



Mahr Unipre | Meter Mix Dispense Technology

Mahr Unipre - Technology for the future

Your production gains flexibility with MarMax:

The modular machine concept easily adapts your application. You benefit from high metering accuracy and a visual, user-friendly interface.

Mahr Unipre | Technology for the future

Mahr Unipre – since 1974 a competent partner in the field of metering and mixing technology

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Mahr Unipre – since 1974 a competent partner in the field of metering and mixing technology

Mahr Unipre design and manufacture high-precision technology to meter, mix and apply liquid and paste materials. Our technology is being used where highest accuracy and efficiency standards are demanded, e.g. the paper, steel and wood industries; pattern making; the aerospace industry; the automotive industry and light-weight construction as well as film and foil lamination and medical engineering.

Standardised and individual

Our range of standard machines is based on a flexible design layout. Hence we are in a position to fulfil individual application requirements readily on the basis of existing modules and new developments. The utilisation of in-house manufactured parts is crucial to the high quality and longevity of our meter-mix dispense machines.

Controller MEC 500

The Mahr-specific control unit MEC 500 is a further key element of quality and process reliability. It comes with a uniform user interface for standard and special purpose machines which can be individually adapted to suit your requirements.

Mixing heads

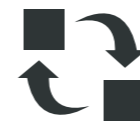
Mixing heads play a vital role in achieving the desired mixing quality. For this reason it is one of our core competencies to select the perfectly suited mixing head for your process.

Ancillary equipment

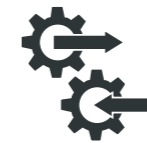
Complementary to this portfolio we offer an extensive range of ancillary equipment for the preparation and application of materials. We provide more than meter-mix dispense machines alone. After all, functional and precisely fitting peripheral equipment components make their own contribution to process stability.

Whether standard or customised solutions – Mahr Unipre provide competent service and consulting.

It is our ambition to ensure optimum operational availability and to maximise the service life of our machines until final replacement by spare part supplies, maintenance concepts and on-site service.



replacement



spare parts service



commissioning



reconditioning



machine upgrading



raw material trials



modification



maintenance



The MarMax - standard series

The MarMax standard machine models are suited for a large variety of applications. Additional modules, e.g., for activators, catalysts, or colours and the flushing feature, for instance, amplify capabilities.

Mahr Unipre have been successful in placing a large number of machines on the market from manually filled two-component-machines up to ten-component fully automated production lines.

For straightforward spraying or casting applications up to special material processing procedures such as rotational casting or spin disc applications, spray applied membranes, coating glass and carbon fibres or potting electronic components – Mahr Unipre provide the metering and mixing expertise.

Application		Machine Type				Customized machines
		MarMax M12	MarMax CP 30	MarMax CP 50	MarMax CS 50	
PUR	PUR-Casting/Elastomers	●	●	●	●	●
	PUR-Foaming	●	●	●	●	●
	PUR-Spraying	●	●	●	●	●
	Compact PUR	●	●	●	●	●
Composites (Resins, PUR Vinyl ester, Polyester etc.)	Pultrusion		●	●	●	●
	RTM		●	●	●	●
	Filament Winding		●	●	●	●
	Prepreg		●	●	●	●
	Coating (PUR, Silicon, EVA, etc.)	●	●	●	●	●
	Converting		●			
	In-situ Polymerisation (PA 6, PA 12, PMMA)				●	●
	Silicon	●		●	●	●

Equipment variants of the MarMax standard range

You can configure your MarMax by choosing modules – flexible and tailored to your requirements

