



Operating manual

PFT levelling pin

Safety, overview, operation and service



Item no. of the operating manual:

00609892

Floor screed levelling pin

Item no.: 20230100



Read the operating manual prior to starting any work!

About us



About us

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1 General information

1.1 Information regarding the operating manual

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

1.2 Information on the safety instructions

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

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

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

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

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

1.3 Keep the manual for future reference

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



1.4 Symbols

Warning signs

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

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

DANGER



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

WARNING



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

CAUTION



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

NOTE



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

Tips and suggestions



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

Special safety instructions

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

DANGER



Danger to life from electric current!

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

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

1.5 Limitation of liability

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

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

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

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

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

1.6 Copyright protection

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



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

All forms of reproduction

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



1.7 Spare parts

WARNING



Danger of injury due to wrong spare parts!

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

Therefore:

- Only use original spare parts from the manufacturer.

Buy spare parts from an authorized dealer.

1.8 Customer service

Our customer hotline is available for technical help and information.

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

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

1.9 Safety

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

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

1.9.1 Owner responsibility

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

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

Here, the following is especially applicable:

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

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

The following therefore applies:

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



1.9.2 Operating personnel

1.9.2.1 Requirements

WARNING



Risk of injury due to lack of qualification!

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

Therefore:

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

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

■ **Instructed person**

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

■ **Skilled personnel**

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

■ **Qualified electrician**

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

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

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

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

1.9.2.2 Unauthorised individuals

WARNING



Danger for unauthorised personnel!

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

Therefore:

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

1.9.3 Personal protective equipment

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

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

Wear in principle

In principle, for all kinds of work, wear:



Protective clothing

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

Do not wear any rings, chains and other jewellery.



Safety shoes

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



Protective goggles

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



Light breathing protection

To protect from harmful dust.



Hearing protection

To protect from hearing deficiencies.



Safety helmet

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



Protective gloves

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

Wear for special work

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



Face guard

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

1.9.4 Special dangers

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

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

General information

Electric current

DANGER



Danger to life from electric current!

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

Therefore:

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

Magnetic/electromagnetic fields

DANGER



Health hazard due to magnetic and electromagnetic fields!

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

Therefore:

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



Discharged material

DANGER



Risk of injury from discharged material!

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

Therefore:

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

Noise

WARNING



Hearing impairment due to noise!

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

Therefore:

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

Hazardous dusts

WARNING



Health hazard caused by dust!

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

Therefore:

- Always wear light breathing protection in the danger zone.

Moving parts

WARNING



Risk of injury due to moving components!

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

Therefore:

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

General information



Dirt and objects lying around

⚠ CAUTION



Danger of stumbling due to dirt and objects lying around!

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

Therefore:

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

1.9.5 Dealing with dangerous situations and accidents

Preventive measures

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

When accidents happen...

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

1.9.6 Signs

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

⚠ WARNING



Danger of injury due to illegible symbols!

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

Therefore:

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



1.9.7 Safety devices

WARNING



Danger to life due to non-functioning safety equipment!

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

Therefore:

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

1.10 Intended use

1.10.1 Intended use of levelling pin

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

The PFT levelling pin is used for levelling ceilings, floors, formwork, etc.

The levelling pin enables fast and completely accurate (0.5 mm) surface levelling and reference measurements without line of sight, both at extremely short and long working distances of 10 to 40 metres. (Extension up to 65 m possible!).

The PFT levelling pin can also be used to level over obstacles. The device also works when the measurement is to take place over a wall, for example. The measuring hose can be laid out higher than the device location.

The simple and reliable single-user operation of the levelling pin delivers time-saving and cost-efficient levelling.

CAUTION



Danger due to improper use!

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

Therefore:

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

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

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



2 Transport, packing and storage

2.1 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.

2.2 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.

2.3 Packaging

For packaging

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

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

Transport, packing and storage



Handling packaging materials

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

NOTE



Environmental damage due to incorrect disposal!

