EN

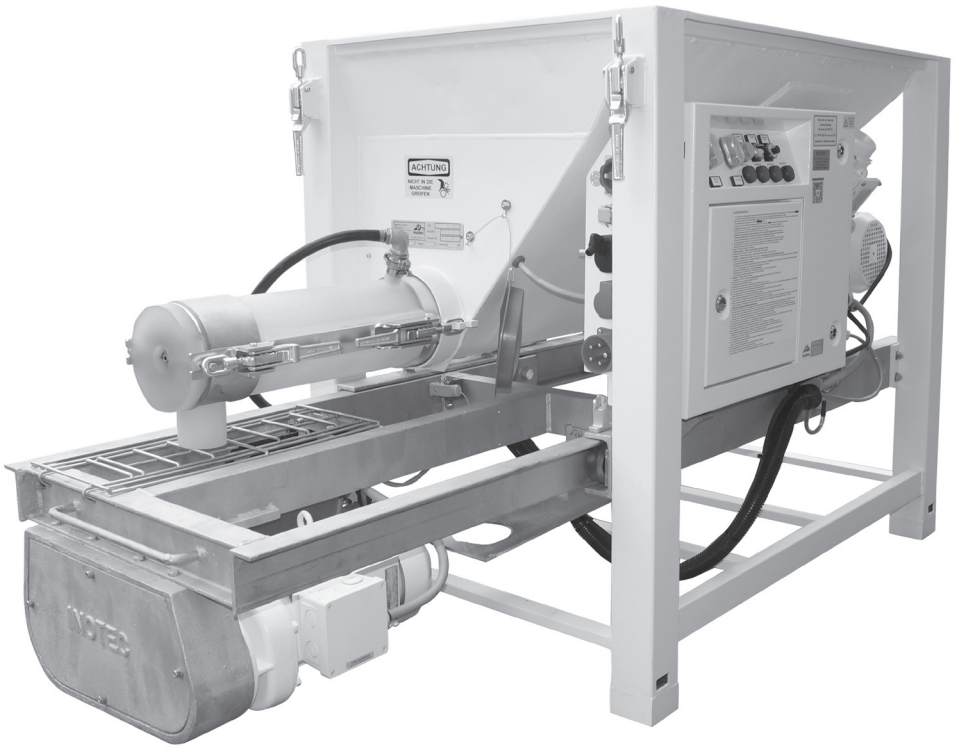
Original Operating Manual

Small Silo inoCOMB Cabrio

Read this entire original operating manual before starting work.

3D Video inoCOMB Cabrio

Originalbetriebsanleitung
Original operation manual



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Thank you for trusting INOTEC. By purchasing you have opted for a quality product.

If you have any suggestions or any issues, we would be delighted to hear your suggestions for improvement and
your feedback. Speak to the sales representative
assigned to you or, in urgent cases, contact us directly.

We work constantly to further develop our products and reserve the right to make changes for technical reasons relating to building legislation.

Yours faithfully
INOTEC GmbH

Legal notice

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Inhalt

1 General information

1.1 Information about this manual

- This manual helps to ensure safe and efficient use of the machine.
- Operating personnel must have carefully read through and understood this manual before starting any work.
- Compliance with all the specified safety instructions is a basic prerequisite for working safely.
- This manual is a component of the machine and must be stored within direct proximity of the machine, accessible to operating personnel at all times.
- In addition to the notices in these instructions, the local accident prevention guidelines and national occupational health regulations also apply.

1.2 Symbol explanation

Hazard notices feature symbols to make them easier to identify. These indicate the severity of the hazard.

- You must observe this information.

DANGER indicates an immediate hazard. Death or serious injuries may result from non-compliance.

WARNING indicates a potentially dangerous situation. Death or serious injuries may result from a failure to avoid these situations.

CAUTION indicates a potentially dangerous situation. Minor or slight injuries may result from failure to avoid these situations or damage to the machine or something in its vicinity.

NOTICE draws your attention to useful tips for effectively handling the machine.

1.3 Information about this manual

1.3.1 Purpose of this operating manual

The operating manual is used to provide information to the operating manager, assembly fitters and machine operators on the construction site. It contains important instructions for safe use, optimum results and a long service life.

Risk of incorrect operation.

Failure to observe the operating manual could put the operator's life and health at risk and damage the machine.

- Read this operating manual carefully before passing it on to your assembly fitters or operators.
- Please ensure that assembly fitters and operators read this operating manual carefully before they start installing and commissioning the machine.
- Always keep the operating manual to hand and in a legible condition.

1.3.2 Disclaimer

All technical information, data and instructions for use contained in this operating manual reflect the state of the art at the time of printing and are based on our experience thus far and the best of our knowledge.

The manufacturer cannot be held liable for any damages as a result of:

- Failure to comply with this manual
- Improper use
- Assignment of non-trained personnel
- Unauthorised alterations
- Technical changes
- Use of non-approved spare parts

1.3.3 Warranty

Statutory warranty periods of 12 months from the date of purchase/the date of invoice of the industrial end customer apply to our machinery.

1.3.3.1 Exercising claims

In the event of a warranty claim, send the entire machine, along with the invoice, to our headquarters in Waldshut-Tiengen.

Contact our free INOTEC service hotline beforehand on +49 7741 6805 777.

1.3.3.2 Warranty claims

Claims apply only where material or manufacturing faults exist and where machinery has been used properly. Wear parts are not covered by the warranty. All claims shall become void if third-party parts are installed, where the machinery has been improperly used or stored and in the event of obvious non-compliance with the operating manual. In this connection, we refer you to our General Terms of Business.

1.3.4 Carrying out repairs

Repairs may only be carried out by employees at our INOTEC service centres.

2 Safety

2.1 Intended use

You may only operate this machine if the following conditions are met:

- The small silo inoCOMB Cabrio is suitable for mixing, conveying and spraying or placing all factory premixed and machine-compatible dry mortars, screed materials and floor levelling compounds. The machine can be fed with powdered material from sacks, from one-way containers (with the inoFLEX Duo dry conveying unit), from big bags (with an attachment bonnet or with the big bag box Mono).
- In the mixing phase, a paste-like product is created by adding water.
- The material is pumped to the processing location by means of mortar hoses. There, it is applied to walls and ceilings with appropriate spray/adhesive guns or a reprofiling sprayer or poured directly onto the floor.
- Only use the machine within its limits of application and according to the technical data.
- Pay particular attention to the safety and warning notices outlined in this original operating manual.

Failure to use the inoCOMB Cabrio, the user is threatened with danger to life and limb as well as impairment of the inoCOMB Cabrio or other assets.

Danger due to misuse!

Misuse of the inoCOMB Cabrio can lead to dangerous situations.

- Never use the inoCOMB Cabrio small silo to produce other products such as food.
- Never use the small silo inoCOMB Cabrio outside the values specified in the "Technical data".

2.2 General risk sources

DANGER **Electrical voltage.**

Danger of death due to electric shock.

- Work on the electronic control system may only be performed by a qualified electrician.
- Switch off the machine and pull out the mains plug.
- Secure the machine against unexpectedly being switched back on.
- Connect the mixing pump only to regulation construction site power distribution points with type B FI circuit breakers (30 mA).
- The connection must be fused with 32 A.
- The cross-section of the supply cable is at least 4.0 mm^2 at 400 V 3 PH
- Connect the supply cable to the feed-in connector of the switching cabinet.
- All operating equipment on the construction site must generally be connected according to BGI/GUV-I 608.

DANGER **Rotating mixing, metering and pump shafts. Danger of death due to being pulled into the machine and crushed.**

When the motors are running, the metering shaft rotates in the material hopper, the mixing shaft in the mixing tube and the pump shaft in the pump hopper.

- Do not reach into the rotating mixing or pump shaft.
- Do not bring any objects into the rotating mixing or pump shaft.

1. Before working on the mixing or pump shaft, disconnect the external power supply (main switch off). Only loosen the screw of the protective grids when the machine is switched off.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on.

DANGER **Pressurised conveyor hoses.**

Risk of injury and risk of property damage due to escaping and/or flying material, and/or bursting conveyor hoses.

- Before disconnecting the conveyor hoses, make sure that the hoses are depressurised. To do so, check the pressure indicator on the mortar pressure gauge. The pressure indicator must display 0 bar!
- Before opening the hose coupling, let the small silo inoCOMB Cabrio run in reverse to release any pressure! To do this, press the "Reverse pump" pushbutton until the pressure display on the mortar pressure gauge shows 0 bar.

Pushbutton "Reverse pump"

- Use only conveyor hoses which are permissible with an operating pressure of 40 bar and a burst pressure of 120 bar, and are in a technically perfect condition (e.g. are without any cracks or other external damage!).

WARNING **Water jet.**

Risk of injury and risk of property damage due to escaping water.

1. Interrupt the external water supply by closing the water valve.
2. In order to release the pressure (approx. 2 bar), open the water drainage valve on the water measuring system under the pressure reducer.
3. Remove the hose from the external water supply.
4. Do not point the water jet at other people or yourself.

2.2.1 Notices in the operating manual

CAUTION **Safety notices in the operating manual alert the operating personnel to any immediate danger. Please observe all the technical and hazard notices in this operating manual.**

2.2.2 Performing checks before starting work

WARNING **Defects or damage can put the safety of operating personnel at risk and impair the functionality of the machine.**

- Before commencing work, check the machine for any obvious external damage or defects.
- Do not commission the machine if you notice any damage to or defects in the machine or to the conveyor hoses.
- Ensure that the damage and/or defects are rectified.

2.2.3 Conversions and changes

DANGER **Conversions or changes can put the safety of operating staff at risk and impair the functionality of the machine.**

- Do not make any changes, additions or conversions to the machine without first consulting INOTEC GmbH and obtaining its written approval. Otherwise, the operating license will become void.

2.2.4 Cleaning and maintaining the machine

WARNING **Cleaning and maintenance work can put the safety of operating staff at risk and impair the functionality of the machine.**

1. Switch off the machine and pull out the mains plug.
2. Secure the machine against unexpectedly being switched back on.
3. Before cleaning with the water jet, cover all the openings that water must not penetrate into for safety and functional reasons.
4. After cleaning, remove all the covers which were attached to protect against the water.

2.2.5 Changing the location of the machine

The small silo inoCOMB Cabrio can be moved on the construction site with a pallet truck or a forklift.

CAUTION **Changing location can put the safety of operating staff at risk and impair the functionality of the machine.**

1. Switch off the machine and pull out the mains plug.
2. Move the machine to a new location on the building site.
3. Always install the machine in such a way that it is level and stable.
4. Secure the machine against undesirable movements.
5. Reconnect the machine to the external power supply before restarting the machine.

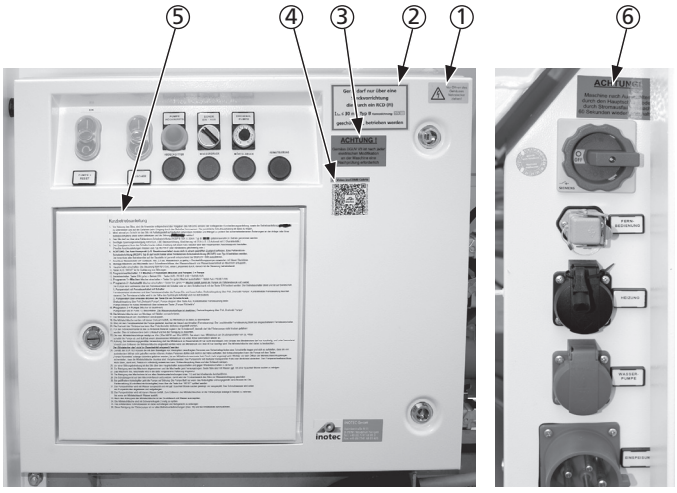
2.3 Notices on the machine

DANGER **Safety notices on the machine make operating staff aware of imminent danger.**

The following warning labels are attached to the small silo inoCOMB Cabrio:

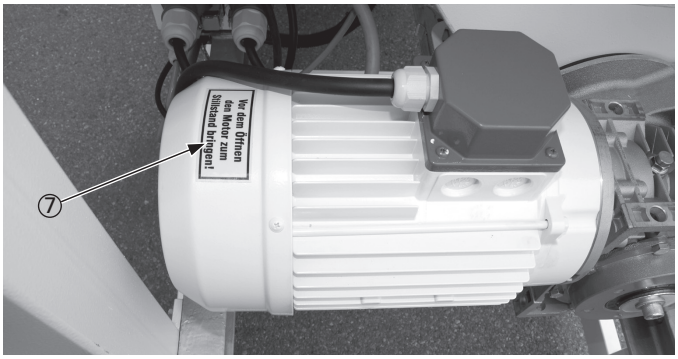
Instructions on the switching cabinet:

- Pull out the mains plug before opening the housing! (1).
- The unit may only be operated via a plug-in device that is protected by an RCD (FI) $I\Delta\eta \leq 30$ mA type B (2)
- WARNING! According to DGUV V3, a retest is required after every electrical modification to the machine (3).
- This QR code will redirect you to the original operating instructions of the small silo and to a 3D animation of how it works (4).
- Short operating instructions (5)
- WARNING! Do not switch the machine on again for 60 seconds after it has been switched off by the main switch or due to a power failure (notice on the right, on the side of the switching cabinet) (6).



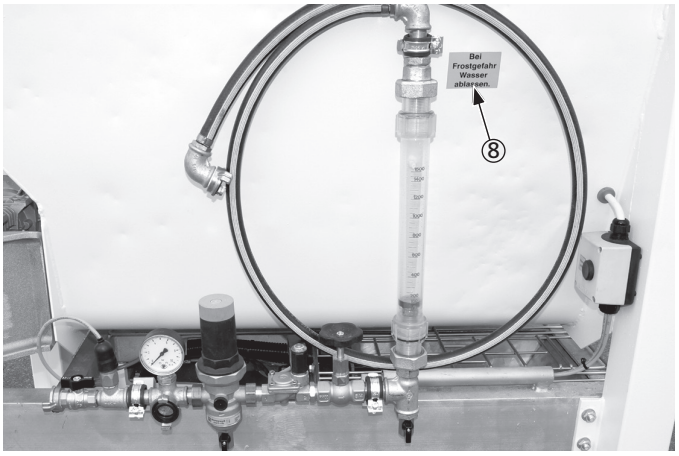
Note on the fold-away motor of the mixing pump:

- Before opening, bring the engine to a standstill! (7).



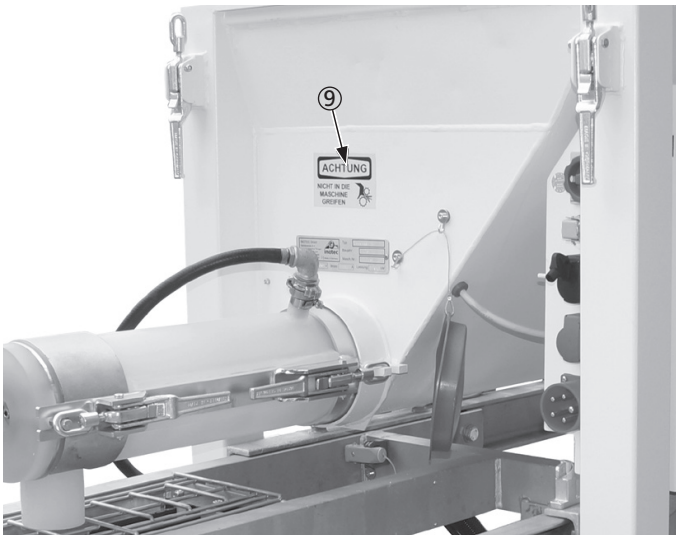
Note on the material hopper (8):

- If there is a risk of frost, drain the water (see water fitting).



Note on the material hopper above the type plate or mixing tube (9):

- ATTENTION: Do not reach into the machine.



Observe all safety and danger notices attached to the machine. Always keep the safety and hazard information in a legible condition.

2.4 Personnel qualification

INOTEC offers training courses on the operation of the small silo inoCOMB Cabrio. Use INOTEC service for the initial commissioning of the machine; this also serves as an opportunity to provide operators with training on how to operate the mixer.

In case of unqualified operation of the small silo inoCOMB Cabrio, there is a risk of danger to life and health of the operating personnel as well as property damage to the inoCOMB Cabrio or other assets.

2.5 Responsibility of the operator

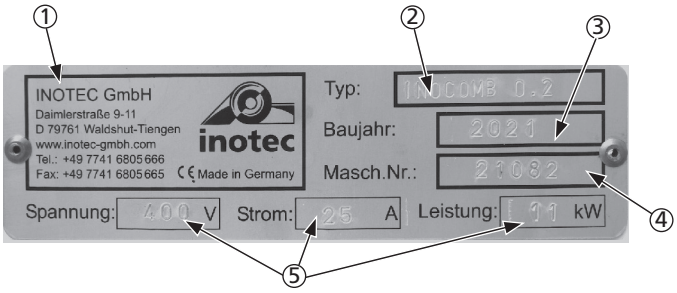
- Only use trained or instructed personnel to operate the inoCOMB Cabrio small solos.
- Define employees' responsibilities for operating, setting up, maintaining and servicing the machine clearly.
- Only task untrained staff or individuals who have not received any instruction with operating the machine when there is a trained or instructed specialist available to supervise them.
- Only have work on the electrical control system carried out by a qualified electrician.
- When using a sprayer, never point it at people or at objects in danger.

2.6 Personal protective equipment (PPE)

PPE – particularly gloves, safety boots, a safety helmet and safety goggles and respiratory protection – must be used. Even though the small silo inoCOMB Cabrio does not cause increased noise exposure, we recommend the use of hearing protection on the construction site.

3 Technical data

3.1 Rating plate



Item	Component	Value
1	Manufacturer, address and contact details, CE marking	-
2	Name and type of machine	-
3	Machine's year of construction	-
4	Machine number	-
5	**Technical data** - Voltage - Current - Mixer motor power - Pump motor power	 400 V 25 A 4.0 kW 6.3 kW

You must always state the machine number if you would like to order spare parts, have any queries or would like to make a complaint. You will find this information on the rating plate or on the delivery note.

3.2 Electric control system, pump output, particle size, weight, dimensions

Mains voltage	400 V, 50 Hz
Mains supply line (CEE plug)	32 A (to be supplied by customer)
Fuse	min. 25 A
Delivery rate*	2 to max. approx. 100 l/min
Delivery range*	up to 80 m
Delivery height*	up to 40 m
to be processed	max. 8 mm
Weight (empty)	approx. 420 kg
Dimensions:	
Length	1,200 mm
Width	800 mm
Height	1,300 mm

* Material-dependent and depending on the consistency of the material – observe the material manufacturer's instructions.

3.3 Mortar pressure gauge

Automatic shutdown	40 bar

3.4 Water measuring system

Pressure being too low	min. 3 bar at 1,500 l/h
Pressure reducer ex-works setting	2.5 bar
Solenoid valve	24 V
Supply line	¾ inch water pipe (to be supplied by customer)

3.5 Material container

Filling quantity material container	approx. 200 l
Filling quantity with attachment bonnet	approx. 1,000 l

3.6 Mixer motor

Power/speed motor 1 Power/speed motor 2	4.0 kW, 280 rpm 4.0 kW, 373 rpm
Installation position	Motor horizontal
Electrical data	f = 50 Hz, I = 8.6 A, U = 400 V, IP 55
Insulation class	F, ED = S1
Colour	White

3.7 Pump motor

Power/speed	6.5 kW, 297 rpm-1
Installation position	Motor horizontal
Electrical data	f = 100 Hz, I = 14 A, U = 400 V, IP 55
Insulation class	F, ED = S1
Colour	White

3.8 Metering shaft

Worm wing maximum height:	20 mm
Minimum height of augur blades (wear limit)	13 mm

3.9 Mixing shaft

Maximum height of mixer blades	57 mm
Minimum height of mixer blades (wear limit)	53 mm

3.10 Pump shaft

Maximum height of augur blades	38 mm
Minimum height of augur blades (wear limit)	30 mm

3.11 Rotor/Stator

Depending on the set selected or area of application	Set "D": D7-2.5S Set "Ü1: 1R6 Set "Ü2": 2R6 Set "RS": R7 - 1.5 with clamping strip

3.12 Noise emission

Sound power level LWA	78 dB (A)

3.13 Operating conditions

Temperature range	2 - 45 °C
Relative humidity, maximum	80 %

4 Assembly and function

4.1 Scope of delivery inoCOMB Cabrio Item no. 10042612

Small silo consisting of:
- Frame
- Material container
- Switching cabinet
- Vibrating unit

Mixing unit consisting of:
- Gear motor 373 rpm
- Water fitting
- PU mixing tube inoPower Mix "S" with wide material outlet

Pump unit consisting of:
- Extendable feed pump
- Stainless steel pump housing
- Gear motor frequency controlled
- Toolbox

Set "D" Cabrio
for spray applications (22 l / 40 bar)
Item no. 10043990*

Set "Ü1" Cabrio
for industrial screeds (100 l / 15 bar)
Item no. 10043988*

Set "Ü2" Cabrio
for floor levelling compounds (100 l / 30 bar)
Item no. 10043989*

Set "RS" Cabrio
for coarse-grained material (50 l / 15 bar)
Item no. 10043991*

* For scope of delivery, see accessories

4.2 Functionality

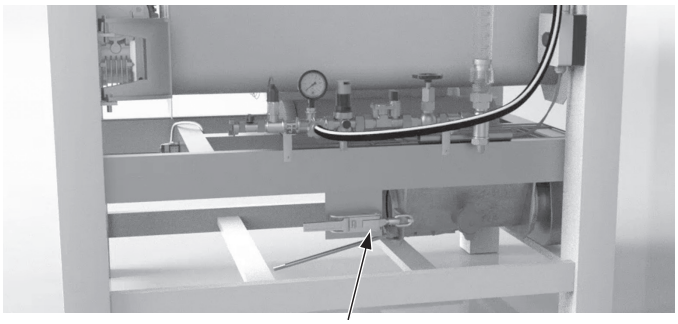
The small silo inoCOMB Cabrio is used for mixing and conveying pumpable (mineral or organic products) materials up to approx. 8 mm grain size. Dry mortar, screed material or floor levelling compounds pre-mixed by the material manufacturer can be used. The material hopper of the small silo can optionally be filled with bagged material, with one-way containers or with big bags. During operation, the dry material is conveyed from the material hopper into the mixing pipe via the metering shaft. In the mixing tube, the dry material – with the addition of water – is mixed with the mixing shaft to form a homogeneous, pasty or liquid product. At the outer end of the mixing tube, the mixed material falls directly into the pump hopper. In the pump hopper, the material is transported to the pump unit (rotor/stator) via the pump shaft. The material is pumped from there via the material hoses to the processing location. There, it is applied to walls and ceilings with appropriate spray/adhesive guns or a reprofiling sprayer or poured directly onto the floor.

NOTE

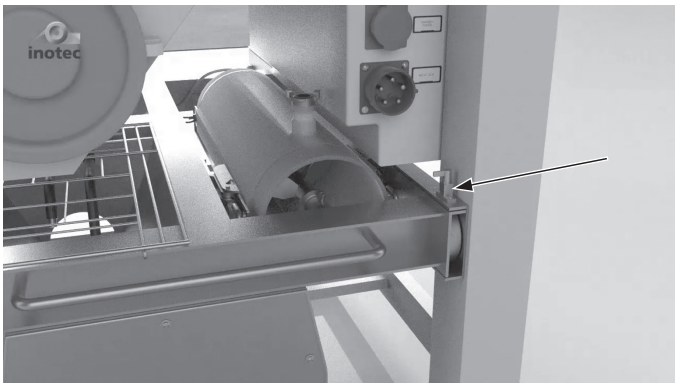
Note the optimum assembly sequence. The small silo is delivered from the factory with an inserted pump hopper.

4.3 Sequence of assembly

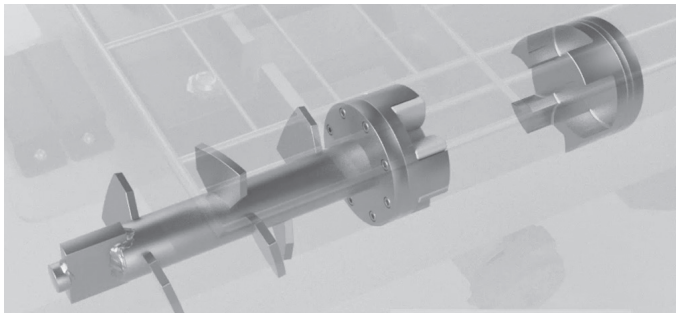
1. Open the eccentric lock on the base frame below the water fitting.



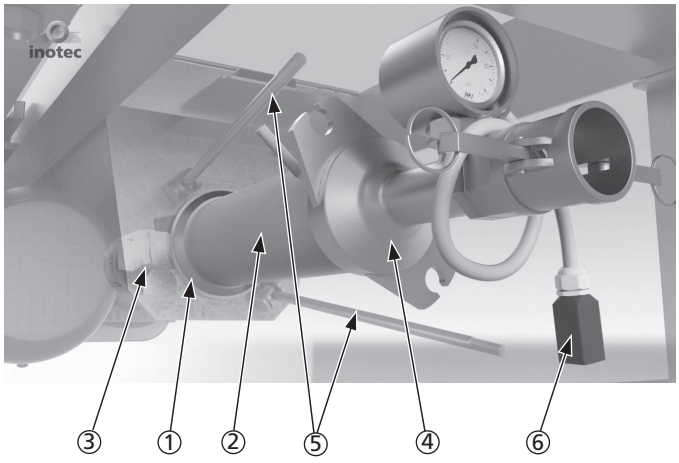
2. Unlock the fixing bolt that secures the extendable pump hopper and pull out the pump hopper.



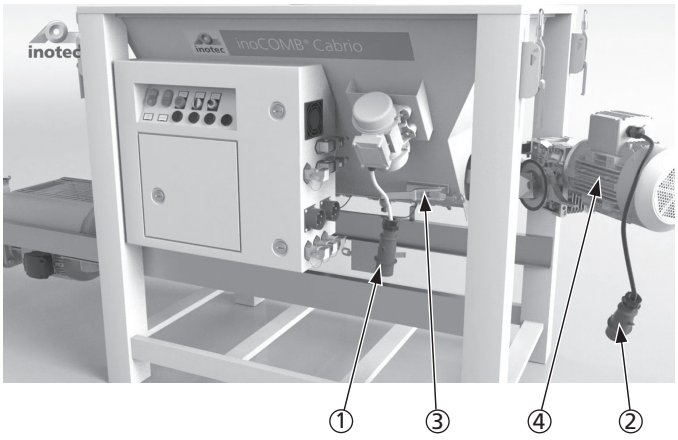
3. Push the pump shaft into the shaft in the lower area of the pump hopper and insert it into the Rotex coupling of the drive shaft.



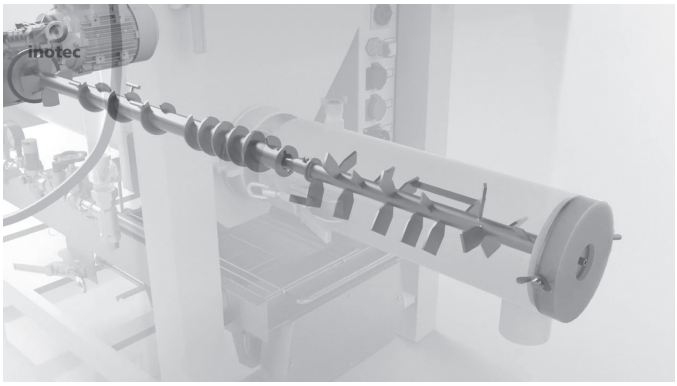
4. Insert the suction flange into the opening provided on the pump hopper (1). Place the pump unit (rotor/stator) (2) on the suction flange and connect the pump unit to the pump shaft (3). Then fit the assembly (4) (pressure flange with mortar pressure manometer and the hose coupling) to the pump unit. Fix the two tie rods (5) to the pressure flange with the corresponding screws. Connect the plug of the mortar pressure gauge (6) to the plug connection attached to the base frame.



