Operating manual

Mixing pump RITMO L FC-230V plus powercoat
Part 2 EC Declaration of Conformity
Overview – Operation

Item number of operating manual: 00132861

Item number of the parts list machine 00667998: RITMO L FC-230V plus powercoat, 1 Ph, 50 Hz, 2,2 kW

Item number of the parts list machine 00659659: RITMO L FC-230V plus powercoat, 1 Ph, 50 Hz, 2,2 kW

Item number of the parts list machine 00659661: RITMO L FC-230V plus powercoat, 1 Ph, 50 Hz, 2,2 kW without spraying gun

Item number of the parts list machine 00631075: RITMO L FC-230V powercoat – A 2-2,5, 1 Ph, 50 Hz without spraying gun

CE

Read the operating manual prior to beginning any work!

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1 EC Declaration of Conformity

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

declares, with exclusive responsibility, that the machine

Machine model: RITMO
Device type: Mixer Pump
Serial number:
Guaranteed sound power level: **78** dB

conforms to the following CE regulations:

- Outdoor Noise Directive (**2000/14/EC**),
- Machine Directive (**2006/42/EC**),
- Directive on Electromagnetic Compatibility (**2014/30/EC**).

Applied conformity assessment procedure according to Outdoor Noise Directive 2000/14/EC:
Internal manufacturing inspection as per Article 14, Section 2 in conjunction with Appendix V.

This declaration applies only to the machine in the condition it was in when sold. Components attached or modifications undertaken by the end customer after purchase remain unconsidered. This declaration becomes invalid if the product is converted or altered without approval.

Agent responsible for putting together the relevant technical documentation:
Dipl.-Wirtsch.-Ing. Michael Duelli, Einersheimer Straße 53, 97346 Iphofen, Germany.
The technical documentation is held at:
Knauf PFT GmbH & Co.KG, Technische Abteilung, Einersheimer Straße 53, 97346 Iphofen, Germany.

Iphofen, Germany
Place and date of issue

Name and signature

Dr. York Falkenberg
General Manager
Information on signatory

2 Testing

2.1 Testing by machine operator

- Before the start of each work shift, the machine operator must test the effectiveness of the control and safety devices as well as check the proper attachment of all protective devices.
- During operation, construction machines must be tested by the machine operator for their operational safety.
- If defects are found in the safety devices or any other area that could impair safe operation, the supervisor must be notified immediately.
- For defects posing a hazard to persons, the operation of the construction machine must be halted until the defect is eliminated.

2.2 Periodic inspection

- Construction machines must be tested for safe operation by a specialist as the usage conditions and operating circumstances require, but at least once a year.
- Pressure vessels must undergo the prescribed inspections by authorised experts.
- The inspection results are to be documented and must be stored at least until the next inspection.

3 General information

3.1 Information regarding the operating manual

- This manual provides important information and instructions on the correct use of the equipment. Adherence to all defined safety and handling instructions is a prerequisite for a safe working environment.
- Additionally, the on-site accident prevention regulations and general safety guidelines for the equipment must be followed at all times.
- Read the manual carefully before starting any work! It is an integral part of the product and must be kept near the machine and accessible to operators at all times.
- Always include the operating manual when transferring the machine to third parties.
- The diagrams and illustrations shown in the manual are intended for better understanding of tasks and descriptions. They are not necessarily shown to the correct scale and may vary slightly from the actual equipment used.

3.2 Keep the manual for later use

The operating manual must be available during the entire service life of the product.

3.3 Layout

The operating manual is comprised of two booklets:

- Part 1: Safety

General safety instructions for mixing pumps/conveying pumps

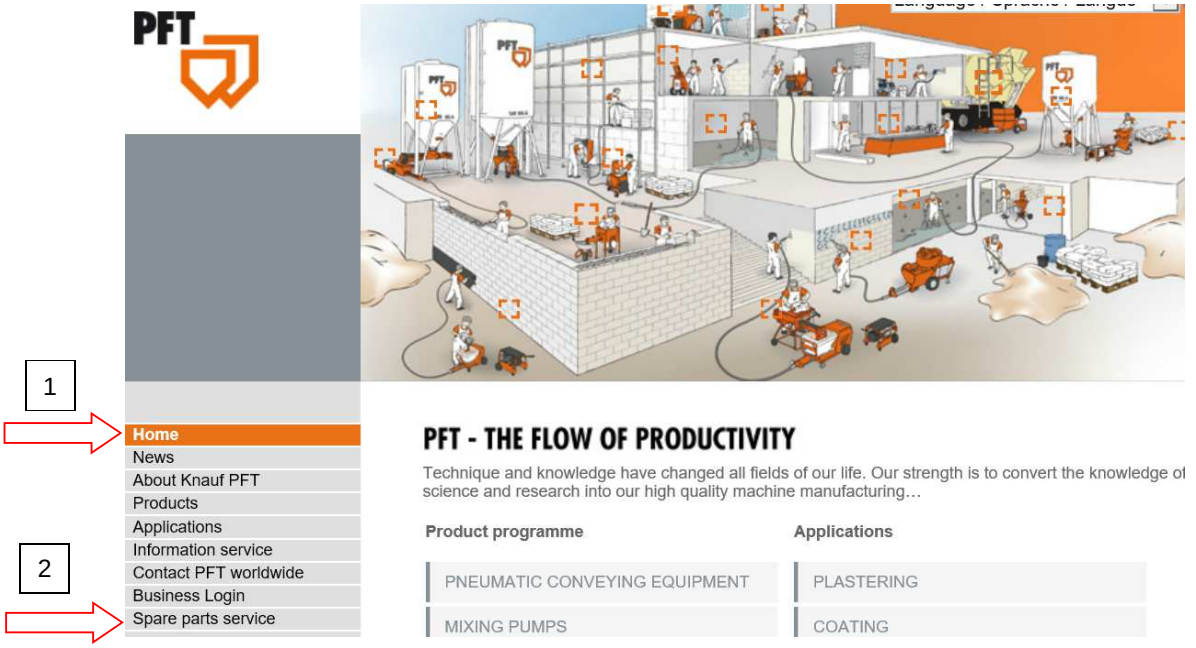
Item number: 00172709

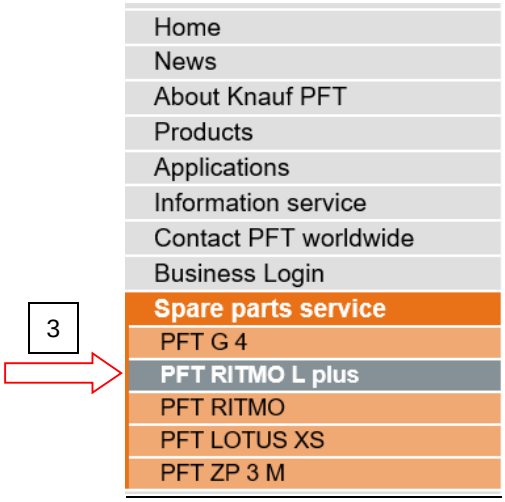
- Part 2: Overview, operation, servicing and spare part lists (this booklet).

Both parts must be read and adhered to in order to ensure safe operation of the equipment. Together, they are valid as one operating manual.

4 Spare part lists

You can find spare part lists for the machine in the Internet under www.pft.net





4.1 Accessories

For recommended accessories/equipment, see PFT Machine and Equipment Catalogue or www.pft.net/plus

5 Technical data

5.1 General specifications

Specification	Value	Unit
Weight RITMO L plus powercoat	120	kg
Length with pump	915	mm
Width	600	mm
Overall height	1450	mm

Individual weights

Specification	Value	Unit
Chassis / Frame	51.2	kg
Motor with tilt flange	30	kg
Material hopper	18	kg

Hopper dimensions

Specification	Value	Unit
Filling height	930	mm
Hopper capacity	45	l

5.2 Electrical data RITMO L plus powercoat

Electrical 230V

EMC Test:
The machine is EMC tested and meets the strict requirements of protection class B.

The switch cabinet is equipped with a mains filter.

Specification	Value	Unit
Voltage, AC current 50 Hz	230	V
Max. current consumption	9	A
Max. power consumption	2.5	kW
Fuse	16	A
Pump motor drive	2.2	kW
Pump motor speed range	74 - 492	Rpm
Pump motor current consumption	8.7	A
Vibrator	0.045	kW

5.3 Output values RITMO L plus powercoat

Pump output A2-2,5

Specification	Value	Unit
Delivery rate infinitely adjustable	0.8 - 3	l/min
Max. operating pressure	20	bar
Granulation max.	2	mm
Pumping distance*, max. for 25 mm ∅	15	m

* Recommended value, depending on conveying height, condition and version of pump, mortar quality (composition and consistency)

Sound power level

5.4 Operating requirements

Ambient conditions

Specification	Value	Unit
Temperature range	2 - 45	°C
Relative humidity (maximum)	80	%

Operating period

Specification	Value	Unit
Maximum continuous operating period	8	hours

5.5 Connection values for water

Specification	Value	Unit
Operating pressure, min.	2.5	bar
Connection	1/2	inches

Fig. 1: Water connection

6 Sound power level

Guaranteed sound power level L_{WA} 78 dB (A)

7 Vibrations

Weighted effective acceleration value to which the upper limbs are exposed = < 2.5 m/s²

8 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 line filter.

9 Dimensions

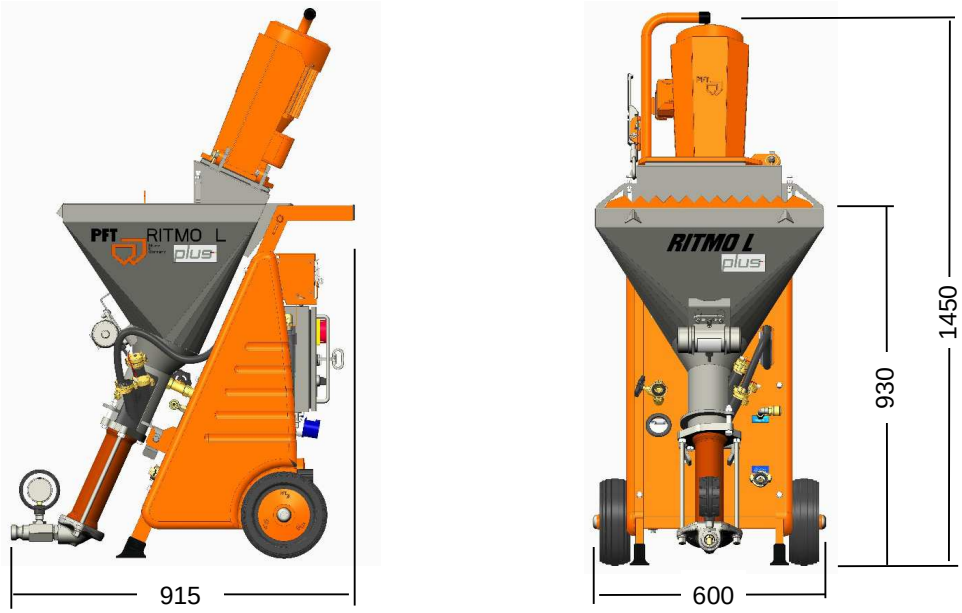


Fig. 2: Dimensions

10 Type plate

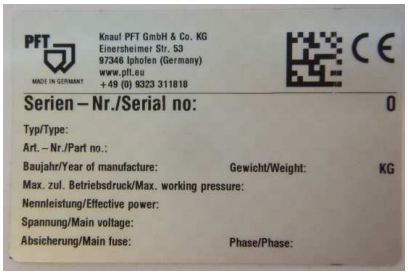


Fig. 3: Type plate

The type plate contains the following information:

- Manufacturer
- Type
- Year built
- Machine number
- Permissible operating pressure