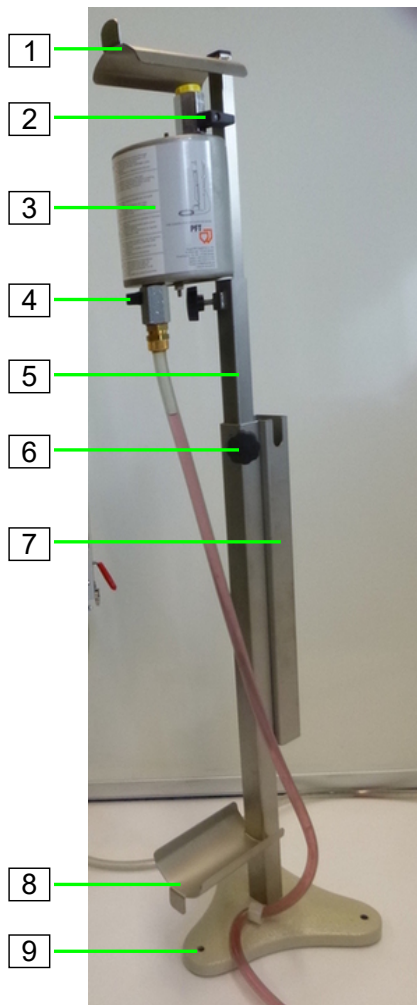
Packaging materials are valuable raw materials and in many cases they can be reused or reconditioned and recycled.

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



3 Description

3.1 Overview of levelling pin

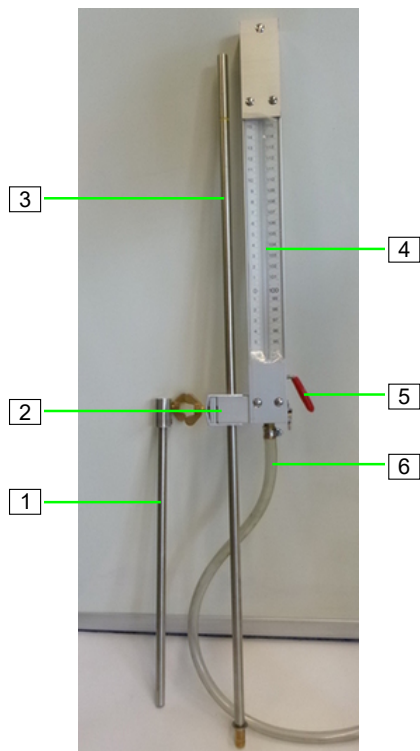


Basic device

- [1] Top hose holder
- [2] Top shut-off valve
- [3] Tank for measuring liquid
- [4] Bottom shut-off valve
- [5] Top part of basic device
- [6] Bottom locking screw
- [7] Protective tube for measuring scale
- [8] Bottom hose holder
- [9] Cast base

Figure 1: Floor screed levelling pin

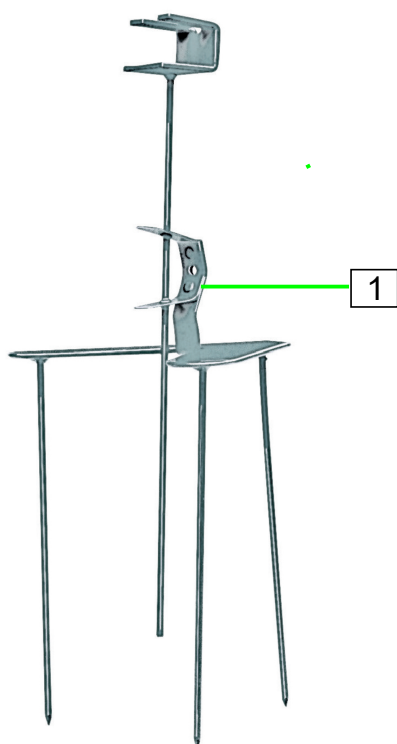
Description



Probe

- [1] Extension for carrier rod
- [2] Guide part for carrier rod
- [3] Carrier rod for levelling pin
- [4] Measuring scale
- [5] Self-closing valve, only the lever for the self-closing valve is visible
- [6] Measuring hose

Figure 2: Probe



Tripod for floor screed

- [1] Tripod for floor screed

Figure 3: Tripod



4 Operation

4.1 Safety

Personal protective equipment

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

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



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

Basic information

WARNING



Danger of injury due to incorrect operation!

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

Therefore:

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

4.1.1 Monitoring the machine

WARNING



Access by unauthorised persons!

