ENG
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INSTRUCTIONS

MOBILE UNIT FOR MAINTAINING AND CLEANING YOUR COOLING LUBRICANT

EASY TO USE
HIGHLY EFFECTIVE CARE
MOBILE AND FLEXIBLE APPLICATION
REDUCES OPERATING COSTS

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Instructions Clean-Tower

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Thank you very much!

We would like to thank you for your trust in our products. We are a manufacturer of mixing, care, cleaning and recycling technology for water-soluble fluids. Our products are manufactured according to high quality standards (DIN ISO 9001) and are sold by us and well-respected coolant and system manufacturers.

Please read these operating instructions through carefully before commissioning the device!

Warranty

The warranty period lasts 12 months. The warranty is void in the event of improper operation, using for purposes other than those intended or if system parts are dismantled.

Technical data

Model	Clean-Tower 150
Output: Emulsions (l/h)	150 – 300
Working temperature max. (C°)	50
Working range pH-value	6 – 11
Return hose height max. (m)	0,7
Length of supply & return hoses (m)	3
Processing tank (liters / material)	60 / V2A
Waste tank (liters / material)	60 / V2A
Power (V / Hz / kW)	230 / 50 / 0,9
Power consumption (kWh)	0,15
Electrical cable length (m)	5
Size (L x B x H, mm)	575 x 500 x 1300
Weight (kg)	68

Scope of delivery

Remove all packaging material and check whether all accessory parts are present.

Art. No.	Quantity in pcs	Designation
1501000	1	Clean-Tower 150

Serienausstattung:
1x Clean-Tower incl. hose system
1x Floating vacuum AS 100
1x Instruction Clean-Tower 150

Safety information

This device was developed and manufactured in agreement with international safety standards.
As with all electric devices, however, you must exercise due caution, to guarantee optimum function and safety. Please read the following notes and the operating instructions through carefully for your own safety.

If you place the Clean-Tower 150 in direct sunlight or near a radiator, it could be damaged under certain circumstances. Avoid places where there are extremely high/low temperatures or high humidity. At the selected site, the temperature should not fall below 15°C or rise above 35°C.

The Clean-Tower 150 may only be operated with intended mains values.
Check whether the electric connection values of the mains socket agree with the technical data of the used device.

Check the Clean-Tower 150 and its accessories before use. A damaged Clean Tower 150 must not be put into operation.

The power of the Clean Tower must always be disconnected when it is no longer used or if the device is unsupervised! The outlet of the Clean Tower must always be above the level of the return siphon if it is not in use (risk of leakage).

Use

This device is used to clean cooling lubricants (KSS) and washing media. The floating oils, dirt, bacteria and fungi are removed and at the same time the medium is enriched with atmospheric oxygen. The oil discharge can vary greatly depending on the KSS manufacturer and the age of the KSS.

Danger! In order to achieve optimal tramp oil discharge, only compatible cooling lubricants, guideway oils and hydraulic oils from the same manufacturer should be used. Cooling lubricants and oils must be good demulsifiers.

The service life of cooling lubricants and other process baths is significantly reduced by foreign contamination, such as e.g. B. tramp oil and lack of oxygen. This makes them ideal breeding grounds for anaerobic bacteria, viruses, yeasts and fungi. The resulting disadvantages are well known: Cooling lubricants suffocate due to insufficient oxygen content, which results in odor formation, tipping of the emulsion, skin irritation, allergies and mucus formation. In addition, tramp oils and dirt impair the production quality to a particular extent. If the limit values defined by legislation are exceeded, the medium must be changed and disposed of. This increases the operating costs considerably.

That is why the care of industrial liquids with our device is essential for economic reasons alone.

The Clean Tower works according to the principle of dissolved air flotation.

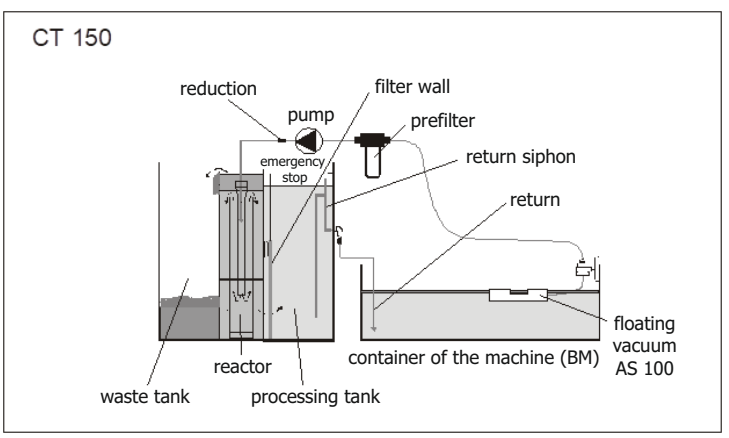


Figure 1: Flow chart

The cooling lubricant, the contamination floating on top (such as oil, oil-water compounds, fine contamination in the form of suspended particles) and air are sucked in by a pump via a float. The pre-filter is used to protect the pump from chips.

