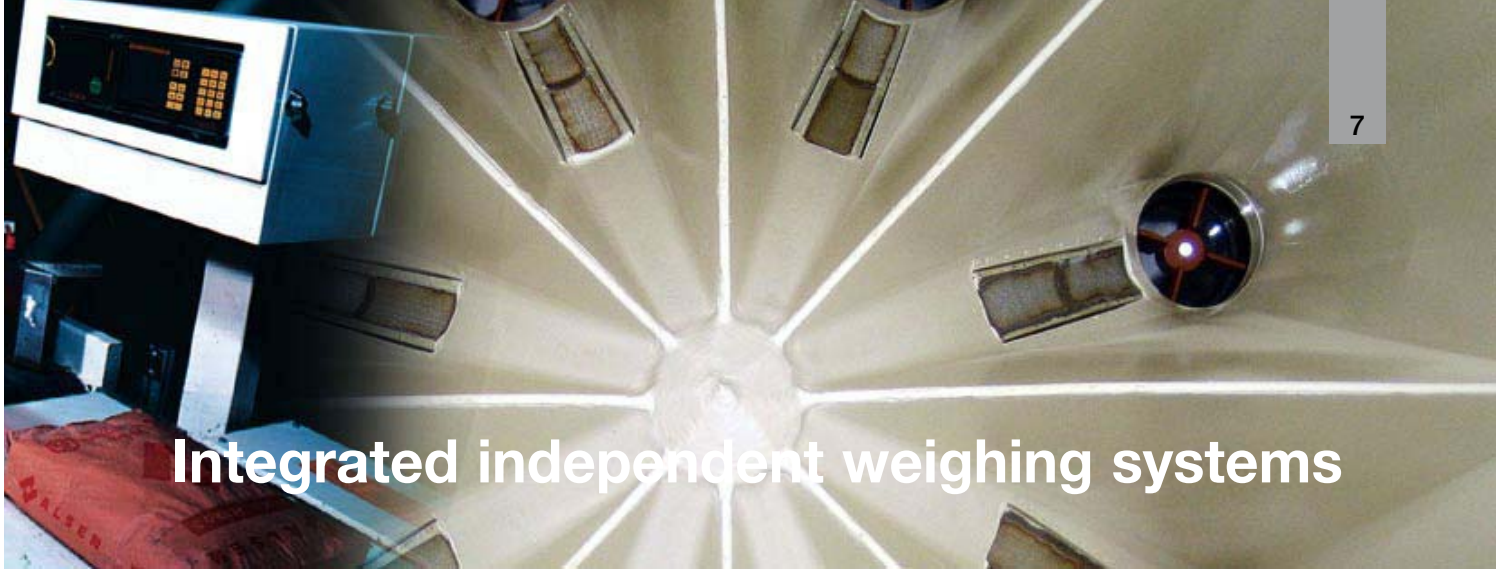


Unique with Claudius Peters: the dust suction upwards from the filling spout

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

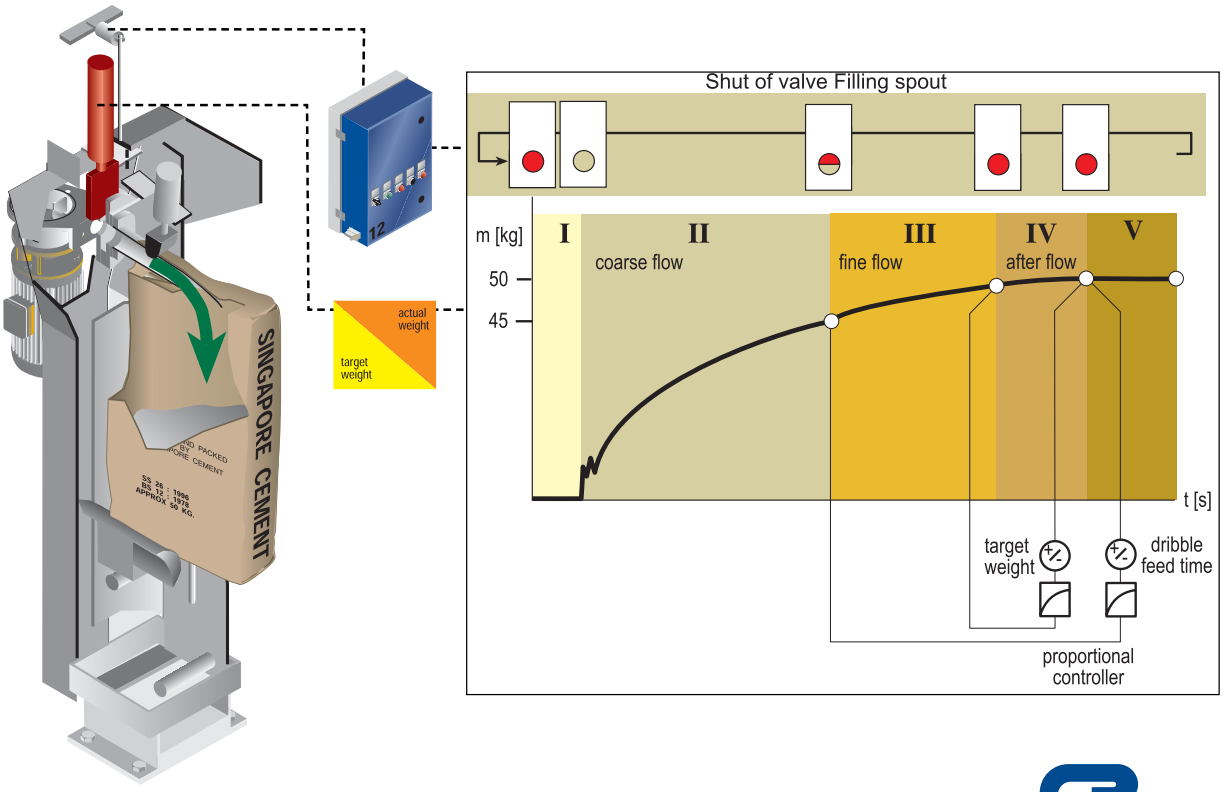
Each filling module in the packing plant is equipped with separate, independent weighing electronics. These weighing systems are connected externally via a data bus with the Claudius Peters PACTRON MASTER-central terminal.

