

# Operating manual

**ROTOQUIRL & ROTOMIX**

**Safety, overview and operation**



Item no. of the operating manual:

00476464



**Read the operating manual prior to starting any work!**

**This operating manual applies to the following items:**

ROTOMIX B-pump 1.5 steps	Item no. 00251139
ROTOMIX B-pump for RITMO L plus	Item no. 00638072
ROTOMIX D-pump Note: Rotor reinforced with tang (25 mm) required	Item no. 00767641
ROTOMIX R-pump Note: Rotor reinforced with tang (35 mm) required	Item no. 00767642
ROTOMIX R-pump with pressure gauge Note: Rotor reinforced with tang (35 mm) required	Item no. 00767686
ROTOMIX disc D-pump Note: Rotor reinforced with tang (25 mm) required	Item no. 00767745
ROTOQUIRL D-pump Note: Rotor reinforced with tang (25 mm) required	Item no. 00767760
ROTOQUIRL R-pump Note: Rotor reinforced with tang (35 mm) required	Item no. 00767763



## About us

<b>Publisher</b>	Knauf PFT GmbH & Co. KG Postfach 60 ▪ 97343 Iphofen Einersheimer Straße 53 ▪ 97346 Iphofen Germany
<b>Document name</b>	00476464_1.0_GB Translation of the original operating manual (DE)
<b>Date of first issue</b>	06.2023
<b>Date of change</b>	
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## 1 General information

### 1.1 Information regarding the operating manual

- This operating manual provides important information and instructions on the correct use of the machine. A prerequisite for safe working is the observance of all stated safety guidelines and instructions.
- Furthermore, the local accident prevention guidelines and general safety instructions for the application area of the device are to be adhered to.
- Read the operating manual thoroughly before starting any work! It is a part of the product and has to be kept near the device and easily accessible to the personnel at all times.
- If the device is given to third parties, also include the operating manual.
- The figures in this manual are for presentation purposes of facts, not necessarily to scale and may slightly differ from the actual model of the device.

### 1.2 Information on the safety instructions

These safety instructions give important information on handling the device. A prerequisite for safe working is the observance of all stated safety guidelines and instructions.

Furthermore, the local accident prevention guidelines and general safety instructions for the application area of the device are to be adhered to.

Read the operating manual thoroughly before starting any work! It is a part of the product and has to be kept near the device and easily accessible to the personnel at all times.

If the device is given to third parties, also include the operating manual.

The figures in this manual are for presentation purposes of facts, not necessarily to scale and may slightly differ from the actual model of the device.

### 1.3 Keep the manual for future reference

The operating manual has to be available during the whole service life of the product.



## 1.4 Symbols

### Warning signs

Warning signs can be identified in the operating manual by symbols. The signs are implemented by using signal words, which indicate the intensity of the danger.

Follow the signs unconditionally and work with care to avoid accidents, injuries or material damage.

#### **DANGER**



Indicates an immediate dangerous situation, which leads to severe injuries or death if not averted.

#### **WARNING**



Indicates a possibly dangerous situation, which may lead to severe injuries or death if not averted.

#### **CAUTION**



Indicates a possibly dangerous situation, which may lead to minor injuries if not averted.

#### **NOTE**



Indicates a possibly dangerous situation, which may lead to material damage if not averted.

### Tips and suggestions



*Contains useful tips and recommendations, plus further information on efficient and problem-free operation.*

### Special safety instructions

The following symbols are used in conjunction with safety instructions in order to illustrate certain types of danger:

#### **DANGER**



##### **Danger to life from electric current!**

Indicates a potentially life-threatening situation caused by electricity in the affected area. Non-adherence to safety instructions may cause severe injuries or even death.

The work to be carried out must be carried out only by an electrician.

## 1.5 Limitation of liability

All specifications and instructions in this manual have been compiled considering the applicable standards and regulations, the status of technology as well as our long-term expertise and experiences.

The manufacturer is not responsible for any damage in the following cases:

- Failure to follow the instructions
- Non-intended use
- Deployment of untrained personnel
- Unauthorised conversions
- Technical modifications
- Use of non-approved spare parts

The actual scope of delivery may vary from the descriptions and illustrations given here in case of special deliveries, demand of additional order options or due to latest technical changes.

Additionally, the obligations defined in the delivery contract, the general terms and conditions, the delivery requirements of the manufacturer and the valid regulations at the time of contract conclusion all apply.

## 1.6 Copyright protection

Treat the operating manual as confidential. It is meant exclusively for the person operating the device. Giving the operating manual to a third party with prior written consent from the manufacturer is strictly prohibited.



*The contents, texts, drawings, pictures and other representations are protected by copyright and are subject to industrial property rights. Any improper use shall be liable to prosecution.*

All forms of reproduction

– both in whole and in part – plus the utilisation and/or publication of the manual contents are not permitted without prior written approval by the manufacturer. Violations may lead to damage compensation. Other claims are reserved.





## 1.7 Spare parts

### WARNING



#### **Danger of injury due to wrong spare parts!**

Wrong or defective spare parts can cause damage, malfunctioning or total breakdown as well as hamper the safety.

Therefore:

- Only use original spare parts from the manufacturer.

Buy spare parts from an authorized dealer.

## 1.8 Customer service

Our customer hotline is available for technical help and information.

Information on the respective contact partners can be found by telephone, fax, e-mail or on the Internet. The address of the manufacturer can be found on the back page.

Our employees are always happy to receive new information resulting from practical operation. This information may be used for future product improvements.

## 1.9 Safety

This section gives an overview of all important safety aspects for optimum protection of personnel as well as for safe and efficient operation.

Non-compliance with the working instructions and safety instructions in this manual can cause considerable damage.

### 1.9.1 Owner responsibility

The device is used in the commercial field. The operator of the device is therefore liable to follow the legal duties for occupational safety.

Apart from the occupational safety instructions in this operating manual, the safety, accident prevention and environment protection regulations must be adhered to.

Here, the following is especially applicable:

- The owner must be aware of the valid health and safety regulations and is responsible for carrying out a hazard analysis in order to determine additional dangers resulting from the individual working conditions on the operating site of the device. He must implement these in the form of operating instructions for operating the device.
- During the entire operation time of the device, the owner is responsible for coordinating the operating instructions with the current operational status and for adapting them as required.
- The owner is responsible for clearly allocating and defining the responsibilities for installation, operation, maintenance and cleaning.
- The operator must ensure that all persons who handle the device have read and understood the manual.  
Additionally, the operator must also carry out regular employee training and inform them of the dangers associated with device use.

Furthermore, the operator is responsible for keeping the device in technically flawless condition at all times.

The following therefore applies:

- The owner must ensure that the maintenance intervals detailed in this operating manual are observed.
- The owner must have all safety devices regularly checked for functionality and completeness.
- The owner must make the requisite safety equipment available to personnel.



## 1.9.2 Operating personnel

### 1.9.2.1 Requirements

#### **WARNING**



##### **Risk of injury due to lack of qualification!**

Improper use can lead to severe injuries or considerable material damage.

Therefore:

- Only let the people mentioned in the respective sections of this manual carry out the special activities.
- When in doubt, consult experts.

The following qualifications are given for various work fields in the operating manual:

#### ■ **Instructed person**

has been instructed by the operator about the tasks assigned to him and possible dangers in the event of improper behaviour.

#### ■ **Skilled personnel**

is, due to his technical training, knowledge and experience as well as knowledge of the relevant regulations, in a position to carry out the work assigned to him and to recognise possible dangers independently.

#### ■ **Qualified electrician**

is able to carry out work on electrical systems and to recognise possible dangers independently due to his technical training, knowledge and experience as well as knowledge of the relevant standards and regulations.

The electrician is specially trained and qualified for his field of work, and is familiar with the relevant standards and regulations.

