



## COMPETENCE IN DRUM FILLING

# HIGHEST EFFICIENCY IN DRUM FILLING

Feige FILLIG GmbH is a traditional German medium-sized company in Bad Oldesloe. Founded in Hamburg in 1972, the company has developed into the market as technology leader in the field of filling technology by its innovative strength and open-mindedness. Feige FILLING stands for gravimetric filling equipment for filling of liquid and pasty products with calibrated accuracy.

Since 2003, the company is a completely integrated member of HAVER & BOECKER. With subsidiaries and agencies on all continents, we stand in a world-wide dialogue with our customers in a spirit of partnership.

## We have the suitable filling technology to meet your challenge

The modular assembly system of the range of filling equipment produced by Feige FILLING offers you an appropriate solution for all your needs when it comes to the gravimetric filling of containers with sizes ranging from 0.5 kg to 3000 kg.

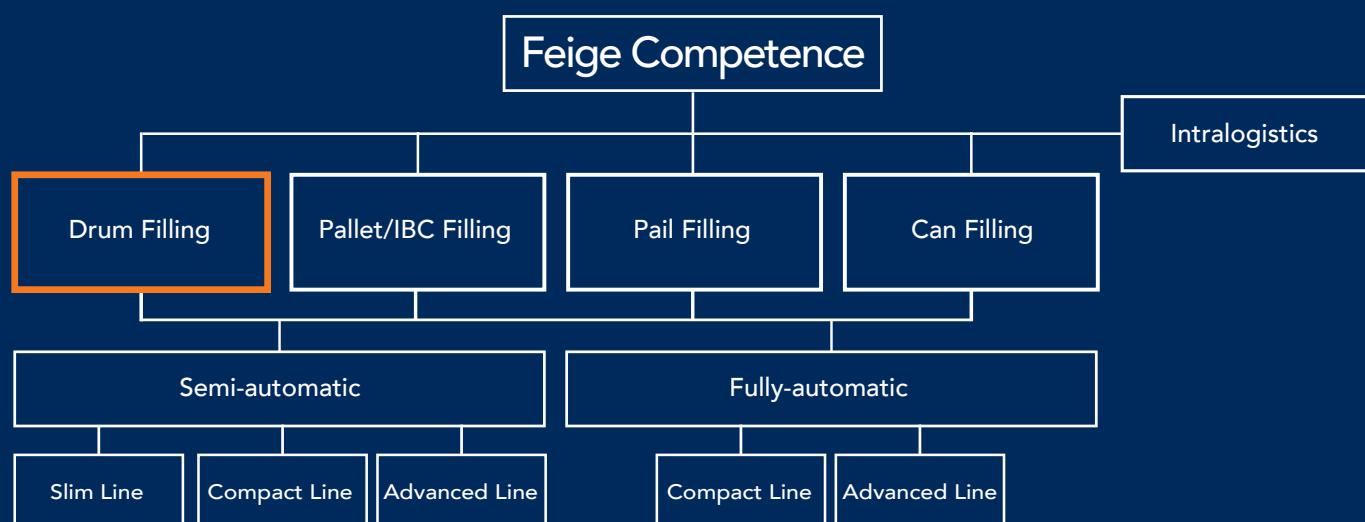
Decades of experience with innovative technology and taking into consideration market requirements guarantee the successful implementation of your requests.

## Let us help you fill your drums

Whenever drums need to be filled, the use of filling equipment is inevitable. Decide for a turnkey filling solution – individually matched to your operating sequences:

- Drum filler for individual containers
- Preconfigured drum filling stations
- Complex pallet filling systems
- Parallel working drum fillers
- Drum fillers

At your request, we will deliver a complete turnkey solution comprising everything from the machine-aided unloading of the empty drums from the truck to the palletising of full containers and load securing.





# SAFETY - ACCURACY - FLEXIBILITY

**Repeatable accuracy as well as the highest degree of safety during product filling are fundamental requirements which have to be met by filling equipment meeting the highest quality standards**

Irrespective whether your products are uncritical, foaming, explosive or flammable commodities, Feige FILLING as specialist for filling equipment will make available suitable filling technologies. All drum fillers have a standardised working principle. Whether individually or arranged on a pallet, the drums reach the automatic filling unit empty, clean and closed and leave it filled with calibrated accuracy, clean and closed. Central components of the drum filler are filling valve and weigh scale. The filling operation takes place using the time-tested coarse/fine fill process. In order to observe the calibration error limits, it is necessary to restrict the volume flow towards the end of the filling process. This necessitates a two-stage or analogue adjustment of the filling valve opening.