5. Unplug the motor (2) from the socket on the side of the switching cabinet. Unlock the eccentric lock (3) that connects the motor to the material hopper and fold the motor away to the side (4).

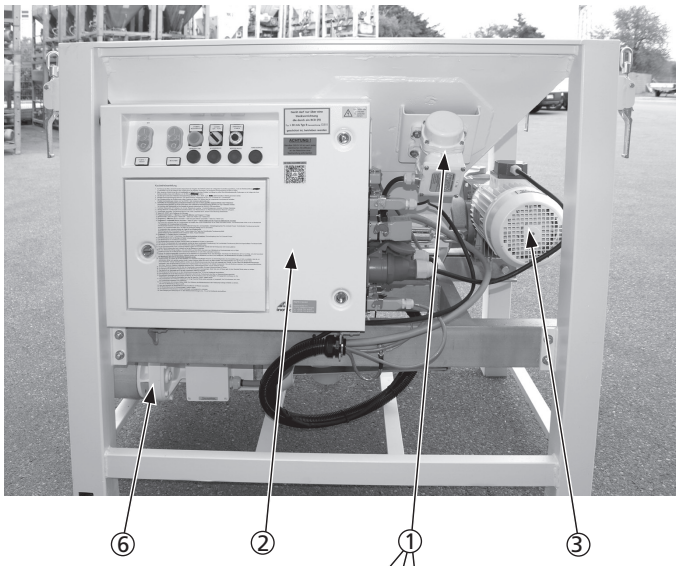


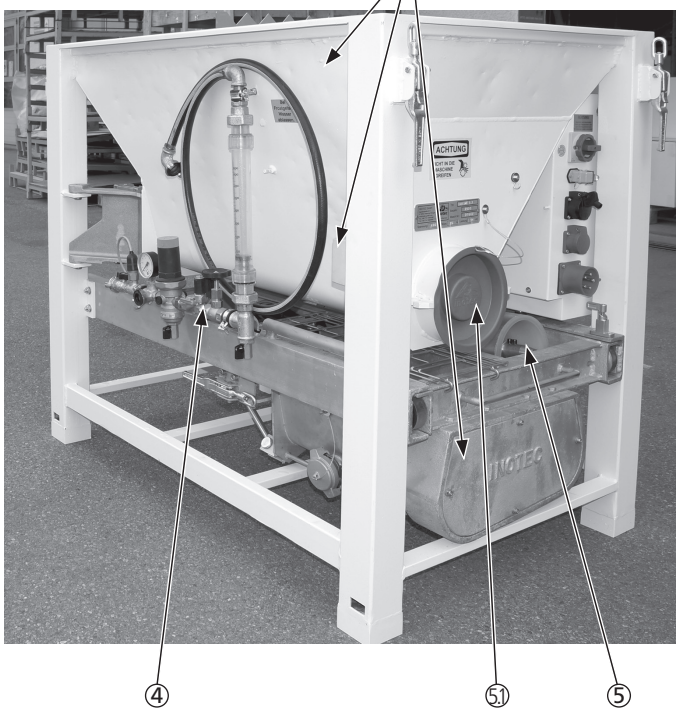
6. Push the metering shaft into the round opening in the lower area of the material hopper.
7. Fold the motor back again and make sure that the metering shaft is connected to the motor via the motor claw.
8. Lock the eccentric lock that connects the motor to the material hopper.
9. Insert the plug of the vibrator (1) into the socket provided and the plug of the motor (2) into the socket provided on the side of the switching cabinet.
10. Remove the green protective cap from the material hopper and secure the mixing tube to the material hopper with the two eccentric locks. Make sure that the mixing shaft is properly connected to the metering shaft.



This sectional view shows the connection from the motor (left) to the metering shaft and from the metering shaft to the mixing shaft.

4.4 Components





4.4.1 Description of the components

Item	Component
1	Frame rack with pull-out frame for pump hopper, material hopper, water supply button and vibrator
2	Switching cabinet
3	Drive unit for the mixer
4	Water measuring system
5	Mixing tube (here in transport position before assembly)
5.1	Mixing tube intake
6	Drive unit for the feed pump, incl. chain gear box and pump hopper

4.4.1.1 Frame with pull-out frame for pump hopper, material hopper, water supply button and vibrator

The material hopper, the switching cabinet, the drive unit for the mixer, the pull-out frame for the pump hopper incl. the drive unit for the pump, the water measuring system and the water supply button, the vibrator and the mixing pipe are attached to the frame.

4.4.1.2 Switching cabinet

The switching cabinet is firmly connected to the frame of the machine. All the necessary connections and controls for operating the machine are located on the switching cabinet.

Connect the feed plug on the switching cabinet to the external power supply (400 V / 50 Hz). The cross-section of the supply cable is at least 4.0 mm² at 400 V 3 PH! The small silo inoCOMB Cabrio may only be operated with a permissible RCD type B residual current circuit breaker (30 mA).

Switching cabinet, view from the front

4.4.1.3 Drive unit for the mixer

The mixer motor is firmly connected to the motor plate. For cleaning purposes or to replace the metering shaft in the material hopper, the unit can be folded away to the side. The electrical connection plug of the motor is plugged into the side of the switching cabinet.

4.4.1.4 Water measuring system

The water measuring system is firmly connected to the frame of the machine. The connection for the external water supply line (min. 3/4") is located on the water measuring unit. The water supply button is also attached to the frame. The water flow button and the needle valve are used to make a rough adjustment of the water supply on the water flow meter.

4.4.1.5 Mixing tube inoPOWER Mix with mixing shaft and mixing tube cover

During transport, the mixing tube is dismantled and placed in the pump hopper. This can be pushed under the material hopper for transport. The opening for the mixing tube in the material hopper is closed with a green cover. For operation, the green cover is removed and the mixing tube is attached to the mixing tube holder with two eccentric locks. The mixing shaft is pushed into the mixing tube together with the mixing tube cover and is also fastened to the mixing tube frame with two eccentric locks.

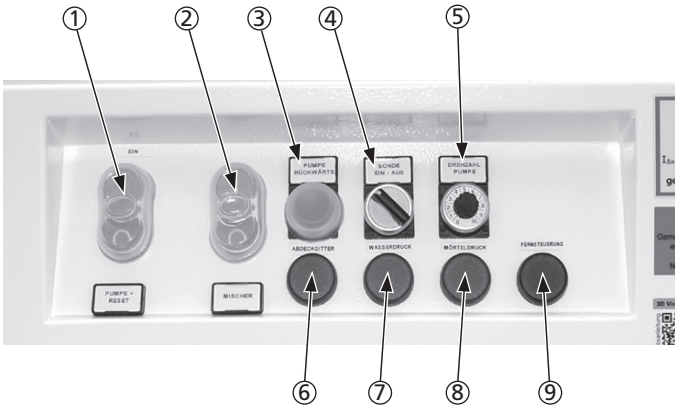
NOTE **Make sure that the mixing shaft is connected to the metering shaft.**

4.4.1.6 Drive unit for the feed pump, incl. chain gear box and pump hopper

The pump motor is firmly connected to the chain gear box and the pump hopper. The pump hopper contains the pump shaft, which is connected to the pump unit (rotor/stator). A level probe is also mounted in the pump hopper to monitor the level of the material in the pump hopper.

4.5 Displays and controls

4.5.1 Switching cabinet



Switching cabinet, view from the front

Description of the displays, controls and connections

Item	Component
1	Pump on/off switch and reset
2	Mixer on/off switch
3	Reverse pump
4	Probe On/Off
5	Pump rotation speed
6	Illuminated button Fault Cover grille Pump hopper
7	Illuminated button Water pressure fault
8	Illuminated button Mortar pressure fault
9	Illuminated pushbutton Remote control

4.5.1.1 Pump on/off switch and reset

This double pushbutton switches the pump on (I) and off (0). By pressing the pushbutton on the switching cabinet or by pressing the remote control switch, the pump switches on and the button lights up.

NOTE **Functionality with remote control cable**

- Remove the cover of the remote control socket for the remote control cable and plug in the remote control cable.
- Connect the remote control cable to the material hose and the air hose of the compressor by means of adhesive tape or cable ties.

NOTE **Working with and without remote control.**

- When the remote control cable is plugged into the switching cabinet, the machine is switched on and off via the green push button at the end of the remote control cable.

4.5.1.2 Mixer on/off switch

This double pushbutton switches the mixer on (I) and off (0). As soon as the mixer is switched on, the pushbutton lights up.

4.5.1.3 Reverse pump

If this pushbutton is pressed, the pump runs in reverse (e.g. if a stopper forms in the material hose).

4.5.1.4 Probe On/Off

This switch turns the level probe in the pump hopper on and off.

4.5.1.5 Pump speed

The pump speed or the desired material flow rate is regulated with the potentiometer knob.

4.5.1.6 Illuminated button Cover grille

This illuminated button lights up red if the cover grid of the material hopper is not properly in place. After the fault has been rectified, the illuminated button flashes and must be acknowledged once by pressing the button.

4.5.1.7 Illuminated button Water pressure

This button lights up red if the water pressure is below the minimum pressure of 2.5 bar or if the external water supply (min. 2.5 bar) is not connected correctly. After the fault has been rectified, the illuminated button flashes and must be acknowledged once by pressing the button.

4.5.1.8 Illuminated sensor Mortar pressure

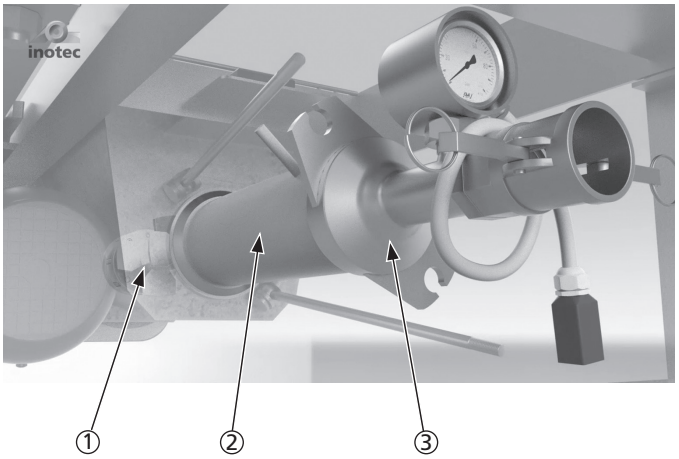
This illuminated button lights up red when the mortar pressure is too high. Switch off the machine immediately if the delivery pressure exceeds 40 bar. After the fault has been rectified, the illuminated button flashes and must be acknowledged once by pressing the button.

4.5.1.9 Illuminated button Remote control

This illuminated button lights up when the pump is operated via remote control. To do this, pull off the cover of the remote control socket on the left of the switching cabinet and plug in the remote control connector.

4.5.2 Pump unit (pump motor, pump shaft, rotor/stator and mortar pressure gauge)

The pump shaft is connected to the pump motor via the drive shaft and rotates in the pump hopper during operation. The pump shaft is also connected to the rotor via a plug-in connection. The assembly with the mortar pressure gauge and the hose coupling are fixed with two tie rods mounted on the pump hopper. The pump shaft and the rotor/stator can be pulled out or dismantled for cleaning and maintenance. Switch off the machine and disconnect the mains plug before carrying out this work. The choice of rotor/stator (see accessories) depends on the planned application. The mortar pressure gauge is used to monitor and display the pressure in the conveyor hose.



This diagram shows the connection from the pump motor to the pump shaft, the rotor/stator (2) and the assembly with the mortar pressure gauge and hose coupling.

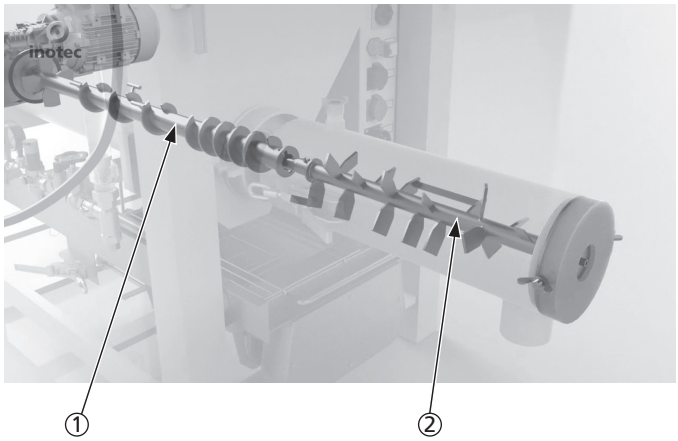
DANGER **Rotating mixing, metering and pump shafts. Danger of death due to being pulled into the machine and crushed.**
When the motors are running, the metering shaft rotates in the material hopper, the mixing shaft in the mixing tube and the pump shaft in the pump hopper.

- Do not reach into the rotating mixing or pump shaft.
- Do not bring any objects into the rotating mixing or pump shaft.

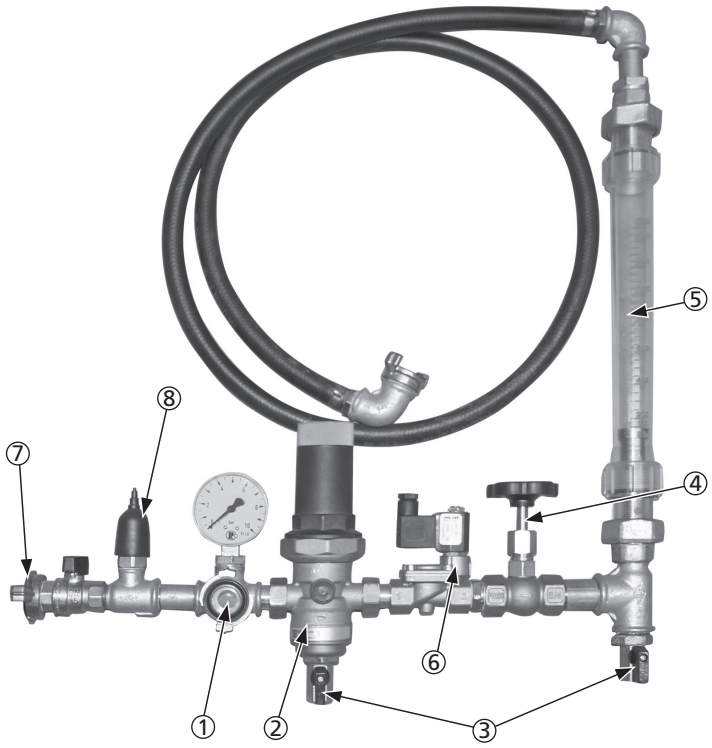
1. Before working on the mixing or pump shaft, disconnect the external power supply (main switch off). Only loosen the screw of the protective grids when the machine is switched off.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on.

4.5.3 Mixing unit (metering shaft and mixing tube with mixing shaft)

The metering shaft (1) is connected to the mixer motor via the drive shaft and rotates in the metering hopper during operation. The mixing shaft (2) in the mixing tube is also connected to the metering shaft via a plug-in connection.



4.5.4 Water measuring system



Description of the components in the diagram

Item	Component
1	Main connection of the external water supply (min. 2.5 bar water pressure)
2	Pressure reducer
3	Drain cocks
4	Needle valve

5	Sight glass Water quantity
6	Solenoid valve
7	Cleaning hose connection
8	Water pressure switch

The inlet pressure at the water metering system (min. 2.5 bar) is determined via a water pressure monitor (8). Below the minimum pressure (2.5 bar), the machine malfunctions and the illuminated button on the switching cabinet lights up. After the fault has been rectified, the illuminated button flashes and must be acknowledged by pressing it once.

4.5.4.1 Installing the water measuring system

1. Connect the supply hose to the external water supply.
2. Open the water valve until a steady water jet comes out of the hose in order to both clean the water hose of dirt and ventilate it.
3. Then close the water valve on the external water supply.
4. Connect the external water hose to the GEKA coupling of the water fitting (1).
5. Close both the water drainage tap (3) below the pressure reducer and the one below the main connection.
6. Connect the internal water hose to the GEKA coupling of the mixing tube.

WARNING **Water jet.**

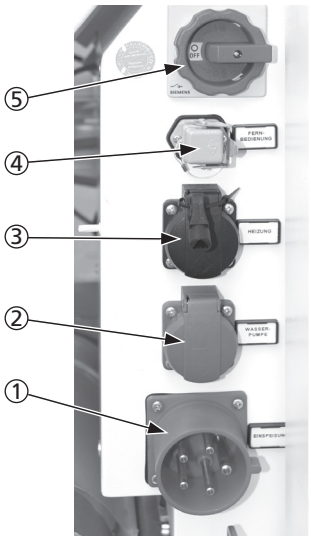
Risk of injury and risk of property damage due to escaping water.

1. Interrupt the external water supply by closing the water valve.
2. In order to release the pressure (approx. 2 bar), open the water drainage valve on the water measuring system under the pressure reducer.
3. Remove the hose from the external water supply.
4. Do not point the water jet at other people or yourself.

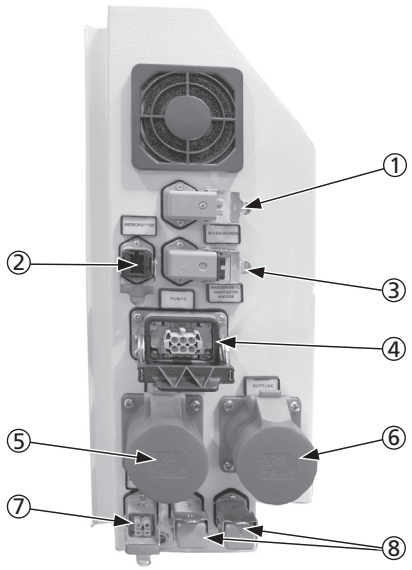
NOTE **Use an external site compressor for processing reprofiling mortar.**

4.6 Connections

4.6.1 Power connections (230 / 400 V)

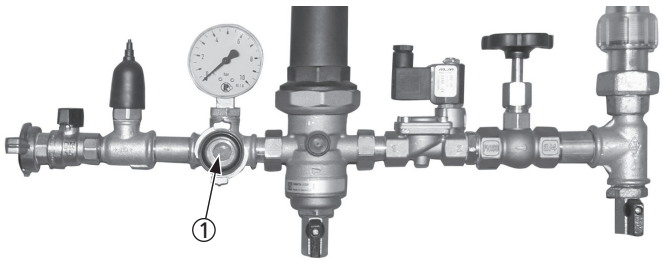


Connections on the switching cabinet <u>left</u>:
CEE appliance plug (400 V) for the central power supply of the small silo (1), socket (230 V) for connecting an external booster pump (2) if the water pressure is too low (below 2.5 bar), socket (230 V) for connecting additional appliances (3), remote control socket with cover (4) and main switch "ON/OFF" (5).



Connections on the switching cabinet <u>right</u>:
Mounting socket for the level probe in the pump hopper (1), mounting socket for monitoring the protective grille (2), mounting socket for monitoring the water pressure and controlling the solenoid valve (3) on the water measuring system, socket for the pump motor (4), socket for the mixer motor (5), socket for the vibrator (6), mounting socket for the mortar pressure gauge (7) and two unoccupied mounting sockets (8).

4.6.2 Connections of the water measuring system

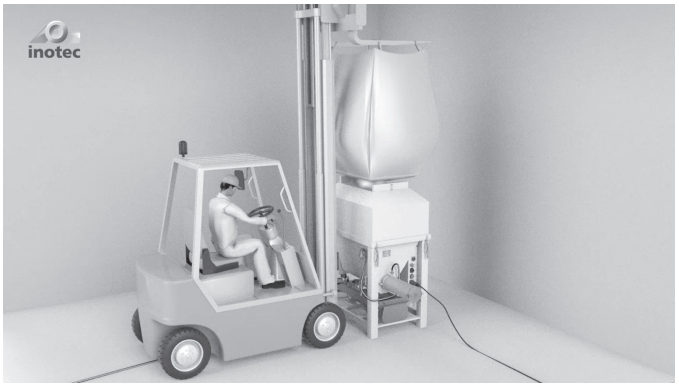


Connection of the external water supply (1).

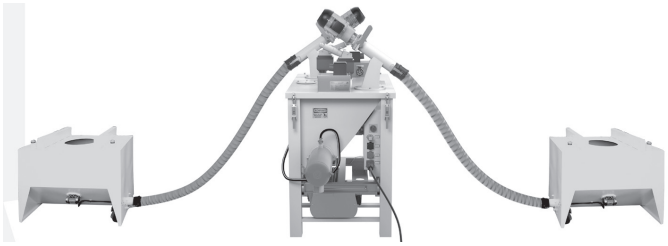
4.7 Operating modes

The small silo can be fed with powdery material from bags, from one-way containers and from big bags.

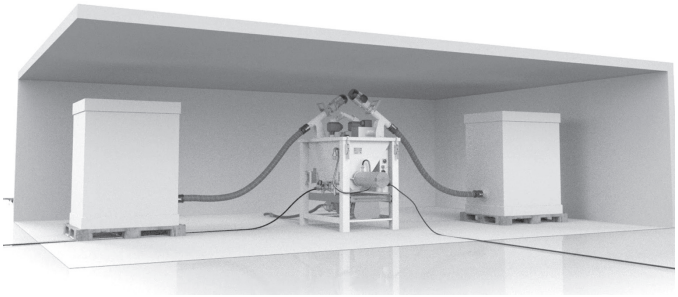
Material loading of the small silo with bagged material (high dust generation); room height min. 180 cm.



Material loading of the small silo with big bags via the attachment bonnet (hardly any dust formation); room height min. 500 cm.



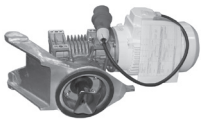
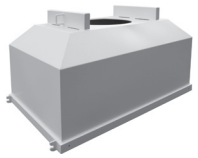
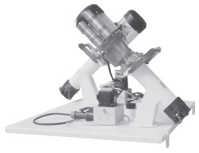
Material loading of the small silo with big bags via two big bag boxes and the dry conveying unit inoFLEX Duo (low dust); room height min. 180 cm.

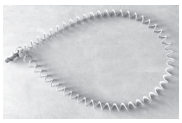
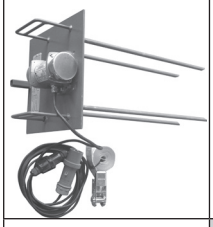
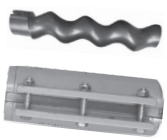


Material loading of the small silo with two one-way containers (OWC) and the dry conveying unit inoFLEX Duo (no dust formation); room height min. 180 cm.

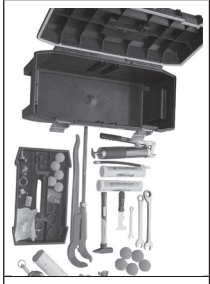
4.8 Accessories

The following accessories can be supplied for the small silo inoCOMB Cabrio.

		Item no.	Set "D"	Set "Ü1"	Set "Ü2"	Set "RS"
	**Set "D"-Cabrio (Rotor/Stator D7-2.5 S)** Ø 89 mm, 22 l/min, 40 bar, e.g., for spray applications **Scope of delivery:** Metering shaft - pitch 30 mm, suction flange, pressure flange, mortar pressure gauge, pump shaft with Rotex coupling, rotor/stator D7-2.5 S, coupling M-part 50	**10043990**	—	—	—	✓
	**Optional gear motor 280 rpm for small silo Cabrio** If the small silo is to be used exclusively for processing spray applications such as reprofiling mortar, the gear motor with 280 rpm can be selected as an option to the standard drive unit with 373 rpm.	**10006137**	—	—	—	✓
	**Set "Ü1"-Cabrio (Rotor/stator 1R6)** Ø = 101 mm, 100 l/min, 15 bar, for e.g. industrial screeds **Scope of delivery:** Suction flange, pressure flange, mortar pressure gauge, pump shaft with Rotex coupling, rotor/stator 1R6, coupling M-part 50 (2" IT), 4 x nut M16, 2 x threaded rods M16 (90 mm), 2 x double nut M1	**10043988**	—	—	✓	—
	**Set "Ü2" Cabrio (Rotor/Stator 2R6)** Ø 101 mm, 100 l/min, 30 bar - for e.g. floor levelling compound **Scope of delivery:** Suction flange, pressure flange, mortar pressure gauge, pump shaft with Rotex coupling, rotor/stator 2R6, coupling M part 50 (2" IT), 2 x eyebolts, 4 x M16 nuts, 2 x M16 threaded rods (270 mm), 2 x M16 double nuts	**10043989**	—	✓	—	—
	**Set "RS" Cabrio (rotor/stator R7-1.5 with clamping bar)** Ø 115 mm, 50 l/min, 15 bar - for e.g. coarse-grained material such as grouted concrete **Scope of delivery:** Suction flange, pressure flange, mortar pressure gauge, rotor/stator R7-1.5 with clamping bar, coupling M-part 50 (2" IT)	**10043991**	✓	—	—	—
	**Attachment hood for inoCOMB Cabrio for direct filling with big bags** • without cover for filler hole	**10041543**	✓	✓	✓	✓
	**inoFLEX Duo: Two dry delivery units for indirect filling from two Big-Bag-Box Monos or two one-way containers** The two flexible conveyor shafts transport the material to be processed from two one-way containers or two big-bag boxes Mono directly into the container of the small silo **Scope of delivery:** Covering hood, 2 flexible delivery shafts, 2 motors, 2 rotary blade sensors	**10042432**	✓	✓	✓	✓
	**Big-Bag-Box Mono** The Big-Bag-Box Mono is filled by means of standard big bags **Scope of delivery:** Frame with material container, vibrator (2 pieces), double adapter 230 V for vibrator, threaded connection piece for inoFLEX Mono, connection piece for industrial hoover	**10044205**	✓	✓	✓	✓
	**Industrial vacuum cleaner KV-3500-EL-LP** **Technical data** Operating voltage: 3 x 1.2 kW / 230 V / 50 Hz / 16 A Filter surface area: 3 m² Filter class: H Dimensions: 760 x 600 x 1,570 mm (D x W x H) Weight: approx. 83 kg Dust container: Longopac **Scope of delivery:** Vacuum, Longopac, 5 m hose Ø 50 mm, suction nozzle, angled suction pipe, straight suction pipe	**10043881**	✓	✓	✓	✓

			Set "D"	Set "Ü1"	Set "Ü2"	Set "RS"
	**Conveyor shaft for inoFLEX Duo** • Delivery shaft for the inoFLEX Duo (L=3,200 mm)	**Item no.**	●	●	●	●
		10042457	✓	✓	✓	✓
	Protective hose for delivery shaft inoFLEX Duo • L = 1800 mm, incl. couplings, V part 3", assembled	**10020118**	✓	✓	✓	✓
	**Vibrator** The vibrator is strapped directly to the one-way container • For non-flowing powder material in a one-way container • Prevents tunnel formation in the material hopper **Scope of delivery:** Vibrating unit with support bracket, tension belt and connection cable	**Item no.**				
		10039026	✓	✓	✓	✓
	**Double adapter for vibrators** • Double adapter 230 V CEE for <u>one</u> vibrator on <u>one</u> one-way container If <u>both</u> one-way containers that supply the Cabrio with material via the inoFLEX Duo are equipped with a vibrating unit, two double adapters are required (one adapter for each rotor sensor / one adapter for each vibrating unit)	**Item no.**				
		10038995	✓	✓	✓	✓
	**Vibrator with vibrating bars for OWC and big bags** The vibration unit is stuck directly into an OWC or big bag and secured with a tension belt • For non-flowing powder material in an OWC or big bag • Prevents 'tunnel formation' or 'bridges' **Scope of delivery:** Vibrating unit assembled on plate with vibration rods, including 230 V connecting cable and tension belt.	**Item no.**				
		10043840	✓	✓	✓	✓
	**Metering shaft**	**Item no.**				
	• gradient 30 mm	**10006096**	✓	—	—	✓
	• gradient 45 mm	**10042444**	—	✓	✓	—
	• gradient 80 mm with double gradient	**10041120**	—	✓	✓	—
	**Rotor 1R6** • 63 HRC tool steel	**Item no.**				
		10041243	—	—	✓	—
	Stator 1R6 • Maintenance-free, 360 mm, 63 shore	**10041242**	—	—	✓	—
	**Rotor 2R6**	**Item no.**				
		10044018	—	✓	—	—
	Stator 2R6	**10044019**	—	✓	—	—
	**Rotor R7-1.5**	**Item no.**				
		10022887	✓	—	—	—
	Stator R7-1.5 with clamping strip	**10023395**	✓	—	—	—
	**Rotor D7-2.5 S**	**Item no.**				
		10022556	—	—	—	✓
	Stator D7-2.5 S	**10022515**	—	—	—	✓
	**Hose mixer for special screed** The material is mixed again by the hose mixer.	**Item no.**				
	40 mm hose mixer	**10042509**	—	—	✓	—
	35 mm hose mixer	**10042648**	—	—	✓	—

