



Operating manual

Mixing pump RITMO double mix

Part 2 Overview, operation and service



Item no. of the operating manual:

00784196

RITMO FC-400V double mix 400 V, 3 Ph, 50 Hz, 6.05 kW

Item no.: 00651176

RITMO 400V double mix 400 V, 3 Ph, 50 Hz, 6.05 kW

Item no.: 00701700



Read the operating manual prior to starting any work!

About us



About us

<u>Publisher</u>	Knauf PFT GmbH & Co. KG Postfach 60 ▪ 97343 Iphofen Einersheimer Straße 53 ▪ 97346 Iphofen Germany
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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 Division

The operating manual is divided into 2 books:

- Part 1 Safety/drinking water protection

General safety instructions mixing pumps/conveying pumps

Item no.: 00172709

- Part 2 Overview, operation and service (this manual).

WARNING



Danger of injury due to incorrect operation!

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

- To ensure safe and proper operation of the machine, all parts of the operating manual must be read before starting work; all parts together are considered to be a single operating manual.

1.3 Display of safety and warning notices

In this manual, safety and warning notices are used in conjunction with signal words to raise safety awareness, indicate degrees of danger and explain safety measures.

Such safety and warning information may also be attached to the product in the form of signs, stamps or stickers.


General information



Structure of the safety and warning notices

All safety and warning notices consist of:

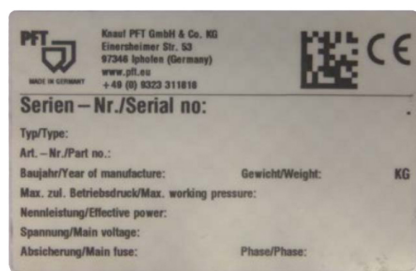
- The danger sign and signal word
- Information on the nature of the hazard
- Information on the source of the hazard
- Information on possible consequences of disregarding the hazard
- Measures to avert the hazard

Danger sign	Signal word	Significance
	Danger	Death or serious injury will occur if you do not take the precautions described.
	Warning	Death or serious injury may occur if you do not take the precautions described.
	Caution	Minor injury may occur if you do not take the precautions described.
	Note	Property damage may occur if you do not take the precautions described.
	Tip	An important piece of information about the product or the particular section of the manual to which special attention is to be drawn.

1.4 Keep the manual for future reference

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

1.5 Name plate



The following details can be found on the name plate:

- Manufacturer
- Type
- Year of manufacture
- Machine number
- Permissible operating pressure

Figure 1: Name plate



1.6 EC Declaration of Conformity

Company: Knauf PFT GmbH & Co. KG
Einersheimer Straße 53
97346 Iphofen
Germany

declares under our sole responsibility that the machine:

Type of machine: RITMO
Type of equipment: Mixing pump
Serial number:
Guaranteed sound power level: 78 dB

is in conformity with the following CE directives:

- Outdoor Directive (2000/14/EC),
- Machinery Directive (2006/42/EC),
- Electromagnetic Compatibility Directive (2014/30/EU),.

Operative Conformity Assessment according to Outdoor Directive 2000/14/EC:

Internal production control as per article 14 paragraph 2 in connection with annex V.

This declaration only refers to the machine in the state in which it has been placed on the market. Parts subsequently added by the user and/or subsequent interventions are not covered. This declaration ceases to be valid if the product is converted or changed without consent.

Person authorised to compile the relevant technical documentation:

- (Dipl. in Industrial Engineering, University of Applied Sciences) Michael Duelli, Einersheimer Straße 53, 97346 Iphofen.

The technical documentation is available from:

- Knauf PFT GmbH & Co. KG, Technical Department, Einersheimer Straße 53, 97346 Iphofen.

Iphofen

Dr York Falkenberg
Managing Director

Town/city

Name and signature

Details of signatory

General information



1.7 Quality Control sticker



The following details can be found on the Quality Control sticker:

- CE confirmed as per EU directives
- Serial no / serial number
- Controller / signature
- Date of control

Figure 2: Quality Control sticker

1.8 Intended use

1.8.1 Purpose of fitting block

The fitting block has been designed and constructed only for the intended use described below.

NOTE



Application range!

Primary use for water and neutral, non-adhesive liquids. Also suitable for air and neutral non-flammable gases.

- Maximum operating pressure (initial pressure) 16 bar.
- After-pressure infinitely adjustable from 1.5 to 6 bar.
- Smallest possible initial pressure 2.5 bar.
- Minimum pressure gradient (initial/after-pressure) 1 bar.
- Maximum media and ambient temperature 75 °C.
- Assembly position as desired, preferable vertical.

1.8.2 Purpose of solenoid valve

NOTE



Application range!

Solenoid valves for liquid and gaseous media, aggressive or neutral, can be used in various temperature and pressure ranges

Type 6213 is a 2/2 way solenoid valve with straight passage, normally closed, with a permanently coupled membrane system. It switches from 0 bar and is universal in use for liquids. A minimum differential pressure of 0.5 bar is necessary for complete opening.

1.8.3 Purpose of flowmeter

NOTE

**Application range!**

The flowmeter serves for measuring the volume of transparent liquid and gas flows in closed pipes. Optionally, the flowmeter can also be used for flow monitoring.

CAUTION

**Danger due to improper use!**

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

Therefore:

- Only use the flowmeter as intended.
- 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.

1.8.4 Intended purpose of booster pump

NOTE



The PFT pressure booster pump only serves for pumping clean water, recommended for water relatively polluted with impurities and chemically non-aggressive liquids. Media with fibrous and abrasive constituents must be avoided.

Its use is subject to the regulations of the local legislation.

1.8.5 Purpose of air compressor

The air compressor has been designed and constructed only for the intended use described in this document.

NOTE



The air compressor is only intended for generating compressed air and may only be used with connected work devices. Any other use or use beyond what is specified, such as with freely accessible and/or open hoses and pipelines, is deemed to be not for the intended purpose. Connected implements or components are to be designed for the maximum generated pressure of 5.5 bar.

The air compressor is to be used only in technically perfect condition, as well as for its intended use and while taking into account the safety and hazard information in the operating manual!

In particular faults that can impair safety must be rectified immediately before the compressor is put back into operation.

1.8.5.1 Safety devices of air compressor

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 and 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.

1.8.5.2 General setup of the air compressor

The air compressor corresponds to the national and international safety regulations and can therefore also be used in damp rooms or in the open air. Areas with as clean and dry air as possible should be preferred. Make sure that the air compressor can suck in the air unimpeded. This applies in particular when an installation is intended.

The air compressor must be set up so that no hazardous admixtures, such as solvents, vapours, dusts or other harmful substances, can be sucked in. The device should be positioned only in rooms where the hazard of a potentially explosive atmosphere is not given.

1.8.5.3 Hot surfaces on the air compressor

General information

WARNING



Risk of injury due to hot surface!

Surface temperatures can reach up to 100 °C during operation of the air compressor.

- Therefore, always ensure that the air compressor does not come into contact with exposed body parts during use as well as for some time after use, depending on the temperature.

1.8.5.4 Air compressor pressure cut-off

WARNING



Danger of death due to missing safety equipment!

We expressly point out that the compressor must not be operated without a pressure switch-off. External pressure switches in machines have to have the same switching cycles as the factory-set pressure switch.

If no pressure switch is positioned upstream, the compressor can be easily retrofitted.

Technical data

PFT

2

Technical data

2.1

General information

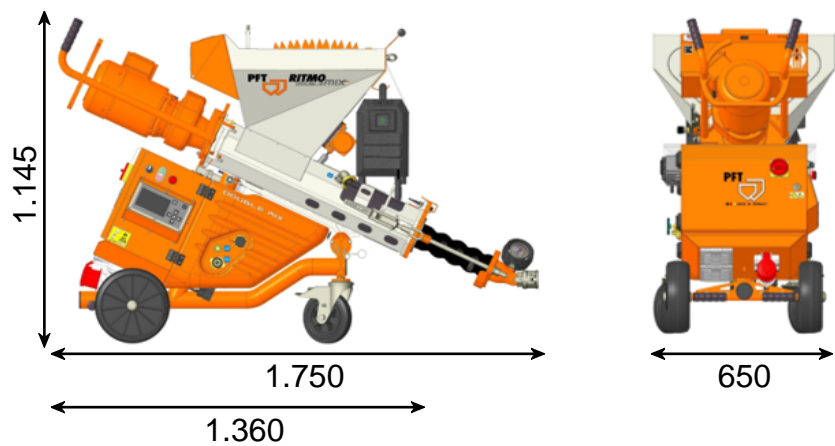


Figure 3: Dimension sheet in mm

Detail	Value	Unit
Empty weight approx.	180	kg
Length with pump unit	1750	mm
Length without pump unit	1360	mm
Width	650	mm
Height	1145	mm

Individual weights

Detail	Value	Unit
Chassis	64	kg
Material hopper with pump motor and pump unit	107	kg
Pump motor	49	kg
Air compressor	14	kg

Material hopper dimensions

Detail	Value	Unit
Filling height	1000	mm
Material hopper volume	85	l
Material hopper volume with attachment	140	l



2.2 Connection values of water



Figure 4: Water connection

Detail	Value	Unit
Operating pressure, min.	2.5	bar
Connection	½	inch

2.3 Operating conditions

Environment

Detail	Value	Unit
Temperature range	2 - 45	°C
Relative humidity, max.	80	%

Duration

Detail	Value	Unit
Max. operating time at a stretch	8	hours

Electrical - 400V

Detail	Value	Unit
Voltage, alternating current 50 Hz	400	V
Power consumption, maximum approx.	16	A
Fuse protection, type C	32	A
Power input, max.	7	kW
Drive pump motor	6.05	kW
Air compressor	0.55	kW
Pressure booster pump	0.37	kW
Pump motor speed range	100 - 400	Rpm

2.4 Capacity values, pump unit D 8-2

Pump capacity D 8-2

Detail	Value	Unit
Delivery rate infinitely adjustable	1 - 40	l/min
Maximum operating pressure	20	bar
Maximum grain size	4	mm
Delivery distance *, maximum	50	m

* Reference value depending on conveying height, pump condition and version, mortar quality, composition and consistency

Compressor output DELTA 2

Detail	Value	Unit
Compressor output	0.180	Nm³/min

Technical data



2.5 Sound power level

Guaranteed sound power level L_{WA}

■ 78 dB(A)

2.6 Vibrations

Weighted effective value of acceleration to which the upper body parts are exposed $<2.5 \text{ m/s}^2$

2.7 EMC test

The machine has been EMC tested and complies with the strict requirements of EMC Directive filter class B.

The control box is equipped with a network filter.



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.

Suspended loads

⚠ WARNING



Danger to life from suspended loads!

When lifting heavy loads, there is danger to life from falling parts or uncontrolled swinging parts.

Therefore:

- Never step under suspended loads.
- Observe the instructions regarding the provided anchorage points.
- Do not attach to projecting machine parts or eyelets of attached components and ensure safe fit of the sling gear.
- Only use approved lifting gear and accessories with a sufficient load-bearing capacity.
- Do not use torn or frayed ropes and belts.
- Do not lay ropes and belts over sharp edges and corners, do not knot or twist.
- When ropes and chains are used in construction operations, the provisions contained in the accident prevention regulation "Load suspension devices in lifting gear operations" (VBG 9a) should be complied with. The following sections contain instructions for scenarios in which ropes and chains are used as lifting means.

Transport, packing and storage



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.

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.



