



**Success through Innovation
and Customer Orientation**



Feige GmbH, Abfülltechnik



Feige GmbH, Abfülltechnik was founded in Hamburg in 1972 by Gerhard Feige with 5 employees.

In 1987 the company headquarters were shifted to Bad Oldesloe (30 km North-East of Hamburg).

In several stages of construction, modern production and office facilities were set up of about 5.000 m² on a total area of 12.000 m².

The extensive list of our highly satisfied clients reflects our success due to modern production technics and unmatched quality assurance and, of course, a group of highly motivated employees.

Apart from appointing agencies in all European countries as well as adjoining industrialised countries, associated companies were founded for other growing markets so as to consolidate the market position of Feige GmbH, Abfülltechnik.

Feige GmbH, Abfülltechnik is member of the Haver & Boecker group.

The "Feige Filling" Group

Feige GmbH, Abfülltechnik in Bad Oldesloe is the parent company.

Feige Filling Technology (FFT) Asia Pacific Pte. Ltd., a wholly owned subsidiary of Feige GmbH, Abfülltechnik was founded in 1998 to take care of the growing markets in South East Asia and China. This subsidiary today contributes 15% of the total turnover of the parent company, its sales target being about 25% of the turnover of Feige GmbH. Special emphasis is laid on the chemical industry in this area.

In 1998 FFT USA was founded. It is based in Houston, Texas today to serve the growing demand of Feige machines on the American continent. Haver Filling Systems is its parent company. Already FFT USA has succeeded in achieving a substantial market share and contributes 12-15% of the current total turnover of Feige GmbH, Abfülltechnik, and its target being 20-25%.

For consolidating its market position even further, yet another wholly owned subsidiary, Feige Filling France (FFF) was founded in October 2001. This subsidiary today contributes 8-10% of the total turnover of the parent company.



Filling of single drums/containers

Drum filling stations, drum filling equipment and automatic drum fillers

It was our drum fillers, which first shot us to fame and earned us respect in the chemical and petrochemical industries due to our special features such as safety devices. These safety devices allow filling of the most critical products, and yet meet requirements for safety at the work place. Thanks to our high-tech design we have gained a position of repute as market leader in the field of drum fillers. Apart from filling systems our manufacturing programme also offers auxiliary equipment such as conveyor systems, palletiser etc. Also available are robots unloading empty drums from trucks.

Many years of experience in handling of empty drums are reflected in our empty drum storage & handling system. We are able to offer a complete range of equipment starting from unloading of empty drums, automatic drum filling system right up to shipping of the filled drums.

- Unloading empty drums from trucks
- Modern storage systems for empty drums
- Transport to drum filler
- Orientation, debunging, and if necessary, leakage or impurity testing of empty drums and inert gas purging
- Accurate filling, the system is approved for W+M regulations in various countries
- Closing (bunging, checking, sealing)
- Filled drum transport
- Palletising
- Pallet transport



Filling of several drums/containers on a pallet

Due to an increasing demand for fully automatic processes we developed – on the basis of pallet filling stations – a fully automatic robot filler with optical bunghole detection also suitable for hazardous area operation. Today's camera system of this filler has reached the 4th generation and is working reliably and trouble-free.

- The pallet with the drums is moved via conveyor system into the pallet filler
- The bungholes are located by camera system
- Appropriate tools are used for
 - Debunging
 - If necessary purging with inert gas
 - Accurate filling, the system is approved for W+M regulations in various countries
 - Closing (bunging, checking, sealing)
 - Transport via conveyor system

Filling lines for pails and cans (1-30 litre)

Type range OC

In 1993, Feige GmbH, Abfülltechnik introduced this part of their manufacturing programme.

Type range OC includes filling lines for the filling of pails and cans from 1 to 30 litre with the following working steps:

Pails:

- Pail denesting
- Accurate filling
- Pail sealing
- Lid placing
- Lid pressing
- Palletising

Cans:

- Single allocation of cans
- If necessary, debunging of cans
- Accurate filling
- If necessary, can sealing with seal cap
- Can bunging
- Palletising

The filling system is approved for W+M regulations in various countries.

Apart from the chemical and petrochemical industries these filling lines are mainly targeted for paints/lacquers, pumpable plasters and food industries.



“Rapid filler”

This is a high speed filler for the W&M approved filling of pails and cans (1-30 litre) with an output of up to 2 000 pcs/hour, and more.

The filler is designed in modular system and can comprise up to 8 filling stations! The rapid filling system can reach this remarkable output by using a special weighing system which assures filling for approval by W+M regulations of every single container by synchronising the product flow rate of all filling stations.

