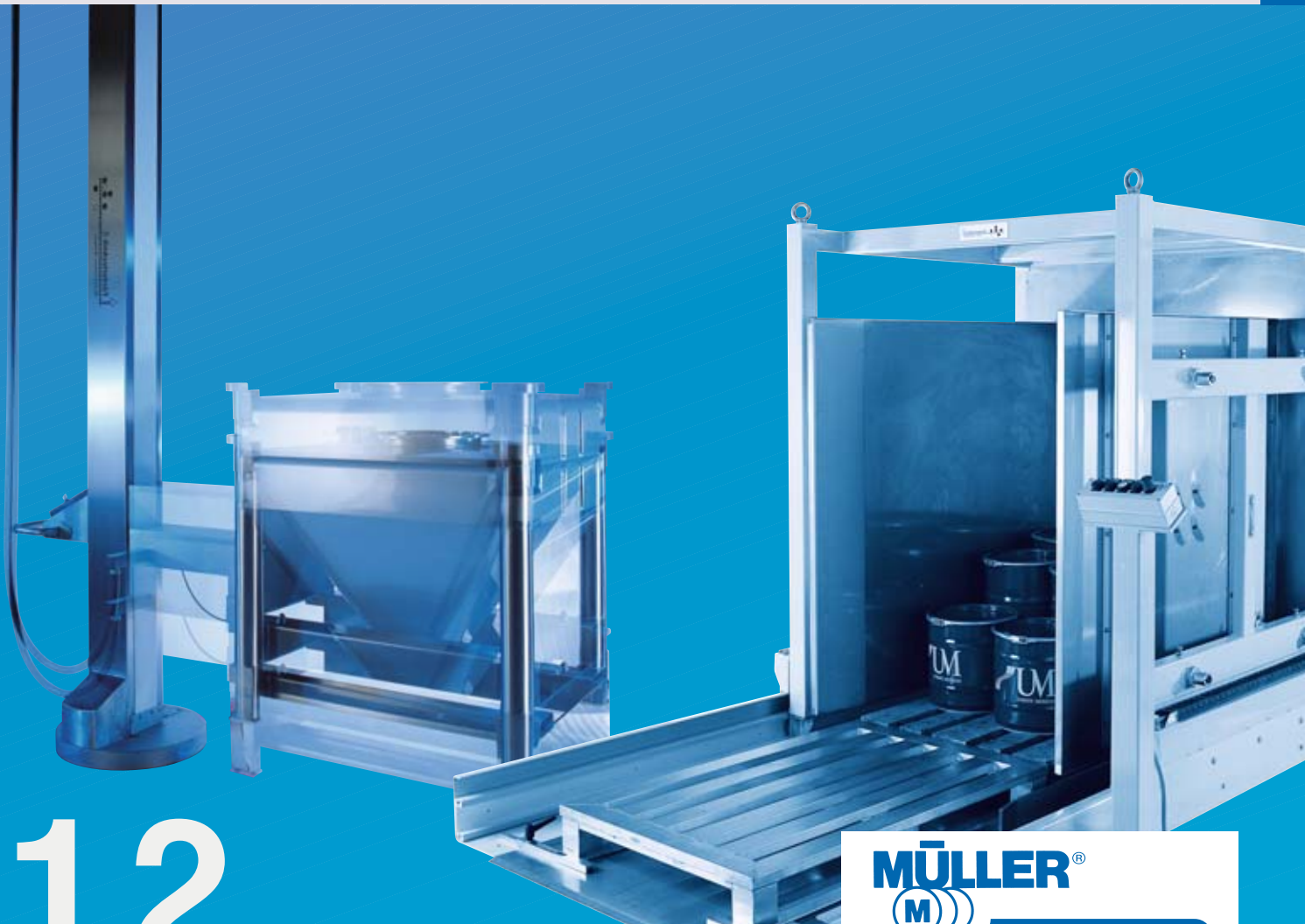




# Müller Handling Systems



# 1.2

- Drum Handling
- Container Handling
- Blenders
- Mobile Handling
- Pallet Transfer Units
- Manual Handling



### Individual solutions for a host of challenges

Whether in the pharmaceutical, chemical or food products industry: cost-effective drum handling is one of the key factors in the process economics. It all depends on handling equipment that can display an impressive performance and exceptional quality and above all be extremely safe and reliable. In other words, handling equipment from Müller. For at Müller we have over 25 years of accumulated experience in this field; we design, develop and manufacture everything ourselves. You can therefore count on individual solutions in world class quality to meet the most demanding needs. Our customers worldwide appreciate our CE-compliant engineering in the form of a slender lifting column that always ensures a good view of the drum. They also think highly of its very quiet movements, not to forget the ease of servicing and low operating costs, since our handling equipment is virtually maintenance-free. Our proximity to the market and our local presence on a global scale give you the security and dependability to be expected from a reliable business partner.

#### Benefits that add up

- Electromechanical drives for all machine functions
- Linear motion with roller chains or ball screw spindle
- With relay control system or programmable logic controller (PLC)
- Available with weighing system
- Maximum repeatability for all travel positions
- Control of peripheral equipment such as metering butterfly valve, vibratory device, etc.
- Utilities supply from ceiling or floor
- Suitable for cleanrooms
- Design compliant with FDA and GMP regulations, for ATEX Zones 1, 21, 2 and 22
- Qualification documentation (FDS, IQ/OQ)
- Factory acceptance test (FAT)
- Installation on site (with SAT)
- Freestanding construction or with ceiling steady bearing