Only those people must be allowed as personnel, who can be expected to do their work properly. Persons, who are under the influence of drugs, alcohol or any medication, for example, are not permitted.

Select people who comply with the directives of age and profession applicable at the operational site.

### 1.9.2.2 Unauthorised individuals

#### ⚠ WARNING



#### **Danger for unauthorised personnel!**

Unauthorised individuals who do not fulfil the requirements here are not fully aware of the dangers in the work area.

Therefore:

- Keep unauthorised persons away from the working area.
- When in doubt, speak to the persons and escort them out of the working area.
- Discontinue working until the unauthorised persons leave the work area.

### 1.9.3 Personal protective equipment

Wear protective gear is necessary while working in order to minimise health risks.

- Always wear the protective equipment required for the work in question during work.
- Observe signs for personal protective equipment in the work area.

#### Wear in principle

In principle, for all kinds of work, wear:



#### Protective clothing

Is tightly fitting clothing with low tear strength, with narrow sleeves and without parts sticking out. It mainly helps to protect from getting stuck into moving machine parts.

Do not wear any rings, chains and other jewellery.



#### Safety shoes

To protect from heavy parts that may fall and from slippery floors.



#### Protective goggles

To protect your the eyes against flying parts and liquid splashes.



#### Light breathing protection

To protect from harmful dust.



#### Hearing protection

To protect from hearing deficiencies.



#### Safety helmet

To protect from parts and materials that may fall or fly onto the person.



#### Protective gloves

To protect the hands from friction, abrasion, cuts or severe injuries as well as from coming into direct contact with hot surfaces.

#### Wear for special work

Special protective equipment is necessary for certain specialist tasks. It is separately mentioned in the individual chapters of this manual. This special protective equipment is explained below:



#### Face guard

To protect the eyes and the entire face from flames, sparks or heat as well as from particles or exhaust gases.

### 1.9.4 Special dangers

The residual risks are mentioned in the following section, which are obtained from the danger analysis.

Pay attention to the safety instructions and warnings in the other chapters of this manual in order to reduce health risks and avoid dangerous situations.

## General information

### Electric current

#### **DANGER**



##### **Danger to life from electric current!**

There is danger of immediate death if live parts are touched. Damage to electrical insulation or individual components can be potentially life-threatening.

Therefore:

- If insulation damage occurs, switch off the electrical supply immediately and organise repairs.
- Work on electrical systems should only be carried out by qualified electricians.
- When working on electrical systems, first ensure that they are completely switched off and isolated.
- Before starting maintenance, cleaning and repair work, switch off the power supply and secure to prevent switching on again.
- Do not bypass fuses or disable them. Observe the correct electrical amperage when replacing fuses.
- Keep electrical parts away from sources of moisture. It can lead to short-circuit.

### Magnetic/electromagnetic fields

#### **DANGER**



##### **Health hazard due to magnetic and electromagnetic fields!**

Conductors that carry current and permanent magnets in motors generate magnetic and electromagnetic fields, which pose a serious risk to individuals who are fitted with pacemakers, metallic implants and hearing aids.

Therefore:

- Avoid machinery in which electrical equipment and components (e.g. frequency converters) are installed and operated.
- Avoid machinery in which motor parts with permanent magnets are installed and operated.
- However, if operation is necessary then consult a medical specialist beforehand.




---

Discharged material
**⚠ DANGER****Risk of injury from discharged material!**

Discharged material may lead to injuries to the eyes and face.

Therefore:

- Always wear protective goggles.
- Always position yourself in such a way that you are not hit by the mortar being discharged.

---

Noise
**⚠ WARNING****Hearing impairment due to noise!**

The noise level generated in the work area can cause serious hearing impairment.

Therefore:

- Always wear ear protection when working.
- Only remain in the danger zone for as long as absolutely necessary.

---

Hazardous dusts
**⚠ WARNING****Health hazard caused by dust!**

In the long term, inhaled dust can lead to lung damage or have other adverse health effects.

Therefore:

- Always wear light breathing protection in the danger zone.

---

Moving parts
**⚠ WARNING****Risk of injury due to moving components!**

Rotating and/or linear moving components can cause serious injuries.

Therefore:

- Do not reach into or handle moving parts during operation.
- Do not open safety covers during operation.
- Pay attention to run-down times: Before opening covers, ensure that parts are no longer moving.
- Wear close-fitting protective clothing in the danger zone.

## General information

### Dirt and objects lying around

#### CAUTION



##### **Danger of stumbling due to dirt and objects lying around!**

Dirt and objects lying around can be the cause to slip or stumble thus leading to severe injuries.

Therefore:

- Always keep the work area clean.
- Remove objects when they are no longer needed.
- Indicate tripping hazards with yellow and black tape.

## 1.9.5 Dealing with dangerous situations and accidents

### Preventive measures

- Always be prepared for accidents or fire!
- Keep first aid equipment (first aid kit, blankets, etc.) and fire extinguishers handy.
- Familiarise personnel with accident reporting, first aid and rescue equipment.
- Keep access routes free for emergency vehicles.

### When accidents happen...

- Trigger emergency stop immediately.
- Initiate first aid measures.
- Rescue people from the danger zone.
- Inform responsible person at the operational site.
- Alert doctor and/or fire brigade.
- Clear access roads for rescue vehicles.

## 1.9.6 Signs

The following symbols and warning signs can be seen in the work area. They refer to environment in which they are installed.

#### WARNING



##### **Danger of injury due to illegible symbols!**

With time, the adhesive and the signs can become dirty and fade out in some other way.

Therefore:

- Always maintain all safety, warning and operating notices in legible condition.
- Replace damaged signs or labels immediately.





## 1.9.7 Safety devices

### WARNING



#### **Danger to life due to non-functioning safety equipment!**

Safety equipment ensures highest level of safety in operation. Even if safety devices make work processes more complicated, they must never be disabled. Safety is only assured when the safety devices are intact.

Therefore:

- Check that the safety devices are functional and correctly installed before starting work.
- Use safety equipment at all times.
- Do not obstruct access to safety systems such as EMERGENCY STOP pushbuttons, emergency off buttons, pull cords etc.

## 1.10 Intended use

### 1.10.1 Intended use of ROTOQUIRL/ROTOMIX

The ROTOQUIRL/ROTOMIX has been designed and constructed only for the intended use described in this document.

### NOTE



The PFT ROTOQUIRL/ROTOMIX serves to burst the bigger air bubbles in the mortar and thus stabilisation.

### CAUTION



#### **Danger due to improper use!**

Any use beyond the specified purpose and/or any other form of use of the device can lead to dangerous situations.

Therefore:

- Use the device only for the purpose specified.
- Always adhere to the usage directives of the material manufacturer.
- Strictly follow all instructions in this operating manual.

We accept no responsibility for damages caused by improper or unauthorised use.

The operator of the device is solely responsible for any damage arising from improper use.

**Technical data****2 Technical data****2.1 ROTOMIX B-pump**

ROTOMIX B-pump 1.5 stages item no. 00251139 & ROTOMIX B-pump for RITMO L plus item no. 00638072

Detail	Value	Unit
Content	0.25	l
Pump capacity, maximum approx.	16	l/min
Empty weight approx.	3.8	kg
Connection/coupling	25	mm

**2.2 ROTOMIX D-pump**

Item no. 00767641

Detail	Value	Unit
Content	1.2	l
Pump capacity, maximum approx.	35	l/min
Empty weight approx.	12.1	kg
Connection/coupling	35	mm



## 2.3 ROTOMIX R-pump



Item no. 00767642

Detail	Value	Unit
Content	1.2	l
Pump capacity, maximum approx.	80	l/min
Empty weight approx.	11	kg
Connection/coupling	35	mm

## 2.4 ROTOMIX disc D-pump



Item no. 00767745

Detail	Value	Unit
Content	1.2	l
Pump capacity, maximum approx.	30	l/min
Empty weight approx.	12.5	kg
Connection/coupling	35	mm

## Technical data



### 2.5 ROTOQUIRL D-pump



Item no. 00767760

Detail	Value	Unit
Content	4.2	l
Pump capacity, maximum approx.	35	l/min
Empty weight approx.	28	kg
Connection/coupling	35	mm

### 2.6 ROTOQUIRL R-pump



Item no. 00767763

Detail	Value	Unit
Content	4.2	l
Pump capacity, maximum approx.	80	l/min
Empty weight approx.	28	kg
Connection/coupling	35	mm



### 3 Transport, packing and storage

#### 3.1 Safety instructions for transport

##### Improper transport

#### NOTE



#### Damage from improper transport!

Improper transport may cause substantial property damage.