A reduction after the pump puts the sucked-in medium under low pressure.
The pump used also breaks up the air sucked in into the smallest of bubbles.
After the reduction, the medium is fed into the reactor and expanded.
After expansion to atmospheric pressure, the excess air bubbles out in the form of fine bubbles.
In the reactor, the gas bubbles form an agglomerate with the dirt, which due to its increased buoyancy rises to the surface of the working container.
From there, the accumulated dirt is transferred to the integrated dirt container.
The medium runs through cascades via the reactor in the working tank, which allow almost complete degassing of the medium.
A filter fleece in the working container serves as a police filter to remove any residual contamination and further degassing of the medium.
If the oil drops are large enough, they will float to the surface from where they will be transferred back to the dirt tank.
The now cleaned medium is returned by means of an overflow pipe.

Installation

- Check whether the system is level and safe.
- Use an earthed socket
- Check that all hoses are properly seated in their designated containers.
  - the AS 100 suction float or the AS 200 suction system must be attached to the suction hose be connected and attached to the container (see page 8)
  - the return is also attached to the container
- the pump must be filled with water before it is used for the first time (image 3)

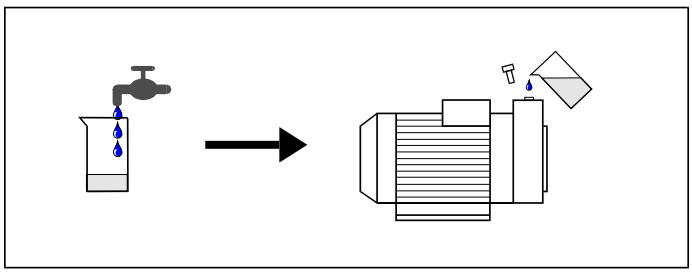


Figure 3: Commissioning the pump

- The first filling of the clean tower should be done with freshly prepared emulsion. This prevents the clean tower from being overly damaged when it is first filled floating oil layer is only filled with oil.

- the return must be installed above the filling edge. Thus, a possible running back of the medium prevented. (see picture 4)

- the clean tower must be filled to just below the arch of the return siphon (see image 4)

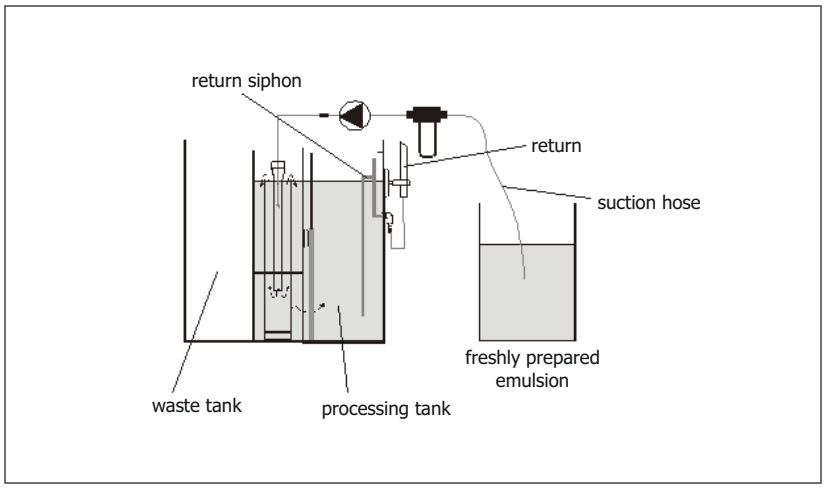


Figure 4: First filling of the clean tower

- Check the medium to be cleaned for demulsification (Figure 2 and 3)