## Filling - safely

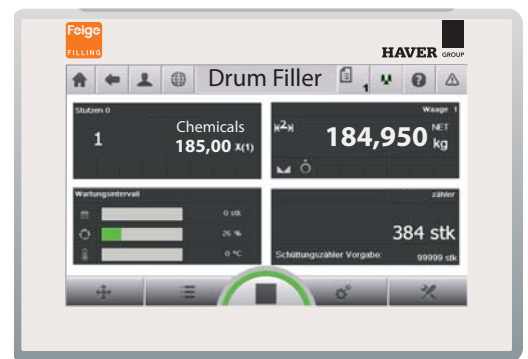
With the Feige FILLING valve, you fill your liquid and viscous products with a proportional or multi-stage dosing system. The filling valve is dimensioned in accordance with your requirements on filling opening, viscosity and volume flow. Resistant materials such as stainless steel, Teflon, Hastelloy, titanium, nickel, PVDF and PTFE guarantee the reliable use of the filling valve. Depending on the area of application, you can also resort to filling valves of hygienic design, heated and with overfill protection. To enable you to change the filling valve within seconds during operation, a stainless steel quick-action filling valve mount is a standard feature.



## Measuring with calibrated accuracy

The FEIGE weigh scale terminal is the heart of the equipment. Measuring the dosed filling volumes with calibrated accuracy is carried out with mass flowmeters (minimum filling volume and filling tolerance) or load cells (maximum weight), which are integrated in the filling equipment as a system approved for verification. Safety mechanisms assume the control of all important parameters.

You operate the weigh scale terminal via discrete elements or a touch panel with alphanumeric input. The weigh scale records your operating data, logs the weighing results and puts statistical data at your disposal. The system communicates with your network or outputs the data on a mobile USB flash drive.



## The filling valve



- **Filling valve diameter** according to
  - Filling opening
  - Viscosity
  - Flow rate



- **Aseptic**
  - Minimum dead space



- **Heated** filling valves



- **Material**
  - Stainless steel
  - Teflon
  - Hastelloy
  - Titanium/Nickel
  - PVDF/ PTFE



- **Multistage dosing**



- **Proportional Dosing**





### Safety Functions

The filling valves are equipped with important safety functions such as:

- Closing / opening with compressed air
- Closing with spring force
- Relieved of product pressure
- Leakage monitoring of the sealing space
- Fill level check
- Minimum dead space

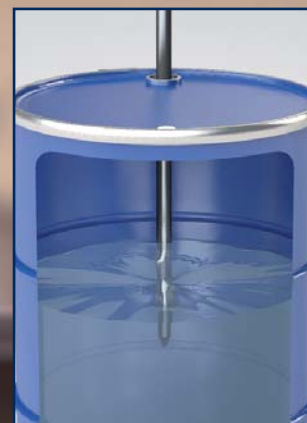
Above-Surface



Below-Bunghole



Below-Surface



## The weigh scale



- 255 Product files, expandable



- Protocol of weighing results and statistics



- Alphanumeric entry through prompting



- Storage of operation data



- Label printer protocol printer



- Measuring device  
Load cell  
Mass flow meter

# CONCENTRATED KNOW-HOW IN INTRALOGISTICS

**If you are planning a seamless overall concept of filling equipment with end packaging, palletising, conveying and marking technology, talking with the specialists of Feige FILLING will certainly be of assistance**

For more than 40 years, Feige FILLING has been building automatic packaging systems for liquid and pasty products. Due to the numerous application experiences the engineers have gathered a wide variety of projects, existing systems are continuously enhanced and always adapted to the latest state-of-the-art.

Due to the affiliation with HAVER & BOECKER, the expertise at Feige FILLING was further enhanced and the range of services portfolio expanded in synergy. Today, Feige FILLING supplies you with the entire process technology seamlessly from one source.