Due to the Feige-weighing system an additional check-weigher for containers of 2.5 up to 10 kg is not necessary (in accordance with FPVO-Fertigpackungsverordnung).

Combined with the corresponding modules like denester of pails, labelling device and lid placer complete production plants can be designed with fully automatic process.

References

Worldwide more than 3000 machines have been delivered ...			
Germany	1556	Marocco	2
Austria	46	Mexiko	6
Belgium	142	Netherlands	143
China, Taiwan, Hong Kong	60	Norway	28
Denmark	37	Poland	11
Egypt	6	Portugal	8
Finland	28	Rumania	3
France	132	Russia	14
Gulf area	12	Singapore	16
Great Britain	141	Spain	21
Hungary	11	Sweden	102
India	21	Switzerland	200
Ireland	11	Turkey	10
Italy	22	USA	53
Malaysia	5	other	160
... Industries:			
Building materials	160	Petrochemical industry	500
Chemical industry	1500	Logistics Provider	50
Food industry	210	other	430
Paints/Lacquers	150		

We have supplied more than 3000 machines worldwide, including approx. 300 automatic drum fillers and 40 pallet filling robots.

Since April 1993 we have been certified as per DIN EN ISO 9001 and we are working accordingly. Since beginning of 2002 we have been certified as per EN ISO 9001:2000.

All our machines and systems bear the CE sign to demonstrate the compliance with European guidelines. We can supply required certificates on electro-magnetic compatibility for all machine types.

And of course, we are protected against all eventualities by means of appropriate insurance.

In Germany we are reputed as competent company as per § 19 I of water resources law to deal with water polluting products, the corresponding certificate can be supplied.

Our position in the market today is the result of more than 30 years of listening to our customers.

Innovations

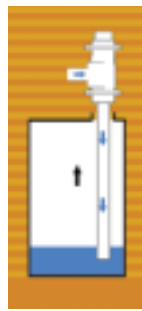
Innovations have always been strength of Feige GmbH, Abfülltechnik and an essential factor to gain our market position.

Some of the innovations are e.g. the rapid filler, parallel filling with flow control, advanced pallet filling robot and the unique Feige scale terminal with its special features designed for optimum filling process with high accuracy.



The characteristics of your product determine the filling mode.

Below-surface



for products which produce foam or explosive gas during filling.

Above-surface



for uncritical products which are filled in open top containers.

Below-bunghole



for uncritical products which are filled in bung-type containers.

For filling for custody transfer application load cells or mass flow meters are used.

The electronic weigh scale

The load cell and the scale terminal are integrated in the filling system as approved equipment for custody transfer application according to Weights & Measures legislation.

The Weights & Measures legislation specifies the minimum and maximum allowable weight for a particular scale and the filling tolerance.

The mass flow meter

The mass flow tube (Coriolis principle) through which the product flows, the transducer and the scale terminal are integrated in the filling system as approved equipment for custody transfer application according to Weights & Measures legislation. The minimum filling quantity and the filling tolerance are set by approved technical specification (the maximum filling quantity is not stipulated).

You can choose the filling machines for handling single containers or containers in batches.

Single container filling



Each individual container is placed under the filling valve and then filled and finally closed. Feige palletising systems can be used for storing on pallet and for transportation.

Pallet filling



Empty containers are first palletised. With pallet filling systems, all containers are filled one after the other. For this purpose, the filling valve is positioned to the filling openings.

Design and dimension of the equipment even enable multi-layer filling and the filling of large containers (IBC).

You determine the degree of automation.