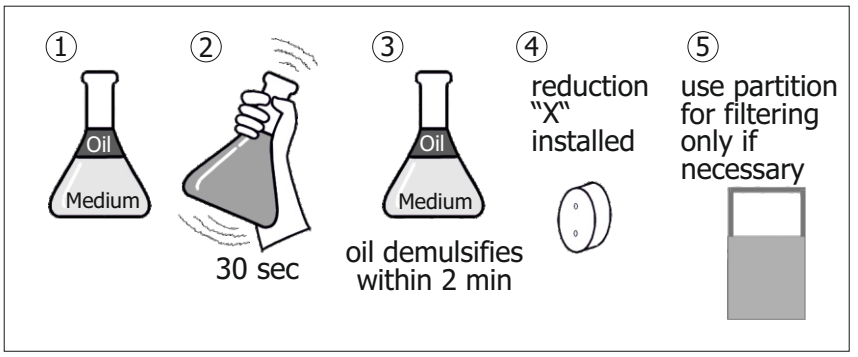


Figure 5: washing medium / coolent -> good demulsifying

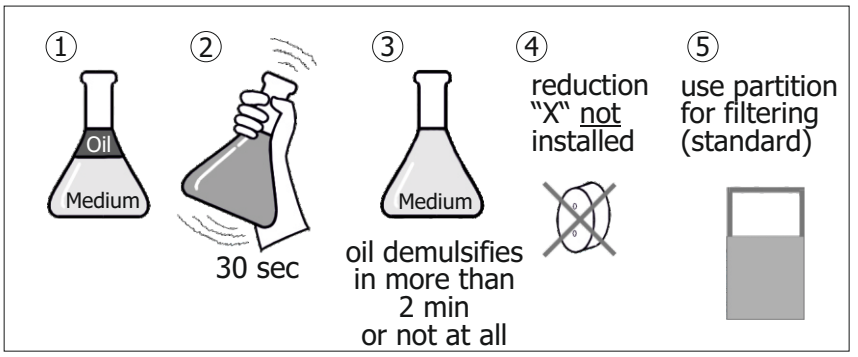
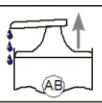
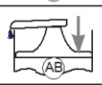
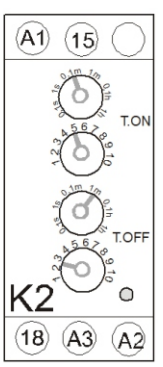


Figure 6: washing medium / coolent -> poorly demulsifying

By adjusting the height of the hood and changing the times, the Clean-Tower can be optimally adjusted to the demulsifying ability.

Fill up time / Settling time (adjustment in switch box K2)

Type of adjustment		**CT 150**			
Standard adjustment		T_{ON}	30 sec	T_{OFF}	2,5 min
Good demulsifying oil / strong foaming		T_{ON}	15-30 sec	T_{OFF}	1-2,5 min
Poorly demulsifying oil / poor foaming		T_{ON}	25-50 sec	T_{OFF}	2,5-5 min



The hood is used to better discharge the foam. If there is a lot of foam, the hood is pulled up. If there is little foaming, it can be pushed all the way down.
If no foam forms at all, you can remove the hood.