Therefore:

- When unloading the packages on delivery, as well as transport within the company, pay attention and observe the symbols and instruction on the package.
- Use only the specified anchorage points.
- Remove packaging only shortly before the assembly.

#### 3.2 Transport inspection

On receipt check the delivery immediately for completeness and transport damage.

In case of externally visible transport damage, proceed as follows:

- Do not accept the delivery or under reserve only.
- Note the extent of damage on the transport documentation or on the delivery note of the carrier.
- Initiate complaint process.

#### NOTE



Report any defect as soon as it is detected. Claims for damages can be asserted only within the valid warranty period.

#### 3.3 Packaging

##### For packaging

The individual packages have to be packed in accordance with the transport conditions to be expected. Only environmentally-friendly materials were used for the packaging.

The packaging should protect the individual components until the assembly from transport damage, corrosion and other damage. Therefore do not destroy the packaging and remove only shortly before the assembly.

## Transport, packing and storage



### Handling packaging materials

If no agreement for the recovery of the packaging has been made, separate materials according to type and size and reuse or recycle.

#### NOTE



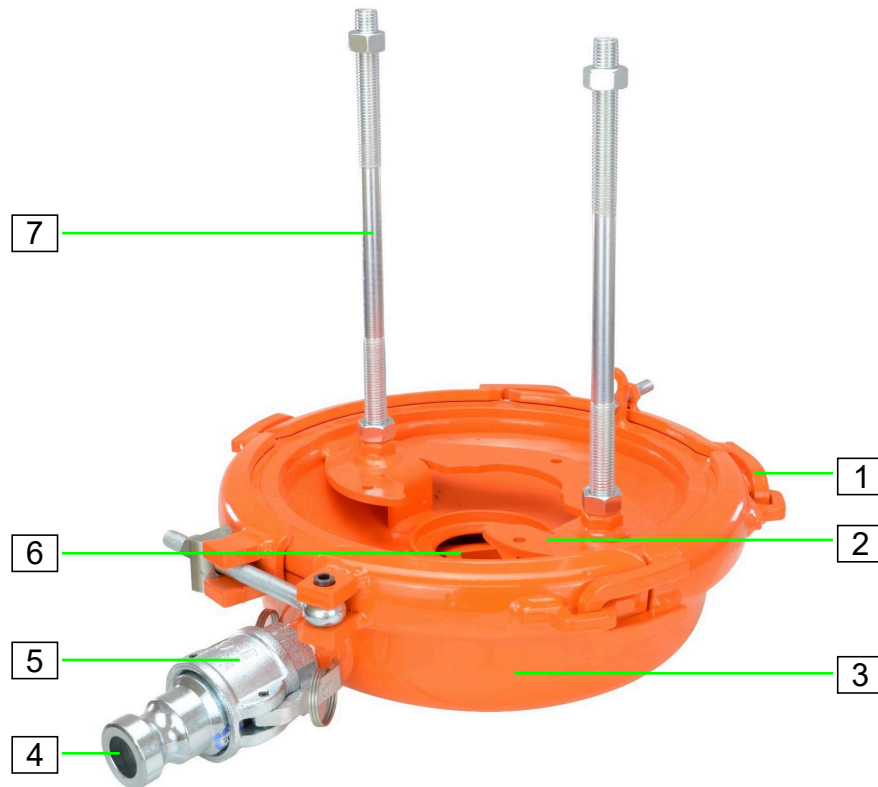
#### **Environmental damage due to incorrect disposal!**

Packaging materials are valuable raw materials and in many cases they can be reused or reconditioned and recycled.

- Dispose of packaging materials in an environmentally-friendly way.
- Observe the applicable local disposal regulations. If required hand over the disposal to a specialist.

## 4 Description

### 4.1 ROTOQUIRL overview



- [1] Lock ring for ROTOQUIRL
- [3] ROTOQUIRL housing
- [5] Coupling 35M-part
- [7] Tie rod 330 mm

- [2] ROTOQUIRL cover
- [4] Coupling reducer 35V to 25V-part
- [6] Mixing impeller ROTOQUIRL

## Description



### 4.2 ROTOMIX overview

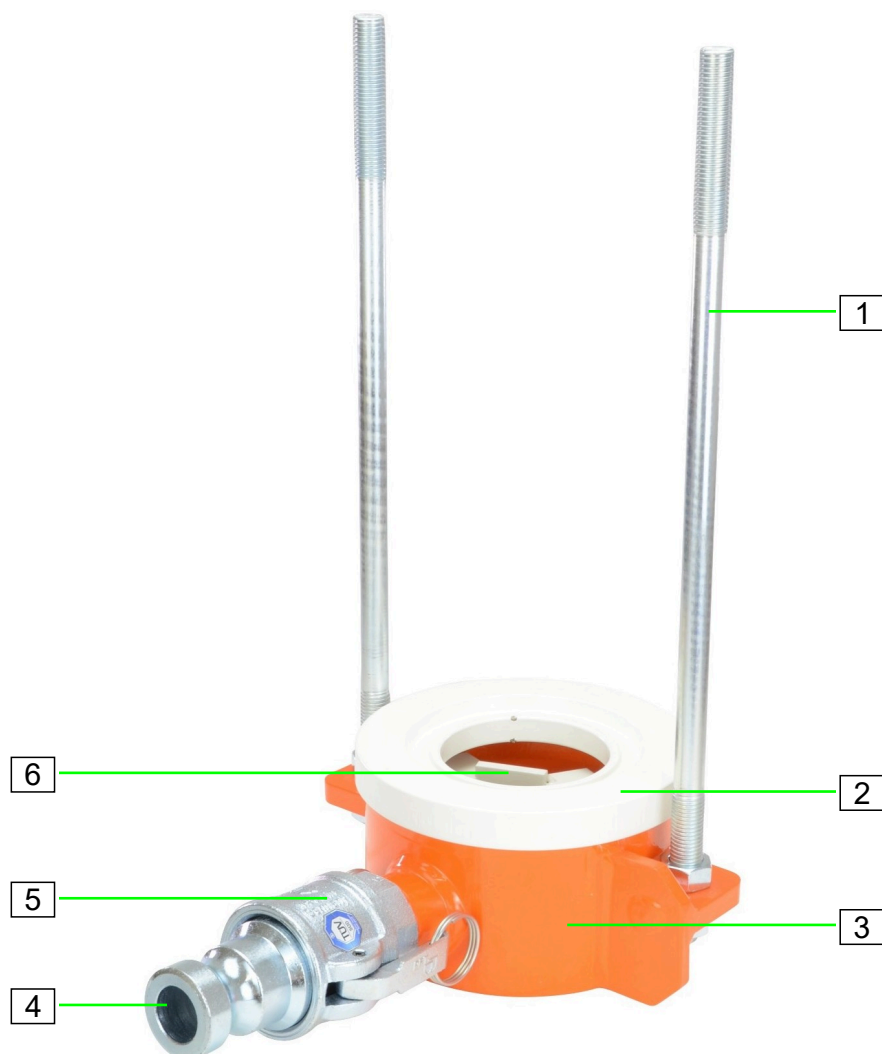


Figure 1: ROTOMIX overview

- |                       |                                      |
|-----------------------|--------------------------------------|
| [1] Tie rod 420 mm    | [2] ROTOMIX cover                    |
| [3] ROTOMIX housing   | [4] Coupling reducer 35V to 25V-part |
| [5] Coupling 35M-part | [6] Mixing impeller ROTOMIX          |