## Turnkey complete solutions

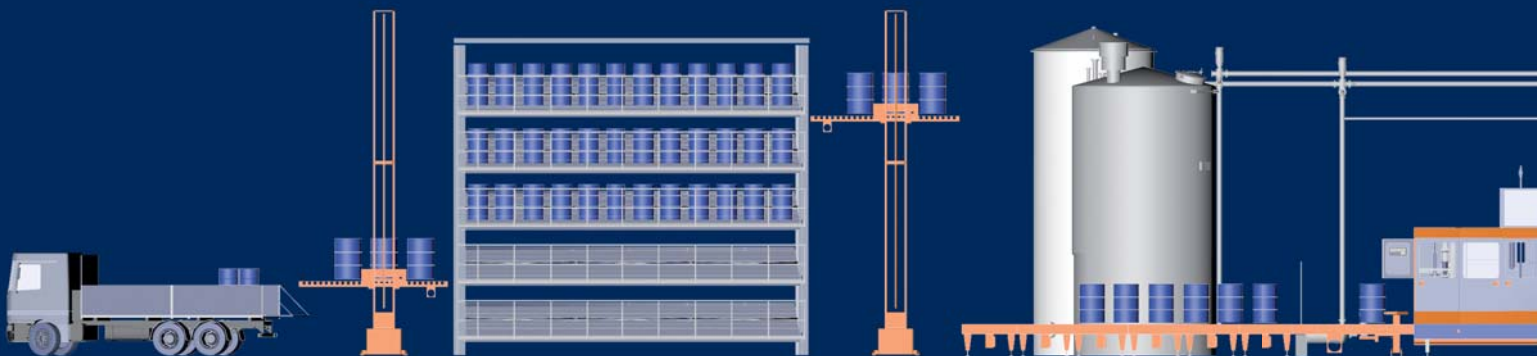
In the field of filling, Feige FILLING will project your complete turnkey equipment for the solution of complex logistic tasks. The equipment required by the most different industrial sectors for storage, mixing and filling of liquid or pasty products comprises:

- Computer-controlled process control
- Conveyor systems for container transport
- Conveyor systems for pallet feed
- Palletising systems
- Product feed
- Storage facilities for pallets and containers
- Loading facilities
- Cleaning systems
- Marking systems
- Load securing