## Drum handling

### Container handling

### Blenders

### Mobile handling

### Pallet transfer units

### Manual handling

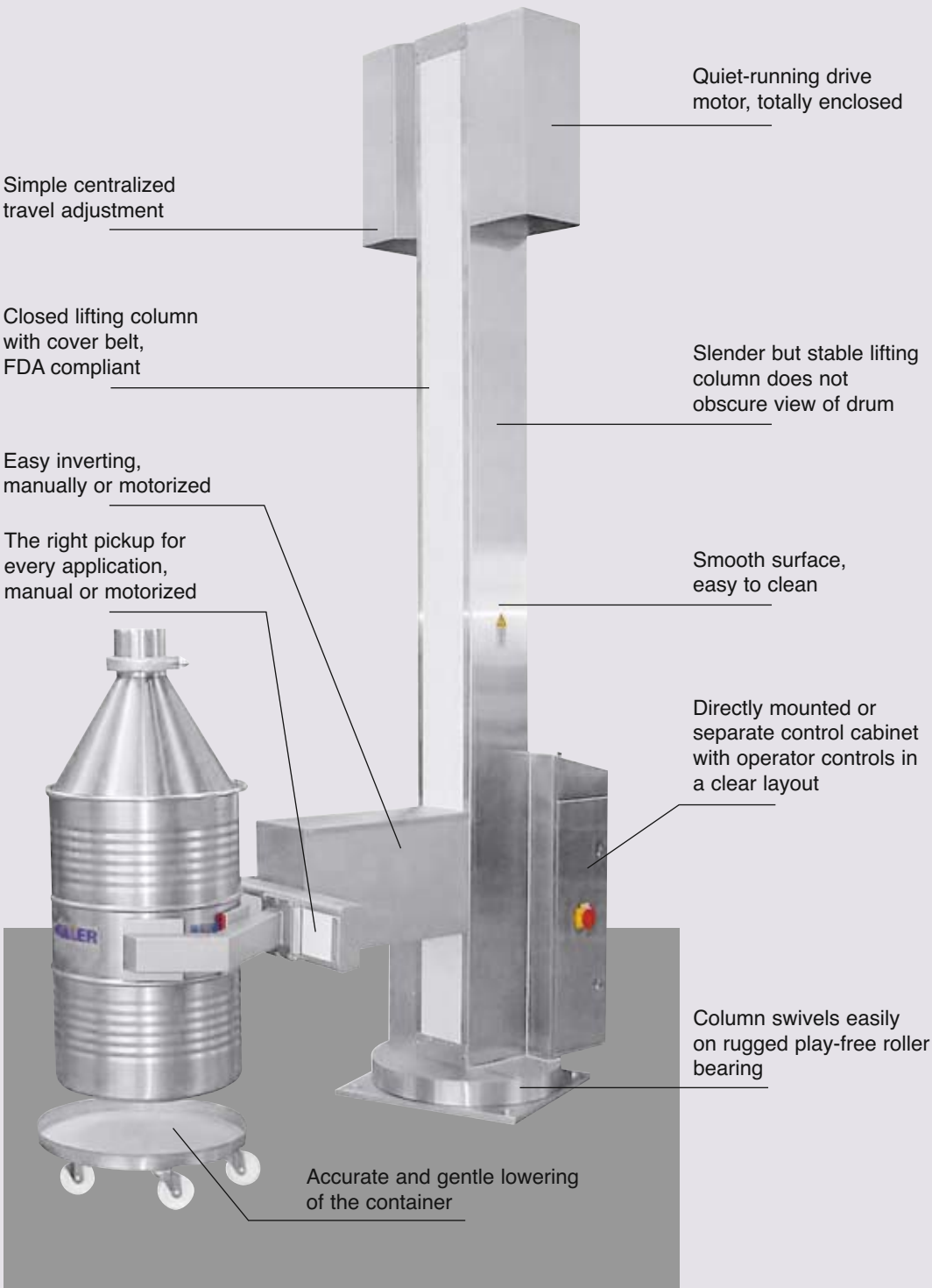
**Many individual tasks fitting together like a jigsaw puzzle: Müller drum handling**

Müller lift-, swivel- and inverting columns for drums can carry out all the handling tasks in your production facility. Originally developed for the pharmaceutical industry, they are today equally in demand in the chemicals and food products sectors. Müller offers the right solution: cost-effective, safe, ergonomic and quiet. Typical tasks include:

- Feeding of tablet presses, capsule filling machines, blister pack machines and sieving units
- Filling, product transfer and weighing

They can also be integrated in existing production lines for:

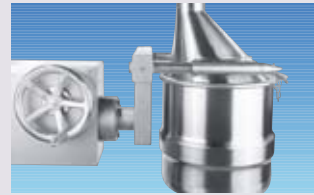
- Moving goods between floors
- Automatic palletizing on smaller lines



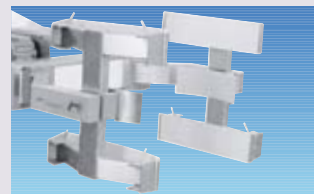
**Clamping band**



**Universal clamp**



**Pickup fork**



**Universal pickup with webbing jaws**



**Platform**

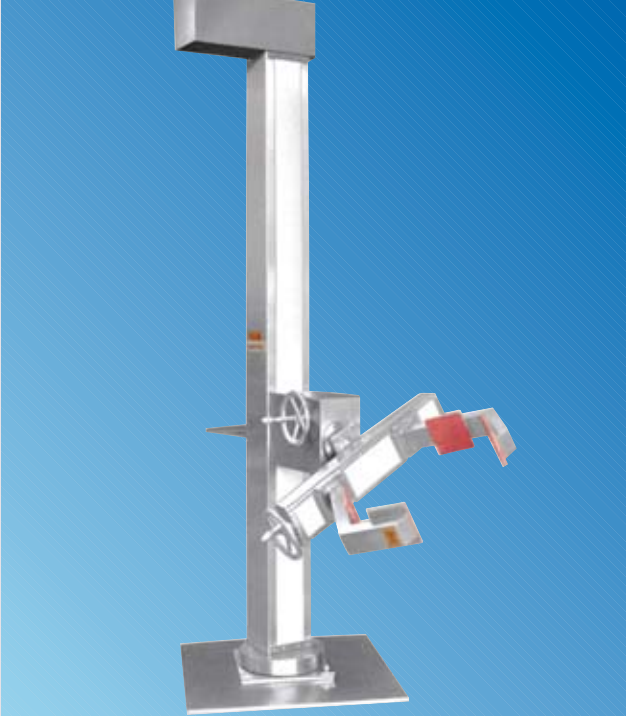


**Squeeze funnel for light drums**



**Squeeze funnel for heavy drums**

The tried-and-tested standard – lift-, swivel- and inverting column in Müller quality for drums. A universal unit for handling various drum sizes. Motorized lifting mechanism, manual clamping, inverting and swiveling.