### 4.3 ROTOMIX B-pump overview

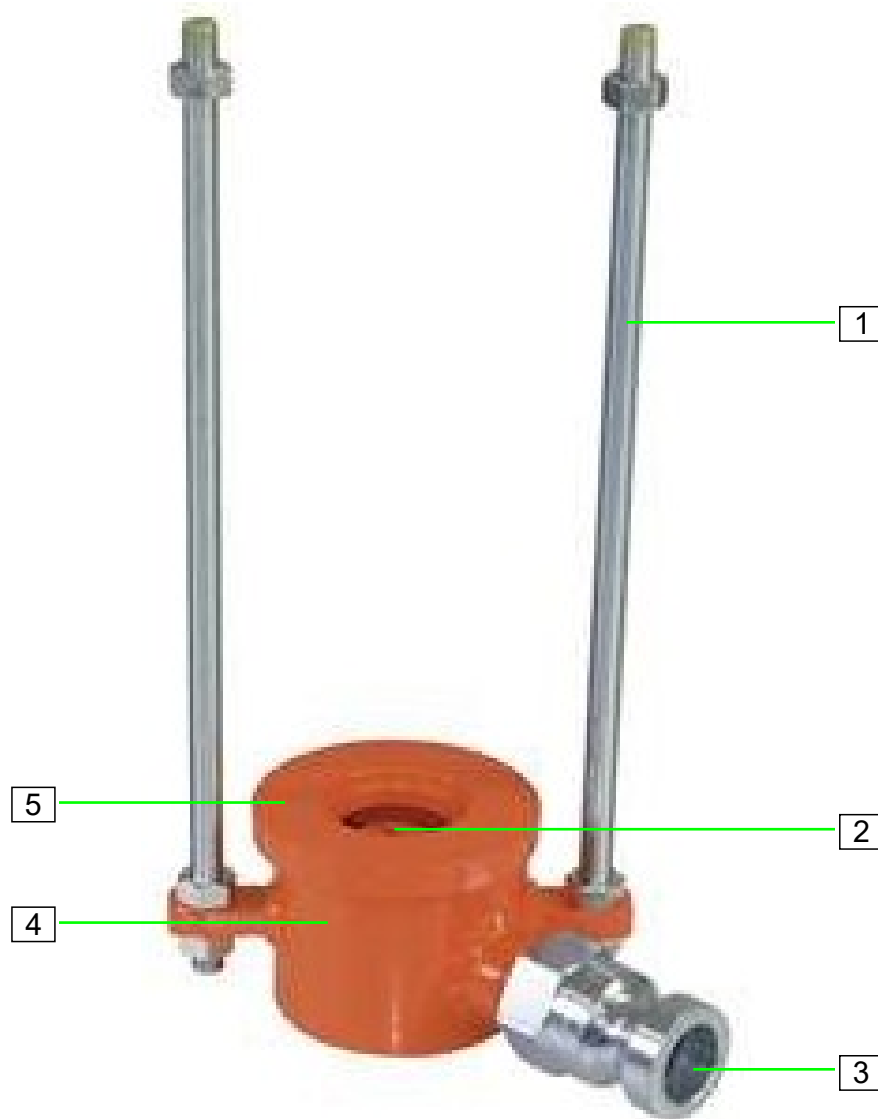


Figure 2: ROTOMIX B-pump overview

- |                          |                                    |
|--------------------------|------------------------------------|
| [1] Tie rod 340 mm       | [2] ROTOMIX B-pump mixing impeller |
| [3] Coupling 25V-part    | [4] ROTOMIX B-pump housing         |
| [5] ROTOMIX B-pump cover |                                    |

#### 4.4 Mounting situation on the machine

- ROTOQUIRL and ROTOMIX G 4 up to machine number 93052432072 with a welded suction flange

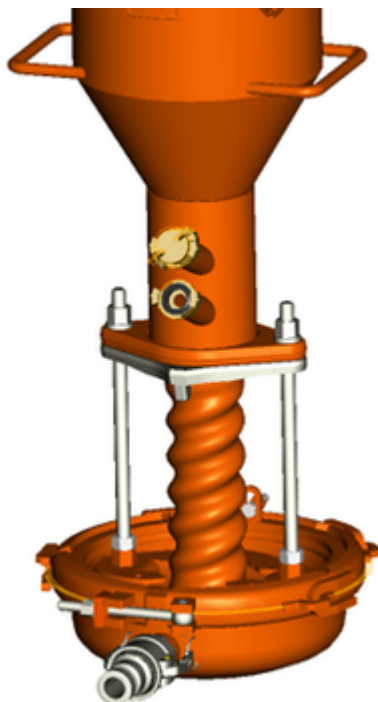


ROTOQUIRL with welded suction flange

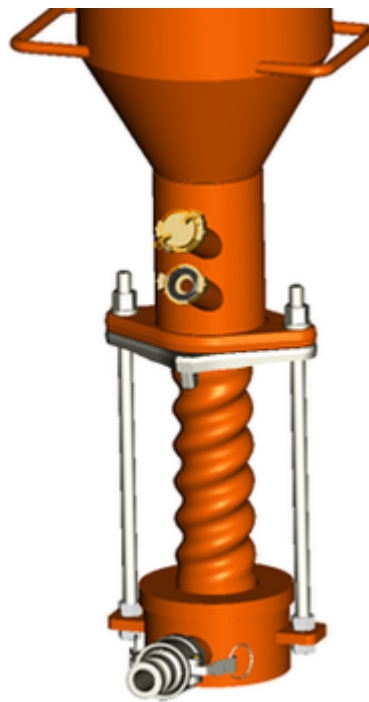


ROTOMIX with welded suction flange

- ROTOQUIRL and ROTOMIX G 4 from machine number 93052432073 with a changeable suction flange



ROTOQUIRL with a changeable suction flange



ROTOMIX with a changeable suction flange



## 4.5 Operating principle of ROTOQUIRL/ROTOMIX

The bigger air bubbles in the mortar are burst in the remixer and thus stabilised.

Bursting of the air bubbles at the time of discharge from the mortar nozzle can thus no longer be seen. This makes the mortar smoother and more efficient.

As a result of an intensive re-mixing, the mortar becomes completely doughy and has no knots such that easy, quick and consistent processing is ensured.

Additives become fully effective with intensive remixing. Work can be carried out with an optimum water factor.

This creates smooth mortar, which has good elastic properties as a finished plaster.

## 4.6 Brief description of ROTOQUIRL/ROTOMIX

The PFT ROTOQUIRL and PFT ROTOMIX are referred to as remixer. By mixing again, the mortar properties are improved and result in maximum utilisation of the material quality.

The PFT ROTOQUIRL, like the PFT ROTOMIX, can be opened and attached to the mixing tube of the mixing pumps.

The ROTOQUIRL with 4.2 l capacity, as compared to the ROTOMIX with 1.2 l, has the advantage that the material can remain in the mixing zone for a longer time thanks to the bigger pot.

The mixing impeller used in the remixer is directly powered by the pump motor (screw conveyor with actuator).