Semi-automatic fillers

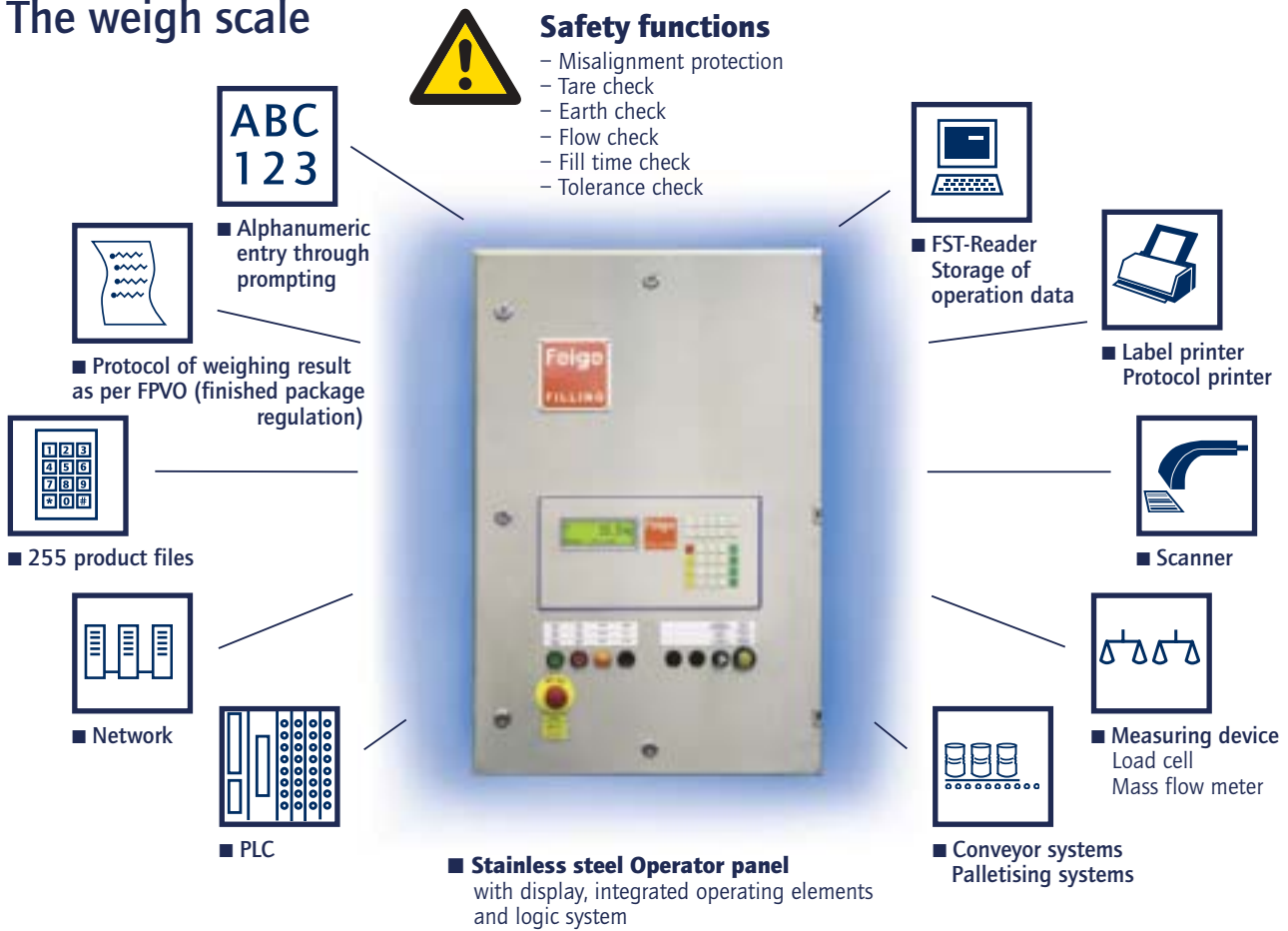
The operator positions the filling valve to the open, empty container. The operator presses the start button and filling appropriate for verification automatically starts in coarse and fine fill. Containers can be opened or closed by the operator whilst another is being automatically filled. Depending of the type of closure, Feige can offer the appropriate ancillary tools.

