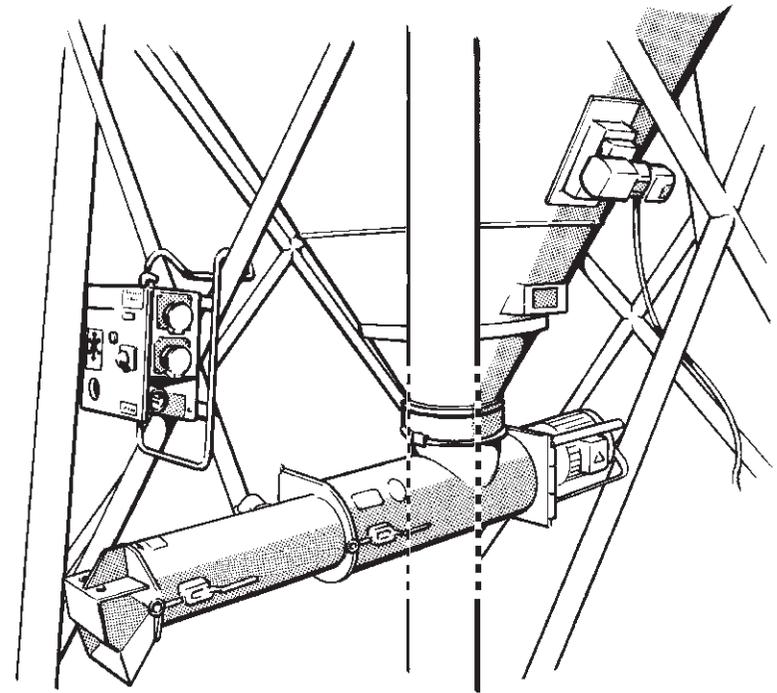


# Operating Instructions

## Continuous-Flow Mixer D40/D100/D150



Key to fig. 20:

S1 Main switch  
S2 Button "Off"  
S3 Button "On"  
S4 Switch "Heating"  
S5 Toggle switch "Operation /Cleaning"  
S6 Toggle switch "with probe/without probe"  
H1 Signal lamp "Control ON"  
T1 Transformer  
F1 Automatic circuit breaker prim. 400 V  
F2 Automatic circuit breaker sec. 230 V  
F3 Fuse sec. 42 V  
K1 Contactor "continuous-flow mixer"  
K2 Contactor "vibrator"  
K3T Flash relay  
K4T Time relay "mixer running time"  
K5T Time relay "probe"  
K6 Auxiliary relay  
Y1 Solenoid valve  
D1 Diode  
R1 Heating  
Q1 Motor-protection switch "continuous-flow mixer"

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Technical development:

The manufacturer reserves the right to adapt technical data without notification in order to reflect the current state of technical development. For information regarding the current status, alterations or additions to these operating instructions, please contact m-tec.

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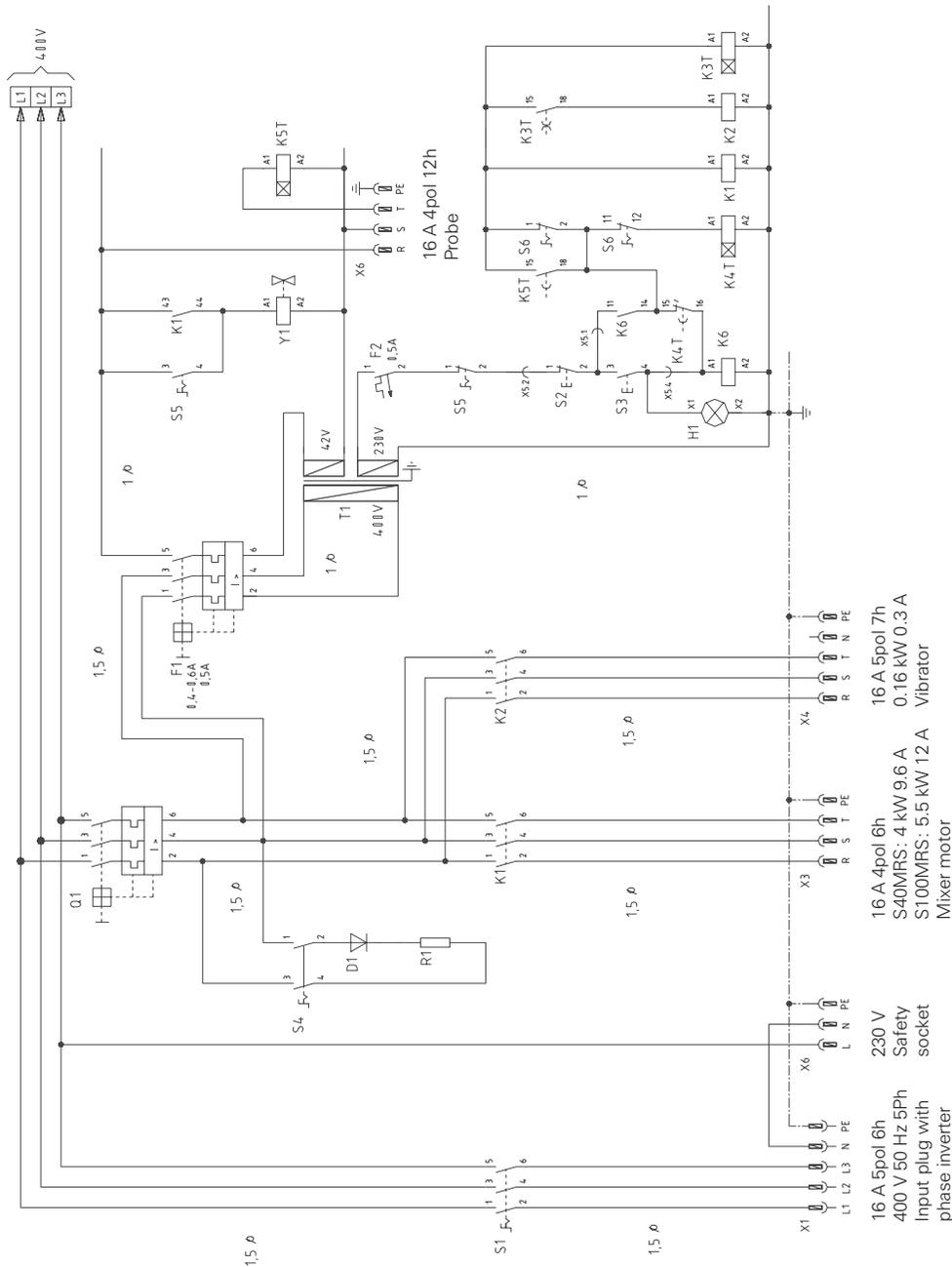


Fig. 20: Circuit diagram S40/S100/S150 MRS

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## Dear Customer,

this machine represents the current technical state of the art and complies fully with general standards and EC guidelines. This is indicated by the CE symbol and the enclosed declaration of conformity which can be found in the pocket on the machine.

