



# Operating manual

**Delivery pump ZP 3 XL / XL Vario**

**Part 2 Overview, operation and service**



Item no. of the operating manual:

00825225

ZP 3 XL Vario, 400 V, 3 Ph, 50 Hz

Item no. 00098125

ZP 3 XL, 400 V, 3 Ph, 50 Hz

Item no. 00102964

ZP 3 XL, 400 V, 3 Ph, 50 Hz with accessories

Item no. 00232678

ZP 3 XL, 400 V, 3 Ph, 60 Hz

Item no. 00271774

ZP 3 XL with compressor and gear motor 254 rpm RAL2004

Item no. 00417824



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

## About us

Publisher	Knauf PFT GmbH & Co. KG Postfach 60 ▪ 97343 Iphofen Einersheimer Straße 53 ▪ 97346 Iphofen Germany
Document name	00825225_1.0_EN Translation of the original operating manual (DE)
Date of first issue	11.2023
Date of change	
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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:

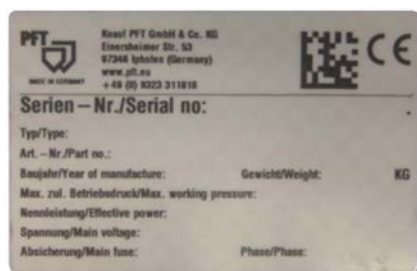
- The danger sign and signal word
- Information on the nature of the hazard
- Information on the source of the hazard
- Information on possible consequences of disregarding the hazard
- Measures to avert the hazard

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:** ZP 3 XL  
**Type of equipment:** Delivery 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 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.





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

## 1.8.3 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.

## 1.8.4 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.

Technical data

PFT

2

Technical data

2.1

General information

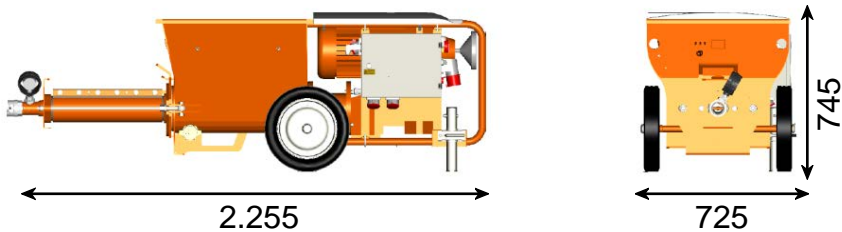


Figure 3: Dimension sheet in mm

Detail	Value	Unit
Empty weight approx.	238 - 386	kg
Length	2255	mm
Width	725	mm
Height	745	mm

Material hopper dimensions

Detail	Value	Unit
Filling height	620	mm
Material hopper volume	130	l

2.2

Power connection



Figure 4: Motor protection switch

Detail	Perfor- mance	Setting value	Designa- tion
Pump motor	7.5 kW	15 A	Q2
Compressor	0.9 kW	1.8 A	Q4
Vibrating unit	0.25 kW	0.65 A	Q3

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



## Technical data

### Electrical details

Detail	Value	Unit
Voltage, three-phase current 50 Hz	400	V
Fuse protection, minimum	3 x 25	A
Connection	32	A
Power input, max.	9	kW
Pump motor speed range	175	Rpm
Vario pump motor speed range	70 - 260	Rpm

## 2.4 Performance values of pump unit R 7–3

### Pump capacity R 7–3

Detail	Value	Unit
Delivery rate *, approx	42	l/min
Operating pressure, maximum	30	bar

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

## 2.5 Performance values of pump unit T 10–1.5

### Pump capacity T 10–1.5

Detail	Value	Unit
Delivery rate *, approx	118	l/min
Operating pressure, maximum	15	bar
Delivery distance *, max. with 50 mm Ø	100	m

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

## 2.6 Sound power level

Guaranteed sound power level  $L_{WA}$

■ 78 dB(A)

## 2.7 Vibrations

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

## Transport, packing and storage



### 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.



## 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.

## Transport, packing and storage



### 3.4 Transport



Figure 5: Attachment points for crane transport

Anchor the machine at the four marked anchor points (1) for transport by crane.

Observe the following conditions:

- The crane and lifting equipment have to be designed for the weight of the packages.
- The operator has to be authorised to operate the crane.

Attachment:

1. Anchor the hooks to the crane hooks accordingly.
2. Ensure that the package is straight, possibly observe eccentric centre of gravity.

### 3.5 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.

### 3.6 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

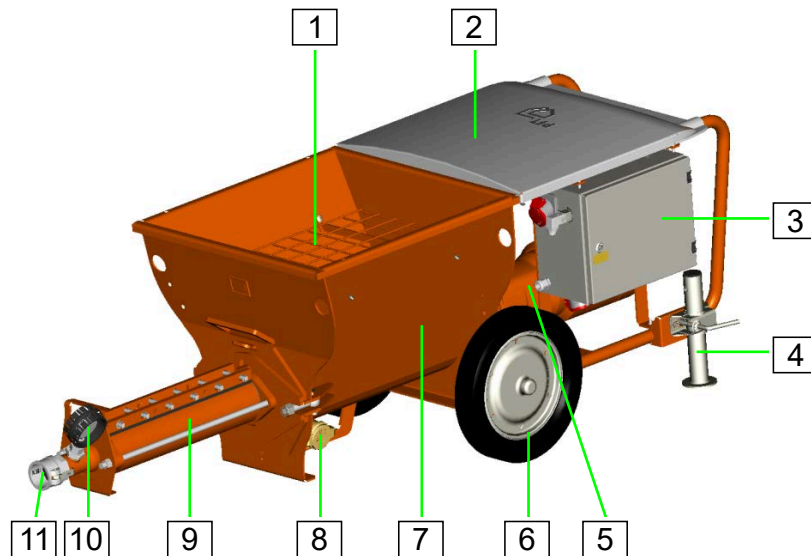


Figure 6: Overview of the assemblies item no. 00102964

- |                                 |                            |
|---------------------------------|----------------------------|
| [1] Protective grille           | [2] Plastic hood           |
| [3] Control box                 | [4] Tube slide support     |
| [5] Pump motor                  | [6] Wheel with steel rim   |
| [7] Material hopper             | [8] Cleaning nozzles       |
| [9] Pump unit R 7-3             | [10] Mortar pressure gauge |
| [11] Connection for mortar hose |                            |

