

# Safety regulations

Always keep in mind



## Safety comes first!

The safety equipment attached to the machine by the manufacture merely provides the basis for protection against accidents. The key responsibility for an accident-free operation lies with the entrepreneur who is using the machine and additionally with the persons authorised by the entrepreneur to perform the operation, maintenance and repair or other work on the machine.

### The entrepreneur must ensure that

- The authorised persons are given instructions on their activities and regarding the safety regulations.
- The safety regulations and operating instructions are observed.
- The safety regulations and operating instructions are displayed for viewing at designated places.

Always read and observe the following safety regulations!

For the sake of clearness related items have been combined to form blocks. Always pay particular attention to the associated block when carrying out the respective work!

However, all of the other blocks still apply **at all times!**

## Generally valid safety regulations

- Unloading and transportation of the machine to the place of installation is only to be carried out by respectively authorised and skilled personnel.
- The machine is only to be operated by persons who have been given appropriate instructions, who are physically and mentally suitable and can be relied on to carry out their work in a responsible manner.
- Persons under the influence of alcohol, medication or such are not to operate the machine or carry out maintenance and repair work.
- The machine is designed to be operated by specially qualified persons. Other persons must therefore keep away at an appropriate distance.
- The person operating the machine must check the function of the safety equipment prior to commencing the operation and check the machine for conspicuous shortcomings.
- The person operation the machine must be familiar with the function of the EMERGENCY-STOP button and **check this regularly**.
- The person operating the machine must immediately inform the responsible superior officer and also the person replacing him at the end of the shift **in writing** with regard to any shortcomings on the machine, especially safety-relevant shortcomings.
- In the event of shortcomings which endanger the operational safety, the operation of the machine must be stopped through the superior authorised to give instructions.
- If several persons are working on the machine in the event of a repair job or other jobs, **all** of these persons must be warned prior to **every** switching on of the machine.
- **The machine is only to be used for the designed purpose or for the purpose contractually agreed with KRONES AG.**  
**In particular, the products delivered in compliance with the contract are only to be used for the production of brewed beverages / foods. A use other than the intended use is not permitted. The raw and process materials described in the documentation, such as lubricant oils and greases are to be used.**
- Technical alterations which have an impact on the function or safety of the machine are only to be carried out by *KRONES AG personnel* or with specific approval from *KRONES AG*.  
*KRONES AG* shall otherwise not accept any liability for the alterations or for the subsequent damage caused by these alterations.

- Do not under any circumstances operate or adjust any operating controls, checking equipment etc., if you are not authorised to do so or are not familiar with the function.
- Protection and safety equipment are never to be put out of action during normal production operation of the machine.
- It is forbidden to stand inside the closed safety equipment!
- A manual operation is possible in order to be able to inspect the machine. The person operating the machine must make sure **prior** to this manual operation that there are no other persons at the machine.
- If a disconnection of safety equipment cannot be avoided for setting up, maintenance and repair work, this is only to be carried out by specially authorised persons. These persons must then make sure that injuries to persons and damage to the machine do not occur.



Always wear the appropriate personal safety equipment – especially during conversion work, during cleaning, during maintenance and repair work. Clothing should be close-fitting and resistant to cleaning agents.



Depending on the type of work to be carried out you must wear safety goggles, ear protection, helmet, safety shoes, gloves etc..

Never wear jewellery – rings, chains etc. – which could get caught in machine parts. Protect long hair in a hairnet.

**- During repair work, care and maintenance:**



Secure main switch against being switched on again.

Depress Emergency-Stop button to ensure that the machine cannot be unintentionally switched on. If the machine has to be moved during this work, switch the power supply of the machine on just for the time that is absolutely necessary. Pay particular attention when doing so that no person or the machine are endangered when switching the machine on.



Conduits (pipes, etc.) are only to be crossed over at secured crossovers or other provided passageways.



Pipes for steam and hot water supply are heated to temperatures of up to 160 ° centigrade. Do not touch non-insulated pipes or parts of vessels without appropriate hand protection.

- Always observe the accident prevention regulations of the respective statutory insurance institute of the industry.

## Prior to startup and during production

- Only use satisfactory packing material (e.g. hop cartons on the infeed equipment, hop extract vessel etc.)
- Prior to every start up of the machine make sure that
  - all components (parts) have been correctly installed and fastened.
  - there are no loose parts (cleaning cloths, tool etc.) lying in the machine.
- Make sure prior to each time you switch on the machine that there is no one standing in the hazard area of the machine.
- Especially in manual operation the operating personnel must make sure that there are no other persons working on the machine. **In concealed areas of the plant always position additional persons to ensure that the aforementioned requirement is met.**
- Do not handle with tools, cleaning agents and such at the machine when it is running.