**Before using the machine for the first time, please remove the declaration of conformity from the pocket and keep it in a safe place.**



Before starting the machine up, fill in the information required on this page. This is the easiest way to familiarise yourself with the characteristics of the machine, and the main data can be consulted at any time without reading them off the machine plate. If you wish to consult us at any time, please have the information on this page ready at hand. The data you require can be found on the machine plate.

Type \_\_\_\_\_

Machine no. \_\_\_\_\_

Year of manufacture \_\_\_\_\_

Power supply \_\_\_\_\_

Rated current (total) \_\_\_\_\_

Date of commissioning \_\_\_\_\_

Application \_\_\_\_\_

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Key to fig. 19:

S1 Main switch

S2 Button "Off"

S3 Button "On"

S4 Switch "Heating"

S5 Toggle switch "Operation /Cleaning"

T1 Transformer

F1 Automatic circuit breaker prim. 400 V

F2 Automatic circuit breaker sec. 230 V

K1 Contactor "continuous-flow mixer"

K2 Contactor "vibrator"

K3T Time relay "vibrator"

K4T Time relay "mixer running time"

Y1 Solenoid valve

D1 Diode

R1 Solenoid valve

Q1 Motor-protection switch "continuous-flow mixer"



## 1.1 Danger symbols

In these instructions, the following symbols are used to draw the attention of the reader to possible sources of danger:



***This symbol is used to identify all operations which may result in serious injury if not carried out correctly. Follow the instructions and always proceed with special care. Pay particular attention to the safety of other persons in the vicinity of the machine and its components.***

**ATTENTION!**

***This symbol is used to identify all work which may involve danger to the material or the machine, or which may affect the efficiency of the process. Follow the instructions closely at all times.***



*This symbol is used to identify important or additional information on the machine or its documentation.*



***This symbol is used to identify potential dangers, which, if disregarded, may endanger the environment.***

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Key to fig. 18:

S1 Main switch

Q1 Motor-protection switch "continuous-flow mixer"

F1 Autom. circuit breaker prim 400 V

F2 Fuse sec 230 V

F3 Fuse sec 42 V

K1 Contactor "Vibrator"

K2T Flashing relay

T1 Transformer

Y1 Solenoid valve

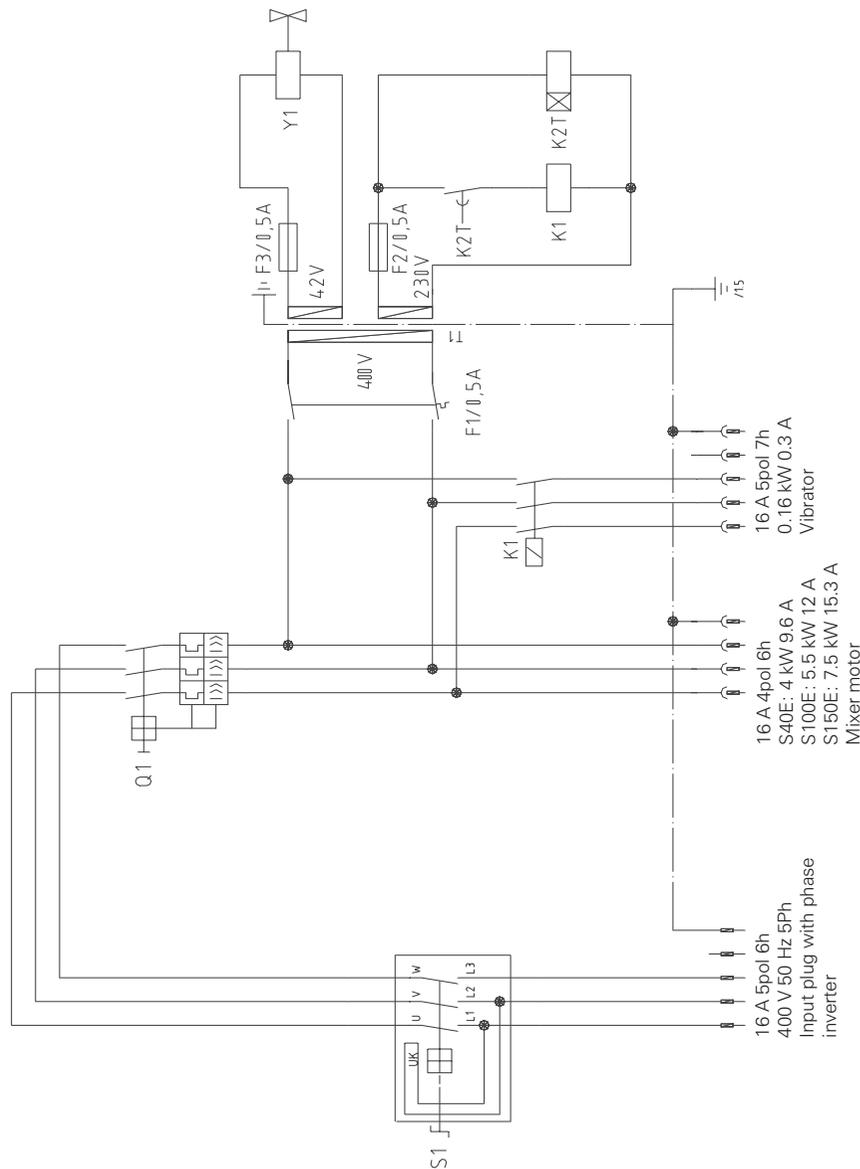


Fig. 18: Circuit diagram S40/S100/S150 E

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## 1.2 Safety at work

**When transporting, assembling, dismantling, operating, cleaning, and servicing the machine, the applicable national and international safety regulations and legislation must always be observed, even if such regulations and legislation are not explicitly mentioned in these instructions.**