				Item no.	Set "D" ●	Set "Ü1" ●	Set "Ü2" ●	Set "RS" ●
	**Static mixers** • Prevents/destroys lumps in mortar • Diameter: 35 mm • Length: 200 mm • incl. coupling M-part 35 mm and V-part 35 mm			**10042362**	—	—	✓	—
	**Reprofiling sprayer**			Item no.				
	• Reprofiling spraying device, 35 V with nozzle pipe 12 mm, connection 35 V piece			**10023309**	—	—	—	✓
	• Nozzle pipe 12 mm			**10022789**	—	—	—	✓
	• Nozzle pipe 15 mm			**10022790**	—	—	—	✓
	**Inotec mortar hose** - Abrasion-resistant special hose for pumping Wet mortar under high pressure, largely kink-proof • For an operating pressure of 40 bar with 3 times the reliability • Yellow on the outside at Ø 35 mm • Black on the outside at Ø 40 and Ø 50 mm - With mortar hose couplings, M-part as well as Rotatable V-part (only for Ø 25 mm) • With cam levers on the M-piece **Technical data:** Operating pressure: 40 bar / burst pressure: 120 bar	**Ø**	**Length**	Item no.				
		35 mm	10 m	**10022032**	✓	✓	✓	✓
		35 mm	20 m	**1008346-007**	✓	✓	✓	✓
		40 mm	13.3 m	**10041544**	✓	✓	✓	✓
		40 mm	20 m	**10041545**	✓	✓	✓	✓
		50 mm	13.3 m	**10008346-010**	✓	✓	✓	✓
		50 mm	20 m	**10008346-011**	✓	✓	✓	✓
	**Coupling reducer** • For connecting two mortar hoses or as a reduction in machine output.			Item no.				
		50 V-piece -> 42 V-piece		**10041187**	✓	✓	✓	✓
		50 V-piece -> 35 M-piece		**10022100**	✓	✓	✓	✓
		42 M-piece -> 35 M-piece		**10022097**	✓	✓	✓	✓
	**Plaster piece with GEKA coupling** • For cleaning mortar hoses			Item no.				
		50 M-piece		**10022116**	✓	✓	✓	✓
		35 M-piece		**10022114**	✓	✓	✓	✓
		42 V-piece		**10042213**	✓	✓	✓	✓
	**Sponge balls** • For cleaning material/mortar hoses	**Ball diameter**	**Hose diameter**	Item no.				
		45 mm	35 mm	**10008116-005**	✓	✓	✓	✓
		60 mm	40 / 50 mm	**10008116-006**	✓	✓	✓	✓
	**PQm65 booster pump with GEKA coupling for raising the water network (observe local regulations)** • 230 V / 50 Hz / 0.55 kW, 6 bar • Including power cable			Item no. **10044111**	✓	✓	✓	✓
	**Check valve set incl. GEKA coupling and 1 metre hose**			Item no. **10044163**	✓	✓	✓	✓
	**Water barrel for inoCOMB Cabrio** • incl. 2 m water hose between water barrel and booster pump with GEKA couplings • including booster pump PQm65 (item no. 10044111) • including check valve set (item no. 10044163)			Item no. **10042962**	✓	✓	✓	✓

					Set "D"	Set "Ü1"	Set "Ü2"	Set "RS"
	**Water/air hose** • For universal use, e.g. air, water • GEKA couplings crimped with sleeves on both sides **Technical data:** Max. operating pressure: 15 bar Temperature range: -20 up to +90°C	**Ø**	**Length**	**Item no.**				
		1/2"	10 m	**10022000**	✓	✓	✓	✓
		1/2"	15 m	**10022001**	✓	✓	✓	✓
		1/2"	20 m	**10022002**	✓	✓	✓	✓
		3/4"	20 m	**10022011**	✓	✓	✓	✓
	**Remote control extension cable without remote control switch** • For remote control cable • For remote control switch • For inoCOLL one-handed gun		**Length**	**Item no.**				
			16 m	**10015210**	✓	✓	✓	✓
			32 m	**10042463**	✓	✓	✓	✓
	**Remote control switch** - With 0.2 m cable, control lamp and Harting plug			**Item no.**				
				10015134	✓	✓	✓	✓
	**First aid set for Cabrio small silo** **Scope of delivery:** Systainer, grease guns incl. 2 cartridges, ratchet ring spanner 24 mm reversible, open-end ring spanners SW24 and SW13, Geka coupling 3/4" spout and 3/4" IT and 1" IT, Geka spray nozzle 3/4", Geka coupling 1/2" spout, Geka seal with beaded edge, brass strainer insert, spare strainer for pressure reducer D06F, seal for coupling 35 / 42 / 50 mm, cleaning piece 50 M-part and 35 M-part with Geka coupling, sponge ball 45 mm RG250 and 60 mm RG200, corner pipe wrench 3", multifunctional spatula B75 mm stainless steel. steel, special assembly lubricant spray (400 ml tin), connecting coupling for compressor (Geka/claw coupling), bench hammer 300 g, hose clamp 1/2" and 3/4" clamping range, Stanley FatMax tool box			**Item no.**				
				10043923	✓	✓	✓	✓
	**Pump shaft** for set "Ü" with Rotex coupling (without sprocket)			**Item no.**				
				10041876	—	✓	✓	—
	Pump shaft for set "D" with Rotex coupling (without sprocket)			**10042437**	✓	—	—	✓
	Sprocket for Rotex coupling			**10041878**	✓	✓	✓	✓
	**inoPOWERMIX "S" mixing pipe, complete** including PU inlay, steel frame with eccentric fastenings, mixing pipe cover and mixing shaft (stainless steel) (e.g. floor levelling compounds, masonry mortar, etc.)			**Item no.**				
				10044171	—	✓	—	✓
	**inoPOWERMIX+ "S" PU mixing pipe, complete, with wide material discharge for stiff material with high delivery rate** including PU inlay, steel frame with eccentric fastenings, mixing pipe cover and mixing shaft (stainless steel) (e.g. drainage mortar, industrial screeds, etc.)			**Item no.**				
				10044169	✓	✓	✓	✓
	**Mixing shaft for inoPOWERMIX "S" (stainless steel)** (e.g. floor levelling compounds, masonry mortar, drainage mortar, industrial screeds, etc.)			**Item no.**				
				10041033	✓	✓	✓	✓
	**400 V / 5 x 4 mm² extension cable** • 32 A plug and socket		**Length**	**Item no.**				
			20 m	**10015201**	✓	✓	✓	✓
	**Extension cable, 230 V 3 x 2.5 mm²** • 16 A Schuko plug and coupling		**Length**	**Item no.**				
			10 m	**10015208**	✓	✓	✓	✓
	**Assembly spray lubricant** • For assembling the rotor and stator • 400 ml			**Item no.**				
				10004591	✓	✓	✓	✓

4.9 Spare parts and diagrams

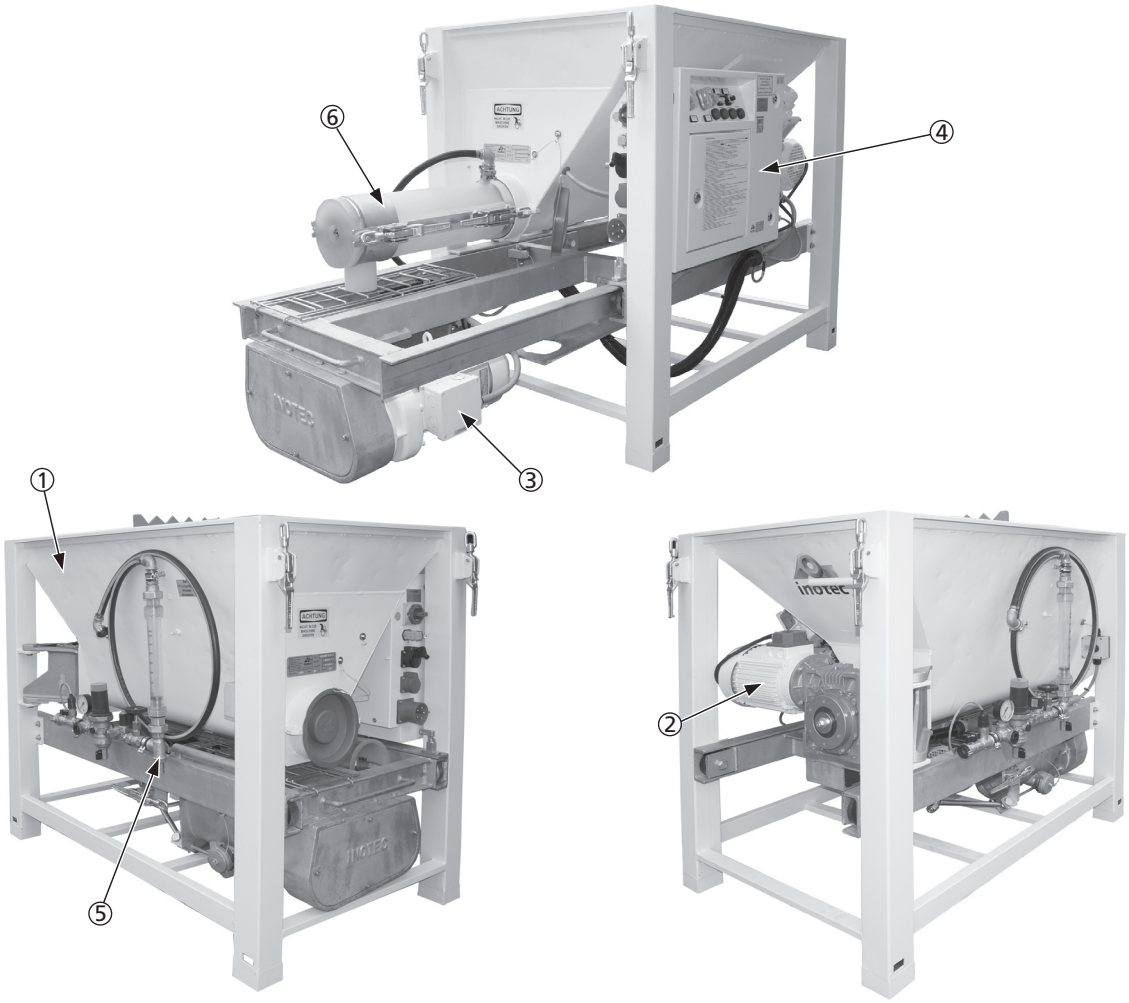
The spare parts for the small silo inoCOMB Cabrio are marked with numbers in the following pictures. The individual items are described in the table under the respective diagrams.

Description of the table columns:

Item: Corresponds to the number in the drawing designating a spare part.
Item no.: INOTEC item number.
Installation quantity: Number of parts in this position as they are installed in the original small silo inoCOMB Cabrio.
UQ: Unit of quantity of this item.
Name: Name of the spare part.

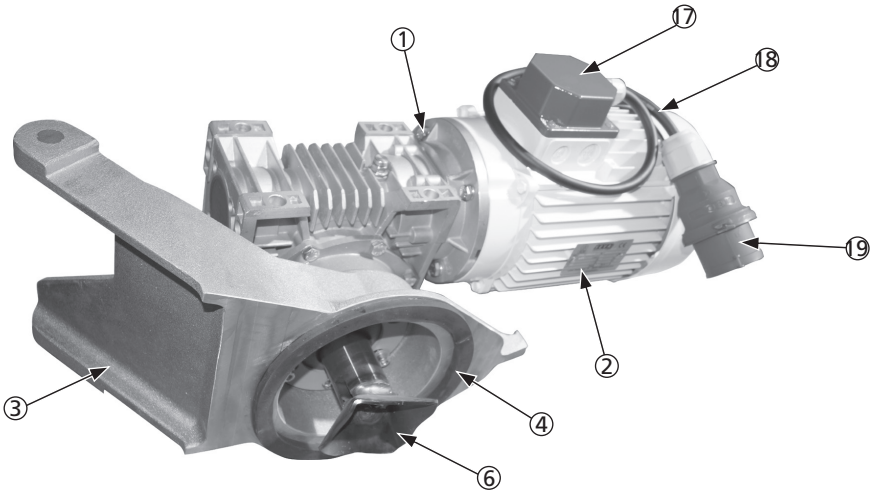
NOTE **Use the order form at the end of this operating manual to order spare parts.**

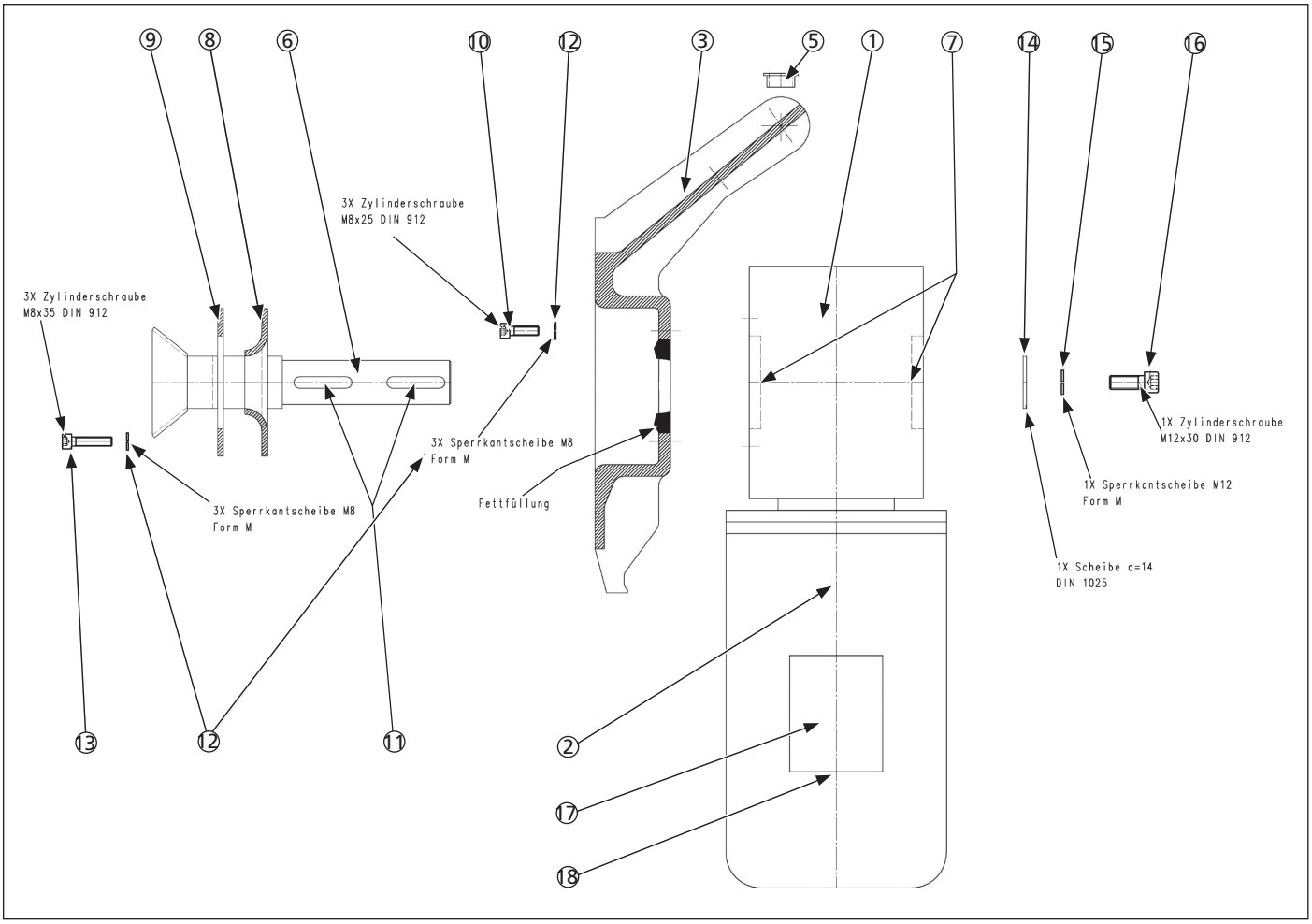
4.9.1 Overview of the individual assemblies of the small silo



Item	Name
1	Frame rack with pull-out frame for pump hopper, material hopper, water supply button and vibrator
2	Drive unit for the mixer
3	Drive unit for the feed pump, incl. chain gear box and pump hopper
4	Switching cabinet
5	Water measuring system
6	Mixing tube

4.9.2 Drive unit for the mixer

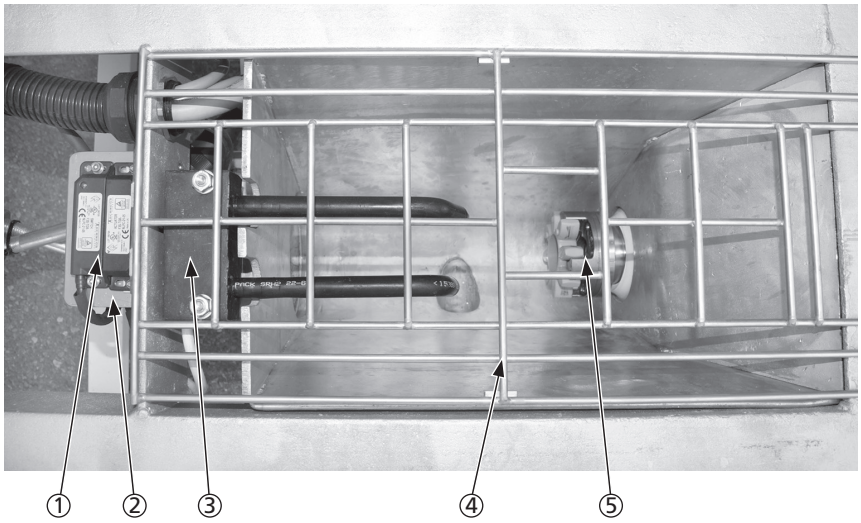




Item	Item no.	Installation quantity	UQ	Name
1	10041407	1	Units	Worm gear motor 4 kW, 373 rpm
2	10006536	1	Units	Three-phase motor 4 kW for mixer
3	10006139	1	Units	Motor plate with bolt and seal
4	10006141	1	Units	Sponge rubber square profile for mixer motor
5	10006140	2	Units	Dry bush with collar
6	10006138	1	Units	Motor shaft with bell and feather key
7	10004148	2	Units	Oil seal 55 x 80 x 10

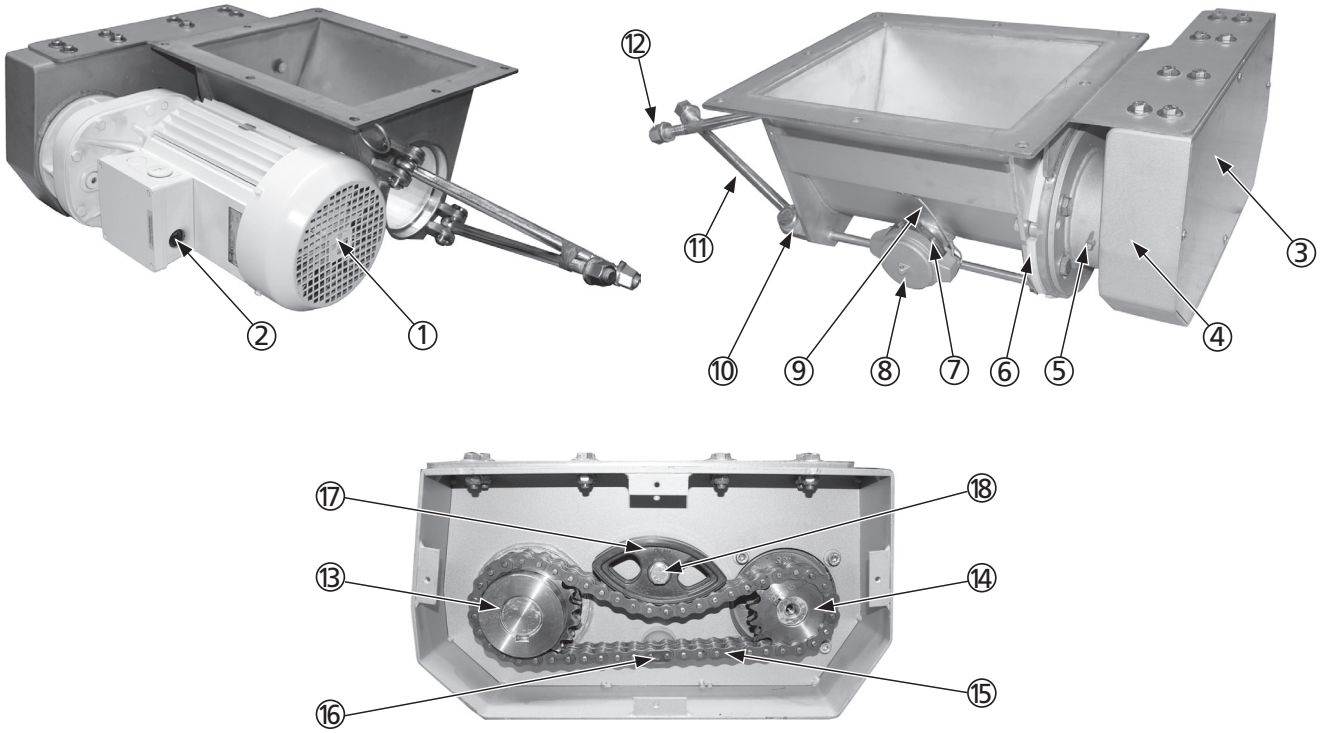
8	10004165	1	Units	Rubber seal for mixer motor
9	10017172	1	Units	Flange for rubber seal
10	10005048	3	Units	Allen screw M 8 x 25 galvanised
11	10004699	2	Units	Key 10 x 8 x 50
12	10004660	6	Units	M shape detent edged washer, M8
13	10005050	3	Units	Allen screw M 8 x 35 galvanised
14	10004702	1	Units	Disc d=14/55 x 6 mm thick
15	10004962	1	Units	M shape detent edged washer, M12
16	10005452	1	Units	Allen screw M 12 x 30 galvanised
17	10006354	1	Units	Terminal board box for gear motor
18	10015178	1	Units	Motor connection cable with CEE plug
19	10015262	1	Units	CEE plug 5 x 16

4.9.3 Pump hopper



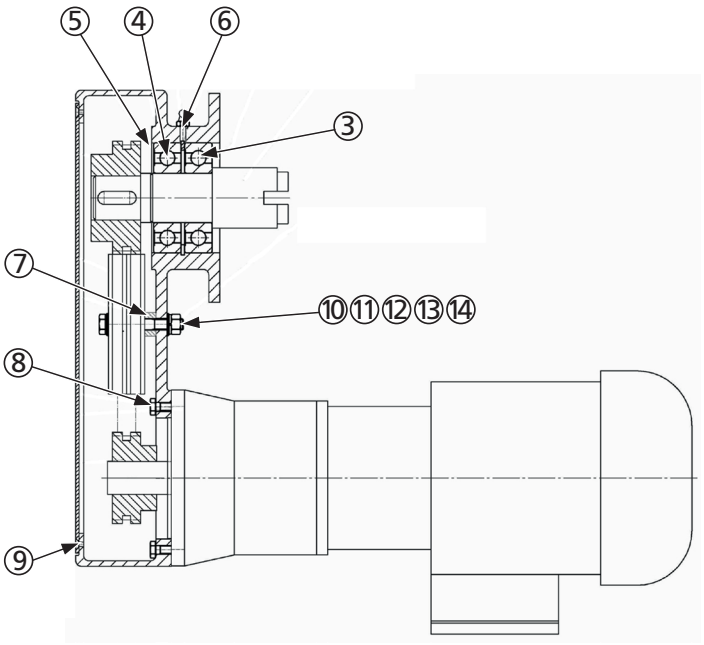
Item	Item no.	Installation quantity	UQ	Name
1	10039224	1	Units	Complete safety switch
1.1	10034395	1	Units	Actuator for safety switch
2	10043846	1	Units	Retaining plate for safety switch
3	10041273	1	Units	Level probe
4	10006200	2	Units	protective grating
5	10041878	1	Units	Gear rim for Rotex coupling

4.9.4 Drive unit incl. chain gear box and pump hopper (Item no. 10043268)



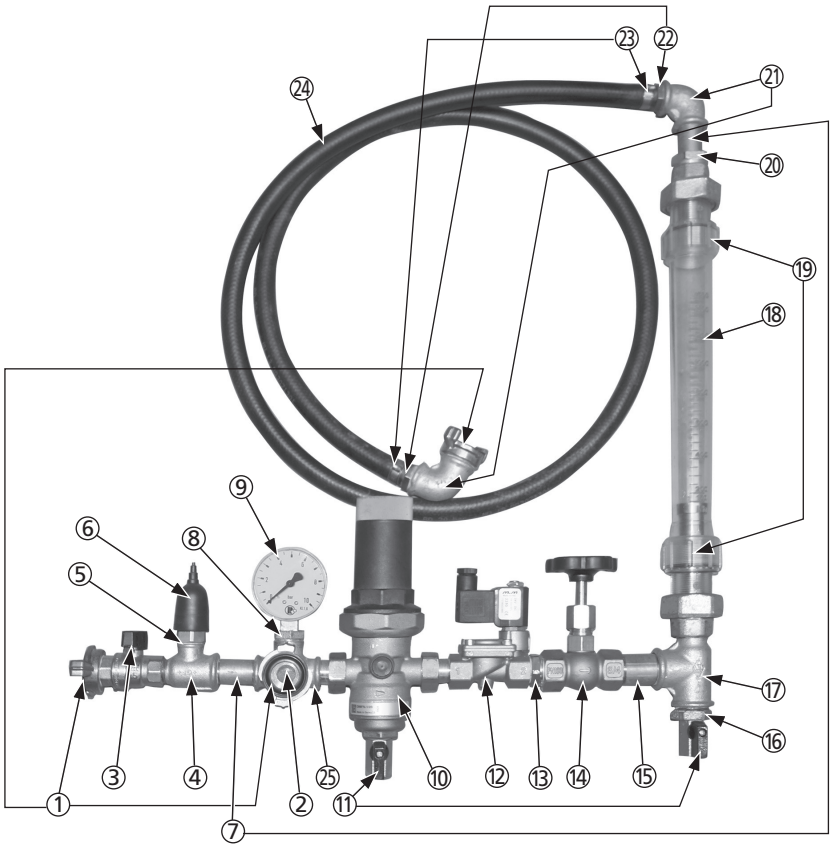
Drive unit incl. chain gear box and pump hopper				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1	10006530	1	Units	Spur gear motor
2	10044124	1	Units	EMV screw connection
3	10043868	1	Units	Cover for chain gear box
4	10006051	1	Units	Chain gear box
5	10005131	1	Units	Straight M 6 grease nipple
6	10004153	1	Units	White rubber seal
7	10022478	1	Units	TW male part
8	10022476	1	Units	TW protective cap
9	10016824	1	0.2 m	Steel cable, 2 mm
9.1	10018183	2	Units	Ferrules
10	10006057	2	Units	Stud bolts
10.1	10005332	2	Units	Split pin, 4 x 32 mm
11	10016544	2	Units	M16 x 300 eyebolts
12	10005228	2	Units	Collar nut
Chain gear box				
13	10006043	1	Units	Chain wheel z = 19
14	10006048	1	Units	Chain wheel z = 15
15	10006046	1	Units	Roller chain
16	10019063	1	Units	Connecting link
17	10006044	2	Units	Chain slider
18	10005351	1	Units	Screw M10 x 70
-	10004900	1	Units	10.5 mm washer