11 Quality control sticker

Fig. 4: Quality control sticker

The quality control sticker contains the following information:

- CE confirmed in compliance with EU directives
- Serial number
- Controlled by / signature
- Date of control

12 Structure RITMO L plus powercoat

12.1 Overview RITMO L plus

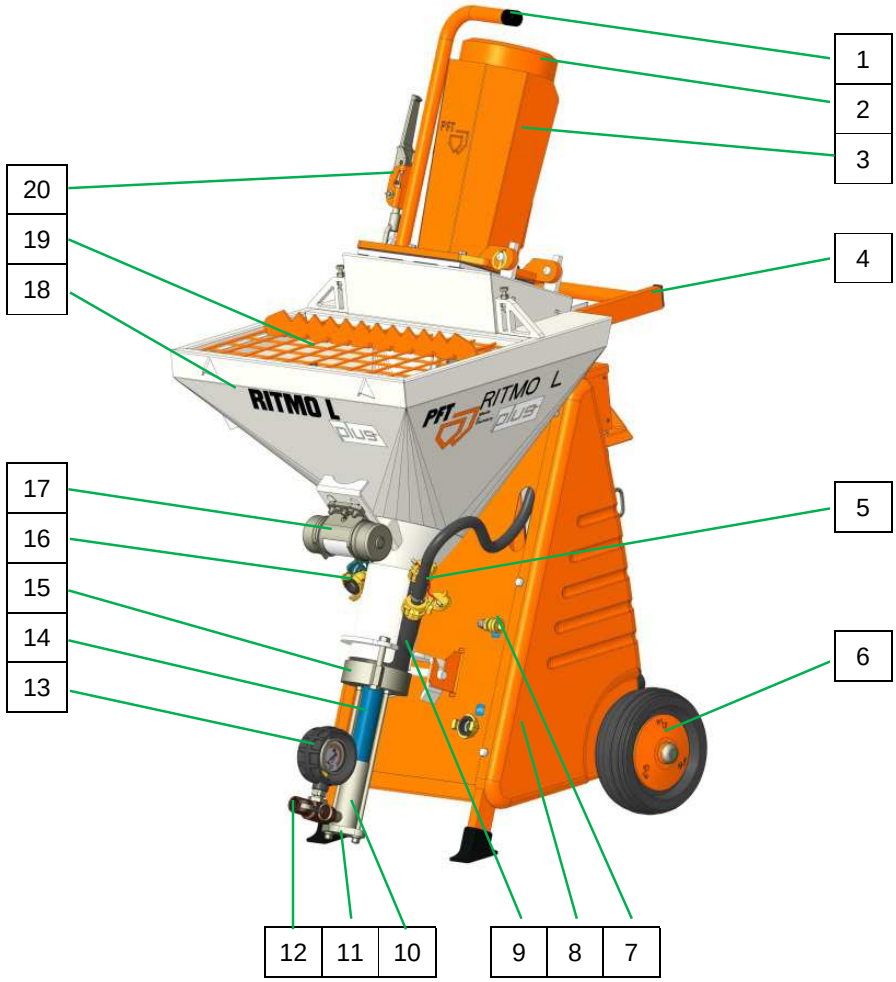
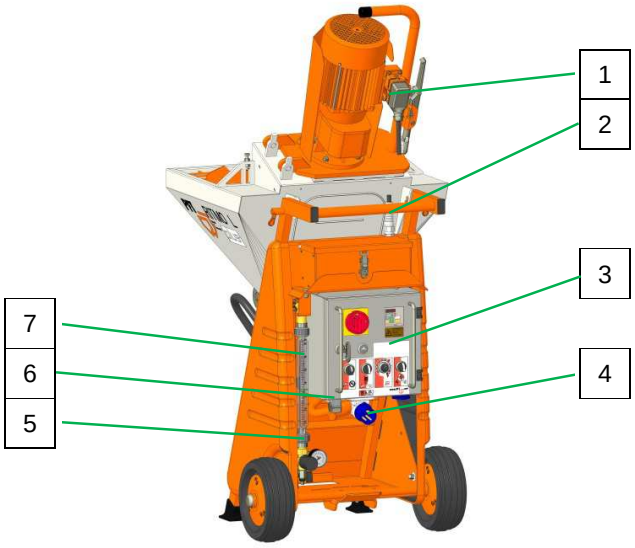


Fig. 5: Overview RITMO L plus powercoat

1 Engine guard
2 Gear motor
3 Motor guard plate
4 Push handle
5 Water supply to mixing tube / rubber mixing zone
6 Wheel
7 Compressed air from air compressor to spray gun
8 Water inlet, water connection from water supply
9 Rubber mixing zone
10 Remixer
11 Pressure flange
12 Mortar hose connection
13 Mortar pressure gauge
14 Pump unit A2-2,5
15 Suction flange
16 Water extraction valve
17 Vibrator
18 Material hopper
19 Protective grille with bag opener
20 quick fastener

12.2 View from rear RITMO L plus



1.Motor connection cable.
2.Tool box.
3. Control box.
4. Mains connection 230V.
5. Water manifold.
6. Dummy plug / remove control cable connection.
7. Water flowmeter (water manifold).

Fig. 6: View from rear

13 Assembles RITMO L plus

13.1 Gear motor with material hopper and pump unit

The mixing pump PFT RTIMO L plus powercoat comprises the following main components:

- Gear motor with tilt flange, mixing tube with material hopper, vibrator and pump unit A2-2,5
- The gear motor with tilt flange can also be removed from the material hopper for transport.

  Weight: 68.6 kg.

Fig. 7: Material hopper assembly

13.2 Gear motor

- Gear motor 2.2kW with tilt flange and protective tube.

  Weight: 29.8 kg.

Fig. 8: Gear motor

13.3 Chassis with compressor and control box

- Chassis with water manifold and control box.
  Weight: 51.2 kg.

Fig. 9: Frame

14 Description of assemblies

14.1 Overview of control box RITMO L plus powercoat

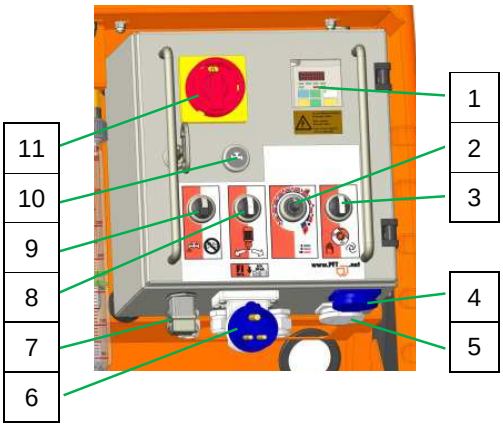
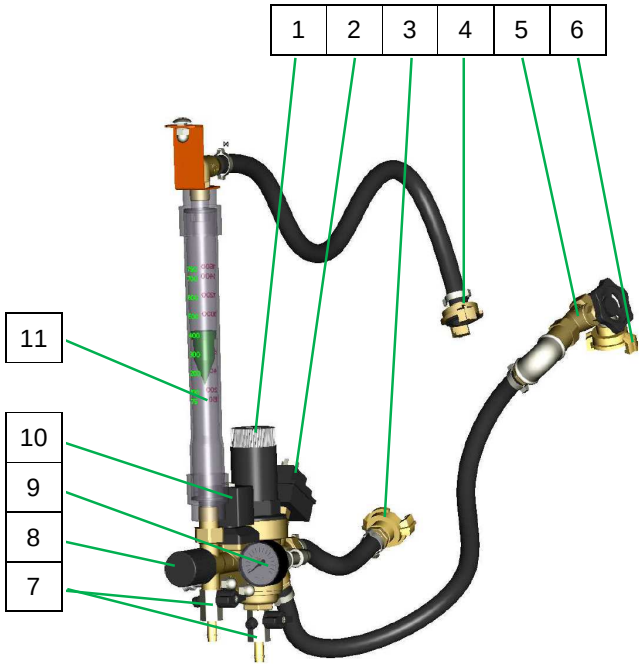


Fig. 10: Control box connections

1. Sight glass for frequency converter.
2. Potentiometer for motor speed / material volume.
3. Selector switch Vibrator “ON / OFF”.
4. Connection for air compressor COMP R-80 230V (socket blue continuous current)
5. Connector for vibrator 230 V (socket grey controlled).
6. Connection for main current 230 V, 1Phase, 16 A.
7. Dummy plug / remote control connection.
8. Selector switch Pump.
9. Selector switch Operation with water (as mixing pump), without water (only as pump).
10. Push button Water supply push.
11. Main switch, also functions as Emergency OFF switch.

14.2 Overview of water manifold RITMO L plus

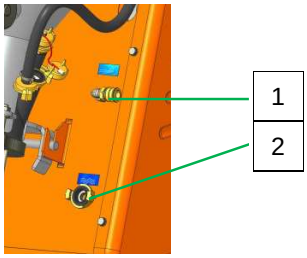


1. Pressure reducer
2. Water pressure monitor.
3. Water connection from water supply.
4. Water to mixing tube.
5. Shut-off valve / water outlet.
6. Water outlet for cleaning the mortar pressure hose.
7. Antifreeze water drain cock.
8. Needle valve for water quantity.
9. Primary water pressure gauge.
10. Solenoid valve.
11. Water flow meter 31,5 – 315l/h.

Fig. 11: Water manifold

15 Connections RITMO L plus

15.1 Connections for water, mortar hose and air



1. Air connection (1) to spray gun (Air compressor external)
2. Water connection from water supply (2).

Fig.12: Connections

15.2 Mortar hose connection

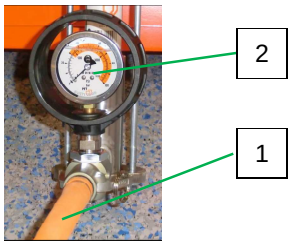


Fig. 13: *Mortar hose connection*

1. Mortar hose connection (1) to mortar pressure gauge (2).

16 Operating modes

16.1 Pump motor selector switch

Fig. 14: Operating modes of pump motor

The pump motor has three operating modes:

Selector switch position “0”:

The machine is switched off.

Selector switch (latching):

The machine starts up when the main switch is switched on.

Selector switch left (spring return):

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

16.2 Water selector switch

Fig. 15: Water selection switch

The RITMO can be used for two application areas:

Selection switch (latching):

The machine is operated without water.

Use as pump.

Selector switch left (latching):

The machine is operated with water.

Use as mixing pump.

16.3 Potentiometer

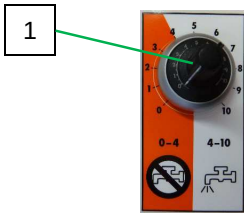


Fig. 16: Potentiometer

Potentiometer (1) for motor speed / delivery rate:

If the RITMO L plus powercoat is switched on/off with the remote control within shorter time intervals, fluctuations in material consistency occur.

The solenoid valve opens from 40Hz. However, this also means that no water supply is possible with the speed control setting 1-4.

A pictogram below the controller draws the processor's attention to this setting.

