

Müller Emptying Systems



1.4

FD Drum-Emptying System
FD XXL Drum-Emptying System

FD drum-emptying system

For peak performance in your processes

Too much product lost when emptying drums, complicated cleaning of container and pump systems, high handling costs and problems with the stringent hygiene requirements: a daily headache for companies working with viscous products. Time to change all that!

Try handling your pastes, creams and ointments without these aggravations by using Müller's user-friendly container systems. Our world class stainless steel drums offer the functionality you are looking for:

- Cleanliness - total hygiene for products and workplace
- Emptiness – systems optimized for complete emptying and residue-free cleaning
- Ø 450 mm for 50 to 90 liter usable volume, Ø 560 mm for 60 to 180 liter usable volume
- Pressure vessels complying with the Pressure Equipment Directive 97/23/EC, category I, module A
- CE mark affixed

FD XXL drum-emptying system



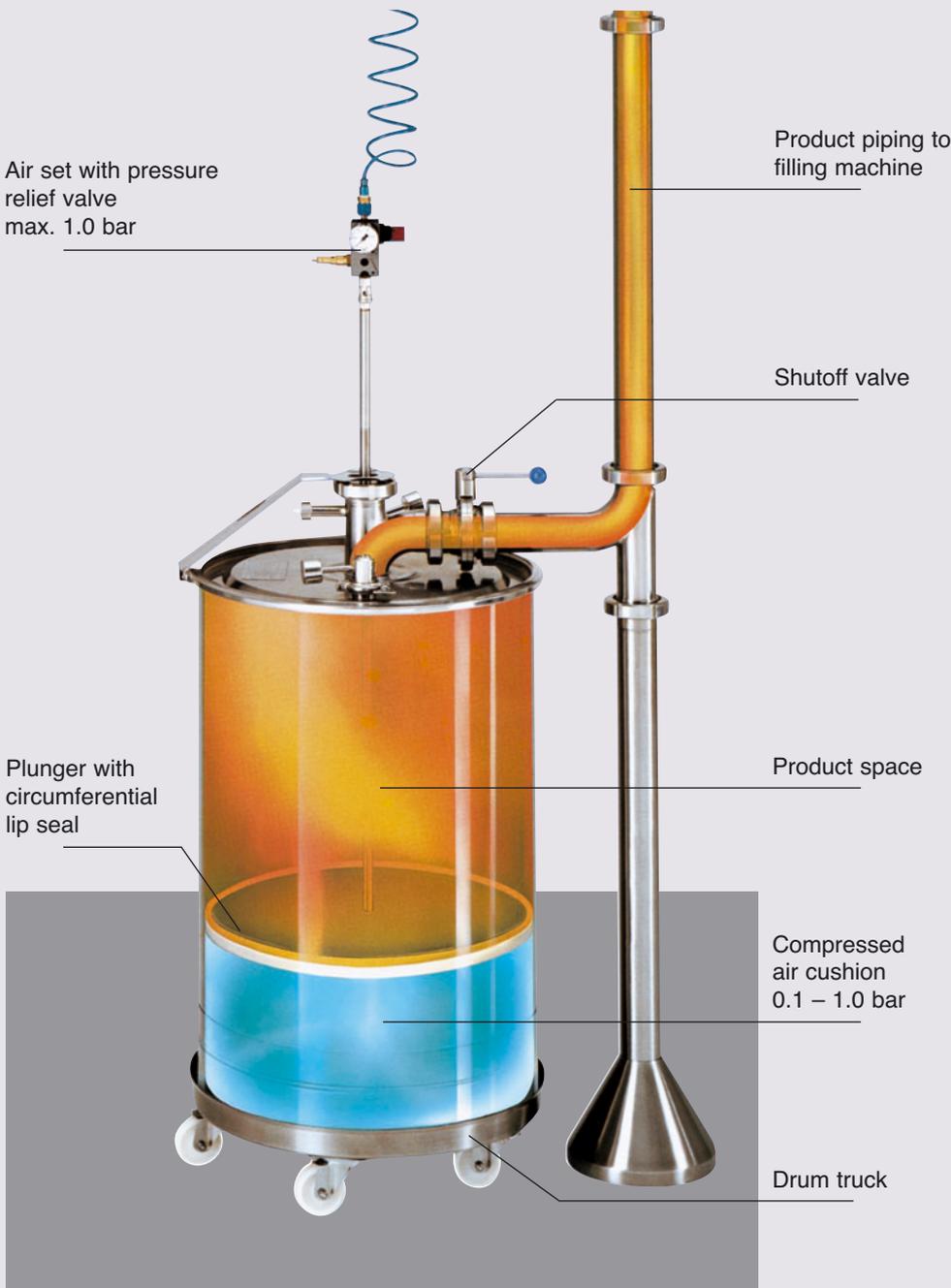
**Small, but superb:
the Müller FD drum-emptying
system**

