



Basic safety instructions

PFT MIXING PUMPS/FEED PUMPS

Part 1 Safety/drinking water protection

Article number of the operating manual
Basic safety instructions

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Mixing pumps/feed pumps



Read the operating manual prior to starting any work!

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1 General information

1.1 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.

1.2 Keep the manual for future reference

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

1.3 Division

The machine documentation is comprised of two booklets:

- Part 1 Safety instructions
- Part 2: Operating manual

For safe operation of the device both parts have to be read and observed. Together they form one operating manual.

General information



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.

General information



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.



2 Drinking water protection

2.1 European directives

The Drinking Water Ordinance is the implementation into national law of the European "Council Directive of 3 November 1998 on the quality of water intended for human consumption (Directive 98/83/EC)". In principle, the Drinking Water Ordinance is a harmonised European regulation. It exhibits a number of deviations, which represent a tightening of German law in comparison to European law. These deviations are both necessary and permissible, in order to establish proven regulations that are important for the protection of citizens' health.

One significant problem area exists in temporary drinking water connections through standpipes to hydrants.

Care must be taken to reliably separate drinking water from non-potable water wherever construction measures are taking place.

It is essential to implement adequate protection of drinking water against backpressure, backflow and the back-siphonage of non-potable water. Honeywell system separators provide this protection, which is extremely important for keeping drinking water clean.



Standards for drinking water protection:

The protection of drinking water against contamination through backflow will remain regulated by two parallel standards (DIN 1988-4 and DIN EN 1717) until a set of accordant regulations has been fully developed at European level. It is advisable to align drinking water protection with the European standard DIN EN 1717 because this will be the only valid standard in the future, and it also sets higher requirements for the protection of drinking water. Furthermore, this standard reflects the latest engineering practice.

2.2 Action requirement for drinking water protection

Deficiencies in standpipe protection:

- Insufficient number of take-off points
- Cross-connections without backflow protection
- Use of hose material that does not comply with the generally recognised rules of technology
- Placing couplings on the ground

It is almost impossible to fully eliminate such hazard points.

A system separator (such as the Honeywell BA295STN) reliably keeps drinking water clean.

2.3 Example of a BA295STN system separator from Honeywell

Approvals	DVGW-tested
Medium	Water
Liquid category (EN1717)	Category 4
Valve body material	Dezincification-resistant brass

Additional description

- Rotating connection at the top
- Optimum protection for the drinking water supply network
- Integrated dirt trap on the inlet side
- Inlet-side backflow preventer and drain valve integrated in a single cartridge insert
- Low maintenance because the valve insert is fully replaceable
- No dead space means no stagnant water
- Compact design
- Unimpeded access to internal parts
- Low pressure drop and high flow rate
- Triple safety: two backflow preventers and a drain valve divide the system separator into three chambers
- Quick and easy installation
- Each standpipe take-off point can be individually safeguarded.
- Insulation shell protects against tampering
- Easy maintenance of the backflow preventer thanks to upstream shut-off valve



Proposed installation of the backflow preventer



*The system separator is not available from Knauf PFT.
Please contact your plumbing dealer.*

Figure 1: e.g. BA295STN system separator from Honeywell



3 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.

3.1 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.

3.2 Operating personnel

3.2.1 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.



3.2.2 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.

3.2.3 Inspection

The machine must be inspected by a specialist once a year. This inspection must be documented (see the attachment "Checklist for annual inspection by specialists") and contain the following points:

- Visual inspection for visible defects
- Functional test
- Check of the safety devices
- Insulation measurement of the control cabinet

The inspection by specialists per BGR 183 (rules and regulations of the employers' liability insurance association) must be carried out once a year. A test badge will be attached to the machine and control cabinet as proof of this assessment. The test report has to be shown on demand.

Date of inspection	Inspector	Signature	Machine number
Part	Inspection criterion	OK	Rework / replace
Material hopper	Check all welding seams!		
Material hopper	Destruction by corrosion or deformation?		
Mixing zone	Check pipe walls for wear! Minimum wall thickness 1.5 mm		
Control box	Control cabinet state		

Table 1: Example of a checklist for annual inspection by specialists

3.3 Intended use

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

NOTE



The device is intended exclusively for use with factory premixed materials.

⚠ WARNING



Danger due to improper use!

Any case of use beyond the specified purpose of use and/or any other sort 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.
- In particular, do not use the device for the following purposes. They are not considered as intended:
 - Do not use for food or pharmaceutical industry.
 - Do not climb on the machine.

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.

3.4 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.

3.5 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.

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.

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.

3.6 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 devices such as emergency off buttons, EMERGENCY STOP push-buttons, ripcords, etc.



For more information on the position of the safety devices, refer to the chapter "Layout and function".



The following safety devices are installed:



Figure 2: Main switch

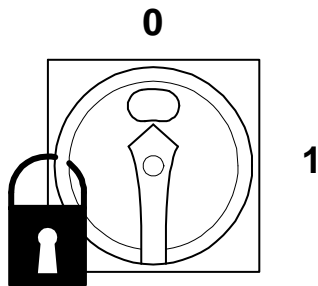


Figure 3: Locking the main switch

Main switch

The main switch is also used as an emergency stop switch. Turning the main switch to the “0” position switches off the energy supply immediately and leads to an emergency stop.

⚠ WARNING



Danger of death due to undesired restart!

Undesired restart can lead to severe injuries or even death!

Therefore:

- Before switching the system back on, ensure that the cause of the emergency stop has been solved and the safety devices are attached and fully functional.

Locking the main switch

When in the “0” position, the main switch can be additionally secured against being switched back on using a padlock.

⚠ DANGER



Danger of death due to improper system activation!

If the main switch is secured with a padlock, then personnel may be located inside the danger zone. These individuals could be seriously injured if the machine is switched back on.

Therefore:

- Never remove the lock on one's own authority.
- Before removing the lock, ensure that no personnel are located inside the danger zone.

3.7 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.

Safety



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.

3.8 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.

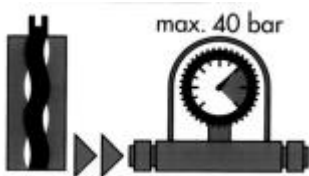
Therefore:

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



Running machine

Do not reach into the machine while it is running.



Maximum pressure

Do not exceed the maximum pressure.



Hand injury

Keep hands away from areas displaying this warning symbol.

There is a risk of hands becoming crushed, drawn in or otherwise injured.



Automatic startup

Machine starts up automatically.



Electrical voltage

Only electricians may work in areas with this designation.

Unauthorised individuals may not enter such designated work areas or open cabinets with this designation.



Moving machine parts

Maintenance work on opened machines may only be performed by specially trained technicians. There is a risk of injury while the machine is moving.



Compressed air

Warns about the presence of compressed air.



Danger point

Warns about a danger point in work areas.



Protective gloves

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



Observe the operating manual

Only use the designated object after reading the operating manual.



Face guard

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



Safety devices

Use safety devices.

Safety



Rotating parts

Do not reach into rotating parts.



No maintenance work

Do not perform any maintenance while the machine is running.



Touching prohibited

Touching containers or parts may destroy them.



Safety





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