## Description

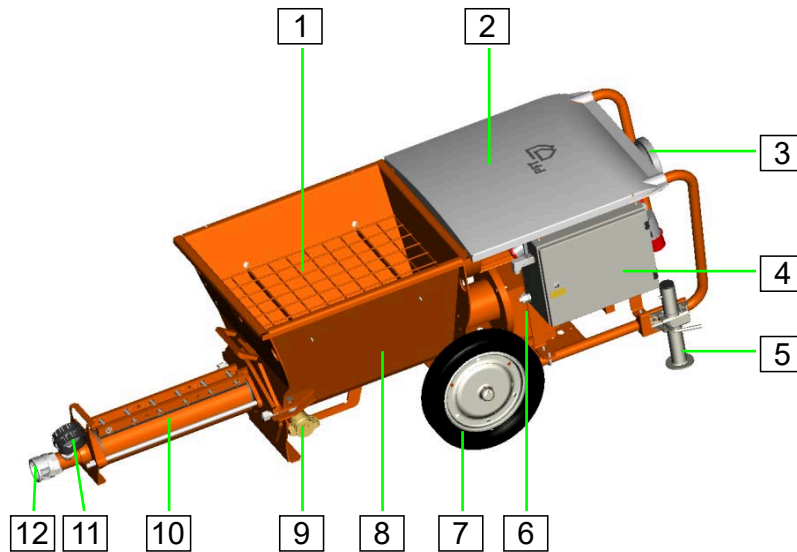


Figure 7: Overview of the assemblies item no. 00098125

- |                                     |                                 |
|-------------------------------------|---------------------------------|
| [1] Protective grille               | [2] Plastic hood                |
| [3] Handwheel for the vario gearbox | [4] Control box                 |
| [5] Tube slide support              | [6] Pump motor                  |
| [7] Wheel with steel rim            | [8] Material hopper             |
| [9] Cleaning nozzles                | [10] Pump unit R 7–3            |
| [11] Mortar pressure gauge          | [12] Connection for mortar hose |

### 4.2 Functional description ZP 3 XL



Figure 8: Functional description

PFT delivery pumps are suitable for processing all pumpable lime/cement-based ready-mix dry mortars as well as wet products, paste-like materials and liquid media. In combination with an air compressor and a spray gun, they can also be used to apply plasters and paints.

If very high delivery rates are required, the PFT ZP 3 XL is the right choice.

The intermediate mortar pump directly pumps the plaster, masonry mortar or screed mixed by a continuous mixer, forced action mixer or truck mixer to the site of use. The delivery rate can be steplessly adapted to the material requirements.

### 4.3 Fields of application

#### For all materials such as:

- Masonry mortar/light mortar
- Floor screed (from truck mixer)
- Levelling compounds
- Guniting

... and much more





### Flowability / flow characteristics



- *The pump unit R 7–3 can be used up to 30 bar operating pressure.*
- *The pump unit T 10–1.5 can be used up to 15 bar operating pressure.*
- *The possible conveying distance depends mainly on the flowability of the mortar.*
- *Heavy, sharp-edged mortar has poor flow characteristics. Runny materials, fillers, paints etc. have good flow characteristics.*
- *If 30/15 bar operating pressure are exceeded, the mortar hose length has to be reduced.*
- *In order to avoid machine faults and increased wear of the pump motor, pump shaft and the pump itself, only original PFT spare parts such as:*
  - *PFT rotors*
  - *PFT stators*
  - *PFT pump shafts*
  - *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 Advantages at a glance

- High delivery rate and long delivery distance
- Optional remote control
- Sealing unit between gear unit and container
- Sturdy construction
- Integrated control unit
- Very mobile
- Minimal maintenance and cleaning expenses
- Quick disassembly of pump

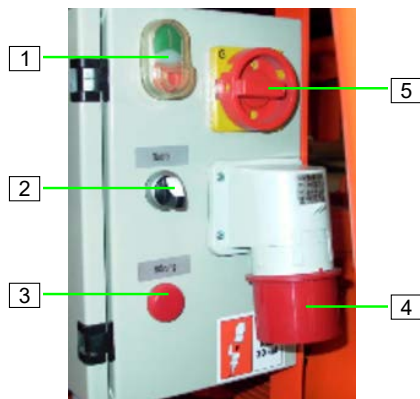
## 4.5 Description of assemblies

The PFT ZP 3 XL delivery pump consists of the main components described in the following chapters.