From this terminal, the operating staff can transfer individual control parameters for the different types of products to the weighing electronics by keyboard. This also allows a pursuance of the different metering procedures at the monitor.

Precise dosing electronically

The weighing electronics of each module autogenously controls the metering course in the following phases:

Area I:	Bag identification and zero taring
Area II:	Start the coarse flow metering under permanent supervision of the filling flow quantity
Area III:	Fine flow metering for maintaining high weighing accuracy
Area IV:	Check weighing with simultaneous ascertainment of the fine flow and after-run quantity, resulting in optimization of the switching-off points
Area V:	Bag discharge



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Turbine or Air Packing Machine

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

The Claudius Peters Technikum (technical centre) will provide the correct solution for your specific application, based on our knowledge of numerous bulk materials, quality data and testing methods.

Which system for which bulk material?

Horizontally rotating turbine

Free flowing bulk materials:

- **Cement**
- **Limestone**
- **Gypsum**
- **Fine building materials**

Vertically rotating turbine

Free flowing bulk materials:

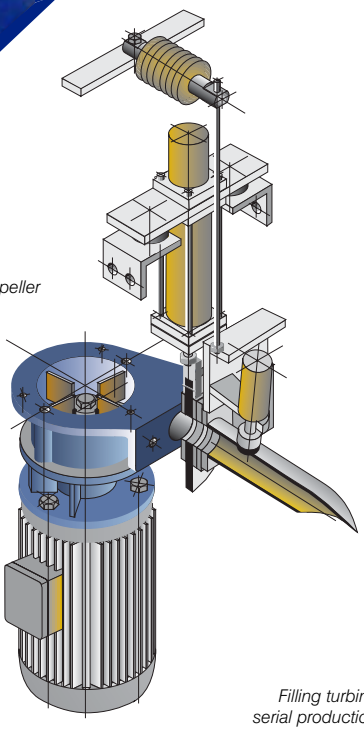
- **Cement**
- **Limestone**
- **Gypsum**
- **Fine building materials with a higher proportion of coarse grain**