(Parameter value 11 – 75Hz)

17 Accessories for machine

Fig. 17

Power cable 3x2.5 mm², 25 m safety socket CEE 16A Art.No.20423420

Fig. 18

Tool bag, mixing pump RITMO L plus powercoat Art.No. 00098808
Consisting of:
Tool roll bag 350 x 400 Art.No. 20048502
Double wrench 13x17 Art.No. 00137015, 17x19 Art.No. 20048512
Double wrench 16x18 Art.No. 00262402, 20x22 Art.No. 00099111
Sponge ball 17 mm fixed Art.No. 00010411
Control box key, double bit 5 mm Art.No. 20444500
Reamer with toolholder Art.No. 00021219
Cleaning brush, brass wire 0.15 mm Art.No. 00098801
Sleeve brush for cleaning RITMO powercoat Art. No. 00090738

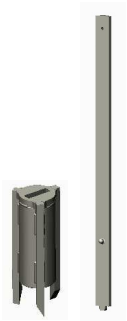


Fig. 19

Mixing tube cleaner RITMO L PLUS, zinc-plated Art.No. 00231970
Cleaner shaft BIONIK RITMO D-pump, zinc-plated Art.No. 00588832

Fig. 20

RONDO DN13 hydraulic connection, male part | female part - 15 m Art.No. 00087354

Fig. 21

Extension for remote control cable - 16 m Art.No. 00088049

Cleaner coupling 13 female part Geka Art.No. 00087597

Fig. 22

Air hose DN9 Ewo male part | Ewo female part - 16 m Art.No. 00008521

Fig. 23

Fig. 24

00094898

Spraying gun powercoat DN13 VA4 1500 Ewo, handle, stainless steel

00098703

Belt for spraying gun RITMO powercoat

18 Intended use of fitting block

18.1 Purpose of fitting block

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

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.

Installation position unimportant, preferably horizontal.

18.2 Purpose of solenoid valve

Application range!

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

WARNING!

Danger due to improper use of the machine!

Improper or unauthorised additional use of the system can lead to dangerous situations.

Therefore:

- Use the machine only for its intended purpose.
- Always observe all processing guidelines from the material manufacturer.
- Strictly observe all instructions in this operating manual.

18.3 Purpose of flowmeter

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 straight-through solenoid valve, closed without power, with a positively coupled diaphragm 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.

19 Description of the PFT pressure booster pump (accessories)

19.1 Application area of pressure booster pump

The PFT pressure booster pump is used predominantly as a high-pressure pump for installation between the mortar mixer and the mortar mixer pumps when the water pressure is too low. It can also be used as a primer pump for drawing liquids from containers, for emptying small tanks and ponds, for pumping water out of cellars and for irrigation.

The water supply is automatically ensured from a water tank by the PFT pressure booster pump for the constant water supply to the PFT machine engineering.

The flow pressure of min. 2.5 bar when the machine is running is ensured on size by drawing water from the water tank.

Connection example

Fig. 25: Pressure booster pump and water barrel

00 49 36 86 Item number for the pressure booster pump AV3000/1

Accessories

Inlet strainer with stainless steel filter screen, 1" suction hose, 2.5 m

Item no. 00 13 66 19

19.2 Proper use of the machine

Caution!

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.

20 Preparation of pressure booster pump (accessories)

Electrical system

Important!

Connect the pump only to plug sockets with PE contact. In order to increase safety, we recommend that the electrical circuit to which the pump is connected has a ground fault interrupt system with a residual-current circuit breaker with a rated residual current of 30 mA. This applies in particular for installation close to water tanks, ponds, etc.

Hose connection

Important!

Ensure that the suction line or intake line is connected at the marked position.

If the pump is operated in suction mode, ensure that the suction line is kept as short as possible.

21 Initial operation, filling the pump

Fig.26: Filling the pump

Before putting the PFT High Pressure Pump into operation for the first time, fill the pump with water so that the air in the pump housing is displaced.

Fill the pump with water via the water filler plug (1) or the water inlet (2).

Do not fill too quickly so that the air has time to completely escape from the housing.

It is advantageous if the suction hose is also filled with water.

21.1 Putting the pressure booster pump into operation

Before operating the pump, observe the following instructions.

The pump must be installed in a horizontal position.

Both the suction line and the pressure line must be connected before the pump is put into operation. Pay attention to adequate dimensioning of both lines.

- At least 1" for the suction line
- At least 3/4" for the pressure line

The hose must be completely air-tight and the end immersed in the liquid to be pumped to avoid drawing in air.

Initial operation, filling the pump

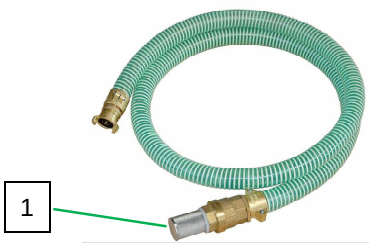


Fig. 27: Strainer with mesh filter

The end of the suction line (1) must be fitted with an inlet strainer with filter screen and integral non-return valve.

An additional fine filter in the suction line is recommended.

NOTE!

The delivery of the pump decreases with increasing suction line length. Connect the high pressure pump as close as possible to the water supply point (pressing is better than sucking).

When all these points have been observed, the pump can be switched on. Depending on the length of the suction hose, priming may take a few seconds. If the pump is still not delivering after a short time, this may have one of the following causes:

- There is still air in the pump and this has to be completely vented again.
- The suction line is not air-tight and the pump is drawing in air.
- The suction-side screen is clogged.
- The suction hose is kinked.
- The maximum suction head is exceeded.

Important!

The pump must not be allowed to run dry in order to avoid damage.

22 Brief description of RITMO L plus powercoat

Fig.28: RITMO L plus powercoat

- The proven mixing pump PFT RITMO L plus powercoat is equipped with a revolutionary stainless steel remixer, which makes it possible for the first time to grind nodules mechanically. Thus, a homogeneous sprayable filling compound is produced. A material that was previously mixed by hand with a spatula in a time-consuming process.
- The pump output can be adjusted electronically in the range of 74 - 492 rpm depending on requirements.
- The machine should generally be started up at maximum speed to avoid malfunctions.
- The dry material is mixed with water and blended in the mixing zone.
- The water flow rate is adjusted manually at the needle valve. The flow rate can be seen on the plug in the water flow meter.
- A pressure switch monitors the water flow pressure, should this fall below 1.6 bar, the machine switches off automatically.
- The RITMO L plus powercoat can also be filled with pasty materials during pump operation. Turn the pump selector switch to the right. A water connection is not necessary as the water safety switch is bridged by an electrical control.
- The PFT RITMO L plus powercoat consists of portable individual components, which allow a fast and comfortable transport with handy dimensions and low weight.

23 Material

23.1 Flow characteristics of RITMO L plus powercoat

NOTE!

- The pump unit A2-2,5 can be used with an operating pressure of up to 20 bar.
- The minimum conveying distance depends mainly on how the material flows.
- Fluid mortars, filling compounds and paints flow easily.
- It is recommended to reduce the length of the mortar hose if you exceed an operating pressure of 20 bar.
- 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 shafts
- PFT material hoses.
- These components are compatible with one another and form a single constructive unit together with the machine.
- Failure to follow these recommendations will result not only in the voiding of the warranty, but the quality of the mortar you are producing will also suffer.

24 Mortar pressure gauge

Fig.29: Mortar pressure gauge

Important!

For reasons of safety, the use of a mortar pressure gauge is recommended.

PFT mortar pressure gauge

Benefits of the mortar pressure gauge:

- Exact regulation of correct mortar consistency
- Constant monitoring of correct conveying pressure.
- Early detection of clogging or overloading of pump motor.
- Produces zero pressure.
- Contributes significantly to the safety of operating personnel.
- Long lifespan for PFT pump components

25 Safety regulations

Important!

When performing any work, observe the locally applicable safety regulations for mortar conveying and spraying machines!

26 Transport, packaging and storage

26.1 Safety instructions for transport

Improper transport

CAUTION!
Damage can be caused by improper transport!

Significant damage may occur if the equipment is transported incorrectly.

Therefore:

- Proceed with care when unloading packages and transporting goods on-site. Always observe the symbols and instructions on the packaging.
- Only use the provided suspension points.
- Only remove packaging immediately before assembly.

Suspended loads

WARNING!
Danger of death due to suspended loads!

Falling or swinging parts can pose a fatal hazard when heavy loads are lifted.

Therefore:

- Never step underneath suspended loads.
- Follow instructions regarding the provided suspension points.
- Do not attach lifting tackle to protruding machine parts or to eyelets of add-on components. Ensure the lifting gear is fastened securely.
- Only use approved lifting gear and accessories with a sufficient load-bearing capacity.

26.2 Closing the motor tilt flange

Fig. 30: Closing the motor tilt flange

DANGER!
Danger of crushing at the motor tilt flange!

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

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

26.3 Closing the snap lock before transport

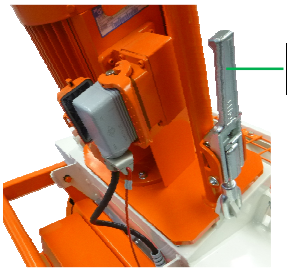


Fig. 31: quick fastener

CAUTION!
Generally make sure that the snap lock (1) on the gear motor and on the material hopper is closed when the machine is moving.

26.4 Transport checklist

Inspect the goods for damage and missing parts immediately after delivery.

If external transportation damage can be seen, proceed as follows:

- Do not accept the delivery, or accept it only under reservations.
- Note the damage on the transportation documents or the delivery note of the carrier.
- Submit the appropriate claim.

NOTE!
Always submit a claim for the defects as soon as they are detected. Damage claims can only be accepted within the applicable deadlines for submission.

26.5 Transport in individual parts

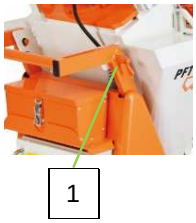


Fig. 32: Opening the rotary bolt

Fig. 33:Individual parts

1. To make transport easier, disassemble the machine into its individual components.
2. The units mixing tube with material hopper and pump, gear motor with tilt flange and chassis.
3. Release cable and hose connections. Open rotary bolt (1) (*Fig. 32*).
4. Remove mixing tube with material hopper from the chassis.

26.6 Transport by car

Fig. 34: transport

DANGER!
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.

26.7 Transportation of operational machines

DANGER!
Danger of injury due to leaking mortar!

Injury to the face and eyes can occur.

Therefore:

- Make sure all hoses are depressurised before opening the couplings (note the indicator on the mortar pressure gauge).

1. Carry out the following steps before transporting:
2. First unplug the main power cable.
3. Detach all other connected cables.
4. Remove the water supply lines.
5. Begin transport.
6. Remove loose parts during crane transport.

27 Packaging

Packaging information

Individual packages are packed according to the applicable transportation requirements. Only environmentally-friendly materials were used for the packaging.

The packaging is intended to protect individual components from harm during transportation, corrosion and other damage up to the point of assembly. Do not destroy the packaging and only remove it shortly before assembly.

Provided no agreements for the return of the packaging have been made, separate the materials according to type and size and reuse or recycle them accordingly.

Handling the packaging materials

CAUTION!
Environmental damage can result from improper disposal of materials!

Packaging materials are valuable resources and can often be reused or recycled.

Therefore:

- Dispose of packaging materials in an environmentally sound manner.
- Observe locally applicable waste disposal guidelines. If necessary, contract a specialist waste disposal company.

28 Operation

28.1 Safety

Basic information

WARNING!
Danger of injury due to improper operation!

Improper operation can lead to serious injuries or equipment damage.

Therefore:

- Carry out all operating steps as described this operating manual.
- Before starting any work, ensure that all covers and protective devices are installed and functioning properly.
- Never disable protective devices during operation.
- Keep the operating area clean and tidy. Components and tools that are stacked on one another or left lying around can cause accidents.
- An increased noise level can cause permanent hearing loss. Operation can result in noise that exceeds 78 dB (A) in close proximity to the machine. Close proximity is defined as the area within 5 metres of the machine.

Personal protective equipment

All machine operators must wear the following protective equipment:

- Protective work clothing
- Safety goggles
- Safety gloves
- Safety shoes
- Ear protection

NOTE!

The warning signs illustrated relate to additional protective equipment that must be worn for particular working conditions.

29 Preparation of the machine

Before operating the machine, carry out the following work steps as preparation:

Fig. 35*: Protective grille*

DANGER!
Rotating mixing shaft!