Unit location plan

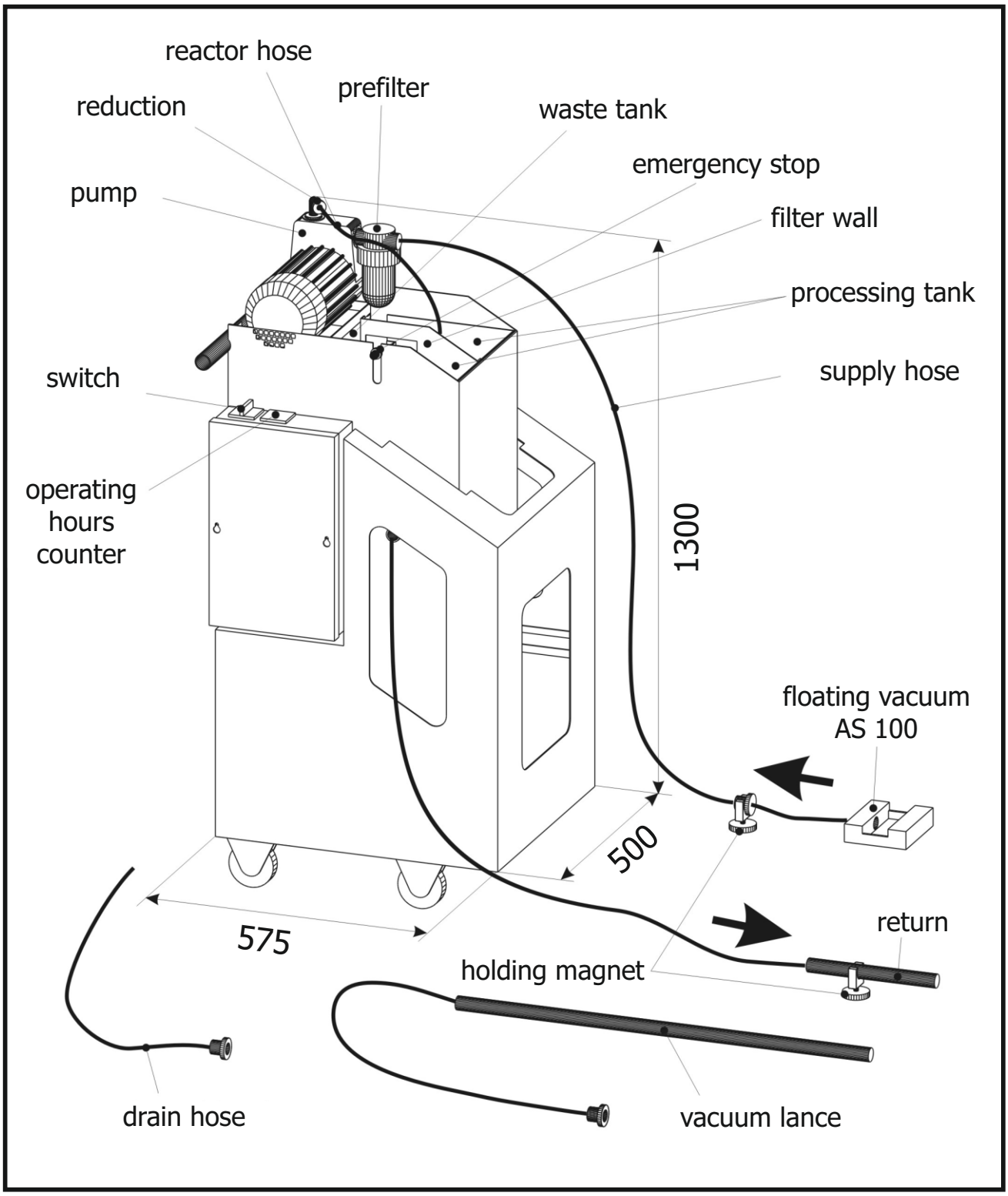


Figure 2: unit location plan / assemly plan

Suction devices

Floating vacuum AS 100

The floating vacuum must be able to move freely in the medium.
It must not be affected by the hose.

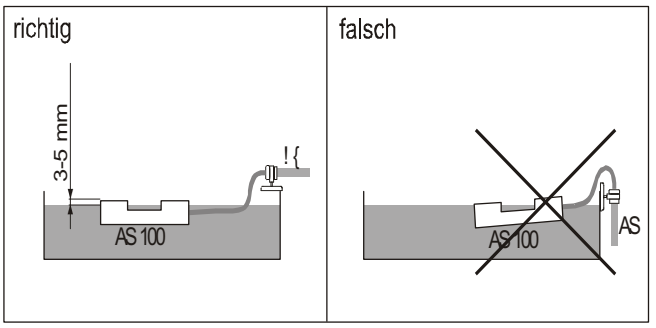


Figure 7: Position of the floating vacuum

AS 200 suction system (optional)

The AS 200 suction system is used where space is limited.
Level range: max. 65 mm
Dipping at a 45° angle would be advantageous. The suction slot must be at the top

