

System Solutions & Customized Solutions

- Individual process solutions adapted to the customer's product
- Linkage and combination of technology platforms to form integral system solutions
- System supplier of complete lines with turnkey services

Technology for Inhalers & Diagnostics

- Lines for the dosing and weighing of micronized powders
- Lines for the dosing and weighing of pasty media and liquid products
- Machines for the assembly of inhalers, inhaler components, active ingredient carriers and diagnostic products
- Machines for filling inhaling devices and inhalation cavities with extremely small volumes
- In-process checks and function tests for inhalation and diagnostic products

Capsule & Powder Technology

- Omnidose – Powder filling machine for laboratory and small scale series production
- Modu-C – Capsule filling and closing machine
- KWS – Capsule weighing and controlling machine
- KPG – Capsule polisher
- Filling and dosing systems for a wide range of different media
- Powder analyses and filling tests
- Project planning of powder dosing systems

Blister & Tablet Technology

- OmniControl – Checking systems for pharmaceutical solids
- Test units and production machines for the manufacture of powder and liquid blisters
- Blister buffering and traying systems
- Units for nesting and grouping of blisters / blister folding machines
- Wallet packaging lines including line synchronization / turnkey service

Web Converting Technology

- PatchLine** Complete lines for the manufacture and inline packaging of:
- Transdermal systems (reservoir & matrix), wound dressings, surgical and special patches
- FoilLine** Installations for manufacturing foil products:
- Oral film strips, double bags for enteral nutrition, urine bags, Diagnostic products etc.
- FormPackLine** Installations for the packaging of products in molded film/foil packs for:
- Diagnostic tubes, surgical suturing material, lithium-ion batteries, Care creams, detergents and cleaning agents, catheter packaging etc.
- SachetLine** Machines for the manufacture, filling and sealing of four-edged sealed sachets for:
- Dosing systems for bulk materials and sachet leveling systems

Syringe & Injection Technology

- Machines for the assembly and filling of depot injection syringes with solid implantates
- Machines for the assembly and filling of multi-chamber injector syringes with powder and liquid
- Machines for the assembly of needle-free injectors (needle-free syringes)

Packaging Technology

- WalletLine** Modular packaging machines for wallet packs
- Peripheral units for the handling and conveying of components for wallet packs
 - Systems for stacking and grouping for end packing
- CartoningLine** Horizontal cartoning machines for folding cartons
- Product specific feed systems, tray loading and unloading systems
 - Buffering systems for packages and package components
- TopLoader** Modular TopLoader packaging machines for the manufacture of:
- Pharmaceutical multi-product packs
 - Universal product end packing
- EndPackingLine** Packaging machines and handling systems for secondary packaging and end-of-line applications:
- For tray, display, multiple and end packaging
 - Pick-and-Place systems for individual handling and packaging
 - Turnkey project planning and realization

Aseptic Technology

- Machine engineering in GMP and validatable execution
- Cleanroom technology for a wide range of applications
- Production lines for assemblies in cleanroom environment



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[ALL YOU NEED]



**Modular Powder Filler
for Micro-Volumes**

Omnidose

[ALL YOU NEED] **E**

**Capsule & Powder
Technology**

The versatile application potential of the Omnidose TT.

Within the framework of powder examinations, the Omnidose TT is used to test the specific filling behavior of powder in the range of macro-volumes. The Omnidose TT is predestined for processing extremely expensive powders, or powder that can be produced in the most minute quantities (up to 50 mg and 100 mg). By defining the powder density the Omnidose TT is able to determine the volume of size parts for application in the Omnidose lab filler.



Practical for galenics applications: The Omnidose TT hand dosing device.

Omnidose TT laboratory hand dosing equipment:

Uncomplicated handling:

The powder supply chamber is manually filled with powder. An agitator distributes the powder homogeneously. A container is positioned beneath the dosing port. The dosing unit is placed over the container by means of a handwheel. Dosing of the specified quantity of powder is performed by alternating overpressure and underpressure.

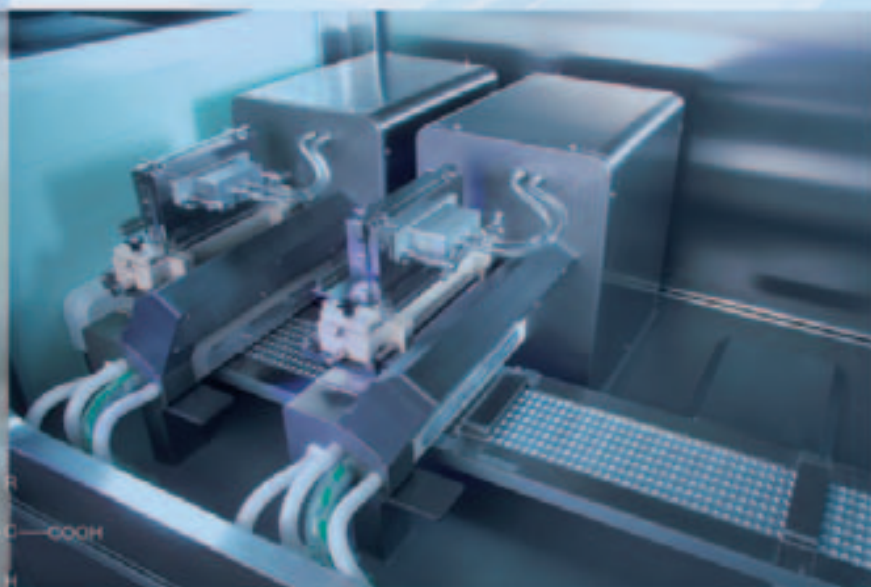
Special technical features of the Omnidose TT:

- Dosing extremely cohesive powders in the 1 – 25 mg range
- Powder particle size 1 µm or larger
- 5 mg residual volume of powder in the powder hopper
- "Upscalable" dosing technology

laboratory filler



Small series production machines



Omnidose – the flexible basic machine.

Flexibility pure:

Trolley with integrated dosing station and supply.



The Omnidose Basic Machine:
Machine frame with standard guarding and integrated dosing trolley.



Diversity with pharmaceutical products:

Powder, fixed media such as pellets and liquid products may be filled on the Omnidose into a wide variety of containers and cavities.

The following criteria are decisive for the selection of the suitable dosing system:

- *The physical properties and the dosing capability of the medium to be filled.*
- *The economical requirement on the production process.*
- *Geometry and volume of the containers and cavities being filled.*



Solid & liquid products

Filling of cavities:



Capsules

- Hard gelatine capsules
- HPMC capsules
- Multi-component chambers



Devices

- The scope of fillable
Inhaler devices:
- DPI
 - MDPI
 - Liquid Inhaler



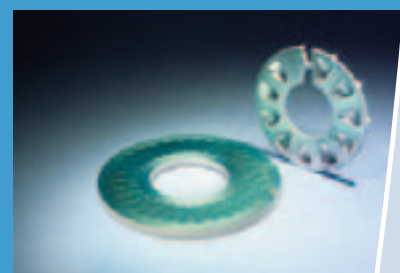
Rigid containers

- Powder chambers
- Vials
- Cartridges
- Other large-volume cavities



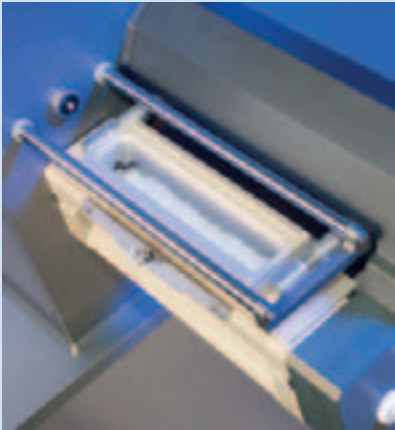
Blister packs

- Blister strips
 - Individual blisters
 - Multiple blisters
- Blister discs

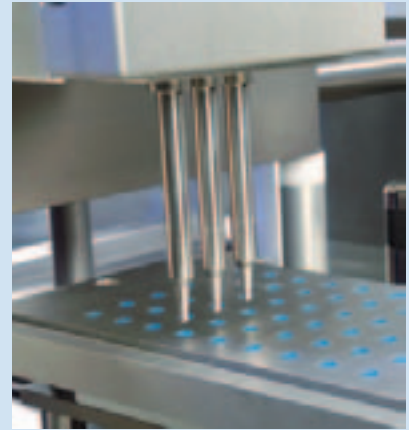


Dosing systems – suitable for every product.

DRUM FILLER



DOSATOR



Type

Drum filler with vacuum / compaction-free:

Vacuum dosator, compaction-free:

Dosing volume
Dosing range

1 mm³ - 100 mm³ *
0,5 - 50 mg

20 mm³ - 700 mm³ *
10 - 350 mg

Principle

Fill volume dosing via borings in the filling drum

Determination of the filling volume via the position and diameter of the dosing piston

Properties
Particle size

For extremely cohesive powders /
Powder particle size 1 µm or larger

for cohesive products
as of a particle size of 5 µm

Residual quantity

approx. 50 ml

200 ml

RSD

up to 1 % **

up to 1,5 % **

cycles/min.

up to 50 **

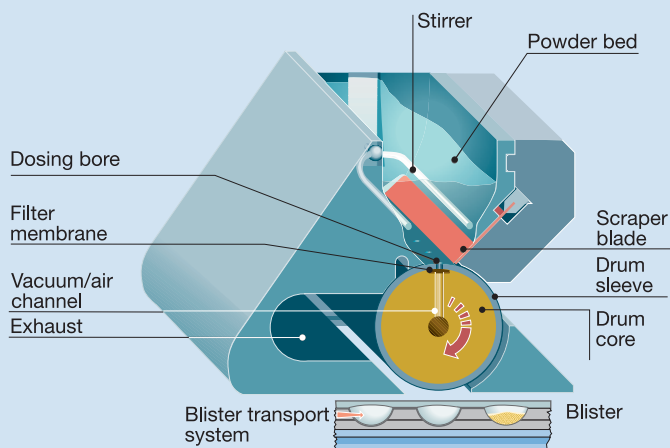
u to 30 **

Special characteristics

Ideal for micro-dosing inhalation powders:
Volumetric dosing by filling the dosing bores in the filling cyclinder – without compaction of powder.