Air Filling System

Free flowing bulk materials including coarse building materials

- **Maximum particle size: 10 mm.**

Turbine with impeller



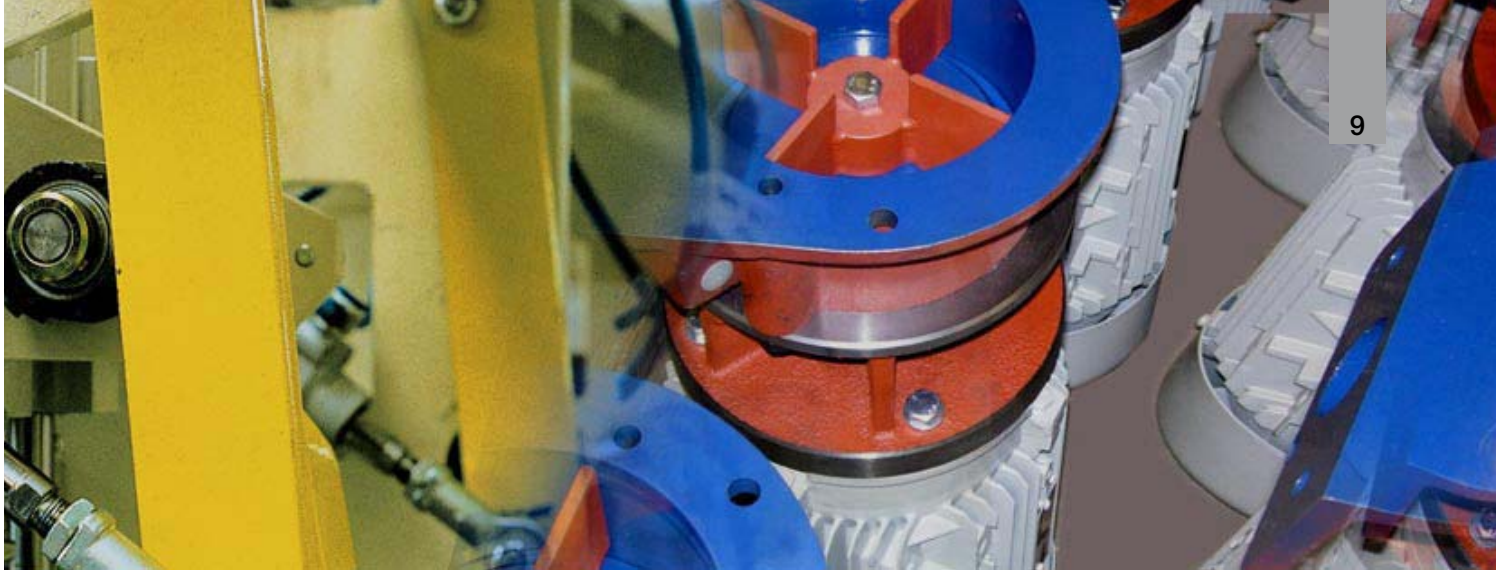
Horizontally rotating turbine impeller

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**
- **4,0 kW Motor power**

Option for frequency-controlled turbine speed and wear-resistant design

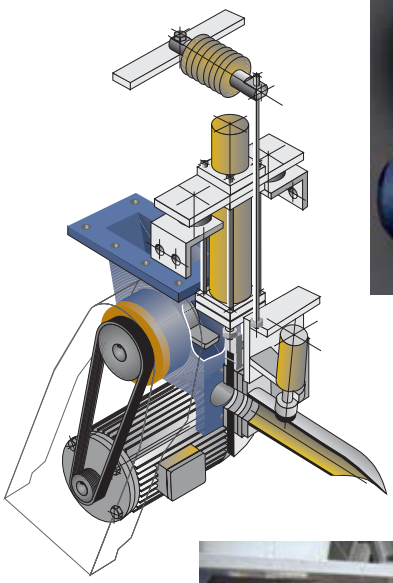
Filling turbine serial production



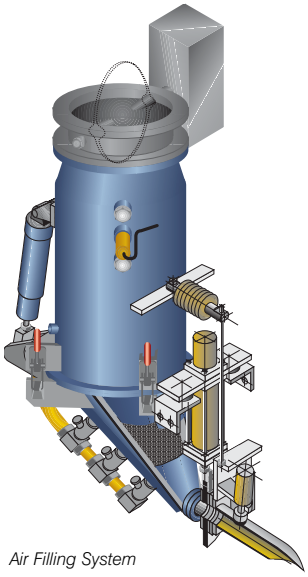
Claudius Peters Turbine, vertically rotating

- 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
- 5,5 kW motor power

Optionally with frequency-controlled turbine speed and wear-resistant design



Vertically rotating turbine



Air Filling System

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
- Complete, undivided aeration bottom made of wear-resistant high-grade steel fabric
- 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
- Filling chamber accessible from the material feeding of the packer to the filling pot bottom

Optionally with cutter valve for very coarse materials

CLAUDIUS PETERS
TECHNOLOGIES

Ultrasonic bag sealing

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 dusttight following 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 - the valve is glued. Subsequently, the bag is fed to the bag discharge.