3.4 Closing the motor tilt flange

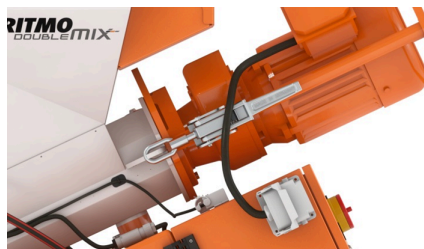


Figure 5: Closing the motor tilt flange

⚠ 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.

3.4.1 Closing the snap lock before transport

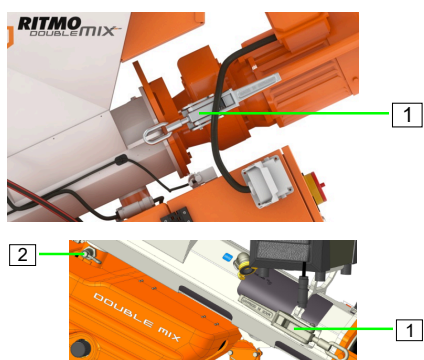


Figure 6: Closing the quick closure

⚠ CAUTION



Generally make sure that the quick fasteners (1) on the pump motor and on the material hopper and rotary bolt (2) are closed when the machine is moving.

3.5 Transport in individual parts

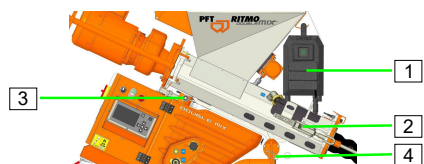


Figure 7: Individual parts

To make transport easier, disassemble the machine into its individual components. In the units mixing tube with material hopper and pump, chassis and air compressor (1).

1. Release cable and hose connections.
2. Unhook the air compressor (1).
3. Open the quick fastener (2) on the pump motor and on the pump and unhook the parts.
4. Open the rotary bolt (3), pull the locking cotter pin out of the screw (4) and remove the screw (4).
5. Remove mixing tube with material hopper from the chassis.

3.6 Transport by car or truck

⚠ CAUTION



Risk injury due to unsecured load!

All persons involved in the loading are responsible for securing the load properly during road transport. The relevant vehicle driver is responsible for the operational loading.

3.7 Transporting a running machine

CAUTION



Danger of injury from discharged mortar!

Injuries to face and eyes can occur.

Therefore:

- Before opening the couplings ensure that there is no more pressure on the hoses (observe display at mortar manometer).

Carry out the following steps before beginning the transport:

1. First unplug the mains cable.
2. Undo all other cable connections, water supply lines and hoses.
3. Remove loose parts during crane transport.
4. Start transport.

4 Description

4.1 Overview

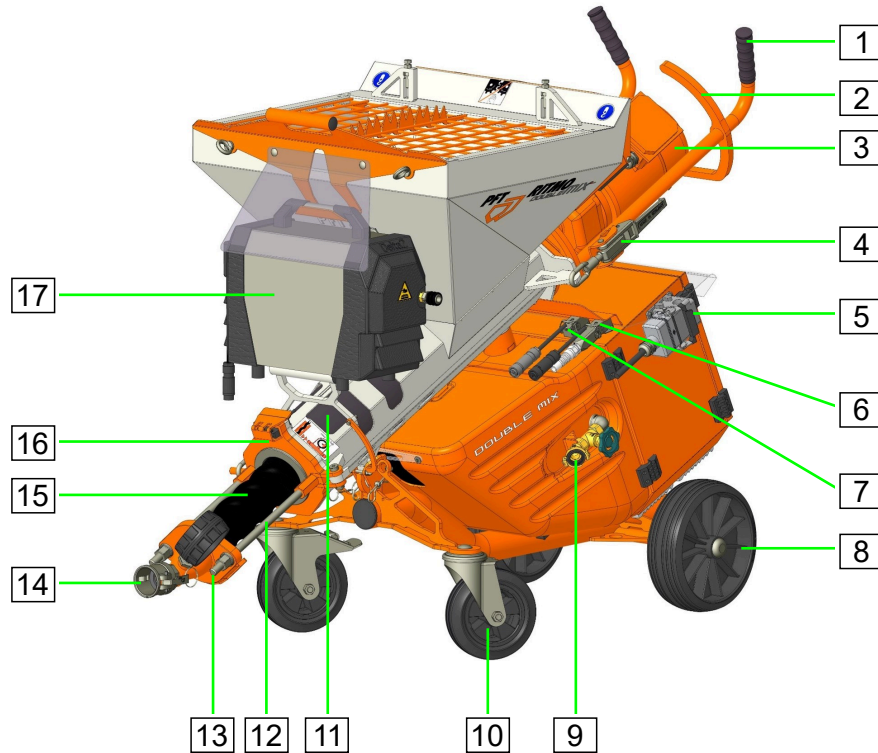


Figure 8: Table of the assembly groups

[1] Slider handle	[2] Carrying handle
[3] Pump motor	[4] Quick fastener
[5] Connection for motor connection cable	[6] Connection for mixing tube safety sensor
[7] Connection for pressure sensor for retrofitting	[8] Rubber wheel
[9] Water sampling valve	[10] Castor
[11] Rubber mixing section	[12] Tie rods
[13] Pressure flange	[14] Connection for mortar hose
[15] Pump unit	[16] Suction flange
[17] Air compressor	

Description

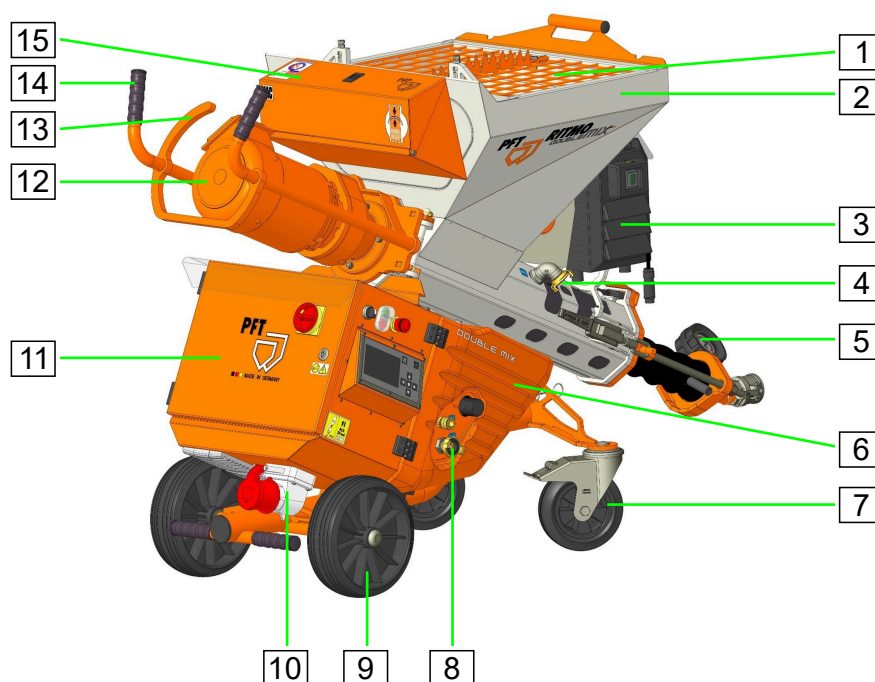


Figure 9: Table of the assembly groups

[1] Protective grille with sack opener	[2] Material hopper
[3] Air compressor	[4] Water supply to mixing tube
[5] Mortar pressure gauge	[6] Side panel installation cabinet
[7] Stop castor	[8] Water inlet
[9] Rubber wheel	[10] Main terminal
[11] Control box	[12] Pump motor
[13] Carrying handle	[14] Slider handle
[15] Tool kit	

4.2 Brief description



Figure 10: RITMO double mix

The compact mixing pump RITMO double mix with 400V three-phase drive was specially developed for pumping, spraying and applying machine-compatible dry mortars, pasty materials and much more up to 4 mm grain size, depending on the material and pump system.

The pump output can be adjusted infinitely electronically, depending on requirements.

The machine consists of portable single components of handy dimensions and light weight that allow fast and convenient transport.

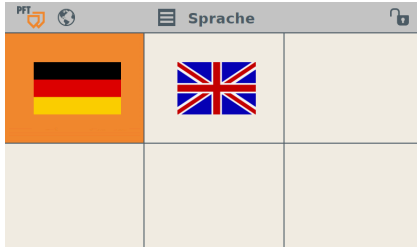
The machine is equipped with a PFT control system.

4.3 Flowability / flow characteristics



- The pump unit D 8-2 can be used up to 20 bar operating pressure.
- The possible conveying distance depends mainly on the flowability of the material.
- If 20 bar operating pressure are exceeded the mortar hose length has to be reduced.
- To avoid machine breakdowns and excessive wear on pump motor, mixing shaft and pump, always use original PFT spare parts such as:
 - PFT rotors
 - PFT stators
 - PFT mixing shaft
 - PFT mortar hoses
- These are compatible with each other and form a constructive unit with the machine.
- Non-compliance does not only cause loss of guarantee, but also bad mortar quality is to be expected.

4.4 Language selection



The display and thus also the RITMO double mix can be operated in the following languages:

- German
- English

Figure 11: Language selection

4.5 Description of assemblies

The mixing pump PFT RITMO double mix consists of the main components described in the following chapters.

Description



4.5.1 Material hopper with pump motor and pump unit



- Pump motor with tilt flange, mixing tube with material hopper and pump unit D 8-2.
- The pump motor with tilt flange can be removed from the mixing container for transport purposes.

Figure 12: Material hopper assembly

4.5.2 Pump motor



- Pump motor 6.05 kW with tilt flange, sliding and carrying handle.

Figure 13: Gear motor assembly

4.5.3 Chassis



- Chassis with control box, water and air fittings.

Figure 14: Chassis assembly

4.5.4 Pump unit



■ Pump unit D 8-2.