Fully-automatic fillers

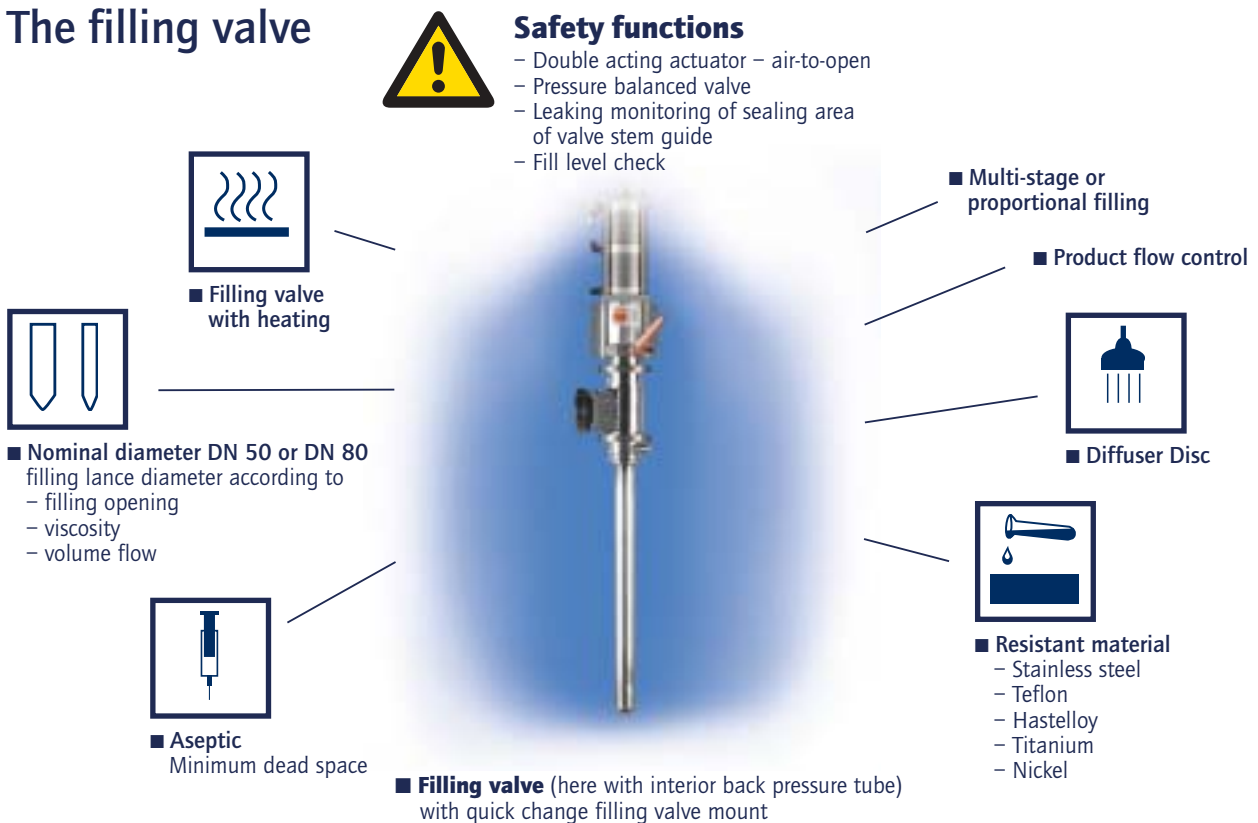
Empty, clean and closed containers are transported to the filler. Filling opening and tools are positioned to each other. Debunging, filling, bunging and sealing are automatically done. The filled, clean and closed container leaves the filler. Other functions such as labelling, printing, nitrogen purging, overpressure bunging or leak testing can be integrated into the automatic process.

The weigh scale – The filling valve

The weigh scale



The filling valve





The simple "Plug-and-Fill" solution

The filling station is installed; compressed air is simply connected via connectors and power supply is put on.

You can start filling appropriate for verification of your product by connecting the product hose.

Even for hazardous area application this plug-and-fill solution is available.

A mobile version of this drum filling station is also available with rollers.

Drum filling station Type 19.



How your drums are moved on

A safe solution to your logistic demands is provided by modular designed components of roller conveyors.

Of course, all your requirements of safety and interlock are fulfilled in our control system.

Drum roller conveyor Type RBF



The solution to your complex requirements

Apart from drum filling you need conveyor systems for empty and filled drums.

Your drums should automatically be palletised.

Your filling products require larger nominal widths of product hose and filling valve.

Combined with special accessories your filling process should lead to more safety and efficiency.

Drum filling equipment Type 29.



Your drum is automatically positioned and filled. The operator manually opens and closes the drum.
Drum filler Type 39.



Your drum is automatically positioned, debunged, filled, bunged and sealed.
Drum filler Type 81.



The automatic solution

While one empty drum is debunged after automatically positioning, an already open drum is filled in the filling station and a filled drum is closed in the closing station.

Further working steps can be integrated such as:

- Labelling • Printing
- Inert gas purging
- Overpressure bunging
- Leakage test.

Drum filler Type 84.



You want to store or to transport your filled drums on pallets. This working step can be automated through appropriate palletising systems.

**Drum palletiser Type FP-S
Empty pallet magazine Type LPM**



The simple "Plug-and-Fill" solution

You move this transportable pallet filling station to the desired filling place via forklift truck, simply connect the compressed air via connectors and put on the power supply.

Even for hazardous area application this plug-and-fill solution is available

You can start filling appropriate for verification of your product after connecting the product hose.

Of course, this pallet filling station is also available as stationary station and in combination with conveyor systems.

Coordinate pallet filling station Type 17.
Transportable version
(also available with boom arm Type 16.)



How your pallets safely reach their destination

Sturdy pallet roller conveyors and/or chain conveyors move your pallets to the desired places.

Conveyor systems combined with modern control technique provide intelligent and safe logistic systems.

