



**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

---

# Content

## About Mahr Unipre

Info | Page 2

## Meter Mix Dispense Machines Standard series



Products | Page 4

## Meter Mix Dispense Machines Customised solutions



Products | Page 14

## Mixing Heads



Products | Page 18

## Controller MEC 500

Products | Page 20

## Ancillary equipment

Accessories | Page 21

## 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, for example, the paper, steel and wood industries, pattern making, the aerospace industry, the automotive industry and lightweight 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

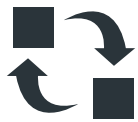
Mixing heads play a vital role in achieving the desired mixing quality. For this reason it is one of our core competencies to select the perfectly suited mixing head for your process.

### Ancillary equipment

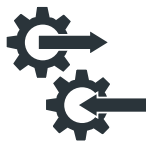
Complementary to this portfolio we offer an extensive range of ancillary equipment for the preparation and application of materials. We provide more than meter-mix dispense machines alone. After all, functional and precisely fitting peripheral equipment components make their own contribution to process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

		Machine Type				
Application		MarMax M12	MarMax CP 30	MarMax CP 50	MarMax CS 50	Customized machines
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	Coating	●		●	●	●
	Casting	●		●	●	●

# Equipment variants of the MarMax standard range

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

## Design features

Mobility

Components

Material tank sizes

Flow rate (further options on request)

Mixing ratios (depending on output quantity + viscosity) (further options on request)

Maschine type

unheated

partially heated

completely heated (seamless heating inside heating cabinet)

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

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)

Tank filling

manual

automatic with refill unit with burst protection

(optional connection to IBC, 200 L drum or ring line)

Operation via colour touch screen panel

screen sizes 15" (38.1 cm) and 21,5" (54.6 cm)

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



M 12	CP 30	CP 50	CS 50
optionally mobile available	mobile	mobile	stationary
2 as standard / 3 on request	1-4	1-4	1-12
3 l up to 10 l	3 l up to 60 l	3 l up to 100 l	3 l up to 2000 l
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
infinitely variable			
Room temperature	Room temperature		
85°C	85°C	85°C	
			85°C/130°C opt. 160°C
○	○	○	○
○	○	○	○
●	●	●	●
○	○	○	○
○	○	○	○
suited to product and process			
●	●	●	●
○	○	○	○
○	○	○	○
●	●	●	●
●	●	●	●
○	○	○	○
10 l	options: 10 l, 19,5 l or 30 l		
●	●	●	●
not available	○	○	○
screen size selection depends on machine setup and requirements			
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
○	○	○	○
●	●	●	●
●	●	●	●

● standard    ○ optional

## 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

**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



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

**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)

arm/bracket  
for utility lines

tank incl. degassing,  
pressurising

heating cabinet

platform

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



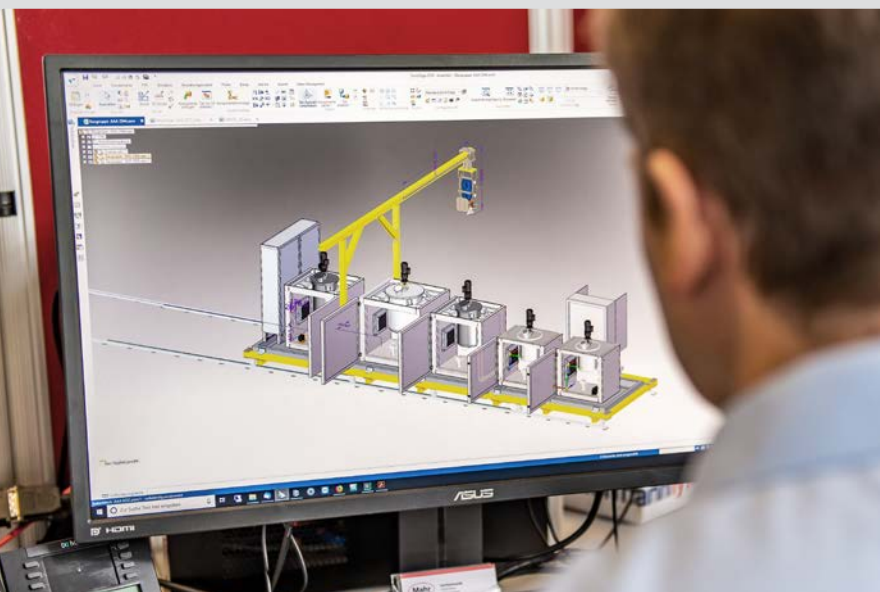
high  
energy efficiency







# 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

---



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

---



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

---



Accessible 3 component PUR-Hot casting machine

---

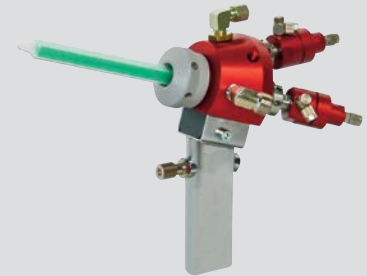


# Mixing heads – the mixture makes the difference

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 hobbocks
- 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.