For the dosing of inhalation powders with an extremely low volume:
Vacuum intake of powder via dosing tubes.
No powder pre-compaction required.

Function diagram drum filler



Function diagram Dosator

Vacuum channel

Dosing tube

Scraper blade

Powder container

Powder

Vacuum filter

DIAPHRAGM FILLER



Dosator with compaction:

20 mm³ - 1000 mm³ *
10 - 500 mg

Fill quantity determination via level adjustment of the dosing piston, the powder bed level and the position and diameter of the dosing piston

for powder with Carr's Index between 15 and 25 and a particle size as of 80 µm

150 ml

up to 2 % **

up to 30 **

For the dosing of cohesive powders and of powders with inferior flow characteristics.

Diaphragm filler with vacuum:

20 mm³ - 1000 mm³*
10 - 500 mg

Complete filling of devices via vacuum

for extremely cohesive powders / Powder particle size 1 µm or larger

> 50 ml (depending on device)

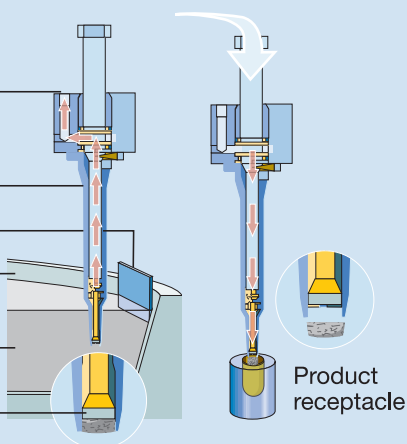
up to 2 % **

up to 15 **

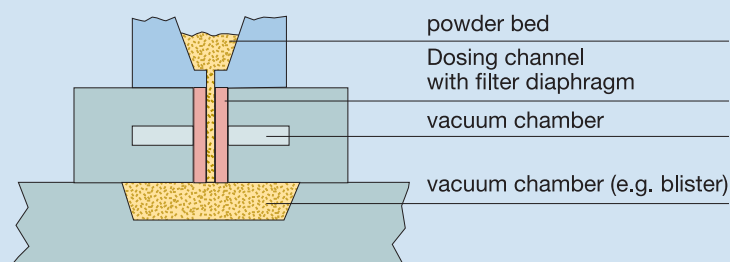
For the complete filling of blister halos.

* Values for dosing volumes are based on a reference powder density of 0.5 mg per mm³
** Values for RSD and cycle depending on powder

with vacuum



Function diagram diaphragm filler



Top flexibility in product conveyance.

The unique conveying system combines the requirements on a GMP-compliant design and the many versatile application options.

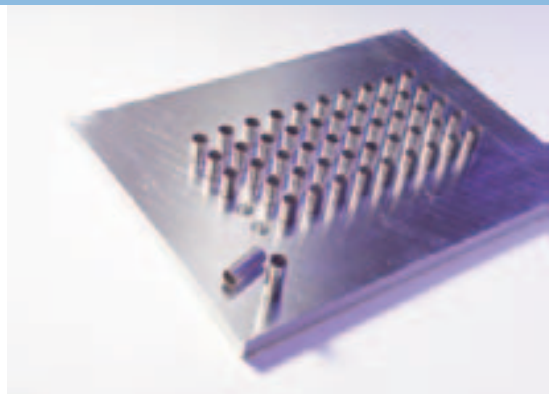
The system is released for removal from the machine table by pushing a button. This exposes the table top for easy cleaning.

The conveying system is equipped with variable product holders or format plates. This permits the alternate conveyance of blister sheets, vials, hard gelatine capsules or Inhaler devices through the machine for filling.



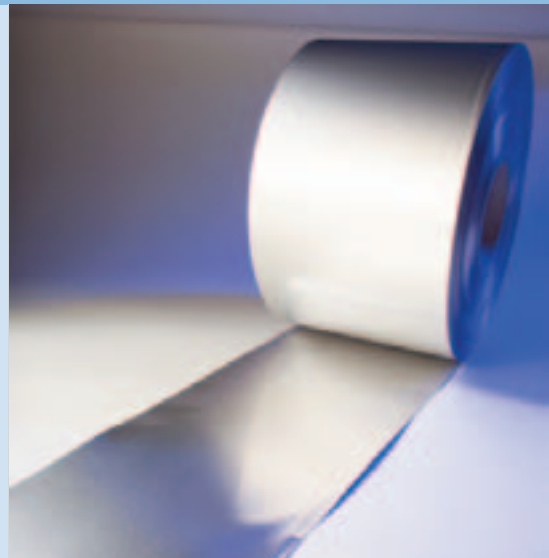
Vials

Format plate to receive vials.