Reaching into the material hopper poses a risk of injury.

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

Fig. 36*: Set-up*

Install the machine on stable and even ground and secure it against accidental 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.
- Keep a free space of approx. 1.5 metres around the machine.

30 Connection to the 230V power supply

30.1 Connection to power distributor

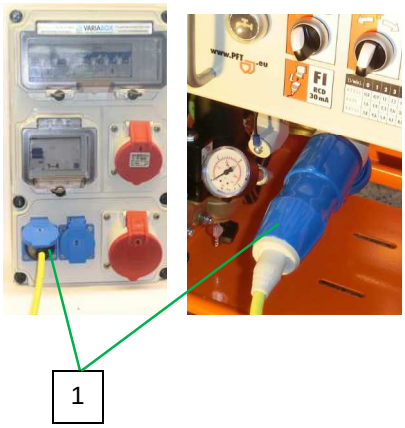


Fig.37*: Power connection*

1. Only connect machine (1) to power distributors that conform to regulations.

DANGER!
Danger of death due to electric current!

The electrical connection must be fused correctly:

For the operation of frequency converters, only connect the machine to a power source with an approved FI circuit breaker (30mA RCD - residual current device) of type “B” that is sensitive to all currents.

2. Pull connector plug of the air compressor (2) off the control box.
3. Selector switch (3) at the middle position.

30.2 Motor connecting cable for pump motor

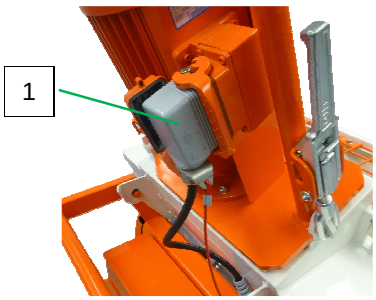


Fig. 38: Motor connection cable

WARNING!
Danger of death due to rotating parts!

Improper operation can lead to serious injuries or equipment damage.

- The respective drives (motors) may only be operated via the corresponding control box of the machine.

1. Connect motor connecting cable (1) to gear motor.

30.3 Checking the dirt trap screen

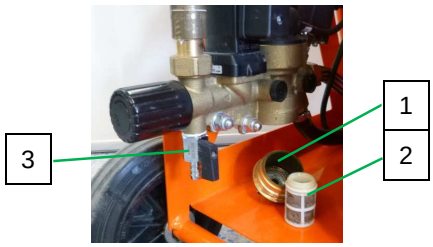


Fig. 39: Dirt trap screen

1. Unscrew the brass screen cup (1) with outlet tap from the pressure reducer.
2. Check whether the dirt trap screen (2) in the pressure reducer is clean.

   Screen for pressure reducer: Item number 20156000
3. Screw in brass screen cup (1) again.
4. Close all water outlet taps (3).

30.4 Water supply connection

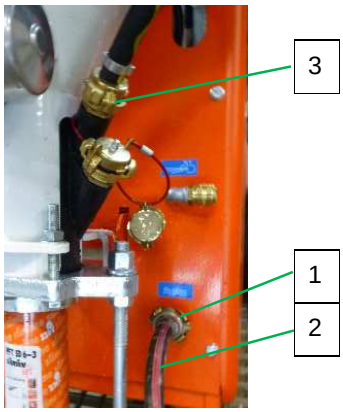


Fig. 40: Water connection

1. Check whether the water inlet screen in the water inlet (1) is clean.
2. Clean and bleed the water hose (2) for the water mains supply.
3. Connect the water hose (2) to the water inlet (1).
4. Remove the water hose (3) from the mixing tube.

NOTE!

Only use clean water that is free of particulates. The minimum pressure is 2.5 bar when the machine is running.

Observe the Drinking Water Protection Ordinance in Part 1.

NOTE!

Never allow the pump unit to run dry, since this will significantly shorten its service life.

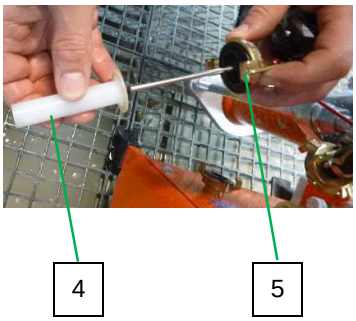


Fig. 41: Cleaning the nozzle

5. Remove nozzle (4) from rubber mixing tube and clean with mandrel (5).

30.5 Water from water barrel connection

Fig. 42: Booster pump

Booster pump AV3000/1 (1) item number 00493686

The booster pump which is connected ensures the required water pressure of minimum 2.5 bar.

NOTE!

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

Fig. 43: Inlet strainer with filter screen, cpl.

NOTE!

Never allow the pressure booster pump to run dry, since this will significantly shorten its service life.

31 Switching on RITMO L plus

31.1 Putting RITMO L plus into operation

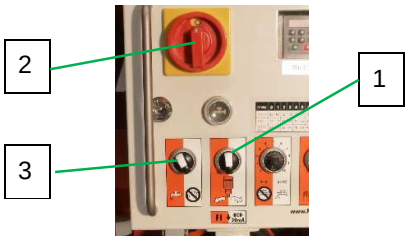


Fig. 44: Switching on

1. Selector switch (1) at the middle position.
2. Turn the main switch (2) to the “I” position.
3. Turn the selector switch (3) “Operate with water” left to the position with water.

31.2 Presetting the water flow rate

Fig. 45: Water flow ratee

1. To adjust the water quantity, press the water flow button (1).

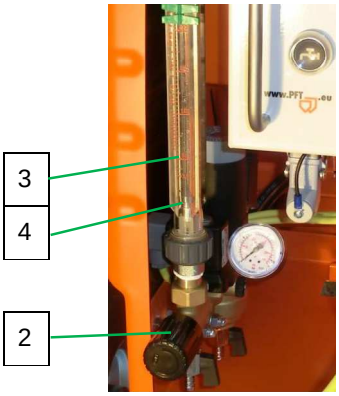


Fig.46: Presetting

2. At the same time, adjust the expected water quantity at the needle valve (2).
3. Water flow visible at the sight glass (3) of the water flow meter and at the position of the cone (4).

NOTE!

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

NOTE!

Every interruption to the spraying process causes a slight irregularity in the consistency of the material. This irregularity will normalise itself as soon as the machine has been operating for a short period.

Do not change the water flow rate upon each irregularity. Wait until the consistency of the material has returned to normal.

31.3 Watering the mixing zone

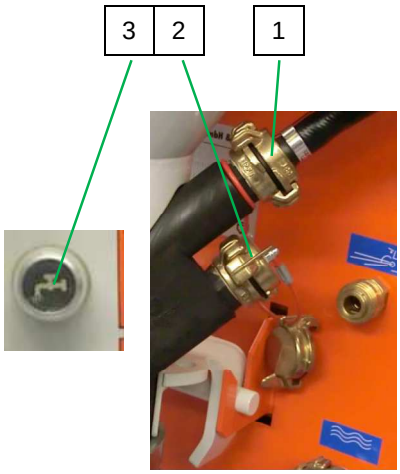


Fig.47: Watering the mixing zone

NOTE!

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

1. Connect the water hose (1) from the water fitting to the rubber mixing tube.
2. Remove the blind cover (2) from the lower water connection.
3. Press water flow button (3).
4. Release the water flow button (3) as soon as water emerges from the lower water connection.
5. Screw the blind cover (2) back onto the lower water connection.

32 Mortar pressure gauge

Fig.48: Mortar pressure gauge

DANGER!
Operating pressure too high!
Machine components can fly open in an uncontrolled manner and injure the operator.

- Do not operate the machine without the 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 be at least 2.5 times the operating pressure.

33 Hazardous dust

Fig. 49: Dust mask

WARNING!
Danger of health problems due to dust!
Inhaled dust can lead to long-term lung damage or other health problems.

NOTE!

The machine operator or the person working in the dusty area must always wear a dust mask when filling the machine.

The decisions of the Committee for Hazardous Materials (AGS) can be read in the Technical Rules for Hazardous Substances (TRGS 559).

34 DUSTCATCHER RITMO L plus SET

Fig. 50: DUSTCATCHER

DUSTCATCHER for RITMO L plus SET item number 00611177

comprising:

- Dust collector class M.
- Supplementary set for dust collector M.
- Container attachment DUSTCATCHER RITMO L.

35 DUSTCATCHER attachment RITMO L plus SET

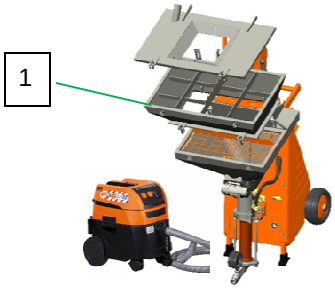


Fig. 51: DUSTCATCHER

DUSTCATCHER attachment RITMO L plus SET item number 00619834

comprising:

- Dust collector class M.
- Supplementary set for dust collector M.
- Dust collecting hood attachment RITMO L plus complete RAL9002.
- Without item 1.

36 Filling the material hopper with dry material

Fig. 52: Bagged material

DANGER!
Risk of injury from bag opener!
Sharp edges of the bag opener pose a risk of injury.

- Wear safety gloves.

NOTE!

When filling with bagged material for the first time, allow half of the first bag to trickle slowly into the material hopper!

37 Monitoring the machine

DANGER!
Access by unauthorised persons!
The machine may only be operated when monitored.

38 Putting the machine into operation

38.1 Checking the mortar consistency

Fig.53: Consistency inspection pipe

1. Connect consistency inspection tube to the mortar pressure gauge.
2. Place a bucket or tray below the consistency inspection tube.

Item number: 00099057 Consistency inspection tube 25M-part.

38.2 Switching on the RITMO L plus powercoat with material

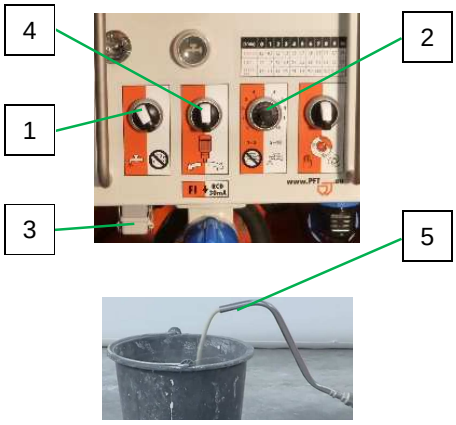


Fig. 54: Switching on

1. Turn selector switch (1) left to position “With water”.
2. Turn potentiometer (2) for motor speed / material volume to position 10 (readjust as required).
3. Dummy plug (3) must be connected to the remote control socket.
4. Turn selector switch (4) Pump motor directions of rotation to the right (machine starts).
5. Check material consistency at consistency inspection tube (5).
6. Switch off machine at selector switch (4) (middle position).
7. Remove consistency inspection tube (5) and clean..

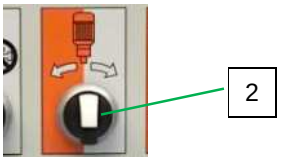


Fig. 55: Switching off

Switch off the machine at the selector switch (4) (position "0").

Remove and clean the consistency test tube.

39 Potentiometer

Fig. 56: Potentiometer

If the RITMO is switched on/off with the remote control within short time intervals, the mortar consistency will fluctuate.

The solenoid valve opens from 40Hz. This means that no water can be supplied in the potentiometer positions 1-4.