Figure 15: Pump unit assembly

4.5.5 Control box

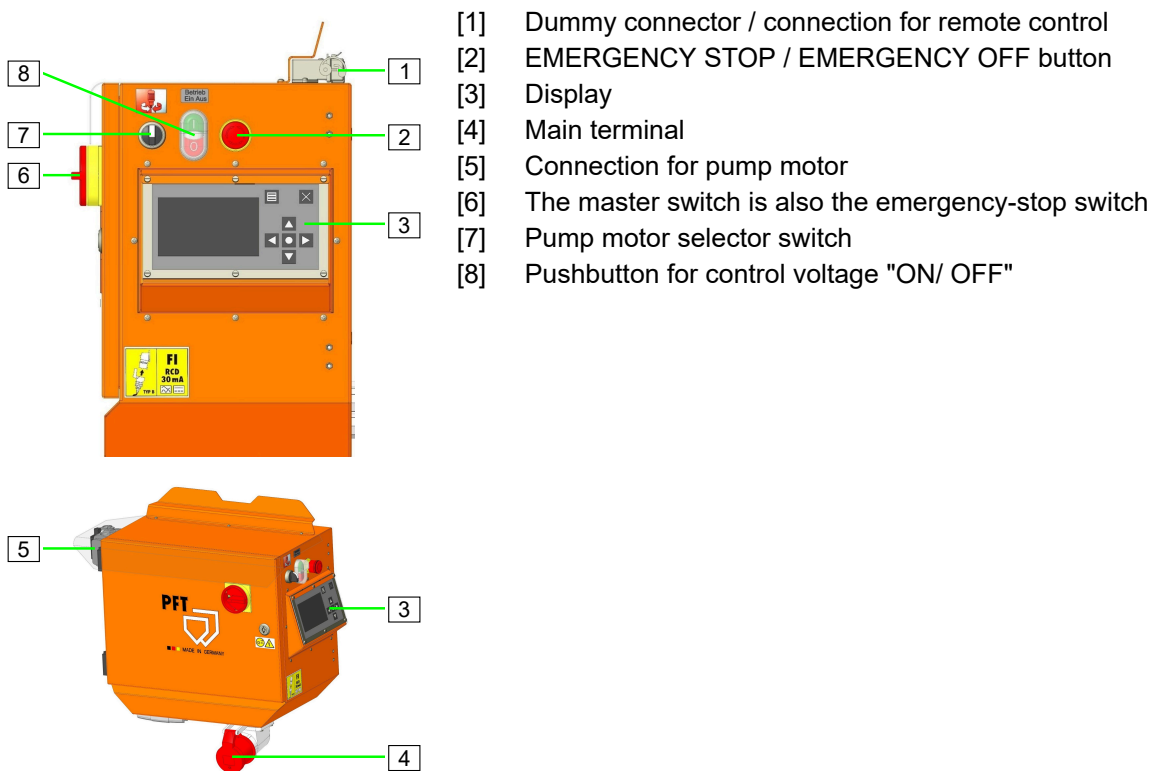


Figure 16: Assembly unit control box

Description



4.5.6 Water and air fitting

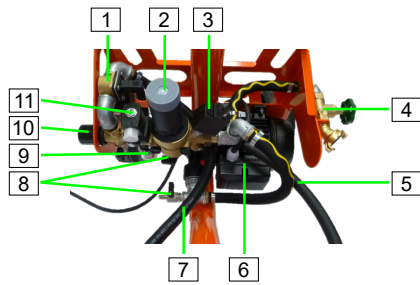


Figure 17: Water and air manifold assembly

- [1] Digital water flow meter
- [2] Pressure reducer
- [3] Water pressure switch
- [4] Shut-off valve/water sampling valve
- [5] Compressed air hose to the air compressor
- [6] Pressure booster pump
- [7] Water to mixing tube
- [8] Antifreeze water outlet tap
- [9] Strainer
- [10] Needle valve water quantity
- [11] Solenoid valve

4.5.7 Air compressor



Figure 18: Air compressor

- Air compressor DELTA 2 230V with pressure switch-off

4.5.7.1 Dry running air compressor

Runs completely without oil

Benefits:

High operational life, no downtime due to wear, like e.g. for a membrane compressor, as the wear of the sleeves and piston seals has a linear basis. The use of high-quality components lets the compressor reach high durability. Safety on multiple levels by virtue of a robust aluminium casing and sophisticated filter system. Changing filter insert for motor cooling air, easy access from the outside and easy replacement. The actual intake air for the compressor is taken in via two internal intake filters with silencer function.

4.5.8 Mortar pressure gauge



Figure 19: Mortar pressure gauge

PFT mortar pressure gauge

⚠ CAUTION



The use of a mortar pressure gauge is recommended for safety-related reasons.

Some advantages of the mortar pressure gauge:

- Exact adjustment of the correct mortar consistency.
- Constant control of the right conveying pressure.
- Early detection of clogging or overload of the pump motor.
- Relieving pressure.
- Durability of pump components
- Is a major contribution to the safety of the operators.

4.5.9 Pressure sensor

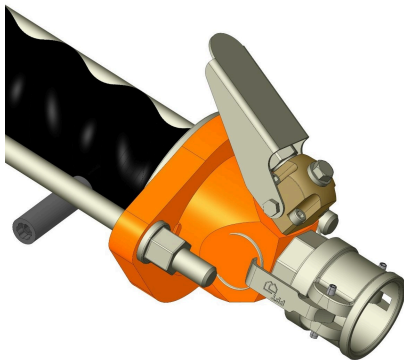


Figure 20: Pressure sensor

⚠ CAUTION



The use of a pressure sensor is recommended for safety-related reasons.

Some advantages of the pressure sensor:

- Exact adjustment of the correct mortar consistency.
- Constant control of the right conveying pressure.
- Early detection of clogging or overload of the pump motor.
- Relieving pressure.
- Durability of pump components
- Is a major contribution to the safety of the operators.
- If the pressure sensor or the cable is defective, the machine cannot be put into operation.
- A fault message appears in the display.

4.6 Connections



Figure 21: Connections

- [1] Mortar hose connection on mortar pressure gauge
- [2] Connection water supply from mains
- [3] Connection air to spray gun

Description

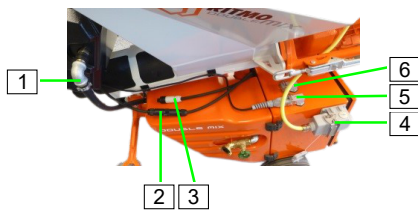


Figure 22: Connections

- [1] Compressed air connection from air compressor to pressure control
- [2] Plug-in connection compressor to control box
- [3] Plug-in connection vibrator to control box (optional)
- [4] Motor connection cable connection
- [5] Connection for limit switch on mixing tube and pump
- [6] Pressure sensor connection (optional)

4.7 Operating modes



Figure 23: Pump motor selector switch

Pump motor selector switch

The pump motor has three operating modes:

Switch position "0":

- The machine is switched off.

Switch position "right" (latching):

- The machine starts up when the power supply is correctly and completely switched on.

Switch position "left" (spring return):

- The pump motor goes into reverse, thereby relieving the pump and locking other functions.

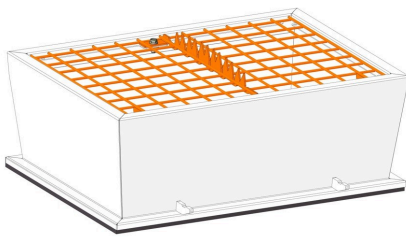
4.8 Accessories



Injection hood RITMO double mix RAL9002

- Item no. 00773772

The PFT injection hood is used for feeding dry material to the mixing pump using the PFT SILOMAT pneumatic conveying system.



Extension hopper - 55 litres RITMO double mix

- Item no. 00773773

The hopper volume of the extension hopper is approx. 55 litres.

The protective grille is not included in the scope of delivery. Before mounting the extension hopper, the protective grille of the machine must first be mounted on the extension hopper.



Tool bag of mixing pump/delivery pump

- Item no. 00021666

Consisting of:

- Tool kit item no. 00021668
- Tool roll item no. 20048502
- Strainer screen for Geka coupling (10 items) item no. 20152000
- Spraying cap S16 (PU 10) item no. 00201950
- Seal 25M-part (PU 50) item no. 20199600
- Seal 35M-part item no. 20200715
- Geka coupling seal (PU 50) item no. 20201700
- Sponge ball 30 mm fixed item no. 20210501
- Sponge ball 50 mm fixed item no. 20210601
- Mandrel 5.0 mm diameter item no. 20223100
- Control box double bit 5 mm item no. 20444500
- Mortar/air hose and cable holder item no. 20190222
- Spraying cap S12 (PU 10) item no. 00062382
- Spraying cap F14 (PU 10) item no. 20190900
- Spraying cap S10 (PU 10) item no. 00063290
- Cleaning piece 25V-part NW24 with Geka item no. 20199500

RONDO DN25 hydraulic connection V-part | Female part - 10 m

- Item no. 00021100



Spraying gun DN25-360° S14 200 Geka

- Item no. 00136624



Description



Air hose DN12 Ewo V-part | Geka - 11 m

- Item no. 20211600



Extension cable 5 x 4 mm², RED 5-32 A – 50 m (400 V, 3 Ph)

- Item no. 20423900



Extension cable 5 x 4 mm², RED 5-32 A – 25 m (400 V, 3 Ph)

- Item no. 20423920

You can find further accessories on the internet at www.pft.net or from your PFT construction machinery dealer.

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 protective 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.
- Increased noise level may cause permanent hearing deficiencies. At close range of the machine 78 dB(A) can be exceeded due to operational conditions. Close range is a distance of less than 5 metres to the machine.

5.1.1 Safety rules

CAUTION



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

Operation



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 24: 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).

5.1.3.1 DUSTCATCHER RITMO double mix SET



Figure 25: DUSTCATCHER

DUSTCATCHER for RITMO double mix item no. 00660718 includes:

- Class M dust remover - iPulse (the following information is required for conveyance assembly: iPulse M-1635 Safe - No. 018935)
- Supplementary set for dust remover M
- Container attachment DUSTCATCHER for RITMO double mix

5.1.4 Safety system

5.1.4.1 EMERGENCY STOP / EMERGENCY OFF button



Figure 26: EMERGENCY STOP / EMERGENCY OFF button

NOTE



Check the EMERGENCY STOP / EMERGENCY OFF button daily before starting work:

1. Switch on main switch/main reversing switch.
2. Control voltage "ON".
3. Press EMERGENCY STOP / EMERGENCY OFF button.
4. The control voltage is switched off by pressing the EMERGENCY STOP / EMERGENCY OFF button.
5. Unlock the EMERGENCY STOP / EMERGENCY OFF button by **turning** in the direction of the arrow.

NOTE



The EMERGENCY STOP / EMERGENCY OFF button quickly puts the machine into a safe state in the event of a hazard, or to avert danger.

- The EMERGENCY STOP / EMERGENCY OFF button must lock after actuation.
- This immediately disconnects the energy supply to the drive elements. **Turning** the EMERGENCY STOP / EMERGENCY OFF button returns it to its original position.

⚠ WARNING



Danger to life if safety devices are overridden!

Never perform improper actions on safety equipment that endanger the life or health of employees.

5.1.4.2 Safety sensor on pump unit/mixing tube

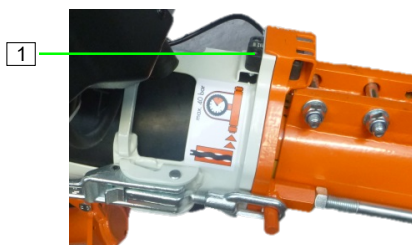


Figure 27: Limit switch pump unit/mixing tube

1. If the pump unit is released from the mixing tube while the machine is running, the machine switches off via the magnetic safety sensor (1).

Operation

5.1.5 Mortar pressure gauge



Figure 28: 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.

5.1.6 Pressure sensor

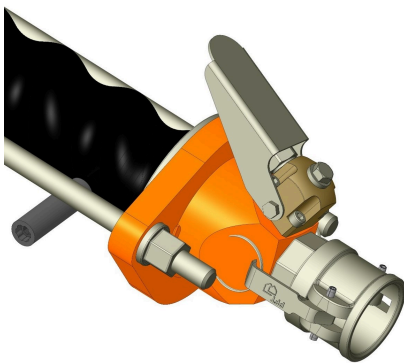


Figure 29: Pressure sensor

⚠ WARNING



Operating pressure too high!

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

- 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.

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 Preparing the machine

Prior to operating the machine carry out the following steps for preparing the machine:

5.3.1 Risk of injury due to rotating mixing shaft



Figure 30: Grille cover

⚠ WARNING



Rotating mixing shaft!

Risk of injury when reaching into the material hopper.

- The protective grille (1) should not be removed during operation or while preparing the machine.
- Never reach into the running machine.

5.3.2 Setting up the machine



Figure 31: Setting up the machine

Install the machine on stable and even ground and secure it against accidental movements:

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.