Efficient drum-emptying systems by Müller have long set the standard in a diversity of applications in many industries.

The "junior" FD system has been specially developed for small batches of between 50 and 200 liters, offering maximum operator convenience for a modest investment.

Benefits that count:

- The system is GMP compliant. All components can be disassembled and are easy to clean
- The drum-emptying system needs little space and is safe and simple to operate
- The Müller lidded drum with a dished bottom is fabricated from AISI 316L stainless steel, with all butt welds ground flush and a 320 grit polished finish on its internal and external surfaces. All seals are made from a silicone elastomer, are FDA compliant and sterilizable
- Seals also available on request in Viton or EPDM



Emptying lid



Pressure gauge helps operator



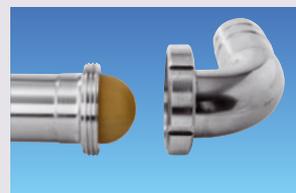
Tubing coil with quick-release coupling for compressed air



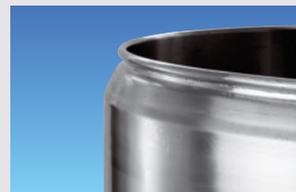
Lid lifting device



Storage unit for plungers



Pigging system



Protective outer body

How a Müller drum becomes an efficient emptying system for small batches

The task:

To transfer viscous media efficiently and with as little loss of product as possible from a transportation or storage container directly to the filling machine.

The solution:

With Müller stainless steel drums the product is fed to the production line in an enclosed system directly from the storage container – efficiently and hygienically with no product losses – in three phases:

1. Filling the drum:

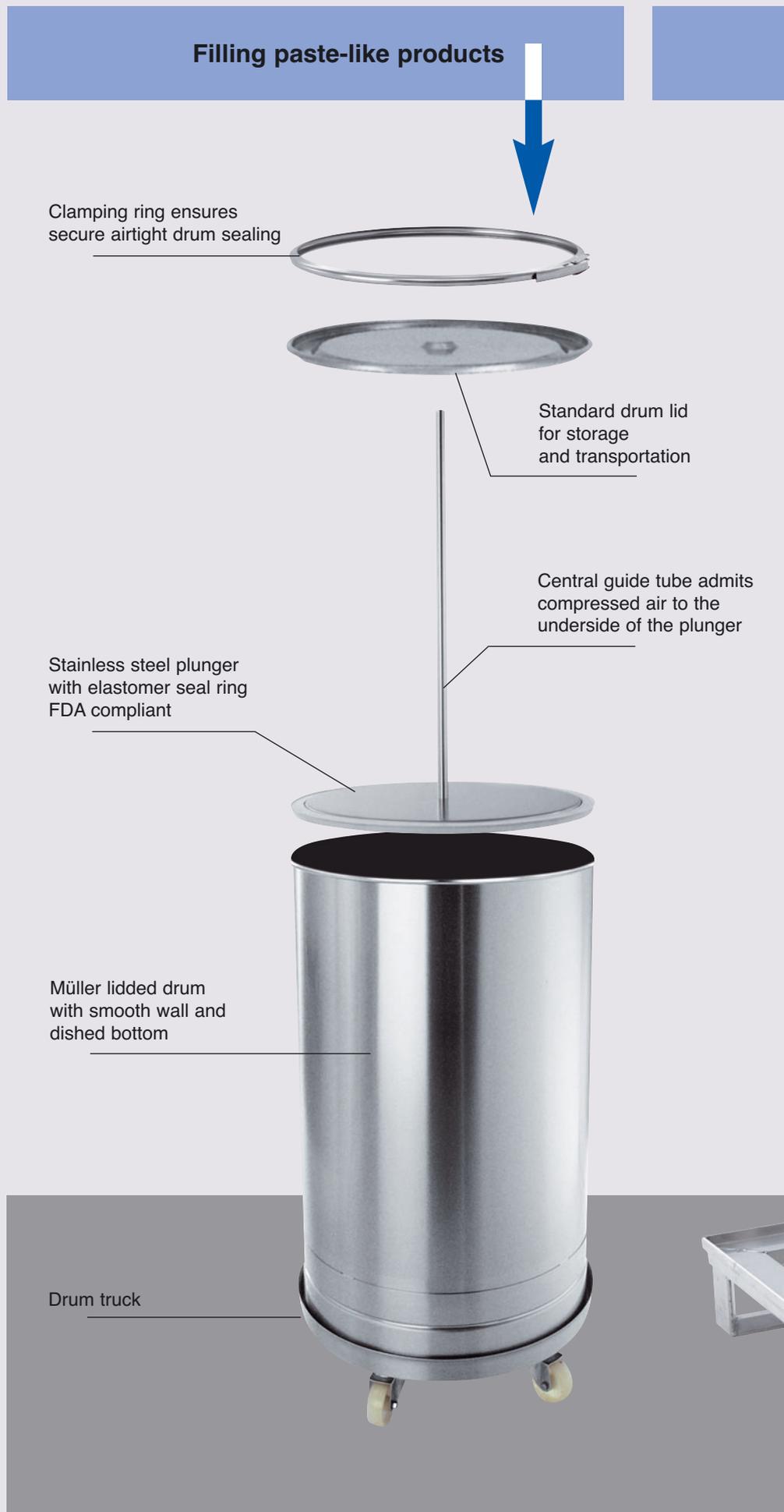
A stainless steel plunger is placed in the empty drum. Its central guide tube will later admit compressed air to the chamber underneath the plunger. The drum can now be filled with the viscous product and tightly sealed with a standard lid and clamping ring.

2. Transportation and storage:

The filled drum can be warehoused or transported directly to the facility where the filling line is located.

3. Drum emptying directly into the filling machine:

The drum lid is removed and a special emptying lid and clamping ring with safety clasp are fitted onto the drum. The product discharge piping to the filling line is connected, thus forming an enclosed system. Compressed air is admitted through the central guide tube at a pressure of 0.1 to 1.0 bar. This forces the plunger upwards and squeezes the contents of the drum through the piping to the filling machine, the desired product flow being controlled by means of the air pressure regulator and the shutoff valve. An elastomer seal ring around the plunger prevents the compressed air coming into contact with the product while at the same time wiping the wall of the drum clean.