Pallet roller conveyor Type RBP
Chain conveyor Type TKF



The solution to your complex requirements

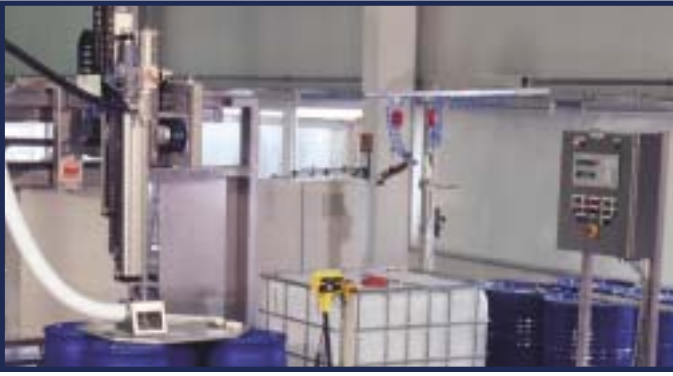
After filling, the pallets with your containers should be moved on conveyor systems through your filling hall.

Small drums and high containers should be filled (height difference > 1000 mm).

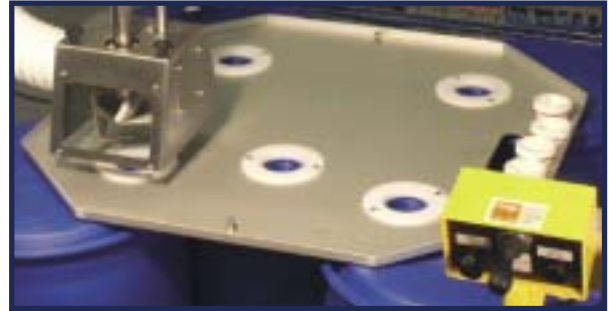
Your filling products require larger nominal widths of product hose and filling valve.

Combined with special accessories your filling process should lead to more safety and efficiency.

Pivoting pallet filling equipment Type 26.
(also available as coordinate pallet filling equipment Typ 27.)



Automatic pallet filler Type 37.



The automatic solution

The filling openings of your containers on pallets are either stored in PLC via teach-in or positioned through a template. Filling appropriate for verification of all containers then automatically starts.

Gantry-type pallet filler Type 72.
also available with automatic debunging and bunging

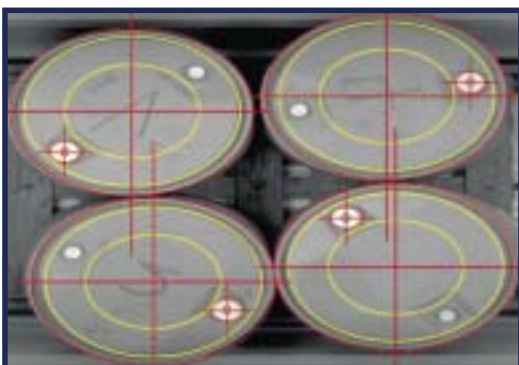


Pallet filling robot Type 71.
here in enclosed housing made of stainless steel with sliding doors in the in-feed and out-feed area.



The pallet filling robot

A patented camera system automatically and reliably locates the bungholes of your containers. The containers are then automatically debunged, filled appropriate for verification, bunged and sealed.



A CCD line camera and a frame grabber generate a two-dimensional image when the pallets enter the filling robot. The image processing system (patent pending) reliably locates the centres of all bungholes despite of possible stains or labels on top of the drum.

A Remote Maintenance feature for the image processing system is available. This feature allows Feige service personnel to configure new container types. Modification and diagnosis for re-adjustment is possible via direct access to the data base.



The simple "Plug-and-Fill" solution

This container filling station offers highest flexibility!

Only slight resetting work is required to use the filling station for filling appropriate for verification of your different containers at any desired filling place. For relocation, the filling station is thus available with rollers.

The filling station is installed; compressed air is simply connected via connectors and power supply is put on.

You can start filling appropriate for verification of your product after connecting the product hose.

Even for hazardous area application this plug-and-fill solution is available.

Container filling station Type 14.



It depends on your can!

For each container we will find a suitable conveyor system!

- Roller conveyor
- Link conveyor
- Belt conveyor



The automatic solution

Filling line for cans

- In-feed and out-feed roller conveyor
- Pusher for exact positioning
- Filling station, below-bunghole
- Cap bunging with conveyor belt