**In the interest of safety, always follow the instructions given below:**

- The continuous-flow mixer should be used only when it is installed under a hopper.
- The machine should be used only for mixing dry mortars which have been pre-mixed by the manufacturer. These include masonry and plaster mortars, insulating mortars, fine concrete and floor cements. It must not be used for any other purpose.
- It is prohibited to make changes or modifications to the machine without the approval of the manufacturer.
- Use only spare parts and accessories supplied by m-tec. m-tec mathis technik gmbh will not accept liability for injury or damage caused by the use of non-approved spare parts and accessories.
- The hopper must be set up in a steady position and secured against accidental movement. The hopper must be positioned in an area where no objects can fall onto it from above. If this is not possible, the hopper and the area around it must be protected by a roof. Always follow the operating instructions for the hopper.
- The machine must be connected to a site distributor box with FI automatic circuit breaker. Use a 16 A 5-pole 6 h plug. The connecting cable must have a cross section of 5 x 2.5 mm<sup>2</sup> and a 16 A fuse.

- When the machine is plugged in to the power supply, never put your hands into the machine or the mixing pipe as serious injury may result.
- Before every start-up, the continuous-flow mixer must be checked for damage to electric cables, water hoses, plugs and couplings. Any damage must be repaired before the machine is used.
- Before every shift, the machine must be carefully inspected for obvious signs of damage, in particular to electric cables, plugs and couplings. Any defects detected must be repaired before beginning work.
- Before repairing malfunctions or carrying out maintenance or cleaning work, the Continuous-Flow Mixer must be switched off and disconnected from the mains electricity supply. Even when the machine is switched off, certain parts of it remain live.
- **When using the wet-mortar probe with switch cabinet MRS:** If the machine has been switched on at the double push button "On/OFF" it may be started automatically at any time (even when it is not running) by the probe control system. Indication: the white signal lamp on the double push button "On/OFF" lights up.
- The Troubleshooting Table is not intended to replace the detailed instructions in the appropriate sections of these Operating Instructions. Always comply with the safety notes in each section!
- If necessary, the safety of the machine must be verified by a person qualified to make such inspections. The inspection must however be carried out at least once per year. Qualified persons are those who, through training or experience, have sufficient knowledge in the field of mortar-feeding and mortar-spraying machines and who are sufficiently familiar with legislation regarding

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## 11 Circuit diagrams

See following pages

## 10.2 Spare parts

For spare parts, please refer to our spare-parts catalogue. Send orders to:

**m-tec mathis technik gmbh, Sales Dept.:**

Tel. no.: +49 / 7631 / 709-112 or -216

Fax no.: +49 / 7631 / 709-116

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safety, accident prevention, and general technical procedures to allow them to assess the safe condition of such machines.

- Check the direction of rotation of the motor!
- The direction of rotation of the fan must correspond to the direction of the arrow on the fan cover. If the direction is incorrect, switch the machine off immediately at the double push button "On/Off" and the main switch.
- To ensure the uniform consistency of the mortar, the infeed water pressure must be at least 3 bars.
- Do not use thin or runny material.
- Intervals in work should be limited in length. Always keep the setting time of the mortar in mind. Hardened mortar in the mixing tube causes difficulty in starting the motor and may damage the mixer permanently. For longer intervals in work, ensure that the water fitting is completely emptied.
- Always keep the coupling between the mixing shaft and the portioning shaft clean, dry and free of grease. Always ensure that no water can enter the portioning pipe.
- Do not top up with gear oil between oil changes. If the machine is overfilled with oil, it may overheat. Never mix different types of oil. This may cause the oils to decompose and lead to irreparable damage to the gear unit.
- Always dispose of mortar residues in a regulation rubble container.
- When disposing of oil, grease and cleaning agents, always comply with the environmental regulations in force.

### 1.3 Personal safety equipment

- If the noise level at the working position is over 85 dB (A), the building contractor must provide special noise-protection equipment. Wearing of this protective equipment by the employees is compulsory if the noise level is 90 dB (A) or above.

## 10 Accessories/spare parts

***Use only spare parts and accessories supplied by m-tec. m-tec mathis technik gmbh will not accept liability for injury or damage caused by the use of non-approved spare parts and accessories.***



### 10.1 Accessories

The field of application and the handling of the machine can be considerably improved by using m-tec accessories. The following accessories are available for this machine:

	D40	D100	D150
Feeder screw, pitch 30	-	X	X
Feeder screw, pitch 40	X	-	-
Feeder screw, pitch 50	X	X	X
Feeder screw, pitch 60	X	-	-
Feeder screw, pitch 70	X	X	X
Feeder screw, pitch 90	X	X	X
Weather-protection hood	X	X	X
Water pump	X	-	-
Flow meter	X	-	-
Concrete probe and holder	-	X	X
Stromobil	-	X	X
Blow-out device	X	X	X
Mounting plate for transporting switch cabinet on hopper	X	X	X
Extended mixing pipe and shaft	X	-	-
Grid mixing shaft	X	X	-
Securing belt with hooks	X	X	X
Wet-mortar probe, type NMS, incl. holder	X	X	X

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Problem	Cause	Remedy
No water	The solenoid valve in water fitting does not open Motor-protection switch triggered	Solenoid valve defective, replace Press motor-protection switch back in
Water runs continuously	In version with toggle switch "Operation/Cleaning": switch is at "Cleaning"	Set switch to "Operation"
Mortar too thick	Water flow too low	Check water supply Open fine control valve on water fitting
Mortar too thin	Too much water	Close fine-control valve on water fitting slightly
Mortar-consistency fluctuates	Uneven flow of material from hopper a) Hopper almost empty?  b) Vibrator not connected? c) Vibrator on hopper defective?  Water filter in pressure reducer or inlet clogged  Material accumulated on mixer shaft or in pipe	– Fill hopper; – Operate vibrator button; – Open and close hopper trap several times, until material begins to flow again.  – Connect vibrator – Check vibrator, replace if necessary  Clean water filters (see section 8.3)  Clean clogged parts

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## 2 Machine description

These operating instructions are for continuous-flow mixers of type D40, D100 and D150. Every continuous-flow mixer can be combined with a switch cabinet of type E, MR or MRS.