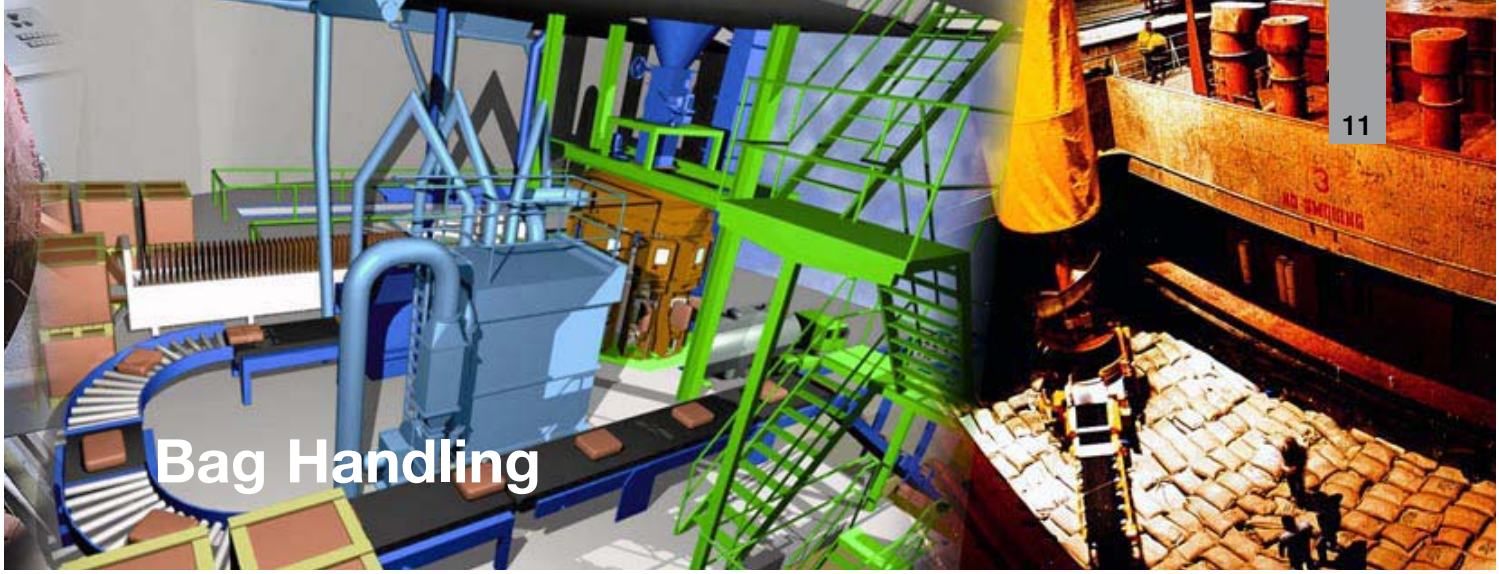
Benefits

- **Locking rates almost 100%**
- **Shortest locking times**
- **Welding 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...

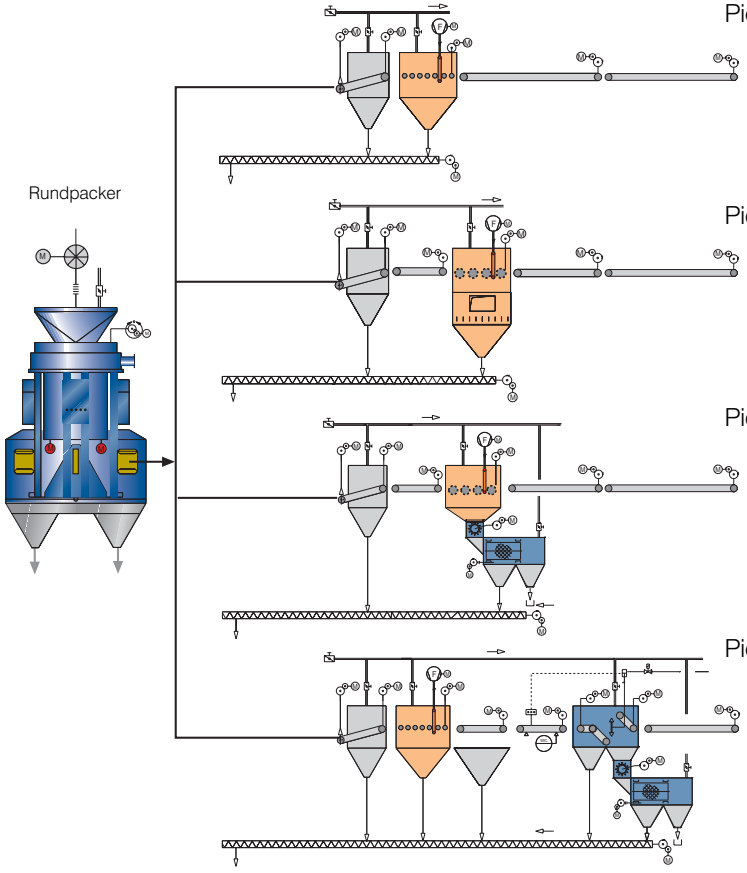
...welded and hermetically sealed



Bag Handling

For every type of application, Claudius Peters offers you tailor-made bag handling systems from a simplified bag discharge belt conveyor with subsequent cleaning of the bags right up to the removal of under or over-weight bags to the following separation.

Different bag discharge systems



Picture 1:
- **Bag discharge,**
- **Cleaning of the bags**

Picture 2:
- **Bag discharge**
- **Rejection of damaged bags**
- **Cleaning of the bags**

Picture 3:
- **Bag discharge**
- **Rejection of damaged bags and separation of material and paper**
- **Cleaning of the bags**

Picture 4:
- **Bag discharge**
- **Cleaning of the bags**
- **Check weighing with removal of damaged or under/over weight bags and separation of material and paper**

Bag discharge with belt conveyor, manual or optionally motorised height adjustment
bag stressing line with integrated bag cleaning • bag trap - driven or pneumatic • removal of damaged bags
pneumatic bag cleaning • check weigher for continuous weighing and sorting of the filled bags
flat belt conveyor with bag reversing station and 90°-chute • bag roller conveyor with integrated bag cleaning
failed bags cutter, rotary screen for separating bulk material from the cut paper bags