Filling station, below-surface with gas hood



Cap bunting with conveyor belt



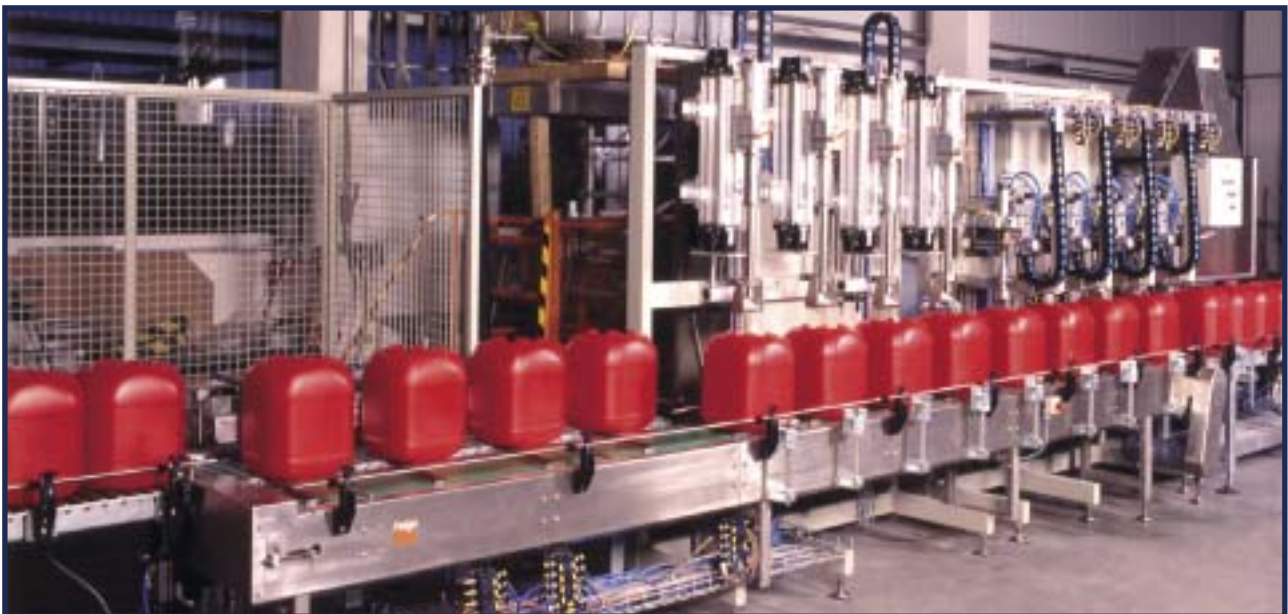
Plug presser with conveyor unit

OC modules

Our OC programme is designed as a modular system.

The basic modules are the conveyor line and the filling station.

Combined with further modules any of your demands on automation can be realised.



OC automatic can filler

Four cans are fed to the conveyor line.

Four cans are filled (below-surface).

Four cans are screwed down.

A cap magazine feeds the caps.



Palletising robot with combination tools

An empty pallet is taken and placed onto the roller conveyor.

A row of cans is taken and placed onto the pallet.

The robot places a slip sheet onto the first layer of cans.



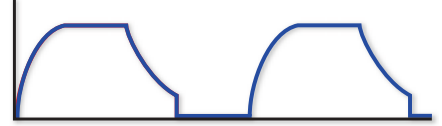
„Plug and Fill“
Semi automatic filler
for high speed filling
of pails

6" filling valve
for liquid plaster
3" filling valve
with diffuser
disk for paints

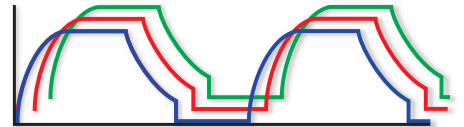
The product flow control

enables high-speed filling of pails!

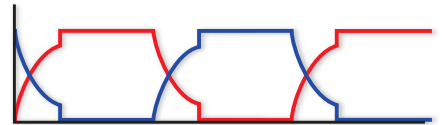
When filling starts, the filling valve opens in defined motion to avoid product spilling. At the end of filling the filling valve slowly shuts off, always considering instantaneous flow and remaining quantity, to precisely reach the target weight.



For parallel filling of several containers the product flow is divided into continuous partial flows for all filling valves.



Constant product flow control enables product feed to the filling equipment with minimum pipe cross section and without cyclic pump control.



Rapid filler

This high-speed filler is designed for filling your containers of up to 30 kg in accordance with W&M legislation, reaching an output of 2000 pcs/h and more.

The product can quickly be changed. The carriage with the filling valves is removed. The next valve carriage is brought into position and connected via connectors.



Filling line for pails

- Pail denester
- Cycled conveyor for exact positioning
- Filling station, above-surface
- Lid placer
- Lid presser
- Palletising robot
- with appropriate tools for pallets and different oval pails



Double filling station
above-surface



Double filling station
below-surface

OC modules

By means of OC modules automatic filling lines are designed according to your specific requirements.

Your existing filling line can also be extended with OC modules.

OC modules can also be used as stand-alone units.