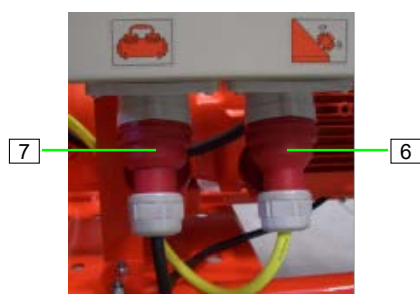
## Description



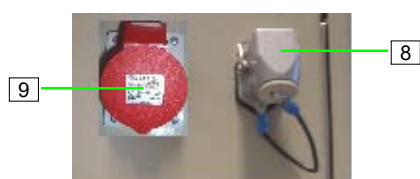
### 4.5.1 Control cabinet item no. 00098601



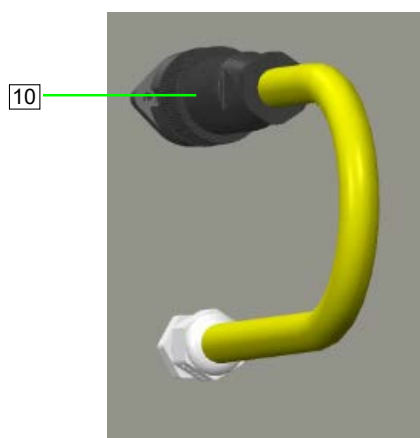
- [1] Pushbutton for control voltage 'ON/ OFF'
- [2] Vibration selector switch 'manual-0-automatic'
- [3] Red control lamp, motor protection switch activated
- [4] Main terminal
- [5] Main reversing switch is also emergency-stop switch



- [6] CEE mounted socket for connection of vibrating unit (optional)
- [7] CEE mounted socket for connection of air compressor (optional)



- [8] Dummy connector / connection for remote control
- [9] CEE mounted socket for connection of drum mixer (optional)



- [10] Control cable limit switch connection

Figure 9: Assembly unit control box

### 4.5.2 Frame with material hopper

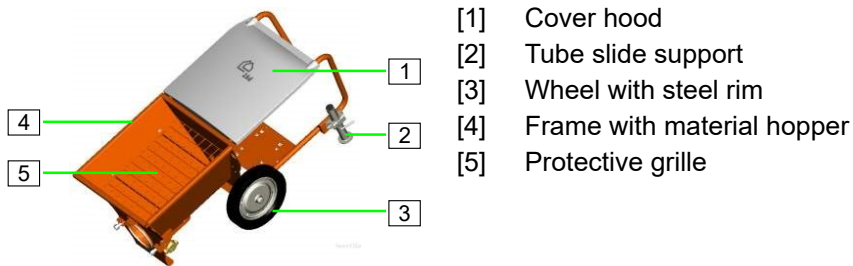


Figure 10: Frame assembly

### 4.5.3 Pump unit R 7–3

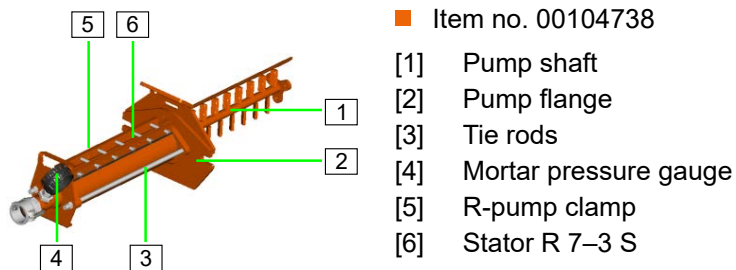


Figure 11: Pump unit assembly

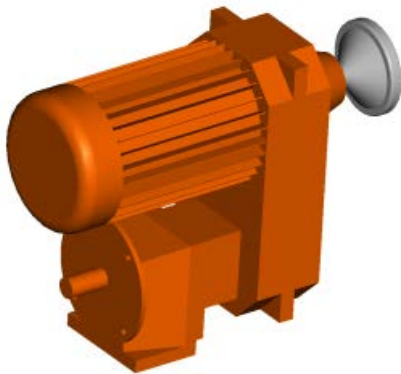
### 4.5.4 Pump motor



- Pump motor 7.5 kW, 175 rpm item no. 00741427
- Pump motor 7.5 kW, 254 rpm item no. 20143500
- Pump motor 7.5 kW, 175 rpm, 230/400 V, 60 Hz item no. 00763354

Figure 12: Pump motor

## Description



- Vario pump motor 7.5 kW, 70-260 rpm item no. 00102001

Figure 13: Vario pump motor

### 4.5.5 Mortar pressure gauge



Figure 14: 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.

### 4.6 Operating modes



Figure 15: Selector switch - Vibrating unit

Selector switch - Vibrating unit

The vibrating unit can be operated in three different operating modes:

Switch position '0':

- The vibrating unit is switched off.

Switch position 'Automatic' (right):

- The vibrating unit runs on automatic, pulse/pause with the pump motor.

Switch position 'Manual' (left):

- In the 'Manual' position, the vibrating unit runs in continuous operation as long as the selector switch is held in this position.

## 4.7 Accessories



Extension cable 5 x 4 mm<sup>2</sup>, RED 5-32 A – 25 m (400 V, 3 Ph)

■ Item no. 20423920



Extension cable 5 x 4 mm<sup>2</sup>, RED 5-32 A – 50 m (400 V, 3 Ph)

■ Item no. 20423900



Extension cable 5 x 6 mm<sup>2</sup>, RED 5-32 A – 25 m (400 V, 3 Ph)

■ Item no. 00105633



Remote control cable with switch - 25 m

■ Item no. 20456929



Water hose/air hose DN12 Geka | Geka - 5 m

■ Item no. 20211100

## Description



Spray nozzle DN19 ( $\frac{3}{4}$ " ) Geka

■ Item no. 20215700



Rinsing hose DN10 Geka - 11 m

■ Item no. 00113856



Assembly aid for R-pump

■ Item no. 00478212



Vibrating screen for retrofitting for ZP 3 XL, complete

■ Item no. 00148146



Extension hopper 300 mm with sieve insert and surge case

■ Item no. 00098004



Retrofit kit for air compressor for ZP 3 XL FC-400V/Vario

- Item no. 00148510

Consisting of:

- COMP M-250-V5 handy, 400 V, 3 Ph, 50 Hz
- Pressure switch-off for compressor
- Pressure control for machine
- Mount for compressor

You can find further accessories on the internet at [www.pft.net](http://www.pft.net) or from your PFT construction machinery dealer.