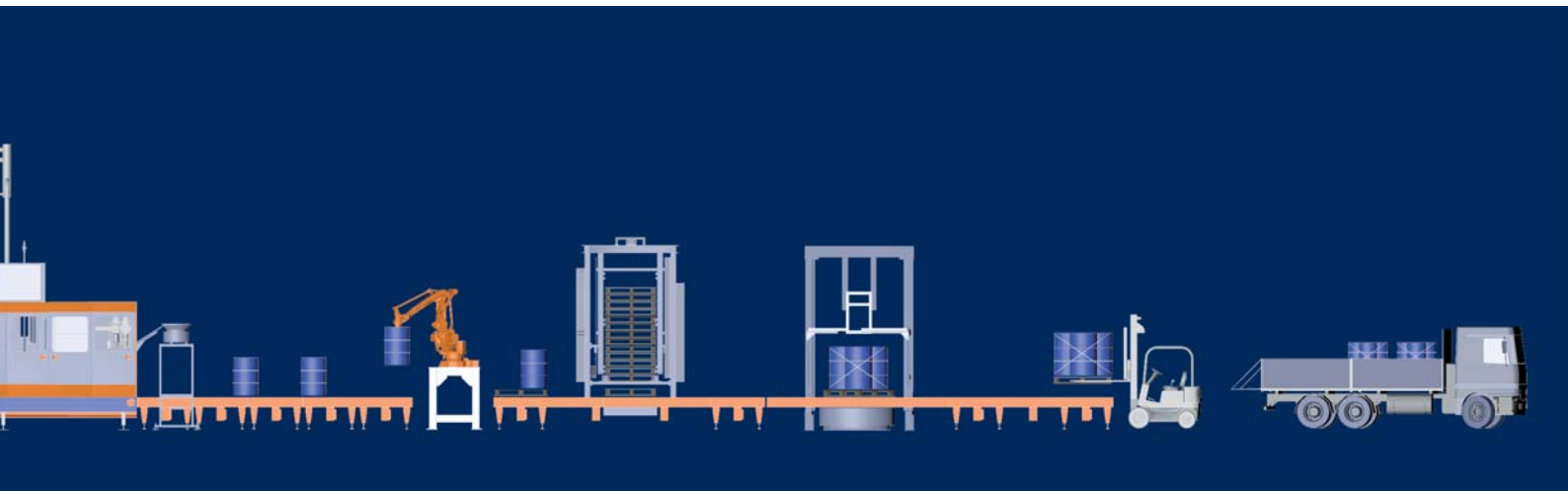
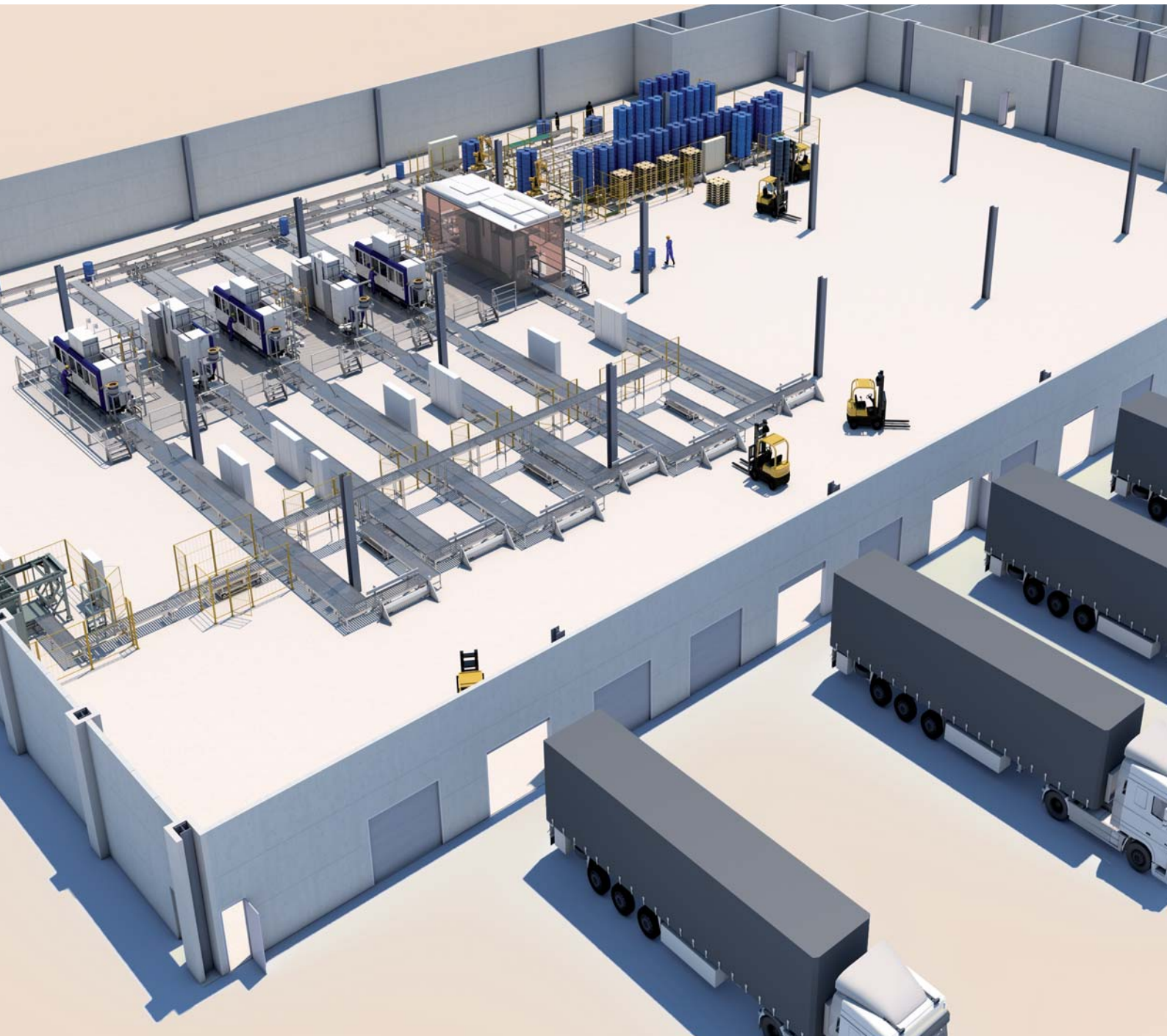
## Innovative factory and system design (FEIGE FACTORY DESIGN)

You would like to look at your new equipment long before it is implemented in your production hall? FEIGE FACTORY DESIGN shows you how. With an accurate, photo-realistic visualisation, you can marvel at your future equipment already before it is assembled. To make this possible, the planned equipment is adapted to the intended environment. Particularities inside the hall, e.g. an old system comprising subsequent extensions and conversions, are recorded by means of a 3D laser scan and taken into consideration.