CLAUDIUS PETERS
TECHNOLOGIES

Automatic Empty Bag Handling

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:

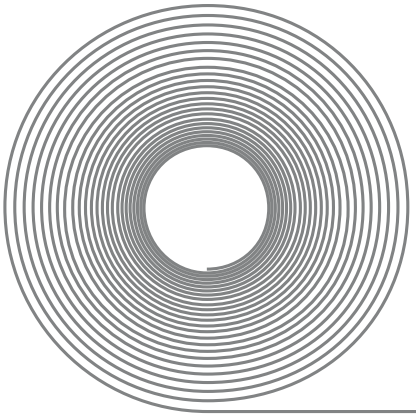
- **From cassette magazines for bundled bags**
- **From reel magazines in single or double roller design**

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.

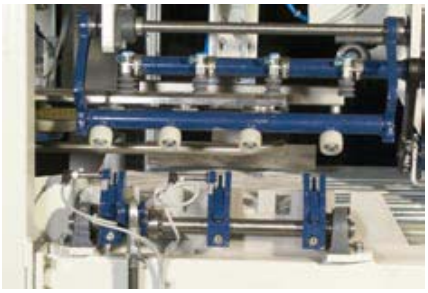
6-spout air-rotary packer with bag applicator and cassette magazine during testing in works.

The double reel magazine allows the change of rollers with ongoing filling



Bag valve opener and shoot-on position

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

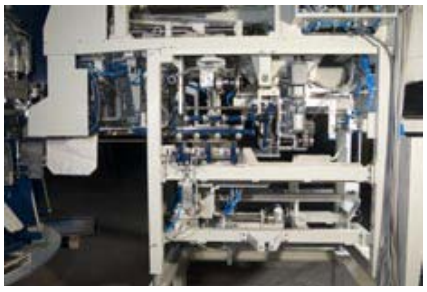


Positioning of empty bag

Positioning of empty bag package

Automatic bag applicators

- Feeding capacity of up to 4500 bags/h
- Feeding of cassette magazines in standard lengths of 3 m, 5 m or 7 m
- 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



Position of empty bag for application onto spout

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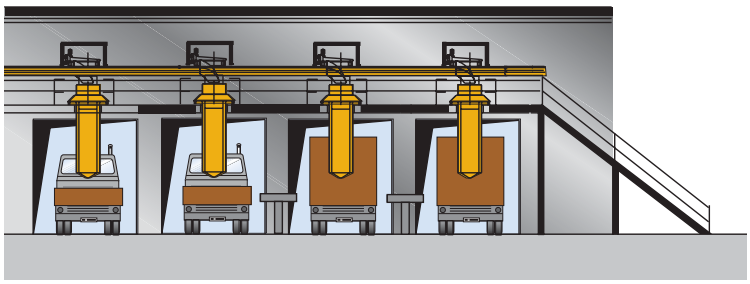
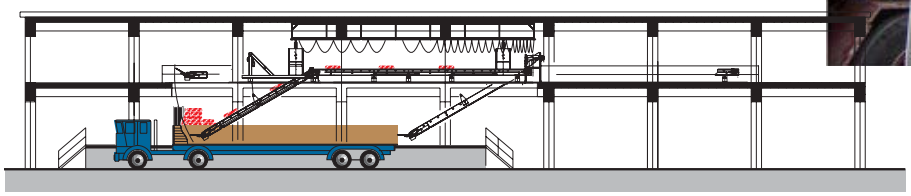
Rear loader



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.