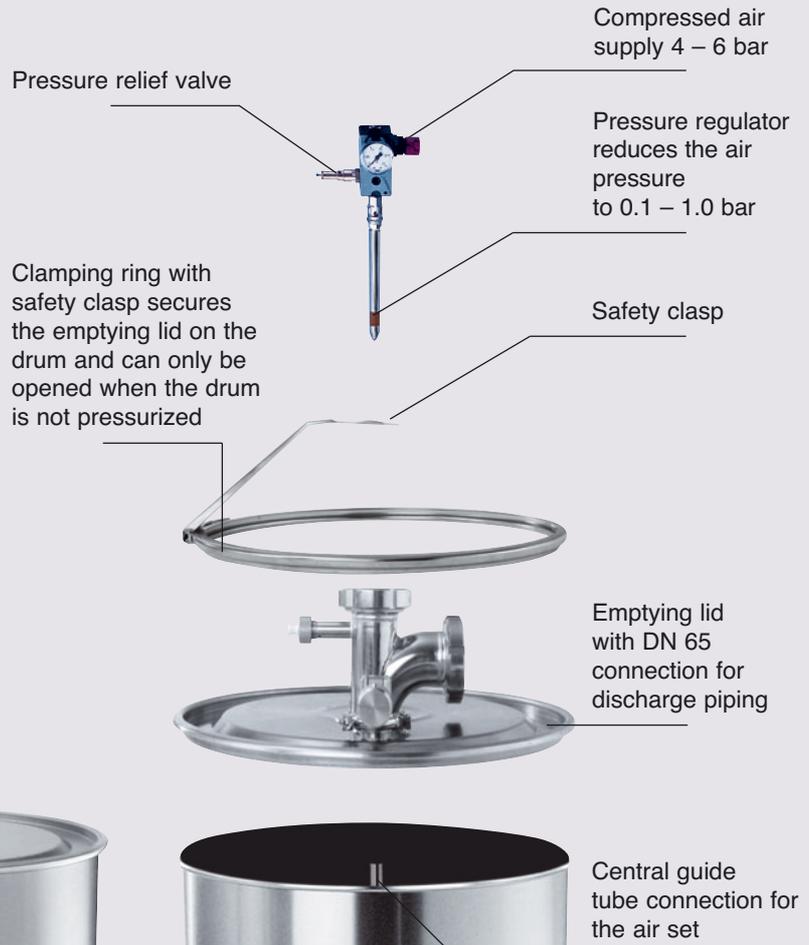
Transportation and storage



Discharge direct to the filling machine



The filled drum is sealed with lid and clamping ring and is securely protected from the outside world



The Müller principle sets the standard in XXL format

Handling viscous and pasty products in large batches is a challenging task. The larger the batch, the larger the residual quantity of product when the drum is emptied. Not only is valuable product lost, but the costs and effort of cleaning are increased, particularly when it is necessary to comply with GMP or FDA regulations. This problem is resolved with the intelligent Müller FD XXL drum-emptying system, manufactured specially for batches in the range 400 – 1000 liters. This larger-scale system again uses the proven Müller principle of an enclosed discharge through a piping line – simple, efficient and hygienic, with no waste and no mess:

- Cleanliness - total hygiene for products and workplace
- Emptiness – systems optimized for complete emptying and residue-free cleaning
- Ø 800 mm for 400 liter usable volume
- Ø 950 mm for 600 liter usable volume
- Ø 1200 mm for 1000 liter usable volume
- Pressure vessels complying with the Pressure Equipment Directive 97/23/EC, category II, module A1
- CE mark affixed