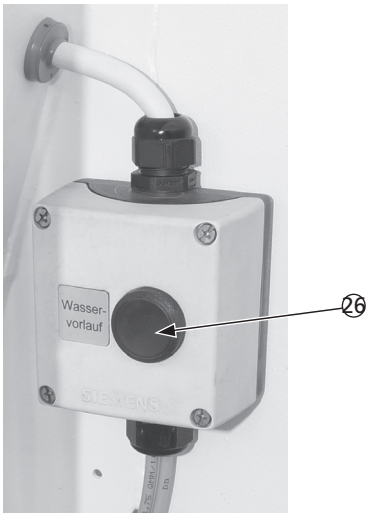
4.9.5 Drive shaft in the pump hopper



Drive shaft in pump hopper				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1	10041877	1	Units	Drive shaft with Rotex coupling
2	10041878	1	Units	Sprocket for Rotex coupling
3	10019580	1	Units	Deep groove ball bearing 6309
4	10019581	1	Units	6309 Z deep groove ball bearing(s)
5	10004599	1	Units	Retaining ring, d = 45 mm
6	10004598	1	Units	Retaining ring, d = 100 mm
7	10006045	1	Units	Spacer sleeve
8	10005457	4	Units	Allen screw M8 x 25
9	10004978	4	Units	Oval head screws M5 x 10
10	10005351	1	Units	Screw M10 x 70
11	10004900	1	Units	10.5 mm washer
12	10004828	1	Units	M10 nut
13	10005312	1	Units	Splash guard washer, 10.5mm
14	10004887	1	Units	Lock washer M10

4.9.6 Water measuring system

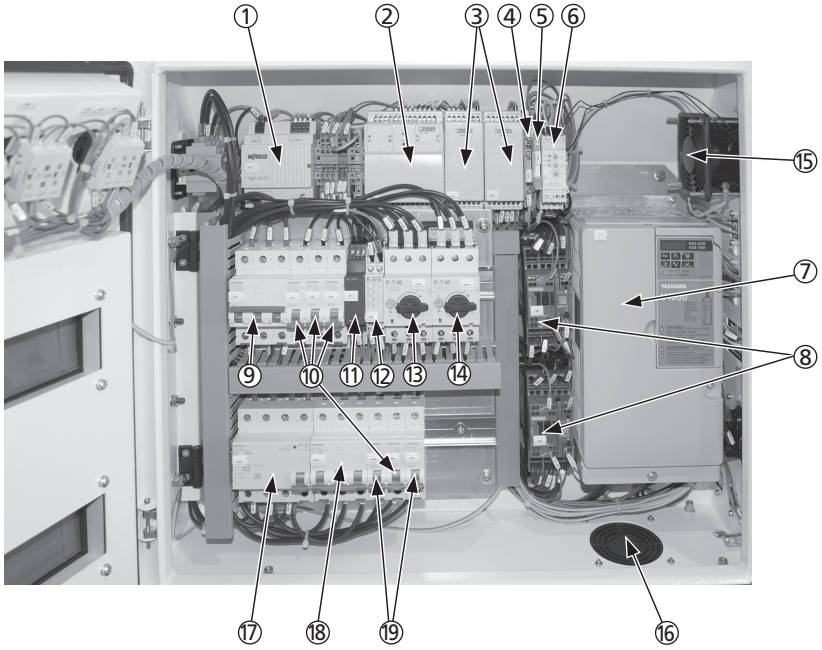




Item	Item no.	Installation quantity	UQ	Name
-	10043252	-	-	Water measuring system complete
1	10022372	3	Units	GEKA coupling, 1/2" IT
1.1	10004149	1	Units	GEKA seal
2	10006007	1	Units	Brass sieve insert
3	10022412	1	Units	Ball valve, 12", with butterfly handle, IT/IT
4	10006493	1	Units	T-piece, 1/2", ET x 1/2" IT x 1/4" IT
5	10006492	1	Units	Pressure switch 2.0 bar, 1/4" AG
6	10006496	1	Units	Protective cap for pressure switch
7	10006472	2	Units	Pipe double nipple 1/2" x 60 mm, galvanised
8	10006478	1	Units	Reduction nipple, 1/2" ET x 1/4" IT
9	10006466	1	Units	Pressure gauge, 0 - 10 bar, 1/4" below
10	10039020	1	Units	Pressure reducer D06FN, low-pressure
10.1	10006464	1	Units	Brass sieve cup with 1/4" hole
10.2	10006518	1	Units	Replacement strainer for pressure reducer
11	10017912	2	Units	Mini ball valve, 1/4", IT + ET
11.1	10004302	1	Units	PE seal, hard, 18.8 x 13.5 x 2
12	10006463	1	Units	Magnetic valve, 2/2-way, 1/2", 24 V, complete
13	10006477	1	Units	Reduction nipple, 3/4" ET x 1/2" ET
14	10006459	1	Units	Needle valve 3/4" IT
15	10006476	1	Units	Pipe double nipple 3/4" x 60 mm, galvanised
16	10006474	1	Units	Reduction nipple 3/4" AG x 1/4" IG
17	10006475	1	Units	T-piece 3/4", 1 x AG, 2 x IG galvanised
18	10016934	1	Units	Flow meter for S48/Picco cpl.100 - 1000 l/h
18.1	10023072	1	Units	Plastic pipe / measuring tube 150 - 1,500 l/h
19	10037002	2	Units	Plastic gland
19.1	10006452	4	Units	O-ring for flow meter

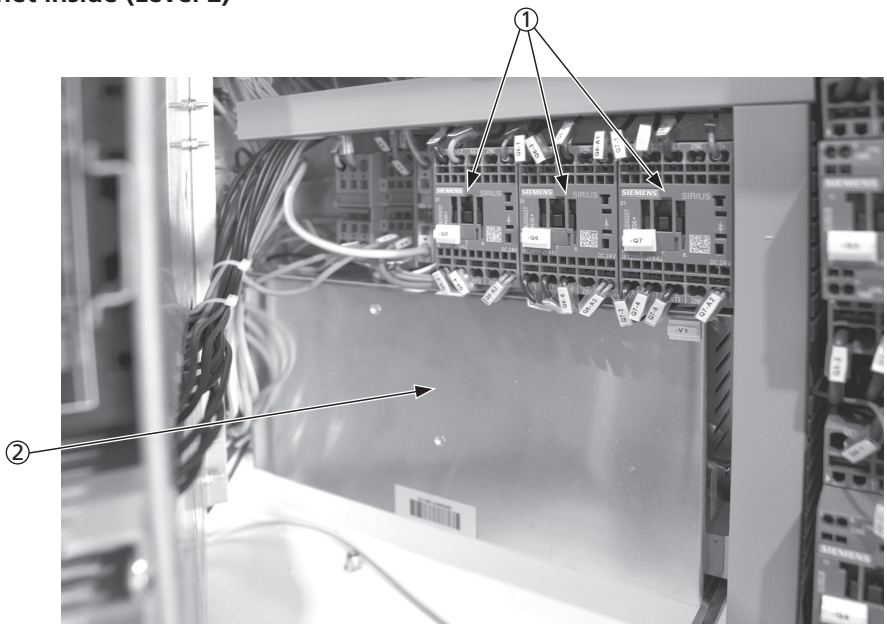
20	10006473	1	Units	Reduction nipple 3/4" AG x 1/2" IG
21	10006471	2	Units	Angular, 1/2", 90°, galvanised, IT
22	10006470	2	Units	Hose nozzle, 1/2" ET x 13 mm nozzle
23	10022443	2	Units	Hose clamp, 1-ear, 19.2 - 21.8, (1/2")
24	10021968	1.85	Meter	Rubber water hose 1/2" black with yellow stripes
25	10006479	1	Units	T-distributor, 1/2", galvanised, no. 223
26	10006309	1	Units	Water flow button complete
-	10004284	1	Units	Teflon band 12 x 0.08 x 12 mm
-	10004303	2	Units	PE gasket hard 23.8 x 17.5 x 2

4.9.7 Switching cabinet inside (Level 1)



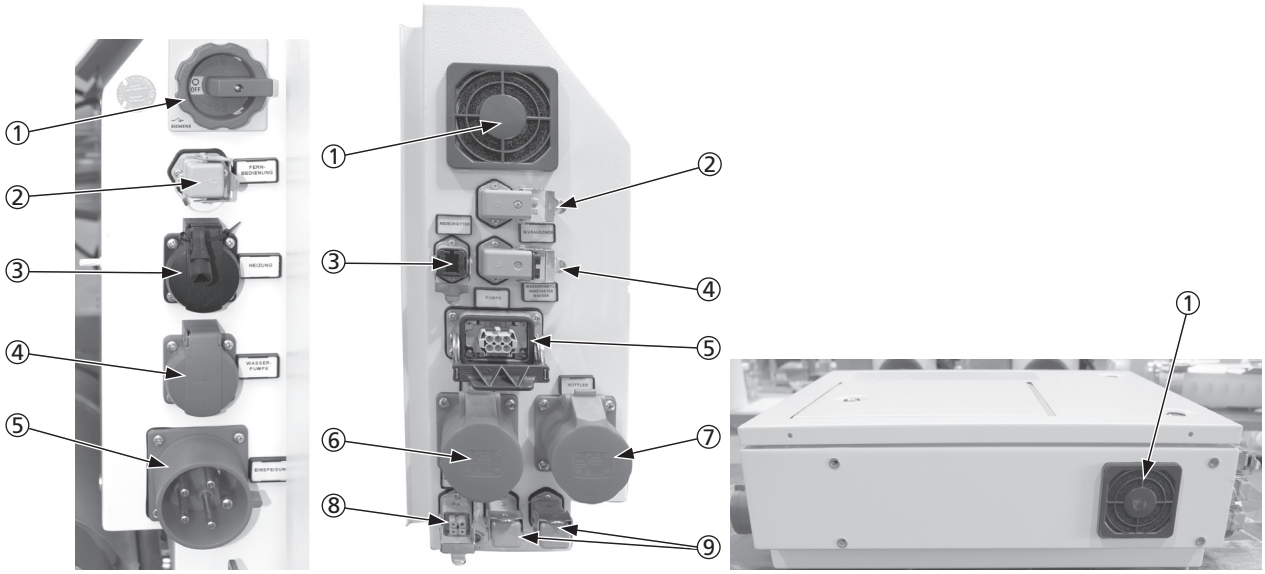
Item	Item no.	Installation quantity	UQ	Name
1	10041987	1	Units	Power supply unit
2	10041060	1	Units	CPU control
3	10041061	2	Units	Extension CPU
4	10041107	1	Units	Coupling relay(s)
5	10041062	1	Units	Relay
6	10041101	1	Units	Level relay
7	10041117	1	Units	Frequency inverter
8	10041074	2	Units	Power contactor
9	10043194	1	Units	Circuit breaker C25 3-fold
10	10043191	4	Units	Circuit breaker B16
11	10041951	1	Units	P1 Phase sequence relay
12	10041103	1	Units	P2 Mains monitoring
13	10041113	1	Units	Motor protection switch
14	10041114	1	Units	Motor protection switch
15	10044250	1	Units	Filter fan
16	10044251	1	Units	Exit filter
16.1	10044252	1	Units	Filter mat for outlet filter
17	10043195	1	Units	Residual current circuit breaker
18	10043192	1	Units	Circuit breaker B20 3-fold
19	10043190	2	Units	Circuit breaker B6

4.9.8 Switching cabinet inside (Level 2)



Item	Item no.	Installation quantity	UQ	Name
1	10041075	3	Units	Power contactor
2	10041448	1	Units	Mains filter

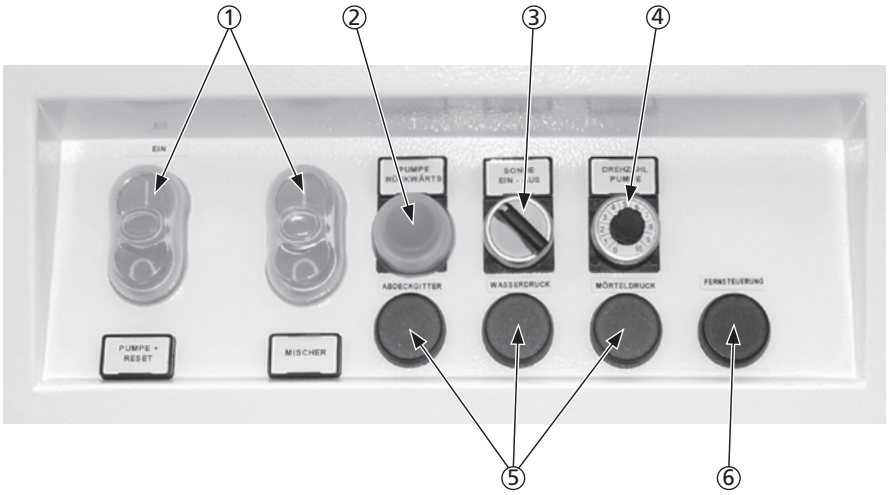
4.9.9 Switching cabinet left and right side, underside



Item	Item no.	Installation quantity	UQ	Name
-	-	-	-	**Switching cabinet left side**
1	10041077	1	Units	Main switch
2	-	1	Units	Remote control socket
2.1	10015618	1	Units	Mounted housing
2.2	10015398	1	Units	Socket insert 4-pole
2.3	10015613	1	Units	Metal cover
3	10039975	1	Units	Black mounted socket
4	10039976	1	Units	Surface-mounted socket outlet blue
5	10043951	1	Units	CEE attachment plug 5 x 32

Item	Item no.	Installation quantity	UQ	Name
-	-	-	-	**Switching cabinet right side**
1	10044250	1	Units	Fan
2	-	1	Units	Mounting socket for level probe
2.1	10015616	1	Units	Mounted housing
2.2	10015398	1	Units	Socket insert 4-pole
3	-	1	Units	Mounting box for protective grille
3.1	10015618	1	Units	Attachment housing straight
3.2	10015610	1	Units	Socket insert 6-pole
4	-	1	Units	Surface mounting box for solenoid valve
4.1	10015616	1	Units	Mounted housing
4.2	10015610	1	Units	Socket insert 6-pole
5	-	1	Units	Socket for the pump motor
5.1	10015619	1	Units	Attachment housing straight
5.2	10015400	1	Units	Socket insert 6-pole
6	-	1	Units	CEE mounting socket, straight
7	-	1	Units	CEE mounting socket, straight
8	-	1	Units	Attachment box for mortar pressure gauge
8.1	10015618	1	Units	Attachment housing straight
8.2	10015398	1	Units	Socket insert 4-pole
9	10015613	2	Units	Metal covers (unoccupied connections)
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
-	-	-	-	**Switching cabinet underside**
1	10044251	1	Units	Air inlet filter
1.1	-	1	Units	Filter mat

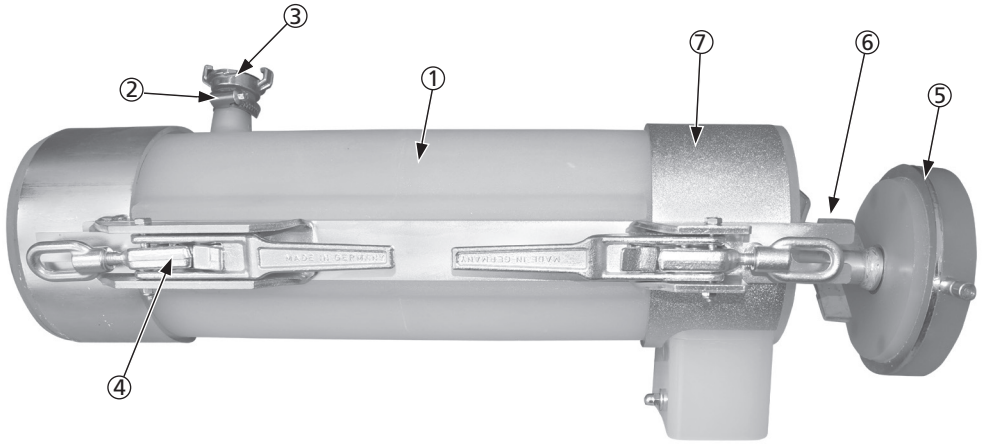
4.9.10 Switching cabinet front



Item	Item no.	Installation quantity	UQ	Name
1	-	-	-	Switch for pump "ON / OFF" & mixer "ON / OFF"
1.1	10042987	1	Units	Double pushbutton
1.2	10042986	1	Units	Protective cap
1.3	10042982	1	Units	Contact block opener
1.4	10042981	1	Units	Contact block closer
1.5	10042985	1	Units	White LED lamp holder
1.6	10042983	1	Units	3-fold adapter
2	-	-	-	Pushbutton "Reverse pump"

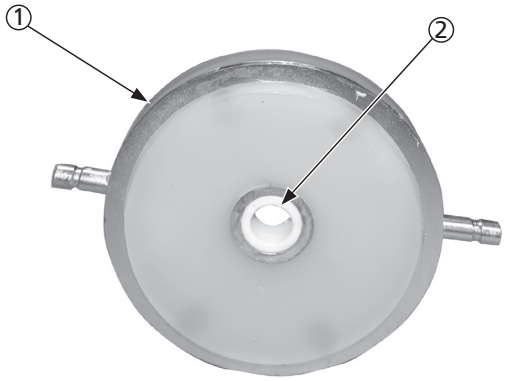
2.1	10044145	1	Units	Pushbutton black
2.2	10042981	1	Units	Contact block closer
2.3	10044151	1	Units	Sealing bonnet
2.4	10042983	1	Units	3-fold adapter
3	-	-	-	Switch probe "ON / OFF"
3.1	10044089	1	Units	Selector switch
3.2	10042981	1	Units	Contact block shooter
3.3	10042983	1	Units	3-fold adapter
4	-	-	-	Potentiometer
4.1	10016054	1	Units	Potentiometer 10 kΩ
4.2	10044142	1	Units	Potentiometer drive
5	10044153	3	Units	Indicator lamp red complete
5.1	10044152	1	Units	Lamp holder LED red
6	10044360	1	Units	Indicator lamp blue complete
6.1	10044361	1	Units	Lamp holder LED blue

4.9.11 Mixing tube inoPOWERMIX “S” Plus with mixing shaft and mixing tube cover



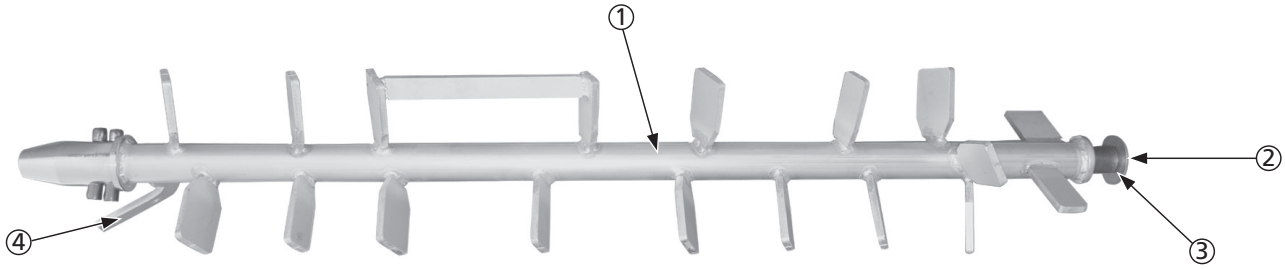
Item	Item no.	Installation quantity	UQ	Name
-	10044030	1	Units	Mixing tube inoPOWERMIX “S” Plus with mixing shaft and mixing tube cover
1	10044167	1	Units	inoPOWERMIX PU inlay short with wide outlet
2	10022457	1	Units	Hose clamp 3/4", clamping range
3	10022379	1	Units	Geka coupling 3/4" grommet
4	10017068	4	Units	Eccentric lock size 0, w. towing eyelet
5	10044008	1	Units	inoPOWERMIX PU mixing lid for mixing tube “S” + “L”
6	10041033	1	Units	Mixing shaft
7	10044185	1	Units	inoPowerMIX frame with wide outlet

4.9.12 Mixing tube cover for inoPOWERMIX “S” & “L” mixing tube (Art. No. 10044008)



Mixing tube cover for inoPOWERMIX “S” & “L” mixing tube				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1	10044008	1	Units	Mixing tube cover for mixing tube inoPOWERMIX “L”
2	10006175	1	Units	Plastic transfer for the mixing shaft

4.9.13 Mixing shaft for inoPOWERMIX “S” & “L” mixing tube

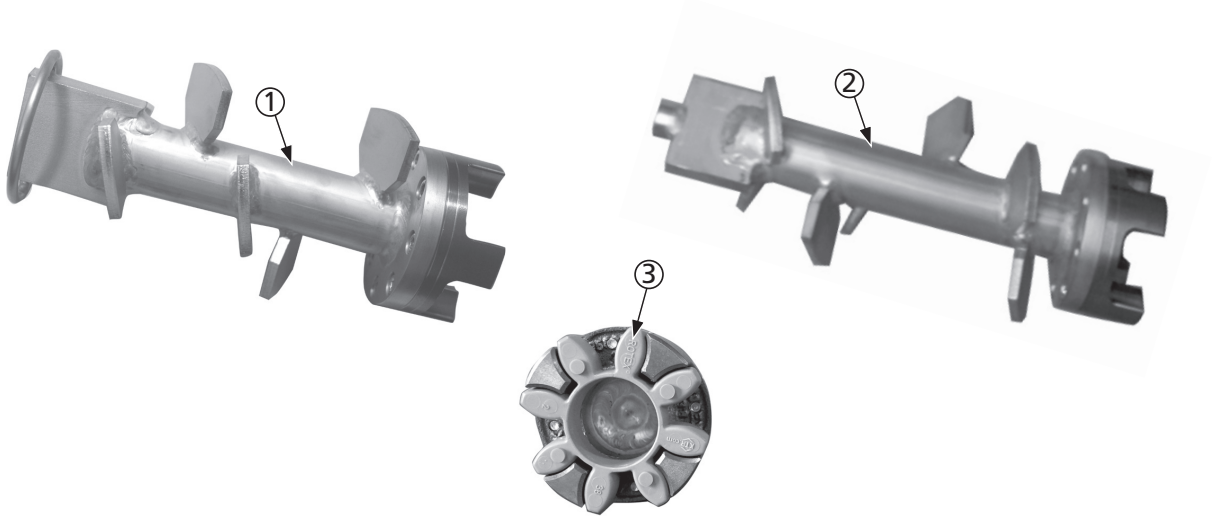


Mixing shaft for inoPOWERMIX “S” & “L” mixing tube				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1a	10040026	1	Units	Mixing shaft for inoPOWERMIX “S” for adhesive and reinforcement mortar
1b	10041033	1	Units	Mixing shaft for inoPOWERMIX “S” with PU scraper for masonry mortar
1b	10044009	1	Units	Mixing shaft for inoPOWERMIX “L” with PU scraper for masonry mortar
2	10040694	1	Units	Allen screw, 8 x 12 mm, left-hand thread
3	10040419	1	Units	Splash guard washer
4	10044011	1	Units	PU scraper for mixing shaft inoPOWERMIX "S" & "L"

4.9.14 Metering shaft

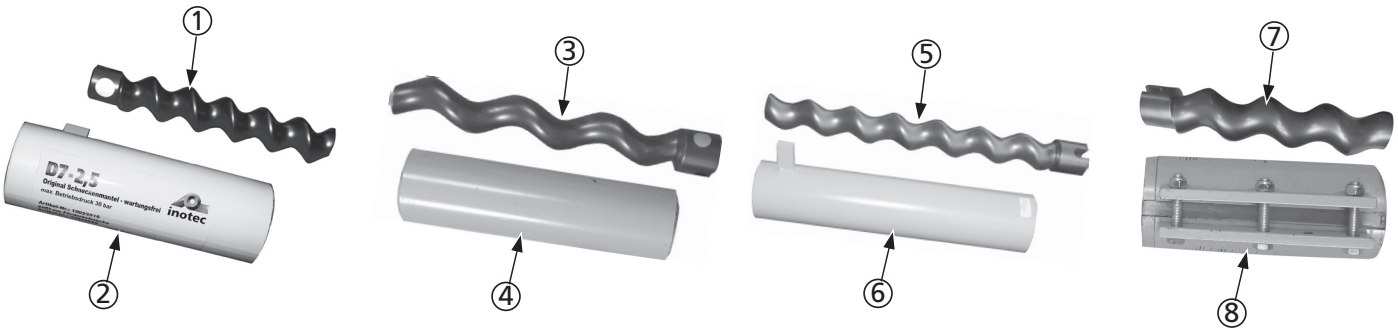
Mixing shaft for inoPOWERMIX “S” & “L” mixing tube				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
-	10006096	1	Units	Metering shaft pitch 30 mm for set “D” Cabrio
-	10042444	1	Units	Metering shaft pitch 45 mm for set “Ü1” & “Ü2” Cabrio
-	10041120	1	Units	Metering shaft pitch 80 mm with double pitch for set “Ü1” & “Ü2” Cabrio

4.9.15 Pump shaft for set “D” and “Ü”



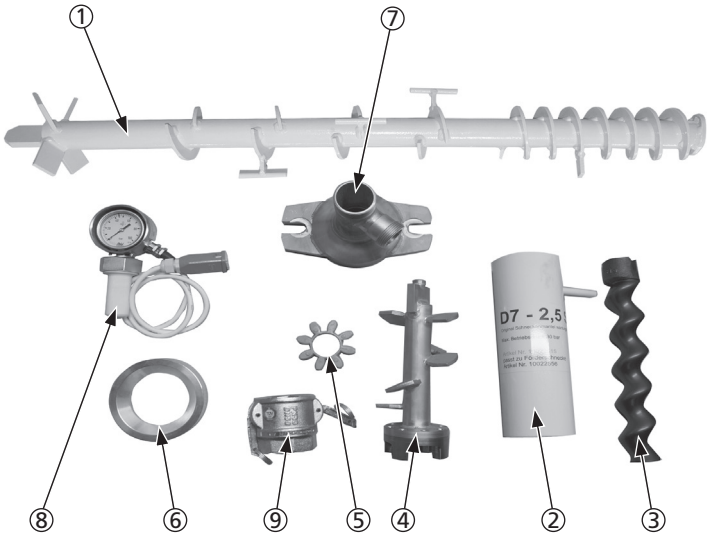
Pump shaft for sets “D” and “Ü”				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1	10041876	1	Units	Pump shaft for sets “Ü1” and “Ü2” Ü50 coating with Rotex coupling (without sprocket)
2	10042437	1	Units	Pump shaft for set “D” D coating with Rotex coupling (without sprocket)
3	10041878	1	Units	Sprocket for Rotex coupling

4.9.16 Rotor/Stator



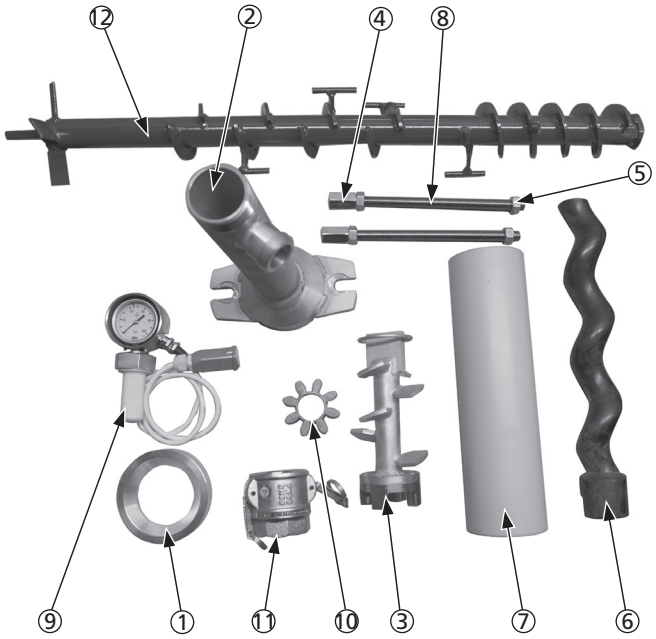
Rotor/stator depending on set and application				
Item	**Item no.**	**Installation quantity**	**UQ**	**Name**
1 2	10022556 10022515	1 1	Units Units	Set “D”: Rotor D7-2.5 “S” Set "D": Stator D7-2.5 “S”
3 4	10041243 10041242	1 1	Units Units	Set “Ü1”: Rotor 1R6 Set “Ü1”: Stator 1R6 (maintenance-free)
5 6	10044018 10044019	1 1	Units Units	Set “Ü2”: Rotor 2R6 Set “Ü2”: Stator 2R6
7 8	10022887 10023395	1 1	Units Units	Set “RS”: Rotor R7-1.5 Set “RS”: Stator R7-1.5 with clamping strip

4.9.17 Set “D”



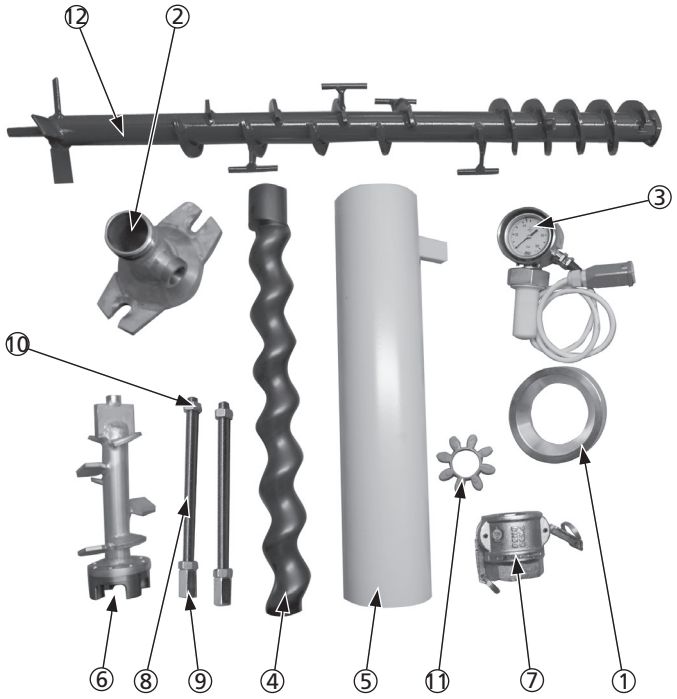
Item	Item(s)	Item (name)	Quantity
1	10006096	Metering shaft pitch 30 mm	1 pcs.
2	10022515	Stator D7-2.5 “S” wf	1 pcs.
3	10022556	Rotor D7-2.5 “S”/ Plus	1 pcs.
4	10042437	Pump shaft inoCOMB for D-jacket with Rotex coupling	1 pcs.
5	10041878	Sprocket for Rotex coupling	1 pcs.
6	10006054	Suction flange d=91 mm, for D4 jacket	1 pcs.
7	10006203	Pressure flange straight	1 pcs.
8	10017981	Mortar stainless steel contact manometer	1 pcs.
9	10022060	Coupling M-part 35, 1 1/2" IT	1 pcs.

