

Your product is our only concern



Bucket fillers



GRUNWALD® 
Dosing · Filling · Packing



Make your vision a reality – step ahead with GRUNWALD

Pure technology is available from many companies but not the experience behind it. GRUNWALD have been a reliable partner in dosing, filling and packing for several decades. Today our filling machinery is used all over the world by the food producing industry, delicatessen industry, meat processing industry, ready-meal producers and the cosmetics industry.



YOGHURT, DAIRY PRODUCTS, SINGLE OR MULTIPLE FLAVOURS, FILLED IN LAYERS OR IN A SWIRL PATTERN



BUTTER, MARGARINE, MAYO, DIPS, SAUCES



JAM, SPREADS, FRUIT PUREE



CREAM CHEESE, CURD, COTTAGE CHEESE



FRESHLY-PREPARED SALADS, NON-PUMPABLE READY-MEALS



DELICATESSEN SALADS, HUMMUS



DESSERTS, SWEETS OF ALL KINDS

We do everything we can to help you give your product the best reception in the marketplace. Many years experience with a large variety of products, container shapes and lid types makes it possible to develop innovative, individual, flexible and reliable machinery. This guarantees production reliability, easy operation and changeover, giving the maximum speed and flexibility for your products.

Flexibility, speed, value for money, short delivery times and prompt, reliable customer service result in long-lasting partnerships with all of our customers.

Perfect presentation and mouth-watering taste will make your product a bestseller. We understand this and we do all we can to help you achieve it.

It is a fact that to keep your product as delicious as it was when it was made, the appropriate technology is required. This is one of our key strengths.

Different designs of filler guarantee weight-accurate, non-drip filling and thus the best possible presentation of your products.

HITPAC XL

Our compact machine

Our compact rotary-type bucket filling machine - almost without any format parts - giving phenomenal value for money.

The fully-automatic format flexible rotary-type bucket filling machines complement the full model range of linear bucket filling machines.

HITPAC XL

Dimensions: max. 1,700 x 1,700 mm
8-station rotary table

Optionally with

- cutting/sealing station and
- leak test station.

1-lane

Approx. 500 – 1,300 buckets/h

Dosing range: 1 – 10 litres,
in special design dosing range
up to 20 litres possible

Possible applications:

For all round and rectangular buckets,
with and without handle for liquid and
pasty products.

The most important advantages of
rotary-type bucket filling machines are:

- increased production speed due to considerably higher rotary table cycle speed compared to inline bucket filling machines
- lower space requirements as well
- good value for money.

The open construction allows for good accessibility.

One important feature is the dosing station which was designed for guaranteed high filling accuracy.

Previous experience has shown us that production increases of 25 % to 50 % are possible.



HITPAC XL

1-lane
with bucket denest-
ing, filling station
with manual cleaning
and with snap-on lid
station



HITPAC XL

1-lane
with bucket
denesting, filling
station in CIP design,
cutting/sealing
station and leak test
station as well as
snap-on lid station



Filling station with weigh cell

and maximum filling accuracy



Bucket suction station with servo drive for bucket height adjustment via push of a button

Patented, universal bucket slat for different bucket sizes
(in this case for 3 different rectangular bucket sizes)

ROTARY XL

Our exclusive machine

This rotary-type bucket filling machine – almost without any format parts – is also available in ultraclean design.

The fully-automatic bucket filling machine **ROTARY XL** offers compact solutions with phenomenal value for money.

ROTARY XL

Dimensions: max. 2,300 x 2,300 mm
12-station rotary table

It offers supplementary options for bucket filling and for the assembly of additional customer-specific stations. Optionally it can be equipped with

- packing material sterilisation,
- cutting/sealing station and
- leak test station.

1-lane

Approx. 500 – 1,300 buckets/h

Dosing range: 1 – 10 litres,

–in special design dosing range up to 20 litres possible

Possible applications:

For all round and rectangular buckets, with and without handle for liquid and pasty products.

Ultraclean design with

- laminar cabin
- with special high-pressure UV(C) radiators for buckets and sealing film at a guaranteed sterilisation rate of $\geq \text{LOG4}$.