FD XXL drum-emptying system

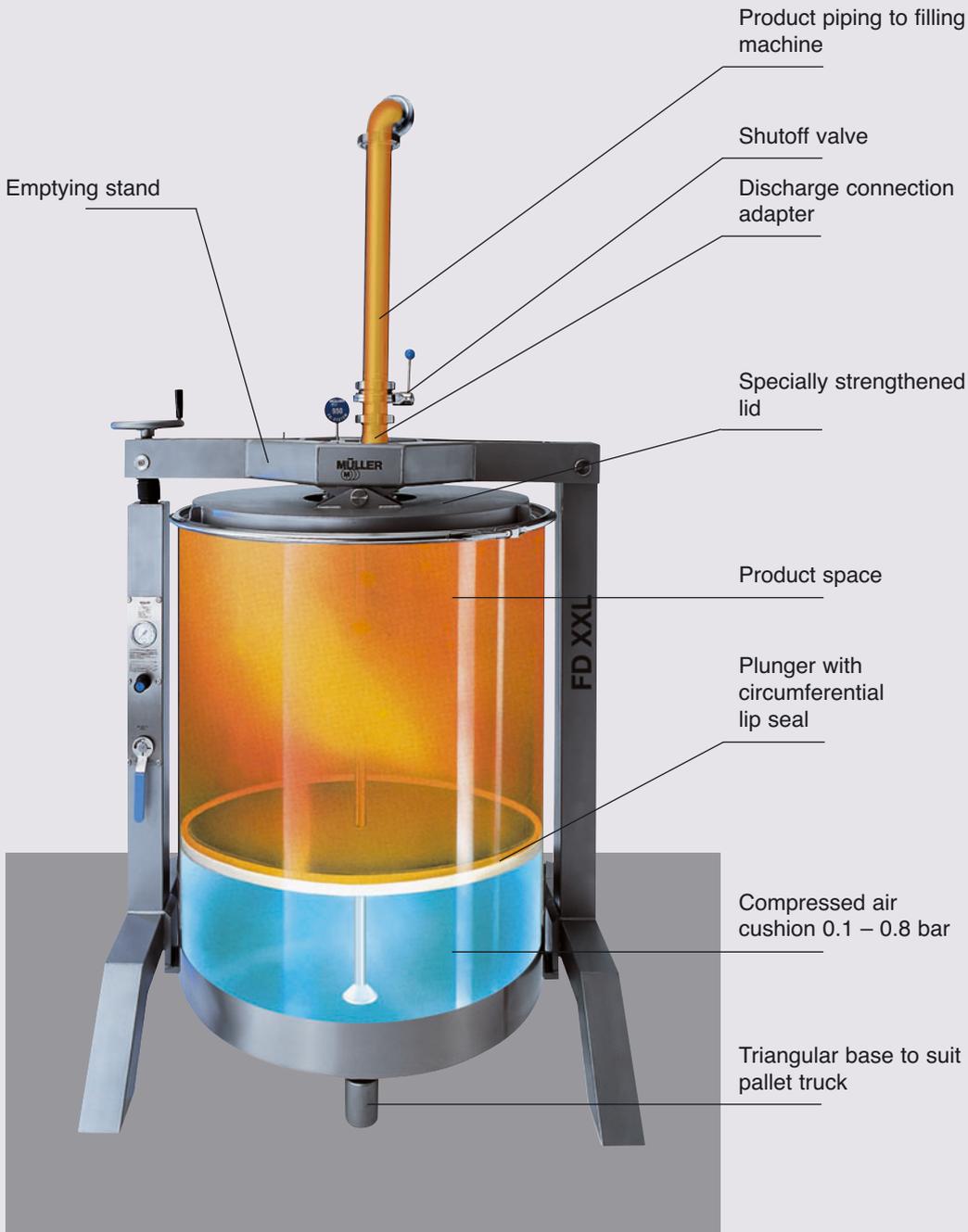


**Not only is it big, it's great:
the Müller FD XXL drum-emptying
system**

The Müller XXL drum-emptying system centers around Müller's smooth-walled stainless steel lidded drums with usable volumes from 400 to 1000 liters. This system makes it no problem to transfer large batches of highly viscous products directly from the storage container to the filling machine.

XXL benefits that count:

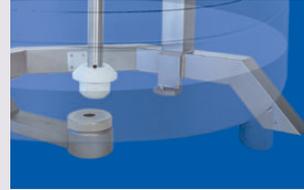
- The system is GMP compliant. All components can be disassembled and are easy to clean
- The Müller emptying system needs little space and is safe and simple to operate
- The Müller lidded drum with a dished bottom is fabricated from AISI 316L stainless steel, with all butt welds ground flush and a 320 grit polished finish on its internal and external surfaces. All seals are made from a silicone elastomer, are FDA compliant and sterilizable
- Seals also available on request in Viton or EPDM



Emptying stand



Pressure regulator and gauge with pressure relief valve



Compressed air connection



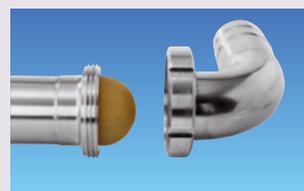
Disassembly fixture for plunger



Plunger insertion aid



Level indicator flag



Pigging system

How a Müller drum becomes an efficient emptying system for large batches

With Müller everything centers around the drum. Any decision to use Müller drums is automatically a decision for a businesslike system, improved cost-effectiveness and a better future as well. See for yourself how series 800, 950 and 1200 drums make a fascinating XXL-format emptying system for batches of up to 1000 liters.