4.9.18 Set “Ü1”



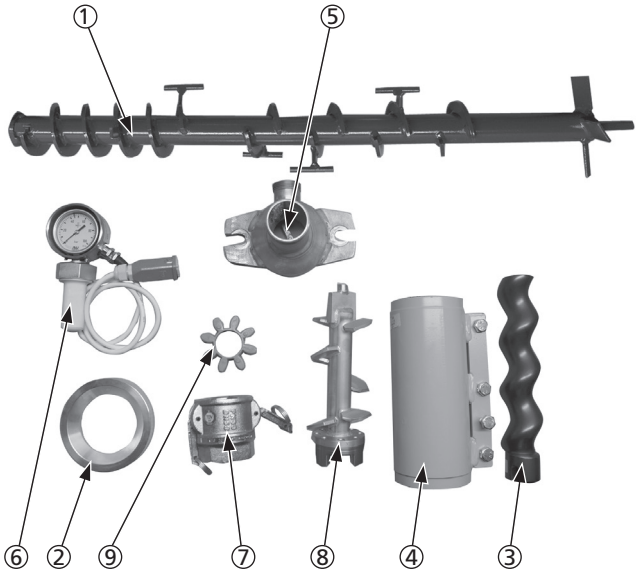
Item	Item(s)	Item (name)	Quantity
1	10006062	Suction flange for Ü50 stator	1 pcs.
2	10041272	Pressure flange straight V2A for Ü 50 jacket	1 pcs.
3	10041876	Pump shaft inoCOMB for Ü 50 jacket with Rotex coupling	1 pcs.
4	10016799	Double nut M 16, spacer sleeve SHK	2 pcs.
5	10004830	M16 nut	4 pcs.
6	10041243	Rotor 1R6 tool steel hardened 63 HRC	1 pcs.
7	10041242	Stator 1R6 wf, 360 mm, 63 Shore	1 pcs.
8	10005098	Threaded rod M 16, V2A, DIN 976	0.18 m
9	10017981	Mortar stainless steel contact manometer	1 pcs.
10	10041878	Sprocket for Rotex coupling	1 pcs.
11	10022052	50 M-piece coupling, 2”, IT	1 pcs.
12	10042444	Metering shaft pitch 45 mm	1 pcs.

4.9.19 Set “Ü2”



Item	Item(s)	Item (name)	Quantity
1	10006062	Suction flange for Ü50 stator	1 pcs.
2	10041272	Pressure flange straight V2A for Ü 50 jacket	1 pcs.
3	10017981	Mortar stainless steel contact manometer	1 pcs.
4	10044018	Rotor 2R6+++ head version	1 pcs.
5	10044019	Stator 2 R 6+++ without anti-rotation device	1 pcs.
6	10041876	Pump shaft inoCOMB for Ü 50 jacket with Rotex coupling	1 pcs.
7	10022052	50 M-piece coupling, 2”, IT	1 pcs.
8	10005098	Threaded rod M 16, V2A, DIN 976	0.54 m
9	10016799	Double nut M 16, spacer sleeve SHK	2 pcs.
10	10004830	M16 nut	4 pcs.
11	10041878	Sprocket for Rotex coupling	1 pcs.
12	10042444	Metering shaft pitch 45 mm	1 pcs.

4.9.20 Set “RS”



Item	Item(s)	Item (name)	Quantity
1	10042444	Metering shaft pitch 45mm	1 pcs.
2	10041057	Suction flange R-pump / R-jacket	1 pcs.
3	10022887	Rotor R7-1.5	1 pcs.
4	10023395	Stator R7-1.5 with clamping strip	1 pcs.
5	10043901	Pressure flange for set “RS”	1 pcs.
6	10017981	Mortar stainless steel contact manometer	1 pcs.
7	10022052	50 M-piece coupling, 2”, IT	1 pcs.
8	10042437	Pump shaft inoCOMB for D-jacket with Rotex coupling	1 pcs.
9	10041878	Sprocket for Rotex coupling	1 pcs.

NOTE **Use the order form at the end of this operating manual to order spare parts.**

5 Transport and storage

5.1 Safety instructions for transport

DANGER

Slipping machine

Danger of death for drivers and transport users.

- Ensure that the machine is in a secure position during transport.
- Secure the machine against slipping.
- Choose a means of transport with sufficient payload.
- For loading, unloading and moving on the construction site, use a forklift truck, lift truck or crane equipment.

The small solo has an unladen weight of 420 kg. Choose means of transport with sufficient payload.

5.2 Transport inspection

NOTE

Check the machine to ensure that all components are present and for transport damage immediately upon receipt.

- Do not leave any parts in the packaging.

5.3 Damage report

Proceed as follows in the event of externally visible transport damage:

1. Write a damage report with the following details:
   - Your client address
   - Name of the transport company and the driver
   - Date and time of the delivery
   - Order number and machine name according to the delivery note
   - Description of the damage
   - Signature of the driver
   - Signature of the recipient at the customer's premises
2. Have the transport damage confirmed by means of the driver's signature.
3. Send one copy of the damage report to the transport company and another to Inotec GmbH.
4. And clarify the possible ways in which the damage could be remedied with one of our service centres (see second last page)

5.4 Complaints

Claims for compensation relating to transport damage can only be made if the delivery company is informed of the same without undue delay.

5.5 Packaging

The new machine is delivered shrink-wrapped.

- Dispose of the packaging material as required by law.

5.6 Transporting the used machine in the vehicle

DANGER

Slipping machine.

Danger of death for drivers and transport users.

1. Ensure that the machine is stored securely during transport.
2. Secure the machine against slipping.
3. Choose a means of transport that has sufficient load capacity.

NOTE

Leaking material residue

- Clean the machine before transport.
- Secure the machine in the vehicle using suitable fixing materials.

5.7 Storage

If the machine is not likely to be used for an extended period of time, thorough cleaning will be required.

Store the machine under the following environmental conditions:

- Dry
- Frost-free
- Protected from dust
- Protected against corrosion (e.g. salt water)

6 Installation

Observe the following notices when assembling and positioning the machine:

DANGER **In case of unqualified operation of the small silo inoCOMB Cabrio, there is a danger to life and health of the operating personnel as well as material damage to the small silo or other assets.**

DANGER **Rotating mixing, metering and pump shafts. Danger of death due to being pulled into the machine and crushed.**
When the motors are running, the metering shaft rotates in the material hopper, the mixing shaft in the mixing tube and the pump shaft in the pump hopper.

- Do not reach into the rotating mixing or pump shaft.
- Do not bring any objects into the rotating mixing or pump shaft.

1. Before working on the mixing or pump shaft, disconnect the external power supply (main switch off). Only loosen the screw of the protective grids when the machine is switched off.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on.

DANGER **Pressurised conveyor hoses.**
Risk of injury and risk of property damage due to escaping and/or flying material, and/or bursting conveyor hoses.

- Before disconnecting the conveyor hoses, make sure that the hoses are depressurised. To do so, check the pressure indicator on the mortar pressure gauge. The pressure indicator must display 0 bar!
- Before opening the hose coupling, let the small silo inoCOMB Cabrio run in reverse to release any pressure! To do this, press the "Reverse pump" pushbutton until the pressure display on the mortar pressure gauge shows 0 bar.

Pushbutton "Reverse pump"

- Use only conveyor hoses which are permissible with an operating pressure of 40 bar and a burst pressure of 120 bar, and are in a technically perfect condition (e.g. are without any cracks or other external damage!).

Installation location requirements

- Ensure that there is enough space around the machine to enable filling of the material hopper and machine operation.
- Install the small silo inoCOMB Cabrio only on level, horizontal ground.
- Prevent the machine from sliding.
- Cover the floor underneath the machine with a plastic sheet, if it is not on a firm, tarmacked surface.
- Keep the machine in a dry, protected area in wet weather.
- Prevent direct exposure to sunlight, especially while in continuous operation, in order to prevent the motor from overheating.
- Do not use the machine at temperatures below 0° Celsius to prevent the water-carrying parts from freezing. For storage, dry out all water-carrying parts.

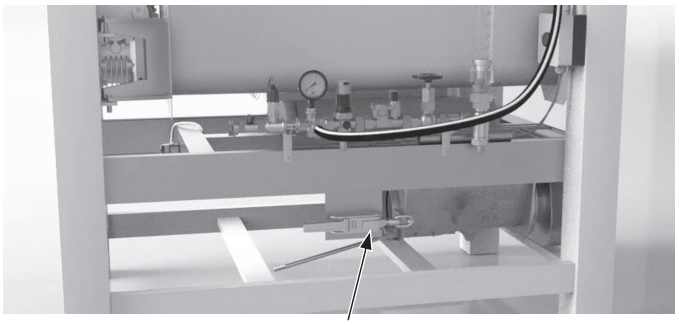
6.1 Delivery condition of the machine

The small silo inoCOMB Cabrio is delivered from the factory as a basic module. Before initial commissioning, assemble the corresponding pump unit (with pump shaft, rotor, stator and pressure gauge) and the mixing tube with the mixing shaft.

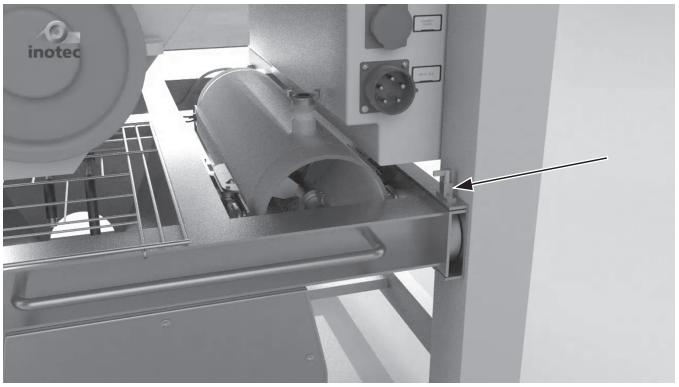
NOTE **For the application of reprofiling mortar, use an external site compressor.**

6.2 Assembling the pump unit (pump shaft, rotor, stator and pressure gauge with hose coupling)

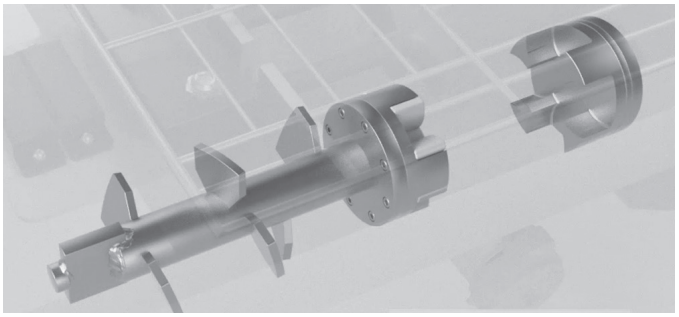
1. Open the eccentric lock on the base frame below the water fitting.



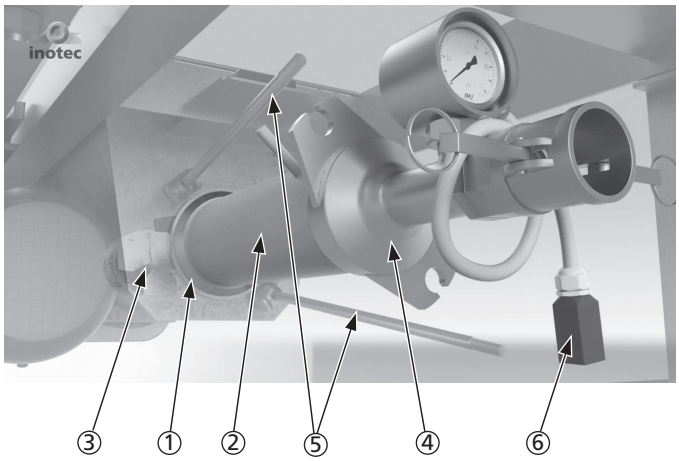
2. Unlock the fixing bolt that secures the extendable pump hopper and pull out the pump hopper.



3. Push the pump shaft into the shaft in the lower area of the pump hopper and insert it into the Rotex coupling of the drive shaft.



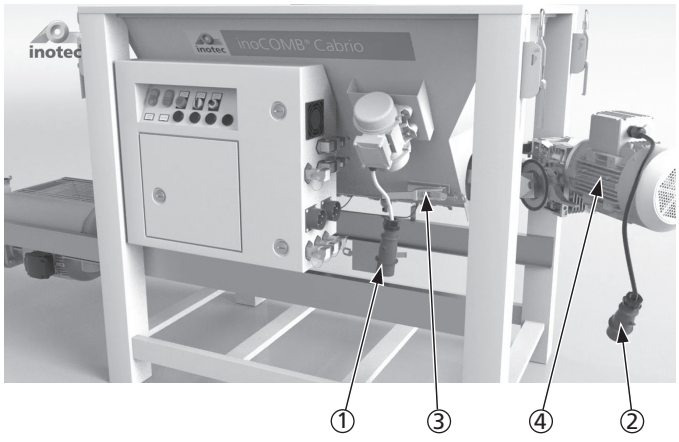
4. Insert the suction flange into the opening provided on the pump hopper (1). Place the pump unit (rotor/stator) (2) on the suction flange and connect the pump unit to the pump shaft (3). Then fit the assembly (4) (pressure flange with mortar pressure manometer and the hose coupling) to the pump unit. Fix the two tie rods (5) to the pressure flange with the corresponding screws. Connect the plug of the mortar pressure gauge (6) to the plug connection attached to the base frame.



NOTE **Depending on the set, the machine is equipped with different rotors/stators.**

6.3 Mounting the metering and mixing shaft with mixing tube

1. Unplug the motor (2) from the socket on the side of the switching cabinet. Unlock the eccentric lock (3) that connects the motor to the material hopper and fold the motor away to the side (4).

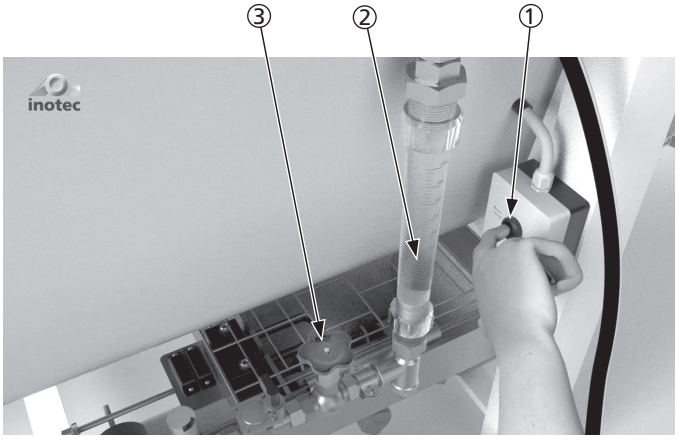


2. Push the metering shaft into the round opening in the lower area of the material hopper.
3. Fold the motor back again and make sure that the metering shaft is connected to the motor via the motor claw.
4. Lock the eccentric lock that connects the motor to the material hopper.
5. Insert the plug of the vibrator (1) into the socket provided and the plug of the motor into the socket provided on the side of the switching cabinet.
6. Remove the green protective cap from the material hopper and secure the mixing tube to the material hopper with the two eccentric locks. Make sure that the mixing shaft is properly connected to the metering shaft.

WARNING **Acute Danger of injury!**
The machine must not be operated without the guard fixed in place.

6.4 Installing the water measuring system

1. Connect the supply hose to the external water supply.
2. Open the water valve until a steady water jet comes out of the hose in order to both clean the water hose of dirt and ventilate it.
3. Then close the water valve on the external water supply.
4. Connect the external water hose to the GEKA coupling of the water fitting.
5. Close both the water drainage tap below the pressure reducer and below the main connection.
6. Lift the end of the internal water hose into an empty container.
7. Press the water flow button (1) until the float in the water sight glass (2) moves to the desired amount of water.
8. By turning the needle valve (3) you can increase or decrease the amount of water accordingly.
9. Release the water flow button when the desired amount of water has been reached.
10. Connect the internal water hose to the GEKA coupling of the mixing tube.



You can read the current flow rate on the sight glass (2) of the flow meter. With the needle valve (3) you can regulate the fine adjustment for the desired amount of water. Follow the instructions of the manufacturer of the drying material.

NOTE **To ensure sufficient water pressure independent of the pressure of the supply line, we recommend the use of a booster pump.**

WARNING **Water jet.**
Risk of injury and risk of property damage due to escaping water.

1. Interrupt the external water supply by closing the water valve.
2. In order to release the pressure (approx. 2 bar), open the water drainage valve on the water measuring system under the pressure reducer.
3. Remove the hose from the external water supply.
4. Do not point the water jet at other people or yourself.

NOTE **A rubber hose (min. 10 bar) with a cross-section of at least 3/4" must be used as the connecting hose between the external water supply and the water fitting.**

- Before connecting the hose, check that the connections on the hose and on the machine match. If necessary, replace them with suitable ones.

NOTE **After the end of work (especially if there is a risk of frost), the residual water still in the water measuring system should be drained off via one of the water drain taps.**

CAUTION **If the amount of water is too low, the conveyor hose in which the mixed material is conveyed to the sprayer can become blocked. This can lead to severe wear of the pump unit (rotor/stator). It is therefore advisable to start with plenty of water so that the amount of water can then be reduced to the required level.**

6.5 Regulation of the water pressure

A pressure reducer is installed and pre-set at the factory to regulate the water pressure. The control cap on the pressure reducer allows you to readjust the water pressure if necessary.

6.6 Material preparation

Fill the material hopper with dry material.

CAUTION **Make sure that no bag parts fall into the material hopper when emptying the dry material. These would mix with the material and could clog the sprayer and thus damage the machine.**

WARNING **Machine does not start.**

Check the position of the main switch on the switching cabinet and all electrical connections. In the event that all connections are correct and the main switch is in the vertical position ("ON') and the pump motor still does not rotate, have the machine checked by a qualified electrician. Only this person is authorised to open the switching cabinet.

6.7 Adjusting the material consistency

1. Slide the pump hopper under the machine and place a suitable container under the mixing tube.
2. Then start the mixer by pressing the "Mixer ON" button and check the material consistency. Use the needle valve (3) to set the desired material consistency.
3. Stop the mixer by pressing the "Mixer OFF" button.

6.8 Preparing the machine

1. Extend the pump hopper again and lock the fixing bolt that secures the pump hopper in its exact position.
2. Fill approx. 2-3 litres of milk of lime, mortar slurry or wallpaper paste into the delivery hose as pre-lubrication and then connect it to the mortar coupling.
3. Start the mixer motor by pressing the "Mixer ON" button and fill the pump hopper up to the upper probe rod.
4. Then start the pumping process by pressing the "Pump" button. The button of the pump lights up green and the button of the mixer flashes (ready message).
5. Lift the end of the material hose into an empty container and run the pre-lubrication into the container until material comes out of the hose.
6. Use the potentiometer to set the speed and thus the desired delivery rate of the material transport.
7. Read the current mortar pressure in the delivery hose on the mortar pressure gauge.
8. The machine is now ready for operation.

DANGER **Pressurised conveyor hoses.**

Risk of injury and risk of property damage due to escaping and/or flying material, and/or bursting conveyor hoses.

- Before disconnecting the conveyor hoses, make sure that the hoses are depressurised. To do so, check the pressure indicator on the mortar pressure gauge. The pressure indicator must display 0 bar!
- Before opening the hose coupling, let the small silo inoCOMB Cabrio run in reverse to release any pressure! To do this, press the "Reverse pump" pushbutton until the pressure display on the mortar pressure gauge shows 0 bar.

Pushbutton "Reverse pump"

- Use only conveyor hoses which are permissible with an operating pressure of 40 bar and a burst pressure of 120 bar, and are in a technically perfect condition (e.g. are without any cracks or other external damage!).

6.9 Starting the machine

1. For the use of bagged material you need a second man who continuously fills the dry material into the material hopper of the machine. When using one-way containers or big bag boxes, this second man is not needed.
2. As soon as the mixer has started up and the material falls in the correct consistency through the mixing tube opening into the pump hopper, the level probe installed there measures the minimum and maximum level with two probe rods. When the material reaches the upper probe rod, the mixer is automatically switched off until the material drops below the level of the lower probe rod. Then the mixer is switched on again (automatic mode).
3. The material is conveyed from the pump shaft to the rotor/stator and from there further into the conveying hose.
4. Check on the mortar pressure gauge whether the mortar pressure is within the permissible pressure range.

7 Commissioning

7.1 Adding material to the material hopper

Risk to health due to dust.

When cleaning the machine, inhaled dust can cause long-term lung damage or other adverse health effects.

- The machine operator or people working in the dust area must each wear a dust mask when cleaning the machine.
- Find out about the technical rules for hazardous substances (TRGS 559) "Mineral dust" on the homepage of the German Social Accident Insurance Institution (www.bgbau.de).

Risk of injury posed by powdery and paste-like material

When filling the material container, swirling or splashing material can cause injuries, especially in the area of the eyes and face.

- Always wear safety goggles.

Observe the applicable work regulations (e.g. respiratory protection)

7.2 Changing the material

1. Empty the material hopper and the pump hopper of the inoCOMB Cabrio small silo.
2. Then switch off the machine.
3. Close the valve on the external water supply.
4. Clean the material container, the metering shaft and the mixing tube with the mixing shaft. Also clean the pump hopper with pump shaft and rotor/stator incl. the delivery hoses used.

Operation without any material or with too little material.

Danger of destroying the rotor/stator.

If the machine is operated without any material or with too little material, there is a risk of the rotor/stator being destroyed within an extremely short period of time (< 1 min.)!

7.3 Change of location on the construction site

For moving on the construction site, use a forklift truck, lift truck or crane equipment. To do this, disconnect the mixing pump from the mains and water supply.

NOTE **This QR code will take you directly to a 3D animation of the assembly and function of the small silo.**

3D Video inoCOMB Cabrio

Originalbetriebsanleitung

Original operation manual

8 Operation, use

8.1 Checking operating behaviour

1. If you detect deviations in the operating behaviour, take the small silo inoCOMB Cabrio out of operation immediately.
2. Ensure that the damage and/or defects which led to the deviating operating behaviour are rectified.

8.2 Checking the consistency of the material

Ensure an even, paste-like material consistency during operation.

- The viscosity may change, especially in warm weather conditions.

Material too stiff	Increase the water supply by re-adjusting it on the needle valve of the water fitting
Material too runny	Reduce the water supply by re-adjusting it on the needle valve of the water fitting

NOTE **Ensure that the change in consistency may take some time to become noticeable, depending on the length of the hose (approx. 20 seconds per 15 m hose length). Therefore, adjust the water supply at the needle valve only by turning it a small amount each time.**

8.3 Correcting flow fluctuations

1. Check the water inlet screen and clean it if it is dirty.
2. Check the water pressure at the supply line and regulate it accordingly, if necessary.
3. Check the pressure reducer and regulate it, if necessary.

8.4 Work break/end of work

If the duration of a work break exceeds the setting time of the material to be processed, there is a risk of the material setting during the break.

1. In case of short interruptions of the pumping process (up to approx. 15 min., depending on the material) switch off the machine.
2. In the event of longer interruptions, the machine must be run until it is empty and then cleaned.

9 Areas of application

All pumpable, powdered ready-mixed mortars can be processed with the inoCOMB Cabrio small silo. Always follow the manufacturer's instructions for the material!

inoCOMB Cabrio

Floor levelling compounds	✓
Fire protection mortar	✓
Floor levelling compounds	✓
Mineral textured plasters	✓
Reprofiling mortar	✓
Renovating plaster systems	✓
SPCC Mortar	✓
SPCC filler	✓
ETICS glue, mineral	✓
ETICS glue, paste-like	✓

Always follow the manufacturer's instructions for the material!

10 Cleaning & decommissioning

Electrical voltage.
Danger of death due to electric shock.

- Work on the electronic control system may only be performed by a qualified electrician.
- Switch off the machine and pull out the mains plug.
- Secure the machine against unexpectedly being switched back on.

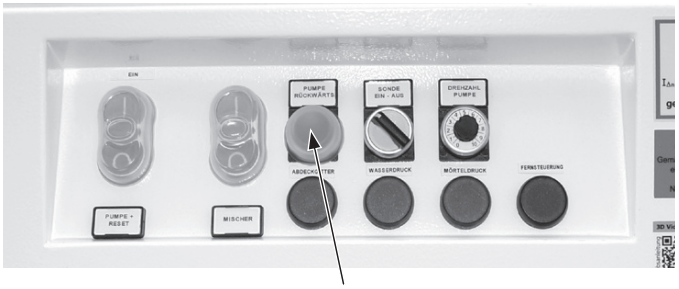
Rotating mixing, metering and pump shafts. Danger of death due to being pulled into the machine and crushed.
When the motors are running, the metering shaft rotates in the material hopper, the mixing shaft in the mixing tube and the pump shaft in the pump hopper.