This new procedure saves you time and costs. Planning is clearly simplified and accelerated. Disruptive ambient conditions are already given consideration during the tendering stage. Tedious drawing work or on-site actions have become superfluous. The accurate and realistic pre-visualisation offers you the perfect basis for a decision.







# FLEXIBLE SOLUTIONS FOR YOUR REQUIREMENTS

**You decide on the degree of automation. From the FEIGE modular assembly system you compile your semi-automatic drum filling system according to your individual requirements for the calibrated filling of drums.**

Select the equipment in accordance with your type of filling - individual container or pallet filling. The semi-automatic machines will support you during the entire filling process.

## **Accelerate your filling processes**

The three product lines of Feige FILLING for semi-automatic drum filling offer you all the functions of gravimetric fillers, ranging from the reasonably priced drum filler „Slim Line“ and the pre-configured filling station „Compact Line“ to the drum filling system „Advanced Line“ with extensive peripherals.

The systems convince by their ease of operation and installation. Depending on the application, they are also available in mobile designs conforming to ATEX requirements. All main functions of gravimetric fillers are executed in time-tested FEIGE quality.

You can supplement filling systems produced by Feige FILLING at any time with additional modules, which integrate further working steps such as removing and marking the containers.

## **Individual container and pallet filling**

The individual containers are positioned below the filling valve, automatically filled with calibrated accuracy and manually closed. Optionally, the filled drums can afterwards be palletised with Feige palletising systems. Empty containers that are already palletised prior to filling are consecutively filled on the pallet, after the filling valve has been manually positioned at the drum's bunghole. After actuating the start button, the container is automatically tared and filled with calibrated accuracy using the coarse/fine fill process. The necessary auxiliary tools for the correct bunging of the drums are made available to you.

SEMI AUTOMATIC  
FILLING







## SLIM LINE

### JUST FILL

- Cost-effective filler
- Designed in well-proven FEIGE quality and accuracy
- Simple installation – easy use

### DRUM FILLER **TYPE 9**

With non-driven roller conveyor

## COMPACT LINE

### PLUG & FILL

- Pre-configured / pre-assembled compact filling station
- Stainless steel load cells / 255 product parameter sets
- Conveyors with up to three motors

### DRUM FILLING STATION **TYPE 19**

With driven roller conveyor for drum in-feed and out-feed

## ADVANCED LINE

### COMPLEX CONFIGURATION

- Large conveying systems for empty and filled containers
- Filling products or environment require special features

### DRUM FILLING EQUIPMENT **TYPE 29**

With driven conveying system and fitted with several accessories for more safety and efficiency

# INCREASED INDIVIDUALISATION DUE TO SYSTEM EXTENSION

Determine the extension of your Feige FILLING system in accordance with your performance and product characteristics. Use the advantages offered by the versatile additional modules.



## Increased Productivity

- Valve heating
- Perforated disc
- Drum holding device
- Roller conveyor on weigh scale
- Roller conveyor in the in-feed and out-feed area

## Simplified Handling

- Drip scoop
- Drip extraction
- Valve rack
- Fine fill via product file
- Manual bunging station
- Manual bunging and sealing station



## High Flexibility

- Level controlled ascent
- Filling valve principle and geometry
- Base Height Adjustment
- Drain funnel
- Cleaning station
- Product hose
- Product hose suspension
- Valve encoding

## Utmost Process Reliability

- Reduced fill start
- Inerting
- Earthing
- Nitrogen blanketing
- Overpressure bunging station
- Bunghole extraction
- Gas hood
- Collecting basin
- Overflow protection
- Pressure surges reduction



# AUTOMATICALLY ACHIEVING HIGH-PERFORMANCE FILLING

**You want to start the automatic filling of your drums immediately subsequent to installation? The fully automatic drum fillers and automatic units of the "Compact Line" and "Advanced Line" will satisfy this wish.**

You can start up the equipment immediately following installation. A plain text display on the control panel of the drum filler displaying all operating modes and possible error messages of the equipment provides you with all the information you require for a simple and safe operation of the equipment. The empty drums are automatically positioned and debunged in the work station. An open drum is filled inside the filling station while simultaneously a filled drum is closed and checked for tightness in the closing station. The drums are moved through the system by the chain conveyor in single cycle mode and are in this way moved to the work stations.