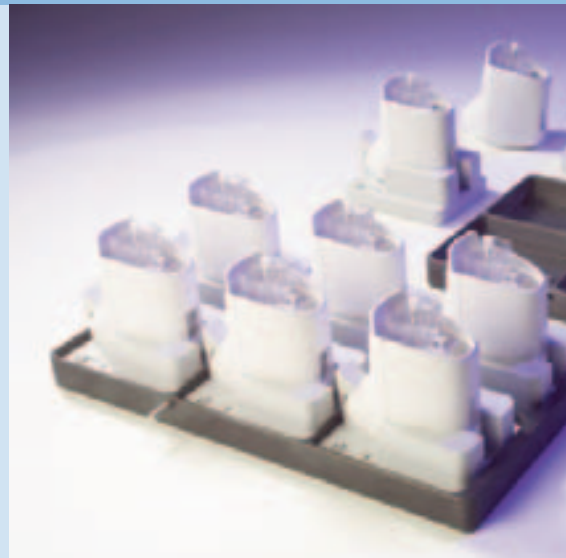
Web reels

From the web reel to the filled Inhaler blister.



Devices

Format plate to hold Inhaler devices.





PORTATION

Capsules

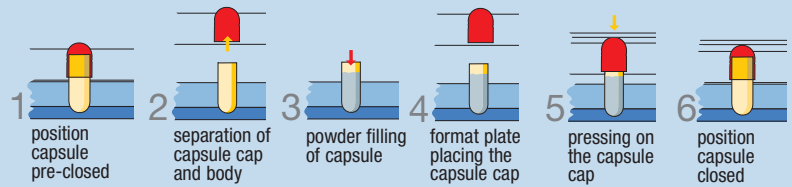
Format set for the handling of capsules.



Format set for the semi-automatic processing of capsules:

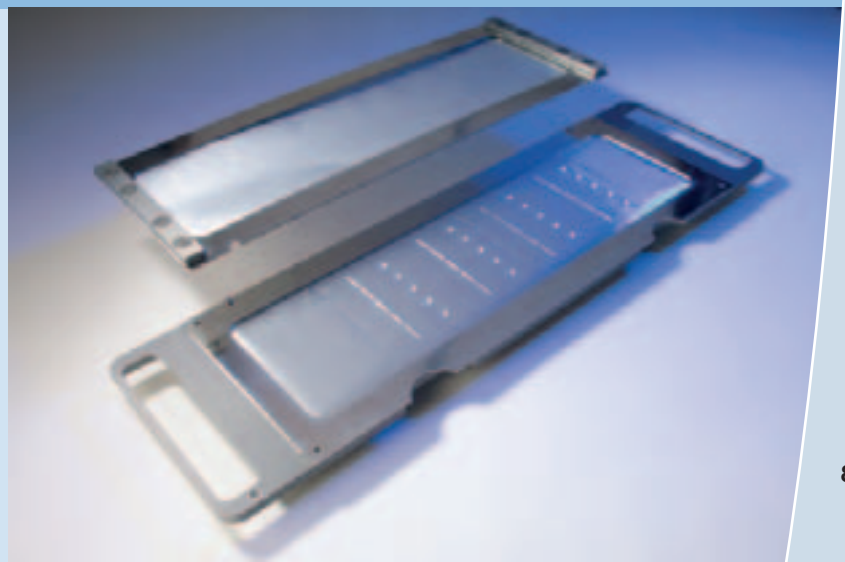
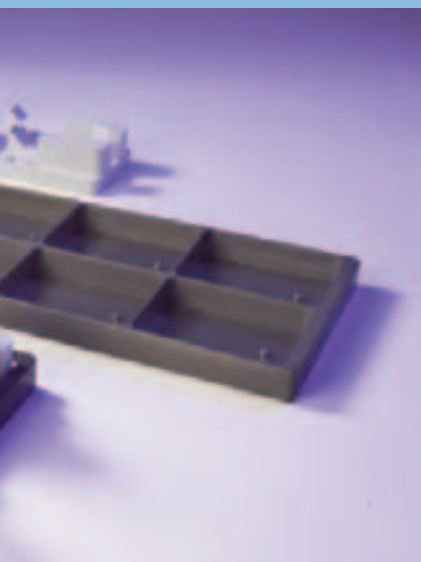
This configuration permits test series for powder filling of all standard capsule sizes.

Function sequence:



Foil sheets

Tray system for the handling of base and lidding webs for blister sheets.



The Omnidose protection concept.

Ready to process Active ingredient powder.

Extension of the Omnidose laboratory filling machine by Powder Containment is required when processing highly active powder products. While criteria must be met to guarantee operator protection, the contamination of the active ingredient product by exterior influences such as air humidity and temperature must be avoided at any cost.

Based on isolator barrier technique and matured barrier functions, these requirements are optimally realized in the protection concept of the Omnidose Powder Containment. Several solutions for the regulation of pressure conditions in the production room offer a variety of product protection (P+), operator protection (P-) or protection of both operator and product (P=).