### 2.1 Intended use

The Continuous-Flow Mixer should only be operated when installed under a hopper. It is suitable only for mixing dry mortars which have been pre-mixed by the manufacturer. These include masonry and plaster mortars, insulating mortars, fine concrete, floor cements, earth-moist concrete of grain size up to 4 mm and wet concrete of grain size up to 8 mm.

***It is prohibited to use the machine for any other purpose.***



### 2.2 Function

The continuous-flow mixer is installed under a hopper, from which dry material drops into the portioning pipe. The portioning screw conveys the material in the mixing pipe. Here it is mixed with water and conveyed to the outlet.

#### **Additional function with switch cabinet MR:**

With this switch cabinet, the running time of the mixer can be set by means of a timer relay.

**Additional function with switch cabinet MRS:**

With this switch cabinet, the running time of the mixer can be set by means of a timer relay. In addition, the mixer can also be controlled by a wet-mortar probe (e.g. in the material trough of a pump). As soon as the material trough of the pump is empty, the probe signals this to the mixer, which then mixes material. When the trough is full, the probe signals "full" which causes the mixer to stop mixing and go into standby mode. The signal lamp on the double push button "On/Off" lights up. When another signal "material trough empty" is received, the continuous-flow mixer again begins to mix.

**9 Troubleshooting**

**The Troubleshooting Table is not intended to replace the detailed instructions in the appropriate sections of these Operating Instructions. Always comply with the safety notes in each section!**

Problem	Cause	Remedy
Electric motor does not start	No mains voltage	Check mains voltage, insert power plug Check fuses in power-distributor box
	Mortar hardened in mixing pipe	Remove and clean mixing pipe
	Motor-protection switch triggered (fig. 17,2)	Press motor-protection switch in again
	Control fuse defective	Replace fine fuse
	Switch cabinet MR/MRS: time relay at "0" (fig. 17,1)	Set time relay to desired running time

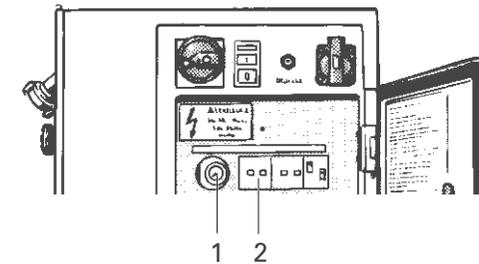


Fig. 17: Switch cabinet MR

- 1 Time relay
- 2 Motor-protection switch

### 8.3 Maintenance of water filters

The filters in the water fitting must be cleaned every 4 to 6 weeks. These filters are located in the water inlet (fig. 16, 3) and in the pressure reducer (fig. 16, 1).

- Remove filters with special key (fig. 16, 2)
- Clean filters under running water
- Blow out the filters with compressed air
- Replace the filters and re-connect them securely

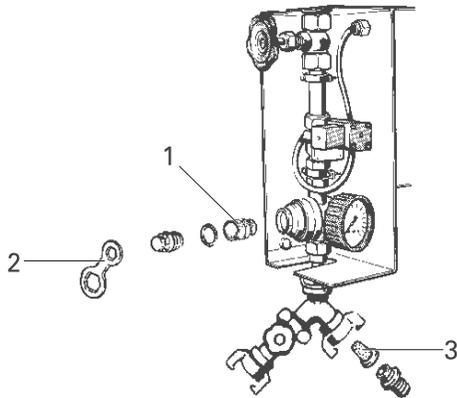


Fig. 16: Filter cleaning

- 1 Filter in pressure reducer
- 2 Special key
- 3 Filter in water inlet

### 2.3 Machine diagram

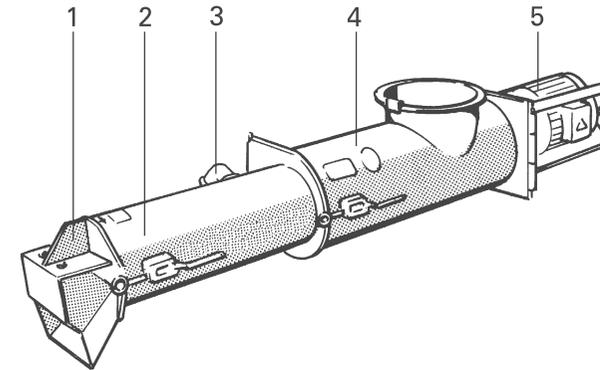


Fig. 1: Continuous-flow mixer

- 1 Bearing cover
- 2 Mixing pipe
- 3 Water connection
- 4 Portioning pipe
- 5 Continuous-flow mixer motor