Pail sealer



Lid placer
with double magazine



Lid crimper



Lid presser



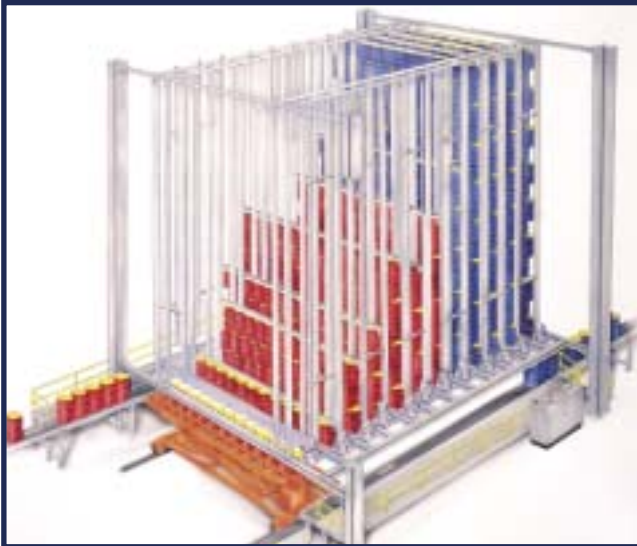
Palletising robot with combination tools
The robot takes a pallet out of the magazine and places it on the out-feed conveyor.



The pails are palletised by the robot as per pre-set pallet scheme.

Your turnkey filling plant from one partner

Apart from filling, palletising and conveyor systems you need systems for storage, in-feed, marking and securing of your containers.
 You want to store and to analyse your operation data.
 You need to interface to your Host System.
 Feige can do all these, from engineering to delivery and commissioning of your filling plant.



Empty drum silo

for automatic storing in and removal of empty 200 l steel or plastic drums (capacity 2000 drums).

A silo for automatic storing in and removal of different container types is also available.



Robot
for allocation of empty drums taken from a drum storage



Labeller

Self-adhesive labels are automatically attached to drum cover and drum top.

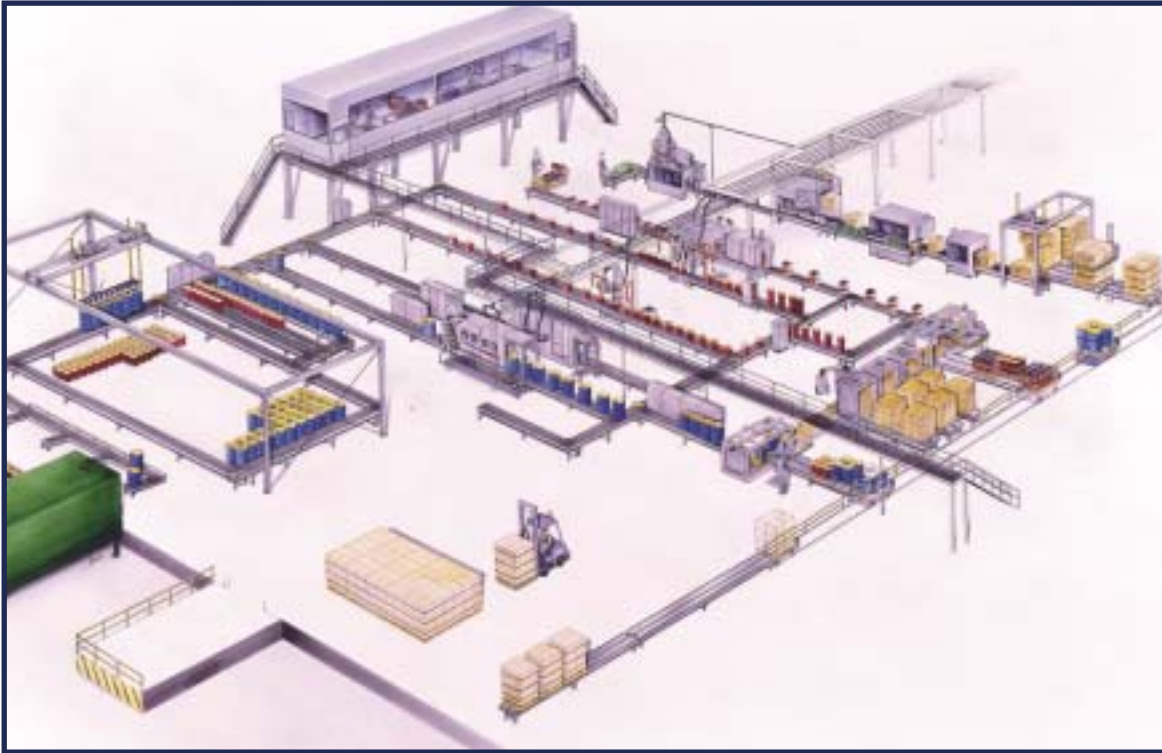
Can station

for efficient can in-feed to the filling line.



Stretch wrapper

A film is automatically wrapped around the pallet and the containers. Thus, the containers are secured and protected.