ROTARY XL

1-lane
in standard design
and optionally with
external control box
and machine roof



ROTARY XL UC

1-lane
in ultraclean design
with laminar cabin
and packing material
sterilisation



View into the clearly arranged and easily accessible ROTARY XL

with bucket denesting (in the middle), bucket sterilisation station (on the left) and snap-on lid station with integrated home pressing station as well as bucket discharging station (on the right)



Cutting/sealing station for film from the reel

for easy, quick exchange of the cutting tools

FLEXLINER XL-1

Our flexible machine

A versatile bucket filler offering an abundance of options.

The design of the fully-automatic and extremely flexible bucket filling and closing machine **FLEXLINER XL-1** was based on proven design features. The abundance of options is manifested by the equipment of this **FLEXLINER XL-1**.

Great value was attached to

- operator-friendly handling,
- easy cleaning,
- extremely smooth running,
- high availability,
- minimum of format changeover times as well as
- maximum cost-efficiency.

The **FLEXLINER XL-1** is capable of handling containers with and without handle from approx. 1 kg to approx. 20 kg. Due to the drive concept with servo motors the extremely smooth running as well as a mechanical speed of up to 20 cycles/min. is achieved.

FLEXLINER XL-1

Machine width: 1,000 mm

1-lane

Approx. 240 – 900 buckets/h

Dosing range: 1 – 20 litres



FLEXLINER XL-1

1-lane
with laminar cabin, cutting/sealing station, leak test station, snap-on lid station as well as discharging station for buckets with weight fluctuations or leaky buckets



FLEXLINER XL-1

1-lane
with bucket denesting and storage platform for faster loading of the bucket magazine



Innovative hygienic design

Reduced number of parts
as well as rounded edges above
the table plate for easy cleaning



Pushing rod drive

via servo motor for quick and precise transport of the containers without spilling

FLEXLINER XL-2

Our high-capacity machine

Up-to-date and robust technology in connection with high speed and maximum flexibility.

Especially the fully-automatic bucket filling and closing machine **FLEXLINER XL-2** offers a very high capacity. This creates the flexibility required to enable you to react quickly and adapt to the manifold requirements of your customers.

The **FLEXLINER XL-2** is available with the following equipment:

- bucket denesting
- bucket storage
- filling station alternatively designed for manual cleaning resp. automatic cleaning via the CIP unit to be provided by the customer
- sealing station with rotating cutting knives for round bucket sizes with
- cutting tools for square, rectangular or oval bucket sizes
- snap-on lid station with home pressing station
- discharge to customer's transport system or a conveyor

The manifold options for these high-capacity bucket fillers are stated on page 18.

FLEXLINER XL-2

Machine width: 1,600 mm
2-lane
Approx. 480 – 1,800 buckets/h
Dosing range: 1 – 20 litres



FLEXLINER XL-2

2-lane
in compact design. The buckets are closed with tamper evident snap-on lid closure



FLEXLINER XL-2

2-lane
with fully-automatic storage system for buckets with a storage time of up to 30 minutes



Snap-on lid station

with powered tongs for safe snap-on lid denesting
The 2-phase home pressing station avoids cambers and guarantees the safe closing of the buckets



Lid setter drive

via servo motor for the safe denesting and placing of the snap-on lids as well as with automatic height adjustment to different bucket heights

ERGOLINER XL

The master of its class

The new linear bucket filler with ergonomic ultraclean design for maximum production speed and utmost flexibility.

The new upside down machine technology is a milestone with regard to the development of bucket filling machines. The whole machine can be operated without platforms. This relates to both the reloading of packing materials and the format changeover without tools.

Depending on the extent of the format changeover the changeover time for the complete linear bucket fillers takes only 5 – 15 minutes.

The consequent further development of the proven pulsed-light-high-performance UV(C) sterilisation system for GRUNWALD cup filling machines resulted in a patented procedure which guarantees a sterilisation rate of $\geq \text{LOG}4$ also with buckets (up to 10 litres).