Precision for lightweight drums – the lift-, swivel- and inverting column with squeeze funnel for emptying various drum types (fiber drums, plastic drums, etc.). The funnel is pressed firmly onto the drum. Also suitable for drums with internal liners.



The mobile lifting column – impressively flexible: a range of pickup options, long outreaches and a telescopic mast for increased lifting height.



Making machines mobile – your processing unit, in this example a mill, is moved to where it is needed and lifted into position.



Reliable and dust-free – filling a container from a drum clamped to a hopper. The dust-free filling operation takes place through a sieve directly into the container. The use of two lifting columns enables various sizes of containers to be filled.



Precision handling – the short lifting column with pickup fork for docking silos to the bottom port of a glove box. With weighing unit for the filling operation.



The right answer is always well thought-out – here a system for emptying big bags into a batching frame. With safety latch at working height.



A simple and practical solution with a small footprint – an elevator platform for transporting material between the floors of a building.



### **No problems with the right partner**

Whenever heavy weights have to be handled accurately and cost-effectively, there is a need for robust and reliable handling equipment. In the production of pharmaceuticals in particular, Müller's carefully designed container lifting columns have become an indispensable component in a wide variety of processing operations. Whether round, rectangular or individually shaped containers – we design and manufacture the solutions to meet your special manufacturing requirements. Because only those who are familiar with industrial practice can give it fresh impetus. You too can profit from our expertise.

## **Drum handling**

## **Container handling**

## **Blenders**

## **Mobile handling**

## **Pallet transfer units**

## **Manual handling**



**Stable, reliable and robust:  
Müller container handling**

In the manufacture of large batches, appropriately sized containers are often used. Although these are very heavy, Müller container columns can make light work of automating your material flow. They are specially adapted to suit your handling processes

and are highly versatile in their applications, such as the following duties:

- Feeding of tablet presses, capsule filling machines, blister pack machines and sieving units
- Filling, product transfer and weighing

Heavy duty gearbox for inverting in exactly the right position

Electrically powered lifting system with precision roller chains or ball screw spindle

Enclosed lifting system with elastomer or stainless steel cover belt

Secure clamping of various container sizes by a pickup system

Heavy duty container forks, if desired with weighing unit

Precision docking and dust-free filling



**Round pickup forks**



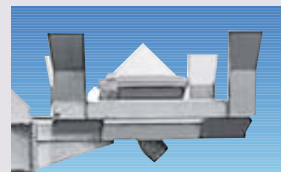
**Flat pickup forks**



**3-point pickup**



**Pickup frame**



**Cone valve discharge station**



**Pickup fork for WSG vessel**



**Suspension fork**

Versatility itself – the container lift- and swivel column with pickup fork for emptying containers of various sizes. The container butterfly valve is opened by a pneumatic actuator.



Specialties are our specialty – the lift- and swivel column specially designed to pick up round containers from their wheeled carriages. Pickup fork with pneumatic latch device.



A standard product yet adaptable – the combination unit for IBCs and drums. Special feature: the adapter fitted for handling drums also incorporates an automatic inverting system. A simple and reliable way to feed the compactor shown here.





Fits like a cleanroom glove – here the lifting column is built into a GMP sterile wall.



All in one – the lift-, swivel- and inverting column for emptying a WSG vessel, with or without a rotary valve. Optimum sieving and discharge, all into one container. Column-mounted central control system for the column itself and peripheral devices.



Feeding a tablet press – the lift- and swivel column for picking up round containers. Pickup with pneumatic latch device.



Raring to go – always at the ready to lift and move containers and pallets.



## Drum handling

### **We want to blend into your business**

Most processes involve a blending step. Whether blender or blending column, whether for drums or containers – or both together – we adapt the handling equipment to suit your special processes and facilities.

Regardless of how charging is carried out, how the drums or containers are delivered – by pallet truck or wheeled carriage – we have the right solution for accurate and safe pickup – because the blending vessels also serve as transportation containers. This saves time, cuts costs and conserves resources. The Müller blending column mixes the product, then stops tumbling after a set time and charges the process. Emptying takes place without needing to change the container.

## Container handling

## Blenders

## Mobile handling

## Pallet transfer units

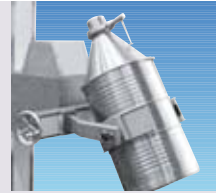
## Manual handling

**Almost like plug and play:  
Müller blenders**

Blender or blending column, drum or container – bulk solids such as granules or powders are mixed reliably by an intelligent system; which if required can provide a data report for tracking blender settings such as weight, mixing times and number of revolutions. You therefore have complete documentation for your quality assurance system.

Müller blending equipment is adaptable for your processes:

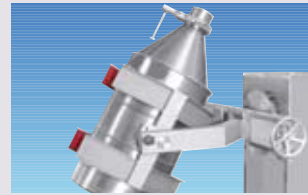
- Gentle action
- Highly effective
- Safe
- Blending parameters can be set
- With data report