**Additional warning sign**

Do not reach into the machine when it is running and keep away from driven machine components. This applies especially to gearbox lanterns and vessels with agitators.

- Do not let the machine run unattended.
- Do not operate the machine with defective instruments, signal lamps or control units.



Keep away from the machine if it has been stopped by the automatic load regulation. The machine starts again automatically once the stop cause (cause of error) has been removed.

- Pay attention during the operation of the machine to unusual noises. Find out the cause of any such noises and have the damage removed.

## During care and maintenance work



Do not clean any electrical parts with water or other liquid media.



Attention: hazardous substances – safety data sheets.

Handle aggressive cleaning agents, acids and caustics etc. with care. Always observe the specifications on use given by the cleaning agent manufacturer. Wear appropriate protective clothing (goggles, gloves etc.) when using such cleaning agents.



Make sure that all grips, steps and platforms are free from oils, grease and other substances which could lead to slipping.

- Pay attention to damaged operating elements e.g. broken clamping levers, switches, buttons etc. and have these replaced.

## During repair work



- If a machine is defective, hang a warning sign on the closed repair switch / motor protection switch and additionally on the control/power cabinet.

- All repair work must be carried out under the instructions of an authorised, responsible person.



- As long as the machine does not have run for the purpose of maintenance and repair work, switch off the main switch and secure against unauthorized switching on again using up to 3 different types of padlock.

- Repair work on the machine is only to be carried out by appropriately trained skilled personnel. This personnel must carry out the work with the required prudence in order to avoid injury to persons and damage to the machine.



- Prior to work on the electrical system always switch this dead. The following safety regulations must be observed to provide isolation from the power supply.

- - Isolate.
- - Secure against switching back on again.
- - Verify isolation from the supply.  
(only use satisfactory and suitable equipment.)
- - Connection to earth and short circuiting.  
(only use satisfactory equipment.)
- - Cover or fence off adjacent parts under load.

- Only carry out repair work on pneumatic and hydraulic parts when these are in pressure-free condition.

- During the maintenance and repair work unauthorised persons must be kept away from the machine.

- If during the repair job or other work there are several persons working on the machine, **all** of these persons must be warned prior to **every** switching on of the machine.

- After repair work the machine is only to be started up when the responsible person gives approval for the operation.

Prior to giving approval the responsible person must make sure that

- the work has been definitely completed.
- the entire machine is back in safe operating condition, incl. the safety equipment
- all persons involved in the work have left the hazardous area.

- Please observe that:

*KRONES AG* shall not accept any liability for repair work and possible consequential damage caused by the removal, re-assembly and commissioning if the work is carried out by the client or authorised representative and not by *KRONES AG personnel*!

### **Other valid regulations:**

- Observe the valid regulations which apply to the setting up and operation of technical plants and systems.

These particularly include:

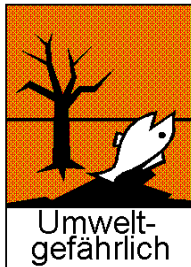
- Ordinances which

- regulate the storage, use and disposal of substances that are hazardous to health and to the environment
- regulate the storage, use and disposal of service products and consumables.
- Guidelines on the operation and for the repair of electrical installations.
- Specific regulations for your operations.

- In this connection always observe when operating *Steinecker* machines

- that during CIP operation a maximum caustic concentration of 5% or an acid concentration of 0.5% is not exceeded in order to protect the environment.
- that in the case of particularly highly effective media a lower concentration can be expedient.
- that acids and caustics are disposed of in the correct manner in compliance with the legal regulations and are not conducted into the sewerage system without being neutralised.
- that replaced parts (spare parts) and waste from repair, care and maintenance work are inspected for hazardous waste and that the respective parts are disposed of in an appropriate manner.
- Please observe in this connection that vessels and tanks for elevated temperatures can only be operated with appropriate cooling rates or with guaranteed pressure compensation to prevent damage occurring to the vessel through a developing vacuum.

Pay particular attention to:



Hazardous to the environment

- Oils and greases as well as their packaging (e.g. sprays, perma lubricators) etc.
- Cleaning agents, solvents and coolants
- Batteries, picture tubes, fluorescent tubes etc.
- plastics
- radioactive tablets for control equipment such as feed control and residual caustic detection.

**(Note:** This equipment is marked with the “radioactive” symbol.)

## **Special notes on the operation of vessel covers (manholes) and work on vessels as well as the handling of pressure equipment**

The installation of covers (manholes) in the vessels is only to be carried out by appropriately trained personnel

Pressure covers inspected by TÜV (Technical Inspectorate) are only to be installed by approved specialist firms with certified welders.

The container seals (manholes) must not be opened during normal operation of the containers/system.

The opening of vessel covers is only to be carried out when the vessels are not under pressure.

The responsible system manager must be informed before opening a container seal. The system manager will ensure that the system is in a safe mode.



The operation of the machine/plant leads to the development of high temperatures (up to 110° centigrade) at the bare parts of the cover. Only open hot covers using appropriate safety equipment.



When walking on or entering the vessel it must first be ensured that the corresponding key-operated switch has been actuated. Remove the key and keep in a safe place during the work. A sign must be affixed in the control station indicating that persons are inside the vessel.

Additionally, when entering vessels the covers must either be secured by a person or mechanically on “close”.

It is only permitted to stay inside vessels with the corresponding personal protection equipment.

It is only permitted to access the vessels with approved ladders or scaffolding. Pay attention to non-slip shoes as the auxiliary steps inside the vessels may be wet/damp. If there are no auxiliary steps inside the vessel, then appropriate measures must be taken to provide access by means of ladders or scaffolding. In this respect the possible rescue of persons involved in an accident, out of restricted spaces must always be accounted for.

For electrical work inside vessels the corresponding accident prevention regulations must be observed (work in restricted spaces).

After carrying out work in vessels always make sure that there are no foreign objects left in the vessel.

Prior to closing the cover make sure that the gaskets are correctly seated. It is also necessary to clean the gasket and the sealing surface.  
It must always be ensured that there are no persons inside the vessel.  
Carefully close the cover without applying force.

Prior to tightening the bolts or the eye bolts always make sure that the cover is aligned centrally. Additionally make sure that the clamping elements engage or rest in exactly the right position. With covers which have eye bolts make sure that these are tightened uniformly.

Prior to start up check again that there are no persons inside the vessels.

Defective pressure dome covers as well as their accessories must be replaced by authorised and appropriately trained personnel immediately.

After closing the container openings and checking that the system is in a safe mode, the system manager must be notified that system operation can recommence.

### **Pressure equipment:**

Prior to installation and commissioning make sure to observe the valid national guidelines and regulations for pressure equipment.

With pressure equipment that is subject to inspection the user must inform the responsible authorities in due time on the installation and commissioning.

The documentation on the pressure equipment must be kept in a safe place up until the time the equipment is disposed of or sold.

Set up and handle pressure equipment in such a way that the operating safety is always guaranteed. Additional loads such as nozzle loads, loads on supporting elements are not to be exceeded. Attachments and nozzles of the pressure equipment are not to be used for taking up loads for other components.

Supply pipes must be cleaned prior to connecting to the pressure equipment. The supply pipes must be able to withstand the media and also be able to supply this media to the pressure equipment without deposits or contamination.

The transport and installation are only to be carried out with the appropriate load lifting devices at the provided load bearing points.

Commissioning is not permitted as long as the correct operation cannot be guaranteed.

The operating data specified on the type plate are not to be fallen short of or exceeded. The operation of the pressure equipment is only permitted with the specified media.

With regard to the recurring inspections, the nationally valid regulations in the country of installation are to be observed: The following recommendations are given as guide values:

- 5 years for the external and internal visual inspection (sight check)
- 10 years for the recurring pressure inspection
- The intervals are to be coordinated with the designated, responsible bodies and documented.

Stress from vibration that may develop through incorrect use e.g. via attachments, valves etc. must always be ruled out. Always pay attention to this when equipping the pressure equipment.

Safety-relevant accessories provided by the user must be selected with reference to the parameters specified on the type plate and must meet the national regulations and standards.

There is principally to be no welding work or other forms of heat treatment carried out on pressure bearing parts of the pressure equipment, or other activities which have an impact on the safety of the pressure equipment.

Conversion work on peripheral equipment carried out by the user may impair the operational safety and therefore this work necessitates additional, safety relevant accessories.

Any form of damage occurring necessitates the immediate disconnection of the pressure equipment and assessment through an expert.

Information on all repair work or alterations to the pressure equipment must be passed on to the responsible, national inspection authorities and to KRONES AG in writing.

All work on the pressure equipment must be carried out in pressure-free condition and the equipment must be secured against starting up again. Please observe the general safety instructions on this point.

Every time work is carried out on the pressure equipment an inspection certificate must be issued and signed by the user. All safety-relevant aspects must be listed in this inspection certificate. The respective measures derived from the certificate must be introduced and monitored. All supplied and discharged power and media must be taken into consideration. Always pay attention to any possible heating up and/or fire hazard caused by remote transmission.

Following a repair or maintenance job the user must always prepare a written record on the satisfactory condition of the pressure equipment prior to commissioning. In particular cases, the responsible, named authority must also be involved.

The user must always rule out any hazards to third parties. Access to the plant is only to be granted by the user to authorized persons. Appropriate signs are to be provided by the user.