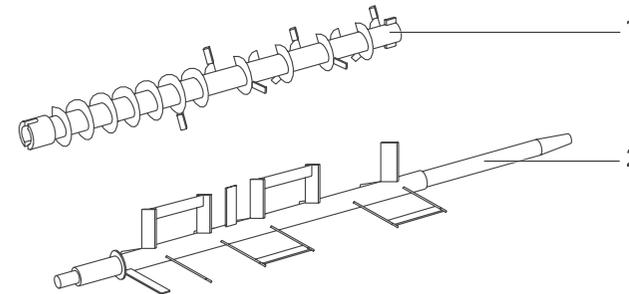


Fig. 2: Continuous-flow mixer shafts

- 1 Portioning shaft
- 2 Mixing shaft

## 2.4 Operating and control elements

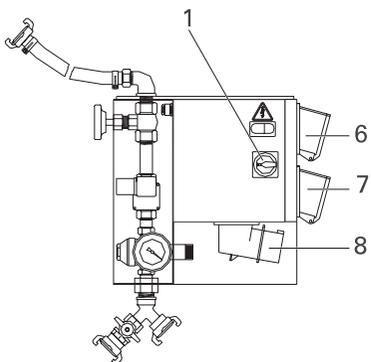


Fig. 3: Switch cabinet E

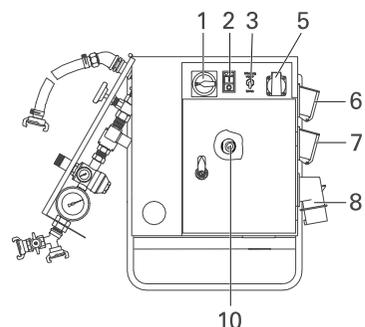


Fig. 4: Switch cabinet MR

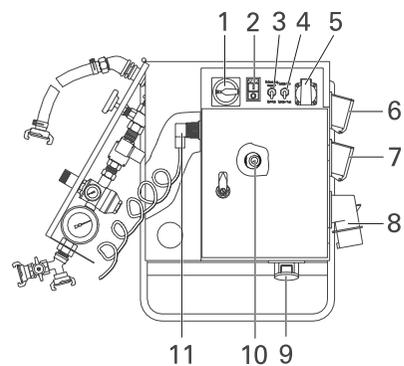


Fig. 5: Switch cabinet MRS

### Item Name no.

Item no.	Name	Switch cabinet		
		E	MR	MRS
1	Main switch	x	x	x
2	Double push button	-	x	x
3	Toggle switch "Run/Clean"	-	x	x
4	Toggle switch "Operation with/without probe"	-	-	x
5	Safety socket	-	x	x
6	Connection "continuous-flow mixer"	x	x	x
7	Connection "vibrator"	x	x	x
8	Power connection	x	x	x
9	Connection "wet-mortar probe"	-	-	x
10	Time relay "mixer running time"	-	x	x
11	Connection "heater band"	-	x	x

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## 8.2 Oil change

The gear motors require no maintenance up to 8000 hours of operation. After this period, the gears must be flushed thoroughly with a suitable flushing oil, cleaned, and the gear oil changed.

**Do not top up with gear oil between oil changes. If the machine is overfilled with oil, it may overheat. Never mix different types of oil. This may cause the oils to decompose and lead to irreparable damage to the gear unit.**

**ATTENTION!**

**When disposing of oil, grease and cleaning agents, always comply with the environmental regulations in force.**



We recommend the following type of oil for the gear motor:

Shell Tivela Oil 82; quantity 400 cc.

If you are unable to obtain the lubricant named above, there is a number of possible alternatives:

ARAL	Degol BG 220
BP	Energol GR-x P220
CALYPSOL	Bisol Oel MSR 114
ESSO	Sparton EP-220
HOUGHTON	Molygear 115
MOBIL	Mobilgear 630
SHELL	Omala 220

## 8 Maintenance



**Before working on the continuous-flow mixer or its control system, switch the machine off and remove the power plug from the socket in the switch cabinet.**

**Use only original m-tec spare parts and accessories.**

### 8.1 Lubrication plan

- Lubricate the grease points every 4 to 6 weeks with a high-pressure grease gun (1 or 2 shots) and bearing grease (fig. 15)
- Fill the rubber packing on the continuous-flow mixer regularly with a grease gun.

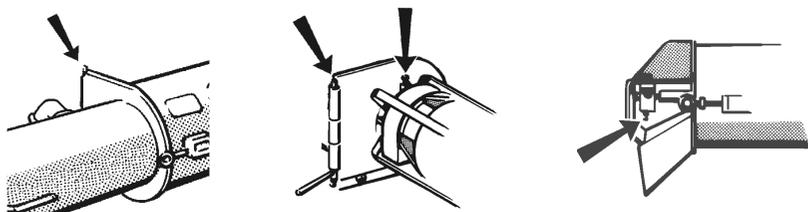


Fig. 15: Securing pin    Motor and securing pin    Bearing cover

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### Main switch

In position "0", the entire unit is switched off. In position "1", the machine is on standby.

### Double push button "On/Off"

This switch can be used to switch the mixer on or off. When the machine is switched on and ready for operation, the white signal lamp on the double push button "On/Off" lights up.

### Time relay "Mixer running time" (MR and MRS versions)

The duration of the mixing operation can be controlled by a time relay. When the set time has expired, the machine switches off automatically. It is however still ready for operation.

### Toggle switch "Operation with/without probe" (MRS version only)

The continuous-flow mixer with MRS switch cabinet can be controlled via a wet-mortar probe. The probe is generally located in the storage trough of an additional pump. When the trough is full, a signal is given to the control system of the continuous-flow mixer to switch off. When the level drops below a certain point, the mixer starts again.

To operate the machine with the wet-mortar probe, set the toggle switch to "with probe". To operate the machine without the probe, set the toggle switch to "without probe".

**Operation with wet-mortar probe: If the machine has been switched on at the double push button "On/OFF" it may be started automatically at any time (even when it is not running) by the probe control system. Indication: the white signal lamp on the double push button "On/Off" lights up.**



**Toggle switch “Operation/Cleaning”**

In normal operating mode, the toggle switch is set to “operation”. The flow of water for mixing with the dry material is controlled by the solenoid valve. If water is required for cleaning, or if a water fitting is being emptied, the toggle switch should be set to “clean”.

**7 Cleaning**

**Before cleaning, switch the continuous-flow mixer off and pull the power plug of the continuous-flow mixer out of the socket in the switch cabinet.**



- Disconnect the water hose from the mixing pipe
- Release the eccentric lock (fig. 14, 1) and remove the bearing cover (fig. 14, 5)
- Pull out the mixer shaft (fig. 14, 4) and open the mixing pipe

**Always keep the adapter between the mixing shaft and the portioning shaft (fig. 14, 3) clean, dry and free of grease. Always ensure that no water can enter the portioning pipe (14, 2)**

**ATTENTION!**

- Clean the bearing cover, mixing pipe and mixing shaft with a water jet and a brush
- Release the eccentric lock on the motor and fold the motor down
- Remove the portioning shaft from the portioning pipe
- Clean the dry area in the portioning pipe. Do not use water.
- Re-assemble the machine in the opposite sequence