The **ERGOLINER XL** offers the following features:

- bucket denesting with a storage time of up to 30 minutes.
- patented pulsed-light-high-performance-UV(C) sterilisation system
- filling station in aseptic design with CIP cleaning, SIP optionally available
- cutting/sealing station with UV(C) sealing film sterilisation
- leak test station
- snap-on lid station with a storage time of up to 30 minutes
- home pressing station

ERGOLINER XL

2-lane

Approx. 480 – 1,800 buckets/h

Dosing range: 1 – 20 litres



ERGOLINER XL in new upside down machine technology

Due to the fact that all drives were shifted to the top this machine stands out with its unique ergonomics



View into the inside of the linear bucket filler ERGOLINER XL

UV(C) sterilisation area (on the right of the photo), filling station with weigh cell (in the middle), cutting/sealing station with sealing film sterilisation (on the left)



Ergonomic low level bucket storage

with a storage time of up to 30 minutes



Ergonomic low level snap-on lid storage

Via the servo traverse axis the snap-on lids are precisely positioned on the buckets. In the subsequent home pressing station the snap-on lids are tightly pressed on the buckets

OPTIONS

Format changeover

Another step towards increase in efficiency: the GRUNWALD quick-change format changeover system with bucket and snap-on lid magazines adjustable via motor. The format changeover is actuated on the touch panel.

The advantages of the quick-change format changeover system are verified:

- maximum of flexibility
- handling of additional bucket sizes
- considerable saving of time as the change of magazines is not necessary
- exchange of heavy format parts no longer necessary
- no damage to format parts.

Magazine rods

Magazine rods movable via motor for the automatic adjustment of the magazine to different bucket and lid diameters



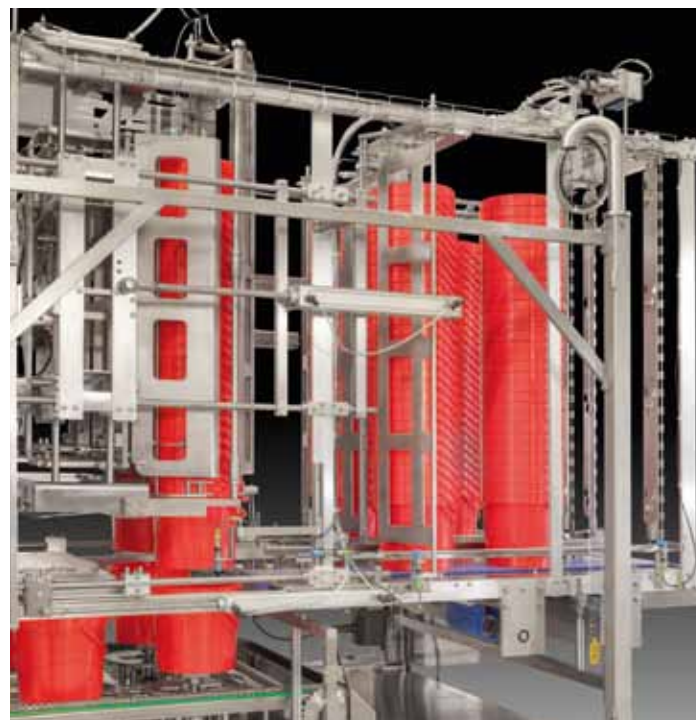
Storage system

Depending on the cycle speed and stacking distance the standard storage time for packing materials is 3 – 5 minutes.

The storage time can be increased to 15 – 30 minutes by a fully-automatic packing material storage station with conveyor.