5.3.3 Connecting the power supply

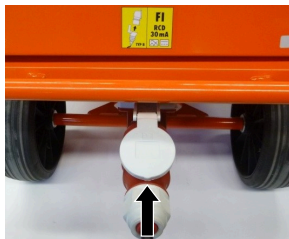


Figure 32: Connecting the power supply

1. Only connect the machine to a 400V power supply.

⚠ DANGER



Danger to life from electric current!

The electrical connection must be fused correctly:

- Only connect the machine to a power source with permissible 30 mA circuit breaker (RCD) of type B that is sensitive to all currents that are required for the operation of frequency converters.

Operation



5.3.3.1 Connecting the motor connecting cable

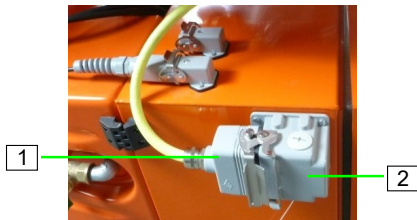


Figure 33: Connecting the motor connecting cable

⚠ WARNING



Danger to life from rotating parts!

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

- The respective drive (motors) must be operated only with the control box of the machine.

1. Connect the motor connection cable (1) to the control box (2).

5.3.4 Checking the strainer screen

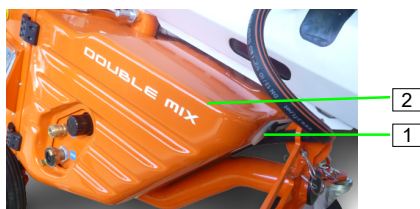


Figure 34: Open panel

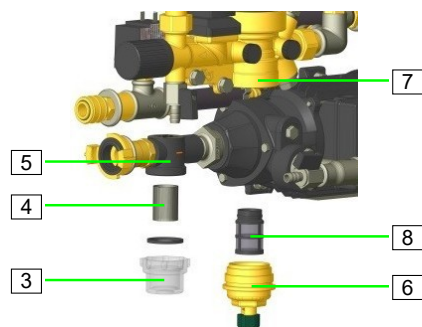


Figure 35: Checking the strainer screen

1. Unhook the rubber (1) and open the panels (2).
2. Unscrew sight glass (3) with strainer screen (4) from dirt trap (5).
3. Clean the strainer screen (4) or replace it if necessary.
4. Screw sight glass (3) with strainer screen (4) back in.
5. Remove the brass screen cup (6) from the pressure reducer (7).
6. Check whether the strainer screen (8) in the pressure reducer (7) is clean.

Screen for pressure reducer:

- Item no. 20156000

7. Screw in brass screen cup (6) again.
8. Close all water outlet taps.
9. Close the plastic panel (2) and replace the rubber (1).

5.3.5 Connecting the water supply

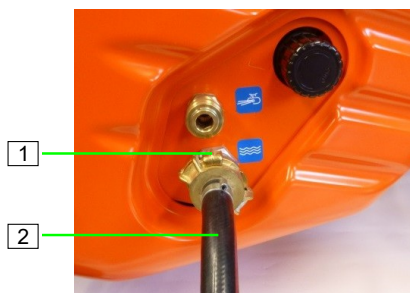


Figure 36: Connecting water supply

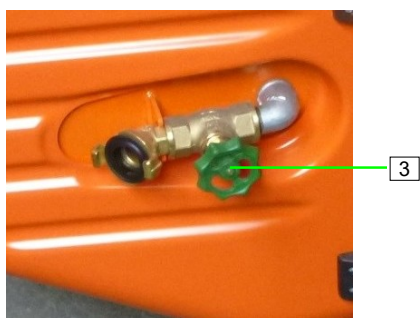


Figure 37: Close the water sampling valve.

1. Check whether the water inlet screen in the water inlet (1) is clean.
2. Clean the water hose (2) from the water supply and bleed.
3. Connect the water hose (2) to the water inlet (1).
4. Close the water sampling valve (3).

NOTE



Use only clean water free of solids. The minimum pressure is 2.5 bar when the machine is running.

- Observe the Drinking Water Protection Ordinance in Part 1

NOTE



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

5.3.5.1 Connection of water from water tank

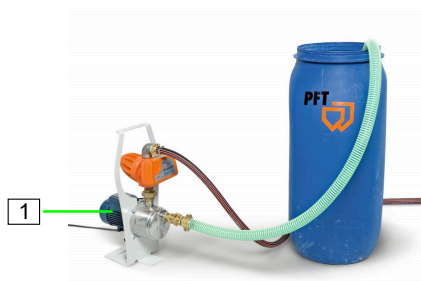


Figure 38: Pressure booster pump

- Item no. of pressure booster pump AV1000/1 (1): 00493686
- The connected pressure booster pump ensures the required water pressure of at least 2.5 bar.

NOTE



When working with water from the barrel, the inlet strainer must be fitted with a filter screen (item no. 00136619)
(Bleed the booster pump)

NOTE



The booster pump must not run dry to avoid any damage!



Figure 39: Suction strainer complete with filter screen

5.3.6 Switching on the machine

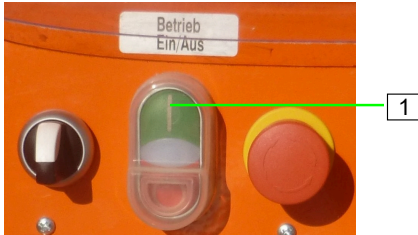


Figure 40: Switching on the machine

1. Turn the main switch to "ON".
2. Press the green pushbutton (1) control voltage "ON".

5.3.6.1 Change language



Figure 41: Open language selection

If the machine was started in the wrong language, the language selection can be opened again:

1. Open the main menu by pressing the button (1).
2. Use the arrow keys to select the "Language" field (2) and confirm by pressing the key (3).

✓ The language selection opens.

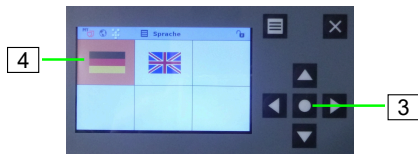


Figure 42: Select language

3. Select the desired language with the arrow keys; the selection is indicated by the orange background (4).
4. Then confirm the selection by pressing the button (3).

5.3.6.2 Setting the water quantity



Figure 43: Remove the water hose



Figure 44: Opening the cockpit

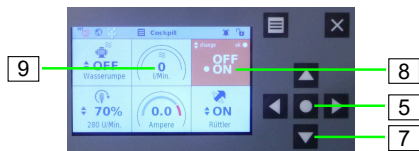


Figure 45: Activating the water flow

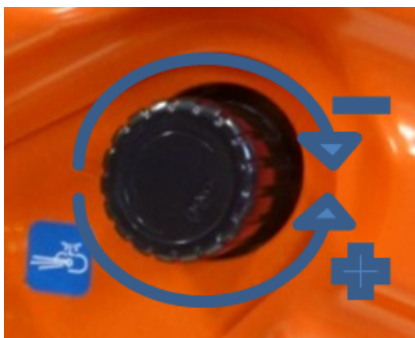


Figure 46: Setting the water quantity

1. Remove the water hose (1) from the mixing zone (2).
2. Open the main menu by pressing the button (3).
3. Use the arrow keys to select the "Cockpit" field (4) and confirm by pressing the key (5).
- ✓ The cockpit opens.
4. Use the arrow keys to select the "Water flow" field (6) and confirm by pressing the key (5).
5. Activate the water flow (8) by pressing the arrow key (7) and confirm with the key (5).
- ✓ The water flow is activated.
6. Adjust the expected water quantity at the needle valve, as shown in the display (9).

NOTE



If the expected water quantity has not yet been adjusted, activate the water flow again.

NOTE



Observe the specifications of the material manufacturer when setting the water factor.



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.

7. Connect water hose (1) to the inlet at the mixing zone (2).

Operation

5.3.6.3 Adjusting the pre-watering quantity



Figure 47: Open functions



Figure 48: Open water function



Figure 49: Adjusting the pre-watering quantity

1. Open the main menu by pressing the button (1).
2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.
3. Use the arrow keys to select the "Water" field (4) and confirm by pressing the key (3).
- ✓ The settings open.
4. There must be no tick in the "Pasty" field (5), otherwise remove the tick by pressing the key (3).
5. If necessary, open the settings for the water (4) again by pressing the button (3).
6. Change to the pre-watering quantity setting (6) by pressing the right arrow key.
7. Use the arrow keys (7) to set the pre-watering quantity.
8. Then accept the change by pressing the button (3).

5.3.6.4 Watering the mixing zone



Figure 50: Opening the cockpit



Figure 51: Activating the water flow



Figure 52: Watering the mixing zone

1. Open the main menu by pressing the button (1).
2. Use the arrow keys to select the "Cockpit" field (2) and confirm by pressing the key (3).
- ✓ The cockpit opens.

NOTE



The pump must generally be flushed with water. Flushing with water makes it easier for the pump to start up.

3. Use the arrow keys to select the "Water flow" field (4) and confirm by pressing the key (3).
4. Activate the water flow (6) by pressing the arrow key (5) and confirm with the key (3).
- ✓ The water flow is activated.
5. The set pre-watering quantity flows into the mixing zone.
6. If more water is needed, activate the water flow again.

5.3.6.5 Adjusting the speed of the pump motor



Figure 53: Adjusting the pump motor

1. Use the arrow keys to select the field for the pump motor (1) and confirm by pressing the key (2).
2. The arrow keys (3) can be used to set the speed of the pump motor and thus also the pump output, which can be seen in the display (4).
3. Then accept the change by pressing the button (2).

5.3.6.6 Activate overrun protection



Figure 54: Open functions

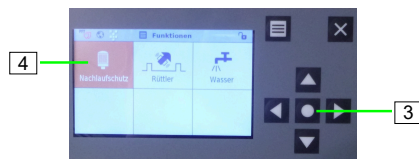


Figure 55: Open overrun protection function

1. Open the main menu by pressing the button (1).
2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.
3. Use the arrow keys to select the "Overrun protection" field (4) and confirm by pressing the key (3).
- ✓ The settings open.
4. Use the arrow keys (5) to set the reverse time (6) that the pump motor should automatically run backwards.
5. There must be a tick in the "activated" field (7) to activate the overrun protection, otherwise change to the field (7) by pressing the right arrow key and set the tick by pressing the key (3).
6. Then accept the changes by pressing the button (3).

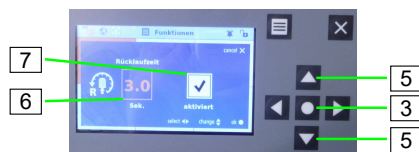


Figure 56: Activate overrun protection

Operation

5.3.6.7 Setting the booster pump



Figure 57: Opening the cockpit



Figure 58: Activating the water pump

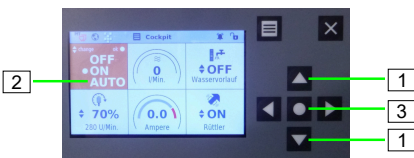


Figure 59: Activating automatic mode

1. Open the main menu by pressing the button (1).
2. Use the arrow keys to select the "Cockpit" field (2) and confirm by pressing the key (3).
- ✓ The cockpit opens.
3. Use the arrow keys to select the "Water pump" field (4) and confirm by pressing the key (3).

Activating automatic mode

1. Select "AUTO" (2) with the arrow keys (1) and confirm by pressing the key (3).



The booster pump is necessary if the water pressure falls below 2.5 bar during running operation of the machine.

NOTE



The booster pump only starts in automatic mode when the machine is switched on via the pump motor selector switch.