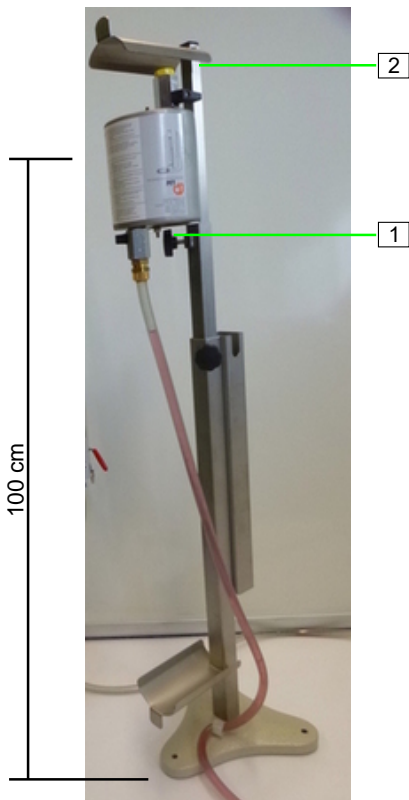
- The machine may only be operated when monitored.

4.2 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.

4.3 Setting up the levelling pin

4.3.1 Setting up basic device



1. Remove the levelling pin from the transport box.
2. Place the device at the levelling starting point.
3. Unwind the measuring hose and lay it out without kinks.
4. Loosen the top locking screw (1) on the basic device.
5. Pull out the top part of the basic device (2) to a height of about 100 cm (centre of the liquid tank).
6. Moderately tighten the locking screw (1) again.

Figure 4: Setting up levelling pin

4.3.2 Setting measuring scale

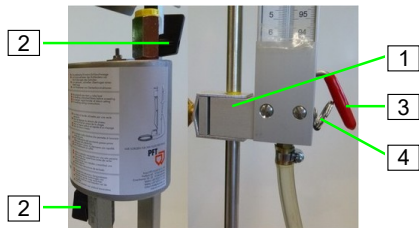


Figure 5: Opening shut-off valves

1. Remove the probe from the protective tube.
2. Move the measuring scale on the top part of the carrier rod to the upper edge of the guide part of the carrier rod with the yellow marking ring (1). Precisely 100 cm are then set from the lower edge of the carrier rod extension to 0 = 100 on the measuring scale.
3. Open the two shut-off valves (2) on the liquid tank of the basic device.
4. Open the self-closing valve (3) on the probe by pressing in the red lever and hold it with the ring (4).
5. Lift the probe, then place the probe rod vertically close to the basic device on the floor level to be measured, the liquid level will level off.
6. Read off the liquid level, the self-closing valve (3) must still be open.
7. Close the self-closing valve (3).
8. Once these preparations are complete, the levelling pin is ready for measuring.

NOTE



The measuring hose must not be moved or pressed while the measuring scale is being read, as this will cause the measuring column to change.

4.3.3 Adjustment check of the levelling pin

NOTE



Make sure an adjustment check is carried out several times a day when working with the levelling pin, because temperature differences can cause a change in the volume of the measuring liquid. It is equally important that the probe is vertical during the measuring process. Any deviation from the perpendicular in excess of 3° will cause erroneous measurements.

Operation

4.3.4 Transferring the reference level

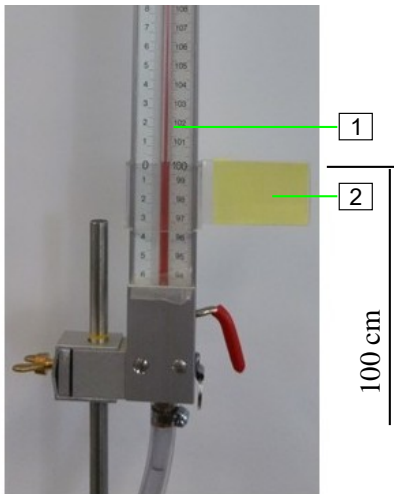


Figure 6: Marking square

When the PFT levelling pin is ready to measure, the liquid levels are always the same in the base tank on the basic device and in the measuring tube of the probe (principle of communicating tubes).

By raising or lowering the base tank, the liquid level is adjusted until the level in the measuring tubes in the probe is at 0 = 100 on the scale.

This height can be transferred anywhere - reference level.

If a reference level marker is specified, the scale line 0 = 100 probe is held on the specified height marker. The location of the basic device and the set height of the measuring liquid tank on it is always the starting point of every measurement and must remain fixed during every measurement cycle.