## Automatically neatly filled

For fully automatic drum filling, you can choose from two lines of drum fillers.

With the most simple design of the Compact Line you fill approx. 40 drums (200l) per hour. By expanding the machine components, you can increase the performance of this type of equipment to up to 110 drums (200l) per hour.

It goes without saying that all subsidiary working steps such as marking, labelling, printing, inerting, pressure application and leakage tests can be integrated into the automatic operating sequence.

## Versatile options

The Advanced Line is characterised by a multitude of functions which leave nothing to be desired. For the central exhaust of filling gases, designs with closed cabins are available to choose from. Depending on the requirements of your products, the equipment is executed in stainless steel design or with acid protection and in conformity with ATEX regulations.

Apart from the filling operation, you can also integrate upstream and downstream sub-assemblies as well as the required conveyor technology into the equipment.

At the same time, electronic control systems and solution-specific software synchronise the flow of materials and information, even of peripheral functions with their conveying equipment and devices, into efficient logistics systems.

## Turnkey - filling logistics





## COMPACT LINE

### PLUG & FILL

- Pre-configured / pre-assembled compact filling machines
- Operated via touch screen

### AUTOMATIC DRUM FILLING MACHINE TYPE 31

Automatic orientation

### AUTOMATIC DRUM FILLING MACHINE TYPE 32

Automatic de-bunging

### AUTOMATIC DRUM FILLING MACHINE TYPE 33

Automatic de-bunging and bunging

## ADVANCED LINE

### COMPLEX CONFIGURATION

- Large conveying systems for empty and filled containers
- Operated via touch screen
- Filling products or environment require special features

### AUTOMATIC DRUM FILLER TYPE 81/84/86

Automatic de-bunging, bunging and cap sealing  
Output up to 120 drums per hour

# QUALITY AND PROCESS CONTROL

## The right „turn“

The high standards required by occupational health, safety and environmental protection require a correct and reliable closing of the containers. To be able to meet the corresponding requirements, closing with defined torque is indispensable.

The FEIGE closing station offers you safety and accelerates the closing procedure of your containers. The closing station consists of a plug bunging head with adjustable torque. In the automatic bunging station, the torque control integrated in the bunging head ensures that the plugs are reliably bunged into the filling openings with the correct torque.

A leak test may be carried out afterwards to check the screw connections and the sealing inside the plug for reliable closure.

## Sealing of trust

The sealing cap as original plug is an important factor and a quality feature.

The metal sealing cap is automatically fed to the system as concluding step and is applied to the drums by the automatic machine with a special sealing tool. The correct sealing procedure is monitored.

## Torque monitoring of the screw caps

The correct and secure bunging of drums is one of the most important topics when it comes to automatic filling. The FEIGE torque monitoring unit checks the specified container or plug-dependent target torques. In order to do so, the torque achieved during the bunging procedure is continuously determined by a force sensor and monitored by the control system.

Evaluating the measurement curve makes it possible to reliably determine any faults such as missing bunghole seal or plugs getting wedged.

The data thus determined can be fed back to a PCS (production control system) for statistical evaluation. In case of a fault, a drum that has not been closed according to the specifications can be rejected.