Figure 60: Activating manual mode

Activating manual mode

1. Select "ON" (2) with the arrow keys (1) and confirm by pressing the key (3).

NOTE



In manual mode, the booster pump runs continuously, e.g. for cleaning the hoses if the pressure from the water mains is not sufficient.

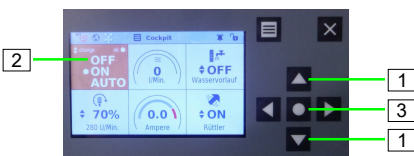


Figure 61: Switching off the booster pump

Switching off the booster pump

1. Select "OFF" (2) with the arrow keys (1) and confirm by pressing the key (3)
- ✓ The booster pump is switched off.

NOTE



If the water pressure from the water mains is continuously 2.5 bar, the booster pump does not have to be switched on.

5.3.7 Mortar hoses

5.3.7.1 Preparing the mortar hoses

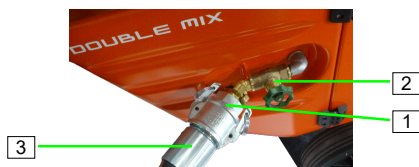


Figure 62: Preparing the mortar hoses

1. Connect the cleaner coupling (1) at the water extraction valve (2).
2. Connect the mortar hose (3) to the cleaner coupling (2).
3. Open the water sampling valve (2) and water the mortar hose (3).
4. Remove mortar hose and cleaner coupling again and disconnect from each other.
5. Remove all the water from the mortar hose.
6. Pre-lubricate the mortar hose with about 2 litres of wallpaper paste.
7. The wallpaper paste is mixed through the mortar hose with the first mixing.

⚠ WARNING



The mix could burst out under pressure and result in serious injuries, especially injuries to the eyes.

Hoses that tear off can lash wildly and injure those standing nearby!

- Never loosen the hose couplings as long as there is pressure on the mortar hoses (check mortar pressure gauge)!

5.3.7.2 Connecting the mortar hose

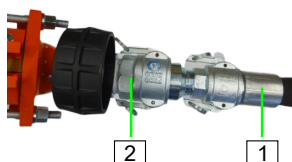


Figure 63: Connecting the mortar hose

1. Connect the mortar hose (1) to the mortar pressure gauge (2).

NOTE



Ensure clean and correct connection and tightness of the couplings! Dirty couplings and rubber seals are not watertight, and water might leak under pressure inevitably leading to blockages.

2. Lay mortar hoses with a radius large enough so that the hoses do not kink.
3. Carefully secure risers so that they do not tear away from their own weight.
4. Turn the pump motor selector switch (3) to "right" position.
5. Allow the machine to run until all the wallpaper paste has emerged from the end of the mortar hose.
6. Collect the wallpaper paste in suitable container and dispose of as per regulations.
7. Turn the pump motor selector switch (3) to the "0" position.



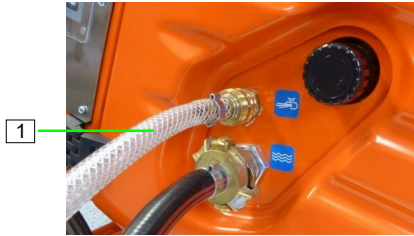
Figure 64: Switching on

Operation



5.3.8 Compressed air supply

5.3.8.1 Connecting the air hose



1. Connect the compressed air hose (1) at the air manifold.

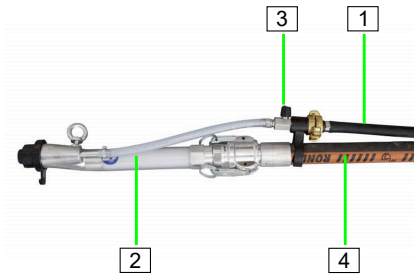
⚠ WARNING



- Never undo hose couplings while the compressed air hose is pressurised.

Figure 65: Connecting the air hose

5.3.8.2 Connecting the spray gun



1. Connect compressed air hose (1) to the spray gun (2).
2. Make sure that the air tap (3) on the spray gun is closed.
3. Connect spray gun (2) to the mortar hose (4).

Figure 66: Spray gun

5.3.8.3 Switching on the air compressor



1. Switch on the air compressor using the green toggle switch (1).
2. As soon as the air compressor has built up pressure in the pipeline system, it switches off using the pressure switch-off.

Figure 67: Switching on the air compressor

5.3.9 Switching on the vibrating unit



Figure 68: Switching on the vibrating unit



If the material is not to slide subsequently in the material hopper, the vibrating unit can be connected.

1. Use the arrow keys to select the "Vibrator" field (1) and confirm by pressing the key (2).
 2. Select "ON" (4) with the arrow keys (3) and confirm by pressing the key (2).
- ✓ The vibrator is switched on and runs according to the set interval times as soon as the pump motor selector switch is switched to the "right" position.

5.3.9.1 Adjusting the vibrator



Figure 69: Open functions



Figure 70: Open vibrator function

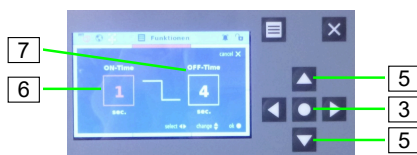


Figure 71: Set interval times

1. Open the main menu by pressing the button (1).
 2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.
3. Use the arrow keys to select the "Vibrator" field (4) and confirm by pressing the key (3).
- ✓ The settings open.
4. Use the arrow keys (5) to set the "ON time" (6) at which the vibrator should run.
 5. Change to the "OFF time" field (7) by pressing the right arrow key.
 6. Use the arrow keys (5) to set the "OFF time" (7) at which the vibrator should stop.
 7. Then accept the changes by pressing the button (3).

Operation



5.3.10 Filling the material hopper with dry material



Figure 72: Bagged goods

⚠ CAUTION



Danger of injury at the sack opener!

The sharp edges of the sack opener pose a risk of injury.

- Wear safety gloves.



For initial filling with bagged material slowly pour half of the first bag into the material hopper!

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.



After the rescue operations

In case of danger proceed as follows:

1. Switch off the main 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 the machine into operation

5.5.1 Feeding material to the machine



Figure 73: Switching on

1. Place a bucket or tray below the pressure flange.
 2. Turn the pump motor selector switch (1) to "right" position.
- ✓ The machine starts.



Figure 74: Checking the consistency

3. Check mortar consistency at the pressure flange (2).
 4. Turn the pump motor selector switch (1) to the "0" position.
- ✓ The machine stops.

5.6 Remote control

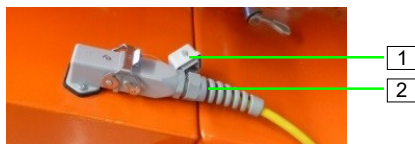


Figure 75: Remote control

Using the remote control without spray gun

NOTE



It is also possible to operate the machine without compressed air for pouring liquid filler or for working with a glue gun. To do this, switch off the air compressor and work without the spray gun. The machine is then switched on and off via an optional remote control cable.

1. Remove dummy plug (1) from control box.
2. Connect remote control (2).
3. The RITMO can be switched on or off via the remote control.

5.7 Applying mortar

⚠ WARNING



Danger of injury from discharged mortar!

Discharged mortar may lead to injuries to eyes and face.

- Never look into the spray gun.
- Always wear protective goggles.
- Always position yourself in such a way that you are not hit by the mortar being discharged.

Operation



The possible conveying distance depends mainly on the flowability of the mortar. Heavy, sharp-edged mortar has poor flow characteristics. Fluid materials have good flow characteristics.

If an operating pressure of 20 bar is exceeded, the hose length must be shortened or the hose thickness increased.

5.7.1 Opening the air tap on the spray gun



Figure 76: Switching on

1. Turn the pump motor selector switch (1) to "right" position.
2. Point the spray gun toward the wall to be plastered.
3. Ensure that nobody is in the discharge area of the mortar.
4. Open the air tap (2) on the spray gun.
5. The machine will start up automatically via the pressure switch-off and the mortar emerges.

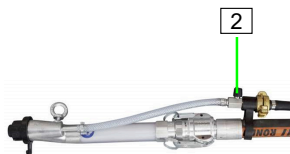


Figure 77: Opening the air tap



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.

5.7.2 Changing the pump motor speed



Figure 78: Changing the speed

1. In the "Cockpit", the speed of the pump motor and thus also the pump capacity can be changed during operation.
2. Use the arrow keys to select the field for the pump motor (1) and confirm by pressing the key (2).
3. Use the arrow keys (3) to change the speed of the pump motor, which is shown in the display (4).
4. Then accept the change by pressing the button (2).

5.7.3 Readjusting consistency

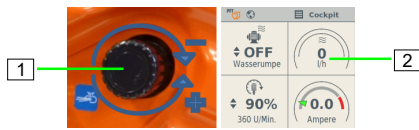


Figure 79: Readjusting consistency



For optimum adjustment of the mortar consistency, the water quantity can be readjusted by turning the needle valve (1), as shown in the display (2).

1. Turning the needle valve (1) to the left increases the amount of water.
2. If the needle valve (1) is turned to the right, the water quantity is reduced.

5.8 Interruption 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.

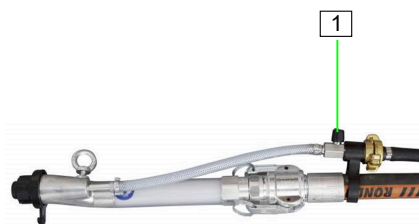


Figure 80: Closing the air tap

1. Close the air tap (1) if you interrupt your work for a short while.
- ✓ The machine stops.
- By opening the air tap (1), the machine will start running again.

5.8.1 In case of longer interruption of work / break

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.

Operation

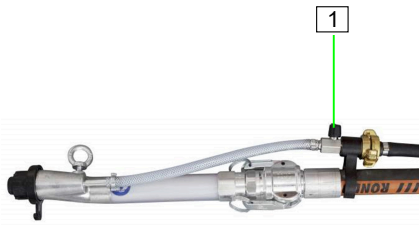


Figure 81: Closing the air tap

1. Close the air tap (1) if the work is interrupted for an extended period of time.

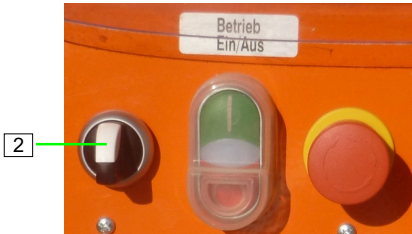


Figure 82: Switching off the machine

2. Switch the selector switch of the pump motor (2) to position "0".

5.9 Switching off the air compressor



Figure 83: Switching off the air compressor

1. Switch off the air compressor using the green toggle switch (1).
2. Open air tap on the spray gun so that the residual pressure can escape.

⚠ WARNING



Danger of injury from discharged mortar!

Discharged mortar may lead to injuries to eyes and face.

■ Beware of residual pressure.