Design features		M 12	CP 30	CP 50	CS 50
Mobility		optionally mobile available	mobile	mobile	stationary
Components		2 as standard / 3 on request	1-4	1-4	1-12
Material tank sizes		3 l up to 10 l	3 l up to 60 l	3 l up to 100 l	3 l up to 2000 l
Flow rate (further options on request)		0,1 up to 3 l/min	0,1 up to 6 l/min	0,1 up to 10 l/min	0,1 up to 40 l/min
Mixing ratios (depending on output quantity + viscosity) (further options on request)		infinitely variable			
Maschine type	unheated	Room temperature	Room temperature		
	partially heated	85°C	85°C	85°C	
	completely heated (seamless heating inside heating cabinet)				85°C/130°C opt. 160°C
Gear flow meter / Screw flow meter / Coriolis flow meter / Flow meter virtual		○	○	○	○
Gap filter		○	○	○	○
Conveying element (other options on request)	gear metering pump with stuffing box	●	●	●	●
	gear metering pump with magnetic coupling	○	○	○	○
Pressure monitoring on suction side		○	○	○	○
Meter/mix head		suited to product and process			
Remote servicing	remote service capability integrated	●	●	●	●
Setup of material tank	degassing	○	○	○	○
	agitator	○	○	○	○
	minimum level monitoring	●	●	●	●
	single-wall tank	●	●	●	●
	double-jacketed tank (with tempering unit, optionally with additional cooling function)	○	○	○	○
Flushing medium container (as standard with level monitoring)		10 l		options: 10 l, 19,5 l oder 30 l	
Tank filling	manual	●	●	●	●
	automatic with refill unit with burst protection (optional connection to IBC, 200L drum or ring line)	not available	○	○	○
Operation via colour touch screen panel	screen sizes 15" (38.1 cm) and 21,5" (54.6 cm)	screen size selection depends on machine setup and requirements			
Machine control – functionality (further features on request / adaptation to individual requirements possible)	flow rate monitoring	●	●	●	●
	output control per component	●	●	●	●
	pressure and temperature monitoring	●	●	●	●
	alarm messages as clear text	●	●	●	●
	control via external signals	○	○	○	○
	optional German or English text	●	●	●	●
	setting values protected by user assignments	●	●	●	●

Standard series
at a glance



MarMax M 12 –
Lightweight design



MarMax CP 30 –
Our allrounder



MarMax CP 50 –
Compact and efficient



MarMax CS 50 –
High capacity and
seamless heating



MarMax M 12 | 2C meter mix dispense machine

Mahr Unipre | MarMax M 12

MarMax M 12 –
Lightweight design

2C and 3C machine for low flow rates. With an output of up to 3 l/min this model is ideal for prototyping or laboratory tests.

Optional features including but not limited to

- trolley, also available with hose holder and mixing head holder
- tank agitator
- pot life monitoring
- shot size counter



MarMax CP 32 | 4C meter mix dispense machine incl. automatic refill from 200 l barrels and IBCs



MarMax CP 52 | Portable machine with mixing head boom - flexible capabilities

Mahr Unipre | MarMax CP 30

MarMax CP 30 – Our allrounder

1-4C machine for low to medium flow rates. With an output of up to 6 l/min it is suited for all industries.

Available designs: 1C, 2C, 1+2C, 1+3C, or 2+2C. This provides high flexibility for processing different material systems suiting your requirements.

Optional features including but not limited to

- automatic refill and control
- partially or completely heated
- level control of roll bath
- integration of further systems
- calculation of layer thickness
- pot life monitoring
- quantity counter
- different application nozzles

Mahr Unipre | MarMax CP 50

MarMax CP 50 – Compact and efficient

2-4C meter mix dispense machine with an output of up to 10 l/min. of mixed material.

To augment flexibility, the machine can be equipped with a rotatable mixing head.