**Universal pickup**



**Pickup fork**



**Double-jaw pickup**



**3-point pickup**



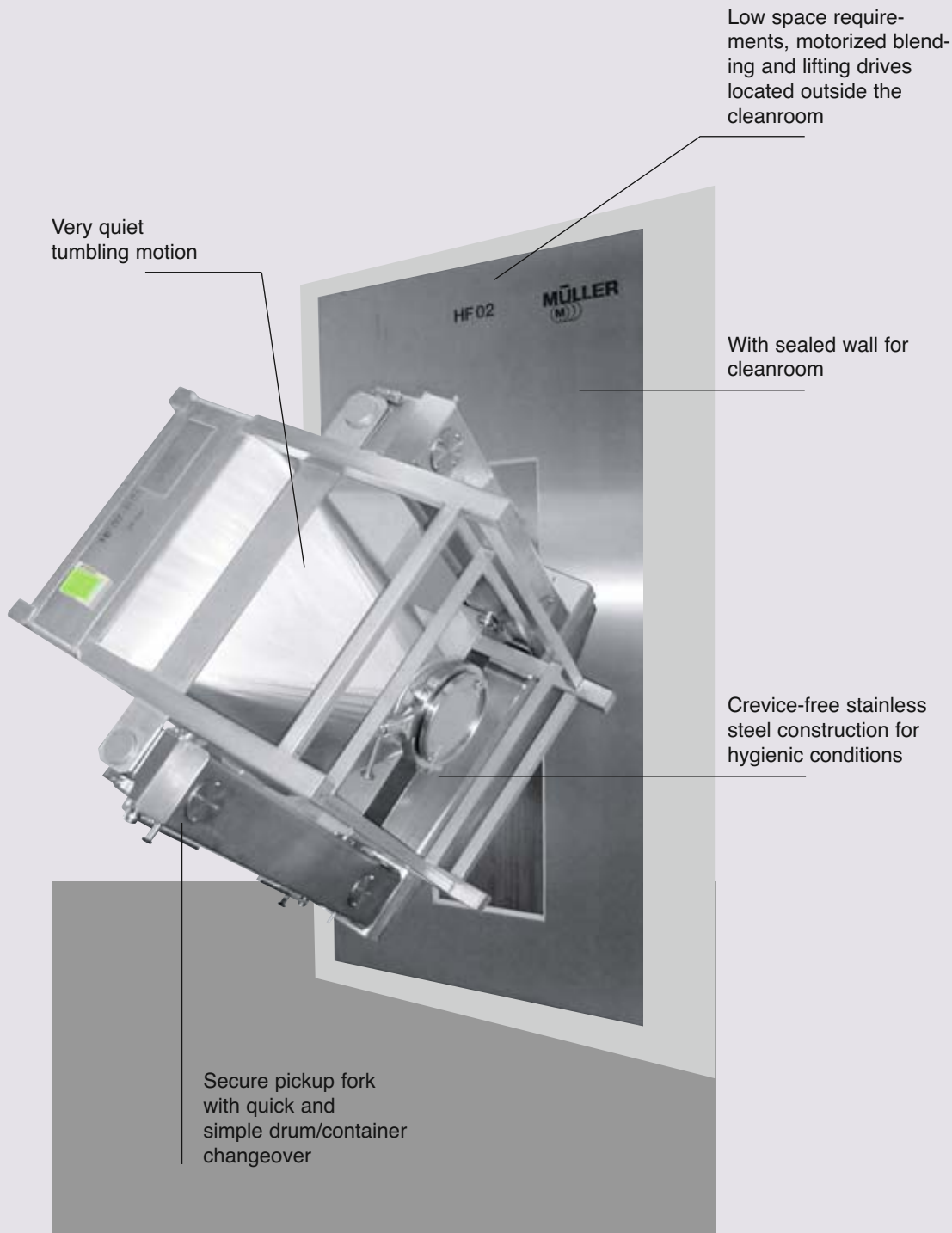
**Special pickup for containers and drums**



**Pickup clamp for containers**



**Pickup clamp for containers and drums**



Very quiet tumbling motion

Low space requirements, motorized blending and lifting drives located outside the cleanroom

With sealed wall for cleanroom

Crevice-free stainless steel construction for hygienic conditions

Secure pickup fork with quick and simple drum/container changeover

One blender takes and rotates any drum – whether metal, fiber or plastic. The drum is gripped and picked up at floor level directly from the drum truck or pallet. Drum inclination is adjusted to give the best mixing results.



We are always glad to advise you on safety concepts, from simple protective fences with door interlock switches to zone protection by means of a freely programmable system with laser scanner.



Universal but still something special – the versatile blender for round and rectangular containers. With integrated electromechanical lifting system.



Minimum footprint – the pickup forks fit through inboard sleeves for a secure tumbling action.



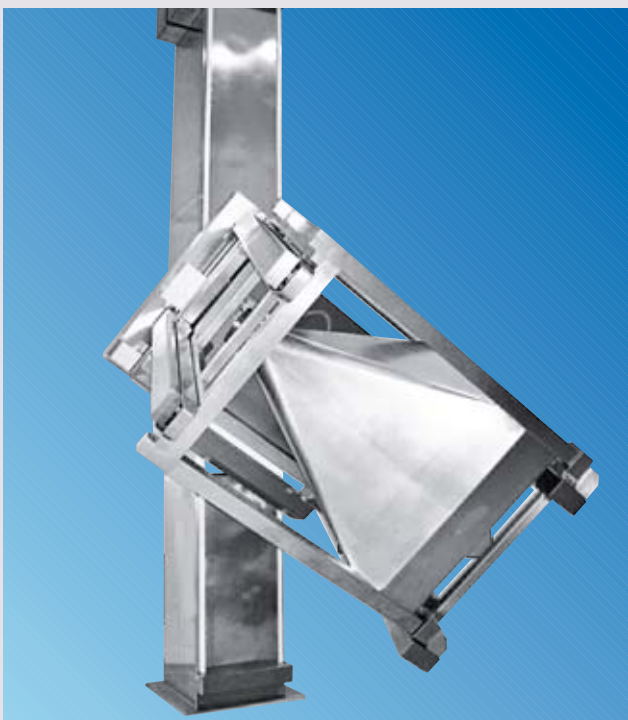
First blend, then feed – the lift- and swivel column for blending the contents of a drum and then feeding the next machine in the process, in this case a tablet press. All without changing the drum. The column can handle various drum sizes.



Carrying it to extremes – the universal blending column for various drum-hopper combinations or containers. With integrated electrically powered slewing ring for discharging the contents into another container or for feeding a mill.



Flexible and strong – the lift-, blend- and weighing column for rectangular containers of various sizes and footprints. Gentle, dust-free product transfer into other containers with weighing module and automatic filling controls.



Clean work and reliable results – the blending column for all rectangular containers of various sizes but with the same footprint.