Reference levels can be transferred easily and reliably by means of a marking square (2) that can be attached to the housing (1).

4.3.5 Levelling the unfinished floor

1. Bring the base tank to approx. the same height by moving the base top part with the probe.
2. Open the shut-off valves of the base tank at the top and bottom.
3. Open self-closing valve.
4. Set the liquid column to a "round" number, preferably 0 = 100, by moving the top part of the basic device and make a note of this.
5. Insert the marking square at the height of the reference level on the measuring scale housing.

NOTE



Highest measured point of the unfinished floor is the lowest reading on the scale. Lowest measured point of the unfinished floor is the highest reading on the scale.

Unevenness:

The difference between the highest and lowest number (e.g. lowest measured point is 4 cm to highest measured point is 5 cm).



4.3.6 Levelling ceilings

1. Bring the basic device to the maximum extension height by pulling out the top part of the basic device and the intermediate stand tube so that the values can be read on the probe at eye level.
2. The carrier rod is extended up to the ceiling by attaching the plug-in stand, item no. 20230500.
3. Open the shut-off valves of the base tank at the top and bottom.
4. Bring the basic device to approx. the same height by moving the top part of the basic device with the probe.
5. Open the self-closing valve on the probe.
6. Set the liquid column to a "round" number, preferably 0 = 100, by moving the top part of the basic device and make a note of this.

In this way, ceiling soffits can be levelled in seconds by sampling with the plug-in stand. Irrespective of uneven flooring.

NOTE



Highest measured point of the ceiling is the lowest reading on the scale. Lowest measured point of the ceiling is the highest reading on the scale.

Unevenness:

The difference between the highest and the lowest number.

NOTE



The basic device must not be moved or adjusted in height during a measurement cycle.

4.3.7 Venting

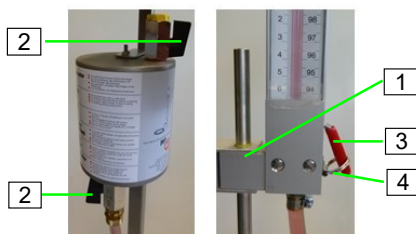
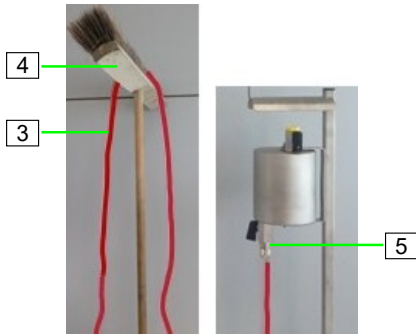


Figure 7: Opening shut-off valves

1. Open the shut-off valves (1) and the self-closing valve (2).
2. Bring the shut-off valves (1) and self-closing valve (2) to the same level.

Operation

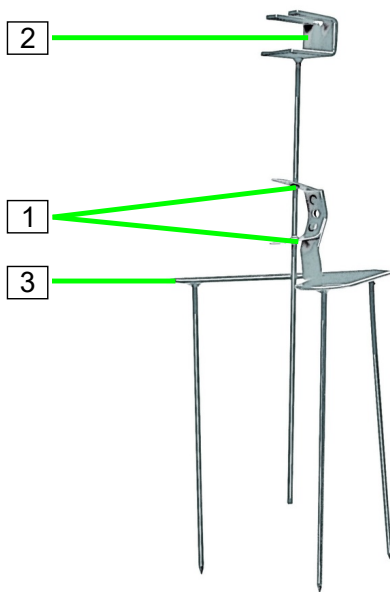


3. Pull the measuring hose (3) over a soft broom (4).
4. The broom (4) must be at a higher level than the base tank.
5. From the base tank (5), vent the hose to allow the liquid to flow from the base tank.
6. Make sure that there is always enough measuring liquid in the base tank.
7. After venting, close the shut-off valves (1) and the self-closing valve (2).

Figure 8: Venting

4.4 Setting up tripods

4.4.1 Tripod



The tripods are the auxiliary points that indicate the height up to which the Knauf levelling screed, for example, is placed. The tripods are set up with the levelling pin.