- Do not reach into the rotating mixing or pump shaft.
- Do not bring any objects into the rotating mixing or pump shaft.

1. Before working on the mixing or pump shaft, disconnect the external power supply (main switch off). Only loosen the screw of the protective grids when the machine is switched off.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on.

Pressurised conveyor hoses.
Risk of injury and risk of property damage due to escaping and/or flying material, and/or bursting conveyor hoses.

- Before disconnecting the conveyor hoses, make sure that the hoses are depressurised. To do so, check the pressure indicator on the mortar pressure gauge. The pressure indicator must display 0 bar!
- Before opening the hose coupling, let the small silo inoCOMB Cabrio run in reverse to release any pressure! To do this, press the "Reverse pump" pushbutton until the pressure display on the mortar pressure gauge shows 0 bar.



Pushbutton "Reverse pump"

- Use only conveyor hoses which are permissible with an operating pressure of 40 bar and a burst pressure of 120 bar, and are in a technically perfect condition (e.g. are without any cracks or other external damage!).

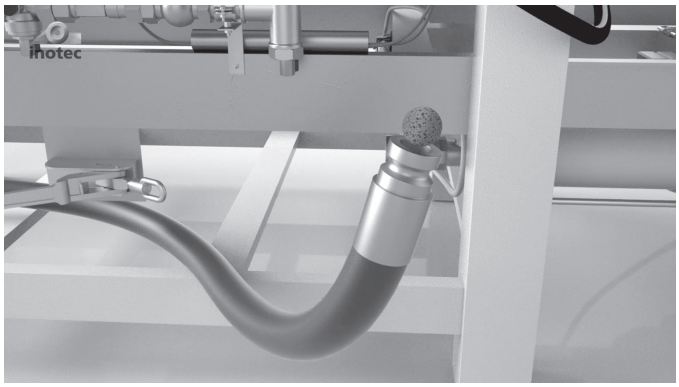
WARNING **Water jet.**

Risk of injury and risk of property damage due to escaping water.

1. Interrupt the external water supply by closing the water valve.
2. In order to release the pressure (approx. 2 bar), open the water drainage valve on the water measuring system under the pressure reducer.
3. Remove the hose from the external water supply.
4. Do not point the water jet at other people or yourself.

10.1 Cleaning process

1. After finishing work, empty the machine's pump hopper and the mortar hose over a suitable collecting container until the pressure indicator on the mortar pressure gauge shows 0 bar.
2. Stop the machine by pressing the double pushbutton "Pump Reset" "0".
3. If necessary, disconnect the mounted spraying device (e.g. reprofiling spraying device) from the end of the mortar hose and clean it with water.
4. Then fill the pump hopper with water and loosen any adhering material (e.g. with a brush).
5. Start the machine by pressing the double pushbutton "Pump Reset" "I" until water comes out at the end of the mortar hose.
6. Stop the machine by pressing the double pushbutton "Pump Reset" "0".
7. Now uncouple the quick coupling on the hose connection (on the mortar pressure gauge) by opening the two cam levers. Put a sponge ball into the hose and then reconnect the mortar hose.



8. Fill some more water into the pump hopper and start the machine by pressing the double pushbutton "Pump Reset" "I". In this cleaning cycle, the pump hopper, the pump shaft and the pump unit (rotor/stator) are cleaned. The sponge ball is conveyed through the material hose together with the water and loosens any residual material that may have adhered to the walls of the mortar hose.
9. Stop the machine by pressing the double pushbutton "Pump Reset" "0".
10. Repeat the cleaning process with the sponge ball up to twice depending on how dirty the machine is.

WARNING **Operation without any material or with too little material.**

Danger of destroying the rotor/stator.

If the machine is operated without any material or with too little material, there is a risk of the rotor/stator being destroyed within an extremely short period of time (< 1 min.)!

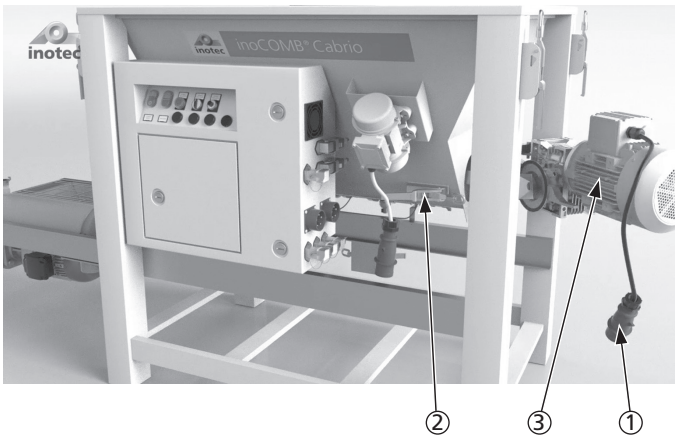
11. Open the drain on the side of the pump funnel and allow the residual liquid to flow into a suitable container.

12. Disassemble the component with the rotor/stator.
13. Screw the rotor out of the stator and store it in a dry location after cleaning.
14. Before reassembly, coat both the rotor and the stator generously with assembly spray lubricant (item no.

10004591) in order to make it easier to screw the rotor into the stator. Make sure that the rotor is correctly installed in the stator.

NOTE **Always carry out this cleaning process before longer breaks in work (> 0.5 hours).**

15. Turn the main switch on the switching cabinet to "0".
16. Pull out the mains plug.
17. Open the two eccentric locks on the mixing tube cover.
18. Now pull the mixing tube cover together with the mixing shaft (this is screwed to the mixing tube cover) out of the mixing tube and clean them over a suitable container of water.
19. Uncouple the GEKA coupling and remove the internal water hose from the mixing tube.
20. Open the two eccentric catches that secure the mixing tube to the material container and clean the mixing tube over a suitable container.
21. For further operation, mount the mixing tube again with the two eccentric locks on the mixing tube holder and push the mixing shaft with the mixing tube cover into the mixing tube. Also secure the mixing tube cover to the mixing tube frame with the two eccentric locks. At the end of work, place the cleaned mixing tube back into the pump pull-out frame. Close the mixing tube receptacle with the green cover.

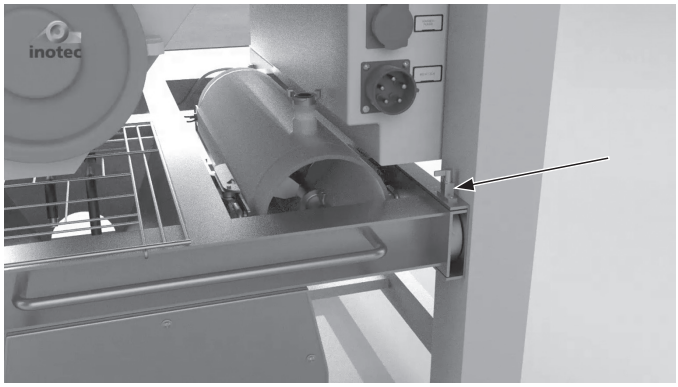


22. For possible cleaning of the material hopper (residue emptying), pull the plug of the motor (1) out of the socket on the side of the switching cabinet.
23. Unlock the eccentric lock (2) that connects the motor to the material hopper and fold the motor (3) to the side.
24. Pull the metering shaft out of the round opening in the lower area of the material hopper and catch any residual material that falls out with a suitable container. Clean the metering shaft with a broom or brush from dry residual material. Then push the metering shaft back into the opening.
25. Fold the motor back again and make sure that the metering shaft is connected to the motor via the motor claw.
26. Lock the eccentric lock that connects the motor to the material hopper.

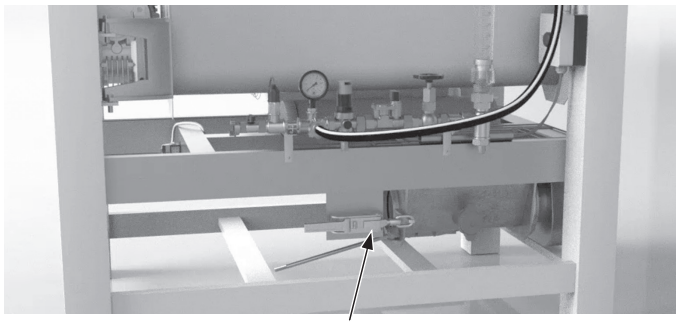
10.2 After cleaning

NOTE **Note the optimum assembly sequence.**

1. For transport, loosen the fixing bolt and slide the pump extension frame under the material hopper into its transport position. Then lock the fixing bolt to the base frame.



2. Close the eccentric lock on the base frame below the water fitting.



10.3 Decommissioning

Running the machine until it is empty and switching it off

1. Stop the filling of the material hopper in time.
2. Empty the material hopper, the pump hopper and the mortar hoses.
3. Clean the machine.
4. Switch off the mixing pump. To do this, turn the main switch on the left side of the switching cabinet to the horizontal position "0 = OFF".
5. Pull out the mains plug.
6. Interrupt the external water supply by closing the water valve.
7. Open the water drainage tap on the water measuring system under the pressure reducer to release the pressure (approx. 2.5 bar).
8. Dismantle the metering shaft, the pump shaft, the pump unit (rotor/stator) and the mixing tube with the mixing shaft.

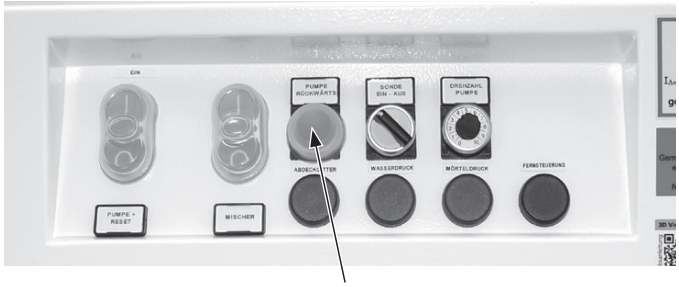
Rotating mixing, metering and pump shafts. Danger of death due to being pulled into the machine and crushed.
When the motors are running, the metering shaft rotates in the material hopper, the mixing shaft in the mixing tube and the pump shaft in the pump hopper.

- Do not reach into the rotating mixing or pump shaft.
- Do not bring any objects into the rotating mixing or pump shaft.

1. Before working on the mixing or pump shaft, disconnect the external power supply (main switch off). Only loosen the screw of the protective grids when the machine is switched off.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on.

Pressurised conveyor hoses.
Risk of injury and risk of property damage due to escaping and/or flying material, and/or bursting conveyor hoses.

- Before disconnecting the conveyor hoses, make sure that the hoses are depressurised. To do so, check the pressure indicator on the mortar pressure gauge. The pressure indicator must display 0 bar!
- Before opening the hose coupling, let the small silo inoCOMB Cabrio run in reverse to release any pressure! To do this, press the "Reverse pump" pushbutton until the pressure display on the mortar pressure gauge shows 0 bar.



Pushbutton "Reverse pump"

- Use only conveyor hoses which are permissible with an operating pressure of 40 bar and a burst pressure of 120 bar, and are in a technically perfect condition (e.g. are without any cracks or other external damage!).

11 Maintenance

Have the machine inspected once a year by a specialist workshop. Replace parts which are subject to wear as soon as the wear limits have been reached. Portable machines, like the inoCOMB Cabrio, must be subject to an annual electrical inspection according to the implementing regulation for electrical plant and operating resources (DGUV V3). This inspection may only be carried out by a qualified electrician (e.g. electrical engineer, electrical technician, master electrician, senior electrician, foreman electrician or assistant electrician). Electrical specialists work at all INOTEC service centres, conducting electrical inspections in line with DGUV V3. To arrange an inspection, call the INOTEC service hotline on +49 7741 6805 777.

Cleaning and maintenance work can put the safety of operating staff at risk and impair the functionality of the machine.

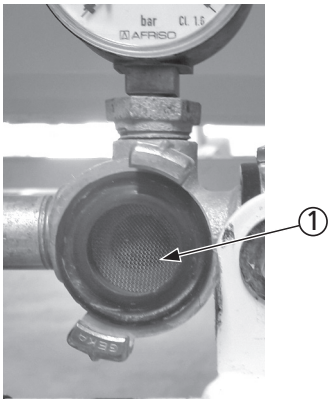
1. Switch off the small silo. To do this, turn the main switch to the horizontal position "0".
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on
4. Before cleaning with the water jet, cover all the openings that water must not penetrate into for safety and functional reasons.
5. After cleaning, remove all the covers which were attached to protect against the water.

11.1 Maintenance plan

Have the machine inspected at a specialist workshop or at an INOTEC service centre	Once a year (Recommended)
Electrical inspection (DGUV V3) by a qualified electrician or at an INOTEC service centre	At least once a year (mandatory, specified by DGUV V3)
The dirt trap sieve in the water inlet is to be cleaned/ replaced by the operator	Daily
The dirt trap sieve in the pressure reducer is to be cleaned/replaced by a service technician	Monthly

11.2 Dirt trap sieve in the water inlet

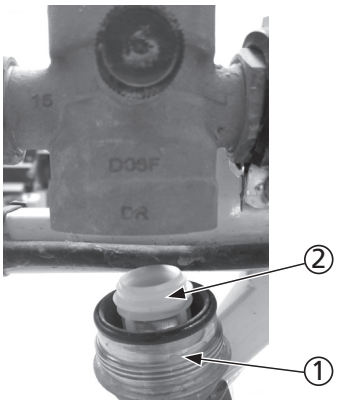
(Brass sieve insert, item no. 10006007)



1. Remove the dirt trap sieve (1) from the GEKA coupling.
2. Clean the dirt sieve trap daily.
3. Replace the dirt trap if it is very dirty.
4. Re-install the dirt trap sieve.

11.3 Dirt trap sieve in the pressure reducing valve

(replacement strainer for pressure reducer item no. 10006518)



1. Unscrew the sieve cup (1) from the pressure reducer.
2. Remove and clean the dirt trap sieve (2) once a month.
3. Replace the dirt trap if it is very dirty.
4. Install a new dirt trap sieve and screw the sieve cup onto the pressure reducer.

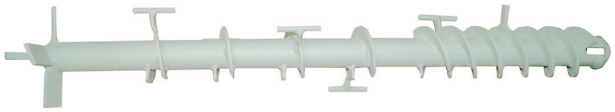
11.4 Set values

Water pressure switch	ON: 2.5 bar	Off: 2.0 bar
Pressure reducer	2.5 bar	

11.5 Wear limits

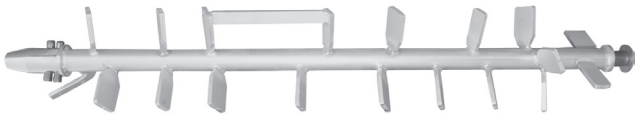
Metering shafts, mixing shafts, pump shafts and rotors/stators are wearing parts that must be checked regularly and replaced if necessary.

11.5.1 Metering shaft wear limit



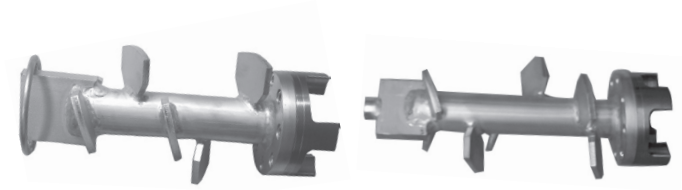
Worm wing maximum height:	18 mm
Minimum height of augur blades (wear limit)	12 mm

11.5.2 Mixing shaft wear limit



Maximum height of mixer blades	57 mm
Minimum height of mixer blades (wear limit)	53 mm

11.5.3 Pump shaft wear limit



Maximum height of augur blades	38 mm
Minimum height of augur blades (wear limit)	30 mm

12 Faults, causes and solutions

The small silo inoCOMB Cabrio is designed for trouble-free operation. However, should a fault occur, please follow the instructions below on analysing, checking and remedying the fault or contact the Inotec Service team (see the address list for INOTEC service centres at the end of the document) or call the INOTEC service hotline on: +49 7741 6805 777.

Malfunctions can jeopardise the safety of the the safety of operating staff at risk and impair the functionality of the machine.

Proceed as follows where a fault occurs:

1. Cut off the power supply in the event of any faults which pose a direct risk to people or material assets. To do this, press the red pushbutton.
2. Pull out the mains plug.
3. Secure the machine against unexpectedly being switched back on
4. Determine the cause of the fault.
5. Report the fault to the responsible person on site.
6. Depending on the type of fault you can either rectify this yourself or have it rectified by a qualified electrical specialist.

The faults listed below feature recommendations as to who is authorised to rectify the fault.

Symptom	Potential cause	Check / solution	Personnel qualification
If the machine will not start.	Power supply is cut off.	• Check the power supply (power distribution points, socket, power cable, cable reel). • Have the electrical control checked and have the fault rectified if necessary.	Machine operator Service technician/ qualified electrician
	No input voltage available. Residual current circuit breaker has been tripped.	• Have the voltage supply checked at the worksite distribution board, supply cables and cable reels. • Have the voltage supply restored if it was interrupted.	Service technician/ qualified electrician
	Blockage due to foreign bodies or hardened material in the mixing tube, in the pump hopper with the pump shaft, in the pump unit (rotor/ stator or the material hose.	• Switch off the machine and pull out the mains plug. • Remove the foreign body or clean the mixing tube, the pump hopper with the pump shaft, the pump unit (rotor/stator) and the material hose.	Machine operator
	Water pressure too low	• Check the water pressure at the pressure gauge of the water fitting (min. 2.5 bar)	Machine operator
	Water supply interrupted	• Check that all taps are open. • Check whether the hoses are kinked. • Clean out blocked pipes.	Machine operator
The machine has stopped.	The overcurrent protection device has tripped.	• Check the RC fault indicator on the switching cabinet. • In the event of a fault in the frequency inverter or if the RCD or the fuse is tripped, the "cover grille" warning light lights up red! After eliminating the fault, acknowledge the warning light with the red button at the "Pump On" switch (Reset).	Machine operator
		• Have the engines checked. • Have the fault remedied if necessary.	Service technician/ qualified electrician
	Mortar pressure too high (> 40 bar)	• Run the machine in reverse to reduce the mortar pressure. Check the mortar pressure on the mortar pressure gauge.	Machine operator
	Metering shaft mechanically blocked,	• Switch off the machine and pull out the mains plug. • Check whether any foreign bodies are in the metering shaft; if necessary, remove the foreign bodies.	Machine operator
	Mixing shaft mechanically blocked.	• Switch off the machine and pull out the mains plug. • Check whether there is a foreign body or hardened material in the mixing shaft; remove the foreign body or hardened material if necessary.	Machine operator
	Pump shaft mechanically blocked.	• Switch off the machine and pull out the mains plug. • Check whether there is a foreign body or hardened material in the pump shaft; remove the foreign body or hardened material if necessary.	Machine operator
	Rotor/stator mechanically blocked.	• Switch off the machine and pull out the mains plug. • Check whether there is a foreign body or hardened material in the rotor/stator; remove the foreign body or hardened material if necessary.	Machine operator

Symptom	Potential cause	Check / solution	Personnel qualification
Machine stops (continued)	Material blockage in the hose; pressure greater than 40 bar.	• Run the machine in reverse to reduce the mortar pressure. Check the mortar pressure on the mortar pressure gauge. If the pressure gauge shows "0" bar, switch off the machine and pull out the mains plug. Remove the mortar hose, remedy the material blockage and then clean the mortar hose. If necessary, use a new material hose.	Machine operator
	Mortar pressure gauge defective.	• Switch off the machine and pull out the mains plug. Replace the mortar pressure gauge.	Machine operator
	The machine is running at its limits; the motor draws more than 16 A current (e.g. material that is difficult to pump); the RC is regulating the motor.	• Adjust the material consistency.	Machine operator
	Protective grille not mounted properly.	• Check that the protective grille above the material tripper is properly fitted.	Machine operator
	Mixer motor defective	• Have the mixer motor checked and replaced with a new motor if necessary. • Have the electrical control checked and repaired if necessary.	Service technician/ qualified electrician
	Excessively high delivery pressure	• Reduce the length of the hose.	Machine operator
	Foreign matter in the metering or mixing shaft	• Switch off the machine and pull out the mains plug. • Check whether there is a foreign body or hardened material in the metering or mixing shaft; remove the foreign body or hardened material if necessary.	Machine operator
Too little material is promoted	Pump shaft or pump unit (rotor/stator) worn or delivery pressure too high.	• Switch off the machine and pull out the mains plug. • Replace the pump shaft or the pump unit (rotor/stator). • If the delivery pressure is too high, reduce the hose length.	Machine operator
Pump is delivering no material, but the motor is running.	Pump shaft is unhinged or worn	• Switch off the machine and pull out the mains plug. Adopt good practice when dismantling the rotor/stator component. Then remount the shaft or replace the pump shaft with a new one.	Machine operator
Pump does not deliver material.	Rotor/stator is worn	• Switch off the machine and pull out the mains plug. • Replace the rotor/stator.	Machine operator

Symptom	Potential cause	Check / solution	Personnel qualification
Pump is delivering no material; hose blockage. Signs: - Increasing delivery pressure - Pump blockage - Stretching the mortar hose	Material blockage in the hose; pressure greater than 40 bar.	• In the event of a blockage, immediately switch off the machine in order to prevent the blockage from becoming stuck further. • When removing blockages, bear in mind that mortar lines can be under pressure even when the machine is switched off. • Run the machine in reverse to reduce the mortar pressure. Check the mortar pressure on the mortar pressure gauge. If the pressure gauge shows "0" bar, switch off the machine and disconnect the mains plug. Remove the mortar hose, remedy the material blockage and then clean the mortar hose. Use a new material hose if necessary. • Danger: Only open hose couplings when the display shows no pressure ("0" bar) and with the face turned away and using protective goggles.	Machine operator
	Blockage in the pump unit (Rotor/stator).	• Check the mortar pressure gauge. If the pressure gauge shows "0" bar and the mortar hose is soft, there may be a plug in the pump unit. • Danger: Only open hose couplings when the display shows no pressure ("0" bar) and with the face turned away and using protective goggles. • Uncouple the mortar hose and carry out further pumping tests. If it is not possible to remove the blockage by continuing to turn the pump with the mortar hose disconnected, the pump unit must be dismantled. • Clamp the stator in a vice, turn the rotor anticlockwise out of the jacket and remove the plugger.	Machine operator
	Worn or poorly lubricated hoses	• Run the machine in reverse to reduce the mortar pressure. Check the mortar pressure on the mortar pressure gauge. If the pressure gauge shows "0" bar, switch off the machine and pull out the mains plug. Remove the mortar hose, remedy the material blockage and then clean the mortar hose. If necessary, use a new material hose.	Machine operator
	Pressure flange clogged	• Run the machine in reverse to reduce the mortar pressure. Check the mortar pressure on the mortar pressure gauge. • If the pressure gauge still shows pressure, switch off the machine and pull out the mains plug. Wrap the coupling connection on the pressure flange with tear-resistant foil. • Loosen both cam levers and the hose connection. • Loosen the blockage by tapping or shaking at the location of the blockage. Wear gloves and eye protection (PPE). • If necessary, insert a flushing hose into the material hose and flush out the material. • If the pressure gauge shows "0" bar, open the coupling on the pressure flange and remove the blockage if necessary.	Machine operator
	Too much taper on the couplings	• Please check the tapers of the material hoses and adjust, as required.	Machine operator
	Kink in the hose	• Lay out the material hose in a generous radius to avoid kinking.	Machine operator
	Leaky couplings	• Check the seals of the hose couplings and replace them if necessary.	Machine operator
	Materials that are difficult to pump	• Only use pumpable materials with a particle size of up to a maximum of 8 mm. Observe the material manufacturer's instructions.	Machine operator

Symptom		Potential cause	Check / solution	Personnel qualification
Material consistency	too thick	The amount of water supplied is too low; fluctuations in water pressure.	• Increase the flow volume by adjusting it on the needle valve of the water fitting. • Check the water pressure (min. 2.5 bar) on the pressure gauge of the water fitting.	Machine operator
	too thin	The amount of water supplied is too high.	• Reduce the flow volume by adjusting it on the needle valve of the water fitting.	Machine operator
	Consistency fluctuations	The material supply or water quantity is fluctuating.	• Switch off the machine and pull out the mains plug. • Check the mixing shaft and the pump shaft for adhering material and clean and dry them before reinserting. • Check the water inlet screen; clean the water screen if necessary. • Check the water pressure of the supply line; regulate the water pressure if necessary. • Check the setting on the pressure reducer; regulate the setting if necessary. • Check the metering shaft, the mixing shaft, the pump shaft and the pump unit (rotor/stator) for wear.	Machine operator

12 Dismantling and disposal

After the machine's period of use has expired, the machine must be dismantled and sent for environmentally conscious disposal.

12.1 Safety

- Only use trained or instructed personnel for dismantling the small silo inoCOMB Cabrio.
- Only have work on the electrical control system carried out by a qualified electrician.

Risk of injury posed by improper disassembly.
Stored residual energy, sharp components, points and corners on and in the machine can cause injuries.

- Ensure there is enough space for disassembly.
- Wear gloves and safety boots to avoid injuries.
- Handle sharp-edged parts with care.
- Ensure that the workplace is tidy and clean. Loose components and tools lying around or on top of each other can cause accidents.
- Adopt good practice when dismantling the components.
- Note that some individual parts may be very heavy.
- Secure the individual parts to ensure these do not fall down or topple over.
- If you have any questions, please contact our free INOTEC service hotline at +49 7741 6805 777.

Electrical voltage
Danger of death due to electric shock.

When switched on, electrical components can cause uncontrolled movements and lead to serious injury.

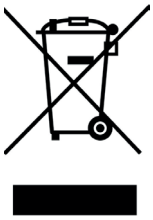
1. Switch the machine off. To do this, turn the red rotary switch to the horizontal position "0".
2. Pull out the mains plug and finally disconnect the machine from the electrical supply.

12.2 Dismantling

Clean and dismantle the machine before sorting the parts in compliance with the applicable occupational health and environmental protection regulations.

12.3 Disposal

In accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in national law, this machine must not be disposed of with household waste, but must be recycled in an environmentally friendly manner!



The small silo inoCOMB Cabrio is mainly made of high-quality metal. When you finally take the small silo out of operation, note the following:

- Send the metal to a recycling facility.
- Dispose of the small silo via a scrap metal dealer or your local scrap metal collection point.

Your used INOTEC equipment will be taken back by us and disposed of in an environmentally conscious manner. Please contact one of our service centres to arrange this.

13 Systems

The following documents are enclosed as annexes and form part of this operating manual:

13.1 EC declaration of conformity

Name/address of the issuer: **INOTEC GmbH**
Daimlerstraße 9-11
DE 79761 Waldshut-Tiengen

We hereby declare
that the machine described below, on the basis of its design and construction, as well as the version that we have put into circulation, complies with the relevant fundamental safety and health regulations of the EC Directive 2006/42/EC.

This declaration will become void in the event of any modification made to the machine without our approval.

Designation of the unit:	inoCOMB Cabrio
Machine model:	Small silo
Item number:	10042612

Applied harmonised standards

DIN EN 12100	Safety of machinery
DIN EN 60 204.1	Electrical equipment of machines - Part 1: general requirements
DIN EN 13857	Safety of Machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs

Authorised representative for the compilation technical documentation:

INOTEC GmbH
Daimlerstraße 9-11
DE 79761 Waldshut-Tiengen

Jörg Tetling
Managing Director

Waldshut-Tiengen, September 2021

13.2 General Terms of Business of the company INOTEC GmbH

Valid from April 2021

§ 1
General, scope

I. All offers, deliveries and other services provided by INOTEC GmbH — including in the future — are exclusively subject to these general terms and conditions.
Terms and conditions of the customer that deviate from or are not included in our terms and conditions are not recognised unless INOTEC GmbH has explicitly agreed to their validity in writing. Counter-confirmations by the customer with reference to their terms and conditions of business or purchase are hereby rejected.