5.10 Switching off the machine



Figure 84: Switching off the machine

1. Turn the pump motor selector switch (1) to the "0" position.
2. Turn the main switch to "OFF".

5.11 Working with pastes

5.11.1 Recommended accessories for pastes



Air compressor COMP P-320, 230 V, 1 Ph, 50 Hz

■ Item no. 00762978



Spraying gun for ornamental plaster DN25 VA10 100 Geka

■ Item no. 20195900



RONDO DN25 hydraulic connection V-part | Female part - 10 m

■ Item no. 00021100

5.11.2 Deactivate water supply



1. Open the main menu by pressing the button (1).
 2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.

Figure 85: Open functions



3. Use the arrow keys to select the "Water" field (4) and confirm by pressing the key (3).
- ✓ The settings open.

Figure 86: Open water function

Operation



Figure 87: Deactivate water supply

4. Press the button (3) to set the tick in the "Pasty" field (5).

5.11.3 Working with pastes

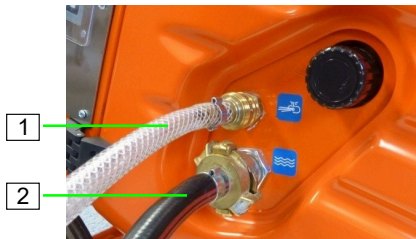


Figure 88: Remove the water hose

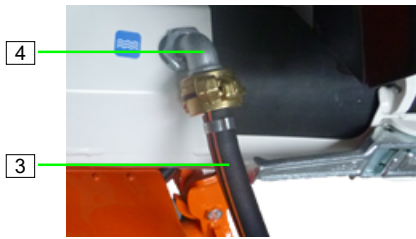


Figure 89: Closing the water inlet

1. Connect compressed air hose (1) at the air manifold.
 2. Disconnect the water hose (2) from the water inlet.
 3. Remove the water hose (3) from the water inlet on the mixing tube (4) and close the water inlet with the dummy cover.
 4. Connect the air hose and the prepared mortar hose to the spray gun.
 5. Close the shut-off valves on the spray gun.
 6. Switch on the air compressor.
 7. The paste can be filled into the material hopper.
 8. Set the pump motor selector switch to the "right" position and open the shut-off valves on the spray gun.
- ✓ The machine starts.

NOTE



When working with pasty material, the insert nozzle in the water inlet of the mixing tube must be cleaned at the end of work.

5.11.3.1 Activate water supply



Figure 90: Open functions

1. Open the main menu by pressing the button (1).
 2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.



Figure 91: Open water function

3. Use the arrow keys to select the "Water" field (4) and confirm by pressing the key (3).
- ✓ The settings open.



Figure 92: Activate water supply

4. Press the button (3) to remove the tick in the "Pasty" field (5).

5.11.3.2 Clean water nozzle



Figure 93: Connecting the water hose

NOTE



When working with pasty material, the insert nozzle in the water inlet of the mixing tube must be cleaned at the end of work.

1. Remove the dummy cover from the water inlet on the mixing tube (2) and connect the water hose (1).
2. Connect the water hose from the water mains to the water inlet of the machine.



Figure 94: Opening the cockpit

3. Open the main menu by pressing the button (3).
 4. Use the arrow keys to select the "Cockpit" field (4) and confirm by pressing the key (5).
- ✓ The cockpit opens.



Figure 95: Activating the water flow

5. Use the arrow keys to select the "Water flow" field (6) and confirm by pressing the key (5).
 6. Activate the water flow (8) by pressing the arrow key (7) and confirm with the key (5).
- ✓ The water flow is activated.
7. The set pre-watering quantity flows through the insert nozzle.
 8. If more water is needed to clean the insert nozzle, activate the water flow again.

5.12 Measures to be taken in case of water outage

NOTE



Clean water can be supplied to the machine from a container by means of a pressure booster pump (item no. 00493686).

Operation



5.13 Action in case of power failure



Figure 96: Turn main switch to the "OFF" position

Turn main switch to the "OFF" position

1. Close the air tap on spray gun.
2. Turn the main switch to the "OFF" position.
3. Switch off air compressor.
4. Have the power supply connection checked by an expert.

5.13.1 Discharging mortar pressure

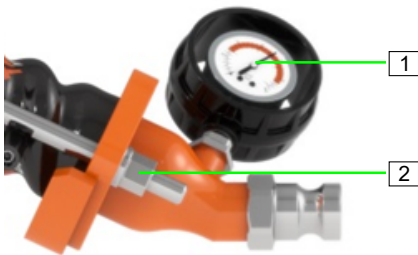


Figure 97: Check and relieve the mortar pressure

⚠ WARNING



Overpressure on the machine!

When opening machine parts they can open in an uncontrolled manner and injure the operator.

- Only open the mortar hoses if the mortar pressure gauge (1) indicates the pressure has fallen to "0 bar".

⚠ WARNING



Danger of injury from discharged mortar!

Discharged mortar may lead to injuries to eyes and face.

- Never look into the spray gun.
- Always wear protective goggles.
- Always position yourself in such a way that you are not hit by the mortar being discharged.

1. Open air tap on the spray gun.
2. Check the mortar pressure gauge (1) if the mortar pressure has fallen to "0 bar". If necessary, discharge any mortar pressure by unscrewing the nuts (2) slightly. When doing so, cover the work area with tear-proof film.
3. Tighten nuts (2) again.

5.13.2 Switching on the machine again after a power failure

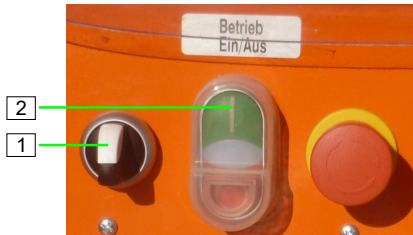


Figure 98: Switching on the machine after a power failure

NOTE



The machine is equipped with a restart interlock. In case of a power failure, this must be started as follows.

1. Turn the pump motor selector switch (1) to the "0" position.
2. Close the air tap on spray gun.
3. Turn the main switch to "ON".
4. Press the green pushbutton (2) control voltage "ON".
5. Switch on the compressor.
6. Turn the pump motor selector switch (1) to "right" position.
7. The machine starts again as soon as the air tap on the spray gun is re-opened.

NOTE



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

5.14 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.

Carry out the following steps when the pump is not operating and there is a danger of frost.

Operation



Figure 99: Disconnect water supply

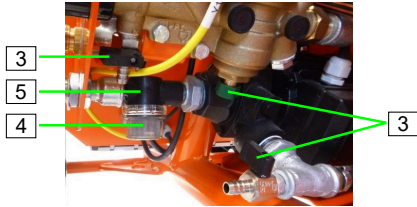


Figure 100: Opening the outlet taps

1. Close external water supply.
2. Disconnect the water hose (1) from the water inlet.
3. Remove the water hose (2) from the mixing tube.
4. Open the water sampling valve.
5. Open the water drain cock (3).
6. Unscrew sight glass (4) with dirt trap strainer from dirt trap (5).
7. Remove water and dirt and screw the sight glass (4) back onto the dirt trap (5).

NOTE



Make sure that the water fully flows out of the water manifold.

5.14.1 Blowing the water manifold dry

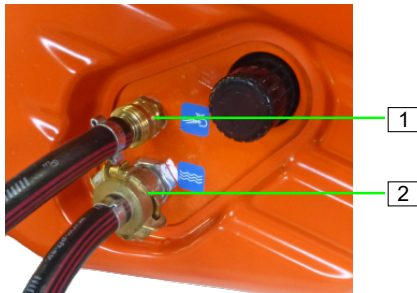


Figure 101: Connecting the air hose

1. Connect air hose with Geka coupling and EWO coupling to the compressed air flange (1) and to the water inlet (2).
2. Turn the main switch to "ON".
3. Switch on the compressor.
4. The water is blown out of the water manifold with compressed air.
5. Switch off air compressor.
6. Turn the main switch to "OFF".

NOTE



Make sure that the water fully flows out of the water manifold.

5.15 Ending work / cleaning the machine

5.15.1 Cleaning

- Clean the machine daily at the end of work and in case of extended breaks.

NOTE



Water can enter sensitive machine parts!

- Before cleaning the machine cover all openings in which no water must enter for safety and functional reasons (e.g.: electric motors and control cabinets).
- Remove the covers completely after cleaning.

5.15.2 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.

5.15.3 Cleaning the machine

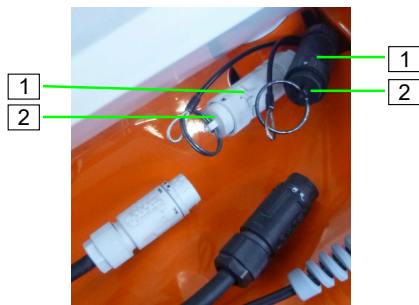


Figure 102: Closing plug connections

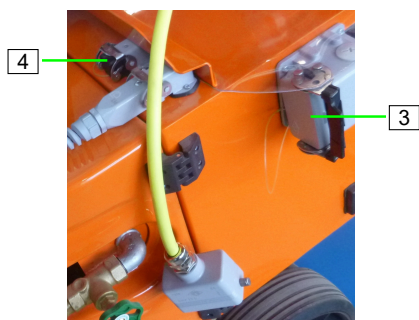


Figure 103: Closing the attachment housing and connections

⚠ CAUTION



In general, all plug connections, attachment housings and connections that are (or can be) opened, must be closed during cleaning, maintenance work or transport of the RITMO double mix unit.

Water penetration can damage the contacts.

1. Close the plug connections (1) with the caps (2) provided for this purpose.
2. Close the attachment housings and connections with the protective covers (3) and dummy plugs (4) provided for this purpose.

Operation

5.15.4 Disconnecting and cleaning the mortar hose



Figure 104: Disconnecting the water hose

Disconnecting the water hose

The machine must be cleaned daily after work and before prolonged pauses.

1. Turn the pump motor selector switch (1) to the "0" position.
2. Turn the main switch to "OFF".
3. Check the mortar pressure gauge (2) to determine whether the mortar pressure has fallen to "0 bar".

⚠ WARNING



Overpressure on the machine!

When opening machine parts they can open in an uncontrolled manner and injure the operator.

- Only open the machine if the pressure has fallen to 0 bar.

4. Release cam lever (3) and uncouple mortar hose (4) from the mortar pressure gauge.
5. Only uncouple the air hose from the spray gun.

Cleaning the mortar hose

NOTE



The mortar hoses and spray gun must be cleaned immediately at the end of work.

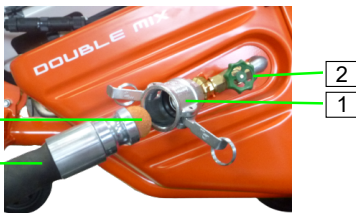


Figure 105: Cleaning the mortar hose

1. Connect the cleaner coupling (1) at the water extraction valve (2).
2. Press the water saturated sponge ball (3) into the mortar hose (4).
3. Connect mortar hose (4) with the sponge ball to the cleaner coupling (1).



Figure 106: Cleaning the spray gun

4. Remove fine plaster nozzle (5) from the spray gun.
5. Undo eye bolt (6) and pull air nozzle tube (7) out of the spray head.
6. Open the water extraction valve until the sponge ball exits the spray gun.
7. Repeat this procedure several times in case of heavy soiling.
8. For different hose diameters, the mortar hoses should be cleaned separately with the appropriate sponge balls.
9. Hose down spray gun with water jet.
10. Knock free air nozzle tube (7) with mandrel.
11. Switch on compressor and blow air nozzle tube free.
12. Reassemble spray gun.

5.15.5 Activate water supply



1. Open the main menu by pressing the button (1).
 2. Use the arrow keys to select the "Functions" field (2) and confirm by pressing the key (3).
- ✓ The overview of functions opens.