Optional features including but not limited to

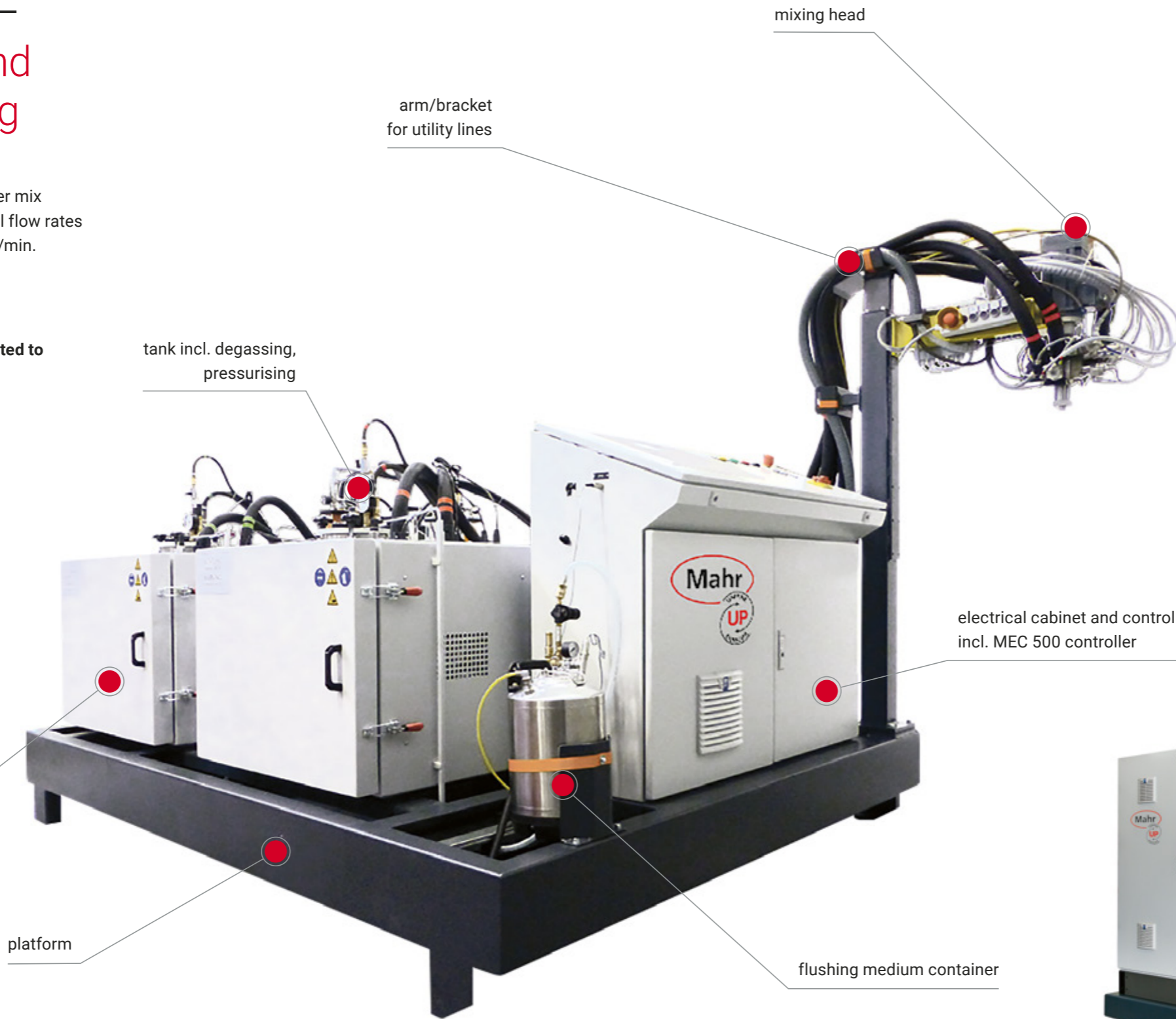
- tank agitator
- pot life monitoring
- shot size counter
- automatic refill control and equipment
- gap filter
- heating for metering pump
- heating for volumetric flow meter
- recirculation - short or long (via mixing head)

MarMax CS 50 – High-capacity and seamless heating

These two- up to multi-component meter mix machines are designed for high material flow rates and a max. material output of up to 40 l/min. Different tank sizes are available up to max. 2000 litres.

Optional features including but not limited to

- heating
- tank agitator
- shot size counter
- vacuum device
- automatic refill control and equipment
- gap filter
- heating for metering pump
- flow meter
- recirculation - short or long (via mixing head)



MarMax CS 52
2C-PUR Casting machine



MarMax CS 60
PUR Elastomer machine

Heating cabinets allow built-in components to be heated continuously without any cold spots.