## Operation

### 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!



### 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 16: Dust protection

#### ⚠ WARNING



#### Danger of damage to health!

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

- Use suitable face protection.

#### NOTE



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

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

### 5.1.4 Position switch on the protective grille

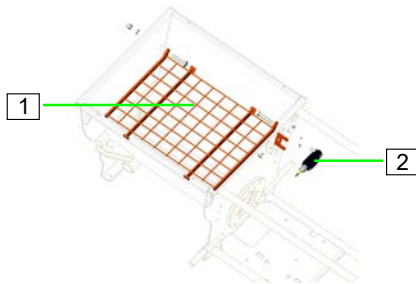


Figure 17: Position switch

#### NOTE



The protective grille (1) of the ZP 3 is equipped with a position switch (2), which deactivates the machine as soon as the protective grille (1) is opened.

1. If the protective grille (1) is opened while the machine is running, the machine switches off via the position switch (2).
2. The machine must then be restarted.

## Operation

### 5.1.5 Mortar pressure gauge



Figure 18: 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.

### 5.2 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 pump shaft



Figure 19: Grille cover

#### ⚠ WARNING



##### Rotating pump shaft!

Risk of injury when reaching into the material hopper.

- During machine preparation and operation, the grille cover must not be removed, and the end switch must not be manipulated.
- Never reach into the running machine.

### 5.3.2 Setting up the machine



Figure 20: Extending the telescoping tube supports

1. Install the machine on stable and even ground with the aid of the telescoping tube supports (1) and secure it against accidental movements.
  2. If necessary, place an underlay under the support foot (2) to ensure the machine cannot subside during operation.
- 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 21: Connecting the power supply

1. Only connect the machine to three-phase current with 400V.

#### **⚠ DANGER**



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

The electrical connection must be fused correctly:

- Only connect the machine to a power source with an approved RCD (residual current device) of type A (30 mA).

#### 5.3.3.1 Connecting the individual connectors

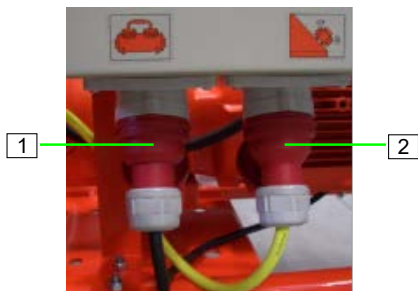


Figure 22: Power connections

#### **⚠ 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 power supply for air compressor (1) (accessories).
2. Connect power supply for vibrating unit (2) (accessories).

## Operation



### 5.3.4 Switching on the machine



Figure 23: Switching on the machine

#### NOTE



Fill the material hopper with approx. 3 litres of water so that the pump does not run dry during start-up.

1. Turn the main reversing switch (1) to position 'I'.
2. Switch the machine on by pressing the green pushbutton (2) control voltage 'ON'.
3. If the direction of rotation is incorrect, switch off the machine by pressing the red push button (3) control voltage 'OFF'.
4. Turn the main reversing switch (1) to position '0'.
5. Push the metal bracket (4) in the opposite direction.
6. Turn the main reversing switch (1) to position 'I'.
7. Switch the machine on by pressing the green pushbutton (2) control voltage 'ON'.
8. Run machine until water comes out of the mortar hose connection.
9. Switch off the machine by pressing the red pushbutton (3) control voltage 'OFF'.

#### NOTE



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

### 5.3.5 Drain residual water



Figure 24: Opening the cleaning nozzles

1. Remove the cover from the cleaning nozzle (1) and drain the remaining water from the material hopper.
2. Screw on the cover (1).

### 5.3.6 Mortar hoses

#### 5.3.6.1 Preparing the mortar hoses

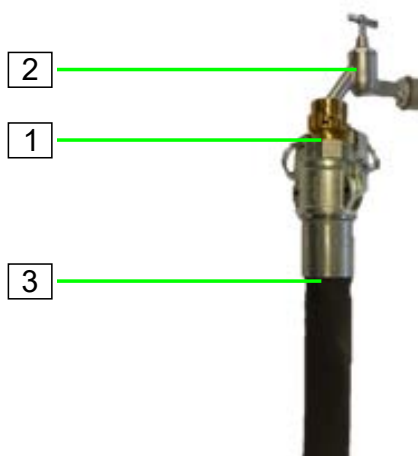


Figure 25: Preparing the mortar hoses

1. Connect the cleaner coupling (1) to the water tap (2).
2. Connect the mortar hose (3) to the cleaner coupling (1).
3. Open the water tap (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)!

#### 5.3.6.2 Connecting the mortar hose

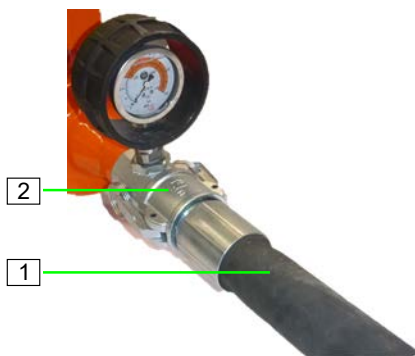


Figure 26: Connecting the mortar hose

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.