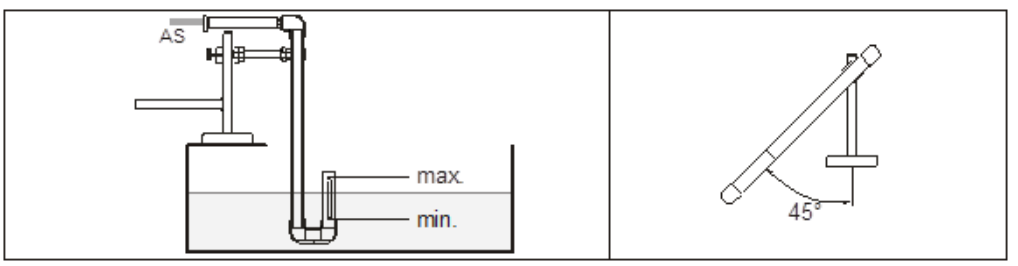
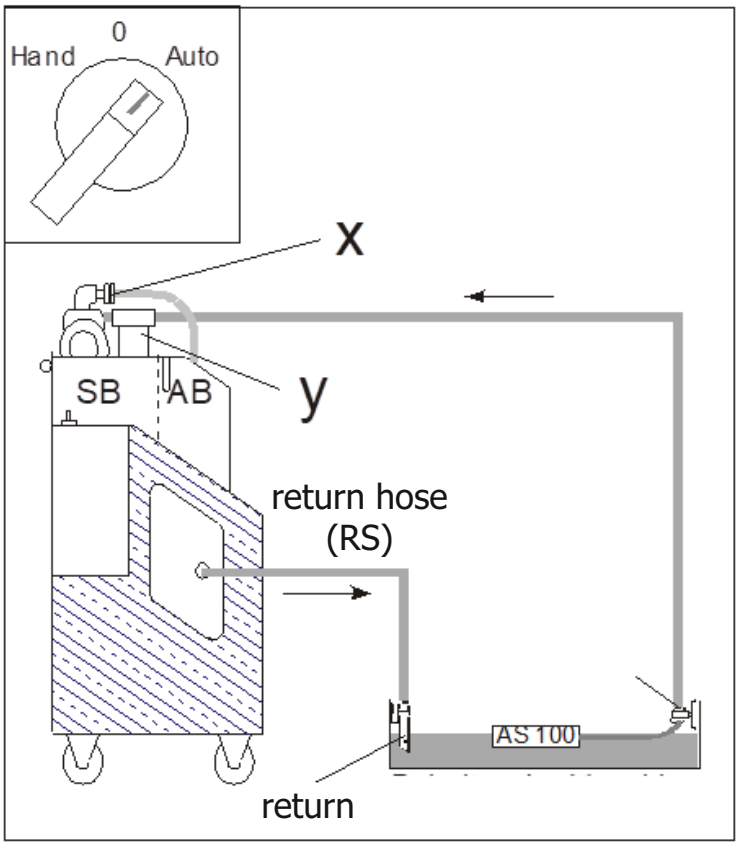


Figure 8: AS 200 suction system

Clean media



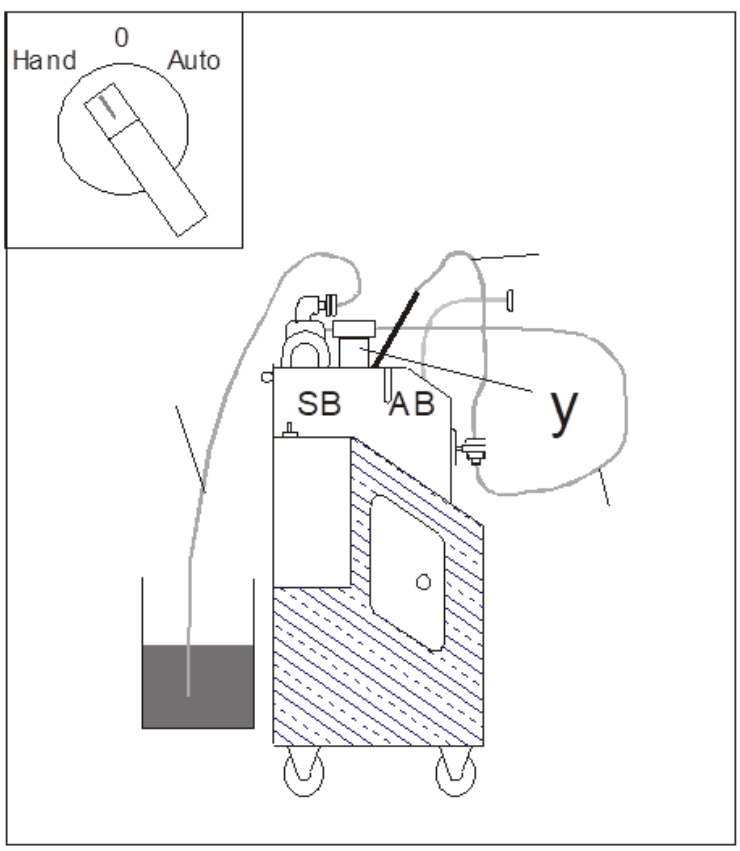
- the suction hose is connected to the floating vacuum AS 100 or dem AS 200 suction system on the tank attached to the machine

- the return hose will also fixed to the container.

- the switch is set to "Auto".