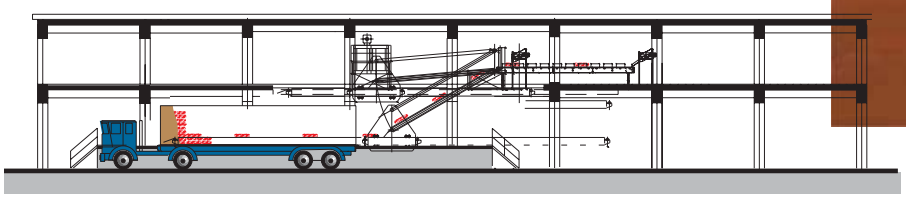
Rear loader for open trucks



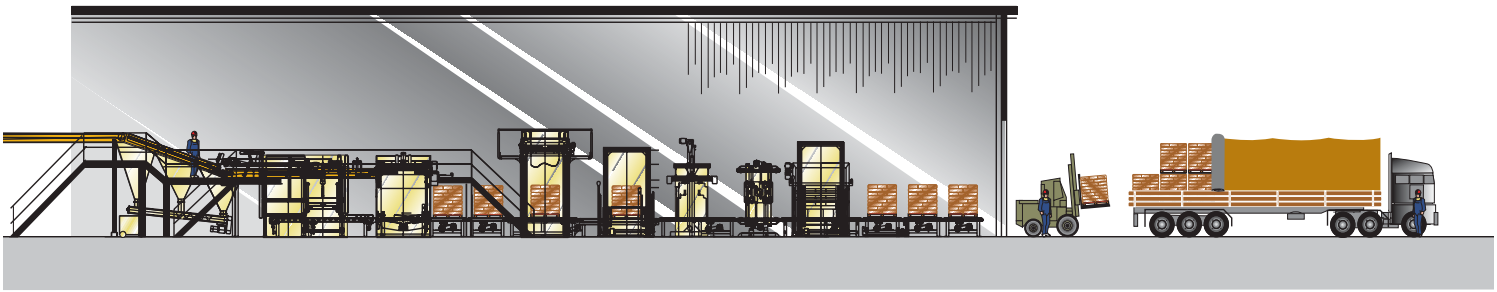
Loader

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

Rear loader for open and closed trucks



Palletizing and wrapping systems



For the protection of, for example, prepacked building materials, a film safeguard is considered to be standard today. Winding, stretching or shrinking – Claudius Peters can supply the appropriate system for each 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**

Palletizer with empty pallets magazine and bag conveyor

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

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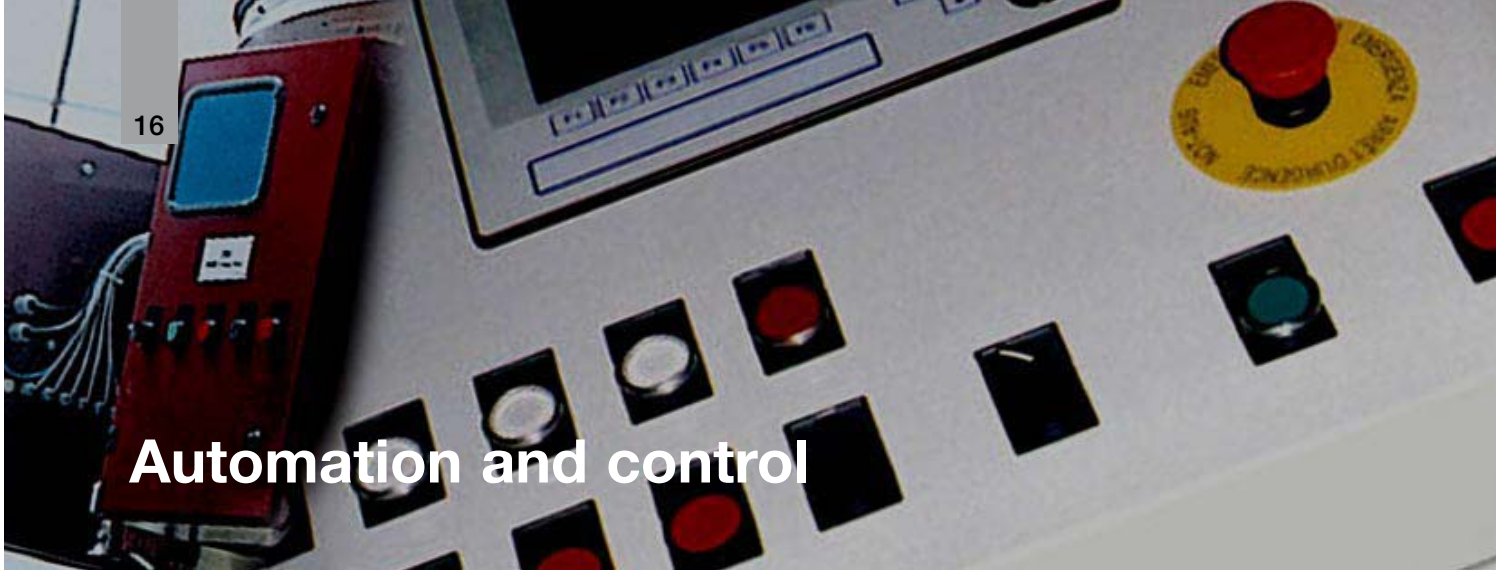