Storage system

with maximum storage time for buckets



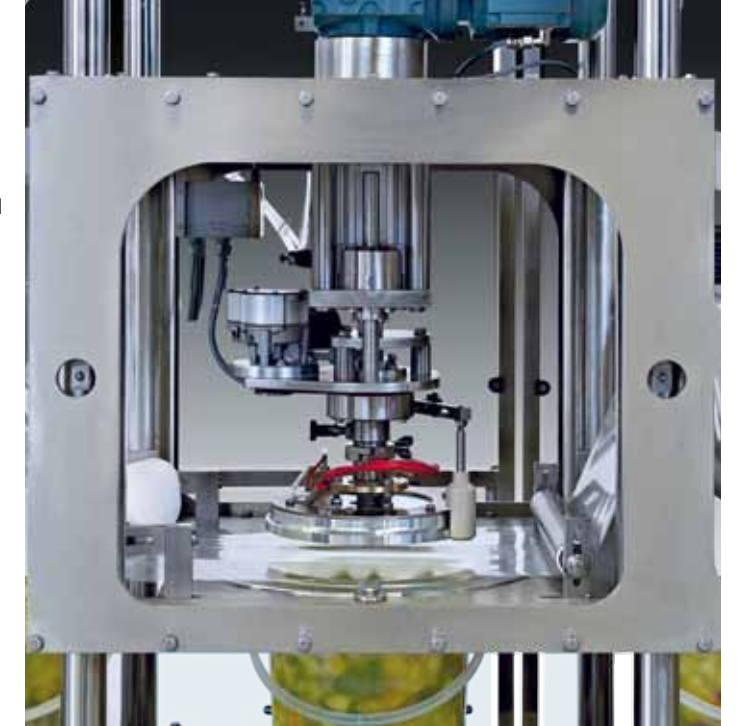
Sealing

For sealing buckets with film cut in accordance with contour two different options are available:

- cutting/sealing station with rotating knife for cutting the sealing film (for round buckets) in accordance with contour
- cutting/sealing station for foil cutting in accordance with contour and tab (for all bucket shapes)
- this option is e.g. used for peelable foils.

Cutting/sealing station

In one working cycle the bucket is sealed with film from reel and the sealing film is cut with hoop-steel knives in accordance with contour



Leak test station

The leak test control of the sealing is available in two designs:

- mechanical leak test control
- thermal leak test control

Due to the mechanical squeezing of the bucket or the temporary heating of the headspace the cambering of the foil is generated.

A sensor controls whether the test weight placed on the buckets can be held in position for a certain time. In case the test weight falls the bucket is identified to be leaky.

Thermal leak test station



OPTIONS

Hygiene levels / Product shelf life

GRUNWALD bucket filling machines are offered with proven hygienic concepts in order to guarantee the shelf life of products.

Patented pulsed-light-high-performance-UV(C) sterilisation system

Optionally all filling machines can be equipped with a laminar cabin.

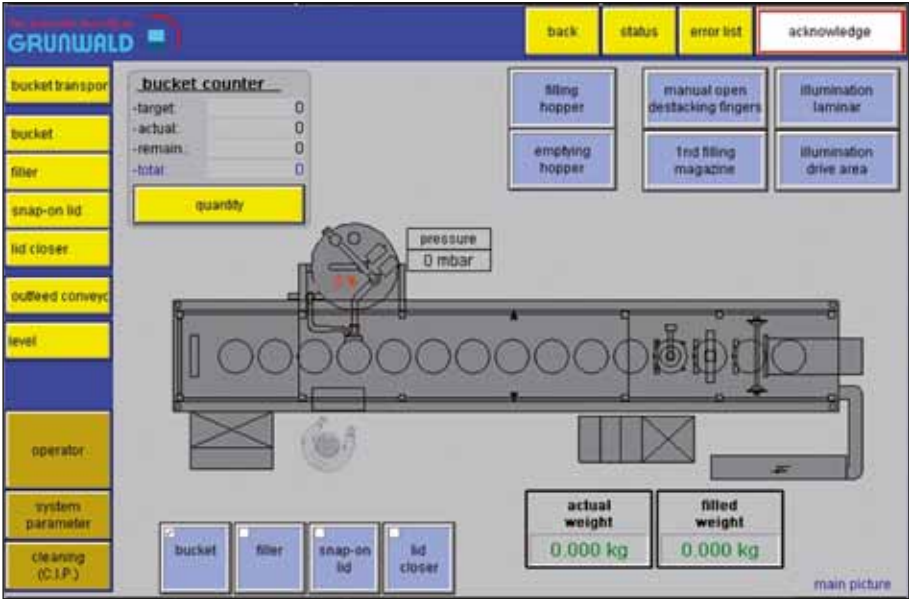
The patented UV(C) sterilisation system meets the current hygiene requirements of the dairy industry. Due to the pulsed-light-high-performance-UV(C) sterilisation system a sterilisation rate of $\geq \text{LOG}4$ can be guaranteed for all buckets (up to 10 litres).



Operator convenience

The standard equipment on all GRUNWALD inline bucket filling machines includes a 12.7" infrared colour touch panel.