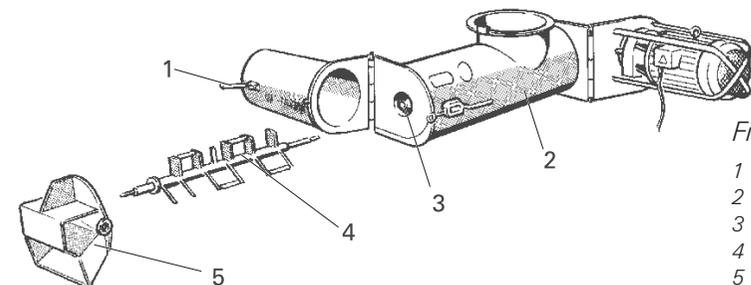


Fig. 14: Cleaning

- 1 Eccentric lock
- 2 Portioning pipe
- 3 Portioning shaft
- 4 Mixer shaft
- 5 Bearing cover

## 6.5 Finishing work

### ATTENTION!

**Do not use thin or runny mortar. Catch it in a bucket and dispose it of.**

- Close the hopper trap and secure it with the cotter pin
- Allow the continuous-flow mixer to run until it is empty
- Switch the continuous-flow mixer off at the double push button "On/Off"
- Set the main switch to "0"
- Turn off water supply



**Dispose of mortar residues correctly.**

## 2.5 Water fitting

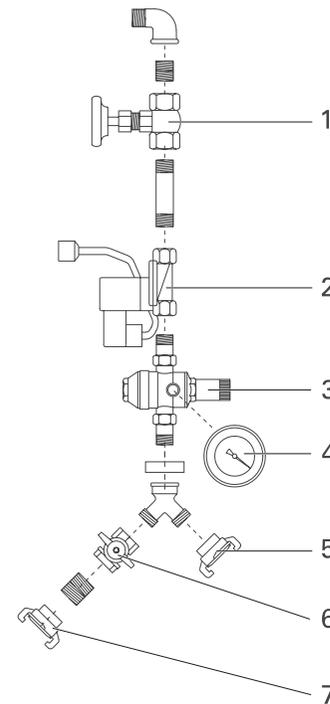


Fig. 6: Water fitting on switch cabinet E

- 1 Fine-control valve 3/4"
- 2 Solenoid valve 3/4"
- 3 Pressure reducer 3/4"
- 4 Pressure gauge 0-10 bar
- 5 GEKA coupling 3/4" inside thread
- 6 Ball valve
- 7 GEKA coupling 3/4" inside thread

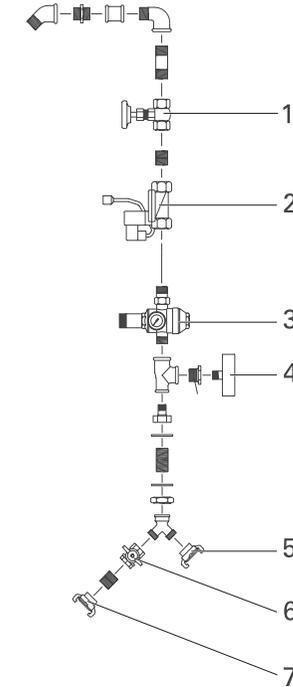


Fig. 7: Water fitting on switch cabinet MR/MRS

- 1 Fine-control valve 3/4"
- 2 Solenoid valve 3/4"
- 3 Pressure reducer 3/4"
- 4 Pressure gauge 0-10 bar
- 5 GEKA coupling 3/4" inside thread
- 6 Ball valve
- 7 GEKA coupling 3/4" inside thread

**The machine requires a constant water pressure of 3 bars.**

**ATTENTION!**

## 2.6 Accessories supplied

Depending on fittings, the continuous-flow mixer is supplied with the following accessories:

- Water hose 3/4" with GEKA coupling complete 2 m
- Screwdriver and phase inverter

The switch cabinets S40/S100/S150 E are supplied with a standard mounting plate for installation on the continuous-flow mixer. Switch cabinet types MR and MRS are supplied with suspension bracket.

Switch cabinet	Continuous-flow mixer		
	D40	D100	D150
S40 E	x	-	-
S40 MR	x	-	-
S40 MRS	x	-	-
S100 E	-	x	-
S100 MR	-	x	-
S100 MRS	-	x	-
S150 E	-	-	x
S150 MRS	-	-	x

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## 6.3 Intervals in work

***Intervals in work should be limited in length. Always keep the setting time of the mortar in mind. Hardened mortar in the mixing tube causes difficulty in starting the motor and may damage the mixer permanently.***

**ATTENTION!**

To prevent the mortar from setting, intervals in work should be no longer than the setting time of the mortar. If the interval in work is longer, the machine must be cleaned (see page 33).

## 6.4 Operation in winter

Under cold conditions, the continuous-flow mixer and the water fittings may be damaged by freezing water.

***For longer intervals in work and after the continuous-flow mixer has been cleaned, ensure that the water fitting is always completely emptied.***

**ATTENTION!**

- Turn off the water supply
- Disconnect the water-supply hoses
- Disconnect the water hose from the mixing pipe
- Open the ball valve
- With switch cabinet type MR or MRS: set toggle switch "Operation/Cleaning" to "Cleaning".
- Allow water to drain completely

Before the next start-up, close the ball valve, or, with switch cabinets MR or MRS, set the toggle switch "Operation/Cleaning" to "Operation".

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## 6.2 Time relay

Models S40/100/150 MR and MRS are fitted with a time relay which allows the running time of the mixer to be set (e.g. until a crane bucket is full)

- Place the empty bucket under the outlet
- Switch the continuous-flow mixer on
- Measure the time taken for the bucket to fill up
- Switch off the continuous-flow mixer and pull out the plug
- Open the switch cabinet S40 MR/MRS and set the time relay (fig. 13, 1) to the time measured.
- Close the switch cabinet
- Re-insert the plug and switch the continuous-flow mixer on.