## Drum handling

### All for one and one for all

If several machines need to be feeded under cramped conditions, Müller`s MOBILO is in its element. Simple to operate and practical even in tight corners, it can pick up drums, lift and invert them and then lower them. This is made possible largely by its compact construction, which combines low headroom requirements with maximum lift. The carrying arms are raised hydraulically and the operating levers allow infinitely variable positioning. The linkage is designed so that the horizontal reach does not change during the lifting operation, the drum always remaining visible to the operator. As the drum always remains on the same vertical center line when being raised or lowered, it is possible to position it accurately. Another advantage becomes apparent when the drum is docked onto the next machine – the drum-hopper combination is lowered gently and is centered automatically in the nest. Regardless of which drum type is being handled. A slewing ring or motorized chassis can give additional mobility to this compact device.

## Container handling

## Blenders

## Mobile handling

## Pallet transfer units

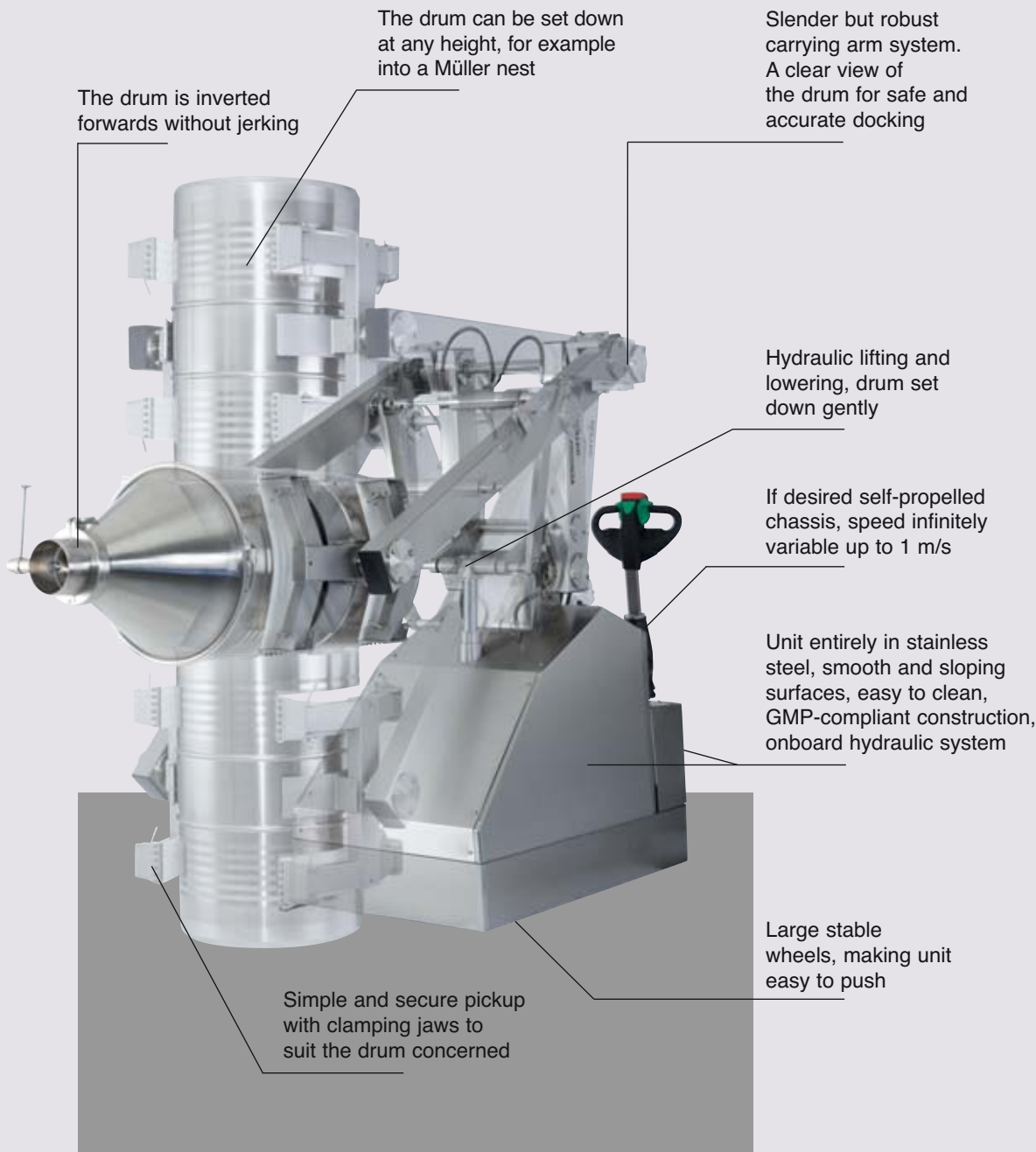
## Manual handling



**Boundless possibilities in the smallest space: mobile handling by Müller**

This is our conception of drum handling – transporting, lifting, inverting and emptying loads up to 350 kg. And all this with mobility and flexibility in the smallest possible space. You will always find a cost-effective solution at Müller, for we have the right equipment for every duty:

- M 150/M 250: the universal unit for "practically" every duty. Lifting heights 3.4 m
- MN 150: special low headroom unit for facilities with height restrictions
- MD 150/MD 250: upper part of unit can slew through 240° on its chassis for more flexibility
- MF: with motorized chassis for heavy loads, sloping floors or long distances
- Drive options: 3-phase supply, battery or compressed air
- Explosion-proof version: ATEX-compliant



**Standard clamping jaws**



**Webbing jaws for fiber drums**



**Webbing jaws for plastic drums**



**Distance retainer**



**Operator controls**



**Self-propelled version**



**Unit with slewing ring**

No problem even in cramped spaces – charging a reactor easily, safely and without creating dust. One unit can charge several reactors in a confined space.



As you like it – sieve in the morning, press tablets at midday. The mobile lifting unit is always there at the time it is needed. Here the product is passed through a sieve into another container in a totally enclosed system.



Mobile work in a restricted space – feeding a tablet press is possible even under very low headroom conditions. While the drum contents are being processed, the lifting and inverting unit can be performing other tasks elsewhere.



Practical needs call for practical solutions – dust-free filling of raw materials into production vessels is no problem. This is ensured by our dust-tight FDA-approved silicone rubber caps, also available in Viton, EPDM or an electrically conducting elastomer for special duties.