(Parameter value 11 – 75Hz)

40 Mortar hoses

40.1 Preparing the mortar hoses

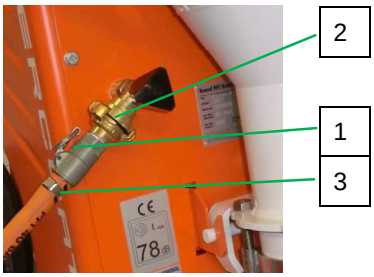


Fig. 57: Preparing the mortar hose

1. Connect the cleaner coupling (1) to the shut-off valve (2).
2. Connect the mortar hose (3) to the cleaner coupling (1).
3. Open shut-off valve (2) and flush mortar hose (3) with water.
4. Remove the mortar hose and cleaner coupling again and disconnect from one another.
5. Completely empty the mortar hose of water.
6. Prime the mortar hose by wetting it with about 1 litre of wallpaper paste.
7. The wallpaper paste is pumped through the mortar hose with the first mixture.

DANGER!

Never detach hose couplings if the mortar hoses are under pressure (check mortar pressure gauge). Mixed material can escape under pressure and lead to serious injuries, especially eye injuries.

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

40.2 Connecting the mortar hose

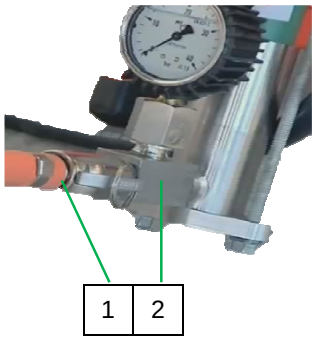


Fig.58: Connecting the mortar hose

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

NOTE!

Make sure the couplings are clean and connected properly, and do not leak. Dirty couplings and rubber seals are leaky and allow water under pressure to escape, which inevitably leads to blockages.

Carefully secure risers so that they do not tear away from their own weight.

2. Lay mortar hoses with a radius large enough so that the hoses do not kink.
3. Carefully fasten the riser so that it does not break off under its own weight

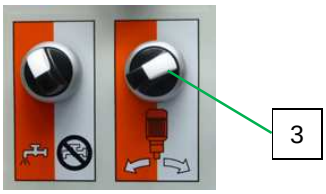


Fig. 59: Switching on

4. Turn the selector switch Pump motor directions of rotation (3) to the right.
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 with a suitable container and dispose of it according to regulations.
7. Switch off machine at selector switch (3) (middle position).

41 Compressed air supply

41.1 Connecting the air hose

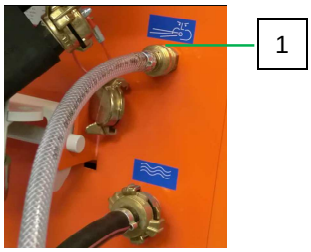


Fig. 60: Connecting the air hose

1. Connect compressed air hose (1) to air fitting  .

NOTE!
An air compressor must be connected to the air fitting.

DANGER!
Never undo hose couplings while the compressed air hose is pressurised.

41.2 Connecting the spray gun

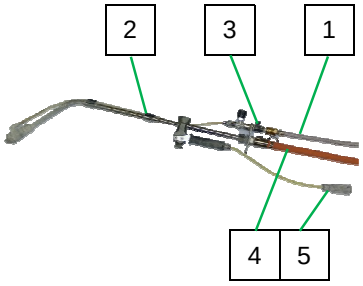


Fig.61: Spray gun

1. Connect compressed air hose (1) to the spray gun (2).
2. Make sure that the air valve (3) on the spray gun is closed.
3. Connect mortar hose (4) to the spray gun (2).
4. Connect remote control cable (5) to remote control socket (7)

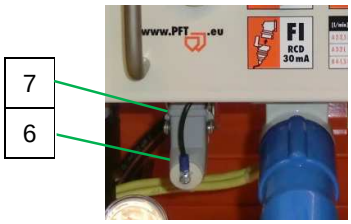


Fig. 62: Remote control cable

5. Remove the dummy plug (6) from the remote control socket.
6. Connect the remote control cable to the remote control socket (7).

41.3 Switching on the air compressor

Fig. 63: Air compressor

1. Switch on air compressor (air compressor PFT LK 402 IV Art.No. 00233174).
2. As soon as the air compressor has built up pressure in the pipe system, it switches off via the pressure cut-off.

DANGER!
The air compressor should not be connected to the control box of the RITMO POWERCOAT.

42 Switching on the vibrator

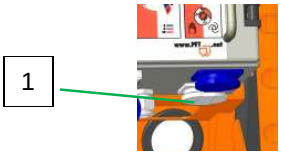


Fig. 64: Connect the vibrator

NOTE!

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

1. Plug the connector of the vibrator into the grey safety socket (1).

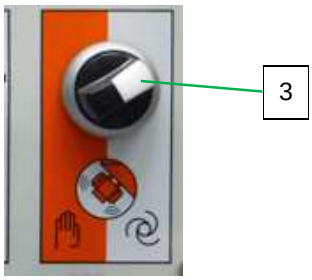


Fig. 65: Switching on the vibrator

2. Turn the selector switch (2) to the right.
3. The vibrator operates according to the set interval times, 3 seconds pause – 3 seconds runtime.

43 Applying mortar

DANGER!
Danger of injury due to leaking mortar!

Escaping mortar can lead to injuries to the eyes and face.

- Never look into the spray gun.
- Always wear protective goggles.
- Always position the machine so that you cannot be hit should mortar escape.

NOTE!

The maximum pumping distance depends primarily on the flow characteristics of the mortar.
Heavy, coarse-grained mortar does not flow well.
Fluid materials have good flow characteristics.

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

NOTE!

Before the first spraying cycle, it is recommended to run the machine briefly without spray nozzle until material has emerged from the spray head.

Then screw the nozzle back onto the spray head.

The delivery pressure may rise to 30 bar for a short time, but will fall back to the normal working pressure of 12-15 bar after a short running time.

43.1 Opening the air tap on the spray gun

Fig.66: Switching on

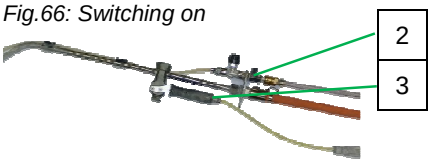


Fig.67: Opening the air valve

1. Turn the selector switch Pump motor directions of rotation (1) to the right.
2. Point the spray gun toward the wall to be plastered.
3. Check that no-one is in the spray gun range.
4. Open the air valve (2) on the spray gun and the compressor will start (with pressure switch-off).
5. The machine starts automatically as soon as the handle (3) at the spry gun is pressed.

43.2 Interruption of work

NOTE!

Generally, the setting times of the materials to be processed must be observed:

Clean the equipment and hoses as appropriate for the setting time of the material and the length of the interruption (take outdoor temperature into account).

Observe the guidelines of the material manufacturer regarding interruptions.

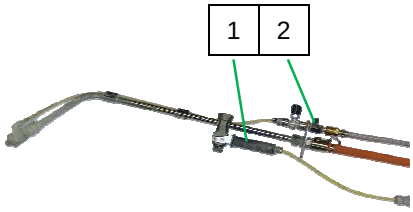


Fig.68: Closing the air valve

1. For brief work interruptions, close the air valve (1).
2. The machine stops.
3. Close the air valve (2) when the nozzle on the sprayer is freely blown
4. The air compressor switches off (must be on pressure switch-off)
5. By opening the air valve (1), the machine will start running again.

43.3 In the event of a work stoppage / pause

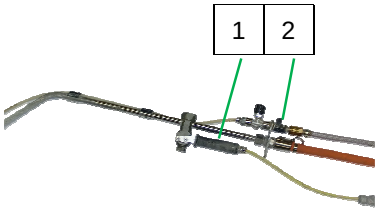


Fig.69: Closing the air valve

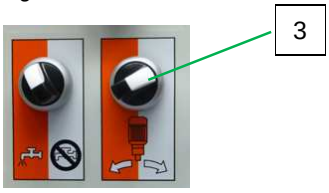


Fig.70: Switching off

1. Release the handle (1) on the sprayer
2. The machine stops
3. Close the air valve (2) when the nozzle on the sprayer is freely blown
4. The air compressor switches off (must be on pressure switch-off)
5. Switch off the machine at the pump motor selector switch (3) (position "0").
6. Switch off the air compressor

44 Working with pastes

44.1 Mortar pressure gauge

Fig. 71: Mortar pressure gauge

DANGER!
Operating pressure too high!

Machine parts can jump open uncontrolled and injure the operator.

- Do not operate the machine without a mortar pressure gauge.
- Only operate delivery hoses with an approved operating pressure of at least 40 bar.
- The burst pressure of the mortar hose must be at least 2.5 times the operating pressure.

44.2 Close water inlet

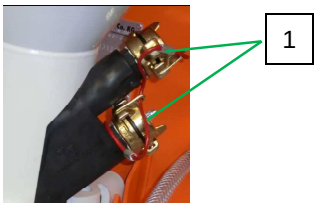


Fig. 72: Close water inlet

1. Close water inlet with blind cover (1).

45 Mortar hose

45.1 Prepare mortar hose

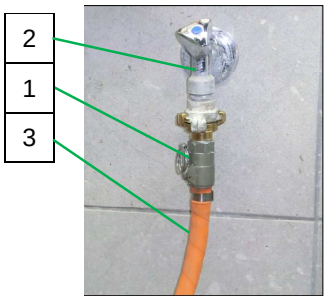


Fig. 73: Prepare mortar hoses

1. Connect the Cleaner coupling (1) to the water tap (2)
2. Connect mortar hose (3) and water it.
3. Remove the mortar hose and the cleaner coupling again.
4. Empty the mortar hose completely of water.
5. Pre-lubricate the mortar hose with wallpaper paste.
6. The wallpaper paste will be pumped through the mortar hose with the first mixture.

DANGER!

Never loosen hose couplings as long as the mortar hoses are not depressurized (check mortar pressure gauge)! Mixing material could escape under pressure and cause serious injury, especially to the eyes.

Torn off hoses can knock around and injure bystanders!

45.2 Connect mortar hose

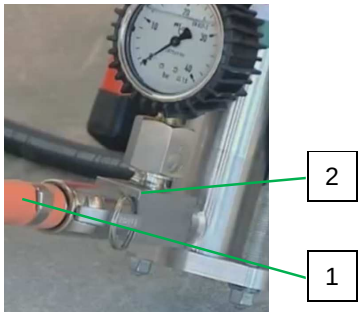


Fig. 74: Connect mortar hose

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

NOTE!

Make sure that the couplings are connected cleanly and correctly and that they are tight! Dirty couplings and sealing rubber leak and allow water to escape under pressure, which inevitably leads to blockages.

Carefully fasten risers so that they do not break off under their own weight..

2. Lay mortar hoses with a radius large enough so that the hoses do not kink.
3. Carefully fasten the riser so that it does not break off under its own weight.

46 Filling the material hopper with pastes

Fig. 75: Pastes

DANGER!
Risk of injury from bag opener!
Sharp edges of the bag opener pose a risk of injury.
- Wear safety gloves.

47 Copressed air supply

47.1 Connecting the air hose

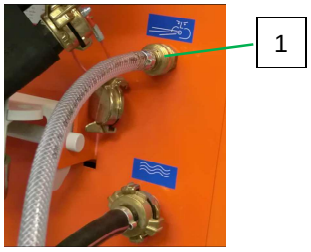


Fig.76: Connecting the air hose

2. Connect compressed air hose (1) to air fitting  .

NOTE!
An air compressor must be connected to the air fitting.

DANGER!
Never undo hose couplings while the compressed air hose is pressurised.

47.2 Connecting the spray gun

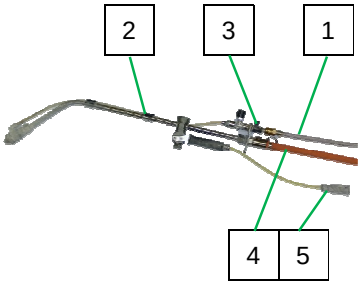


Fig.77: Spray gun

7. Connect compressed air hose (1) to the spray gun (2).
8. Make sure that the air valve (3) on the spray gun is closed.
9. Connect mortar hose (4) to the spray gun (2).
10. Connect remote control cable (5) to remote control socket (7)

Fig.78: Remote control cable

11. Remove the dummy plug (6) from the remote control socket.
12. Connect the remote control cable to the remote control socket (7).