## 4.7 Fields of application

Use on the following machines:

- ROTOQUIRL D- and R-pump for G series and RITMO XL
- ROTOMIX D- and R-pump for G series and RITMO XL
- ROTOMIX B-pump for RITMO M, RITMO L and RITMO L plus

Example fields of application:

- Sgraffito
- Adhesive mortar
- Frame grouting mortar
- Floor screed
- Restoration plaster

## Description



### 4.8 The right mortar consistency

The processing properties of the mortar are improved due to the repeated mixing in the remixer and the longer dwell time in the mixing zone.



*The correct mortar consistency is reached, if the material mixes on the surface to be sprayed (we recommend application on wall surfaces from top to bottom). Uniform mixing and spraying cannot be ensured if the amount of water is insufficient. This can clog the hoses and the pumping components are then subjected to greater wear.*

## 5 Operation

### 5.1 Safety

#### Personal protective equipment

The following protective equipment has to be worn for all operative work:

- Protective clothing
- Protective goggles
- Protective gloves
- Safety shoes
- Hearing protection



*Further protective equipment that is to be worn during particular jobs will be pointed out separately in the warning instructions of this chapter.*

#### Basic information

#### **WARNING**



##### **Danger of injury due to incorrect operation!**

Improper operation may lead to serious damage to persons or property.

Therefore:

- Carry out all operating steps according to the instructions in this user manual.
- Prior to starting your work, ensure that all components are complete and undamaged.
- Prior to starting your work, ensure that all covers and protection devices are installed and work as intended.
- Never operate the machine with defective components and protection devices.
- Never disable protective devices during operation.
- Ensure order and cleanliness in the work area! Loose components and tools on top of one another or lying about pose potential accident risks.

#### 5.1.1 Safety rules

#### **CAUTION**



Observe the regional safety rules for mortar conveyors and mortar guns!

## 5.1.2 Monitoring the machine

### ⚠ WARNING



#### Access by unauthorised persons!

- The machine may only be operated when monitored.

## 5.1.3 Hazardous dusts



Figure 3: Dust protection

### ⚠ WARNING



#### Danger of damage to health!

In the long term, inhaled dust can lead to lung damage or have other adverse health effects.

- Use suitable face protection.

### NOTE



The machine operator or the person working in the dusty area always has to wear a dust protection mask when filling the machine!

The rules of the Committee on Dangerous Substances (AGS) can be found under Technical Rules for Dangerous Substances (TRGS 559).

## 5.1.4 Read the operating manual for the machine

### NOTE



Adhere to the operating manual of the machine used!

### 5.1.5 Mortar pressure gauge



Figure 4: Mortar pressure gauge

#### ⚠ WARNING



##### Operating pressure too high!

Machine parts can open in an uncontrolled manner and injure the operator.

- Do not operate the machine without mortar pressure gauge.
- Only use mortar hoses with a permissible operating pressure of at least 40 bar.
- The burst pressure of the mortar hose must reach at least 2.5 times the value of the operating pressure.

#### ⚠ WARNING



- The operating pressure in the remixer must not exceed 25 bar.
- A mortar pressure gauge is essential for monitoring.  
Mortar pressure gauge DN35 V-part | DN35 M-part:  
  - Item no. 00102228

## 5.2 Inspection by machine operator

- Prior to each shift, the machine operator has to examine the effectiveness of the control and safety devices, as well as the proper fitting of the protection devices.
- The safe working condition of construction machinery has to be checked by the machine operator during operation.
- If the safety devices show any defects or if any other defects are detected that compromise a safe operation, the supervisor has to be informed immediately.
- In case of defects that cause harm to persons, the operation of the construction machine has to be stopped to eliminate the defects.

## 5.3 ROTOQUIRL/ROTOMIX assembly

### 5.3.1 Tools required for assembly



The following tools are required for ROTOQUIRL/ROTOMIX assembly:

- 2x spanner with width across flats 24
- 2x spanner with width across flats 19
- 1x spanner with width across flats 18
- 1x spanner with width across flats 13
- 1x rubber mallet

Figure 5: Tools required



### 5.3.2 ROTOQUIRL assembly

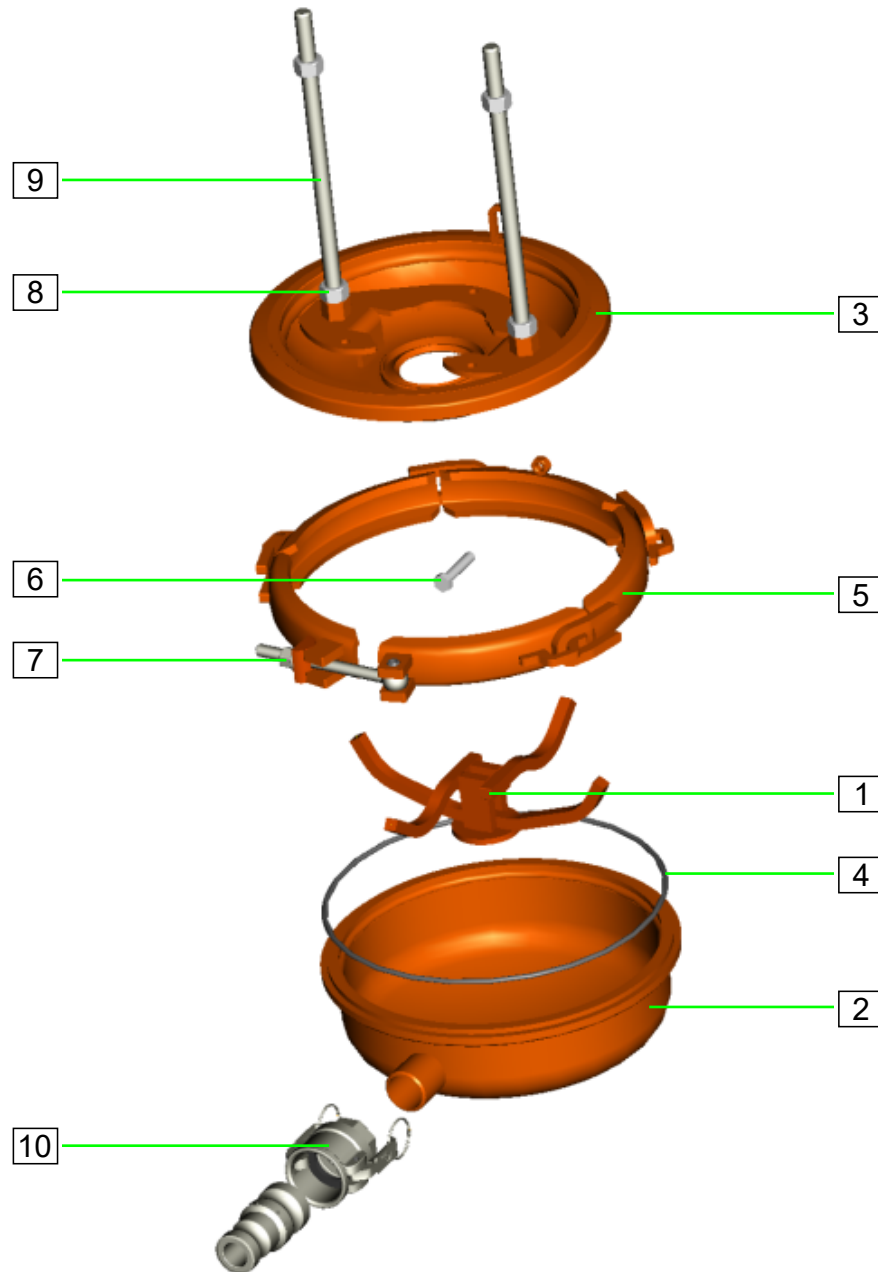


Figure 6: ROTOQUIRL assembly

1. Place the mixing impeller (1) in the housing (2).
2. Place the cover (3) with the O-ring (4) on the housing (2) (support for the pump).
3. Place the lock ring (5) around the cover (3) and the housing (2).
4. Fit the lock ring (5) with a screw (6) to the cover (3).
5. Brace the lock ring (5) by turning the collar nut (7).
6. Screw the nut (8) onto the tie rod (9) (approx. up to the middle of the thread).
7. Turn the tie rod (9) into the housing (2) and lock it with the nut (8).
8. Screw the coupling 35M-part (10) to the housing (2).