## Operation

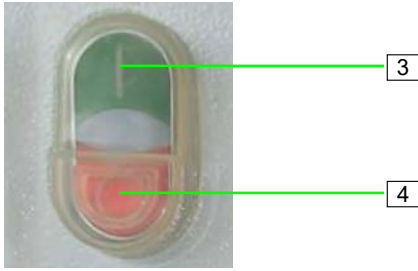


Figure 27: Switching on

4. Switch the machine on by pressing the green pushbutton (3) control voltage 'ON'.
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. Switch off the machine by pressing the red pushbutton (4) control voltage 'OFF'.

### NOTE



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

## 5.3.7 Compressed air supply

### 5.3.7.1 Connecting the spray gun

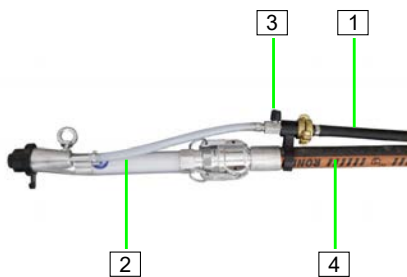


Figure 28: Spray gun

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).

### 5.3.7.2 Connecting the air hose

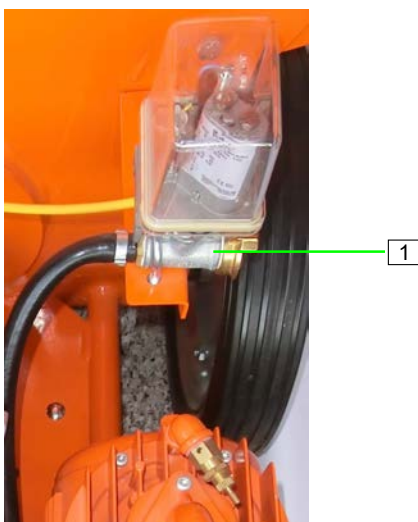


Figure 29: Connecting the air hose

1. Connect the air hose to the air manifold (1).

### ⚠ WARNING



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

### 5.3.7.3 Switching on the air compressor

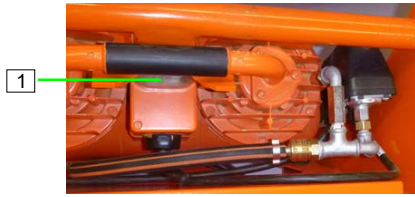


Figure 30: Switching on the air compressor

1. Switch on the air compressor using the black 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.

### 5.3.8 Feeding material to the machine



Figure 31: Loading the ZP 3 with material

1. Load the ZP 3 with the material using a continuous mixer, forced action mixer or truck mixer.

#### NOTE



Formation of tunnels:

Due to the material's physical properties, the material can partially adhere to the sides of the material hopper, resulting in the formation of tunnels. The mortar level in the material hopper should not be higher than absolutely necessary.

## 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.

In case of danger proceed as follows:

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



## Operation

After the rescue operations

### ⚠ 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

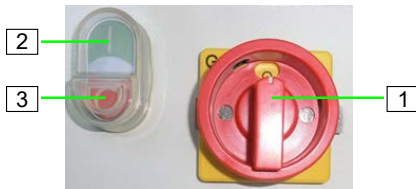


Figure 32: Switching on the machine

1. Turn the main reversing switch (1) to position 'I'.
2. Switch the machine on by pressing the green pushbutton (2) control voltage 'ON'.
3. Check consistency of mortar.
4. Switch off the machine by pressing the red pushbutton (3) control voltage 'OFF'.

### 5.5.2 Change motor speed



Figure 33: Change motor speed

1. The speed of the ZP 3 XL Vario item no. 00098125 can be changed from 70 to 260 rpm using the handwheel (1) on the motor.

### NOTE



Do not adjust the vario gearbox of the ZP 3 XL Vario when the machine is stationary; only make adjustments when the machine is running.

Furthermore, the machine should not be operated at the same speed constantly; change the speed occasionally otherwise the V-belt pulleys will run in too quickly.

## 5.6 Remote control



Figure 34: Dummy plug

### Operation without remote control

1. Insert dummy plug.
2. The machine must be switched on and off manually at the control box.
3. If the dummy plug has been pulled, the control circuit is interrupted.





Figure 35: Remote control

#### Operation with remote control

1. Remove dummy plug from control box.
2. Connect remote control.
3. The ZP 3 can be switched on and off via the remote control.



Figure 36: Remote control with speed controller

#### Connection of remote control with speed controller

1. Disconnect plug from the control box.
2. Plug in the remote control cable with switch and potentiometer for the speed control (1).  
Remote control cable with switch and potentiometer for the speed control – 25 m  
■ Item no. 00047489
3. The speed of the machine can be changed via the remote control cable.

## 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.



*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 30 bar is exceeded, the hose length must be shortened or the hose thickness increased.*

## Operation

### 5.7.1 Opening the air tap on the spray gun

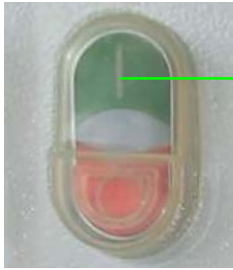


Figure 37: Switching on



Figure 38: Opening the air tap

1. Switch the machine one by pressing the green pushbutton (1) control voltage 'ON'.
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 tap (2) on the spray gun.
5. The machine starts automatically via the pressure switch-off and mortar emerges at the spray gun.



*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.*

### 5.8 Pump screed or masonry mortar

#### NOTE



When masonry mortar or screed is pumped, the machine is operated without the air compressor and spraying gun. The machine is then switched on and off via an optional remote control cable.