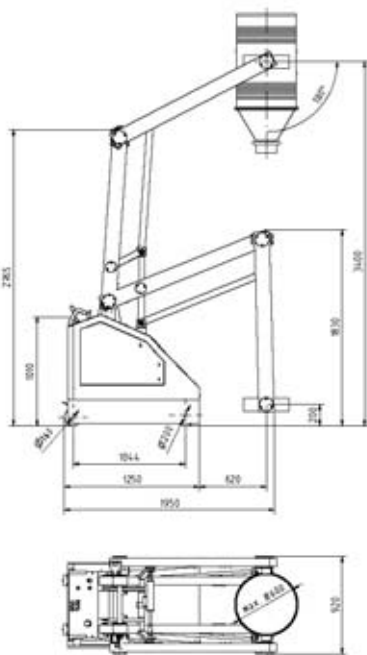


**Technical Data MOBILO (standard units)**

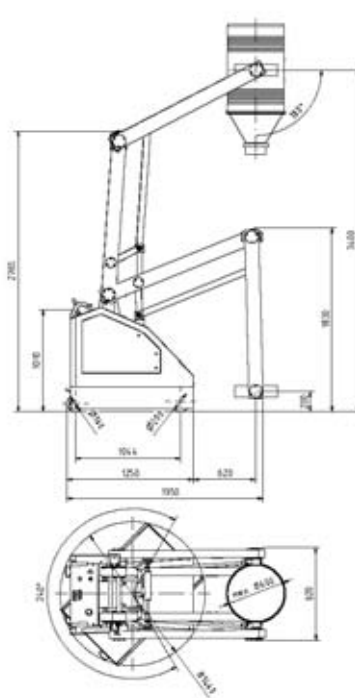
Type	M 150	MD 150	MF 150	M 250	MD 250	MF 250
Max. Load	150 kg	150 kg	150 kg	250 kg	250 kg	250 kg
Unloaded weight	600 kg	640 kg	790 kg	650 kg	690 kg	790 kg
<b>Operating Speeds</b>						
Raising/Lowering	0,2-0,25 m/sec.	0,2-0,25 m/sec.	0,2-0,25 m/sec.	0,2-0,25 m/sec.	0,2-0,25 m/sec.	0,2-0,25 m/sec.
Inverting thru 180°	7 sec.	7 sec.	7 sec.	7 sec.	7 sec.	7 sec.
Self-propelled	-	-	15-55 m/min.	-	-	15-55 m/min.
<b>Motors</b>						
3-phase power	1,5 kW / 1410 rpm			3x400 V – 50 Hz		
Battery 2 x 12 V	110 Ah	110 Ah	-	110 Ah	110 Ah	-
Battery 1 x 24 V	-	-	150 Ah	-	-	150 Ah

Technical details subject to change without notice

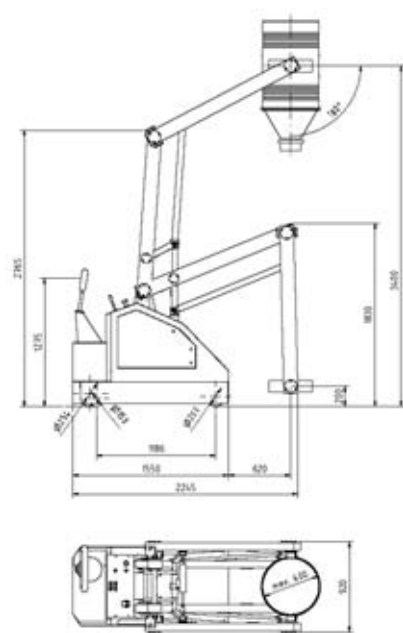
**Typ M**



**Typ MD**



**Typ MF**



More information?

[www.mueller-gmbh.com](http://www.mueller-gmbh.com)

### A question of hygiene

In factories producing pharmaceuticals and food products wooden pallets are taboo - for reasons of hygiene. This means that incoming materials must be repalletized between the delivery dock and the processing area. In order to reduce labor costs for this task to a minimum, Müller offers pallet transfer units, which can also act as an up-to-date and reliable clean zone interface. Since 1988 Müller pallet transfer units have been easing loads delivered on wooden pallets onto hygienic pallets. Pallet transfer units can be loaded for material flow in one or both directions, from the gray zone into the white zone and vice versa. For certain cleanroom facilities, cleaning chambers are installed before the pallet transfer units in order to remove dust from the materials delivered. This illustrates once again how at Müller you always find the right individual solution to meet the most demanding specifications.

## Drum handling

## Container handling

## Blenders

## Mobile handling

## Pallet transfer units

## Manual handling



**From gray zone to white zone:  
Müller pallet transfer units**

Clean zones are an indispensable pre-requisite for manufacturing quality. We have therefore designed the Müller transfer unit so that it can be integrated simply but efficiently into your operating procedures:

- For wooden, steel, aluminum or plastic pallets in various sizes
- For various pallet loads; the pallets need **not** be stacked uniformly
- Adjustable side walls, either manually or by electric motor

- Also available with slip plates for damaged or nonstandard pallets

Pallet transfer units can be loaded and unloaded in a number of ways:

- By manual pallet truck or forklift truck
- Semiautomatically
- Automatically by conveying systems