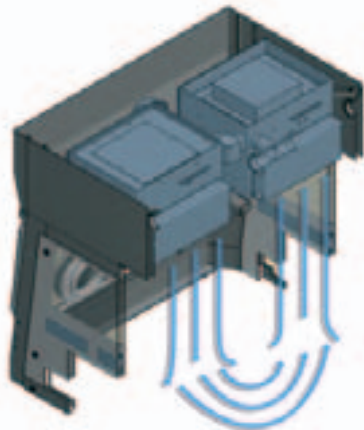
Special equipment options for appropriate access to the production room of the machine and a contamination-free removal of active-ingredient-containing multiple units and halos round off our supply range.



Maximum protection:
Omnidose powder dosing machine with Powder Containment.

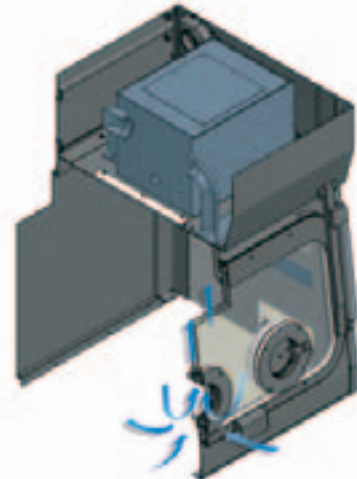
Enclosed circuit:

Isolator and filter technology generate an enclosed atmosphere with regulated pressure and temperature conditions.



Gripping idea:

Due to the double-glazed operator front no active ingredient can escape from the machine – contamination with particles and germs from the exterior is prevented.

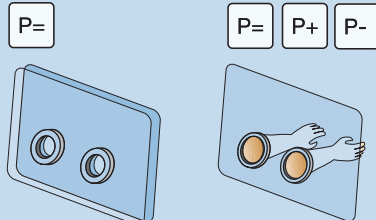


Combination options and accessories for Powder Containment

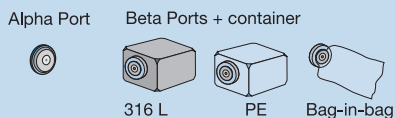
Protection concepts

- P+** Protection of the product
- P-** Protection of the operator
- P=** Protection of the product and the operator

Configuration of the front panel



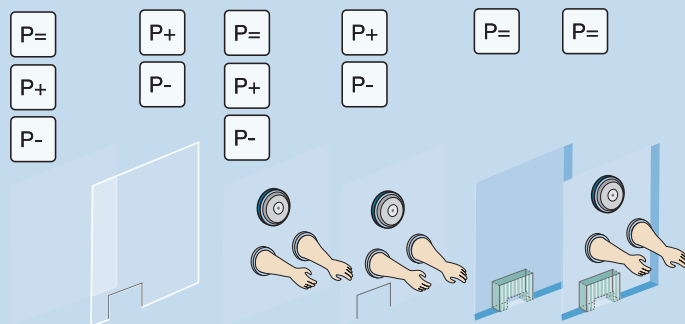
Rapid Transfer Ports



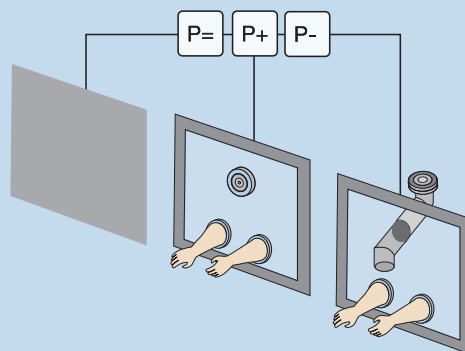
Standard items



Configuration of the right and left lateral panel



Configuration of the service port / back side



ALPHA-Port:
Process safety for in/outsluicing processes.

BETA-Port:
Contour-fitted adaptor, to dock onto the Alpha-Port.

Handschuh-Eingriffssystem:
Contamination-free access into the Omnidose production chamber.



Technical data for gloves

		Single-pane system			Double-pane system		
		ISG-E-1	ISG-E-2	ISG-E-3	ISG-D-1	ISG-D-2	ISG-D-3
Model	Unit	200	300	200/300	200	300	200/300
Nominal width	mm	224 x 224	324 x 324	256,5 x 378,5	224 x 224	324 x 324	256,5 x 378,5
width x height	mm	164 x 164	264 x 264	200 x 320	164 x 164	264 x 264	200 x 320
port opening (width x height)	mm	8-12			8-10		
Material strengths panes	mm						
long gloves		Glove, complete					
	material						
	Hypalon 0,3 mm	✓	✓	✓	✓	✓	✓
	Neopren 0,4 mm	-	✓	✓	-	✓	✓
Glove/sleeve combination		Sleeve/glove					
	material						
	Hypalon 0,3 mm	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
	Hypalon 0,5 mm	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
	Hypalon 0,6 mm	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
	Neopren 0,3 mm	-/✓	-/✓	-/✓	-/✓	-/✓	-/✓
	Neopren 0,5 mm	-/✓	-/✓	-/✓	-/✓	-/✓	-/✓

Uniform concept – from development to production.