### 5.9 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 39: 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.

### 5.9.1 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.



Figure 40: Closing the air tap

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

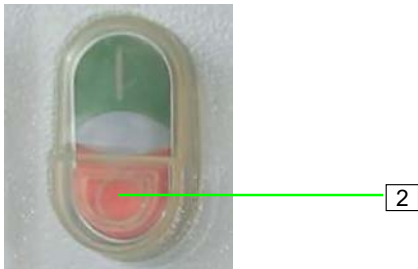


Figure 41: Switching off the machine

2. Switch off the machine by pressing the red pushbutton (2) control voltage 'OFF'.

### 5.10 Switching off the air compressor



Figure 42: Switching off the air compressor

1. Switch off the air compressor at the red 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.

## 5.11 Switching off the machine



1. Switch off the machine by pressing the red pushbutton (1) control voltage 'OFF'.
2. Turn the main reversing switch (2) to position '0'.

Figure 43: Switching off the machine

## 5.12 Action in case of power failure



Turn the main reversing switch to the '0' position

1. Close the air tap on spray gun.
2. Turn the main reversing switch to position '0'.
3. Switch off air compressor.
4. Have the power supply connection checked by an expert.

Figure 44: Turn the main reversing switch to the '0' position

### 5.12.1 Discharging mortar pressure

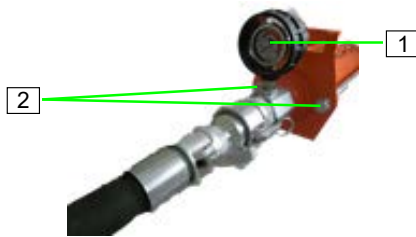


Figure 45: Check and relieve the mortar pressure

#### ⚠ 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.

### 5.12.2 Switching on the machine again 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.



Figure 46: Switching on the machine after a power failure

1. Close the air tap on spray gun.
2. Turn the main reversing switch (1) to position 'I'.
3. Switch on the air compressor using the black switch.
4. Switch the machine on by pressing the green pushbutton (2) control voltage 'ON'.
5. The machine starts again as soon as the air tap on the spray gun is also re-opened.

#### NOTE



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

## 5.13 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.

## 5.14 Ending work / cleaning the machine

### 5.14.1 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.

### 5.14.2 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.

### 5.14.3 Running the machine empty

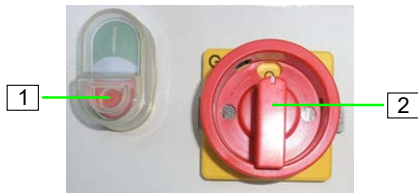


Figure 47: Running the machine empty

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

1. Run the material hopper empty except for a small amount of residue.
2. Switch off the machine by pressing the red pushbutton (1) control voltage 'OFF'
3. Turn the main reversing switch (2) to position '0'.
4. Switch off the air compressor at the red switch.
5. Open air tap on the spray gun.

#### WARNING



#### **Danger of injury from discharged mortar!**

Discharged mortar may lead to injuries to eyes and face.

- Beware of residual pressure.

### 5.14.4 Disconnecting and cleaning the mortar hose

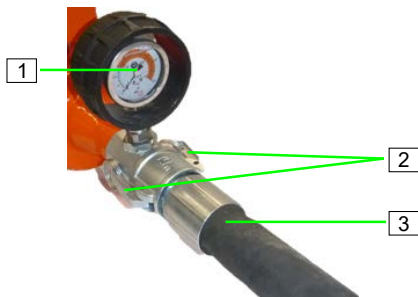


Figure 48: Disconnecting the water hose

1. Check the mortar pressure gauge (1) 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.

2. Release cam lever (2) and uncouple mortar hose (3) from the mortar pressure gauge.
3. De-couple the air hose from the spraying gun.

## Operation

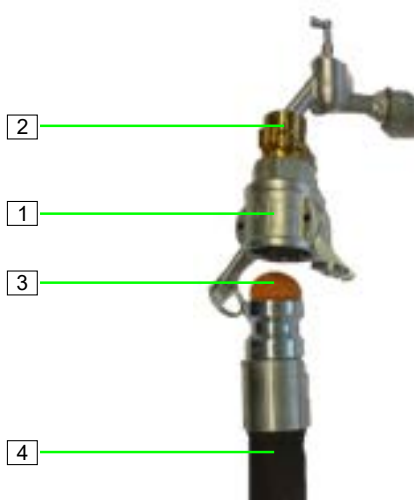


Figure 49: Cleaning the mortar hose

### Cleaning the mortar hose

#### NOTE



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

1. Connect the cleaner coupling (1) to the water tap (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 50: Cleaning the spray gun

4. Remove the fine plaster spraying nozzle (5) from the spraying gun.
5. Undo eye bolt (6) and pull air nozzle tube (7) out of the spray head.
6. Open the water tap until the sponge ball emerges at the end of the spraying gun.
7. Repeat this procedure several times in case of heavy soiling.
8. In case of different hose diameters, the mortar hoses have to be cleaned separately with the matching 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.

### 5.14.4.1 Clean the mortar hose with the pump

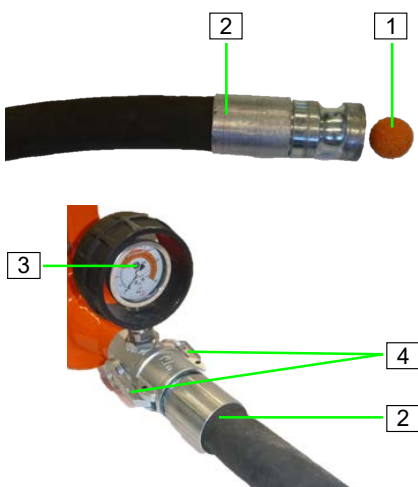


Figure 51: Cleaning the mortar hose

1. Press the water saturated sponge ball (1) into the mortar hose (2).
2. Connect mortar hose (2) to mortar pressure gauge (3) and close cam lever (4).