Figure 9: Connection diagram: cleaning the medium

Processing tank (AB) and wast tank (SB) drain (suck out)



- the vacuum lance is attached to the suction hose appropriate

- at the pump outlet, the hose becomes the Reactor loosened and drain hose on connected to the pump and the end in the Waste oil tank fixed

- Now the processing tank or the wast tank to be vacuumed

Figure 10: Connection diagram: empty the tank

Maintenance and inspections

Exercise following procedures on a weekly basis:

- Reinigung des Vorfilters „Y“ an der Ansaugpumpe
- Reinigen der Absaugsysteme AS100 oder AS200 von Spänen und Schlamm
- Sichtkontrolle auf Dichtigkeit der Anlage und Schläuche
- Reinigen der Düsen der Reduktion ”X”
- Reinigen der Schwimmerschalter für ”Not-Aus”-Funktion
- Schmutzbehälter (SB) entleeren

Transport, plant shutdown and cleaning

1. Machine to machine transport

To transport the system from machine to machine, all hoses should be in the work tank (AB). If you are not using a hood, you can use the "Manual" switch to let the oil overflow into the dirt container after connecting the Clean Tower to the next machine.

2. Plant downtime

When the system is at a downtime, all hoses should be in the working tank (AB).
The pump switch is set to ”Off”. The mains plug is disconnected from the mains.

System downtime < 7 days: drain the system (see Figure 10)
System downtime > 7 days: Drain and clean the system

3. Cleaning

Drain the system as described in Figure 10. The sludge is removed with an industrial vacuum cleaner.
The clean tower is then rinsed out with system cleaner so that no bacteria, yeast or fungi can form.