uniform temperature distribution



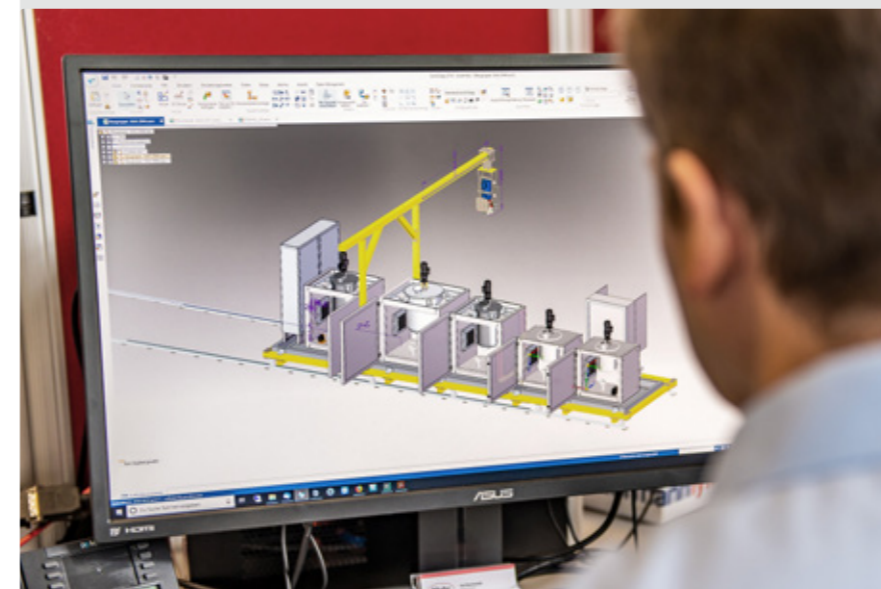
quick, even heating-up



high energy efficiency



Customised solutions – perfectly tailored to suit your application



Benefits for the customer

- consulting service, machine design, assembly and start-up from one source
- a perfectly matched solution with excellent performance
- no exceeding burden on your budget on account of standard machine features that you do not require

Experience has shown that the MarMax portfolio of standard machines does already cover a broad spectrum of customer applications. Where our standard models are not the perfect answer, Mahr Unipre will design a bespoke machine that suits your specific requirements.

Examples – customised solutions

Individual adaptation to

- Mounting and installation situation on site
- Material properties
- Production requirements

Contact us, together we will find the best solution for the challenges that you are facing.



Meter mix machine for the production of preregs with fibre glass or carbon fibre



MarMax CS 52 - 2 component meter mix dispense machine for medical foam applications with connected agitator and pumping unit



Disc applicator - thin film coating for the application of adhesion promoter



Accessible 3 component PUR-Hot casting machine



Mixing heads – it's all in the mix

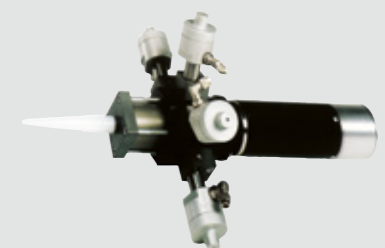
Mahr Unipre mixing heads are built using the latest manufacturing methods and quality standards. Mahr Unipre supplies standard and special purpose mixing head models – also available with spray conversion kit. Mahr Unipre's expertise, gained through many years of experience in the field of mixing technology has resulted in the availability of many different types of mixers.

Mahr Unipre will review your process on the basis of the following parameters in order to select the best suited mixing head. This approach ensures that mixing head and process match perfectly to achieve top mixing quality and exact output rates:

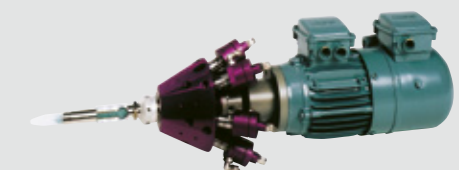
- material characteristics
- pot life
- output
- application
- mixing ratio
- processing temperature



static
mixing head



dynamic
mixing head



static-dynamic
mixing head

Controller MEC 500

The MEC control software developed by Mahr Unipre facilitates a perfectly functional machine operation. Reliable and proven it stands for process safety thus contributing to achieve the demanded production quantity and quality. It comes with a uniform user interface for standard and special purpose machines that can be individually adapted to suit your requirements.

MEC 500 features

- screen size 15", optionally 21"
- capability to store and read measured value histories
- flow monitoring
- output control
- pressure and temperature monitoring
- alarm messages in clear text
- automatic mode and manual mode (no closed-loop control)
- control of automatic mode via external signal (optional)
- user language German or English (further languages on request)
- user management
- remote servicing – minimising on-site service visits
- recording of further data (optional)

Ancillary equipment - everything from one source

Mahr Unipre can also supply the ancillary equipment that you may require straightaway

- temperature-controlled storage cabinets
- preheating units
- agitators
- refill from silos, IBCs, drums and hobbcocks
- degassing stations
- wide slot nozzles
- spray equipment
- linear units
- colour injection module
- robot
- casting tables
- installation on truck for mobile use



Additive injection

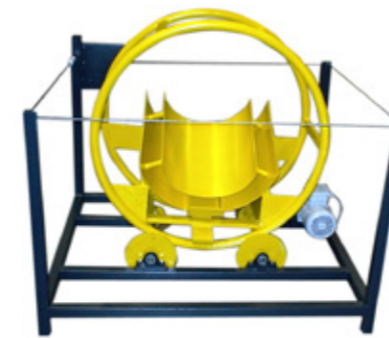


Temperature-controlled storage container

Meter mix dispense machines can only be as good as the surrounding peripheral equipment. It is not least the functional and perfectly matched peripheral equipment that safeguards production process stability.