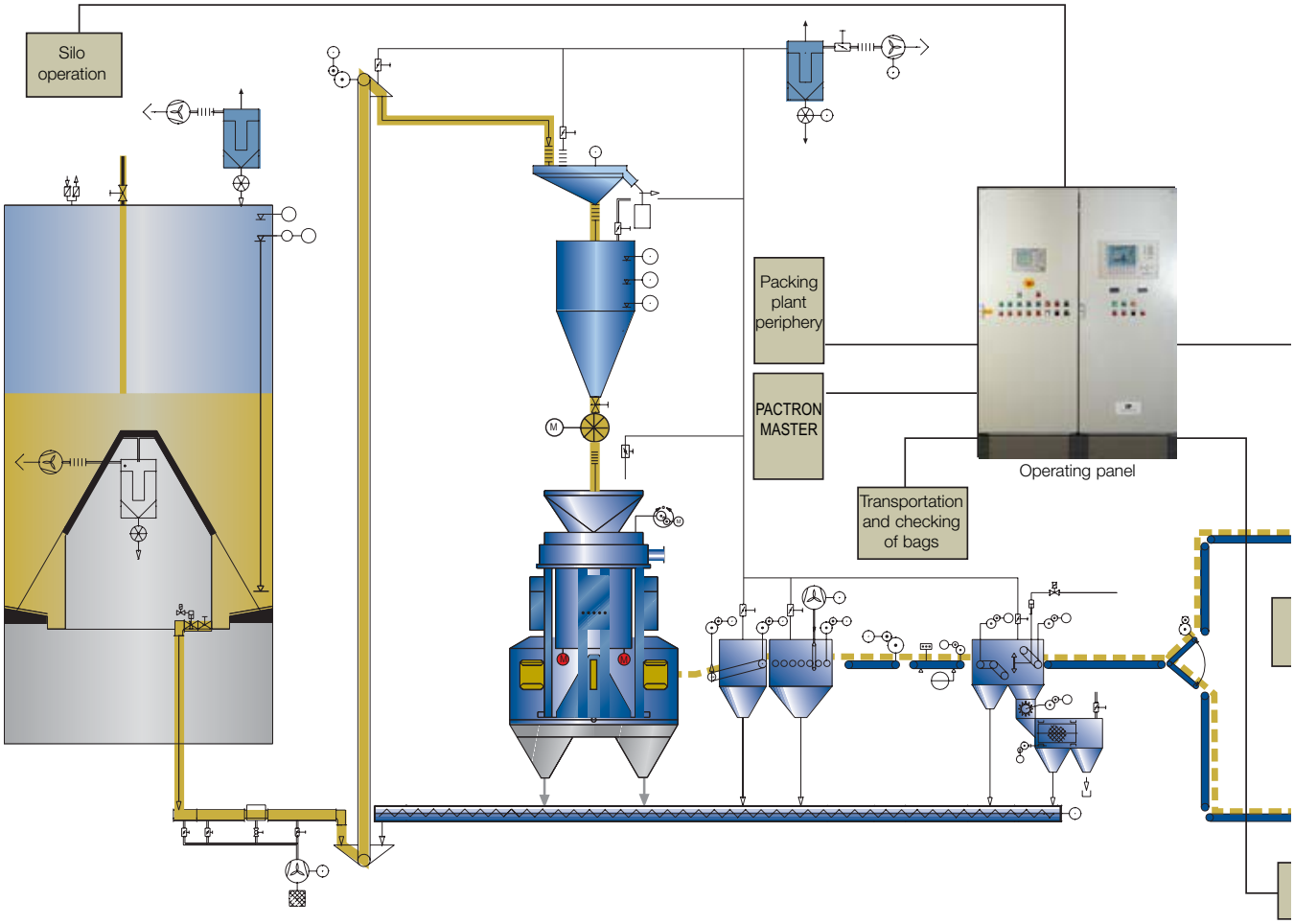
Automation and control

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 and maintenance of operation of a packing plant.