Also suitable for asymmetric and untidy loads

For various sizes and loads

Product-contacted parts in stainless steel

Side walls adjustable manually or by electric motor

Operator panel with simple controls in a clear layout

Rugged, maintenance-free construction

Suitable for various pallet types



The hygienic pallet is placed in front of the loaded pallet



The load is pushed across



Transfer operation completed



The repalletized load is taken away



Transferring rolls of packaging film



Transferring cartons

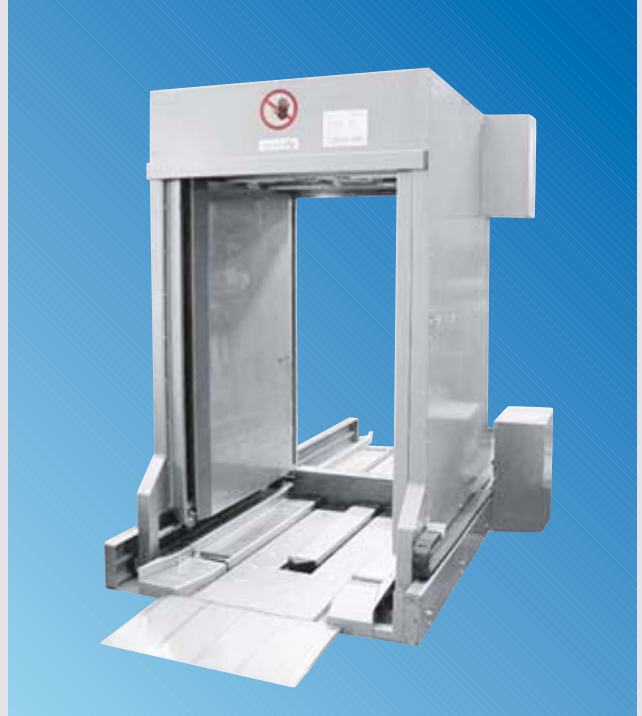


Transferring aerosol cans

Loaded at one end by manual pallet truck – the standard pallet transfer unit can be used for pallets in various sizes and materials. Also suitable for loads that are not uniformly stacked.



Can be loaded at both ends by manual pallet truck or forklift truck – this pallet transfer unit can be used for pallets in various sizes and materials. Transfer in **two directions**, no contamination of the pallet areas. Also suitable for loads that are not uniformly stacked.



Can be loaded at both ends by manual pallet truck or forklift truck – this pallet transfer unit can be used for pallets in various sizes and materials. Transfer in **one direction**, no contamination of the pallet areas. Also suitable for loads that are not uniformly stacked.



Can be loaded at both ends by forklift truck – this pallet transfer unit can be used for transfers in **one direction**; there is no contamination of the pallet areas. Also suitable for loads that are not uniformly stacked. With open transfer port.



Can be loaded at both ends by manual pallet truck – this pallet transfer unit can be used for pallets in various sizes and materials. Transfer in **two directions**. Also suitable for loads that are not uniformly stacked. With open walk-in transfer port.



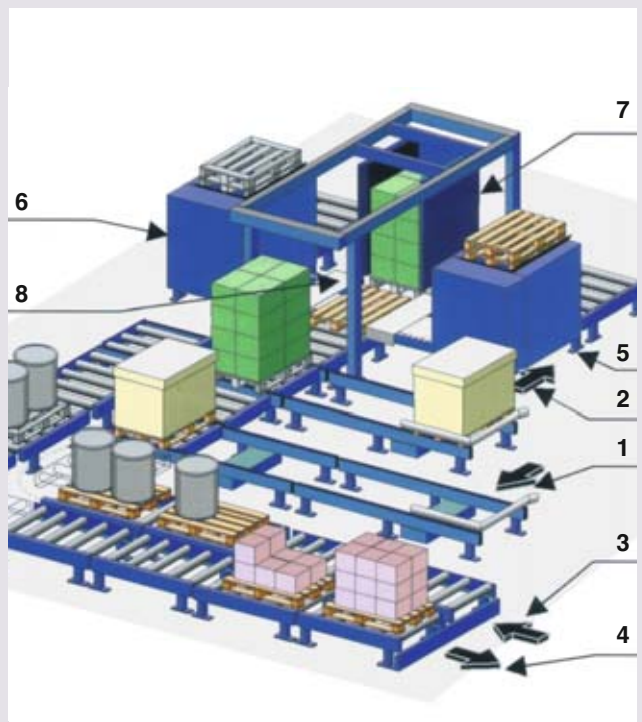
Can be loaded at both ends by manual pallet truck – the automatic pallet transfer unit can be used for pallets in various sizes and materials. Transfer in **one direction**. With slip plates for transferring the load from aluminum or plastic pallets onto pallets of poor quality.



Can be loaded at one end by manual pallet truck - the pallet transfer unit for Euro pallets up to 1000 kg. For transferring stable and uniformly stacked plastic containers. Ideal for meat processors and the food products industry.



Automatic pallet transfer unit in a pharmaceutical facility –  
**1 and 2:**Points for delivering and collecting loads manually  
**3 and 4:**Points for delivering and collecting loads by driverless vehicles  
**5 and 6:** Pallet magazines for wooden or aluminum pallets  
**7 and 8:** Pallet transfer unit with automatic slip plates



## Drum handling

### **Fully automated or manual – the application determines the handling process**

It does not always make sense to automate every operation completely, nor is it necessarily cost-effective. There are still some areas where manual handling is more efficient. We have developed a system for simple manual handling tasks which is quick and easy in use: the Müller drum clamping band and yoke for lifting and inverting drums. A clamping band with trunnions welded to it is secured around the drum between its form-fit beads. The yoke is simply hooked onto the trunnions and the assembly can then be lifted by a suitable crane. An alternative to the drum clamping band is to weld the trunnions directly to the container, as is normally the case for example with mini-silos. Müller also offers a solution for plastic and fiber drums – an inverting frame welded to a hopper to fit your drums.

## Container handling

## Blenders

## Mobile handling

## Pallet transfer units

## Manual handling

**Always the appropriate choice:  
manual handling by Müller**

A system that is always right for your applications: simple and quick but also inexpensive: Müller's manual handling system for lifting and inverting drums, mini-silos and drum-hopper combinations.