Indispensable - material supply

Solutions for material preparation, conditioning and supply to the meter mix dispense machine



Drum hoop mixer



Agitating and pumping station



Direct from drum feed



Tempering and heating cabinet



Continuous oven



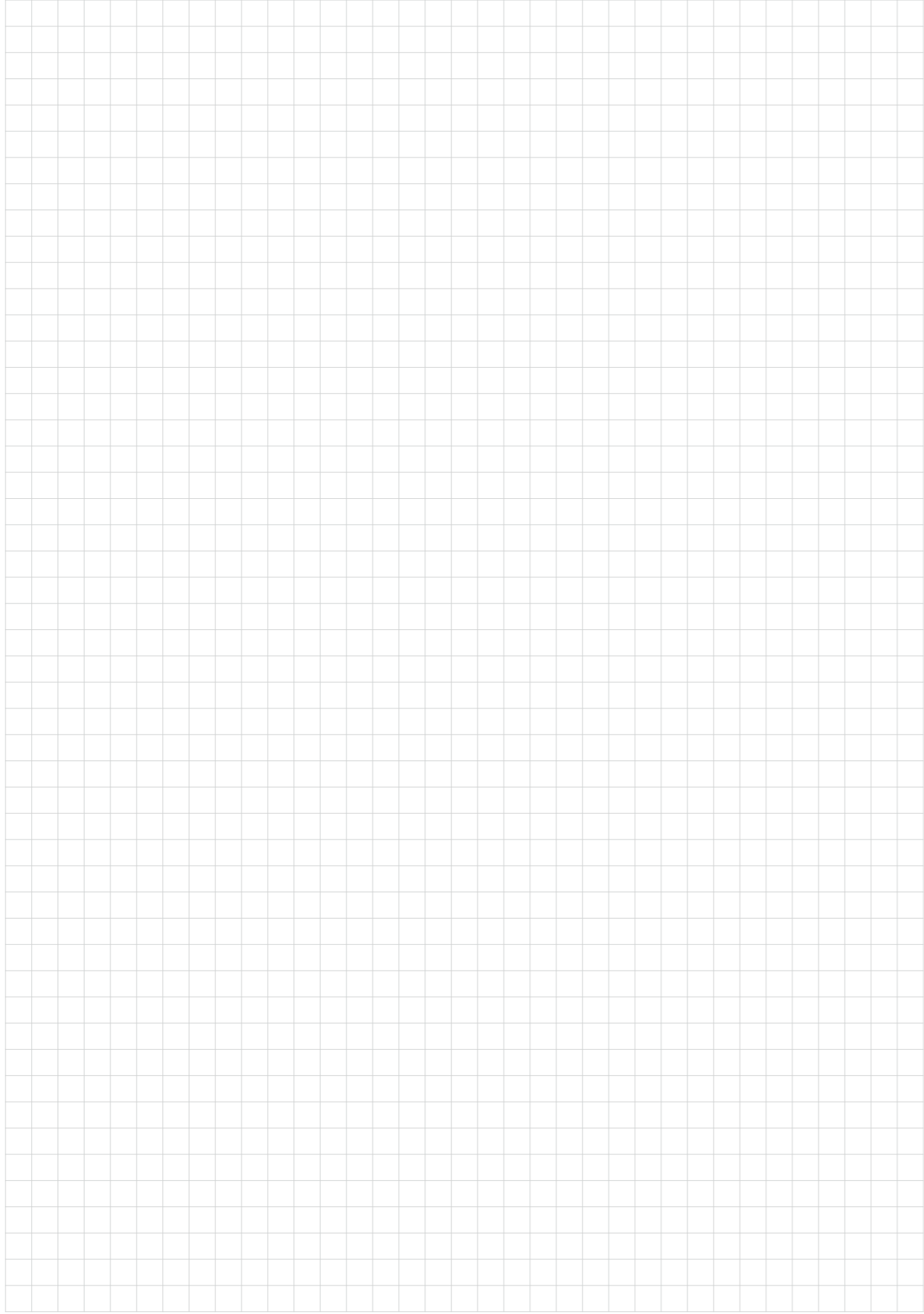
Drum storage and tilting device



MarDrum 200
Drum pump supply system with lifting unit



MarDrum 200 h
Drum pump supply system or dosing station for high viscose media





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