1. Filling the drum:

A stainless steel plunger with its plastic support spider is placed in the empty drum. When the drum is filled, the weight of the product forces the plunger down to the bottom of the drum. The filled drum is then tightly sealed with a standard lid and clamping ring.

2. Transportation and storage:

The filled drum can be warehoused or transported directly to the facility where the filling line is located.

3. Drum emptying directly into the filling machine:

A pallet truck is used to move the drum into the emptying stand. When the drum is lowered into place, it docks automatically with the air connection. The handwheel is then used to lower the cover of the drum-emptying stand. Doing this connects the enclosed product piping line with the drum, which can now be emptied. The desired flow of product is controlled by means of the air pressure regulator and the shutoff valve. An elastomer seal ring around the plunger prevents the compressed air coming into contact with the product while at the same time wiping the wall of the drum clean.

Filling paste-like products



Stainless steel plunger with PE support spider

Boss for central guide tube



Müller lidded drum with smooth wall and dished bottom



Drum lid



Transportation and storage



Discharge direct to the filling machine



The filled drum is sealed with lid and clamping ring and is securely protected from the outside world

Emptying stand closed with handwheel

Drum pressurized: pressure regulator with gauge reduces the compressed air pressure to 0.1 - 0.8 bar

Product discharge piping to filling machine

Shutoff valve

Connection adapter between drum and product discharge line

MÜLLER

FD - 950

Drum moved into emptying stand on pallet truck and lowered into place, docking automatically with the air connection



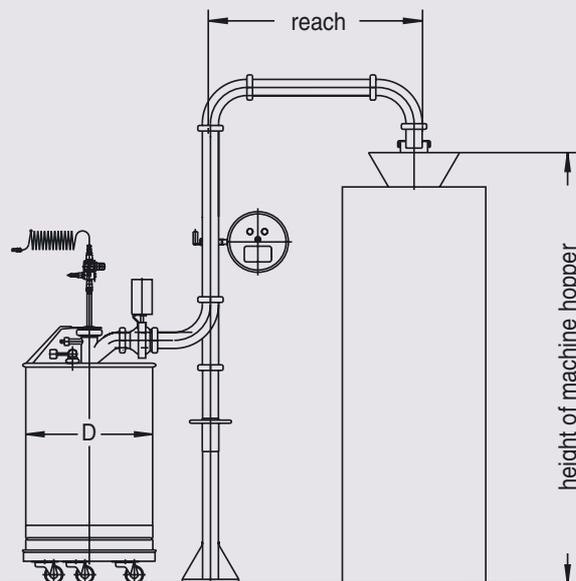
Standard sizes

Ø	Drum volume	Usable volume	Max. operating pressure
450	100 L	90 L	1.0 bar
560	200 L	180 L	1.0 bar

Special sizes from 50 - 250 L also possible

The complete system consists of:

Component	Part Code	Quantity required
Lidded drum Ø 450 mm, 100 L volume Ø 560 mm, 200 L volume	626 808 626 898	At least one drum, but as many as desired
Plunger with central guide tube and plunger seal for Ø 450 mm drum for Ø 560 mm drum Alternative version with seal fixing ring: for Ø 450 mm drum for Ø 560 mm drum	827 270 827 271 827 359 827 358	1 per drum 1 per drum, if product has no lubricating properties
Special emptying lid Ø 450 mm Ø 560 mm	0102417 0102416	1 lid per filling line
Clamping ring with safety clasp for Ø 450 mm drum for Ø 560 mm drum	379 222 379 223	1 per filling line
Air set with pressure gauge and regulator	379 218	1 set per filling line
DN 65 ball valve, manual	480 690	1 valve per filling line
RD drum truck for Ø 450 mm drum for Ø 560 mm drum	827 034 827 036	Number of trucks to suit number of drums and operating procedure
Recommended accessories	Part Code	Quantity required
DN 65 product discharge piping		1 per filling line
Lid lifting device for Ø 450 mm drum for Ø 560 mm drum	379 199 379 219	1 device
Storage unit for plunger Ø 450 mm Ø 560 mm	827 388 827 389	1 unit for every 24 plungers 1 unit for every 30 plungers