Electrical layout of Clean-Tower 150

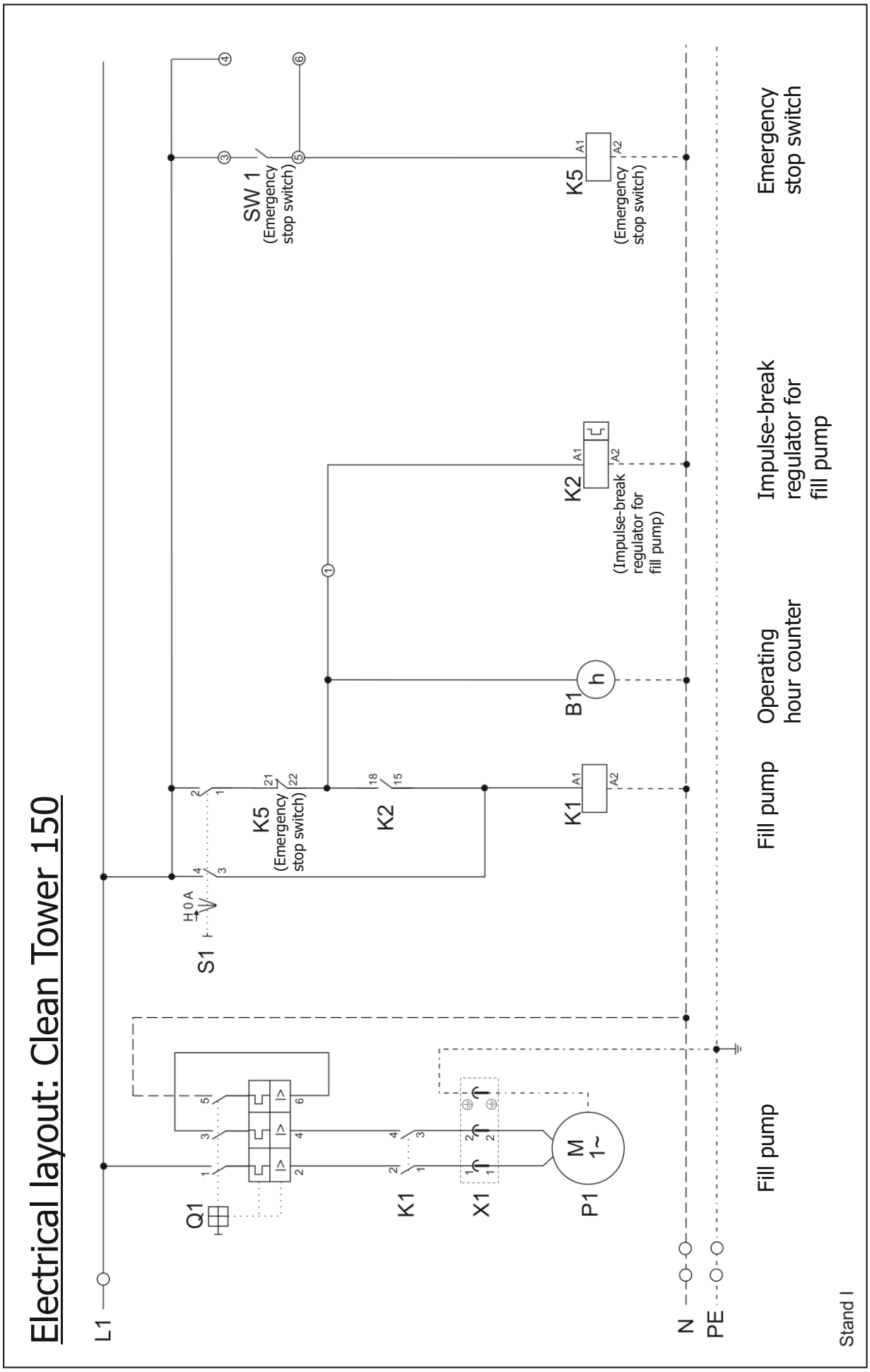
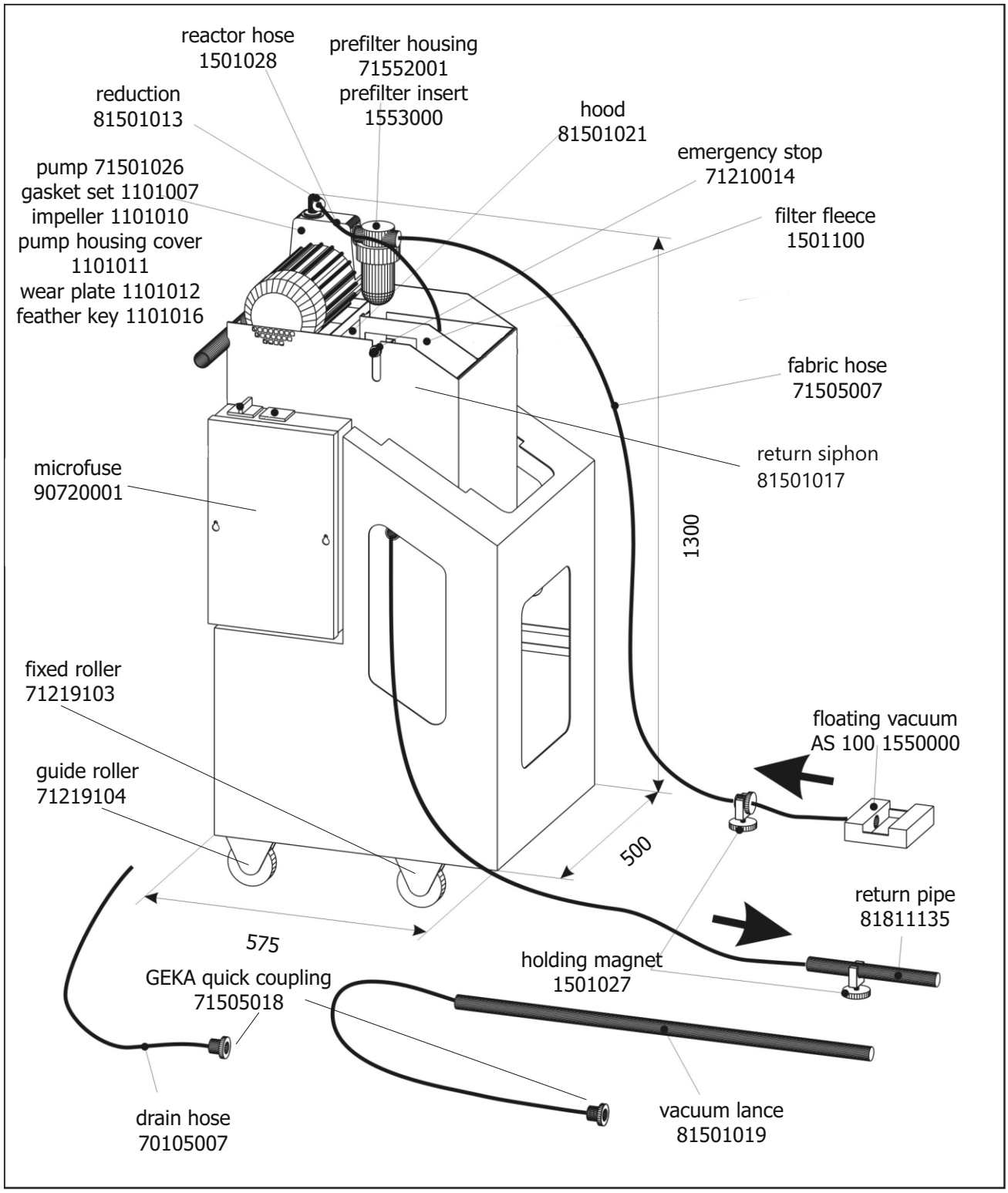