Figure 107: Open functions



3. Use the arrow keys to select the "Water" field (4) and confirm by pressing the key (3).
- ✓ The settings open.

Figure 108: Open water function



4. Press the button (3) to remove the tick in the "Pasty" field (5).

Figure 109: Activate water supply

5.15.6 Clean water nozzle

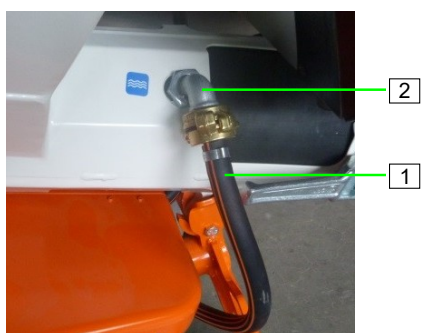


Figure 110: Connecting the water hose

NOTE



When working with pasty material, the insert nozzle in the water inlet of the mixing tube must be cleaned at the end of work.

1. Remove the dummy cover from the water inlet on the mixing tube (2) and connect the water hose (1).
2. Connect the water hose from the water mains to the water inlet of the machine.



3. Open the main menu by pressing the button (3).
 4. Use the arrow keys to select the "Cockpit" field (4) and confirm by pressing the key (5).
- ✓ The cockpit opens.

Figure 111: Opening the cockpit

Operation



Figure 112: Activating the water flow

5. Use the arrow keys to select the "Water flow" field (6) and confirm by pressing the key (5).
6. Activate the water flow (8) by pressing the arrow key (7) and confirm with the key (5).
- ✓ The water flow is activated.
7. The set pre-watering quantity flows through the insert nozzle.
8. If more water is needed to clean the insert nozzle, activate the water flow again.

5.15.7 Cleaning the pump

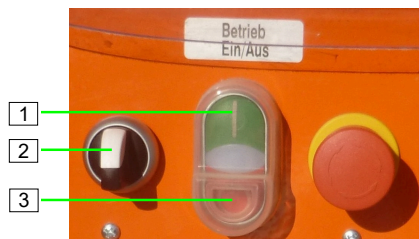


Figure 113: Cleaning the pump unit

1. Turn the main switch to "ON".
2. Press the green pushbutton (1) control voltage "ON".
3. Turn the pump motor selector switch (2) to "right" position.
- ✓ The machine starts.
4. As soon as clean water flows out of the mortar pressure gauge, switch the pump motor selector switch (2) to the "0" position.
- ✓ The machine stops.
5. Press the red pushbutton (3) control voltage "OFF".
6. Turn the main switch to "OFF".

NOTE



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

NOTE



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

5.15.7.1 Removing the pump unit

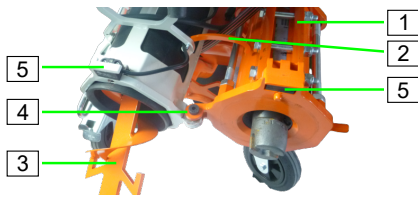


Figure 114: Removing the pump unit

⚠ CAUTION



Danger of crushing by the pump unit!

Note the weight of the pump unit when removing and installing it.

1. Open the quick fastener on the pump unit.
2. Tilt pump unit (1) to the side.
3. Secure the pump unit (1) with the bracket (2).
4. Remove the mixing shaft (3).
5. Remove the pump unit from the locking mechanism (4).
6. Check the cleanliness of the safety sensor (5) and clean if necessary.

5.15.7.2 Closing the pump unit

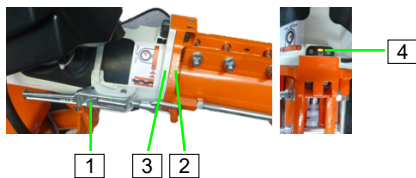


Figure 115: Closing the pump unit

1. Check the cleanliness of the safety sensor and clean if necessary.
2. Close the quick fastener (1) on the pump unit.
3. The suction flange (2) must be in full contact with the mixing tube (3) all around and must be sealed.

5.15.8 Cleaning the mixing tube

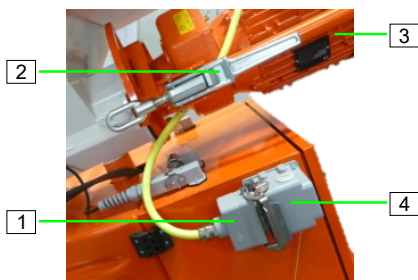


Figure 116: Opening the motor tilt flange

NOTE



There must be no further material in the material hopper and the mixing tube.

1. Disconnect the motor connection cable (1).
2. Open quick fastener (2).
3. Tilt motor (3) to the side.

NOTE



The attachment housing (4) must be closed with the protective cover during cleaning and transport of the motor (protection against moisture and damage).

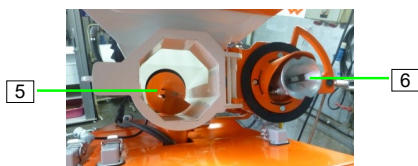


Figure 117: Cleaning the mixing tube

4. Remove the mixing shaft (5) and clean it.
5. Clean the mixing zone with a spatula.
6. Pay attention to wear at the mixing shaft (5) and at the coupling claw (6).

Operation



5.15.8.1 Inserting the mixing shaft

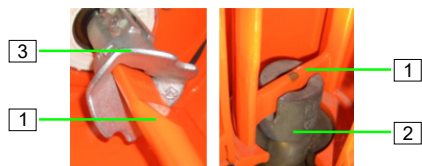


Figure 118: Inserting the mixing shaft

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.

5.15.9 Cleaning the material hopper



The inside of the material hopper can be cleaned with a water hose after having been emptied completely.

5.16 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.

5.16.1 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

5.16.2 Faults

The following chapter describes possible causes for faults and the activities carried out for their rectification.

In case faults occur frequently, shorten the maintenance intervals in accordance with the actual load.

Contact your dealer if malfunctions occur that cannot be solved using this manual.

5.16.3 Fault displays

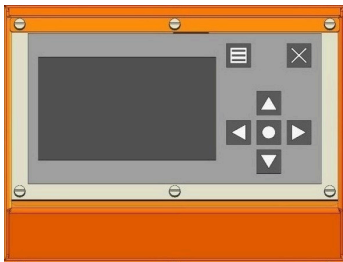


Figure 119: Fault displays

The following installation indicates faults:

- All faults and error messages are shown in the display of the RITMO double mix unit.
- To eliminate the faults and error messages, the user is guided through the menu in the display.

5.16.3.1 Error messages



Figure 120: Bell symbol

1. If the bell (1) flashes, there is an error message.

5.16.3.2 Displaying error messages



Figure 121: Displaying error messages

1. Open the main menu by pressing the button (1).
 2. Use the arrow keys to select the "Messages" field (2) and confirm by pressing the key (3).
- ✓ The error messages open.

Operation

PFT

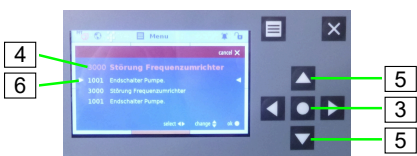


Figure 122: Fault notifications

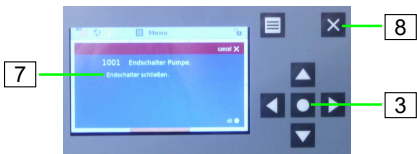


Figure 123: Description of eliminating the error message

5.16.3.3 Error codes

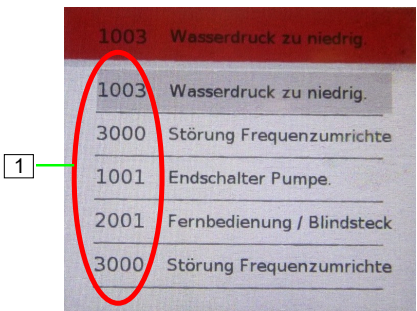


Figure 124: Error codes



- 3. The current error message is highlighted in colour (4).
- 4. The other error messages can also be selected with the arrow keys (5).
- 5. Selection is indicated by the white markings (6).
- 6. Confirm the selection by pressing the button (3).
- 7. A description (7) of possible error elimination appears.
- 8. Eliminate the error.
- 9. To exit the description afterwards, either press the key (3) or (8).
- 10. To return to the main menu, press the key (8) again.

- Codes (1) are stored in the error messages for communication with the dealer or the hotline.

5.16.3.4 Error code 3000 Frequency converter fault

3000 Frequency converter fault

- Communication error
- Check frequency converter.
- Check wiring.


	Troubleshooting
	Press pushbutton for control voltage "ON"
	Connect plug for limit switch pump unit/mixing pipe
	Connecting the motor connecting cable



5.16.3.5 Error code 1001 Pump limit switch

1001 Pump limit switch


- Close limit switch.

	Troubleshooting
	Connect plug for limit switch pump unit/mixing pipe

5.16.3.6 Error code 2001 Remote control/dummy plug

2001 Remote control/dummy plug

- Check whether the dummy plug is plugged in.
- Switch on the remote control.

	Troubleshooting
	Plug in dummy plug or connect remote control

5.16.3.7 Error code 1003 Water pressure too low

1003 Water pressure too low

Troubleshooting
Check water supply
Clean water inlet filters
Switch on booster pump
Hose connection or water pipe must be enlarged
If necessary, connect additional water pressure booster pump.

Operation



5.16.4 Table of faults

Fault	Possible cause	Troubleshooting	Rectification by
Machine does not start water	Water pressure too low	Check the water supply, clean the strainer screen	Operator/ service technician
	Booster pump off	Switch on booster pump	Operator
	Pressure gauge shows less than 2.2 bar	Connect booster pump	Service technician
Machine does not start current	Power supply not in order	Repair power supply	Service technician
	Main switch not activated	Activate main switch	Operator
	RCD was triggered	Reset RCD	Service technician
	Motor protection switch triggered	Turn motor protection switch in control box to position 1	Service technician
	Pushbutton for control voltage "ON" is not pressed	Press pushbutton for control voltage "ON"	Operator
	Contactor defective	Change contactor	Service technician
	Fuse defective	Change fuse	Service technician
Machine does not start air	Insufficient drop in pressure in the remote control due to blocked air duct or air nozzle pipe	Clean blocked air duct or air nozzle pipe	Operator
	Air safety switch is obstructed	Adjust the air safety switch	Service technician
	Air compressor not switched on or connected	Switch on or connect the air compressor	Operator
Machine does not start material	Too much thickened material in hopper or mixing section	Empty half of the hopper and start again	Operator
	Excessively dry material in pump part	Allow the machine to run backwards, otherwise remove pump and clean it	Operator
Water is not flowing	Solenoid valve (hole in membrane blocked)	Clean solenoid valve	Service technician
	Solenoid coil defective	Change solenoid coil	Service technician
	Pressure reducing valve closed	Open pressure reducing valve	Operator
	Water inlet at mixing tube blocked	Clean water inlet at mixing tube	Operator
	Needle valve closed	Open needle valve	Operator
	Cable to solenoid valve defective	Replace cable to solenoid valve	Service technician
Pump motor will not start	Pump motor defective	Replace pump motor	Service technician
	Connection cable defective	Change connection cable	Service technician
	Connection cable not connected	Connect the connection cable	Service technician