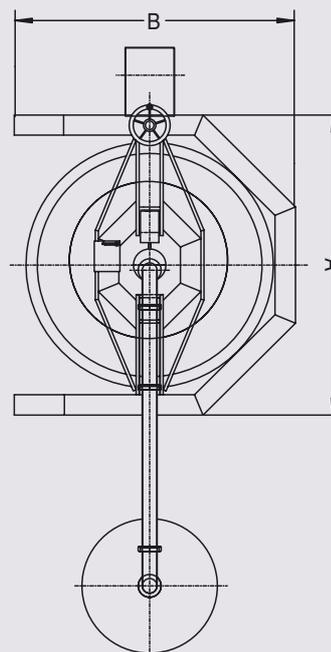
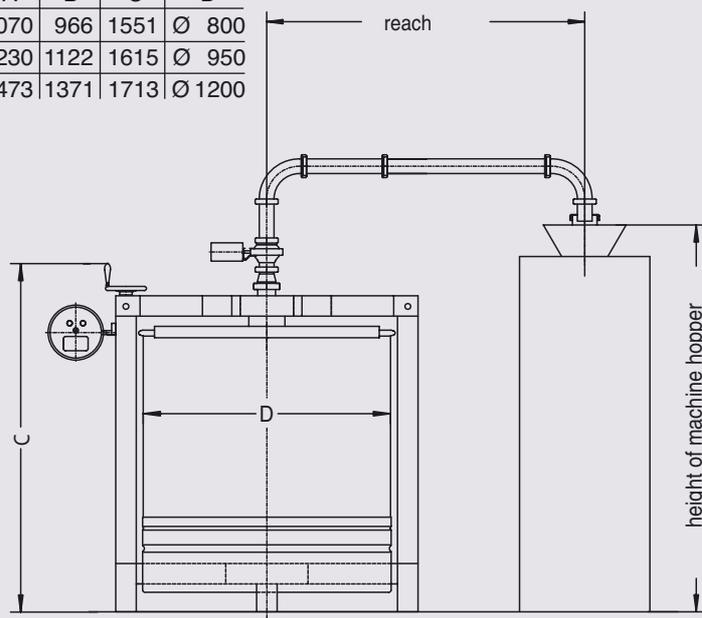
Standard sizes

Ø	Drum volume	Usable volume	Max. operating pressure
800	480 L	400 L	0,8 bar
950	725 L	600 L	0,8 bar
1200	1235 L	1000 L	0,8 bar

The complete system consists of:

Component	Part Code	Quantity required
Lidded drum Ø 800 mm, 400 L volume Ø 950 mm, 600 L volume Ø 1200 mm, 1000 L volume	0102223 0102225 0102227	At least one drum, but as many as desired
Plunger with central guide tube and plastic support spider for Ø 800 mm drum for Ø 950 mm drum for Ø 1200 mm drum	0102289 0102290 0102291	1 per drum
Emptying stand with connection adapter: for Ø 800 mm drum for Ø 950 mm drum for Ø 1200 mm drum	0102228/0102239 0102229/0102239 0102230/0102239	1 per filling line
Triangular base for Ø 800 mm drum for Ø 950 mm drum for Ø 1200 mm drum	0102240 0102241 0102242	1 per drum
DN 80 ball valve, manual	480 673	1 per filling line
Recommended accessories	Part Code	Quantity required
DN 80 product discharge line		1 per filling line
Disassembly fixture for plunger for Ø 800 mm for Ø 950 mm for Ø 1200 mm	0102376 0102377 0102378	1 off

A	B	C	D
1070	966	1551	Ø 800
1230	1122	1615	Ø 950
1473	1371	1713	Ø 1200



More information?

www.mueller-gmbh.com

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, 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.

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Just one click opens new horizons

An ongoing intensive dialogue with our customers all over the world: the elixir of life for Müller.

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.

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