A technical equipment especially matched to this particular environment is required for the production of inhalation products within the framework of the pharmaceutical development phases II and III, and for test production runs.

The Omnidose is ideally suited for being embedded in production lines. Due to its modular design the machine can be installed inside galenics rooms, as stand-alone version or in the production sector as one component of a filling line for the production of inhalation products. Depending on the requirement, Höfliger can support the pharmaceutical producer with a variety of solutions:

- Manual handling of blister sheets in combination with semi-automatic filling, sealing and cutting into blister strips.
- Fully automatic testing machine for a multitude of blister variants.
- The production machine for mini-series and limited batches.

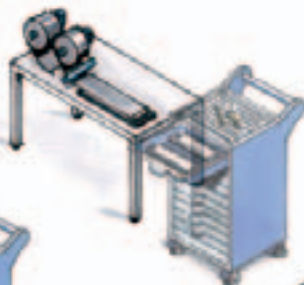


Omnidose as module of a production line for the production of powder blisters.

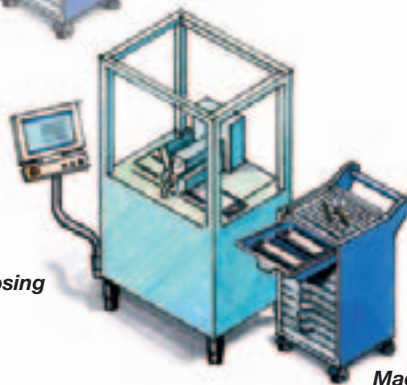
Machine for the forming, sealing and die-cutting of blister sheets (Rohrer AG).



Preparation table for manual provision of web sheets in trays.



Omnidose powder dosing machine.



Magazine trolley for web sheets.



SSP1 Modular: Access the production of blister sheets:

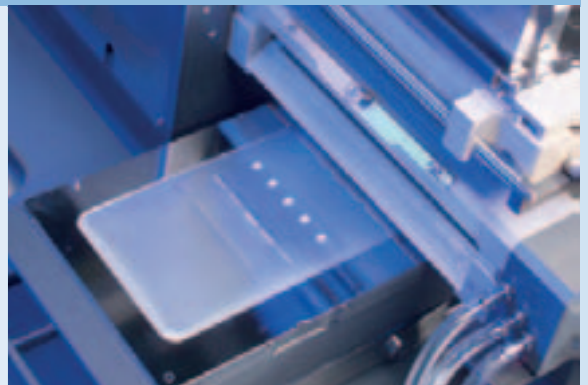
The uncomplicated alternative to technically work-intensive testing units.

Based on an insular solution with stand-alone machine components and intermediary manual processes, the work steps required for the blister production are covered in full.

A preparation table for manual readying of web sheets in holding trays (also see Conveying Systems) is the point of departure for all subsequent operations. The web sheets are fed individually to the various production components on a magazine trolley.

Due to the detached installation of the machines this concept can be applied flexibly in the pharmaceutical laboratory.

**Performance:
depending on product, process and operator**



Mini-series production:
Handling of blister webs in sheet tray.



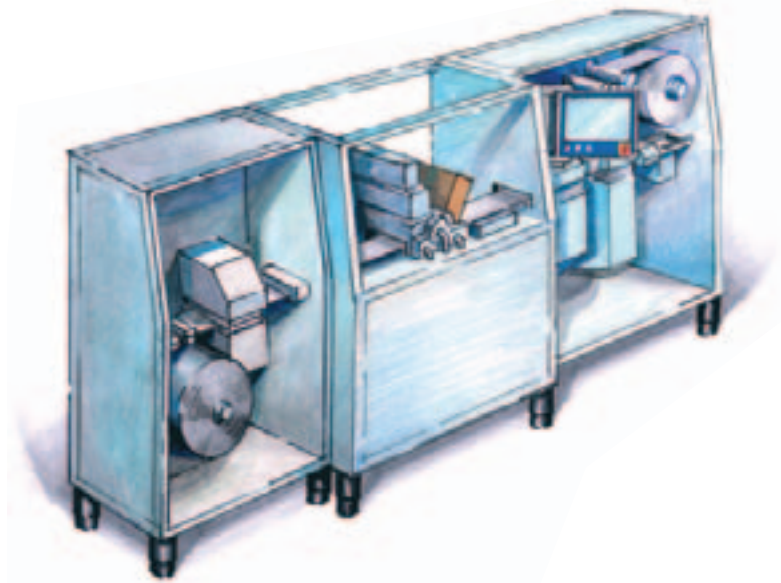
SSP 1 Integrated: Semi-automatic production machine for blister sheets:

Access the automatic
test production of blister sheets.

The line is supplied manually with base and lid stock sheets for of blister web processing. The line is a combination of the Omnidose dosing machine and the multifunctional tool unit from Rohrer AG. This unit covers the functions forming, sealing and die-cutting.