#### 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.

3. Fill the material hopper with clean water.

#### NOTE



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



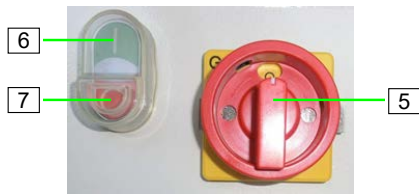


Figure 52: Switching on the machine

4. Turn the main reversing switch (5) to position 'I'.
5. Switch the machine on by pressing the green pushbutton (6) control voltage 'ON'.
6. Pump residual material out of the mortar hose with the sponge ball.
7. Collect the residual material in suitable container and dispose of as per regulations.
8. Run the machine until the sponge ball (1) comes out at the end of the mortar hose.
9. Switch off the machine by pressing the red pushbutton (7) control voltage 'OFF'.
10. Repeat this procedure several times in case of heavy soiling.

### 5.14.5 Cleaning the material hopper



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

### 5.14.6 Drain residual water



Figure 53: Opening the cleaning nozzles

1. Remove the cover from the cleaning nozzle (1) and let the residual material drain off.
2. Clean the protective grille and material hopper with a water jet.
3. Close the cover (1) again.
4. Fill material hopper with water and switch on the machine so that the pump is rinsed with water.
5. Remove the cover (1) again and drain the remaining water completely.
6. Then close the cover (1) again.

#### NOTE



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

### 5.14.7 Cleaning the pump

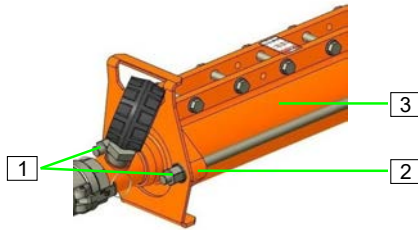


Figure 54: Remove the pump

1. Loosen the nuts (1) slightly, so that any residual pressure can escape completely.
2. Then loosen the nuts (1) completely.
3. Remove pressure flange (2) and clean.
4. Remove and clean the pump unit (3).
5. Mount the pump unit (3), refit the pressure flange (2) and tighten the nuts (1) again.

#### ⚠ CAUTION



#### Danger of crushing by the pump unit!

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

## 5.15 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.*

### 5.15.1 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

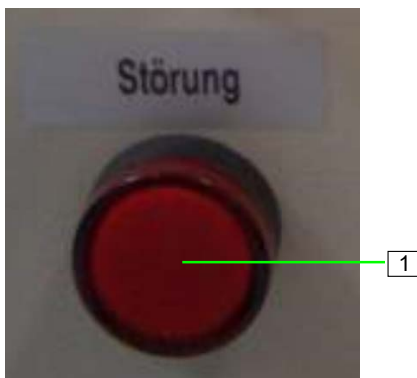
## 5.15.2 Faults

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.

## 5.15.3 Fault displays



The following installation indicates faults:

Pos.	Light signal	Description
1	Red control lamp	Lights up on motor protection switch fault. → Check the motor protection switch

Figure 55: Fault displays

## Operation



## 5.15.4 Table of faults

Fault	Possible cause	Troubleshooting	Rectification by
Machine does not start current	Power supply not in order	Repair power supply	Service technician
	Main switch/main reversing switch not activated	Activate main switch/main reversing switch	Operator
	RCD was triggered	Reset RCD	Service technician
	Motor protection switch triggered	Turn motor protection switch in control box to position	Service technician
	Contactor defective	Change contactor	Service technician
	Dummy plug missing	Insert the dummy plug	Operator
	Fuse defective	Replace fuse	Service technician
	Position switch on the protective grille	Close the protective grille, check the switch	Service technician
Machine does not start material	Too much dry material in the material hopper, possibly resulting in tunnel formation	Clean material hopper and restart machine	Operator
	Hardened material clogs up the pump unit (rotor/stator)	Disassemble, clean and re-install the pump	Operator
	Excessively dry material in pump part	Cleaning the material hopper	Operator
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	Switching on the air compressor	Operator
	Air pressure safety switch set incorrectly or defective	Set or replace air pressure safety switch	Service technician
Pump motor will not start	Pump motor defective	Replace the pump motor	Service technician
	Connection cable defective	Change connection cable	Service technician
	Rotor worn or defective	Replace rotor	Service technician
	Stator worn or clamped too loosely	Replace stator or re-tighten clamp	Service technician
	No original PFT spare parts	Use original PFT spare parts	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



Fault	Possible cause	Troubleshooting	Rectification by
	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'	Rotor worn or defective	Replace 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
	No original PFT spare parts	Use original PFT spare parts	Service technician
Red control lamp, fault lights up	Overload due to the pump getting blocked with dry material	Allow the machine to run backwards, otherwise remove pump and clean it	Operator

### 5.15.5 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.*

### 5.15.6 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.

#### 5.15.6.1 Let the pump run backwards



Figure 56: Reverse operation

1. Turn the main reversing switch (1) to position '0'.
2. Push the metal bracket (2) in the opposite direction.
3. Turn the main reversing switch (1) to position 'I'.
4. Switch the machine on by pressing the green pushbutton (3) control voltage 'ON'.
5. Allow the machine to run until the pressure at the mortar pressure gauge has dropped to '0 bar'.
6. Switch off the machine by pressing the red pushbutton (4) control voltage 'OFF'.
7. Turn the main reversing switch (1) to position '0'.