II. INOTEC GmbH's general terms and conditions of leasing apply to leasing services we provide.

§ 2
Product descriptions, application-related information, subject to change

I. Machine descriptions in brochures, technical data sheets, etc. do not constitute quality guarantees. Application-related information and recommendations that INOTEC GmbH issues verbally and in writing to support the customer or processor are based on our current level of knowledge. They are non-binding and do not establish any contractual rights nor any secondary obligations from the purchase contract, unless explicitly agreed otherwise.

II. We reserve the right to make design and material changes, provided that normal use of the delivery item or use required under the contract is not significantly or adversely affected and the change is reasonable for the customer.

§ 3
Delivery period, assembly deadline

I. Agreed delivery periods start on conclusion of the contract, but not before the customer has provided the necessary documents and approvals and has fully clarified all of the details regarding the requested execution and all technical questions. Compliance with the delivery period always requires the customer to meet its contractual obligations.

II. In the event of force majeure and any unforeseeable obstacles which were unknown on conclusion of the contract, where we are not responsible for such obstacles, the delivery period shall be extended appropriately — including within a delay — insofar as it is proven that such obstacles impacted the provision of the service owed.
This also applies if these circumstances apply to sub-suppliers. We shall notify the customer of the start and end dates of such obstacles as early as possible.
If the obstacle lasts for more than three months or if it is determined that this will last for more than three months, both we and the customer may withdraw from the contract.

III. If we have agreed the time of delivery, assembly or installation with the customer, the customer is obliged to take all precautions at their place of work to be able to carry out their planned work. In particular, the customer is obliged to provide electrical connections, compressed air connections and adequate lighting at the place of work.
If the customer is responsible for the fact that we are unable to complete the planned work, are unable to complete it in full, or are unable to complete it within a reasonable period of time, the customer is obliged to compensate us for any damages incurred, and is particularly obliged to reimburse use for any additional costs incurred as a result of additional journeys and wasted working hours additionally required from our employees.
The assembly deadline is met if assembly has been carried out for acceptance by the customer by the deadline. If a test is stipulated by the contract, the deadline is met if assembly has been carried out for execution by the deadline. If there are any delays as a result of force majeure or circumstances for which the customer is responsible, the assembly deadline shall be extended to a reasonable extent.

IV. If the customer has demonstrably suffered damage as a result of a delay by INOTEC GmbH as an assembly company, they are entitled to demand compensation for the delay. In the case of simple negligence on the part of INOTEC GmbH, this is a fixed amount totalling 0.5% for each full week of the delay, but this amount shall not exceed 5% of the value of the part of the total delivery that cannot be used on time or in line with the contract as a result of delayed assembly.

§ 4
Transportation, transfer of risk, packaging, partial deliveries

I. Unless otherwise agreed, INOTEC GmbH shall deliver goods carriage forward and uninsured to the named destination at the risk of the recipient. If there are any damages in transit, the damage must be confirmed by the carrier before the goods are accepted. If carriage paid delivery is owed, this only applies to shipping and transportation standard in the industry. Additional costs, e.g. for express freight requested by the customer, shall be borne by the customer.

II. Unless otherwise agreed, risk for shipping transactions transfers to the customer as soon as the delivery has been handed over to the person providing transportation. If dispatch is not possible for reasons for which INOTEC GmbH is not to blame, risk transfers to the customer upon notification that the goods are ready for dispatch. If the customer collects the goods, risk transfers when the goods are handed over.

III. Unless explicitly agreed otherwise, INOTEC GmbH shall provide deliveries without packaging.

IV. INOTEC GmbH is entitled to partial delivery and partial performance to a reasonable extent.

§ 5
Prices and payment, returns

I. Unless otherwise agreed, prices do not include packaging, transportation, insurance, unloading, installation, assembly and commissioning, namely for delivery ex works or from the delivery warehouse, and are exclusive of statutory VAT at the respective rate. The prices quoted are only valid for the respective individual order. Assembly is billed based on time spent, unless a fixed rate has been explicitly agreed.

II. If contracts have an agreed delivery period of more than two months, both contracting parties may request a change in the agreed price if costs decrease or increase after the contract is concluded and the contracting parties cannot avoid this, particularly if such decreases or increases are caused by collective bargaining agreements or changes in the cost of materials. The price change must be limited to the amount required to compensate for the cost decrease or increase. A party is entitled to a similar price adjustment if delays arise for which the other party is responsible and these result in an actual delivery period of more than two months.

III. Unless otherwise agreed (e.g. when the invoice is sent), payments are to be made immediately on delivery of the goods. Payment is only considered to have been made when INOTEC GmbH has the amount at its disposal.

Granting a payment term once or several times only applies to the invoice amount referred to and not to other receivables (e.g. receivables from other or future deliveries).

IV. If the customer defaults on payment, INOTEC GmbH may demand statutory default interest as a minimum.

V. Offsetting payments or retaining payments where such retention equates to offsetting is only permitted if the customer has legal claims that are recognised by INOTEC GmbH, are not disputed, are pending judgement or have been established by law.

VI. Despite any of the customer's provisions to the contrary, INOTEC GmbH is entitled to initially offset payments against their older debts and will notify the customer about the type of offsetting that has taken place. If costs and interest have already been incurred, INOTEC GmbH is entitled to offset the payment against the costs first, then against the interest and finally against the main receivable.

VII. If the customer defaults on acceptance of the delivery items or on payment, INOTEC GmbH may withdraw from the contract and/or may demand compensation instead of performance after a reasonable grace period passes to no avail, where such a grace period is required by law and is set by INOTEC GmbH. If a compensation claim for damages is asserted, INOTEC GmbH may demand compensation at the amount of 15% of the purchase price, without being required to provide evidence to compensate for lost profit. The contracting parties are free to provide evidence of higher or significantly lower actual damage.

VIII. If we take back goods after consultation without any legal obligation, a credit note will be issued that totals a maximum of the value of the goods. With respect to the expenses incurred (loss of value, testing, cleaning, freight, packaging, administrative expenses, etc.), we reserve the right to deduct the working hours spent at current billing rates and/or a percentage of the value of the goods from the credit note, and with respect to machine returns, we reserve the right to carry out a leasing calculation using current leasing rates.

§ 6
Retention of title, extended retention of title

I. INOTEC GmbH retains title to the delivered goods until all receivables from the concluded contract, including all accessory claims (e.g. exchange costs, financing costs, interest) have been met in full. If several items are delivered for a total price, ownership of all items remains reserved until full payment has been made.
If a current account agreement has been made with the customer, retention of title exists until the recognised current account balance has been paid in full.
If cheques or bills of exchange are accepted, fulfilment only occurs when the cheque or bill of exchange has been cashed and INOTEC GmbH has the amount at its disposal without any recourse risks.

II. The customer is obliged to treat the goods subject to retention of title with care and to immediately notify INOTEC GmbH in the event of seizure, confiscation, damage or loss. Any breach of this obligation gives INOTEC GmbH the right to withdraw from the contract. The customer shall bear all of the costs that have to be paid, particularly in the context of third-party action against seizure being lifted and, if necessary, for the replacement of the delivery items, unless they can be recovered from third parties.

III. If the customer defaults in payment with respect to a not inconsiderable portion of its obligations, INOTEC GmbH is entitled to temporarily take back the goods subject to retention of title. Exercising the right of withdrawal does not constitute a withdrawal from the contract, unless INOTEC GmbH has explicitly declared withdrawal. The customer shall bear any costs that arise from the exercise of the right of withdrawal (in particular for transportation and storage) if INOTEC GmbH threatened withdrawal within a reasonable period of time. INOTEC GmbH is entitled to dispose of the goods subject to retention of title that have been taken back and to offset its claims with the proceeds, provided that INOTEC GmbH has previously threatened to dispose of them. In the threat, INOTEC GmbH must have set the customer a reasonable deadline to meet their obligations.

IV. The customer hereby assigns to INOTEC GmbH the purchase price, wages or other receivables (including the recognised balance from a current account agreement or, in the event of insolvency on the part of the customer's business partner, the 'causal balance' available) at the amount of the invoice value for the goods subject to retention of title (inclusive of VAT) from the onward sale or further processing of the goods subject to retention of title, or which arise because of another legal reason (insurance, tort, loss of ownership caused by connecting the delivery item to a property); INOTEC GmbH hereby accepts the assignment. INOTEC GmbH revocably authorises the customer to collect receivables assigned to INOTEC GmbH for the account of INOTEC GmbH in their own name. This collection authorisation can only be revoked if the customer does not properly meet their payment obligations. In such a case and at the request of INOTEC GmbH, the customer must provide information on the assigned receivables which is required for collection, in addition to making corresponding documents available and notifying the debtor of the assignment. The assignment of receivables under sentence 1 serves to secure all receivables —
including in the future — from the business relationship with the customer.

§ 7
Notice of defects, rights in the event of material defects

I. If a contract is established with a consumer (§13 of the Civil Code [Bürgerliches Gesetzbuch, BGB]), the statutory provisions that entered into force on 01/01/2002 shall apply.

II. If the purchase is a commercial transaction for both parties, the customer must provide immediate notice of any defects in writing, provided that this is in line with the normal course of business. Notice of hidden defects, however, must only be given after they are discovered; otherwise the goods are considered to be accepted.

III. Insofar as the delivery item and/or the associated assembly service is defective, the customer can either request that the defect is remedied (repair) or that an item free of defects is delivered (replacement delivery) as supplementary performance, at INOTEC GmbH's discretion, for a period of 12 months from transfer of risk. If we are not prepared or are unable to carry out the repair/replacement delivery, particularly if this is delayed beyond a reasonable period for reasons for which we are responsible, or if the repair/replacement delivery fails in any other way, and if further attempts at supplementary performance are unreasonable for the customer, they shall be entitled to withdraw from the contract or to reduce the purchase price, at their discretion. If there is a negligible defect, the customer may only withdraw from the contract with our consent.

IV. No claims for material defects arise in the event of unsuitable or improper use or treatment of the goods, incorrect assembly or commissioning by the customer or third parties, natural wear and tear (especially for wearing parts), unsuitable equipment or operating conditions, inadequate maintenance, etc.

V. If the defective goods are third-party products, we are entitled to assign our claims for material defects against our sub-suppliers to the customer and to refer them to their (judicial) claim. A claim can only be made against us if claims against our sub-suppliers are not enforceable despite the (judicial) claim being made on time, or if the claim is unreasonable in the individual case.

§ 8
Limitation of liability

I. INOTEC GmbH shall be liable for intent and gross negligence.

II. INOTEC GmbH shall only liable for simple negligence if essential contractual obligations (cardinal obligations) have been breached, except in the case of injury to life, limb or health. Liability is limited to foreseeable damage typical for the contract.

III. Liability for indirect and unforeseeable damage, loss of production and use, loss of profits, loss of savings and financial losses due to claims by third parties is excluded in the case of simple negligence, except in the case of injury to life, limb or health.

IV. Further liability that goes beyond this contract is excluded, regardless of the legal nature of the asserted claim. However, the above limitations or exclusions of liability shall not apply to no-fault liability that is mandatory by law (e.g. in accordance with the Product Liability Act [Produkthaftungsgesetz]).

V. Insofar as liability under points II and III is excluded or limited, this shall also apply to the personal liability of INOTEC GmbH's employees, workers, representatives, bodies and vicarious agents.

§ 9
Fixed compensation for damages

I. If the buyer cancels the order before execution, INOTEC GmbH is entitled to demand 15% of the total order amount as compensation.

II. INOTEC GmbH's right to claim higher damage amounts remains unaffected.

§ 10
Documents, demonstration equipment, property rights

We shall retain title and copyrights to drawings, drafts, cost estimates and other documents provided by us, particularly samples and demonstration equipment. Documents and items may not be reproduced or made accessible to third parties without our explicit, specified consent.

§ 11
Place of jurisdiction, applicable law

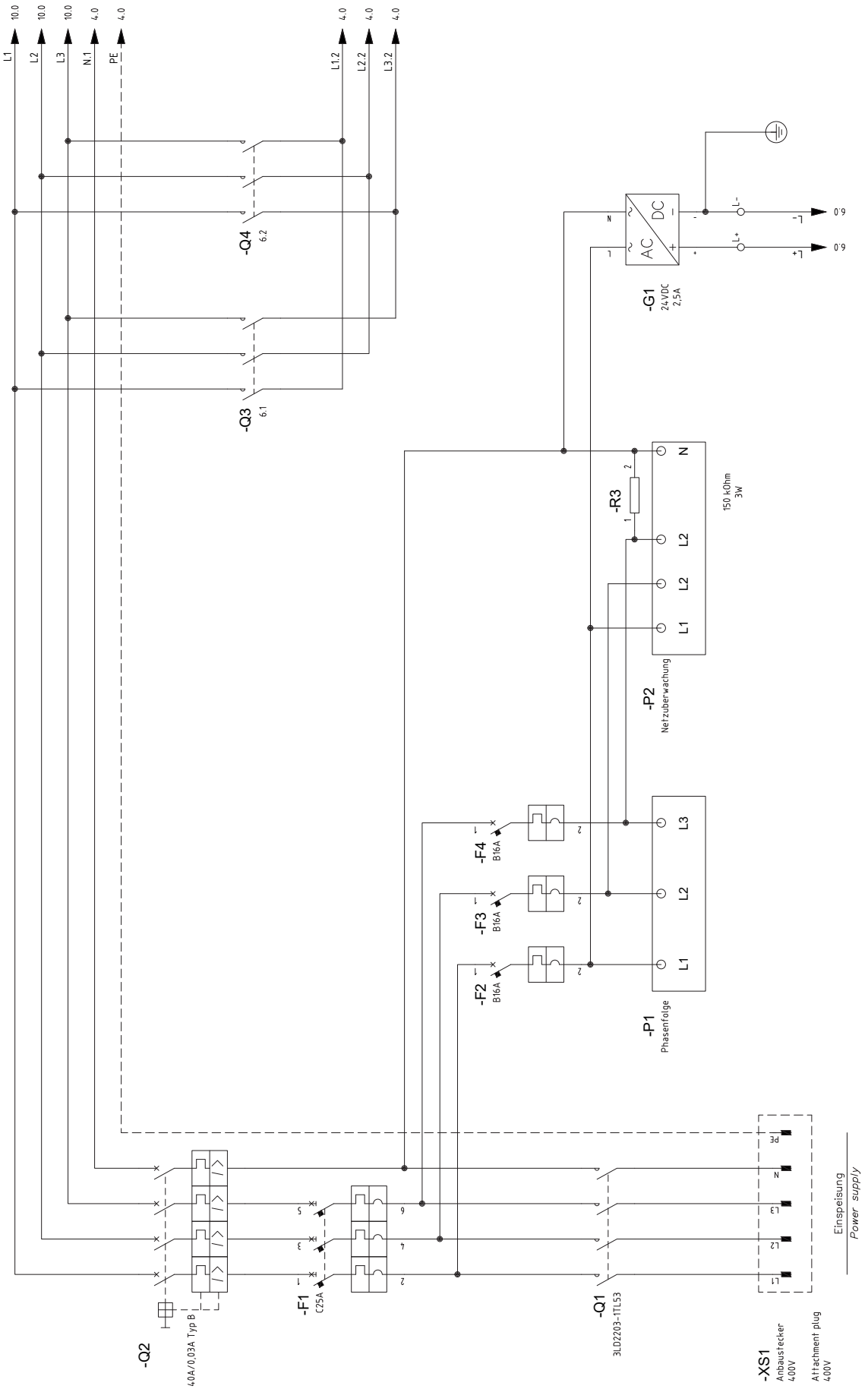
I. The law of the Federal Republic of Germany applies to these general terms and conditions and the entire legal relationship between INOTEC GmbH and the customer, excluding the UN Convention on Contracts for the International Sale of Goods (CISG).

II. If the customer is a merchant within the meaning of the Commercial Code (Handelsgesetzbuch), a legal entity under public law or a special fund under public law, the place of jurisdiction for all rights and obligations of the parties to the contract from any transaction — including those involving bills of exchange and cheque disputes — is Waldshut-Tiengen (Federal Republic of Germany). The same shall apply if the customer does not have a general place of jurisdiction in Germany, has moved their domicile or usual place of residence outside of Germany after concluding the contract, or their place of residence or usual place of residence is not known at the time when the action is filed. However, we are also entitled to sue the customer at their general place of jurisdiction.

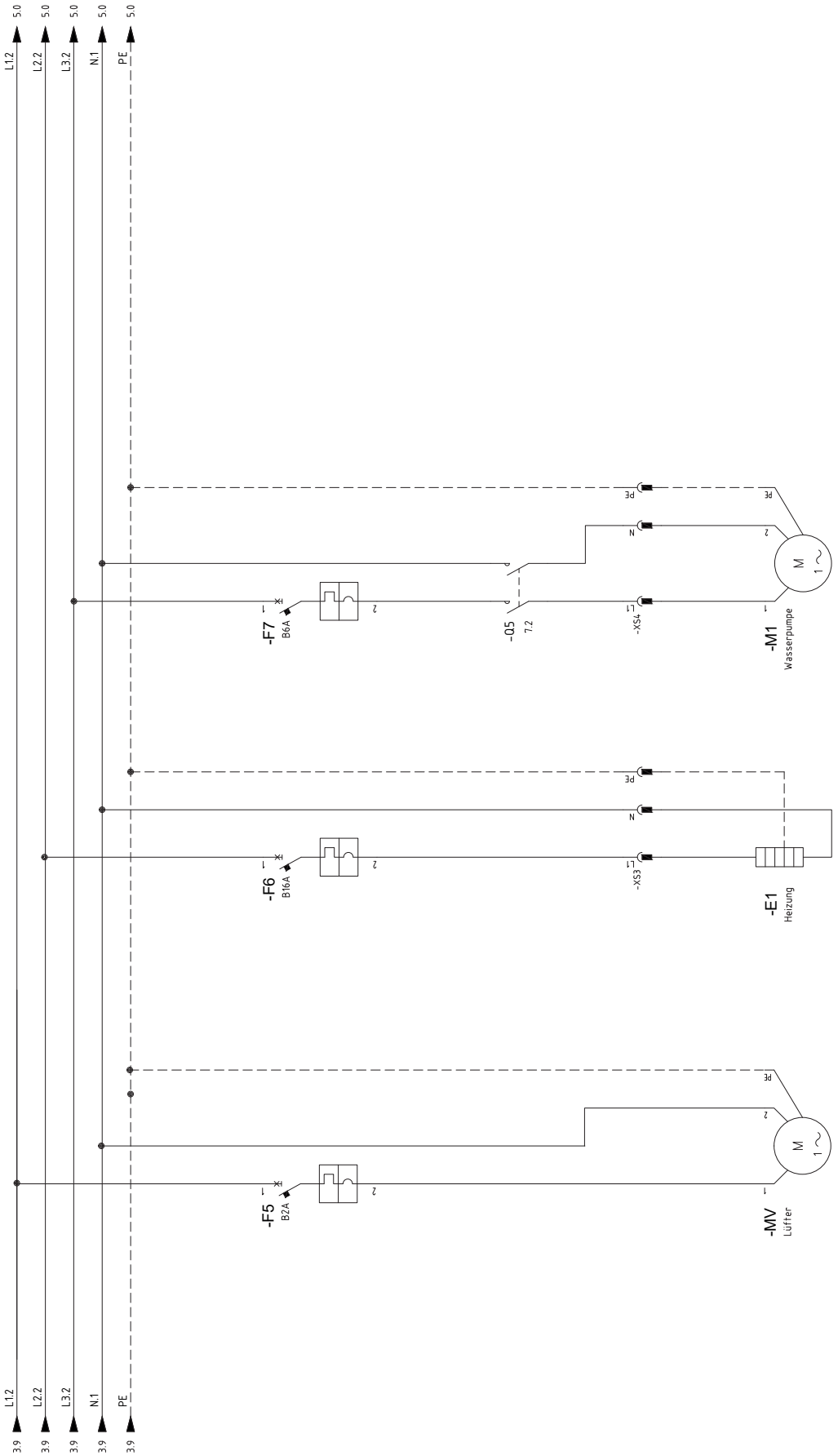
INOTEC GmbH
Daimlerstraße 9-11
D-79761 Waldshut-Tiengen

Managing Director:
Manfred Schmidt
Jörg Tetling
Commercial Register:
Freiburg District Court HRB 621 131

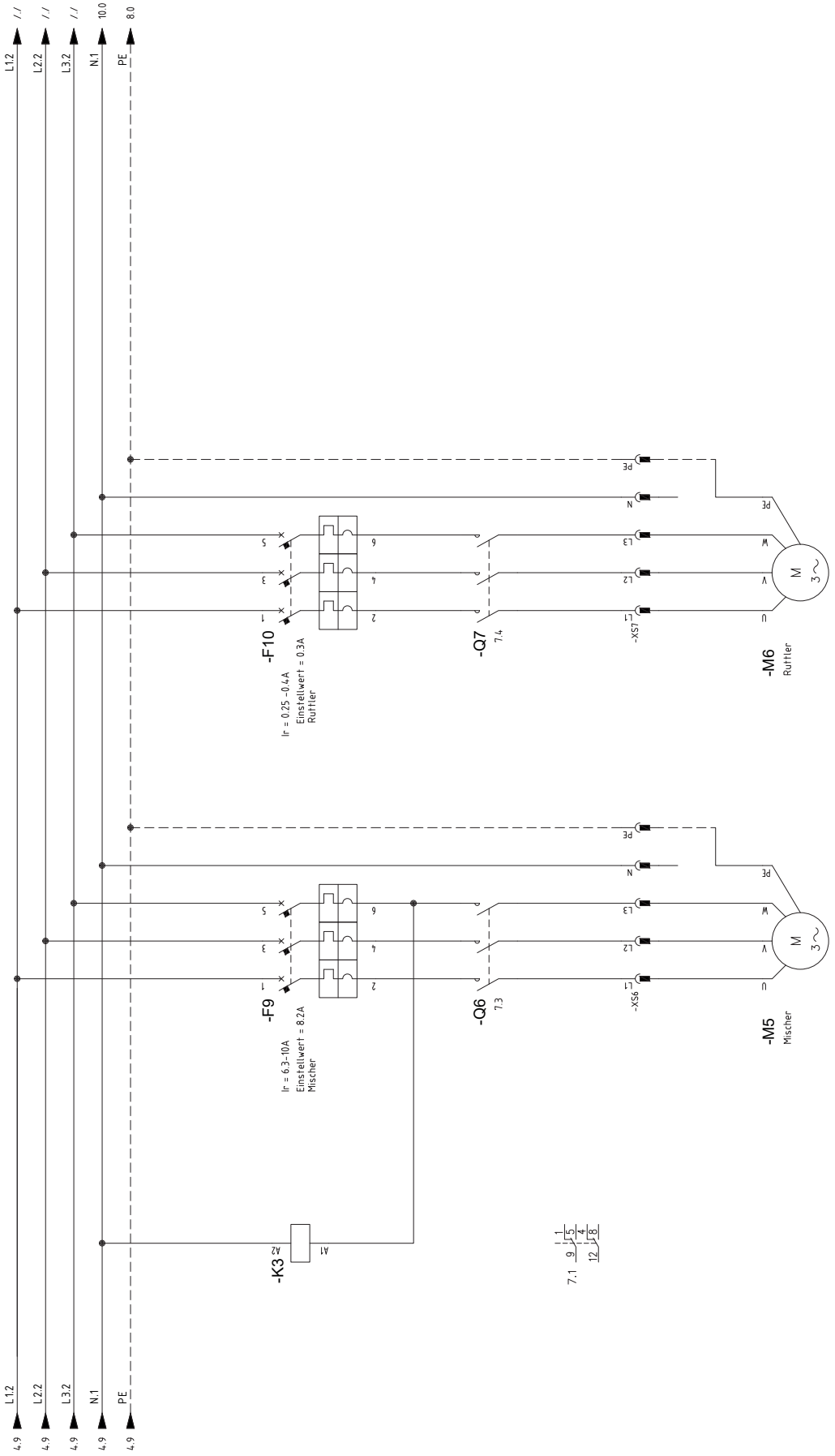
13.3 Feeding and earthing



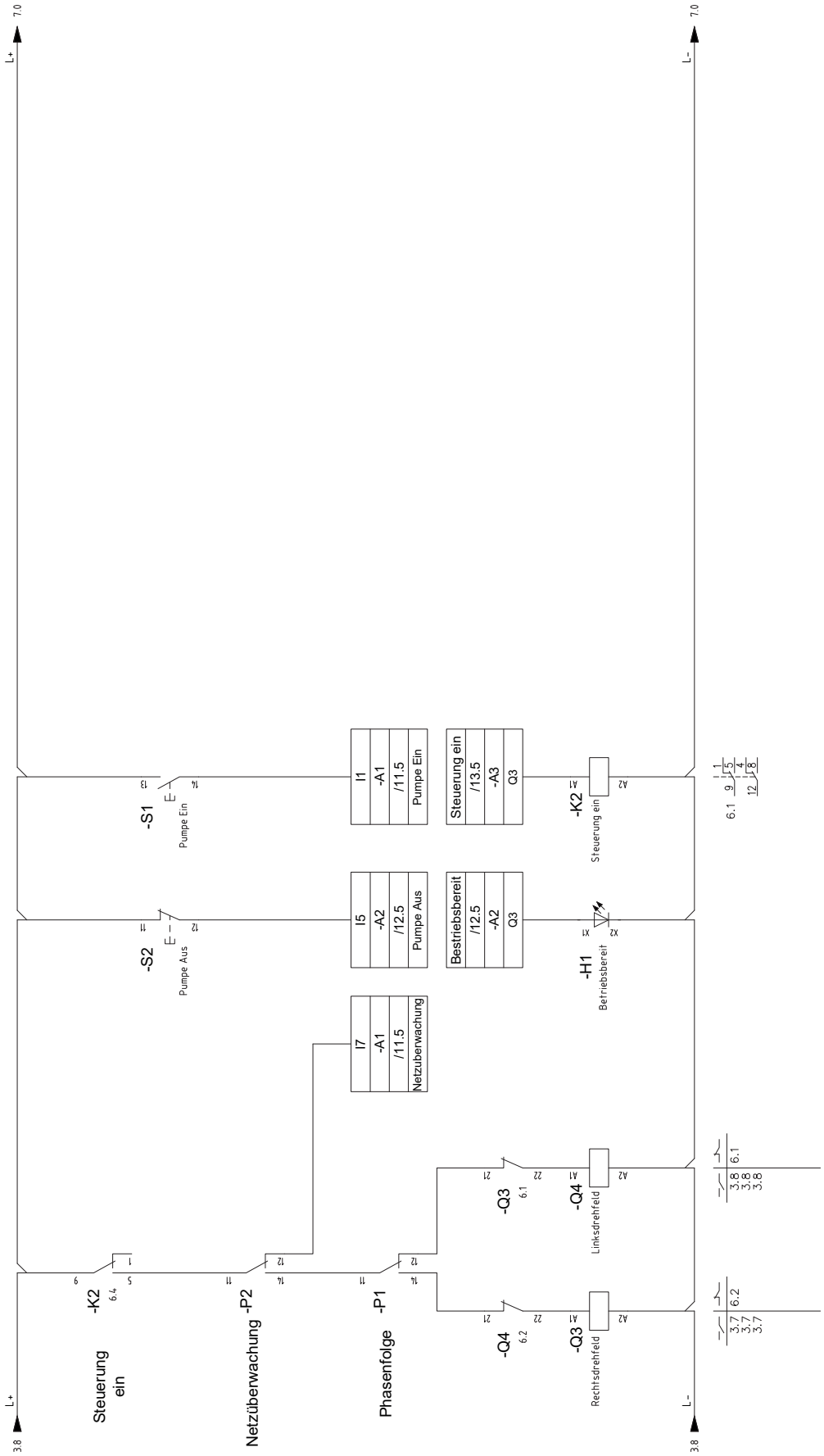
13.3.1 Circuit diagram: Load circuits 01