- Empty drum storage
- Empty drum distributor
- Automatic drum fillers
- Drum filling station
- Automatic container filler
- Container filling station
- Empty pallet magazine
- Push palletiser
- Pallet strapper

Turnkey plant for filling of mineral oil products

The complete system is controlled and monitored through a central supervisory system.



- Can station
- Can distributor (lift)
- Labeller and printer
- Automatic can filler and bunging station
- Palletising robot with combination tools
- Stretch wrapper
- Pallet conveyor system

Turnkey plant for filling of perester

The complete system is automatically adjustable to different can sizes.

After the purchase of a Feige filling equipment we are at your disposal with wide-ranging service. This guarantees a maximum availability of your equipment. The high level of product output of filled containers remains unchanged. Preventive maintenance avoids an unexpected standstill of your equipment. A friendly service team assists you round the clock.



24h-Hotline +49-45 31 -89 09 -222

You can reach a service technician round the clock via hotline who gives advice and takes necessary measures together with you for further action.



Teleservice

If required, we are immediately at your disposal via Teleservice. We have access to your control system through a modem-to-modem connection. We can locate irregularities and take appropriate measures for rectification.



Spare parts service

We guarantee long-term and optimum supply of all required spare and wear parts for your equipment.



Inspection, maintenance

Regular inspections and maintenance increase the availability of your equipment.

Equipment inspection

The actual state of your equipment is assessed as per DIN 31051. Function tests are carried out and an inspection protocol is drawn up. Inspection is the basis for successful maintenance.

Equipment maintenance







The ideal condition of your equipment is restored.

- Replacement of parts based on the inspection protocol
- Lubrication and adjustment
- Drawing up of maintenance protocol



Service contracts

A service contract will be drawn up meeting exactly your demands. The table shows you the possibilities. Your advantage: You know the exact costs for the service you expect.

						
Contracts	inspec- tion contract	mainte- nance contract	check contract	tele- service contract	3- star- service	4- star- service
component check	X	X			X	X
function test with diagnosis	X	X			X	X
preventive repairs		X			X	X
oil, adjust refill		X			X	X
record	X	X	X	X	X	X
gauge preparation			X			X
safety check			X			X
teleservice				X	X	X



Equipment check

Depending on the field of application, some checks must be repeated during operation. Ask for our support regarding to:

- Equipment safety as per VBG 76 §40 "Verpackungs- und Verpackungshilfsmittel"
- Equipment safety as per BGV A2 „Elektrische Anlagen und Betriebsmittel"
- Equipment safety as per EN 60079-14 (VDE 0165 Teil 1) „Elektrische Betriebsmittel in gasexplosionsgefährdeten Bereichen - Teil 14 Elektrische Anlagen in gasexplosionsgefährdeten Bereichen (BetrSichV)"
- Preparation for calibration and assistance during calibration



Training

Regular training of your operating and maintenance personnel guarantees a high level of efficiency of your equipment. We offer training in our works or directly at your equipment.



Equipment optimisation

Your equipment should be adjusted to new fields of application.

- Revamping to latest design
- Revamping to new application
- Extension
- Optimisation of output
- Optimisation of availability

Examples

Scale revamping

Your reliable equipment is revamped with state-of-the-art components, which considerably improve the operation of your equipment. A long-term supply of spare parts is guaranteed.



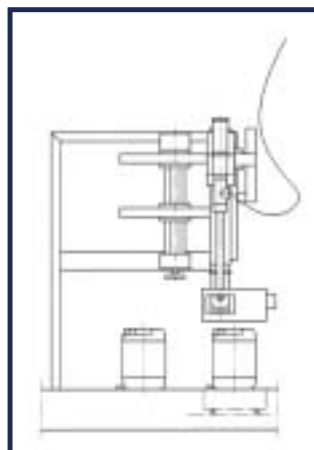
Before: Circular weigh scale



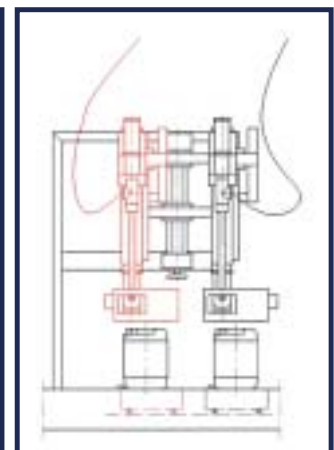
After: Electronic weigh scale

Integration of a second fill place

A remarkable increase in output can be achieved by completing the filling equipment with a second fill place. The modular system of Feige offers this possibility.



Before: Container filling equipment with one fill place



After: Container filling equipment with two fill places



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