Scheme of automation and control of a packing and forwarding plant



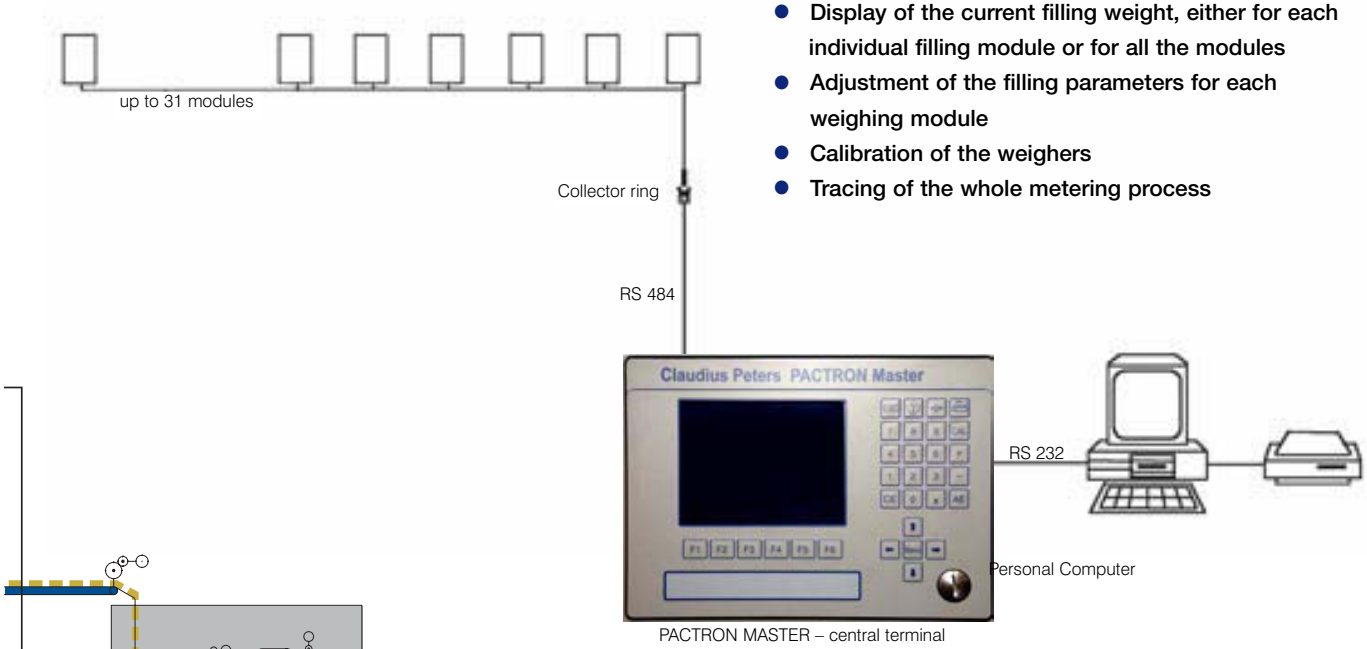
The central PACTRON MASTER terminal

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 programme 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**



PACTRON MASTER – central terminal

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TECHNOLOGIES

Technical Centre and in-house production

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 programme at headquarters Technikum (Technical Centre) in Germany.

The Technikum has proven the characteristics of more than 12,000 different bulk materials. Specific testing on the filling parameters of different materials are undertaken in the Technikum. This data guarantees a practical and optimal solution during the planning phase of a packing plant.

A total solution from just one partner.

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.

Claudius Peters Technikum

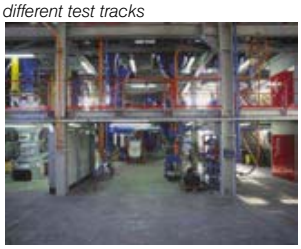
Close cooperation with universities, engineers and scientists:

Fabrication and installation of a turbine packer

Bag test installation

Bag placing test arrangement

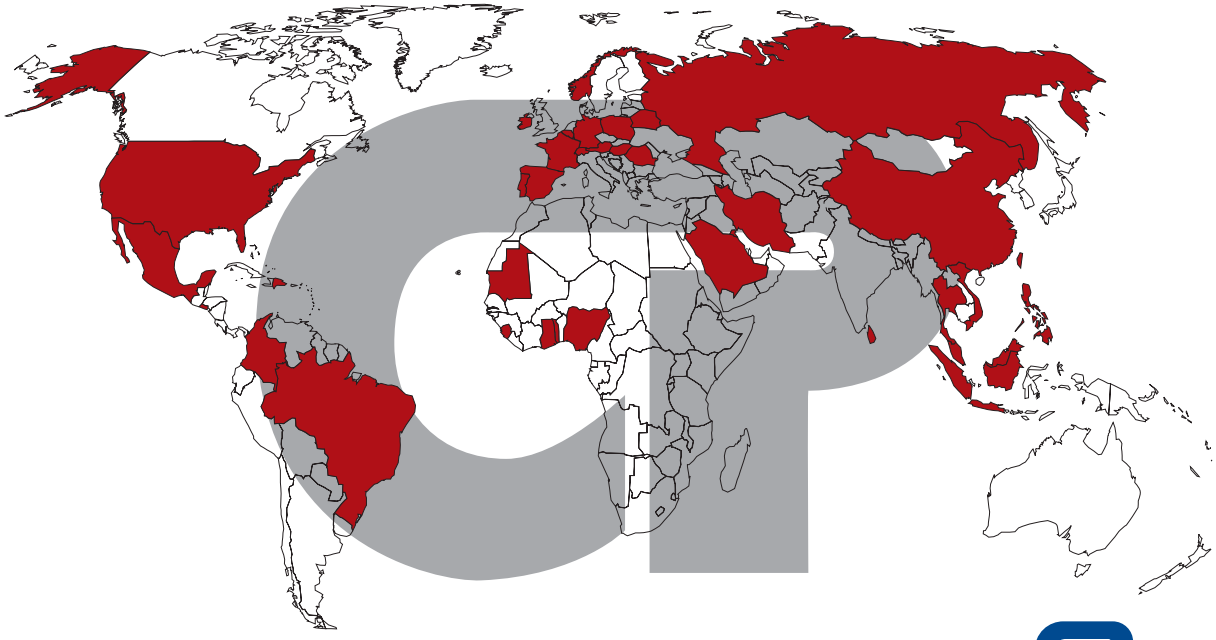
Overall survey of the different test tracks



Bagging test station horizontal/ vertical turbine / air filling

Claudius Peters – global competance

Installations of packing and loading plants on all continents



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