- For drum diameters from 315 to 600 mm
- Max. gross weight 300 kg
- Fabricated in AISI 304 grade stainless steel
- Drum clamping band coated on the inside with a white plastic, FDA compliant
- Manufactured in accordance with EC Directives, CE mark



**Drum clamping band**



**Hopper with inverting frame**



**Welded trunnions**



**Safety catch**



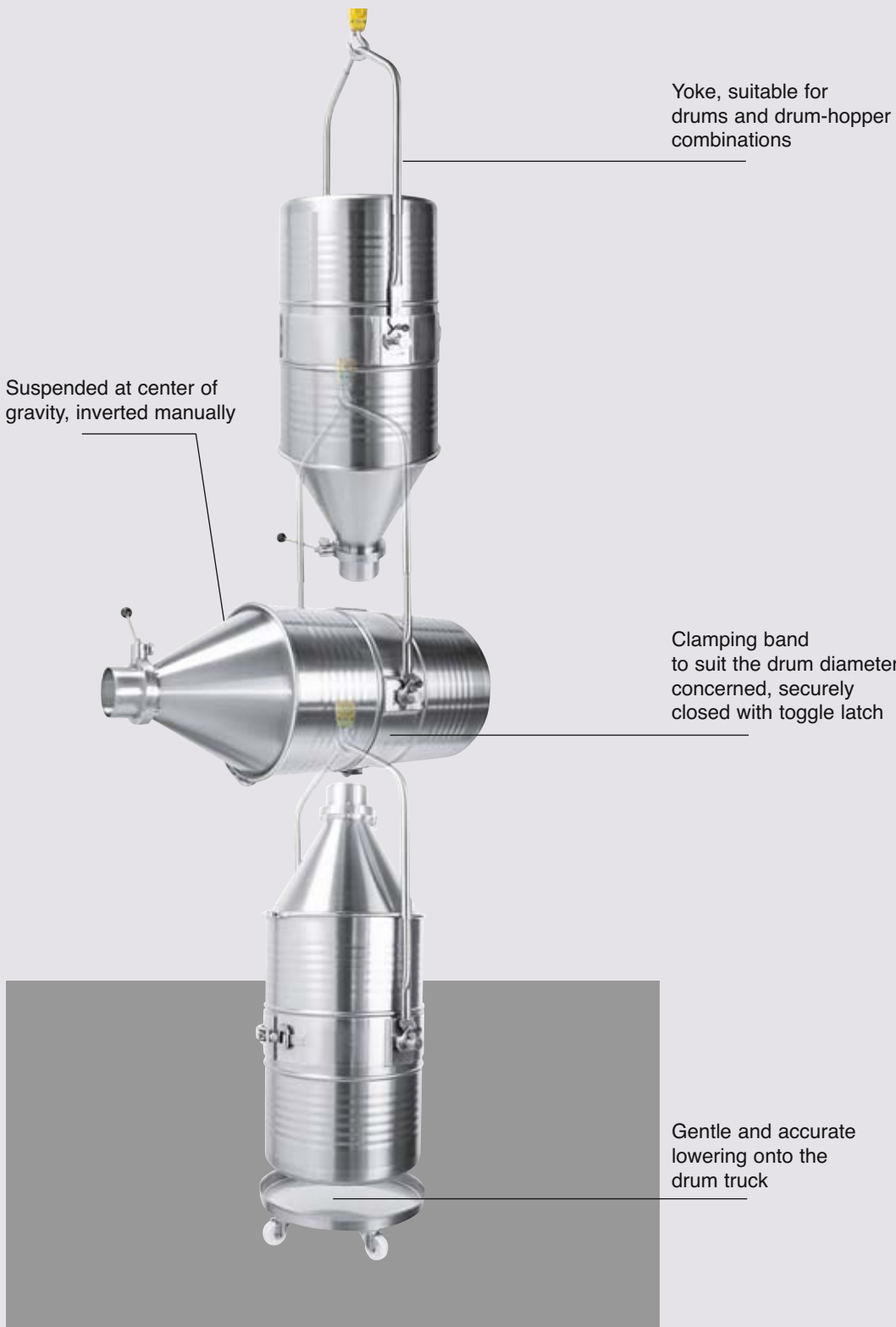
**Toggle latch**



**Lifting point**



**Yoke with inverting gear**



## Presenting the other companies of the Müller Group

Today it is of ever increasing importance to cooperate with trustworthy and competent business partners who know what they are doing. As our customer you can rely on a wholehearted partnership. And you gain the innovation and skills of a world class group of companies in the field of packaging, cleaning solutions, handling, transportation and modular systems.

If you now feel the need to talk to us and ask a few questions, then please do not hesitate.

## www.muellerdrums.com

**Müller Ltd. Packaging**  
Tramstrasse 20  
CH-4142 Münchenstein  
Switzerland

**Phone: +41(0)61/4161200**  
**Fax: +41(0)61/4161222**  
**E-Mail: info@muellerdrums.com**

## www.plastomatic-ag.com

**Plastomatic Ltd.**  
Falkensteinerstrasse 4  
CH-4132 Muttenz  
Switzerland

**Phone: +41(0)61/4679393**  
**Fax: +41(0)61/4679399**  
**E-Mail: info@plastomatic-ag.com**

## www.leichtfass.com

**Leichtfass Ltd.**  
Bahnhofstrasse 11  
CH-4142 Münchenstein  
Switzerland

**Phone: +41(0)61/4113388**  
**Fax: +41(0)61/4113390**  
**E-Mail: info@leichtfass.com**

## www.fördertechnik.ch

**Fördertechnik Ltd.**  
Känelmattstrasse 7  
CH-4142 Münchenstein  
Switzerland

**Phone: +41(0)61/4161212**  
**Fax: +41(0)61/4161213**  
**E-Mail: info@foerdertechnik.ch**

## www.muellercleaning.com

**Müller Ltd. Cleaning Solutions**  
Schützenmattweg 33  
CH-5610 Wohlen  
Switzerland

**Phone: +41(0)56/6184868**  
**Fax: +41(0)56/6184878**  
**E-Mail: info@muellercleaning.com**

## Just one click opens new horizons

As a customer you always experience Müller as a whole. Your contacts are not determined by our organization but by the duties you specify. Proximity to customers and an individual consulting service provide that crucial impetus. Our 40 committed representatives in all key centers of the industrialized nations around the globe make us active worldwide, yet never far away.

Experience the potential we offer in your next project. Our world of modular systems is only a click away. Make use of our expertise – packed full of ideas in stainless steel. Each one a Müller original.



## www.mueller-gmbh.com

**Müller GmbH**  
Industrieweg 5  
D-79618 Rheinfelden  
Germany

**Phone: +49(0)7623/969-0**  
**Fax: +49(0)7623/969-69**  
**E-Mail: info@mueller-gmbh.com**