The screen is made of scratch resistant laminated safety glass which makes it much more durable than conventional resistive message displays. The clear design offers excellent levels of operator clarity.



Dosing systems

The empty bucket is transported onto the weigh cell, is balanced and filled up to 70 % – 80 % of its total volume at a high speed. Then the remaining filling volume is post-filled at a reduced filling speed.

The servo-driven lowering unit also guarantees the proper and foam-free filling of products which are difficult to fill.

Product feeding

via one frequency-controlled product feeding pumps optionally with product hopper incl. level control and agitator for filling different products



Recording of production data

Production data acquisition system "McDat"

To help improve the productivity of filling and packing machines all machine production data can be recorded for analysis using the "McDat" system, thus allowing improvements and adjustments to be carefully targeted where they will have the most affect.

The "McDat" continuously operates in the background automatically collecting data. This can then be evaluated on the touch panel or on an external PC via Ethernet connection.

McDat - (Auswertung WK4211)											
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OUR PROGRAMME

You have the product.

We have the technology.

In order to meet our customers' requirements with their different products, flexible machinery is needed.

To solve the most difficult tasks requires continuous innovation from our designers, programmers and development engineers. Forward thinking and customer focussed innovation are the keys for a successful machine concept. The best customised solutions arise from first consulting with our customers to ensure that we fully understand their requirements.

GRUNWALD bucket filling machines not only succeed because of their durable and sophisticated design, but also by the range of optional equipment that is available and their versatile modular drive technology.

Drive

- pneumatic – for auxiliary functions
- mechanical – step-by-step cam-driven motion
- electronic – servo drive

Format changeover

- fully-automatic height adjustment
- rapid format changeover system without tools to guarantee a changeover time of between 5 and 10 minutes
- movable stations– format parts do not have to be changed

Extended storage stations

- curved, extended magazine rods for buckets and snap-on lids
- fully-automatic storage systems for buckets and snap-on lids giving a storage time of 10 - 20 minutes

Miscellaneous

- leak test station
- inline checkweigher
- reject station for leaky or underweight buckets

Fillers

- Piston filler / rotary valve filler
- Piston filler EASYCLEAN with EHEDG certificate
- Dosing system MOBIFILL for a product changeover time of < 5 minutes

Filling nozzles

- Tappet valve
- Membrane valve
- Rotary valve
- Wire cutter
- Open pipe nozzles

Types of lidding

- Sealing of aluminium/plastic
- Sealing of aluminium/aluminium
- Sealing of aluminium/glass
- Sealing of plastic/plastic – pre-cut or reel-fed
- Snap-on lid

Sealing technology

- Pneumatic heat sealing
- Mechanical heat sealing
- Servo-driven heat sealing
- Hydraulic heat sealing
- Ultrasonic sealing

Cleaning

- Manual cleaning
- Intermediate cleaning
- CIP
- SIP

Hygiene

- Laminar airflow
- Sterile air covers
- Bucket and lid sterilisation using a mixture of steam and hydrogen peroxide
- Bucket and lid sterilisation with pulsed UV(C) high-performance radiator

Electric components

- Modern electronic processor control with operator guidance via a graphical message display
- Electronic cam control with dwell time compensation
- Automatic batch start-up and completion programme
- Remote fault diagnosis via internet (or modem)
- Production data acquisition system "McDat"
- Transfer of production data via OPC server



HITPAC XL



ROTARY XL



HITPAC



ROTARY



FLEXLINER XL



FOODLINER



ERGOLINER XL



FOODLINER UC (ultraclean)



SEMIDOS



MOBIFILL

Bucket fillers

Rotary-type machines

- HITPAC XL
- ROTARY XL
- ROTARY XL UC (ultra clean)

Inline machines

- FLEXLINER XL
- ERGOLINER XL

Dosing machines

- SERVODOS
- MOBIFILL
- MEGADOS
- SEMIDOS

Cup fillers

Rotary-type machines

- HITPAC
- ROTARY

Inline machines

- FOODLINER
- FOODLINER UC (ultra clean)



Entrance



Aerial Photography



Parts Manufacture



Assembly Hall

GRUNWALD® 
Dosing · Filling · Packing

GRUNWALD GMBH

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