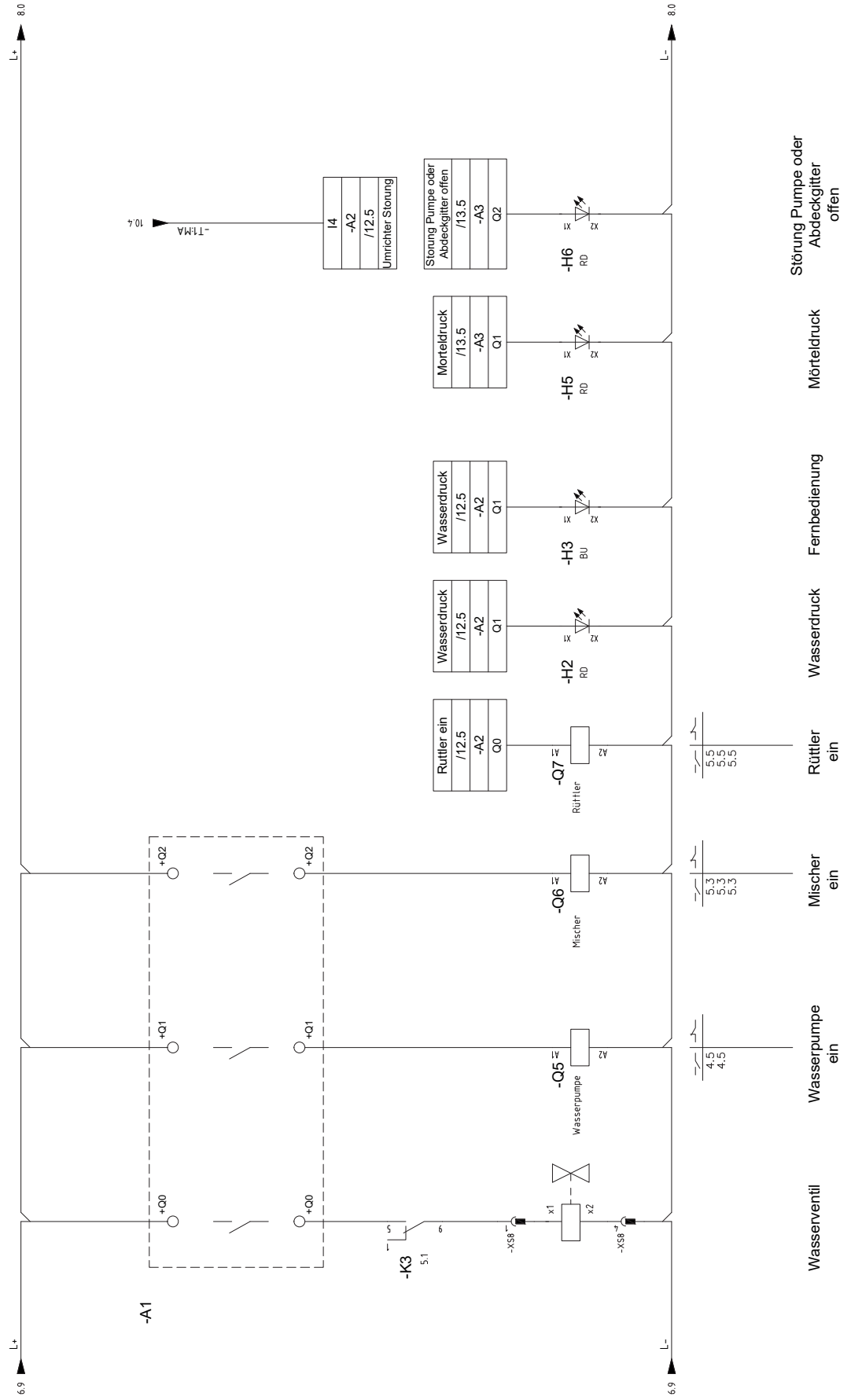
13.3.2 Circuit diagram: Load circuits 02



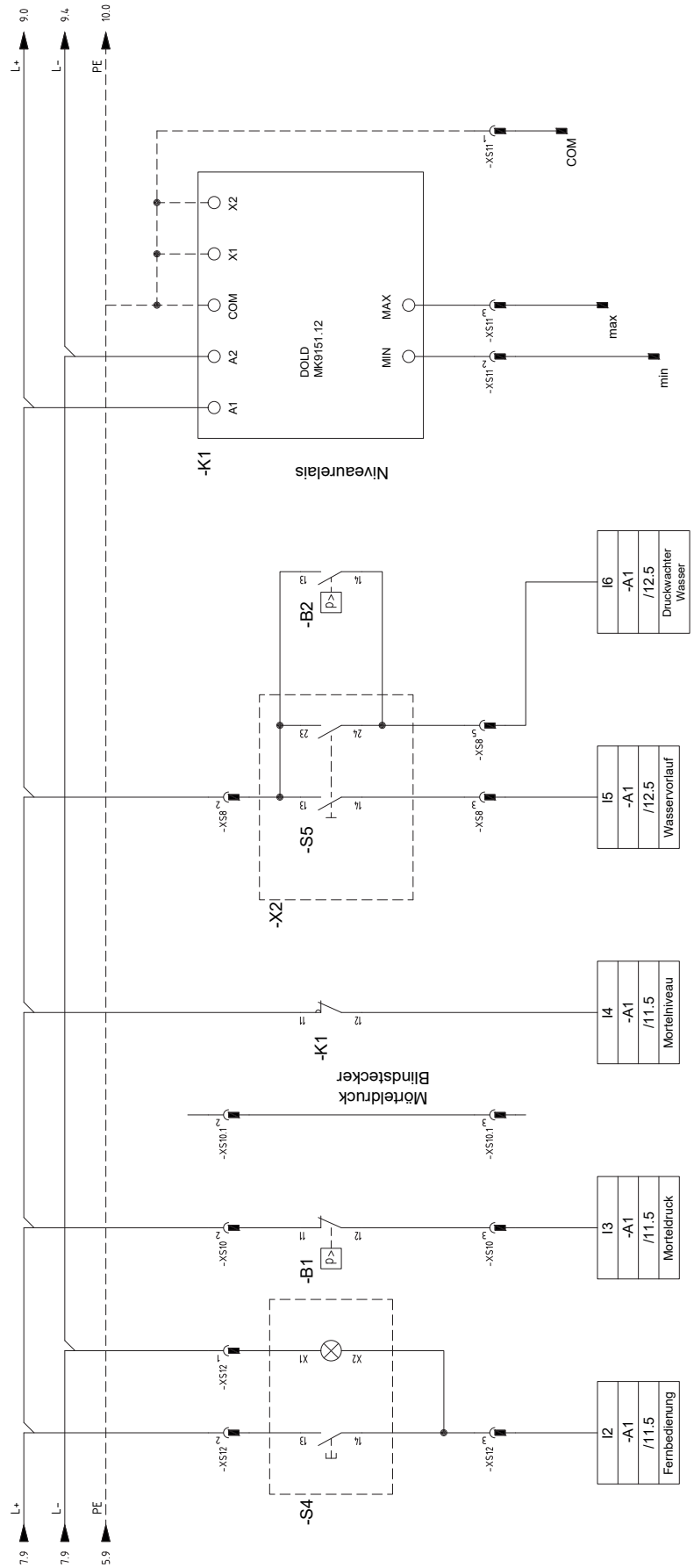
13.3.3 Circuit diagram: Direction of rotation changeover



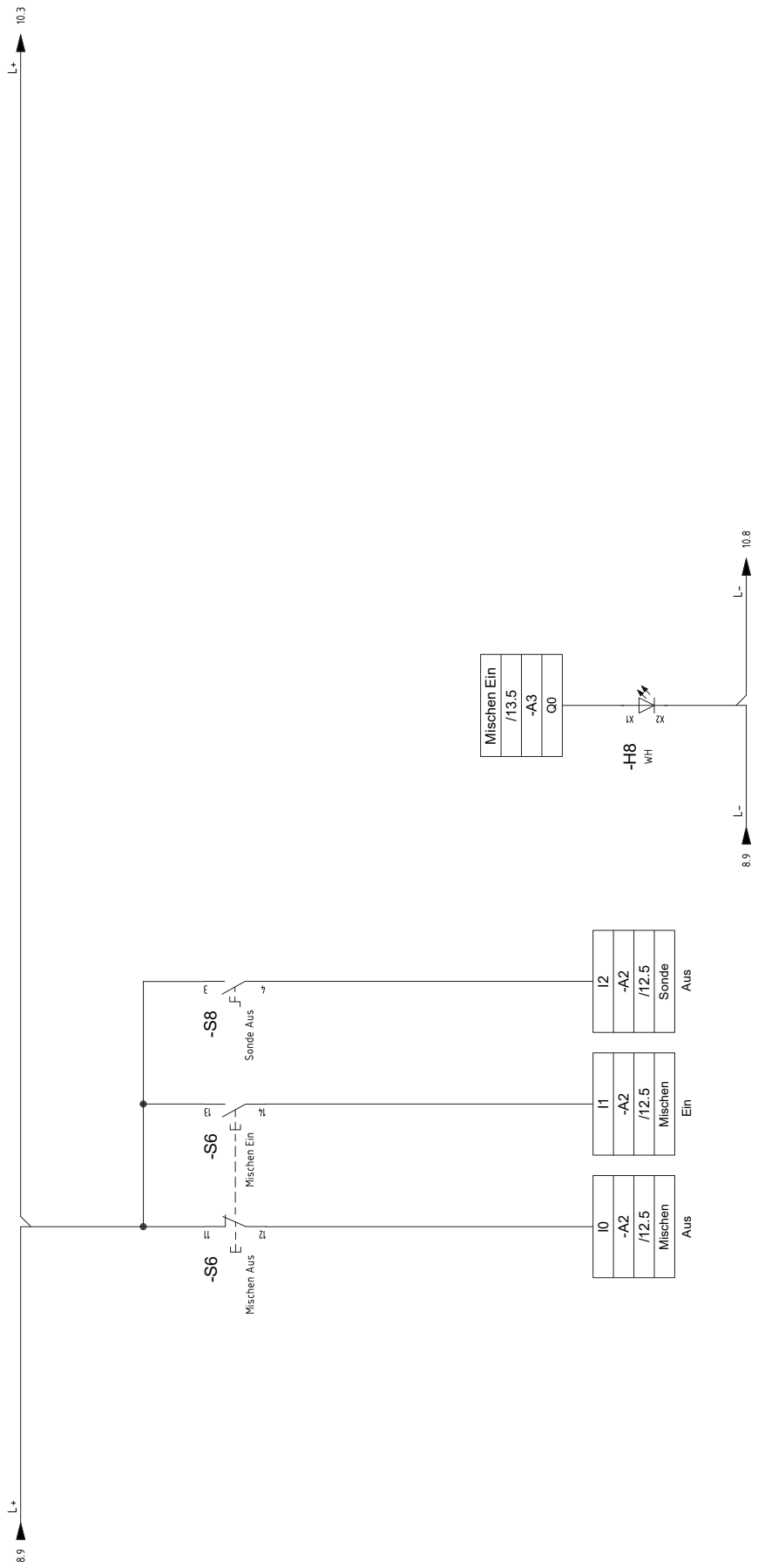
13.3.4 Circuit diagram: Contactor control



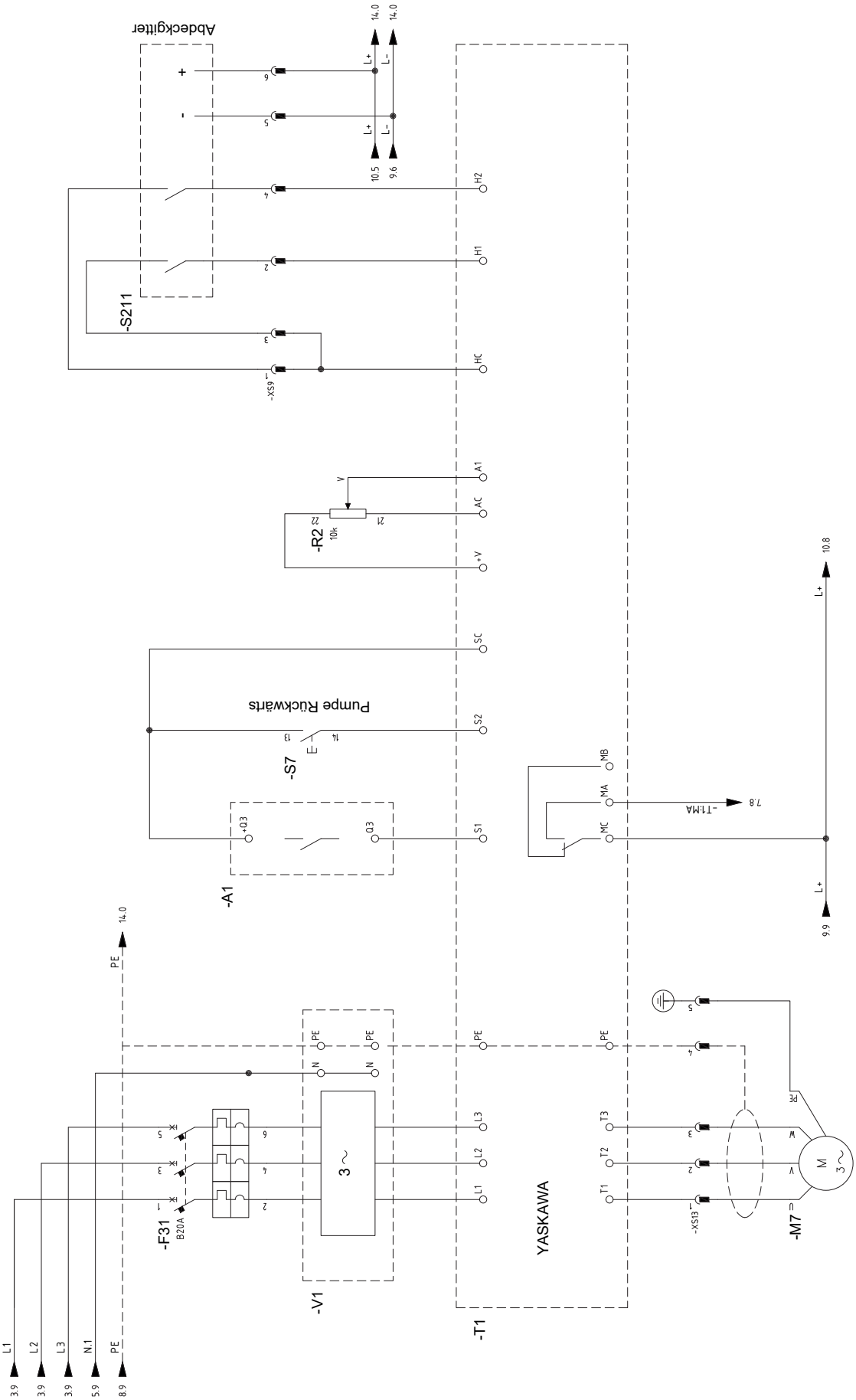
13.3.5 Circuit diagram: Sensors



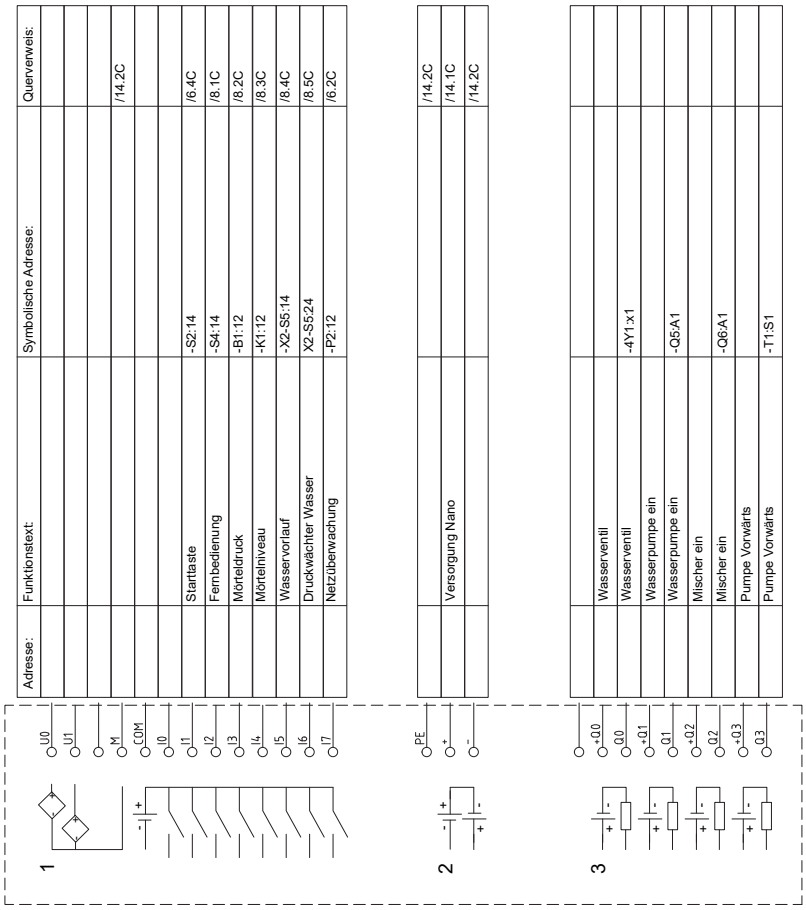
13.3.6 Circuit diagram: Operating switch

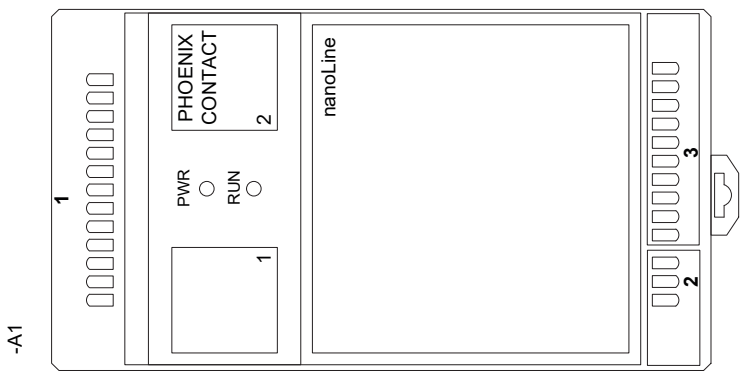


13.3.7 Circuit diagram: Pump

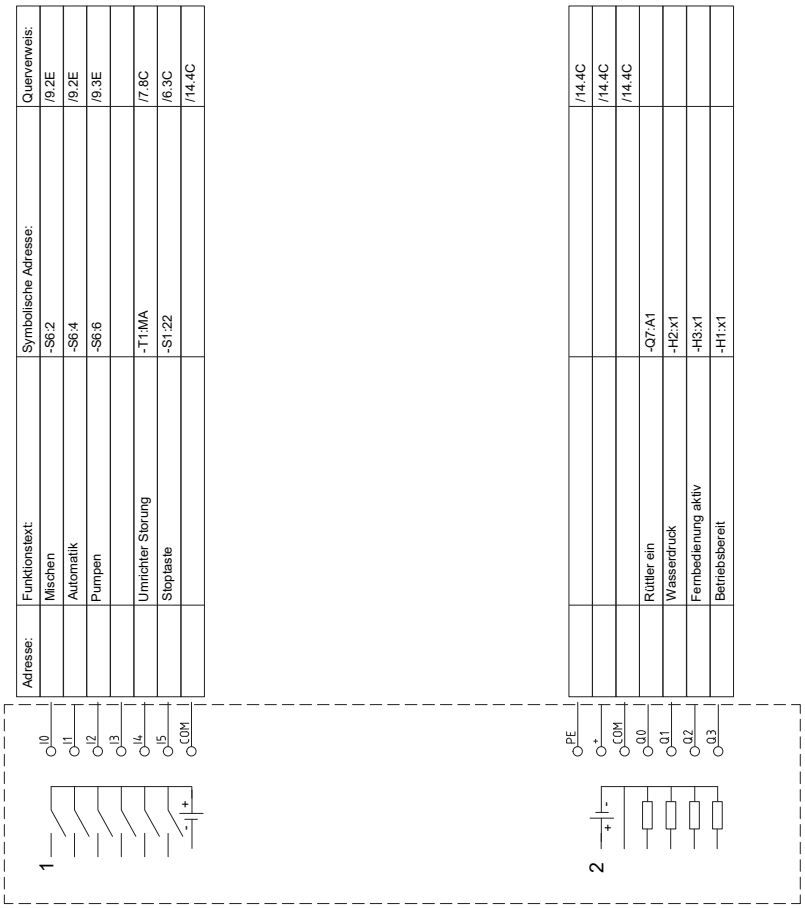


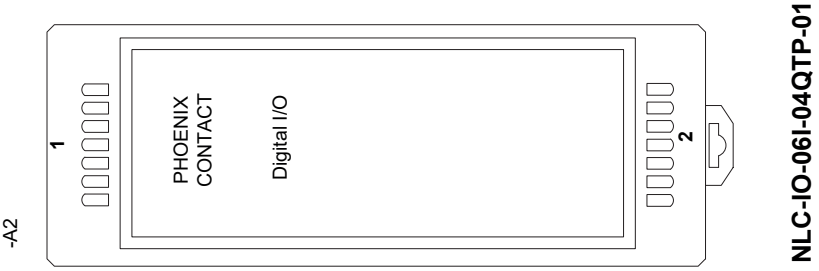
13.3.8 Circuit diagram: Nano 01



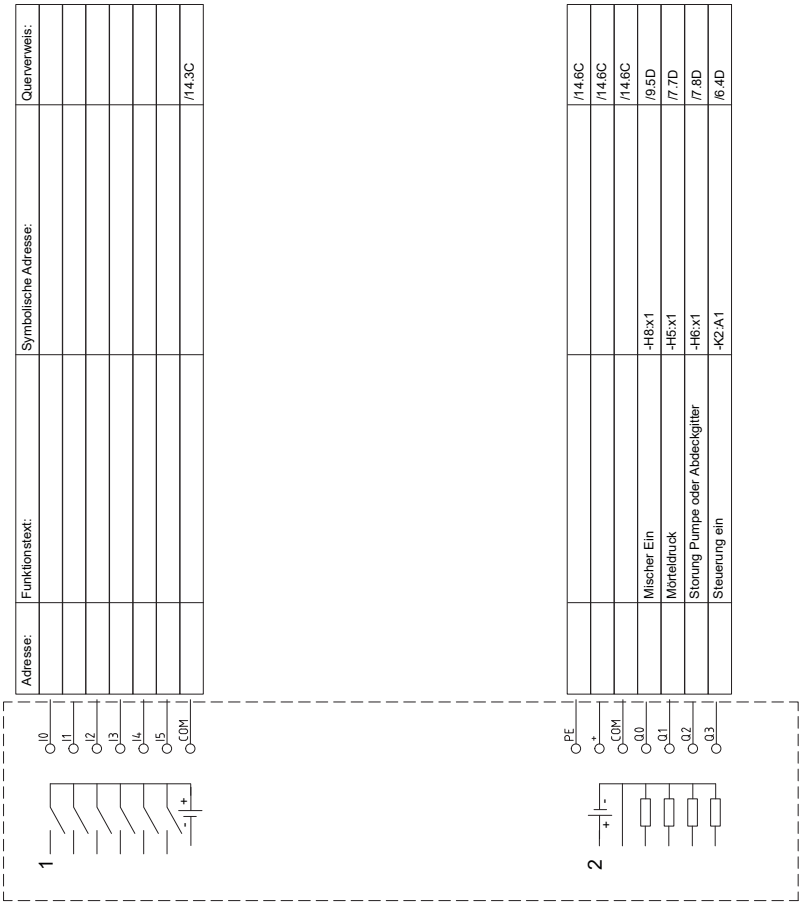


13.3.9 Circuit diagram: Nano 02

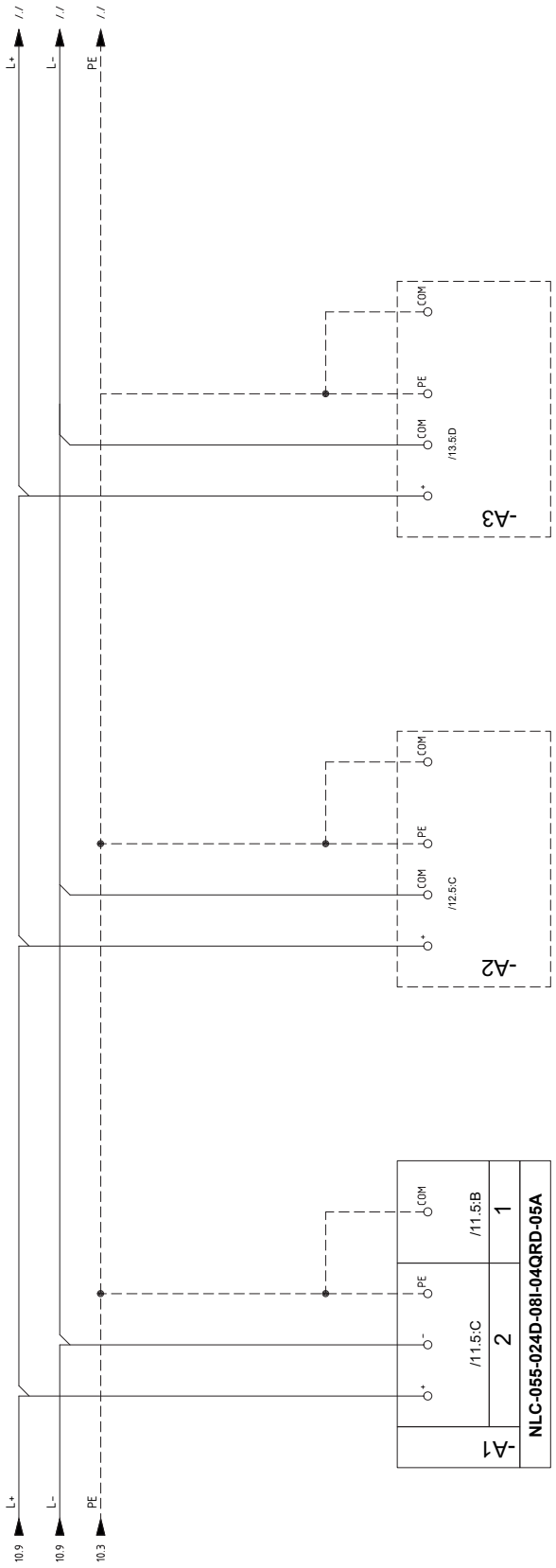




13.3.10 Circuit diagram: Nano 03



13.3.11 Circuit diagram: Nano 04



EN

14 Order form

Fax to: +49(0)7741-6805-665

Delivery address

Invoice to

Name of customer

Consultant

Date

Number	Item no.	Item name

Our General Terms of Business, Delivery and Payment apply. The customer has been made aware of these terms and agrees to the application of the same.
All goods shall be owned by us until we receive complete payment pursuant to Section 449 of the German Civil Code.

15 Index

16 Locations
Your sales partner (English language)

INOTEC GmbH
(Headquarter)
Daimlerstraße 9-11
79761 Waldshut-Tiengen
Germany
Phone +49 7741 / 6805 675
Fax +49 7741 / 6805 665
E-Mail: j.tetling@inotec-gmbh.com

Wherever you are, we're there, too.

inotec

Product range

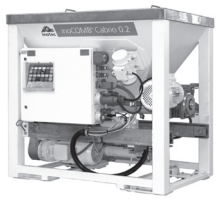
Delivery pumps

Mixing pumps

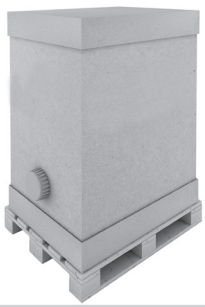
Mixers

Delivery systems

Silo technology



OWC technology



Airless devices

Cutters

Grinders

One-handed guns

Waste water systems

Tillage

Compressed air / compressors

Heaters / air dehumidifiers / high-pressure cleaners

Accessories & spare parts

Power tools / electrical appliances

INOTEC GmbH • Daimlerstraße 9-11 • D-79761 Waldshut-Tiengen • Tel.: +49 77 41 / 68 05-0 • www.inotec-gmbh.com