Tempering and heating cabinet

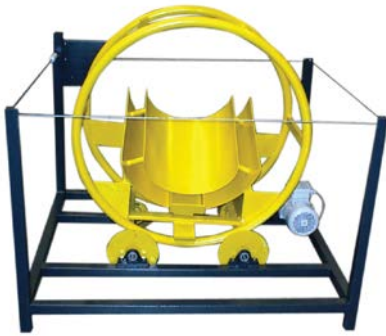


Continuous oven



# Indispensable - material supply

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



Drum hoop mixer



Agitating and pumping station



Drum pump



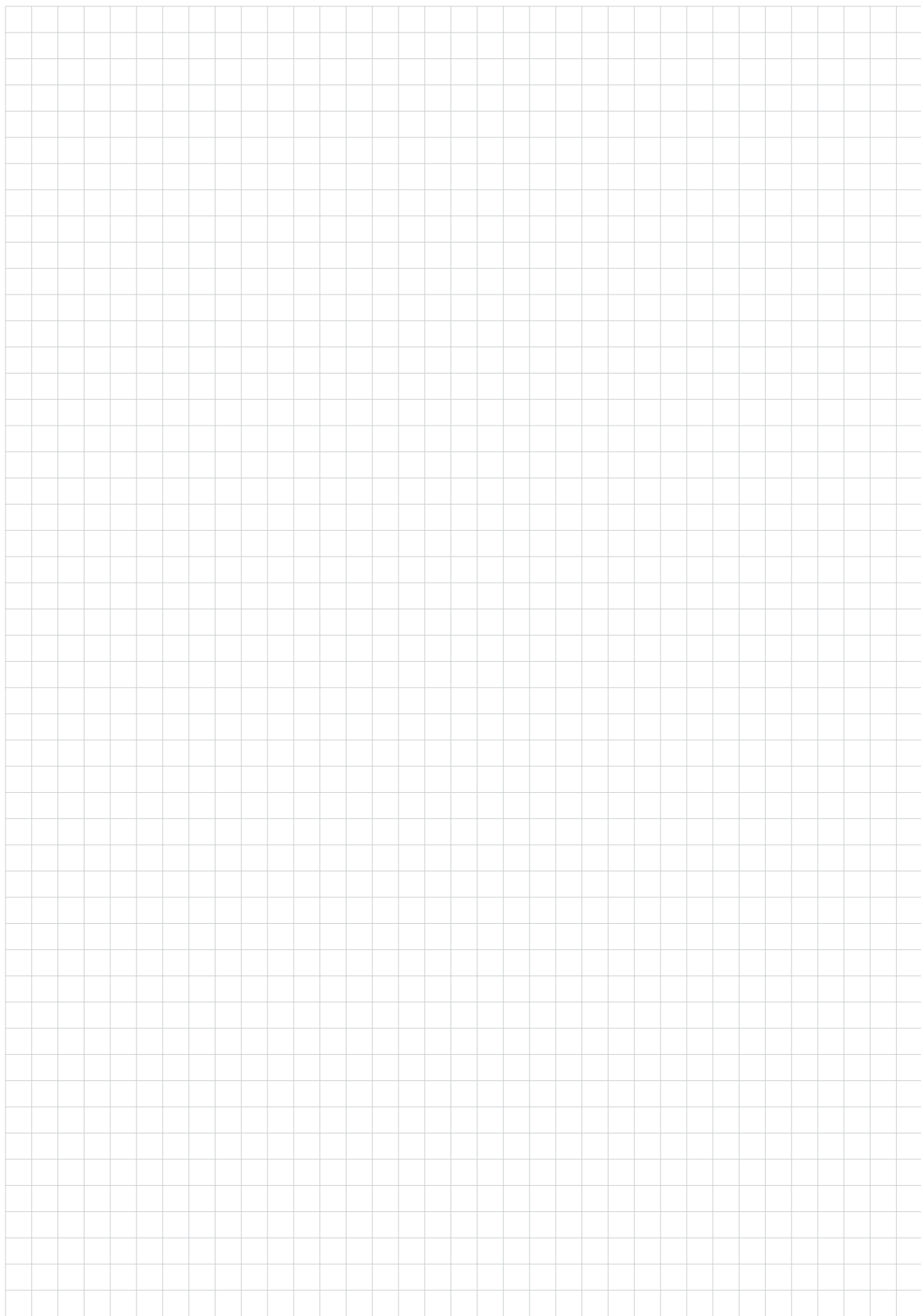
Drum storage and tilting device



**MarDrum 200**  
Drum pump supply system  
with lifting unit



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







**Mahr** Unipre GmbH  
Langenwiedenweg 94  
59457 Werl  
Germany

Phone: +49 2922 878400  
[MahrUnipre@Mahr.com](mailto:MahrUnipre@Mahr.com)  
[www.Mahr.com](http://www.Mahr.com)

© **Mahr** Unipre GmbH

We reserve the right to modify our products,  
particularly with a view to technical improvement and further development.  
All illustrations and numbers etc. are therefore subject to change.

Mahr Unipre EN | Rev. 2 | 11.2019