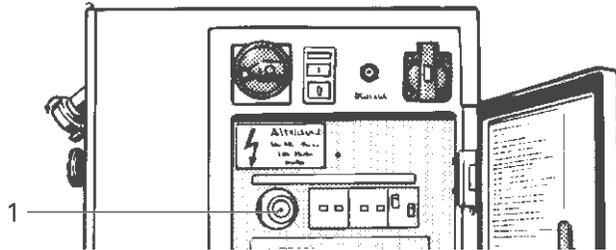


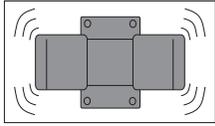
Fig. 13: Time relay (Switch cabinet MR)

## 2.7 Technical data

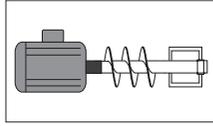
	D40	D100	D150
Mixer type	D40	D100	D150
Mixing capacity	approx. 40 l/min (screw pitch 50)	approx. 100 l/min (screw pitch 50)	approx. 150 l/min (screw-pitch 90)
Drive motor	400 V 50 Hz 3ph 4 kW	400 V 50 Hz 3ph 5.5 kW	400 V 50 Hz 3ph 5.5 kW
Electr. connect.	400 V 50 Hz 3ph	400 V 50 Hz 3ph	400 V 50 Hz 3ph
Installed load	10 A	13 A	13 A
Power lead	5 x 2.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup>
Fuse protection	16 A	16 A	16 A
	via FI circuit breaker (site distributor box)		
Weight	approx. 135 kg	approx. 150 kg	approx. 210 kg
Water connection	Water hose with 3/4" GEKA-coupling (supplied); water infeed pressure min. 3 bar		
Dimensions of cont. flow mixer (LxWxH) [mm <sup>3</sup> ]	2000 x 350 x 350	2300 x 380 x 350	2300 x 380 x 350
Noise level	70 dB (A) noise-pressure level at 1 m distance during operation (free-field measurement)		
Material	only pre-mixed dry mortars for continuous flow mixer		
Dimensions of switch cabinets (LxWxH) [mm <sup>3</sup> ]	S40/S100/S150 E 320 x 320 x 150	S40/S100/S150 MR/MRS 420 x 460 x 150	

## 2.8 Markings on the machine

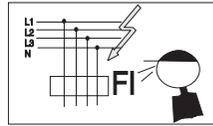
Switch cabinet E, MR and MRS:



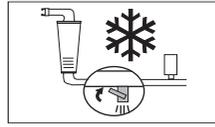
Connection "vibrator"



Mixer / operation



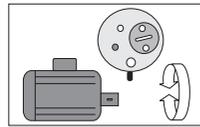
Operation only  
with FI circuit breaker



Drain water off  
in cold weather!

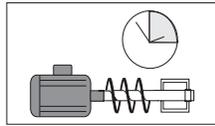


Danger! Keep hands  
well away from running  
machine!

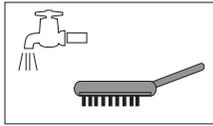


Phase inverter

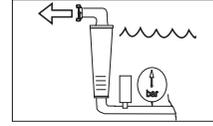
Switch cabinet MR and MRS:



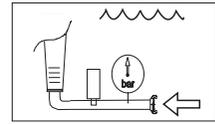
Mixer running time



Switch position "Cleaning"

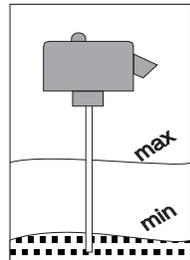


Water outlet



Water inlet

Switch cabinet MRS:



Connection  
wet-mortar probe

## 6 Operation

**When working with the machine, the applicable national and international safety regulations and legislation must always be observed, even if such regulations and legislation are not explicitly mentioned in these instructions.**



**Before every shift, the machine must be carefully inspected for obvious signs of damage, in particular to electric cables, plugs and couplings. Any defects detected must be repaired before beginning work.**

**The machine should be operated only when installed under a hopper.**

**When the machine is plugged into the power supply, never put your hands into the machine or the mixing pipe as serious injury may result.**

### 6.1 Filling with material from the hopper

- Remove the cotter pin from the closing trap on the hopper
- Open the closing trap
- Move the trap back and forward with the lever until material can drop through
- Fix the trap in the open position with the cotter pin

### 5.5 Operation with wet-mortar probe (switch cabinet MRS only)



*If the machine has been switched on at the double push button "On/Off" it may be started automatically at any time (even when it is not running) by the probe control system. Indication: the white signal lamp on the double push button "On/Off" lights up.*

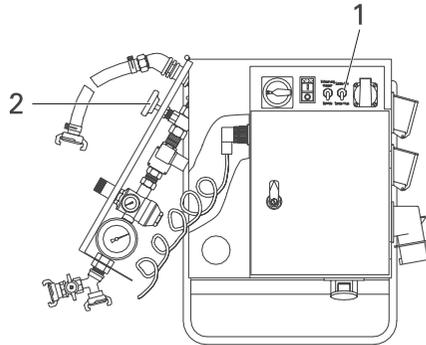


Fig. 12: Switch cabinet MRS

- 1 Toggle switch "Operation with/without probe"  
2 Fine-control valve

The continuous-flow mixer can be controlled via a wet-mortar probe. The probe is generally located in the storage trough of a pump. When the trough is full, a signal is given to the control system of the continuous-flow mixer to switch off. When the level drops below a certain point, the mixer starts again.

- Connect the wet-mortar probe
- Set the toggle switch (fig. 12, 1) to "with probe"

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## 3 Transport and set-up

### 3.1 Transport

*The hoppers are transported by truck. They must be secured to prevent them from slipping or moving when the truck is in motion.*



*Switch cabinets attached to the hopper by suspension bracket must be removed before transport.*

- Disconnect the cable between the continuous-flow mixer and the switch cabinet
- Keep the switch cabinet safe for transport

If the continuous-flow mixer is attached correctly to the hopper by means of a flange, it can be kept on the hopper during transport.

### 3.2 Setting up the hopper

*The hopper must be set up in a steady position and secured against accidental movement. The hopper must be positioned in an area where no objects can fall onto it from above. If this is not possible, the hopper and the area around it must be protected by a roof. Always follow the operating instructions and regulations for the hopper.*



## 4 Assembly

### 4.1 Mounting the continuous-flow mixer on the hopper



***The continuous-flow mixer is designed only for mounting under the hopper.***

The continuous-flow mixer is connected directly to the closing flap of the hopper by means of a flange.