### 5.3.3 ROTOMIX assembly

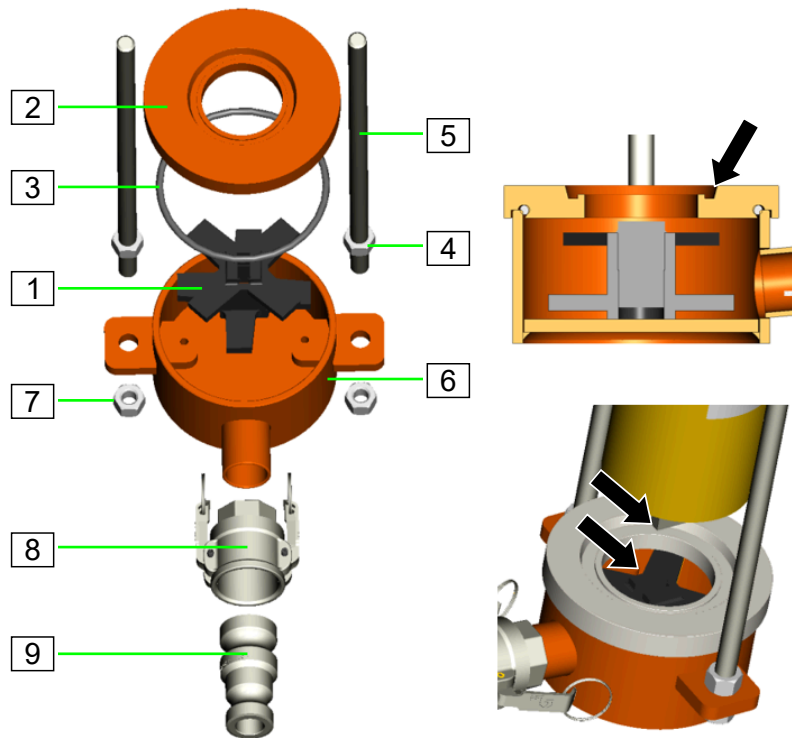


Figure 7: ROTOMIX assembly

1. Place the mixing impeller (1) in the housing (6).
2. Place the cover (2) with the O-ring (3) on the housing (6) (support for the pump).
3. Screw the nuts (4) onto the tie rod (5).
4. Turn the tie rod (5) into the housing (6) and lock it with the nut (4).
5. Screw the coupling 35M-part (8) to the housing (6).
6. Attach the coupling reducer (9) to the coupling (8).
7. Attach the pump system (tang from the rotor must be in the receptacle of the mixing impeller).

### 5.3.4 Mounting the pump unit to the remixer

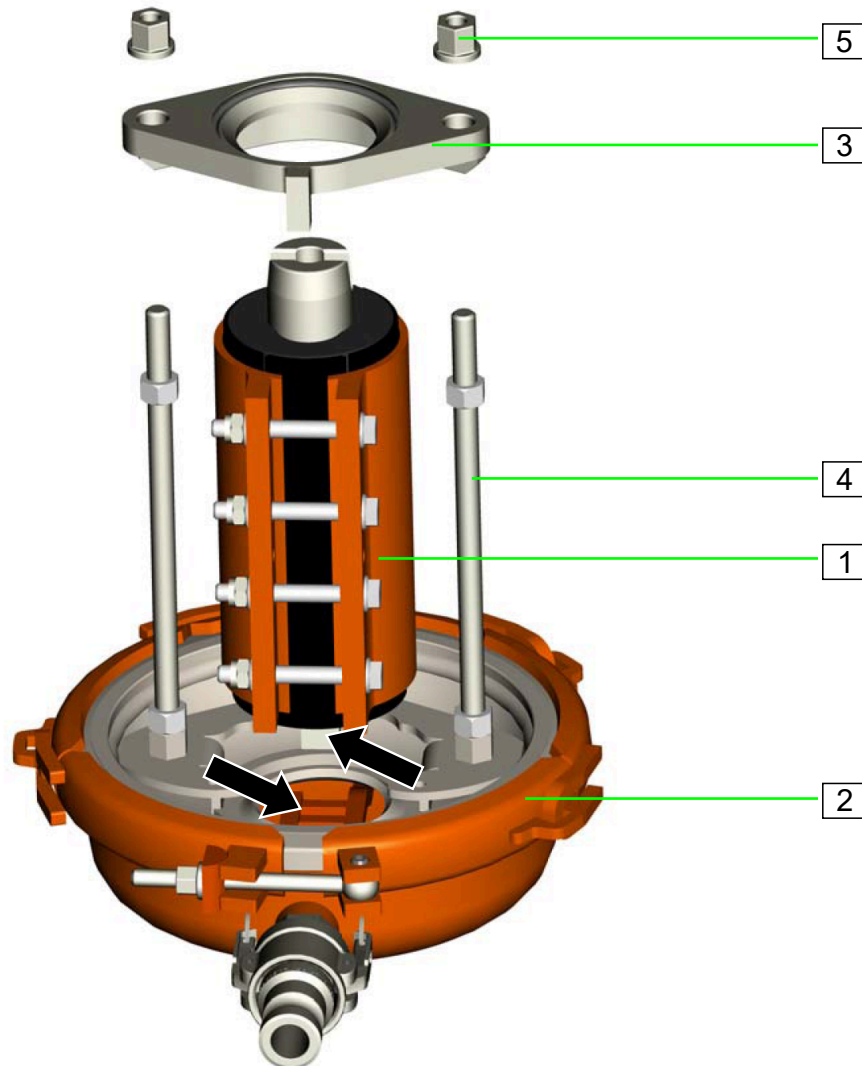


Figure 8: Install the pump unit

1. Attach the pump unit (1) to the remixer (2) (the tang from the rotor must be in the receptacle of the mixing impeller).
2. Fit the suction flange (3) onto the pump unit (1) and the tie rods (4).
3. Attach the remixer with pump unit and suction flange to the mixing tube of the machine.
4. Screw the collar nuts (5) onto the tie rods (4) and tighten.

## 5.4 Shutdown in case of emergency

### Shutdown in case of emergency

In dangerous situations, machine movements have to be stopped as quickly as possible, and the power supply has to be disconnected.

## Operation



After the rescue operations

In case of danger proceed as follows:

1. Switch off the main reversing switch immediately.
2. Secure the main switch against reactivation.
3. Inform responsible person at the operational site.
4. If necessary call for medical assistance and fire brigade.
5. Recover persons from the danger zone, initiate First Aid measures.
6. Keep access routes free for emergency vehicles.
7. If the severity of the emergency permits, inform the competent authorities.
8. Assign specialised personnel with the troubleshooting.

### ⚠ WARNING



#### **Danger to life from premature reactivation!**

On reactivation there is danger to life for all persons in the danger zone.

- Ensure that the danger zone is clear before switching the machine back on.
- Check the system before reactivation and ensure that all safety equipment is installed and functional.

9. Check the system before reactivation and ensure that all safety equipment is installed and functional.

## 5.5 Putting ROTOQUIRL/ROTOMIX into operation

### 5.5.1 Positioning machine



Figure 9: Lockable castor

1. Lock the lockable castor prior to operating the machine.
2. Put up the machine on a stable, even surface and secure against unwanted movements:
  - Do not tilt or roll the machine away.
  - Place the machine where it cannot be hit by any falling objects.
  - The controls must be freely accessible.
  - Maintain a clearance of approx. 1.5 metres around the machine.