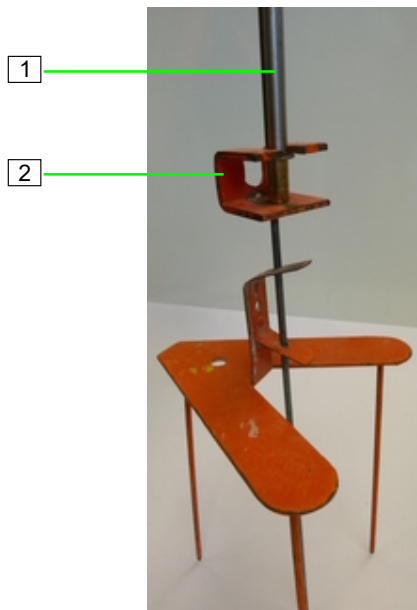
PFT tripod item no. 20230000

1. By pressing the holding clamp (1) together, push the probe holder (2) into the base frame for the tripod (3).
2. Distribute tripods in the casting surface.
3. 4-6 sqm floor space = one tripod.

Figure 9: Tripod

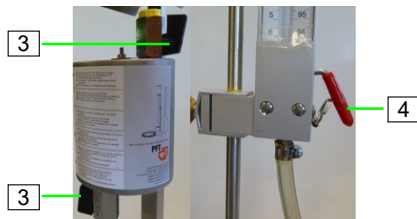


4.4.2 Adjusting the tripod



1. Push the carrier rod with the collar disc (1) of the probe into the probe holder (2) of the tripod.

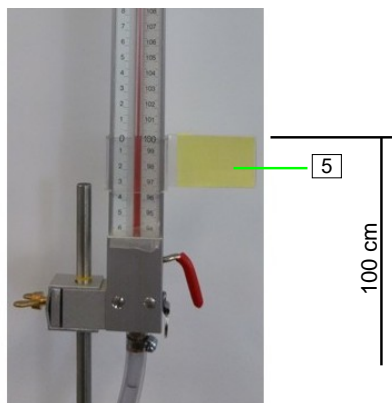
Figure 10: Adjusting the tripod



Adjust the material thickness between the casting surface and the measuring mandrel:

2. Open the shut-off valves (3) of the base tank at the top and bottom.
3. Open self-closing valve (4).

Figure 11: Shut-off valves



4. Set liquid column to a "round" number and make a note of it.
5. Insert the marking square (5) at the height of the reference level on the measuring scale housing.
6. Level the next tripod by moving the measuring mandrel on the holding clamp of the measuring stand.
7. Repeat the process until the last tripod has been adjusted.

Figure 12: Marking square

4.5 End of work

1. Slide in the top part of the carrier rod on the carrier rod guide part, remove the carrier rod extension and place it loose in the case.
2. Loosen both locking screws on the basic device and push the basic device together.
3. Slightly tighten both locking screws on the basic device again, double up the hose and wrap it around the two holders.
4. Place the entire device in the transport case with the holders still down.
5. Make sure that the hose is not kinked or squeezed at any point.

NOTE



Make sure the two shut-off valves on the basic device are closed!

NOTE



In certain probe positions, it is not possible to exclude the measuring liquid leaking from the top of the probe, even when the self-closing valve is closed.

4.5.1 Insert the measuring scale into the protective tube

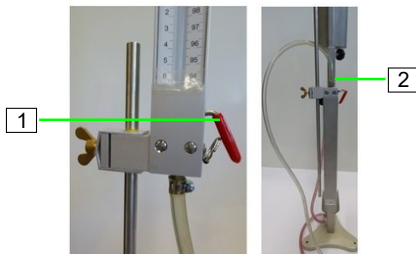


Figure 13: Interruptions to work

1. Raise the probe while simultaneously actuating the self-closing valve lever (1).
2. The liquid column at the bottom of the measuring tube must just be visible (at about 5 = 95).
3. Release the self-closing valve.
4. The two shut-off valves close.
5. Turn the scale part upside down and insert it into the protective tube (2) on the basic device.



4.6 Table of faults

Fault	Possible cause	Troubleshooting
Liquid column does not settle after pressing the self-closing valve	Tank and measuring scale not at the same height	Mutual adjustment
	Air bubbles in the measuring hose	Bleed the measuring hose
	Insufficient measuring liquid in the tank	Top up measuring liquid
	Filling or shut-off valve closed	Open filling or shut-off valve
	Hole in the expansion tank blocked	Clear the rear hole on the expansion tank
Levelling pin does not work after an extended period at a standstill	Valve hose stuck in the measuring scale	Replace valve hose
	Measuring liquid has separated	Replace measuring liquid
Measurement results differ from previously determined measured values	Air bubbles in the hose	Bleed the levelling pin
	Measuring liquid has expanded due to temperature fluctuations	Readjust the device

Maintenance



5 Maintenance

5.1 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.