- Connect the continuous-flow mixer to the hopper closing flap with eight bolts.

### 4.2 Mounting the mixing pipe

If the mixing pipe is not yet installed:

- Insert mixing shaft (fig. 8, 2) into portioning shaft (fig. 8, 1)
- Push mixing pipe over it, then centre and attach it

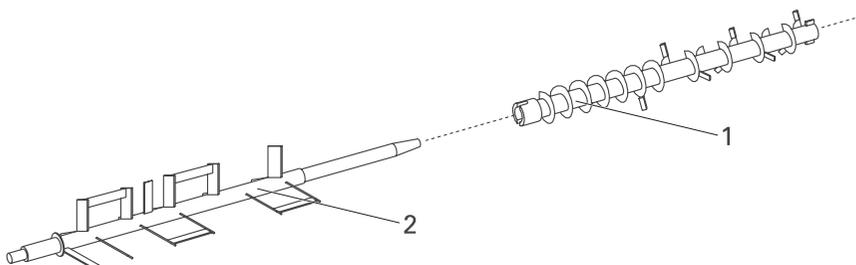


Fig. 8: Mixing and portioning shaft

## 5.4 Motor-rotation direction

***Check the direction of rotation of the motor!***

**ATTENTION!**

- Connect the external water hose to the water fitting using the GEKA coupling (fig. 10, 5). Turn on the water supply.
- Set main switch to "1"
- Switch the continuous-flow mixer on at the double push button "On/Off"
- Check the direction of rotation of the motor by the fan rotation

***The direction of rotation of the fan must correspond to the direction of the arrow on the fan cover. If the direction is incorrect, switch the machine off immediately at the double push button "On/Off" and the main switch.***

**ATTENTION!**

- Pull out the power plug
- Using the screwdriver, press the polarity inverter on the input plug in and turn it by 180°. The polarity inverter must click into position after turning.
- Insert the power plug and start the machine up

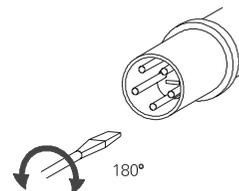


Fig. 11: Polarity inverter in input plug

### 5.3 Setting the water flow

- Place a bucket under the outlet
- Switch the continuous-flow mixer on at the main switch and the double push button "On/Off"; the motor starts up and the solenoid valve on the water fitting opens. The water runs into the mixing pipe where it is mixed with the dry material.
- Check the consistency of the mortar emerging from the machine
- If necessary, adjust the flow of water with the fine-control valve (fig. 10, 2)
- With products where the water requirement is not known, the machine must be started with the fine control valve opened to its full extent. During operation, turn the fine control valve back until the correct consistency is achieved.



***Dispose of the mortar in the bucket correctly as building rubble!***

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### 4.3 Mounting the switch cabinets S40/S100/S150 MR/MRS

- Hook the switch cabinet S40/S100/S150 MR/MRS to the hopper cross bar with the suspension bracket

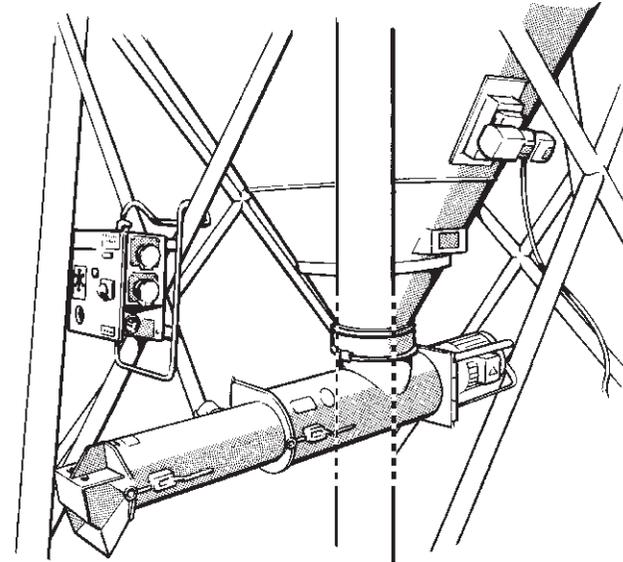


Fig. 9: Switch cabinet on hopper cross bar

## 5 Start-up



**Before every start-up, the continuous-flow mixer must be checked for visible signs of damage, especially to electric cables and water hoses.**

**When the machine is plugged in to the power supply, never put your hands into the machine or the mixing pipe as serious injury may result.**

**The machine should be operated only when installed under a hopper.**

### 5.1 Electric connections



**The machine must be connected to a site distributor box with FI automatic circuit breaker. Use a 16 A 5-pole 6 h plug. The connecting cable must have a cross section of 5 x 2.5 mm<sup>2</sup> with a 16 A fuse.**

- Connect the cable from the drive motor to the switch cabinet
- Connect the cable from the vibrator (on hopper) to the switch cabinet
- With switch cabinet MRS: if required, connect wet-mortar probe (type NMS) to switch cabinet
- Using a CEE plug, connect power cable of switch cabinet to the site distributor box

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### 5.2 Water connection

**To ensure the uniform consistency of the mortar, the infeed water pressure must be at least 3 bars.**

**ATTENTION!**

- Check to ensure that the water-inlet filter is in place and that it is clean
- Before the water hose is connected to the machine, run water through it to ensure there are no leaks
- Connect the short water hose (2 m, fig. 10, 1) from the water fitting on the switch cabinet to the GEKA coupling on the continuous-flow mixer.
- Connect the external water hose to the GEKA coupling of the water inlet (fig. 10,5)
- Turn on the water supply
- The second connection (fig. 10,4) can be used for a separate water hose (e.g. for cleaning)

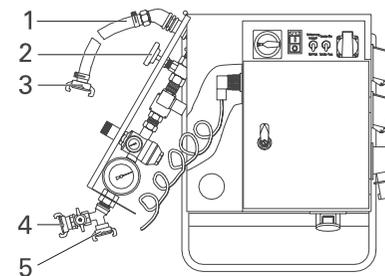


Fig. 10: Water fitting

- 1 Short hose
- 2 Fine control valve
- 3 GEKA coupling for connection to continuous-flow mixer
- 4 Additional water outlet
- 5 External water connection

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