### 5.15.6.2 Blockage cannot be cleared

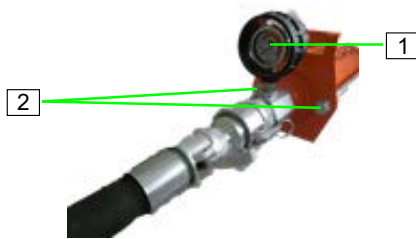


Figure 57: Check and relieve the mortar pressure

#### ⚠ 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 58: 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

### 5.15.6.3 Switching on the machine after removing a blockage

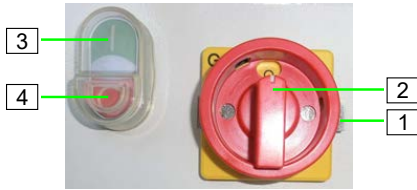


Figure 59: Switching on the machine again

1. Push the metal bracket (1) in the opposite direction.
2. Close the air tap on spray gun.
3. Turn the main reversing switch (2) to position 'I'.
4. Switch the machine on by pressing the green pushbutton (3) control voltage 'ON'.
5. Let the machine run for a short while without mortar hoses.
6. As soon as material emerges from the pressure flange, press the red pushbutton (4) control voltage 'OFF'.
7. Apply wallpaper paste to the cleaned mortar hoses and connect to the machine and spray gun.
8. Switch the machine on by pressing the green pushbutton (3) control voltage 'ON'.
9. The machine starts again as soon as the air tap on the spray gun is re-opened.





## 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 60: 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	Visual and functional inspection of all safety installations.	Operator
	Check all parts subject to wear.	Operator
	Check mortar hoses and couplings.	Operator
	Visual inspection of the electrical cables.	Operator
Monthly	Clean/replace filter of compressor.	Service technician
Yearly	Check screw connections.	Service technician
	Clean the filter of the frequency converter.	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.*

## Maintenance



### 6.4.2 Lubricating the sealing unit



1. Lubricate the sealing unit for material hopper at the grease nipple (1) weekly.
2. Lubricate sealing unit for gear unit at the grease nipple (2) monthly.

Figure 61: Sealing unit

### 6.4.3 Air filter compressor

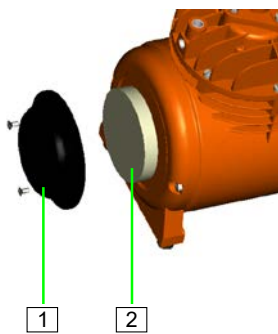
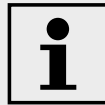


Figure 62: Filter of the compressor

Implementation by a service technician

1. Remove filter cover (1).
2. Take out the filter (2).
3. Blow through the filter from the inside to the outside or tap it.
4. Replace the filter in case of heavy contamination.
5. Insert the filter (2) with the solid side of the filter pointing inwards.
6. Re-attach the filter cover (1).



*Opening of the filter cover is at the bottom.*

### 6.4.4 Safety valve air compressor



Figure 63: Safety valve

1. Check, if the safety valve at the air compressor opens against a completely closed air circuit at 4.0 bar.

### 6.4.5 Clean the filter cartridge for the frequency converter



Figure 64: Protective cap for filter

Implementation by a service technician

Clean the filter insert of the frequency converter annually:

1. Remove all screws.
2. Remove the protective caps (1) for the exit filter.



Figure 65: Clean filter mat

3. Open the exit filter (2) at the blue cap (3).
4. Remove and clean the filter mat (4).
5. Insert the cleaned filter mat (4) and close the exit filter.
6. Screw on the protective cap (1).

### 6.4.6 Adjust clamping of pump

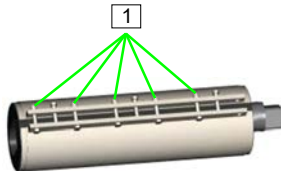


Figure 66: Adjust clamping of pump

1. If the pumping pressure decreases, the stator can be adjusted.
2. Evenly tighten the nuts (1).
3. Do not adjust the tightness of the pump clamping during operation.
4. Pump parts that do not achieve the required pumping pressure when clamped, have to be replaced.

When changing the pump, it has to be ensured that:

- All screws on the clamp are uniformly tightened.
- The tie rod screws on rubber stators are not overly tightened and the liner ends are resting fully and centred in the flanges.

#### 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

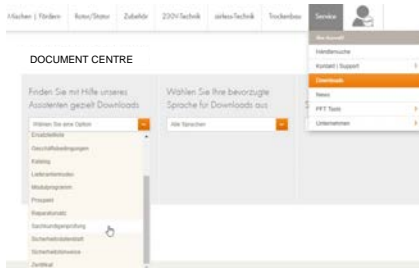
## 6.5 Actions after completed maintenance

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

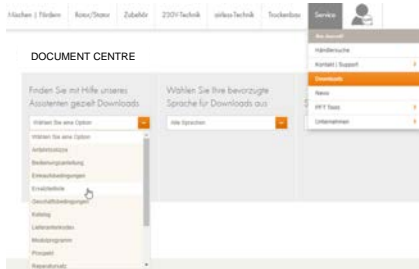
1. Check all previously loosened screw connections for secure fit.
2. Check if all previously removed safety systems and covers are properly reinstalled.
3. Ensure that all tools, materials and other equipment used have been removed from the work area.
4. Clean the work area and remove any spilled materials 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](http://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](http://www.pft.net).

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

### 6.7.1 Accessories



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



## 7 Disassembly

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

### 7.1 Safety

#### Personnel

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

#### Basic information

#### **WARNING**



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

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

Therefore:

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

#### Electrical system

#### **DANGER**



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

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

Therefore:

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

### 7.2 Disassembly

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

Prior to starting the disassembly:

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



## 8 Disposal

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

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

### NOTE



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

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



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

## Disposal





PFT - ALWAYS AT YOUR SITE



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