47.3 Switching on the air compressor

Fig.79: Air compressor

3. Switch on air compressor (air compressor PFT LK 402 IV Art.No. 00233174).
4. As soon as the air compressor has built up pressure in the pipe system, it switches off via the pressure cut-off.

DANGER!
The air compressor should not be connected to the control box of the RITMO POWERCOAT.

47.4 Operation without water

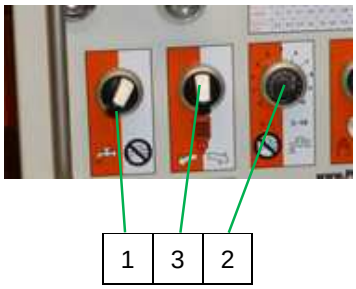


Fig. 80: Switching on

Turn selector switch (1) to position "without water" to the right.

Turn potentiometer (2) for motor speed / material quantity to position 10 (readjust as required).

Turn selector switch (3) rotation pump motor to the right.

48 Applying material

DANGER!
Danger of injury due to leaking mortar!
Escaping mortar can lead to injuries to the eyes and face.
- Never look into the spray gun.
- Always wear protective goggles.
- Always position the machine so that you cannot be hit should mortar escape.

NOTE!
The maximum pumping distance depends primarily on the flow characteristics of the mortar.
Heavy, coarse-grained mortar does not flow well.
Fluid materials have good flow characteristics.
If the specified operating pressure is exceeded, thicker mortar hoses must be used.

Applying material

NOTE!

Before the first spraying cycle, it is recommended to run the machine briefly without spray nozzle until material has emerged from the spray head.

Then screw the nozzle back onto the spray head.

The delivery pressure may rise to 30 bar for a short time, but will fall back to the normal working pressure of 12-15 bar after a short running time.

48.1 Opening the air valve on the spray gun

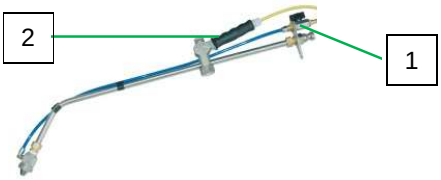


Fig. 81: Opening the air valve

1. Point the spray gun toward the wall to be plastered.
2. Check that no-one is in the spray gun range.
3. Open the air valve (2) on the spray gun and the compressor will start (with pressure switch-off).
4. The machine starts automatically as soon as the handle (3) at the spry gun is pressed.

48.2 In the event of a work stoppage / pause

NOTE!

See chapter 42.2 – 42.3 work stoppage/pause

49 Shutting down in an emergency

49.1 Emergency OFF switch

Switching off in an emergency

Machine movements and the energy supply must be disabled as quickly as possible in dangerous situations.

Fig. 82: Switching off

Proceed as follows in the event of an emergency:

1. Turn the main switch to position “**0**”.
2. Secure the main switch against being activated again using a padlock.
3. Inform supervisors at the site.
4. If necessary, call emergency services.
5. Remove persons from the danger zone and carry out first-aid measures.
6. Ensure emergency vehicles have unobstructed access.
7. If the seriousness of the emergency warrants this, inform the responsible authorities.
8. Assign specialist personnel to begin rectifying the fault.

WARNING!
Danger of death due to premature restarting!
All persons in the danger zone are at extreme risk when the machine is switched back on.

- Ensure that the danger zone is clear before switching the machine back on.

9. Check the equipment before switching it back on and ensure that all safety devices are in place and functioning properly.

50 Measures to be taken in the event of a power failure

50.1 Turning the main switch to position “0”

Fig. 83: Switch at position “0”

1. Close the air tap on spray gun.
2. Turn the main switch to position “**0**”.
3. Disconnect the connector plug from the air compressor.
4. Have the power supply connection checked by an expert.

Measures to be taken in the event of a power failure

50.2 Discharging mortar pressure

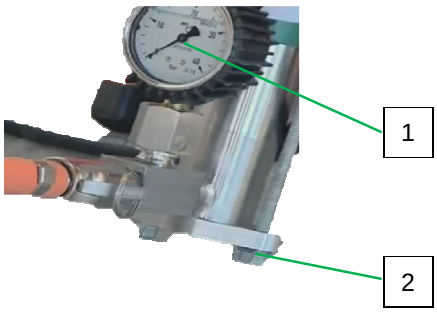


Fig. 84: Checking the mortar pressure

DANGER!
Overpressure on the machine!
When opening machine components, these can fly open in an uncontrolled manner and injure the operator.

➢ Only open the machine if the pressure has fallen to “0 bar”.

DANGER!
Danger of injury due to leaking mortar!
Escaping mortar can lead to injuries to the eyes and face.

Therefore:

- Never look into the spray gun.
- Always wear protective goggles.
- Always position the machine so that you cannot be hit should mortar escape.
- Cover working area with foil.

1. Open air tap on the spray gun.
2. Check the mortar pressure gauge (1) to see if the pressure has fallen to “0 bar”. If necessary, discharge any mortar pressure by unscrewing the screws (2) slightly and cover the working area with foil .
3. Tighten screws (2) again.

50.3 Switching on the machine again after a power failure

Fig. 85: Undervoltage trigger

NOTE!

The RITMO L plus is equipped with an undervoltage trigger. In the event of a power failure, the system must be started as follows.

1. Turn the selector switch (1) to the “Zero” position (middle position).
2. Close air tap on spray gun.
3. Turn the main switch (2) to the “**I**” position.
4. Turn potentiometer (3) for motor speed / material volume to position 7 (readjust as required).
5. Turn the selector switch (1) to the right.
6. The RITMO L plus starts up again as soon as the air valve on the spray gun is reopened.

NOTE!

In the event of a prolonged power failure, the RITMO L plus and the material hoses should be cleaned immediately.

51 Measures in case of water failure

HINWEIS!

The machine can be supplied with clean water from a tank using a pressure booster pump (article number 00493686) (see page 20/21 Fig. 25).

52 Troubleshooting

52.1 Fault displays

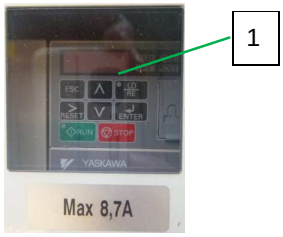


Fig. 86: Troubleshooting

The following equipment indicates a fault:

Faults in the frequency converter are shown in the display (1).

Remedial measures are described in the enclosed Quick Reference Guide.

52.2 Dealing with malfunctions

The following applies as a general rule:

1. For all malfunctions which present a risk of material damage or personal injury, perform an emergency stop immediately.
2. Determine the cause of the malfunction.
3. If troubleshooting requires working in the danger zone, switch off the machine and secure it against being switched back on again.
4. Immediately inform supervisors at the site regarding the malfunction.
5. Depending on the malfunction, either rectify it yourself or have authorised specialists do so.

NOTE!

A table below lists particular malfunctions and who is authorised to handle them.

52.3 Malfunctions

The following chapter details the possible causes of malfunctions and how to solve them.

Shorten maintenance intervals according to the actual load if malfunctions keep reoccurring.

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

Troubleshooting

52.4 Safety

Personal protective equipment

Wear the following protective equipment for all maintenance work:

- Protective work clothing.
- Protective goggle, protective gloves, safety shoes, ear protection.

Personnel

- Unless otherwise stated, the troubleshooting methods detailed here can be carried out by the machine operator.
- Some tasks may only be carried out by specialist personnel or the manufacturer. These are specially indicated in the description of the individual malfunctions.
- Work on electrical systems must always only be carried out by qualified electricians.

52.5 Table of malfunctions

Malfunction	Possible cause	Solution	Performed by
Machine does not start **Water**	Water pressure too low	Check the water supply, clean the dirt trap screens	Operator
	Gauge displays pressure below 2.2 bar	Check pressure booster pump	Service technician
Machine does not start **Power**	Power cable is defective	Repair the power cable	Service technician
	Main switch not activated	Turn on the main switch	Operator
	FI circuit breaker triggered	Reset the FI circuit breaker	Service technician
	Motor protection switch triggered	Turn the motor protection switch to the position “1” in the control box	Service technician
	Contactor is defective	Replace the contactor	Service technician
	Fuse is defective	Replace the fuse	Service technician
Machine does not start **Air**	Insufficient pressure gradient in remote control due to blocked air line or air nozzle tube	Clean blocked air pipe or air nozzle tube	Operator
	Air safety switch incorrectly set	Adjust air safety switch	Service technician
	Air compressor not connected	Connect air compressor	Operator
Machine does not start **Material**	Too much thickened material in the hopper or mixing area	Half-empty the hopper and restart it.	Operator
	Material in pump component too dry	Allow the machine to run backwards, otherwise remove pump and clean it	Service technician

Troubleshooting

Malfunction	Possible cause	Solution	Performed by
Water not flowing (flowmeter does not display anything)	Solenoid valve (bore hole in membrane blocked)	Clean the solenoid valve	Service technician
	Solenoid coil defective	Replace the solenoid coil	Service technician
	Pressure reducing valve closed	Open pressure reducing valve	Operator
	Water inlet in the rubber mixing zone blocked	Clean water inlet in the rubber mixing zone	Operator
	Needle valve closed	Open the needle valve	Operator
	Cable to solenoid valve defective	Replace the cable to solenoid valve	Service technician
Pump motor will not start	Pump motor defective	Replace pump motor	Service technician
	Defective connection cable	Replace the connection cable	Service technician
	Plug or mounted socket defective	Replace plug or mounted socket	Service technician
	Motor protection switch defective or actuated	Replace or reset motor protection switch	Service technician
Machine stops after a short period	Dirt trap screen is dirty	Clean or replace the screen	Operator
	Pressure reducer filter dirty	Clean or replace the screen	Operator
	Hose connection or water line too small	Enlarge the hose connection or water line	Operator
	Water intake line too long or intake pressure too weak	Connect an additional booster pump, if necessary	Service technician
Machine will not switch off	Air pressure safety switch misadjusted 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	Replace air tap	Service technician
	Insufficient compressor output	Check compressor	Service technician
	Air supply not connected to compressor	Connect air supply to compressor	Operator
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
	Material in the mixing shaft has become wet	Empty mixing shaft, dry and begin again	Operator
	Mixing shaft defective	Replace mixing shaft	Operator
	Motor clutch defective	Replace motor clutch	Service technician

Pumping stopped / blockage

Malfunction	Possible cause	Solution	Performed by
“Thick-thin” mortar flow	Not enough water	Increase water supply by 10% for approx. ½ minute and then reduce it slowly	Operator
	Water safety switch misadjusted 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 incorrectly set or defective	Set the pressure reducer correctly, or replace it	Service technician
	Rotor worn or faulty	Replace the rotor	Service technician
	Stator worn	Replace stator	Service technician
	Inner wall of mortar hose defective	Replace mortar hose	Operator
	Rotor too deep in pressure flange	Replace pressure flange	Service technician
	Part not original PFT spare part	Use an original PFT spare part	Service technician
Water level rises in mixing tube during operation.	Backpressure in mortar hose higher than pump pressure	Readjust or replace stator	Service technician
	Rotor or stator worn out	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

53 Pumping stopped / blockage

When the conveyed material remains stuck in the conveying hoses and cannot be pumped out through the hose end, this is a blockage, which can occur in conveying hoses for a number of reasons.

53.1 Remedying hose blockages / Signs of blockages

Performed by operator:

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

Indications of this are:

- Steep rise in feed pressure,
- Seizing of pump
- Sluggishness or seizing of pump motor
- Widening and twisting of mortar hose
- No material emerges from hose end

53.2 Causes of clogged hoses:

- Heavily worn mortar hoses
- Interruptions in work
- Poorly lubricated mortar hoses,
- Residual water in mortar hose
- Clogging of pressure flange
- Steep tapering of the couplings,
- Kink in mortar hose
- Unmixed materials or materials unsuitable for pumping.

53.3 Pre-existing damage on mortar hose

NOTE!

Should a machine malfunction due to blockages cause the pressure in the mortar hose to only briefly exceed 60 bar, replacement of the mortar hose is recommended, since unseen damage to the hose cannot be ruled out.

54 Clearing hose blockages

Fig. 87: Switching off

DANGER!
Danger due to escaping material!

Never detach hose couplings if the feed pressure has not been fully released! The conveyed material can escape under pressure and lead to serious injuries, especially eye injuries.

In accordance with the accident prevention regulations of the Builder's Guild, all personnel clearing blockages should wear personal safety equipment (safety goggles, protective gloves) and position themselves so as not to be hit by escaping material. Other persons are not permitted in the vicinity.

54.1 Running pump motor briefly in reverse

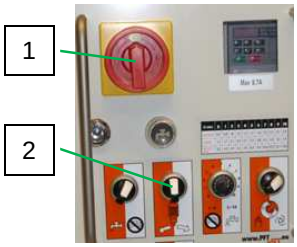


Fig. 88: RITMO reverse run

1. Turn the main switch (1) to the "**I**" position.
2. Turn selector switch (2) Pump motor directions of rotation to the left until the pressure at the mortar pressure gauge has fallen to "0 bar".

54.2 Risk of injury to due overpressure

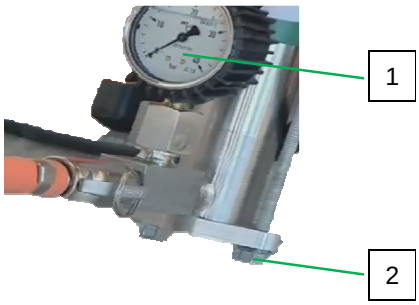


Fig. 89: Checking the grout pressure

DANGER!
Overpressure on the machine!

When opening machine components, these can fly 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”.

DANGER!
Danger of injury due to leaking mortar!

Escaping mortar can lead to injuries to the eyes and face.

Therefore:

- Always wear protective goggles.
- Protective clothing, protective gloves, safety shoes, ear protection.
- Always position the machine so that you cannot be hit should mortar escape.

1. Undo both screws (2) on the pressure flange slightly to ensure the residual pressure can escape.
2. As soon as the pressure has dropped to “0 bar”, tighten the screws (2) again.

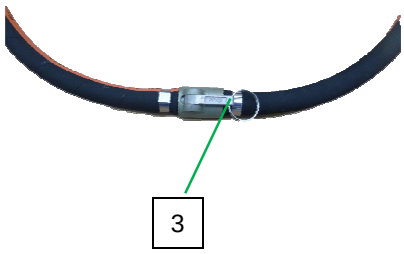


Fig. 90: Detaching the coupling

NOTE!
Immediately clean the mortar hoses.

3. Cover coupling connections with tear-resistant 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, introduce a flushing hose into the mortar hose and flush out the material (PFT flushing hose item no. 00113856).

54.3 Switching on the machine after removing a blockage

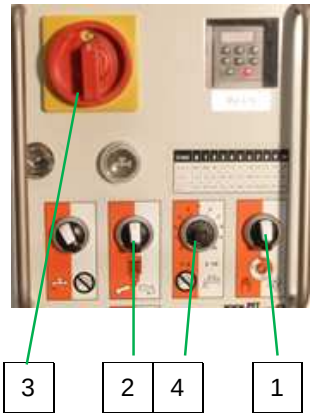


Fig. 91: Switching on

1. Selector switch (1) at “Zero” position (middle position).
2. Close the air tap on spray gun.
3. Turn the main switch (3) to the “I” position.
4. Turn potentiometer (4) for motor speed / material volume to position 7 (readjust as required).
5. Turn the selector switch (2) to the right.
6. Run the machine briefly without mortar hoses
7. As soon as material emerges from the mortar pressure gauge, switch off the machine at the pump motor (2) selector switch (position "0”)
8. Pre-lubricate cleaned mortar hoses with wallpaper paste and connect them to the machine and the spraying unit
9. Switch on air compresso
10. Turn the pump motor (2) and vibrator (1) selector switch to the right, open the air valve on the spray gun and operate the handle as described in section 42.1.

55 End of shift / Cleaning

55.1 Switching off the energy supplies

Securing against restarting

DANGER!
Danger of death due to unauthorised restarting!
When working on the machine, there is a danger of unauthorised switching on of the electrical supply. This puts those in the danger area at extreme risk.

- Before starting work, switch off all electrical power supplies and secure them against being switched back on again.

55.2 Cleaning RITMO

CAUTION!
Water can enter sensitive machine parts!

- Before cleaning the machine, seal all openings where water could enter and impair the safety and functions of the machine (e.g.: electric motors and control boxes).

NOTE!

Do not aim the water jet at electrical components, such as the gear motor or control box.

55.3 Checking the mortar pressure

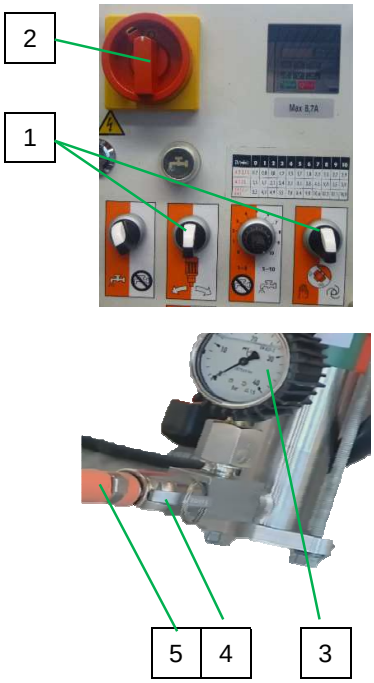


Fig. 92: Mortar pressure at 0 bar

<u>The machine must be cleaned daily after work and before prolonged pauses.</u>

<u>To switch off the machine:</u>

1. Turn the selector switch (1) to the “Zero” position (middle position).
2. Turn the main switch (2) to the position “**0**”.
3. Check the mortar pressure gauge (3) to see if the pressure has fallen to “0 bar”.

DANGER!
Overpressure on the machine!
When opening machine components, these can fly open in an uncontrolled manner and injure the operator.

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

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

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

55.4 Cleaning the mortar hose

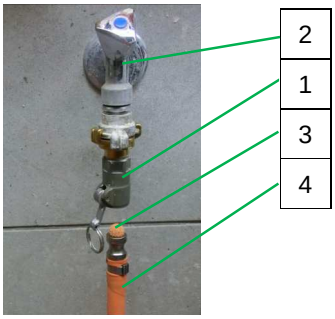
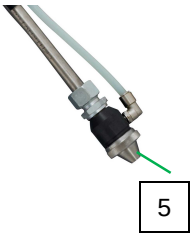


Fig. 93: Connecting the cleaner coupling

1. Connect the cleaner coupling (1) to the water outlet valve (2).
2. Press the water-soaked sponge ball (3) into the mortar hose (4).
3. Connect mortar hose (4) with the sponge ball to the cleaner coupling (1).



4. Remove fine plaster nozzle (5) from the spray gun.
5. Open water outlet valve *Pos. 2 Fig. 93*, until the sponge ball emerges at the spray gun.
6. Repeat this procedure several times in case of heavy soiling.
7. Reassemble spray gun.

Fig. 94: Cleaning the spray gun

55.5 Coupling the water hose

1. Couple water hose (1) to the mixing tube.

Fig. 95: Water hose

55.6 Clean mixing tube.

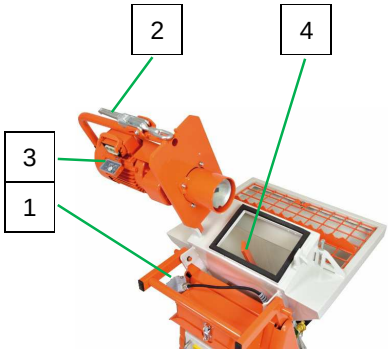


Fig. 96: Opening the motor tilt flange

NOTE!

There must not be any more material in the material hopper or mixing tube.

1. Pull out 10-pole connector plug (1).
2. Open quick fastener (2).
3. Tilt motor to the side.

NOTE!

The housing must be closed with the protective cover (3) during cleaning and transporting of the motor (Protection against moisture and damage).

4. Remove the mixing shaft (4) and clean it.
5. Clean the mixing zone with a spatula.

55.7 Inserting the mixing tube cleaner

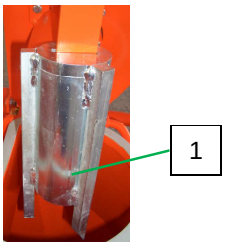


Fig. 97: Inserting the mixing tube cleaner

1. Insert cleaner shaft and mixing tube cleaner (1) into the mixing tube.

NOTE!
Insert mixing tube cleaner (1) with the scrapers pointing downwards.

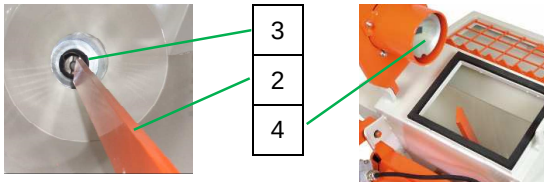


Fig. 98: Cleaner shaft seat

NOTE!
When inserting the cleaner shaft make sure that the cleaner shaft (2) engages in the head of the rotor (3) and when closing the motor flange that it correctly engages in the coupling claw (4).

55.8 Cleaning the mixing tube RITMO

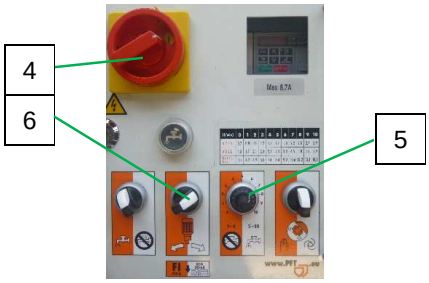


Fig. 99: Cleaning RITMO

1. Close motor tilt flange (1) with gear motor.
2. Close quick fastener (2).
3. Insert 10-pole connector plug (3).
4. Turn the main switch (4) to the “I” position.
5. Turn potentiometer (5) for motor speed / material volume to position 4.
6. Turn selector switch (6) Pump motor directions of rotation to the right (machine starts).
7. Allow the machine to run for approx. 5-10 seconds until the mixing tube is cleaned.
8. Turn the selector switch (6) to the “Zero” position (middle position).
9. Turn the main switch (4) to the “0” position.
10. Pull out 10-pole connector plug (3).
11. Undo quick fastener (2) and tilt motor to the side.
12. Take mixing tube cleaner with cleaner shaft out of the material hopper.

55.9 Cleaning the material hopper

➢ The material hopper can be cleaned using a water hose once all material has been removed.

56 Replacing the pump / Cleaning the pump

56.1 Placing the machine on its rear

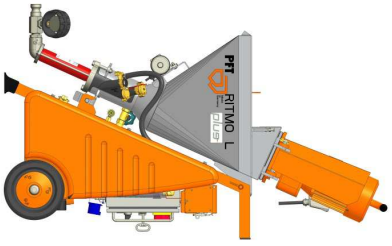


Fig. 100: *Turning over the machine*

DANGER!
Danger of death due to unauthorised restarting!

When working on the machine, there is a danger of unauthorised switching on of the electrical supply. This puts those in the danger area at extreme risk.

Therefore:

- Before starting work, switch off the electrical power supply and secure it against being switched back on again.
- Interrupt the power supply by removing the connection cable.

NOTE!

For easier pump replacement / pump cleaning, the RITMO can be placed on its rear.

56.2 Removing the pump unit

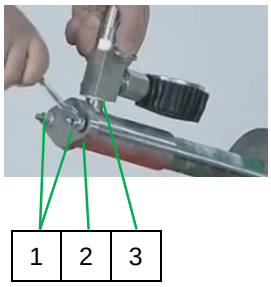


Fig. 101: Removing the pump unit

1. Undo screw (1) at the pressure flange (2).
2. Remove mortar pressure gauge with pressure flange (2) and pump unit (3).

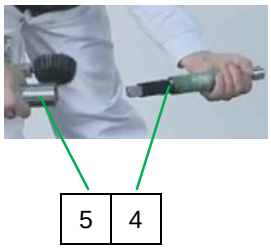


Fig. 102: Cleaning the remixer

3. Pull the remixer (4) out of the remixer housing (5) and clean it.

56.3 Remove the suction flange

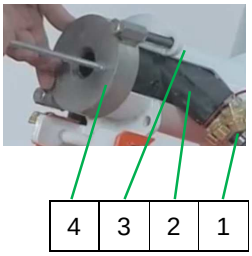


Fig. 103: Cleaning the rubber mixing zone

1. Uncouple the water hose (1) from the rubber mixing tube (2).
2. Undo screw (3) for the pressure flange (4).
3. Remove and clean the suction flange (4).
4. Pull the rubber mixing zone (2) out oft he material hopper and clean it
5. Push the cleaned rubber mixing zone (2) back in the material hopper.
6. Refasten the suction flange (4) with nuts.

56.4 Complementing the remixer with a pump unit

Fig. 104: Remixer / pump unit

1. Reassemble with new rotor and stator or cleaned parts.

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

57 Switching off RITMO powercoat

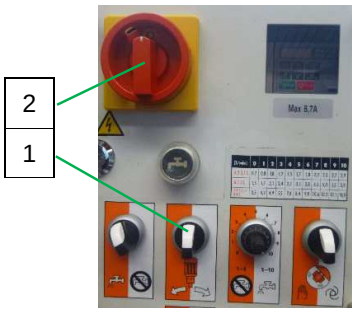


Fig. 105: *Switching off RITMO*

1. Turn the selector switch (1) to the “Zero” position (middle position).
2. Turn the main switch (2) to the position “**0**”.

58 Measures to be taken if there is a risk of frost

CAUTION!
Damage due to frost!
Water that expands on freezing inside the component can cause serious damage.
Therefore:

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

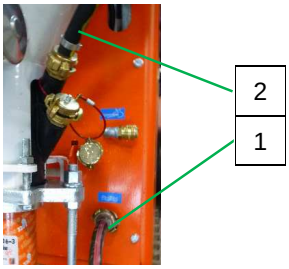


Fig. 106: Disconnecting the water supply

1. Remove the water hose (1) from the water inlet.
2. Remove water hose (2) from the water nozzle at the rubber mixing zone.

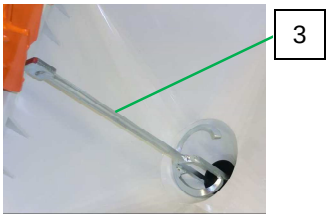


Fig.107: Removing the mixing shaft

3. Take mixing shaft (3) out of the mixing zone.

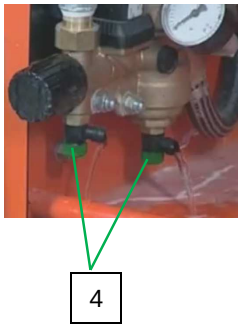


Fig. 108: Opening the outlet tap

4. Open outlet taps (4) on the fitting block.
5. Allow water to drain off and close outlet taps again.

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

58.1 Blowing the water manifold dry

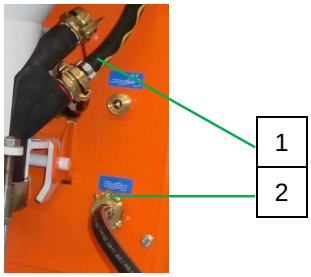


Fig. 109: Connecting the air hose

1. Disconnect the water hose (1) from the rubber mixing tube
2. Connect air hose (2) from air compressor to water inlet

58.2 Blowing the water manifold dry

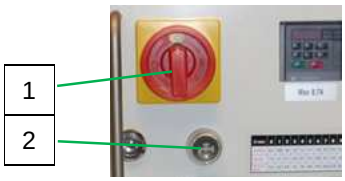


Fig. 110: Blowing the water manifold dry

1. Turn the main switch (1) right to the “**I**” position.
2. Switch on the air compressor
3. Keep the water flow button (2) pressed for approx. 10 seconds.
4. The water is blown out of the manifold with compressed air.
5. Open all water valves and blow out with compressed air again.
6. Switch off the air compressor
7. Turn the main switch (1) to the position “0”.

59 Maintenance

59.1 Safety

Personnel

- Unless otherwise stated, the maintenance work detailed here can be carried out by the machine operator.
- Some tasks may only be carried out by specially trained personnel or only by the manufacturer.
- Work on electrical systems must always only be carried out by qualified electricians.

Basic information

WARNING!
Danger of injury due to improperly performed maintenance work!

Improper maintenance can lead to serious injuries or equipment damage.

Therefore:

- Keep the assembly area clean and tidy. 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.

59.2 Removing the connection cable

Electrical system

Fig. 111: Removing the connection cable

DANGER!
Danger of death due to electric current!

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

Therefore:

- Before starting work, switch off the electrical power supply and secure it against being switched back on again.
- Interrupt the power supply by removing the connection cable.

Securing against restarting

DANGER!
Danger of death due to unauthorised restarting!

When working on malfunctions, there is a danger of unauthorised switching on of the electrical supply. This puts those in the danger area at extreme risk.

Therefore:

- Before starting work, switch off all electrical power supplies and secure them against being switched back on again.

59.3 Environmental protection

Observe the following environmental protection guidelines when carrying out maintenance work:

- Remove used, leaking or excess grease from all manual lubrication points and dispose of it correctly according to the applicable local regulations.
- Collect used oil in suitable containers and dispose of it according to the applicable local regulations.

60 Maintenance tasks

60.1 Maintenance plan

The next sections describe the maintenance tasks required for optimal, problem-free operation.

Provided no increase wear can be identified during regular inspections, reduce the required maintenance intervals as appropriate for the actual signs of wear.

For questions regarding maintenance tasks and intervals, contact the manufacturer (see service address on page 2).

NOTE!

The maintenance is limited to a few checks. The most important maintenance task is thorough cleaning after use.

Interval	Maintenance task	To be performed by
Daily	Clean/replace the dirt trap screen in the water inlet.	Operator
Weekly	Clean/Replace intake filter of the compressor.	Service technician
2 weeks	Clean/replace the dirt trap screen in the pressure reducer.	Service technician

60.2 Dirt trap screen

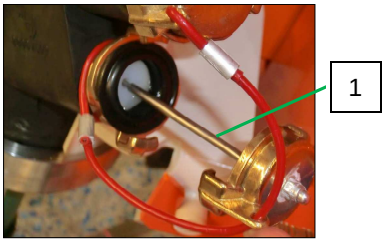


Abb. 112: Insert nozzle

1. Daily clean the insert nozzle in the rubber mixing zone with the stickleback to ensure a clean water dosage.
   - Performed by operator.

60.3 Dirt trap screen in the water inlet

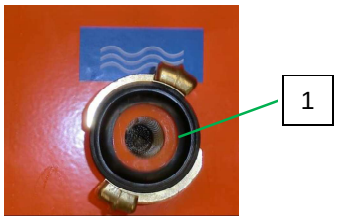


Fig. 113: Dirt trap screen in the water inlet

Check the dirt trap screen in the water inlet on a daily basis:

2. Remove the dirt trap screen from the Geka coupling.
3. Clean the dirt trap screen.
4. Replace the screen if dirt is severe.
5. Reinsert dirt trap screen.

Dirt trap screen for Geka coupling: Item number 20152000

- Performed by operator.

60.3.1 Dirt trap screen

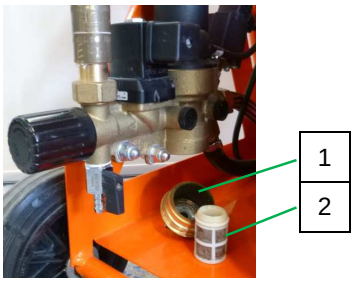


Fig. 114: Dirt trap screen

1. Unscrew sealing screw (1) of the pressure reducing valve.
2. Remove dirt trap screen (2) and clean (every two weeks).
3. Replace the dirt trap screen if dirt is severe.
4. Insert dirt trap screen and screw in sealing screw.

Dirt trap screen for pressure reducer: Item number 20156000

- Implementation by a service fitter.

60.4 Pressure reducing valve

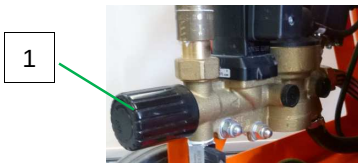


Fig. 115: Pressure reducing valve

Check setting of the pressure reducing valve.

1.4 bar at maximum flow rate.

Needle valve (1) completely open.

60.5 Checking the pressure switch

60.5.1 Water pressure switch

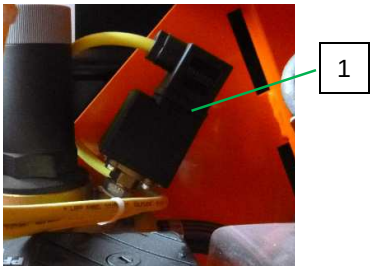


Fig. 116: Pressure switch

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

- Implementation by a service fitter.

Pressure switch Water (1)	Machine switches “ON”	Machine switches “OFF”
Water	1.7 bar	1.4 bar

60.6 After performing maintenance

1. After maintenance has been completed, carry out the following steps before switching on again:
2. Check that all previously loosened screw connections have a tight fit.
3. Check that all previously removed protective devices and covers have been properly reattached.
4. Ensure that all tools, materials and other equipment have been removed from the work area.
5. Clean the work area and remove any traces of escaped material (e.g. liquids, processing material etc.).
6. Ensure that all safety devices are functioning properly.

61 Disassembly

The machine must be disassembled and disposed of in an environmentally sound manner after reaching the end of its useful life.

61.1 Safety

Personnel

- Disassembly may only be performed by specially trained personnel.
- Work on electrical systems may only be carried out by qualified electricians.

Basic information

WARNING!
Danger of injury due to improper disassembly!

Residual energy, sharp-edged components and corners on and around the device or on the tools required can cause injuries.

Therefore:

- Ensure there is adequate space before starting any work.
- Exercise caution when working with open, sharp-edged components.
- Keep the work area clean and tidy. Components and tools that are stacked on one another or left lying around can cause accidents.
- Disassemble components correctly. Bear in mind that individual components can be heavy. Use lifting equipment if necessary.
- Secure components so they do not fall or tip over.
- Consult your dealer if questions arise.

Electrical system

DANGER!
Danger of death due to electric current!

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

Therefore:

➢ Switch off and completely disconnect the power supply before starting disassembly.

61.2 Disassembly

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

Before beginning with disassembly:

- Switch off the machine and secure it against being switched on again.
- 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.

62 Disposal

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

- Metallic parts are scrapped.
- Plastic elements are recycled.
- Remaining components are disposed of sorted by individual material.

CAUTION!
Environmental damage can result from improper disposal of materials!

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.

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