5.2 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.



5.3 Maintenance work

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

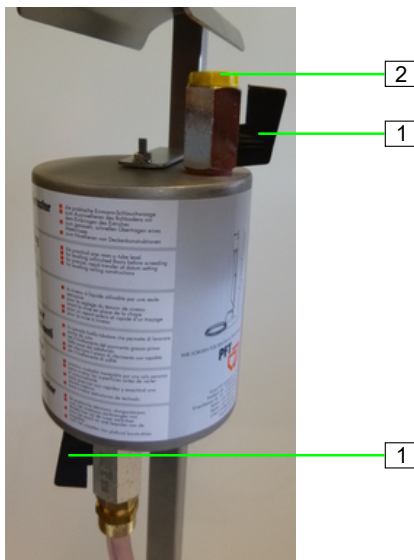
Should you have any queries regarding maintenance works and intervals contact the manufacturer, see back page for service address.

5.3.1 Implementation by a service technician



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

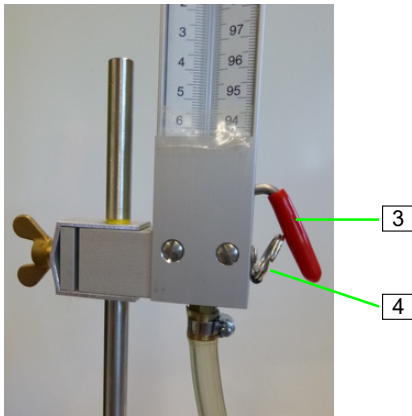
5.3.2 Top up and bleed the measuring liquid



1. Set up the device.
2. Open shut-off valves (1).
3. Remove the dust cap (2) on the top shut-off valve.
4. Hold the measuring scale next to the basic device.

Figure 14: Opening shut-off valves

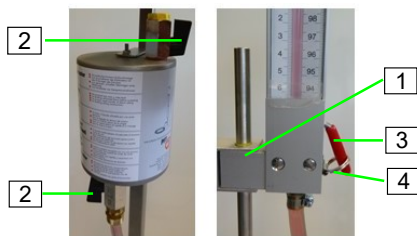
Maintenance



5. Press self-closing valve (3) and hold open with ring (4).
6. Add measuring liquid through the top valve until the liquid column in the measuring scale has risen again.
7. Re-attach the dust cap (2).

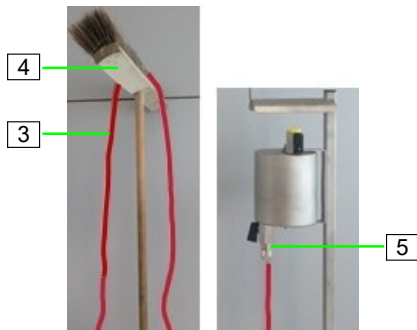
Figure 15: Top up measuring liquid

5.3.3 Venting



1. Open the shut-off valves (1) and the self-closing valve (2).
2. Bring the shut-off valves (1) and self-closing valve (2) to the same level.

Figure 16: Opening shut-off valves



3. Pull the measuring hose (3) over a soft broom (4).
4. The broom (4) must be at a higher level than the base tank.
5. From the base tank (5), vent the hose to allow the liquid to flow from the base tank.
6. Make sure that there is always enough measuring liquid in the base tank.
7. After venting, close the shut-off valves (1) and the self-closing valve (2).

Figure 17: Venting

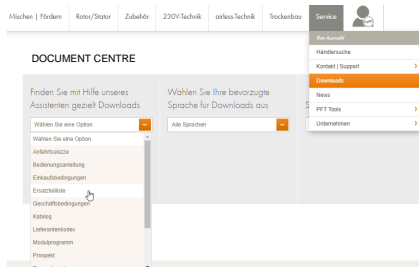


5.4 Actions after completed maintenance

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

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

5.5 Spare parts lists



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

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

5.5.1 Accessories



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

Disassembly



6 Disassembly

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

6.1 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.



6.2 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.

7 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





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