Sealing



Bunging



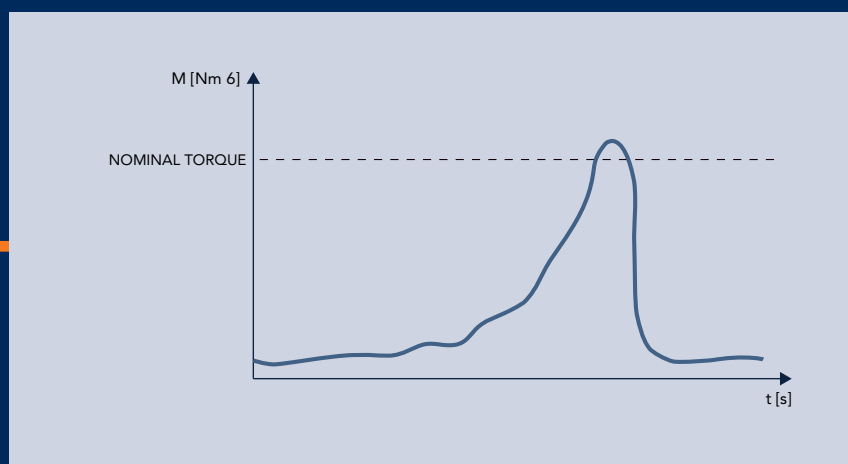
Torque monitoring







## Torque monitoring



# SYSTEM EXTENSION WITH ADDED VALUE

The automatic Feige drum fillers offer you a maximum degree of flexibility. Thanks to our many years of experience with innovative technology and market requirements, we do offer the right filling equipment for every performance class, which you can adapt to your specific requirements by means of individual extensions, thus achieving the maximum possible degree of productivity.

## Clean

- Level controlled ascent
- Drip scoop
- Drip extraction
- Drain funnel
- Cleaning station

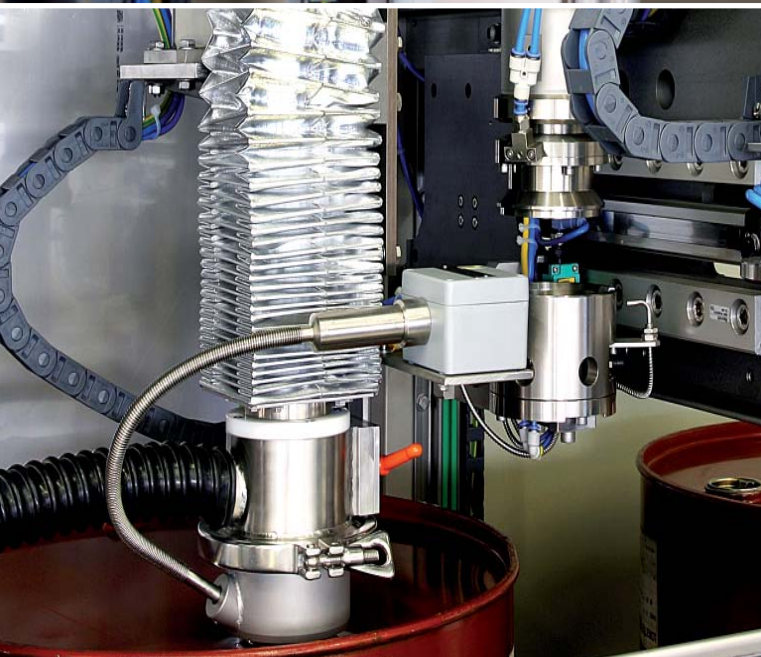
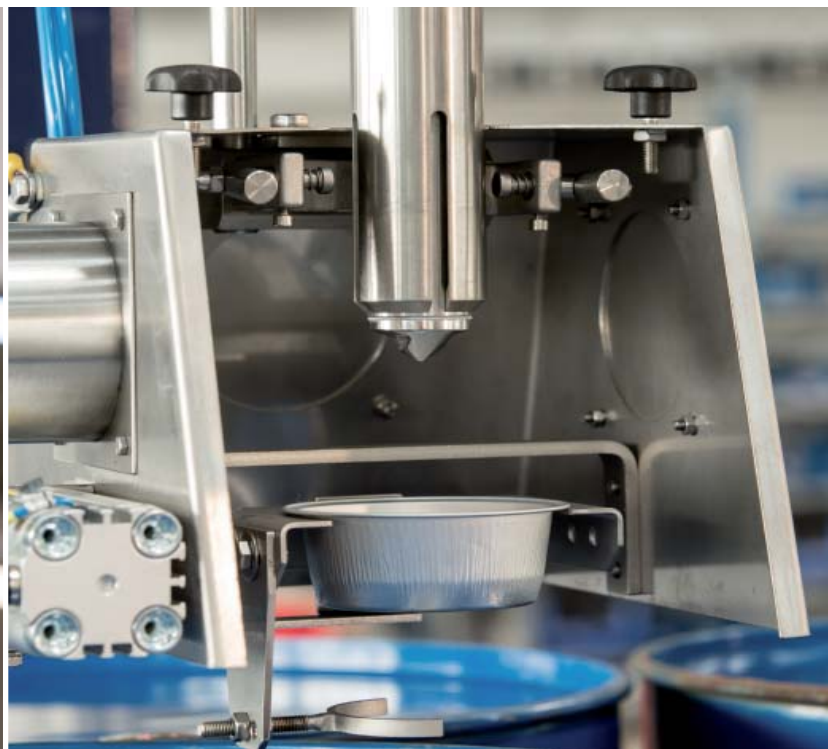
## Tight