Figure 11: Electrical layout of Clean-Towers 150

The spare and wearing parts

ME	Article-no.	Article	Pos.	Wearing parts	Stk CT 150 - **15 01 000**
Stk	1501027	Holding magnet		C	2
Stk	71219104	Guide roller		C	2
Stk	71219103	Fixed roller		C	2
Stk	1501016	Separator plate CT, complete with filter fleece		C	1
Stk	81501016	Separator plate		C	1
Stk	1501100	Filter fleece		A	1
Stk	81501021	Hood for Clean Tower		C	1
Stk	71501026	Centrifugal pump 230V 50Hz	P1		1
Stk	1101007	Gasket set	P1	A	1
Stk	1101010	Impeller	P1	C	1
Stk	1101011	Pump housing cover	P1	C	1
Stk	1101012	Wear plate	P1	C	1
Stk	1101016	Feather key	P1	C	1
Stk	81501013	Reduction			1
Stk	71505018	GEKA quick coupling			3
Stk	71552001	Prefilter housing			1
Stk	1553000	Prefilter insert		A	1
Stk	70105007	Hose, fabric 16x4mm PVC		B	10
m	81501017	Return siphon			1
Stk	81811135	Return pipe			1
Stk	81501019	Vacuum lance			1
Stk	71501013	Geka blind coupling			1
Stk	71210014	Emergency stop	SW1		1
Stk	90720001	Microfuse 0,4A	F1		1
Stk	1501027	Holding magnet for Clean Tower 150		C	1
Stk	1501028	Reactor hose		C	1 - 1
Stk	1550000	Floating vacuum AS 100		C	0,55
m	0720999	Skimmer hose			- 1
Stk	1550300	Suction system		C	0,4
m	0720999	Skimmerhose			


reactor hose
1501028
prefilter housing
71552001
prefilter insert
1553000
reduction
81501013
hood
81501021
emergency stop
71210014
pump 71501026
gasket set 1101007
impeller 1101010
pump housing cover
1101011
wear plate 1101012
feather key 1101016
filter fleece
1501100
fabric hose
71505007
return siphon
81501017
microfuse
90720001
1300
fixed roller
71219103
floating vacuum
AS 100 1550000
guide roller
71219104
500
575
return pipe
81811135
holding magnet
1501027
GEKA quick coupling
71505018
drain hose
70105007
vacuum lance
81501019

In the event of a malfunction

1. After cleaning of medium oil is still present in machine tank
- use oil filter for increase in oil separation
- use floating vacuum for heavy surface pollution of the medium

2. Supply pump (P1) does not draw
- Prime the pump with water (remove screw cap)
- Reducer ”X” blocked. Remove the brass quick-clutch assembly on the pump and clear the blockage. (Use compressed air to blow clear if necessary.)
- Floating vacuum or hoses leading to pump are blocked.
- Check vacuum system for corrrect installation

3. Leaking supply pump (P1)
- clean the O-ring seal and reinstall

4. Supply pump (P1) does not operate on ”Auto”
- Overflow safety switch (switches) activated – inspect fluid level surveillance
- K2 wrongly adjusted (see assembly sheet)

5. Supply pump (P1) does not operate on ”Auto” or ”Hand”
- Check the fill pump safety switch

Disposal of waste (concentrate)

The waste (concentrate) must be disposed of, in such manner as implied by statutory requirement or environmental protection authority that imposes regulations in your country.

Space for your Notes

Product overview

BIOBALANCE

THE PERFECT CARE SYSTEM FOR YOUR COOLING LUBRICANT

MISCEO
MIXING DEVICE

- Mixing device
- Dosing device
- Proportioning device
- Battery
- Barell trailer
- Level monitor controls
- Piping components

RAPID & MIKRO
CARE SYSTEM

- Oil skimmer
- Oil collecting tray
- Micro aerator

CLEAN TOWER
MOBILE CARE SYSTEM

- Mobile care system

ACCESSORY
AROUND YOUR FABRICATION

- Test kit
- Chip stick
- Magnetic sweeper
- Barrel key
- IBC key
- Canister key

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BIOBALANCE

Care your cooling lubricant successful

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Represented by:

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