Operation

Fault	Possible cause	Troubleshooting	Rectification by
	Motor protection switch defective or triggered	Replace or reset motor protection switch	Service technician
Machine stops after a short while	Strainer screen is dirty	Clean or replace filter	Operator
	Filter of pressure relieve device contaminated	Clean or replace filter	Operator
	Hose connection or water supply line too small	Enlarge hose connection or water supply line	Operator
	Water inlet pipe too long or inlet pressure too low	If necessary, connect additional water pressure booster pump.	Service technician
Machine does not switch off	Air pressure safety switch set incorrectly or defective	Set or replace air pressure safety switch	Service technician
	Compressed air hose or gaskets defective	Replace compressed air hose, replace gaskets or check compressor	Service technician
	Air tap on spray gun defective	Replacing the air tap	Service technician
	Power provided by compressor is too low.	Check compressor	Service technician
	Air duct is not connected to the compressor	Connect air supply to compressor	Operator
Mortar flow "thick-thin"	Too little water	Increase the water quantity by 10% for approx. ½ minute and then turn down slowly	Operator
	Water safety switch set incorrectly or defective	Set or replace water pressure safety switch	Service technician
	Mixing shaft defective; no original PFT mixing shaft	Replace mixing shaft with an original PFT mixing shaft	Operator
	Pressure reducer set incorrectly or defective	Adjust or replace pressure reducer	Service technician
	Rotor worn or defective	Replace rotor	Service technician
	Stator worn or clamped too loosely	Replace stator or re-tighten clamp	Service technician
	Clamping bracket defective (oval)	Replace clamping bracket	Service technician
	Inner wall of mortar hose defective	Replace mortar hose	Operator
	Rotor too deep in pressure flange	Replace pressure flange	Service technician
	No original PFT spare parts	Use original PFT spare parts	Service technician
No mortar flow (air bubbles)	Poor mixing in mixing tube	Add more water	Operator
	Mortar clogs and narrows mixing tube inlet	Add more water or clean/replace mixing shaft	Operator

Operation

Fault	Possible cause	Troubleshooting	Rectification by
	Mixing shaft defective	Replace mixing shaft	Operator
	Material in mixing tube has become wet	Empty mixing shaft, dry and begin again	Operator
	Driving dog defective	Replace driving dog	Service technician
During operation water rises in the mixing tube	Backpressure in mortar hose higher than pump pressure	Retighten or replace stator	Service technician
	Rotor or stator worn	Replace rotor or stator	Service technician
	Hose blockage due to mortar being too thick (high pressure due to low water factor)	Remedy hose blockage, increase water factor	Service technician

5.16.5 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.

5.16.6 Removal of clogging in hoses

⚠ WARNING

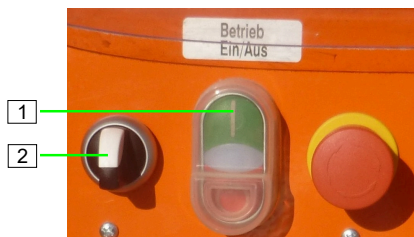


Danger from discharged material!

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.

5.16.6.1 Let the pump run backwards



1. Turn the main switch to "ON".
2. Press the green pushbutton (1) control voltage "ON"
3. Switch selector switch of the pump motor (2) to the "left" position, until the pressure at the mortar pressure gauge has dropped to "0 bar".
4. Turn the main switch to "OFF".

Figure 125: Reverse operation

5.16.6.2 Blockage cannot be cleared

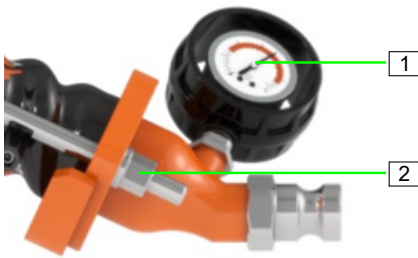


Figure 126: Check and relieve the mortar pressure

⚠ WARNING



Overpressure on the machine!

When opening machine parts they can open in an uncontrolled manner and injure the operator.

- Only open the mortar hoses if the mortar pressure gauge (1) indicates the pressure has fallen to "0 bar".

⚠ WARNING



Danger of injury from discharged mortar!

Discharged mortar may lead to injuries to eyes and face.

- Never look into the spray gun.
- Always wear protective goggles.
- Always position yourself in such a way that you are not hit by the mortar being discharged.

1. Undo both nuts (2) on the pressure flange slightly to ensure the residual pressure can escape.
2. As soon as the pressure is down to "0 bar", tighten the nuts (2) again.



Figure 127: Detaching the coupling

NOTE



Clean mortar hoses immediately

3. Cover coupling connections with tear-proof film.
4. Release cam lever (3) and hose connections.
5. Remove blockage by tapping or shaking at the point of the blockage.
6. If necessary, insert a flushing hose into the mortar hose and flush out the mortar.
 - PFT flushing hose item no. 00113856

5.16.6.3 Switching on the machine after removing a blockage

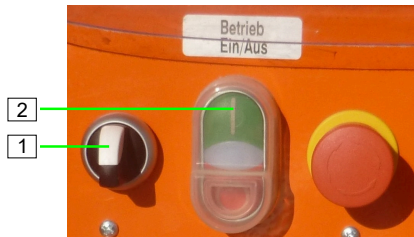


Figure 128: Switching on the machine again

1. Turn the pump motor selector switch (1) to the "0" position.
2. Close the air tap on spray gun.
3. Turn the main switch to "ON".
4. Press the green pushbutton (2) control voltage "ON".
5. Turn the pump motor selector switch (1) to "right" position.
6. Let the machine run for a short while without mortar hoses.
7. As soon as material flows out of the pressure flange, switch the pump motor selector switch (1) to the "0" position.
8. Apply wallpaper paste to the cleaned mortar hoses and connect to the machine and spray gun.
9. Turn the pump motor selector switch (1) to "right" position.
10. The machine starts again as soon as the air tap at the spray gun is re-opened.

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.

6.1.1 Remove connection cable

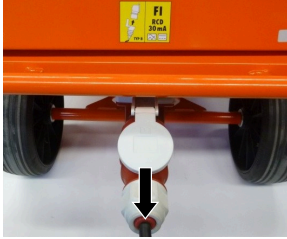


Figure 129: Remove connection cable

Electrical system

WARNING



Danger to life from electric current!

There is danger to life if you come in contact with live parts. Activated electrical components can carry out uncontrolled movements and cause serious injuries.

Therefore:

- Switch off the energy supply before starting any work and secure against restarting.
- Disconnect the power supply by removing the connection cable.

Secure against restarting

WARNING



Danger to life from unauthorised restarting!

When working with the tool, 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.

Therefore:

- Switch off all power supplies 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 plan

The following paragraphs describe the maintenance works required for an optimal and trouble-free operation.

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.



The maintenance is limited to a few checks.

Thorough cleaning after use is the most important maintenance.

Interval	Maintenance work	To be carried out by
Daily	Clean/replace the strainer screen in the water inlet.	Operator
Weekly	Clean/replace intake filter of the compressor.	Service technician
Every 2 weeks	Clean/replace the strainer screen in the pressure reducer.	Service technician

6.4 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.

6.4.1 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.

6.4.2 Strainer screen in the water inlet



Figure 130: Strainer screen in the water inlet

Implementation by operator.

1. Remove the strainer screen from the Geka coupling.
2. Clean the strainer screen.
3. Replace the screen if soiling is severe.
4. Reinsert the strainer screen.

Screen for Geka coupling:

- Item no. 20152000

6.4.3 Strainer screen in pressure reducer

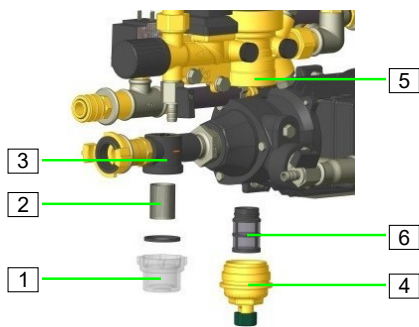


Figure 131: Strainer screen in pressure reducer

Implementation by a service technician

1. Unscrew sight glass (1) with dirt trap strainer (2) from dirt trap (3).
2. Clean the strainer screen (2) or replace it if necessary.
3. Screw sight glass (1) with strainer screen (2) back in.
4. Remove the cap (4) from the pressure reducer (5).
5. Remove dirt trap screen (6) and clean (every two weeks).
6. Replace the strainer screen if dirt is severe.
7. Insert strainer screen (6) and screw on cap.

Screen for pressure reducer:

- Item no. 20156000

6.4.4 Pressure reducing valve

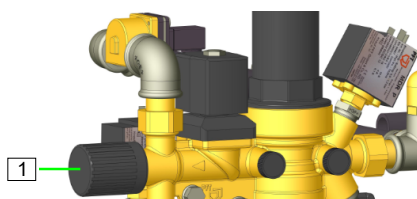


Figure 132: Pressure reducing valve

Check setting of the pressure reducing valve.

- 1.9 bar at maximum flow rate.
- Needle valve (1) completely open.

6.4.5 Setting value pressure switch water

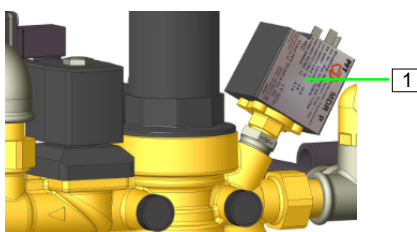


Figure 133: Pressure switch

Implementation by a service technician

If more blockages occur, the pressure switch Water (1) must be replaced. The pressure switch is fixed in its setting and cannot be readjusted.

Pressure switch water (1)	Machine switches "ON"	Machine switches "OFF"
Water	2.2 bar	1.9 bar

Maintenance



6.4.6 Changing the pump

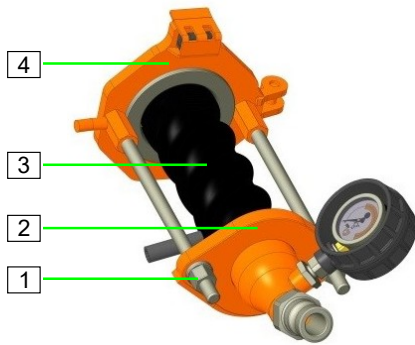


Figure 134: Changing the pump

1. Loosen the collar nuts (1) on both sides.
2. Remove pressure flange (2) and clean.
3. Remove pump unit (rotor and stator) (3).
4. Clean the suction flange (4).
5. Insert new rotor and stator.
6. Fit the pressure flange (2) and tighten the collar nuts (1).

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



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

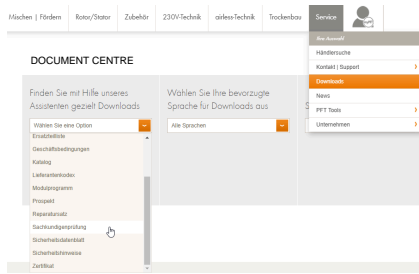
6.5 Actions after completed maintenance

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.

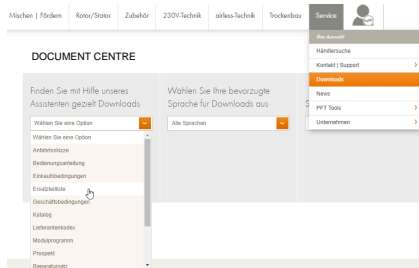
6.6 Periodic inspection/expert inspection

- Construction machinery has to be inspected for safe working condition in accordance with the operating conditions and the operational requirements as needed, however at least once a year by an expert.
- Pressure vessels have to undergo the prescribed expert inspections.
- The inspection results have to be documented and kept at least until the next inspection.



- The documents for the expert inspection can be found on the internet at www.pft.net.
- Open the Document Centre under Service → Downloads.
- In this area, select the expert inspection category to access all relevant inspection documents.

6.7 Spare parts lists



The spare parts lists for the machine can be found on the Internet at 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.

6.7.1 Accessories



Recommended accessories/equipment can be found in the PFT machine and equipment catalogue or under www.pft.net

Disassembly



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.

Disposal



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.



PFT - ALWAYS AT YOUR SITE



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