- Overpressure bunging
- Leakage test
- Manual bunging station
- Manual bunging and sealing station
- Overpressure bunging station

## Flexible

- Valve heating
- Filling valve principle
- Base height adjustment
- Product hose
- Product hose suspension
- Valve rack
- Valve encoding





## Safe

- Reduced fill start
- Inerting
- Earthing
- Nitrogen blanketing
- Pressure surges reduction
- Bunghole extraction
- Protective cabin
- Gas hood

## Efficient

- Perforated disc
- Touch panel
- Drum holding device
- Fine flow via product file
- Conveyor system on scale
- Conveyor system in the in-feed and out-feed area



# SAFETY AND COST EFFECTIVENESS FOR YOUR EQUIPMENT

Resort to a competent and friendly service team to ensure that the reliability and precision of your Feige FILLING system are retained at all times.

## Your partner for all circumstances

You are at the centre of all our considerations! We will support you as a partner at any time. An individual service package covers your requirements from straight-forward service intervals to a complete „no care“ package.

Make use of our know-how, our consulting skills and our experience to keep your equipment's availability at the highest level.

Whether hotline, teleservice, training, calibration, equipment inspection and maintenance, troubleshooting, spare part service or equipment extension and optimisation, committed and imaginative employees will offer you efficient and individual solutions combined with the know-how of experienced specialists.

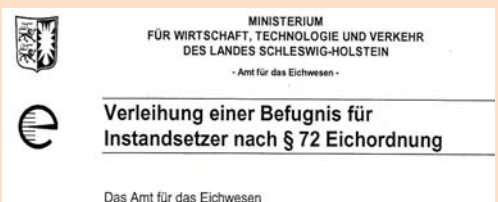
We will take good care of your equipment!

# 24/7

## 24-hour hotline

Phone: +49 (0) 4531 - 8909-222

E-mail: [hotline@feige.com](mailto:hotline@feige.com)



### Teleservice

Dial-up access to your equipment control system via modem or Internet connection for trouble-shooting and diagnosis.



### Equipment inspection

Detailed status report for your equipment with function test.



### Equipment maintenance

Any measures to retain the required condition of your equipment with logging.



### Spare part service

Prompt and optimum supply of your equipment with any wear and spare parts required.



## Training

Certified training courses on your own equipment or at our plant.



## Equipment optimisation

Adaptation and/or extension of your equipment to new requirements in your company.



## Equipment testing

Support with recurring tests in spect of equipment safety and with calibration.

HAVER & BOECKER OHG  
Carl-Haver-Platz 3  
59302 Oelde, Germany  
Tel: +49 2522 30-0  
Fax: +49 2522 30-403  
E-Mail: [haver@haverboecker.com](mailto:haver@haverboecker.com)  
[www.haverboecker.com](http://www.haverboecker.com)

Sommer GmbH & Co. KG  
Burgunder Str. 35  
40549 Düsseldorf, Germany  
Tel: +49 211 230 82 02  
Fax: +49 211 230 82 36  
E-Mail: [info@sommer-anlagenbau.com](mailto:info@sommer-anlagenbau.com)  
[www.sommer-anlagenbau.com](http://www.sommer-anlagenbau.com)

Feige FILLING GmbH  
Rögen 6a, Gewerbegebiet West  
23843 Bad Oldesloe, Germany  
Tel: +49 4531 8909-0  
Fax: +49 4531 87296  
E-Mail: [info@feige.com](mailto:info@feige.com)  
[www.feige.com](http://www.feige.com)