For an efficient configuration of the operative process, without the need of make-ready time, the machine incorporates a magazine for a supply of blister sheets. After forming in the dosing unit operator transfers the tray for filling the blisters. Next the blister sheet is sealed and die-cut. There is always one tool exchange in the multi-function station between the individual work steps of blister processing.

Performance:
depending on product, process and operator



SSP 2: The machine for the production of blister strips in the galenics field:

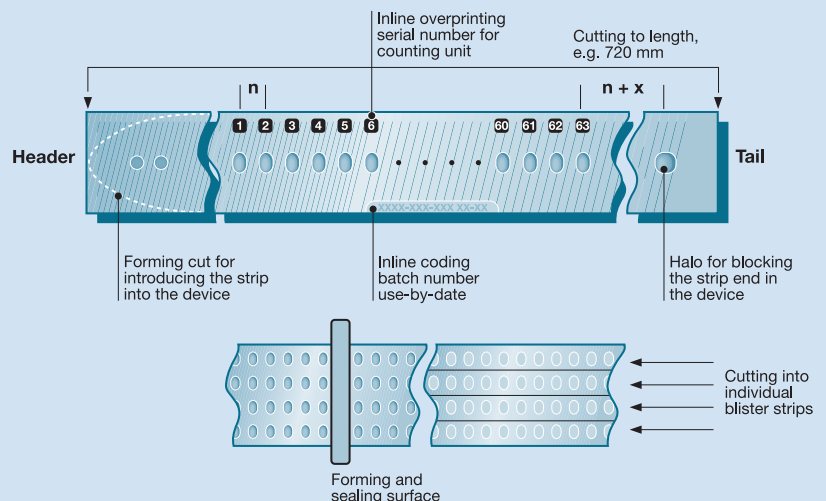
This blister filling machine was engineered jointly by Rohrer AG and Harro Höfliger for pharmaceutical tests.

The advantages of the machine concept incorporates:

- flexible forming and sealing of the halos.
- dosing units for dosing extremely cohesive powders.
- variable arrangement of blister halos on the blister strip – with regard to indexing length, geometric dimension and position (e.g. header and tail).
- imprint of one successive serial number.
- identification and marking of halos with off-filling.

Performance: 15 cycles / min.

Variations of an inhaler strip





MSP 1: The production machine for producing smaller batches:

This system solution for filling inhalation blisters evolved from a joint development of the two companies, Uhlmann Pac-Systeme and Harro Höfliger.

Up to three drum fillers are integrated in this filler via the trolley system. With a cycle frequency of 50 forming cycles/minute this plant is located in a completely different performance class. Serial numbers are overprinted consecutively, blisters with off-fillings are identified and marked.

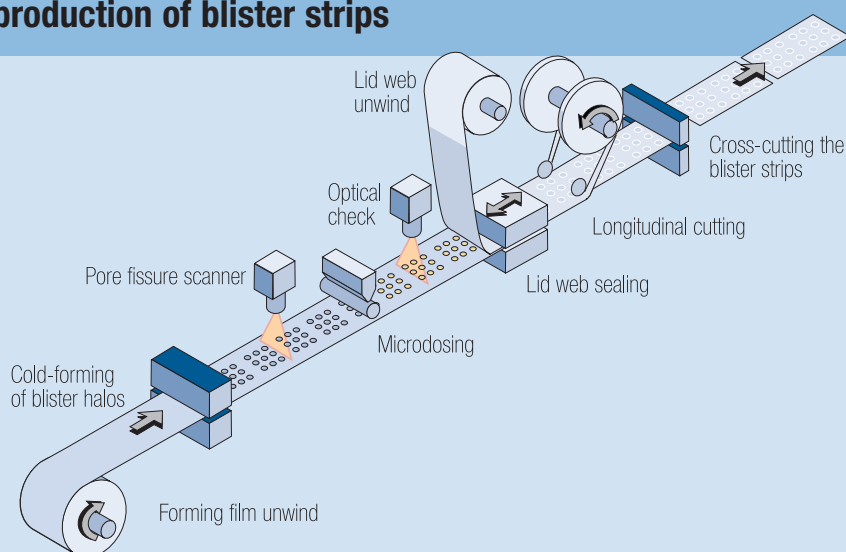
This concept is suited for the production of continuously formed blister halos with non-varying halo spacing.

Performance: 50 cycles/min.

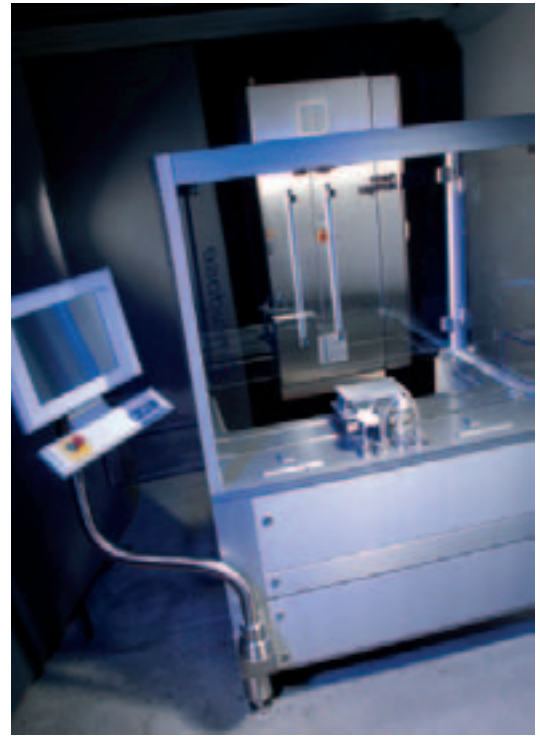


Precision filling:
Drum filler for dosing powder quantities starting at 1 mg.