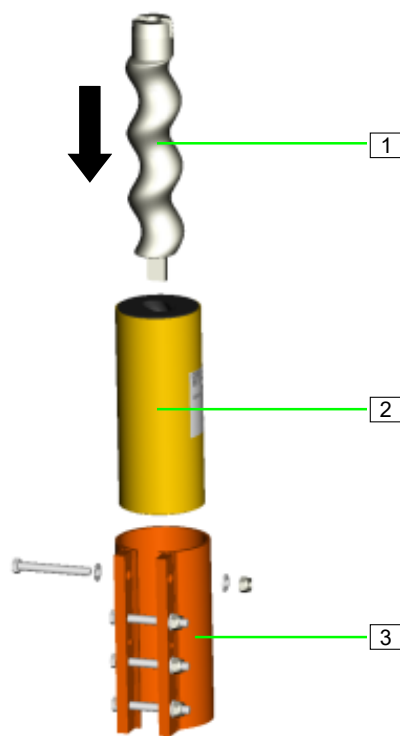
### 5.5.2 Assemble pump unit

#### **NOTE**



It is essential to spray the pump (rotor in stator) with assembly spray before assembly, as otherwise the break-away torque required for the pump motor is too high.

- Assembly spray for PFT rotor/stator item no. 00588821



1. First, turn the rotor (1) into the stator (2) with the tang.
2. Fit the clamp (3).

#### NOTE



If the machine is not used for several days, the rotor and stator should be disassembled and preserved with silicone spray.

#### NOTE



Only store assembled pumps (rotor in stator) for a few days, since longer storage may cause the rotor and stator to become inseparably joined.

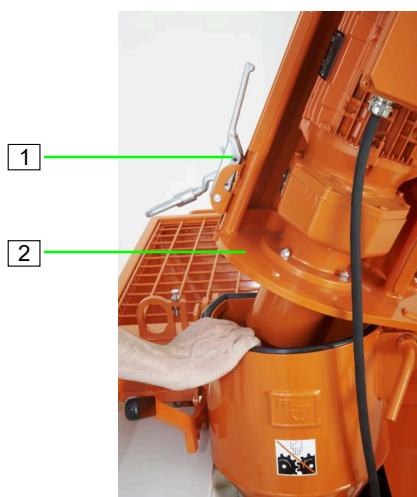
#### NOTE



Never let the pump run dry as this reduces the service life of the pump.

Figure 10: Assemble pump unit

### 5.5.3 Removing the mixing shaft



#### ⚠ CAUTION



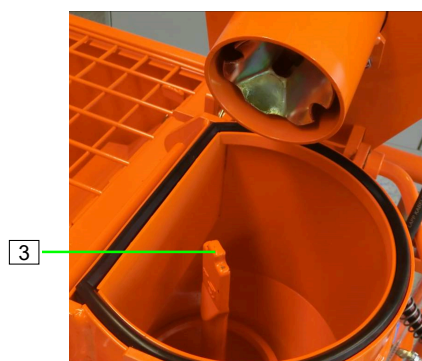
#### Danger of crushing at the motor tilt flange!

There is a danger of crushing injuries when closing the motor tilt flange.

- Never reach into the closing range of the motor tilt flange.

1. Open the quick closure (1) at the motor tilt flange (2) and tilt the motor.

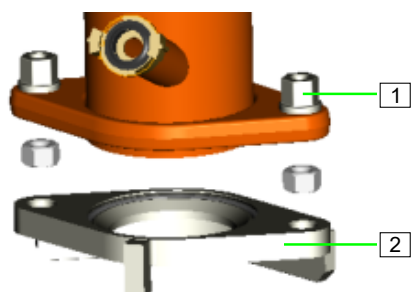
Figure 11: Opening the motor tilt flange



2. Remove the mixing shaft (3).

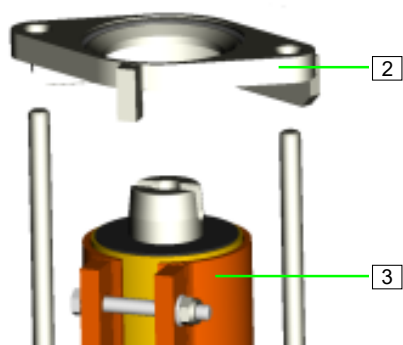
Figure 12: Removing the mixing shaft

#### 5.5.4 Fit the pump unit



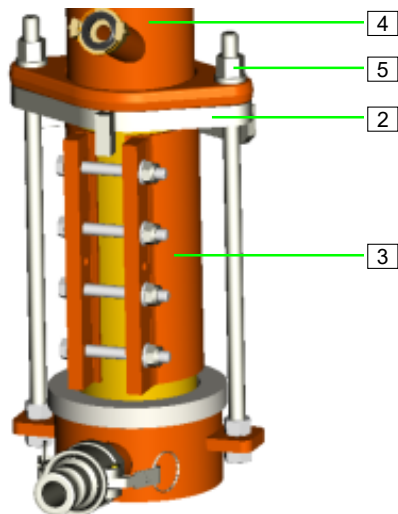
1. Loosen the collar nuts (1) on the mixing tube.
2. Dismantle the suction flange (2).

Figure 13: Remove the suction flange



3. Mount the suction flange (2) on the pump unit with remixer (3).

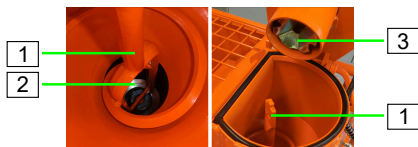
Figure 14: Mounting the suction flange



4. Fit the pump unit (3) with mounted suction flange (2) to the mixing pipe (4).
5. Tighten the collar nuts (5).
6. Fit a mortar pressure gauge.

Figure 15: Install the pump unit

### 5.5.5 Inserting the mixing shaft



1. Insert mixing shaft (1) and ensure correct positioning at the rotor (2).
2. When closing the tilt flange ensure that the mixing shaft (1) engages properly into the drive dog (3).
3. Close the quick closure at the mixing tube.

Figure 16: Inserting the mixing shaft

## 5.6 Applying mortar

### ⚠ WARNING



#### Danger of injury from discharged mortar!

Discharged mortar may lead to injuries to eyes and face.

- Always wear protective goggles.
- Always position yourself in such a way that you are not hit by the mortar being discharged.

## 5.7 Work interruption/end of work

### NOTE



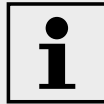
Always observe the setting time of the material to be processed:

Clean the system and mortar hoses depending on the setting time of the material and the length of the interruption (pay attention to outside temperature).

The guidelines of the material manufacturers have to be observed regarding breaks.

If a remixer is attached, the duration of interruptions to work must be reduced by approximately  $\frac{1}{3}$  to avoid settling of the mixing impeller.

In case of extended interruptions to work, the remixer must be dismantled and cleaned.



*Every interruption to the spraying process causes a slight irregularity in the consistency of the material. This irregularity normalises by itself as soon as the machine has been working for a short while.*

*Therefore it is important not to change the water quantity for each irregularity. Wait until the consistency of the material has set again.*

## 5.8 Action in case of power failure

### NOTE



In case of a longer power cut, the machine and the mortar hoses have to be cleaned immediately.

### NOTE



Adhere to the operating manual of the machine used!



## 5.9 Measures in case of risk of frost

### CAUTION



#### Damage by frost!

Water that expands on freezing inside the component can cause serious damage.

Therefore:

- Only install dry parts.

### NOTE



Adhere to the operating manual of the machine used!

## 5.10 Cleaning

The machine and remixer must be cleaned daily after work and before extended breaks:

1. If the machine is properly emptied and cleaned, the remixer is automatically cleaned at the same time.
2. The mixing impeller and mixing chamber in the remixer are cleaned independently by the cleaning water.



*Additional cleaning is nevertheless recommended!*

### NOTE



Adhere to the operating manual of the machine used!

### 5.10.1 Secure against restarting

### WARNING



#### Danger to life from unauthorised restarting!

When working with the machine there is the risk that the energy supply is switched on without authorisation. This poses a danger to life for the persons in danger area.

- Before starting work, switch off all electrical power supplies and secure them against being switched back on again.
- If the protective covers are removed for cleaning purposes, it is essential that they be properly reattached when work is finished.

## 5.11 Reaction in the event of faults

### Reaction in the event of faults

The following applies as a general rule:

1. In the event of faults presenting immediate danger to persons or property, activate the emergency OFF function immediately.
2. Determine cause of the fault.
3. If the rectification of faults requires works in the danger zone, switch off the system and secure against restarting.
4. Inform the manager on site immediately about the fault.
5. Depending on the type of fault, commission authorised skilled personnel or rectify the fault yourself.



*The following fault table gives information on who is authorised to rectify the fault.*

### 5.11.1 Safety

#### Personnel

- The work for rectification of faults described here can be carried out by the operator, unless marked otherwise.
- Some works must be carried out only by specially trained skilled personnel or exclusively by the manufacturer. Information on this can be found in the description of the individual faults.
- Work on electrical systems must always only be carried out by qualified electricians.

#### Personal protective equipment

The following protective equipment has to be worn for all maintenance work:

- Protective clothing
- Protective goggles
- Protective gloves
- Safety shoes

### 5.11.2 Hose blockages

#### Indications

Blockages can occur in the pressure flange or in the mortar hoses.

Indications are:

- Rapidly increasing pressure head
- Blockage of pump
- Running difficulties or blockage of the pump motor
- Expansion and turning of the mortar hose
- No material leakage at the hose ends

Possible causes:

- Heavily worn mortar hoses
- Badly greased mortar hoses
- Residual water in mortar hose
- Clogging of the pressure flange
- Severe restriction at the couplings
- Kink in the mortar hose
- Leaks at the couplings
- Poorly pumping and separated materials

Earlier damage to the mortar hose

*Should the pressure in the mortar hose exceed 60 bar in the event of a machine failure due to material clogging, replacement of the mortar hose is recommended as there might be damage in the hose that is not externally visible.*

**5.11.2.1 Removal of clogging in hoses****⚠ WARNING****Danger from discharged material!**

Never detach hose couplings if the feed pressure has not been fully released! Material to be conveyed can be discharged under pressure and cause injuries particularly to the eyes.

Persons commissioned with the cleaning of clogged hoses have to wear personal protective equipment (protective goggles, gloves) for safety reasons, and must position themselves in such a way that they cannot be hit by discharged material. Other persons have to clear the area.

## Maintenance

### 6 Maintenance

#### 6.1 Safety

##### Personnel

- The maintenance works described here can be carried out by the operator, unless marked otherwise.
- Some maintenance work must only be carried out by specially trained technical personnel or exclusively by the manufacturer.
- Work on electrical systems must always only be carried out by qualified electricians.

##### Basic information

#### ⚠ WARNING



#### **Risk of injury due to improperly carried out maintenance work!**

Improper maintenance can lead to severe injuries or considerable property damage.

- Prior to starting the works ensure that there is enough space to carry out the works.
- Ensure order and safety at the assembly site! Unattached components or tools left lying around or stacked on one another can cause accidents.
- If components have been previously removed, ensure that they are mounted again correctly, reattach all fastening elements and adhere to the specified screw tightening torques.

##### Electrical system

#### ⚠ DANGER



#### **Danger to life from electric current!**

Contact with live components can lead to death or serious injury. Live electrical components can move uncontrollably and cause serious injury.

- Switch off the energy supply before starting any work and secure against restarting.

#### 6.2 Environmental protection

##### Environmental protection

Observe the following notes on environmental protection when carrying out maintenance works:

- Remove the discharged, exhausted or surplus grease at all greasing points that are lubricated manually and dispose of in accordance with the local applicable regulations.
- Collect used oil in suitable containers and dispose of it according to the applicable local regulations.

## 6.3 Maintenance work

In the event that increased wear is detected during regular checks, the required maintenance intervals have to be shortened according to the actual signs of wear.

Should you have any queries regarding maintenance works and intervals contact the manufacturer, see back page for service address.

### 6.3.1 Implementation by a service technician



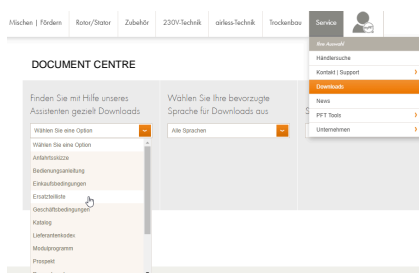
*A service technician is responsible for the assembly and commissioning of machines. In addition, service technicians carry out maintenance and repair work. If work is required on the control box or on other electrical parts, the service technician must have completed vocational training as an electrician.*

## 6.4 Actions after completed maintenance

After finishing the maintenance works and prior to switching on the machine, the following steps have to be carried out:

1. Check all previously loosened screw connections for secure fit.
2. Check if all previously removed safety systems and covers are properly reinstalled.
3. Ensure that all tools, materials and other equipment used have been removed from the work area.
4. Clean the work area and remove any spilled materials such as liquids, processing material or similar.
5. Ensure that all safety systems of the installation work perfectly.

## 6.5 Spare parts lists



The spare parts lists for the machine can be found on the Internet at [www.pft.net](http://www.pft.net).

- Open the Document Centre under Service → Downloads.
- In this area, select the spare parts list category.
- In addition, select the machine you are looking for.

### 6.5.1 Accessories



Recommended accessories/equipment can be found in the PFT machine and equipment catalogue or under [www.pft.net](http://www.pft.net)



## 7 Disassembly

After the useful service life has been reached, the device has to be dismantled and disposed of in an environment-friendly manner.

### 7.1 Safety

#### Personnel

- Disassembly must be carried out by specially trained technical personnel only.
- Work on the electrical system must be carried out by qualified electricians only.

#### Basic information

#### **WARNING**



#### **Risk of injury in case of improper disassembly!**

Stored residual energies, sharp components, points or edges at and inside the device or on the required tools might cause injuries.

Therefore:

- Prior to starting the works ensure that there is sufficient space.
- Carefully handle components with sharp edges.
- Ensure order and cleanliness at the working place! Loose components and tools on top of one another or lying about pose potential accident risks.
- Dismantle components correctly. Pay attention to partly high dead weight of the components. If required, use lifting equipment.
- Secure components that they do not fall down or topple over.
- In case of doubt, consult the dealer.

#### Electrical system

#### **DANGER**



#### **Danger to life from electric current!**

Contact with live components can lead to death or serious injury. Activated electrical components can carry out uncontrolled movements and cause serious injuries.

Therefore:

- Prior to beginning the disassembly, switch off the power supply and fully disconnect it.

## 7.2 Disassembly

When decommissioning, clean the device and dismantle it according to the applicable work safety and environmental protection regulations.

Prior to starting the disassembly:

- Switch off device and secure against restarting.
- Disconnect the entire energy supply from the machine and discharge the residual energy.
- Remove operating and auxiliary materials as well as residual processing materials and dispose of them in an environmentally sound manner.



## 8 Disposal

Provided no return or disposal agreements have been made, recycle the disassembled parts:

- Scrap metals.
- Recycle plastic elements.
- Dispose of remaining components, sorted according to the type of material.

### NOTE



#### **Environmental damage due to incorrect disposal!**

- Electrical scrap and components, lubricants and other process materials are subject to special guidelines and may only be disposed of by approved waste disposal specialists!



*Local authorities and waste disposal specialists can provide more details on the correct disposal of materials.*

## Disposal





PFT - ALWAYS AT YOUR SITE



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