Fully automatic process for the production of blister strips



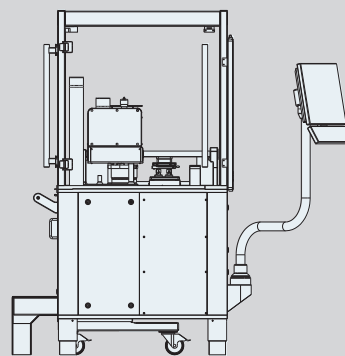
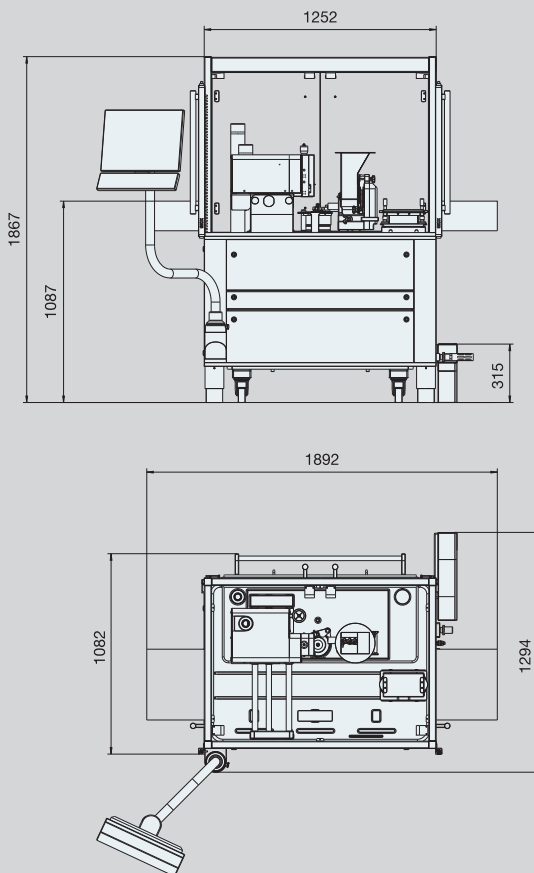
Specification Omnidose TT and Omnidose.



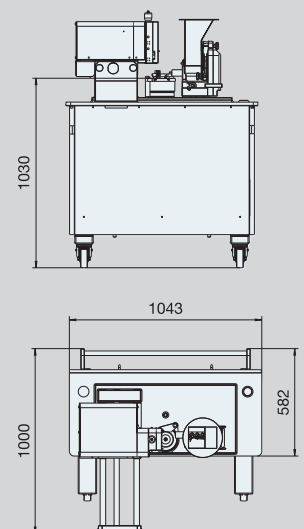
The basic configuration of the Omnidose laboratory filling machine:
Basic machine with standard guarding and separate control cabinet.

Technical data

Omnidose with standard guarding:



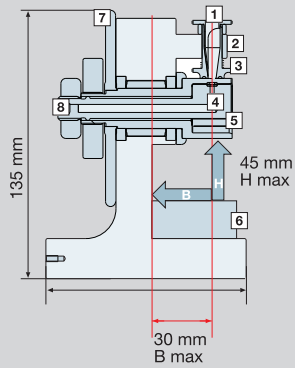
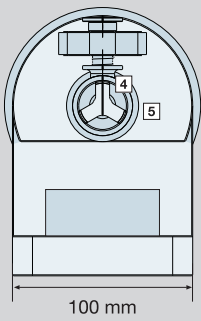
Dosing trolley:



Electric configuration: 230/400 V, 50/60 Hz, 3-phase/neutral
Power consumption: max. 3 KVA, depending on the machine configuration

Compressed air consumption: 4 m³/h, bei 6-10 bar

Omnidose TT laboratory hand dosing equipment:



- 1** Agitator
- 2** Dosing chamber
- 3** Air knives for powder
- 4** Filter board
- 5** Drum (size part)
- 6** Container receptacle (size part)
- 7** Handwheel
- 8** Air connection

Output:
approx. 5 – 10 dosings / min.*

*depending upon filling weight and powder characteristics

Containers:
Vials, capsules, blisters,
stainless steel vials etc.

Connection data: p = 5 bar

B_{max} = max. distance from the dosing bore to the wall 30 mm

H_{max} = max. height of container 45 mm

Omnidose with Powder Containment:

