OPERATING MANUAL

Cutter
KU 130 AC

M-no.: 12667
Year of construction: 2008

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Translation of the original operating instructions

1 Foreword

This Operating Manual contains everything you should know for ensuring that operational disturbance is kept to a minimum plus valuable tips for keeping your machine in top fault-free operating condition and to guarantee it a long service life.

In order to avoid any injuries to persons or damage to property arising from an improper use of the machine it is essential that this Operating Manual and in particular all danger warnings it contains are precisely observed before each start-up and operation of the machine. It must also be ensured that all persons involved in the operation of the machine are thoroughly familiar with this Operating Manual and trained in accordance with it.

In addition all necessary measures must be taken to ensure that the machine is neither used for a purpose for which it is not intended nor that it is operated by persons to whom it has not been explained and who are not trained, nor by company outsiders.

Warning notices placed on the machine must not be removed or made unrecognisable. This Operating Manual must also be included if the machine is transferred to a third partying order to avoid the danger of a use of the machine for a purpose for which it is not intended or an incorrect operation of it.

Correct operation, regular checks and the required servicing and maintenance work are the requirements for a perfect functionality of the machine and for the fulfilment of any warranty claims.
Particular attention is drawn to the fact that the warranty is cancelled on the use of any other cutting tools or spare parts than originals from LASKA.

This Operating Manual may include and describe special versions and additional equipment besides the standard version of the machine type. These may not comply with your machine, since the model and equipment are aligned to the specific customer order. In the event of the machine being provided with equipment details that are not included in this Operating Manual, your nearest LASKA agent will gladly inform you about the operation, the safety regulations, maintenance required etc. All the data given is based on the possible model and equipment at the time of the writing of this Operating Manual, but changes are possible as a result of the further technical development of the machine.

All regulations and notes must be strictly observed maintained without fail in order to avoid any injury to persons or damage to objects.

Thank you for your considered decision to use a LASKA machine.

2 Table of Contents

3 EC - Declaration of Conformity

Machine:	Cutter
Typ:	KU 130 (Mod.137)
Machine - No.:	12667
Year of construction:	2008

The following safety regulations were taken into account in the construction and the building of the above named machine:

EC Machinery Directive	98/37/EC
EN 60204-1	Electrical equipment for industrial machinery Edition: December 1997
EN 12855	Food processing machinery Cutters with rotating bowl Safety and hygiene regulations Edition: Sept. 2003
DIN EN 1672-1	Food processing machinery General design directives Part 1: Safety regulations Edition: August 2000
DIN EN 1672-2	Food processing machinery General design directives Part 2: Hygiene requirements Edition: March 1997

EC-Type-examination

Certification no.:	02011 dated 02.10.2002
The testing authority:	Fachausschuß Fleischwirtschaft Prüf- und Zertifizierungsstelle im BG-PRÜFZERT Lortzingstraße 2 D-55127 Mainz

4 Use of the machine

4.1 Use for the purpose intended

- The cutter is designed for cutting meat, meat products and pre-broken frozen meat for the production of sausage emulsions.
  The manufacturer must be consulted about the processing of other foods.

- The exclusive application of the cutter is stated in the above paragraph.
  Any other use or use extending beyond this in scope is considered to be a use that is not for the intended purpose.

- Use for the intended purpose includes use of the accessories provided or recommended by the manufacturer and the maintaining of the inspection and servicing intervals.

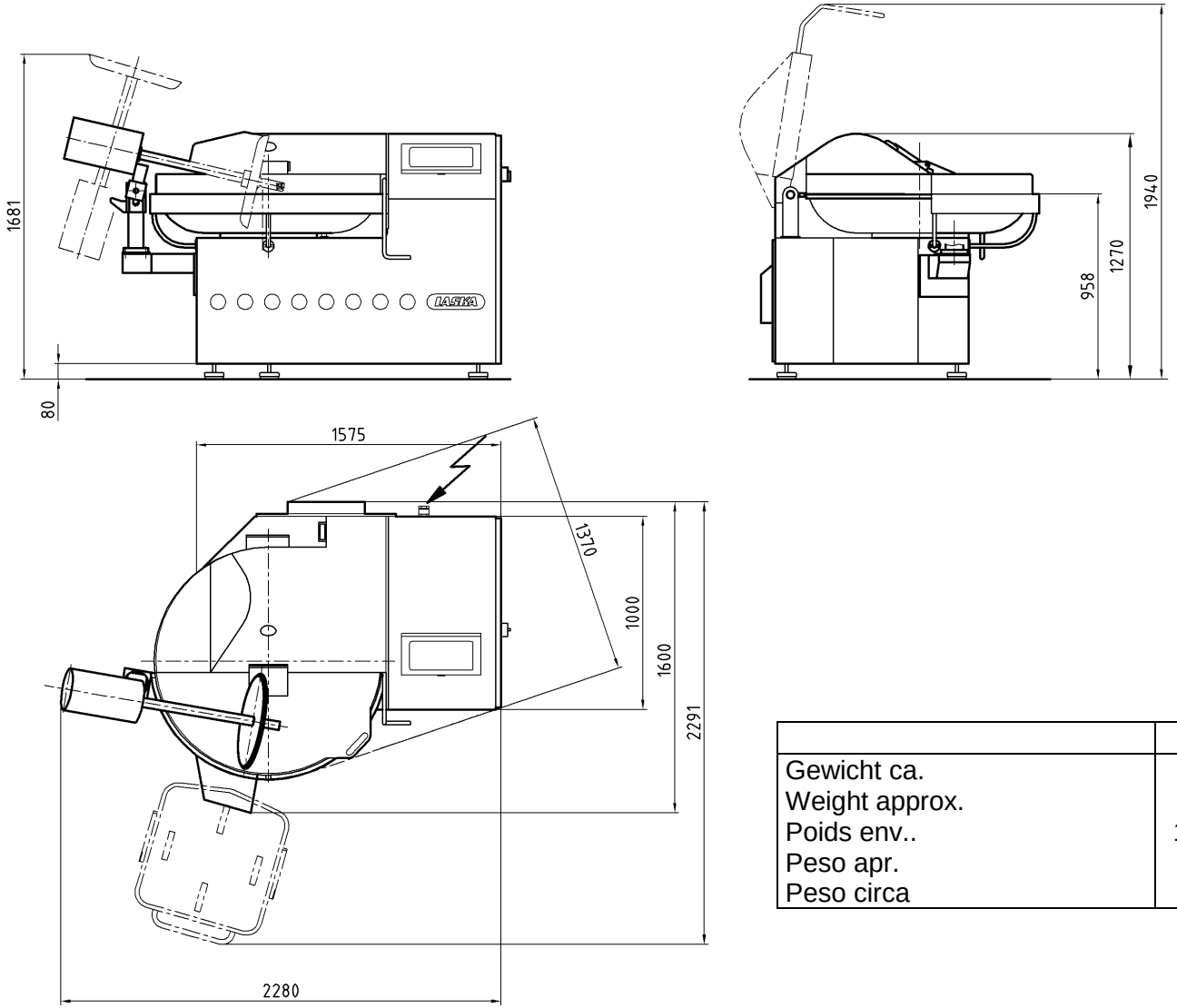
- The cutter may only be operated with the knife hood closed.
  Reaching under the knife hood when the machine is in operation is prohibited.

- The hand may only be reached into the cutting compartment after the knife has come to a complete stop, the main switch is off and is secured against being unintentionally switched on again.

5 Machine data

5.1 Technical data

5.1.1 Dimensions – weights



	kg
Gewicht ca. Weight approx. Poids env.. Peso apr. Peso circa	1710

5.1.2 Noise data

Emission noise level LpA 90 dB

Deviation K_A = 2.5 dB

CAUTION: Noise protection: from 85dB(A) the owner must provide ear protectors - which must be worn by the operator!

5.1.3 Speed data

	DRIVES				
	KNIFE			BOWL	UNLOADER-DISC
	Works setting rpm	Min. setting rpm	Max. setting rpm	Fixed speeds rpm	Fixed speed rpm
speed 1	150	60	4700	7	114
speed 2	1000	60	4700	14	
speed 3	2000	60	4700	/	
speed 4	3000	60	4700	/	
MG reverse	-100	-60	-239	7	

5.2 Electrical data

5.2.1 Performance values - connected load

It is essential that the actual motor performance read off from the machine rating plate because of differences in the machine models! The relevant electrical data are provided in the table below. If the data is not included in the table the local LASKA serviced representation should be asked. The degree of protection is IP 55

A: main drive + fan
B: mixing
C: bowl drive
D: unloader
E: hydraulics
F: vacuum pump

a: power frequency
b: supply voltage
c: motor performance
d: motor nominal current
e: cable diameter (Cu)
f: cutout (time-lag fuse)

∑: total

a:	**50 Hz**			
b:	**200 - 230 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	-	-	-	-
B:	-	-	-	-
C:	-	-	-	-
D:	-	-	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	-	-	-	-

a:	**50 Hz**			
b:	**380 - 400 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	60+1,1	120+2,1	-	-
B:	-	-	-	-
C:	0,66/1,3	2,55/2,85	-	-
D:	0,55	1,75	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	62,95	126,7	50	125

a:	**50 Hz**			
b:	**420 - 440 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	60+1,1	120+1,9	-	-
B:	-	-	-	-
C:	0,66/1,3	2,4/2,7	-	-
D:	0,55	1,6	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	62,95	126,2	50	125

a:	**60 Hz**			
b:	**200 - 230 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	-	-	-	-
B:	-	-	-	-
C:	-	-	-	-
D:	-	-	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	-	-	-	-

a:	**60 Hz**			
b:	**380 - 400 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	60+1,1	120+1,9	-	-
B:	-	-	-	-
C:	0,66/1,3	2,4/2,7	-	-
D:	0,55	1,6	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	62,95	126,2	50	125

a:	**60 Hz**			
b:	**420 - 440 V**			
	c [kW]	d [A]	e [mm²]	f [A]
A:	60+1,1	120+1,8	-	-
B:	-	-	-	-
C:	0,66/1,3	2,3/2,6	-	-
D:	0,55	1,5	-	-
E:	-	-	-	-
F:	-	-	-	-
∑:	62,95	125,9	50	125

6 Operational instructions

6.1 Safety

6.1.1 General

The machine must only be started up by authorized persons who are familiar with the safety and operation stipulations!

The machine must never be used for purposes other than originally intended!

Before starting the machine, all safety devices should be checked. It is important to stress that protective devices and regulations can prevent possible damage and accidents and therefore must never be left out or ignored. Should a protective device cease to function, this must be put right by a specialist before further machine operation!
The accident prevention regulations or work safety laws valid in the subject country of installation are to be strictly adhered to in all cases.

Before start up ensure that no foreign bodies are present in the machine and that all necessary additional equipment, tools, etc. are correctly mounted on the machine and not just loosely fixed or not attached at all.

During operation, moving or rotating parts must on no account be touched with clothing, tools, etc., nor brought into their proximity!

If the machine is equipped with a loading device, the safety function of the trolley stop must always be checked before start of operation and during operation no one should stand near or under the moving loading trolleys.

The machine must be regularly serviced, checked for any defects or damage and worm parts must be promptly renewed.

Before and during each servicing of the machine, as well as for installation and repair work, the machine must, due to safety reason, be completely switched off at the main switch from current, the machine tested for no volts and secured against the current being switched on again.

Please note that only original LASKA spare parts can guarantee perfect functioning of safety devices.

6.1.2 Machine specific safety regulations

CAUTION: Starting up of the machine is prohibited if no hearing protection is being worn!

Master switch

After switching off the main switch the machine is in an electrically dead state.

CAUTION: The mains connection to the main switch is still electrically live.
The main switch must always be switched off and secured against accidental switching on again during servicing and maintenance work and during cleaning (e. g. secure with a padlock).

Knives:

A safety control
- prevents the machine from being started when the knife hood is open.

CAUTION: Reaching into the cutting compartment when the machine is in operation is prohibited.
! DANGER OF INJURY !
Cut-proof gloves must be worn when touching or handling the knives!

Direct access to the knives is virtually impossible as long as the knife hood is closed.

Noise protection:

The knife cutting speed is reduced to half of maximum speed automatically when the noise protection cover is opened.
The knife cutting speed can only be increased again after the noise protection cover has been closed.

See the technical data for noise data!

Bowl drainage screw:

CAUTION: The bowl drainage screw may only be removed when the bowl is at a standstill and the machine has been switched electrically dead!

Unloader (additional equipment):

CAUTION: When the machine is running, it is forbidden to touch the unloader disc, or to reach under the unloader plate when the disc is swivelled in.
! DANGER OF INJURY !

Swivel in hydraulic model:
Unloader can only be swivelled in when the noise protection cover is open and the knife hood is closed.

Loader (additional equipment):

It is forbidden to stand or walk below the loader.
Standing on loading platform is forbidden!
Loader stops at once when the button is released.
Loader only functions when the noise protection cover is opened and the knife hood is closed.
The operator shall make sure that there are no persons staying in the danger area.

CAUTION: Push the trolley into the location device until the stop is actuated.
Check the trolley stop.
A lowering speed of 100 mm/second has been set in accordance with the accident prevention regulations. Any manipulation of this is forbidden.

6.1.3 Remaining hazards

Danger of cuts:

Cutting compartment:
Danger of cuts from reaching into the cutting compartment.
Do not reach into the cutting compartment!

Knife:
Danger of cuts when handling the knives
Cut-proof gloves must be worn!

Danger of crushing:

Knife hood or noise protection covers:
Danger of crushing when the knife hood or noise protection covers are closing.
Do not reach into the danger zone!

Bowl drainage screw:
Danger of crushing from the rotating bowl.
The bowl drainage screw may only be removed when the machine has been switched electrically dead either by pressing the emergency stop button or by switching off the main switch!

Model with loader:
Danger of crushing when in motion.
Do not stand near the loader!

Model with unloader:
Danger of crushing from unloader swivelling in.
Do not stand near the unloader!

6.2 Transport / Setting up

6.2.1 General

Immediately upon arrival/after unpacking the machine, check it for any transport damage and, if necessary, claim this from the transport company.

If the machine is screwed to the base of the crate, the side panels of the machine should be removed so that the base fixing screws are easily accessible from inside the machine and can be removed.

The machine can be rolled away sideways by means of rollers and transported with fork lift truck, taking care that the machine does not slide off (danger of accident and damage).

It should be noted that the machine is only to be supported/lifted at solid bearing frame points to avoid damage!

The machine does not require a special base. It must, however, be set up on a firm floor and exactly adjusted horizontally by means of the height-adjustable, shock-absorbing machine feet.

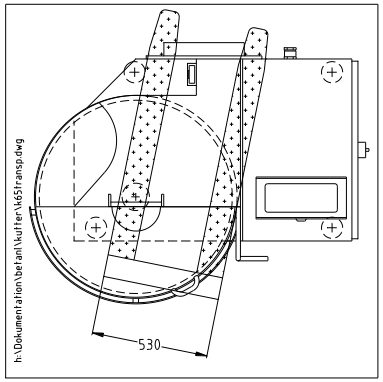


Fig. 1

6.2.2 Machine specific transport

CAUTION: There is danger that the machine may tip over in the direction of the bowl area during transportation, because of the great weight of the bowl – that extends over the machine bowl!

The cutter must not be supported nor raised by the bowl, since this will cause serious damage to the machine!

Transport with a forklift truck:

Stacker fork min. 2000 mm long.
lift force approx. 4000 kg.
(Fig. 1)

The works must be consulted for all other transport means.

Rotary slide valve vacuum pump or liquid seal pump (K 130 V):

The rotary slide valve vacuum pump must always be transported drained of oil.

Both pumps must always be set up on a level floor surface only.
Transport is done using a **forklift truck** or a **hand lift**.

6.3 Electrical connections

6.3.1 General

CAUTION:	**Before starting up it must be ensured that all safety regulations are maintained, that there are no foreign bodies in the machine, that all equipment parts, tools required etc. have been assembled in a professional manner on the machine and have not been fixed loosely in place or have not been attached at all. It must also be checked that the direction of turning of the motors is correct! (right rotary field)**

The electrical connection may only be done by a qualified electrician and should be ordered as follows by the installing party:

Version - switchbox internal:

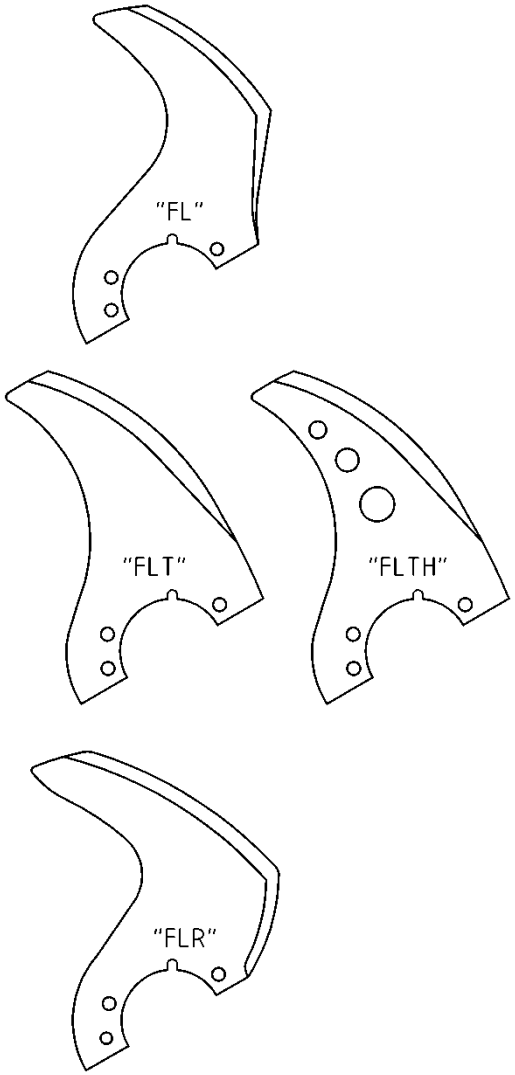
The circuit diagram must be observed!
Check that the frequency and mains voltage conform to the voltage given on the rating plate.
The mains supply line on the machine; i. e. the electric switchbox, should be connected with the necessary cable cross section and main fuses (see electrical data), whereby the locally valid regulations in the respective country are to be observed.

The switchbox mounted on the machine is to be kept closed at all times and the correct state of the seals should be controlled. The requirement for the correct running direction of the drives is a **right rotary field** and a qualified electrician must check this. In addition the electrical terminals must be checked to ensure that the numbers of the cables complies with the numbers of the terminal points.

Version - switchbox external:

The circuit diagram must be observed!
Check that the frequency and mains voltage conform to the voltage given on the rating plate.
The switchbox on the machine; i. e. the electric switchbox, should be connected with the necessary cable cross section and main fuses (see electrical data), whereby the locally valid regulations in the respective country are to be observed.

The electric switchbox is best mounted in an easily accessible place on the wall (lower edge at least 1000 mm from the floor) as near as possible to the machine. It should be noted that the connection cables between machine and switchbox have a normal length of 3500 mm. These connection cables should be laid in the supplied protective hose, which is to be fixed to the machine and the switchbox, and clamped to the corresponding terminals in the switchbox (use tension relief in switchbox).
The switchbox mounted on the machine is to be kept closed at all times and the correct state of the seals should be controlled. The requirement for the correct running direction of the drives is a **right rotary field** and a qualified electrician must check this. In addition the electrical terminals must be checked to ensure that the numbers of the cables complies with the numbers of the terminal points.



6.4 Model

6.4.1 Knives

Number of knives:

6 knives: for universal application
4 knives: purely for raw sausage products

Knife types:

Type "FL"	serial fitting for universal application
Type "FLT"	for the finest emulsion
Type "FLTH"	for the finest emulsion
Type "FLR"	specifically for the processing of raw sausage
Special knives	on request

Changing the knife and the knife head:

See the Servicing and Maintenance section

Sharpening the knife:

See the Servicing and Maintenance section

6.4.2 Bowl

Bowl drainage screw:

- is provided for use in cleaning.
Bring the drainage screw into a freely accessible position by turning the bowl,
place a container beneath it and screw it out.

CAUTION: The bowl drainage screw may only be removed when the machine has been switched electrically dead either by pressing the emergency stop button or by switching off the main switch!

6.4.3 Temperature – measurement

The measurement is made by a thermometer probe built into the knife hood.
The actual current temperature of the product being processed is shown on the display.

6.4.4 Automatic shut-down

Shut-down at a pre-selected time:

The machine shuts down on reaching the programmed time.

Shut-down at a pre-selected temperature:

The machine shuts down on reaching the programmed temperature.

Shut-down after a pre-selected bowl turns number:

The machine shuts down on reaching the programmed bowl turns number.

Precise description in the Operating Elements.

6.4.5 Mixing gear

Slow knife speed for gently mixing whole pieces into the emulsion.

Types KE, KR, KT:

Separate drive for knife shaft via a worm gear motor.
Main motor and gear motor are mutually locked electrically, i. e. if one motor is switched on the other is switched off.
Knives rotate in the direction of cutting.

CAUTION: The mixing gear is destroyed if the main motor turns in the wrong direction.
Reverse operation is not possible.
For the direction of turn see the "Start-up" section.

Type KU:

Infinitely variable knife shaft drive over main motor.
Knives rotate counter to the direction of cutting.

Function see Chapter "Operating elements".

6.4.6 Unloader

Manually actuated - simple swivelling in and out at manually.

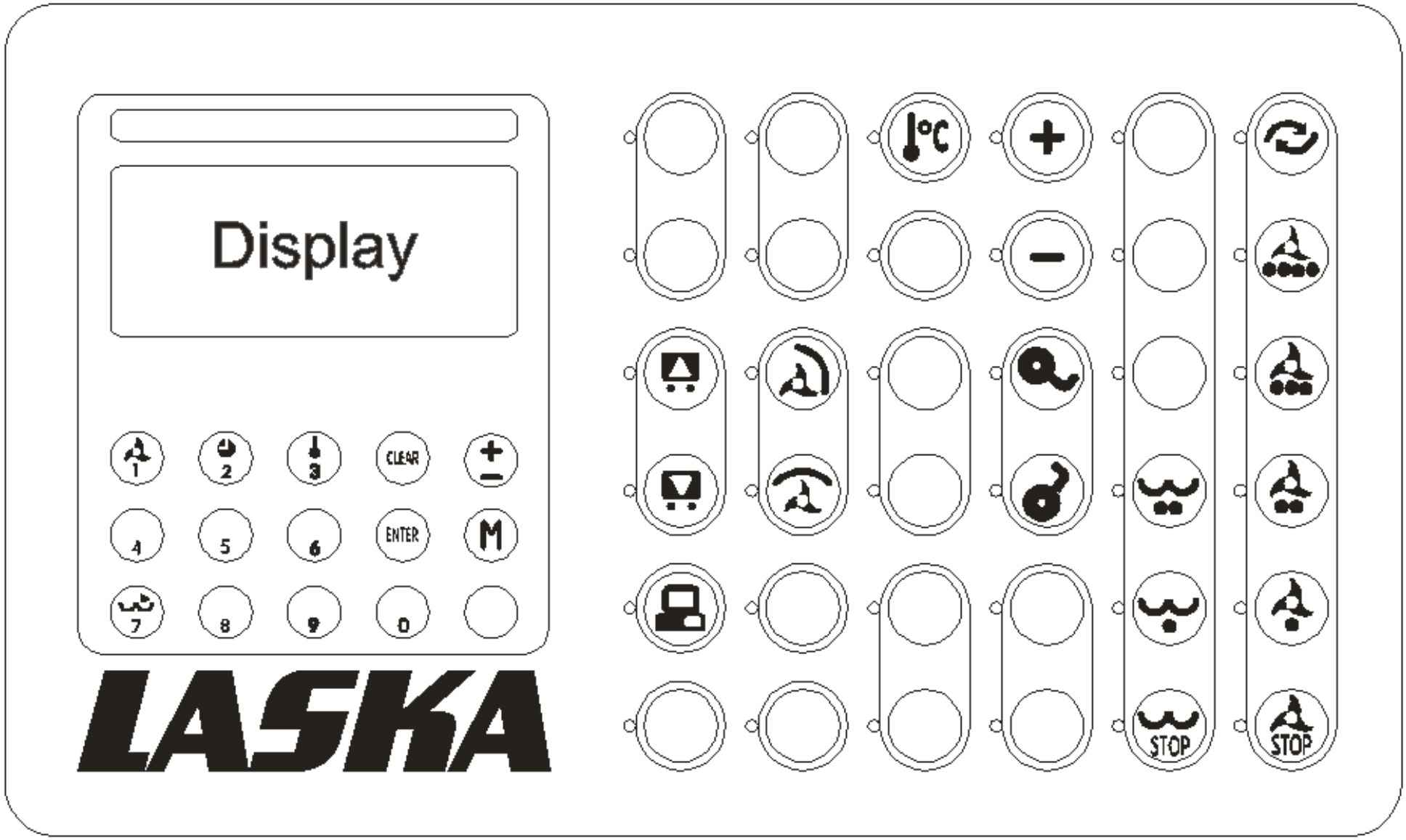
Hydraulically actuated - simple swivelling in and out at the push of a button.

The material is emptied via the unloader plate into the waiting container.

CAUTION: When changing the container, press key “STOP bowl”.
The unloader stays in the swivelled-in position. Push a new container under the unloader plate and start up the bowl again.

Function see Chapter “Operating elements“.

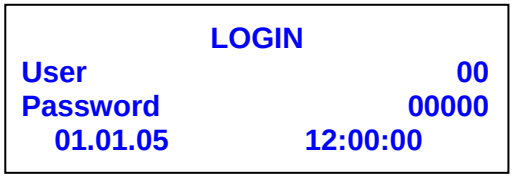
6.4.7 Operator control panel



6.4.8 Operating elements

Login

Only functions when: the login is switched on (see Settings section)



Enter key, activate the user entry field, enter the user using the numerical keypad.
Confirm using the enter key and activate the entry field for the password, enter password with the numerical keypad, confirm with the enter key; the entries will then be checked and manual operation appears on the display when they are correct.
Works settings: - User: "01"
- Password: "00000"

Cancel, the entry is deleted

Manual operation

Note: As soon as a function is active the control light next to the key for the active function goes on.

Automatic operation, recipe

Menu key, settings

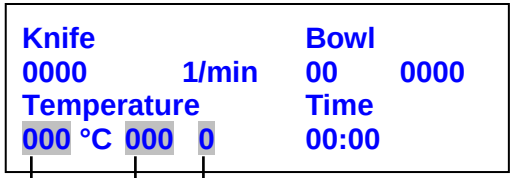
Delete key, press and hold for 5 seconds, all desired values are set to maximum (functions are deactivated)

Leave manual operation, press and hold for 2 seconds, message appears on the display

Display

Product value

Temperature



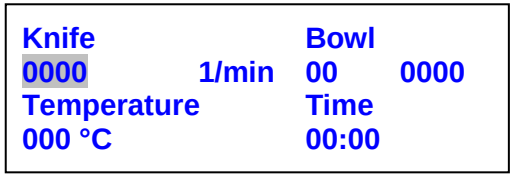
Temperature mode

Value – Temperature

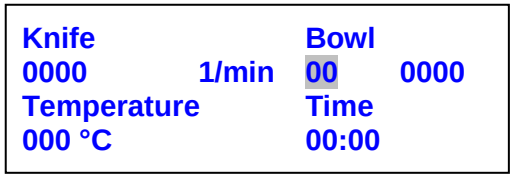
Displays the product temperature (°C / °F)

Speeds

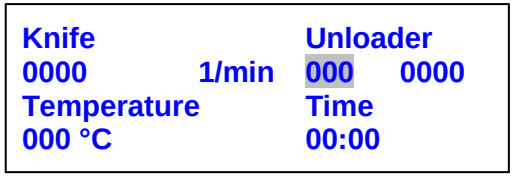
Knife speed



Bowl speed



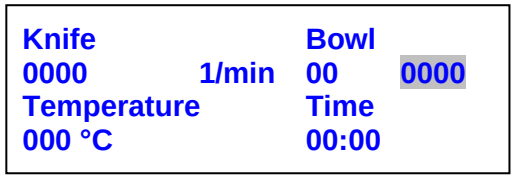
Unloader plate – speed



Appears automatically when the unloader plate is swivelled in.

Counted values

Bowl turns

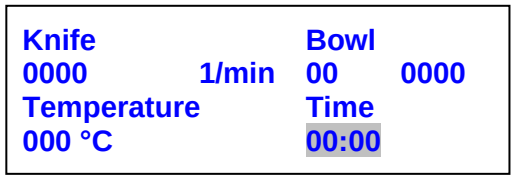


Press on a function key – bowl for 3 seconds to set to zero position

Machine stop due to bowl turns

The knife and bowl stop when the programmed number of bowl turns has been reached (see section Value Programming)
The message “Machine stops at selected number of bowl turns” is displayed
Note: On acknowledging this message the bowl turn counter will be reset to 0. When the number of programmed bowl turns is reached again the machine stops again.

Knife running time



Press on a function key – knife for 3 seconds to set to zero position

Machine stop due to knife running time

The knife and bowl stop when the programmed knife run time has been reached
(see section Value Programming)
The message “Machine stops at selected knife run time” is displayed
Note: On acknowledging this message the knife run time will be reset. On reaching the programmed knife run time again the machine will stop again.

Function keys – knives

Only functions when: - the knife hood is closed

Stop knives, simultaneously stops the bowl and the unloader plate

Type KU (continuously adjustable drive):

Standard model:

Knife speed phases 1 – 4

Note: For the 8 fixed speeds machine model the appropriate knife speed phases 1 – 4 are activated on pressing the key again and knife speed phases 5 – 8 where the lower speed phase has already been activated.

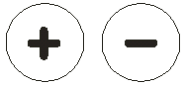
Mixer phase, knives run counter to the cutting direction, the bowl starts simultaneously at bowl speed phase 1

Note: The mixer phase bowl speed is limited by the machine configuration
For the 2 fixed speeds machine model the mixer speed phases 2 are activated on pressing the key again where the lower speed phase has already been activated.

See the Value Programming section for the programming of the knife speed phases.

Continuously adjustable knife speed phase regulation

Note:



Plus / Minus, Temporary speed change of the activated speed phase, minimum speed – 30 revolutions
Only functions when: - continuously adjustable knife speed phase model

Type KE, KR, KT (two speed phase drive):

Knife speed 1

Knife speed 2, only possible when speed 1 is switched on

Mixer phase, knives run in the cutting direction, the bowl starts simultaneously at bowl speed phase 1

Function keys – bowl

Only functions when: - the knife hood is closed
- knife speed is grater that 0

Bowl stop, simultaneously stops the unloader plate

Bowl speed phase 1

Bowl speed phase 2, only possible when speed 1 is switched on

Drive bowl into cleaning position

Caution: **The bowl may only be positioned when it is completely empty in order to prevent the knife from breaking.**

Manual bowl positioning:

Only functions when: - the knife hood is closed
- noise cover open

Bowl speed phase 1, press and hold → bowl turns, release → bowl stops

Function key – temperature functions

Only functions when: - knife speed greater than 0

Select temperature mode, switch through the temperature modes

Note: Activation of the selected temperature mode is time delayed to permit switching onwards, when the temperature modes are activated the control light next to the “select temperature mode” key switches on and off.

The programmed temperature desired value is shown on the display for the separate temperature modes (see section “value programming”).
Deactivation of a temperature mode is by pressing the key “select temperature mode”.

Standard model:

Temperature mode 1, knife and bowl stop on reaching the programmed temperature desired value.
The message “Machine stops at selected temperature” is displayed

Note: When the machine stops the programmed temperature desired value is deactivated (continued cutting is possible at a higher temperature)
When the product temperature sinks 2° below the programmed temperature desired value, there is a renewed activation of the temperature limit.

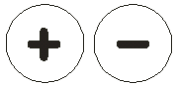
Temperature mode 2, the knife speed is reduced to knife speed phase 1 on reaching the programmed temperature desired value

Note: The programmed temperature desired value is deactivated on reduction of of the knife speed (further cutting is possible at a knife speed as desired is possible at a higher temperature)
When the product temperature sinks below the programmed temperature desired value, there is a renewed activation of the temperature limit.

Value programming

Programming – speeds

The maximum permissible speeds are dependent on the machine configuration.
The values are automatically limited to the maximum permitted values.
The current speeds are shown on the display.



Plus / Minus, forwards / backwards

Menu key, leave settings, set values are save, manual operation appears on the display

Programming – knife speed

Only functions when: - continuously adjustable knife drive machine model
- knives stopped

Programming – knife speed, after pressing an entry field appears on the display, which is activated by pressing the “enter key”. Programming of desired knife speed via numerical pad, entry of desired knife speed, confirm with “enter key”.

Display indicator: Fixed knife speeds

Fixed knife speed 1	**XXXX**
Fixed knife speed 2	**XXXX**

Fixed knife speed 3	**XXXX**
Fixed knife speed 4	**XXXX**

Fixed knife speed 5	**XXXX**
Fixed knife speed 6	**XXXX**

Fixed knife speed 7	**XXXX**
Fixed knife speed 8	**XXXX**

Display indicator: Fixed mixing speed

Fixed mixing speed 1	**XXXX**
Fixed mixing speed 2	**XXXX**

Programming – desired values

The appropriate maximum value must be entered to deactivate a function.

When a function is activated (desired value less than maximum value) the control light goes on next to the appropriate key.

Enter key, activate entry field (cursor for the active entry), confirm entry

Delete key, cancel the value entered

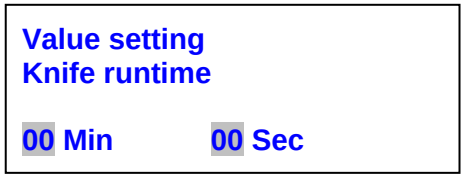
Plus/Minus key, change-over operative sign

Menu key, relevant value programming is ended, the main menu is displayed

Note: The speed values and the desired value values set are saved when the machine is switched off.

Programming – knife running time

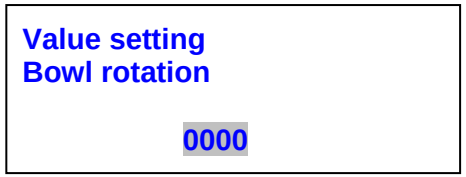
Programming knife running time, the display time field appears after pressing. Programming of the desired knife running time is done using the numeric keypad, enter the desired value for knife running time, confirm with “enter key”.
Desired value range: 0 to 99 minutes
0 to 59 seconds



Note: The function is deactivated on entry of a knife running time of 99:59.

Programming – number of bowl turns

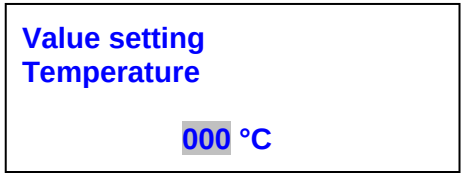
Programming the number of bowl turns, the turn field appears on the display after pressing. Programming of the desired bowl turns is done using the numeric keypad, enter the desired value for bowl turns, confirm with “enter key”.
Desired value range: 0 to 9999 turns



Note: The function is deactivated on entering 9999 bowl turns.

Temperature – desired value – programming for temperature modes

Temperature – desired value – programming, the temperature field appears on the display after pressing, programming of the desired temperature with the numeric keypad, entry of the desired value for temperature modes, confirm with “enter key”.
Desired value range: -20 to 100 °C or -4 to 212 °F



Note: the function is deactivated on entry of the maximum permitted temperature.

Manual functions

Opening the knife hood, first open the noise protection cover and then the knife hood.
Danger of destruction – Noise protection cover!

Note: The knife hood must not be opened while the knife is running.
Danger of destruction – electrical equipment!

Swivel in- and out unloader, simple swivelling in and out at manually
Unloader plate turns on swivelled in state, insofar as the knife and bowl speeds are greater than 0.

Hydraulic functions

Knife hood

Only functions when: - knife speed equals 0
- noise cover open
- unloader (if installed) swivelled out
- loader (if installed) below

Knife hood open, press and hold → knife hood opens, release → knife hood stops

Close knife hood, press and hold → knife hood closes, release → knife hood stops

Unloader

Only functions when: - the knife hood is closed
- noise cover open
- loader (if installed) below

Swivel in unloader, press and hold → unloader swivels in,
release → unloader stops
Unloader plate turns on swivelled in state, insofar as the knife and bowl speeds are greater than 0.

Swivel out unloader, press and hold → unloader swivels out,
release → unloader stops
Unloader plate stops in swivelled out state

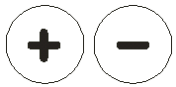
Loader

Only functions when: - the knife hood is closed
- noise cover open
- unloader swivelled out

Raise loader, press and hold → loader is raised, release → loader stops

Lower loader, press and hold → loader is lowered, release → loader stops

Settings



Plus / Minus, page forwards / backwards

Enter key, activate entry field (cursor for the active entry flashes on and off or star appears), confirm entry

Delete key, cancel the value entered
Note: Press and hold the key for 2 seconds to end settings without saving them. Manual operation is shown on the display.

Menu key, leave settings, set values are save, manual operation appears on the display

Operative sign change-over

Machine data

No entry possible, data for information only

LASKA	
Kx – 000	**11562**
Eplan-NR.:	**XXXXX.XXXX**
Hours:	**00000**

Enter key, press and hold for 3 seconds, user administration is displayed

Language selection

Language selection

*** English**

When star is displayed the desired language can be selected using the “operative sign change-over” key.

Load limitation

Only functions when: continuously adjustable knife drive machine model

When the load limitation is switched on the bowl speed is reduced to 1 in the event of an excessive load on
the knife in order to prevent the knife from breaking or an extreme reduction in the knife speed resulting.

Load limitation

*** switched on**

When the star is displayed the load limitation can be switched on or off using the “operative sign change-over” key.

Automatic start bowl

When this function is switched on the bowl is activated at bowl speed 1 as soon as the knife is started.

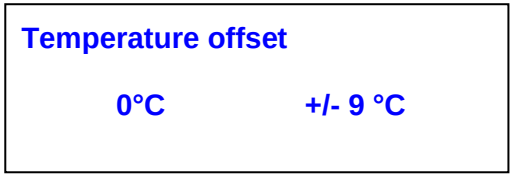
Automatic start bowl

*** switched on**

When the star is displayed the automatic start bowl function can be switched on or off using the “operative sign change-over” key.

Temperature offset

Calibration of temperature measurement
entry value: +/-9 °C or +/-16 °F



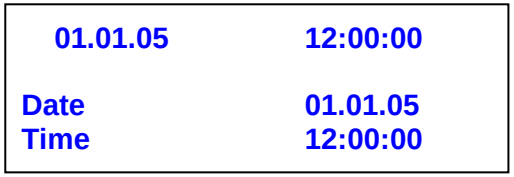
The appropriate value can be entered with the cursor flashes on and off.

Login

The login appears on the display after switching the machine on and the user must log on in order to be able to operate the machine.

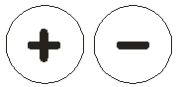
When the star is displayed the login function can be switched on or off using the “operative sign change-over” key.

Setting date and time



The appropriate value can be entered with the cursor flashes on and off.
Note: Use the “enter key” to move between entries.

User administration



Plus / Minus, page forwards / backwards

Enter key, activate entry field (cursor for the active entry), confirm entry

Menu key, changed data are saved and the user administration is ended.
Machine data are shown on the display.

USER ADMINISTRATION			
U01:	**00000**	**U04:**	**00000**
U02:	**00000**	**U05:**	**00000**
U03:	**00000**	**U06:**	**00000**

Rights levels:

Administrator (U01):	all rights
Product manager (U02 – U06):	no access to user administration
User (U07 – U21):	no access to user administration and selection of language
Cleaning staff (U22 – U24):	no access to settings, values programming and User administration

Entry of the desired password for the relevant user with the numeric keypad, confirm with “enter key”,
maximum entry: 9999
Note: Use the “enter key” to move between entries.

Plain text displays

Operator error

There is an operator error when the requirements for a selected function are not fulfilled.
The requirements are shown in the plain text display.

The plain text display goes off automatically after 5 seconds or after it is confirmed.

Reporting

Reports that must be acknowledged appear for:
- Switching off of the machine as the result of a pre-set condition (bowl turns, knife running time or temperature)

Reports that go off automatically appear for:
- reaching of a preliminary warning phase (oscillation monitoring)
- attempted actuation of keys that are not functional

Warning

A warning appears when an automatic machine shut down is imminent for servicing purposes.
The requirements to be dealt with are shown in the plain text display.

The warning goes off on confirmation and reappears again after an hour and the remaining runtime period is updated.

Fault

A fault has occurred where defects result in the machine being no longer operational. The causes of the fault are shown in the plain text display.

When the fault is confirmed the message goes off when it has already been dealt with.

The machine drives and functions are stopped when a fault is shown on the display.

Enter key, the plain text display is acknowledged

6.4.9 General key symbols


Mixer phase speed


Knife speed phase 1


Knife speed phase 2


Knife speed phase 3


Knife speed phase 4

Knife stop


Bowl speed phase 1


Bowl speed phase 2

Bowl stop


Minus


Plus

Select temperature mode

Automatic operation

Continuously adjustable knife speed phase regulation

Programming knife running time

Programming temperature desired values

4 at numerical pad

5 at numerical pad

6 at numerical pad

Programming bowl turns

8 at numerical pad

9 at numerical pad

0 at numerical pad

Enter key

Delete key

Operative sign change-over

Menu key

Leave manual operation

Hydraulic functions (optional feature)

Raise loader

Lower loader

Swivel out unloader

Swivel in unloader

6.5 Starting-up

6.5.1 General

Motor direction of rotation:

After you have informed yourself about all model and equipment details, the direction of rotation of the motors is to be checked **(right rotary field)** or changed if necessary – by the reconnection of two phases of the mains supply cable!

Control box:

CAUTION:	**Tighten all terminals before starting and re-check for tightness after 3 months operation.**

Lubricants:

Control the oil level and lubricate the machine according to the lubrication plan.

Hydraulics:

Check the hydraulics (if installed):
The electric motor of the hydraulic pump must be connected up in the correct direction of rotation so that the necessary oil pressure (already correctly adjusted at our works) can be built up. This is then the case when a button is pressed for a hydraulic function and this functions perfectly or when the manometer of the hydraulic aggregate indicates the correct pressure as adjusted by our factory. (For procedure see section “Maintenance - Service”).
The originally set pressure must not be altered!

Pneumatics:

Test the pneumatic system (if installed)

Protective coatings:

Any protective coatings or foil should be removed and the machine, in particular all parts coming into contact with the product, is to be thoroughly cleaned with hot water to which a grease-dissolving but non-abrasive detergent has been added.

Safety regulations:

Before starting up it must be ensured that all safety regulations are maintained, that there are no foreign bodies in the machine, that all equipment parts, tools required etc. have been assembled in a professional manner on the machine and have not been fixed loosely in place or have not been attached at all, that all screws are tightened with removable parts!

Functional control:

The separate functions of the machine are to be checked.

6.5.2 Machine specific start up

CAUTION: The machine can only be started when the cutter head is installed.
Before starting the machine for the first time, care should be taken that no foreign bodies are in the bowl or on the machine.
Hearing protection must be worn at all times!

Knife-head shaft:

Must be firmly tightened and there must be a min. gap of 0.8 mm between the knife tip and the inner surface of the bowl - see the “Servicing and Maintenance” section

Knife shaft bowls:

Must be removed!
See the “Servicing and Maintenance” section

Bowl drainage screw:

Ensure that the drainage screw plug is fully screwed in place.

Switching the machine ready for use:

 Turn on the **mains master switch**

Controlling the knife shaft direction of turn:

The bowl turns in counter-clockwise direction (as seen from above)
The knives turn in clockwise direction (as seen from the knife-head shaft)

Reducing the knife speed:

CAUTION: The knife speed must not be reduced to the min. r.p.m when there is material still left in the bowl.
Danger of clogging that could lead to damage!

Opening the knife hood:

CAUTION: First open the noise protection cover and then the knife hood.
! DANGER OF DESTRUCTION – NOISE PROTECTION COVER !

Noise reduction:

After opening the noise protection cover the knife speed is automatically reduced to half maximum speed.
The knife cutting speed can only be increased again after the noise protection cover has been closed.
See machine data section for operational noise!

6.6 Function control

CAUTION: After the machine has been switched on at the mains master switch it must not start up on its own.
It should not start up until the respective function keys have been actuated.

Check:

Knives
may not be switched on when the knife hood is open.

Loader (if present)
may not be switched on when the knife hood is open.

When this function “Automatic start bowl” is switched on the bowl is activated at bowl speed 1 as soon as the knife is started.

6.7 Cleaning

6.7.1 General

Before starting work the machine must be got ready and cleaned in accordance with the “Start-up” section.

CAUTION:	**For cleaning only the special purpose electrically locked cleaning pedestal (if installed) may be used. It is forbidden to step on parts of the machine and use these for cleaning.**

The machine, all easily removable parts and tools should be thoroughly cleaned at least once a day at the end of operation adhering to all safety regulations (see section “Safety”) using hot water and a non-abrasive.

Switch the electricity supply to the machine

Never use aggressive cleaning materials or additives!

On no account should high-pressure or steam jet cleaners be directed at sensitive parts such as pushbutton panel, electric switches and equipment, switchbox, bearing, seals, etc., nor at openings into the inside of the machine housing!

All electrical parts must be cleaned in a condition that is as dry as possible – but on no account must a water jet be directed at them!

Caution when cleaning sharp edges - Danger of injury!

After cleaning the machine, machine parts and tools should be dried, smeared with edible oil or fat and spread out separately.

CAUTION:	**CLEANING OF THE PUSHBUTTON PLATE, ELECTRICAL ELEMENTS AND SWITCHBOX WITH HIGH PRESSURE OR STEAM JECT CLEANING DEVICES WILL LEAD TO A BREAKDOWN OF THE MACHINE!**

6.7.2 Cleaning schedule

	Cleaning agent	Method	Equipment	Remarks
ROUGH CLEANING	Manual, mechanical	remove product remnants (if required disassemble small parts)	Spatula Scraper	Begin as soon as production operations have finished
PRE-RINSE	Potable water	Low pressure < 30 bar (< 3 MPa) Temp. 60°C (dep. on softening point of fat	Low-pressure unit Water hose	Incl. small components
ALKALINE CLEANING or	2 - 5 % Henkel Hygiene P3-TOPAX 19 or P3-TOPAX 66 Goldschmied SOMPLEX Grease solvent	Foam or manual cleaning. Action time approx. 15 min. Temperature 40 – 60°C	Low-pressure foam unit Hand-held spray unit Brush, tub	daily Incl. small components!!!
ACID CLEANING (Instead of alkali cleaning if required)	2 - 5 % Henkel Hygiene P3-TOPAX 56 Goldschmied SOMPLEX Acid foam	Foam-cleaning Action time approx. 15 min. Manual, mechanical Temperature 40 – 60°C	Low-pressure foam unit Hand-held spray unit Brush for removing scale Low-pressure foam unit	Instead of alkali cleaning if required
RINSING	Potable water	Low pressure < 30 bar (< 3 MPa) Temperature 50 - 60°C	Low-pressure unit Water hose	Entire machine small components T H O R O U G H L Y

	Cleaning agent	Method	Equipment	Remarks
SIGHT CHECK for outward cleanliness		Sight check		Follow manufacturer's instructions - check critical points and problem areas!
DISINFECTION	As per product data sheet, 0.5 - 2 % Henkel Hygiene P3-TOPAX 990 or P3-TOPAX 91 Goldschmied TEGO 2000 TEGO IMC	Spraying, foam cleaning. Action time as per product data sheet	Low-pressure unit Spray gun	Entire machine and all small components. After all cleaning work in the room has been finished!
RINSING	Potable water	Low pressure < 30 bar (< 3 MPa)	Low-pressure unit Water hose	Rinsing procedure as per FLHV, Anl. 2 11 Nr. 4
DRYING				
MACHINE CARE	e. g. edible oils	Spraying	Spray gun	

6.7.3 Cleaning procedure

CAUTION: the operator control panel may only be cleaned manually using great care!
Under no circumstances may a high-pressure cleaning device be used!

1. Rough cleaning:

The knife hood must be closed.

The noise protection cover must be closed.

The machine must be switched to ready for operation.

Start up knives, and run briefly at maximum speed.

Open noise protection cover.

Start bowl, scrape off residual emulsion.

Stop knife and bowl.

Switch off the main switch.

Open knife hood.

Scrape residual emulsion off knife hood, noise protection cover and bowl.

2. Pre-rinsing:

Starting form above – rinse the noise protection cover, knife hood and knife heads well with hot potable water.

Half fill bowl with potable water.

Close the knife hood.

Switch the machine so that is ready for operation.

Start knives half speed max.

Start bowl.

Briefly run the machine.

Switch off the main switch.

Remove bowl drainage screw:

CAUTION: The bowl drainage screw may only be removed when the machine has been switched electrically dead either by pressing the emergency stop button or by switching off the main switch!

Drain out all water.
Turn drainage screw must be inserted again before the machine is switched ready to start again.

Remove bowl drainage screw and drain off the water completely.

Open knife hood.

Disconnect the machine from the mains.

Dismantle the knife head:

CAUTION: Cut-proof gloves must be worn when touching or handling the knives!

Open the knife shaft with the key provided.
See the Servicing and Maintenance section for details on opening the knife shaft.

CAUTION: Detach the knife-head units one after the other and dismantle into component parts !DANGER OF INJURY!

Dismantle the knife-head units at least 1x a day.

After dismantling knife head, take off cover-ring (DK) see Maintenance and Assembling the knife head section.

Clean all slits and seals with a brush and rinse well with potable water.

CAUTION: Do NOT clean with a high pressure cleaner!
Before mounting knife head push on cover-ring!

Manually rinse the machine and all disassembled parts with hot potable water.

3. Alkali or acid cleaning:

Foam-clean the complete machine and all dismantled parts according to the cleaning schedule.
For cleaning materials see cleaning plan.

4. Rinsing:

Manually rinse the machine and all disassembled parts with hot potable water after the reaction phase.

5. Check:

Perform a sight-check to determine whether the machine is clean.

6. Disinfection:

Spray-clean or foam-clean the whole machine, and all dismounted parts.
Action time: See product data sheet.

7. Rinsing:

Manually rinse the machine and all disassembled parts with hot potable water after the reaction phase.

8. Drying:

Use a dry cloth or paper towelling etc.

9. Machine care:

Spray the whole machine - and all dismounted parts - with a conservation spray suitable for use in the food-processing industry.

6.8 Maintenance

6.8.1 General

Regular controls and necessary maintenance and servicing work are essential for perfect functioning of the machine.

Maintenance, servicing and any repairs may only be carried out **once a year** or after **1000 operating hours** of the **LASKA service department**.

CAUTION:	**Servicing and maintenance work may only be carried out by properly qualified persons!** **Always disconnect the machine from the mains during maintenance work!** **Welding on the machine may only be carried out in consultation with the Works Customer Services Dept. since these can lead to faults on electronic components!**

Hydraulics (if installed):

The hydraulic system is made up of hydraulic aggregate, solenoid valves, hydraulic cylinders and hydraulic pipes.

Check the oil level in the unit every week and check all pipes and components for possible leakage points.

The oil pressure can be tested with the built-on manometer by opening the shut-off valve in front of the manometer.
The button for a hydraulic function should also be pressed and the pressure on the manometer can be read off once the end position of the cylinder has been reached. Utmost attention must be paid that, after testing, the shut-off valve is always re-closed as otherwise the manometer could be damaged.

Pneumatics (if installed):

Regularly control pipes, valves, cylinders, maintenance unit etc.

Lubrication:

Lubricate the machine regularly according to the lubrication plan, control the oil level and carry out oil change. In case of emergence of the lubricant, determine the cause immediately and if necessary repair any damage.

Belts, chains (if installed):

Belts and chains should be tested weekly for correct sit, tension and wear and if necessary retightened (see assembly diagram).

Belt tightening: Utmost attention must be paid that, after tightening, the axes of the pulleys are exactly parallel to each other and the pulley grooves exactly aligned (Do not tighten tensioning elements on one side only).

Belt exchange: Loosen the tightening elements of the belts so far that belts can be easily removed and later easily replaced. Only ever insert belts of the same length.

Pulley grooves must be smooth, clean and free of oil and grease!

Only ever insert belts of the same length.

Belts should be mounted on the pulley carefully and never with force to avoid damage.

Tension the belts as above and control after approx. 15-30 hours of operation whether retightening is necessary.

Electrics:

Electrical devices are to be checked at 6 monthly intervals.

The clamping points of all electrical connections should be checked 1 month after installation to make sure that they are properly secured. Seals in the switch box and electrical parts of the machine should be regularly checked for leakage.

Especial care should be taken that sensitive parts such as the switch box, push button plate, switches, etc. are not directly sprayed with water or high-pressure cleaners.

6.8.2 Servicing Table Cutter

K 65	K 130V	K 130	KCU 200	K 200 330 500 750		on start-up and after approx. 30 operating hours	daily	weekly	monthly	every 6 months	every 12 months
					1. Checking of operational safety						
X	X	X	X	X	After pressing the “EMERGENCY STOP” button the drive elements must be electrically dead		●				
	X	X	X		Loader: limit switch and lowering speed Loading will work only if the noise protection cover is opened, the knife hood is closed and the ejector is swivelled out.		●				
				X	Loader: tipping point, limit switch and lowering speed The loader can only be moved up to the tipping point (tipping is not possible) when the noise protection and vacuum covers are closed. Tipping function only works when the noise protection and vacuum covers are open and the knife hood is closed and the ejector is swivelled out. (Check locking double loader)		●				
	X	X	X	X	Loader: transport car locking, plastic profiles for transport car access		●				
X	X	X	X	X	Unloader: limit switch		●				
X	X	X	X		The ejector can be swivelled in only if the noise protection cover is opened and feeding is at the bottom.		●				
				X	The ejector can be swivelled in only, if the noise protection cover and the vacuum cover are opened and feeding is below the tilting point		●				
X	X	X	X	X	Knife head: tightening according see Operating Manual	●	●				

K 65	K 130V	K 130	KCU 200	K 200 330 500 750		on start-up and after approx. 30 operating hours	daily	weekly	monthly	every 6 months	every 12 months
				X	Knife hood– Baffle plate fixture: see Operating Manual		●				
X	X	X	X	X	Cover movements: paths, closing times		●				
X	X	X	X	X	Drive shafts: Stopping times		●				
X	X	X	X	X	Proper screwing of all machine covers mounted outside		●				
					2. Lubrication						
X	X	X	X		Lubricating points: see Operating Manual		●				
				X	Model central greasing point: see Operating Manual		●				
				X	Model automatic lubrication – grease level container: see Operating Manual			●			
					3. Oil change						
				X	Bowl gear: see Operating Manual						●
	X	X	X	X	Hydraulic aggregate: see Operating Manual						●
	X			X	Vacuum pump: see Operating Manual						●
	X	X		X	Mixing gear, only for types KE, KR, KT: see Operating Manual						●
	X	X		X	Freewheeling, only for types KE, KR, KT: see Operating Manual						●
					4. Expendable parts – check and/or exchange						
X	X	X	X	X	Cutter knife: wear – Regrinding zone see Operating Manual		●				
X	X	X	X	X	Knife shaft bearing: bearing, seals					●	
X	X	X	X	X	Bowl bearing: bearing, seals					●	
				X	Vacuum bowl: seal					●	

K 65	K 130V	K 130	KCU 200	K 200 330 500 750		on start-up and after approx. 30 operating hours	daily	weekly	monthly	every 6 months	every 12 months
				X	Vacuum cover: seal					●	
X	X	X	X	X	Cleaning and machine covers: seals					●	
X	X	X	X	X	The condition of all sealing strips				●		
X	X	X	X	X	Unloader washer: sealing ring			●			
				X	Main drive: tensing roller					●	
X	X	X	X	X	V-belt, ribbed belt	●				●	
				X	Knife hood: Baffle plate fixture		●				
X	X	X	X	X	Switchbox: cleanliness					●	
X	X	X	X	X	Switch cabinet door: locking device		●				
X	X	X	X	X	Switch cabinet door: sealing					●	
				X	Exhaust air pipes – exhaust air flap functioning					●	
	X	X	X	X	Filter mat: dirt	●			●		
	X	X	X	X	Check entire hydraulic system for leaks / hydraulic cylinder – dead centre damping				●		
	X		X	X	Entire compressed air system for leaks				●		
	X		X	X	Entire gas flushing device for leaks				●		
			X	X	Lubrication tubes for ease of flow + leaks				●		
				X	Heating and cooling systems: screw connections and steam tubes – replace tubes every 2 years			●			
					5. Electricals						
X	X	X	X	X	Switchbox: closure + cover seals, condition of interior					●	

K 65	K 130V	K 130	KCU 200	K 200 330 500 750		on start-up and after approx. 30 operating hours	daily	weekly	monthly	every 6 months	every 12 months
X	X	X	X	X	Housing + pushbutton panel: closure + cover seals, condition of interior, heating					●	
X	X	X	X	X	Cable break: damage to insulation					●	
X	X	X	X	X	Main motor: current collector, carbon brushes, water leaks, dirt				●		
X	X	X	X	X	Line contactors: contacts				●		
X	X	X	X	X	Check terminal points switchbox: tighten terminal connections if necessary	●				●	
X	X	X	X	X	Check machine ventilation: cooling system, filter mat				●		
X	X	X	X	X	Check threaded hose couplings, cable duct					●	
X	X	X	X	X	Functional check limit switches + sensors				●		
X	X	X	X	X	Functional check EMERGENCY STOP + brake (if installed)		●				
X	X	X	X	X	Control + check all earthing connections	●				●	

6.8.3 Machine specific servicing and maintenance work

CAUTION: Servicing and maintenance work may only be carried out by properly qualified persons!
Always disconnect the machine from the mains during maintenance work!

Knife head:

Dismantle 1x daily.
Spray all the inside recesses of the unit and the knife shaft with a preservation spray suitable for food industry use.

Bowl – Gear motor:

Checking the oil level:
Unscrew the oil check screw (see lubricants maintenance points/intervals sections).
The oil level is correct when oil runs out of the borehole.

The oil level must be at least in the middle of the glass or maximum at the top of the glass.

Oil change:
Change the oil when the motor has been run warm after approx 10,000 operational hours but after 3 years at least.
Unscrew the drain plug (see lubricants maintenance points/intervals sections) and drain the oil into a drip pan.
Screw the drain plug back in, and refill with oil.
In the event of any oil leaking it must be cleaned using an oil solvent in a manner that protects the environment.

See sections lubricants servicing points/intervals and lubricant overview for details of lubricant and quantities etc.

Unloader – gear motor:

Maintenance free!

Hydraulic aggregate (if installed):

Maintenance is limited to checking the oil level!
Procedure:
Unscrew the oil cap (ventilation cap) from the tank, the oil level is correct as long as there is oil in the filler neck.
If this is not so – to up the oil!

Quantity to be filled: approx. 4 litres
Grease “H” see the lubricants overview section

6.8.4 Filter element
(without monitoring)

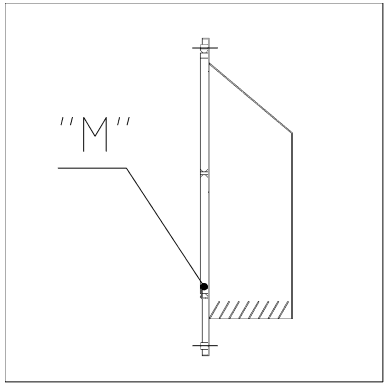


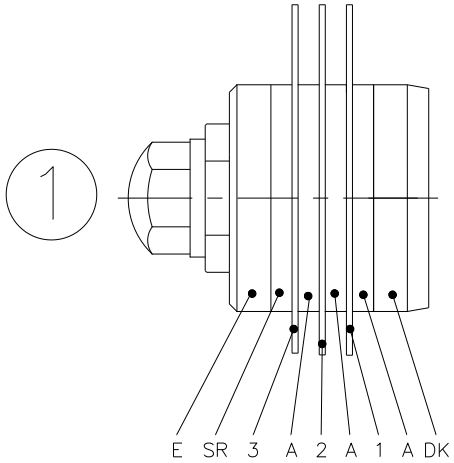
Fig. 1

Clean the filter element **“M”** every 50 to 200 operating hours – depending on dust ratio - and change, if necessary!

CAUTION: Ensure when installing the new filter mat that the written text remains legible.

6.8.5 Assembling the knife head

CAUTION: Cut-proof gloves must be worn when touching or handling the knives!



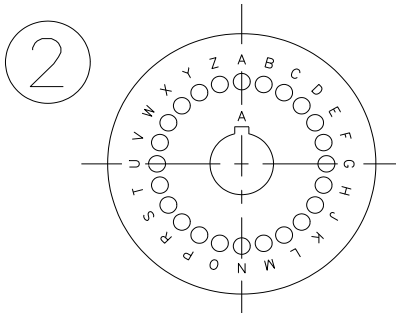
Assembly:

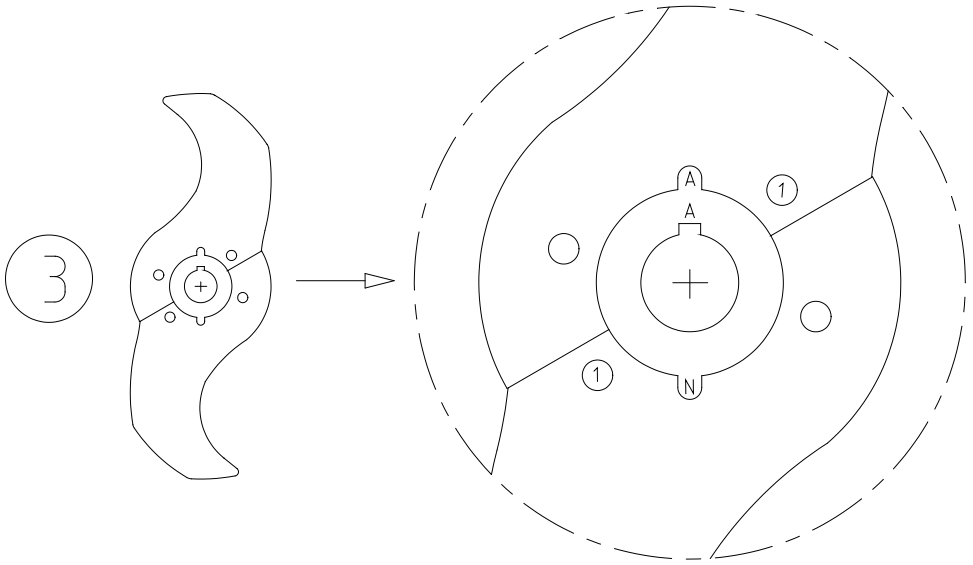
All parts must be thoroughly cleaned and pushed over the knife shaft as follows.
Never insert different knives e. g. “1” – “2” or “1” – “3”, but always in pairs
”1” – “1”, “2” – “2” and “3” – “3” as illustrated in drawings 1, 3, 5, 6
.

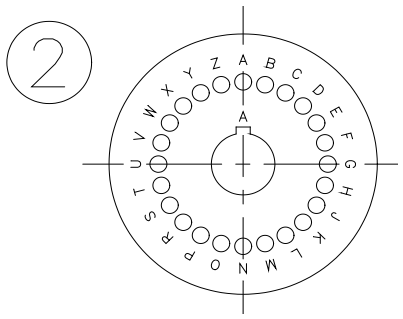
1. Make sure cover-ring **“DK”** (0065.0.045) is pushed on (Fig. 1).

2. Make sure the flange **“A”** is pushed on so that the letters **“A” – “Z”** are visible (Fig. 2).

3. Insert knife **“1”** so that the letters **“A”** and **“N”** are visible (Fig. 3).

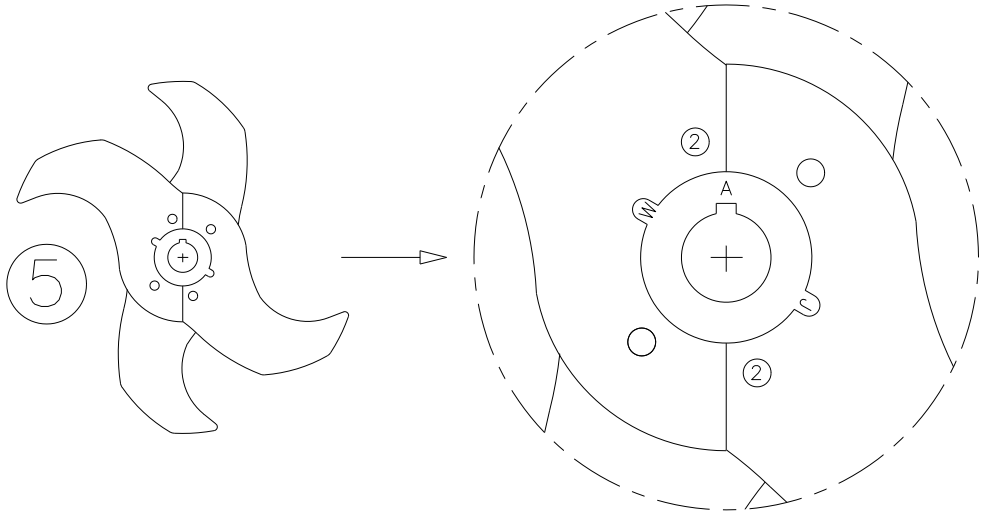




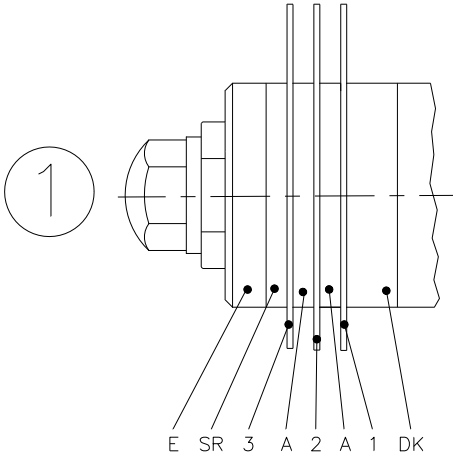


4. Push over flange **“A”** so that the letters **“A” – “Z”** are visible (Fig. 2).

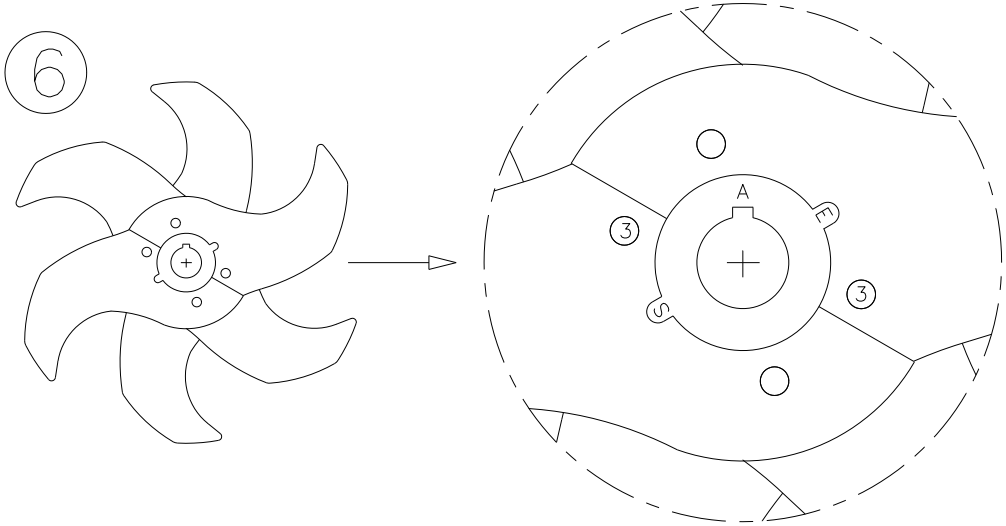
5. Insert knife **“2”** so that the letters **“W”** and **“J”** are visible (Fig. 5).

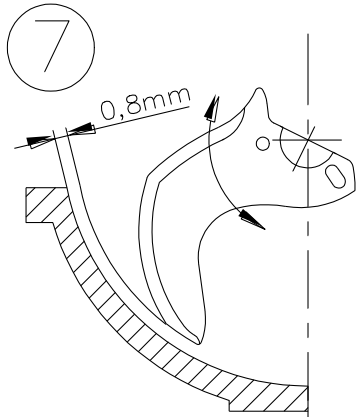


6. Push over flange **“A”** so that the letters **“A” – “Z”** are visible (Fig. 2).



7. Insert knife **“3”** so that the letters **“S”** and **“E”** are visible (Fig 6).





8. Push over terminal ring **“SR”** so that smooth surface is visible (Fig. 1).

9. Push over terminal plate **“E”** as shown on drawing 1.
   Screw on and tighten the knife shaft nut.
   (See Servicing and Maintenance section / tightening the knife

CAUTION: When working with 4 knives, knives No. “3” – “3” are omitted

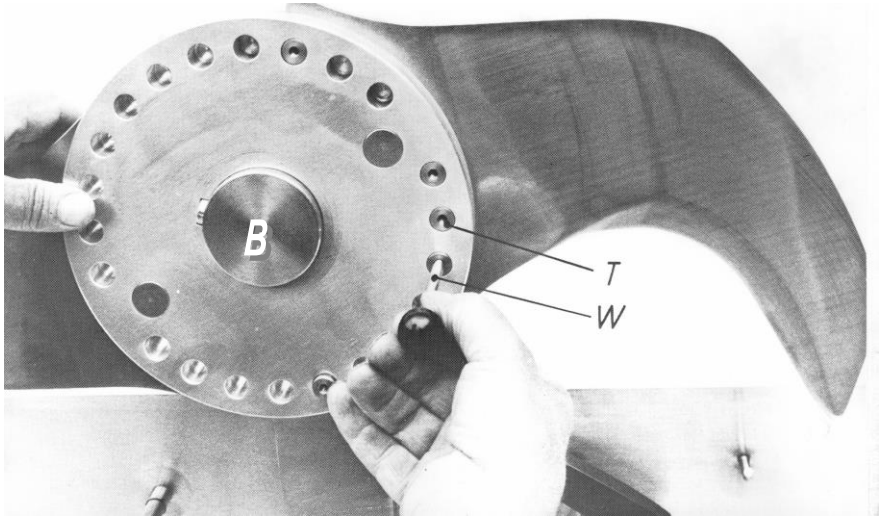
10. A minimum gap of 0.8 mm must exist all around between knife tips and inner bowl rim. (Fig. 7)

6.8.6 Balancing the knives

Slide the knife head units one by one onto shaft **“B”** beginning with unit **“1”**.

The knife heads must come to standstill in every position. If this is not the case, place the knives horizontally and insert weights **“T”** (only as far as the rubber ring) into the side which moves upwards until the balance is achieved.

Test different angles of rotation.
Finally press in the bolts completely.
The bolts can be removed with tool **“W”** which is screwed into the bolts.



6.8.7 Tightening the knives

Once all the knife head units have been slid in turn onto the knife shaft and adjusted, slide on the cover flange and screw on the knife shaft nut.

Knife tensioning device:

- is done with the two spanners provided.
Tighten the knife shaft nut in counter-clockwise direction using the small spanner, while holding in place using the large spanner.

CAUTION: Ensure that the knife shaft nut is tight so that the knives do not come loose during operation of the machine!

MOMENT OF TORQUE 400 Nm

Take off the two spanners and keep them safely!

6.8.8 Servicing of knives

The tension surfaces of the cutter knives and knife heads must be thoroughly cleaned after sharpening the knives and at least once a day, if necessary rust be removed and sprayed with a food-industry suitable conserving spray.
Before the knives are built into the machine, the knife shaft should also be sprayed with a food-industry suitable conserving spray.

Any remaining emulsion on the knives or tension surfaces of the knife head is to be completely removed. Even the slightest damage to the polished knife surfaces, due to mechanical or chemical influences, can lead to **“corrosion”** which in turn results in knife breakage.

The cutter knives should be inserted in pairs of the same from, length and weight
(max. weight difference +/-2 grams).
Any imbalance leads to higher knife burdening, vibrations and uneven running of the machine, which in turn can result in damage to the machine.

6.8.9 Grinding the knives

Particular note should be given to the following:

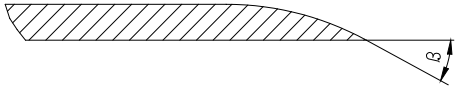
The knives are of hardened stainless steel and thus grinding is best carried out with a special grinding machine with water-cooled whetstone.

Cool the knives often when grinding and make sure and avoid at all costs overheating of the material (yellow-brown or blue discoloration with a special grinding machine with water-cooled whetstone). Overheating leads to grinding fissures and knife breakages.

The cutting edge profile and wedge angle **„β“** of the cutter knife are important influential sizes for the stress of the knife blades The size of the wedge angle directly influences the life of the knife, it should be kept as low as possible.
Factors such as cutting speed, meat qualities product temperature are particularly to be considered.

The cutting edge profile has a big influence on the stress of the knife blade.
The higher the cutting speed, the greater this influence becomes.

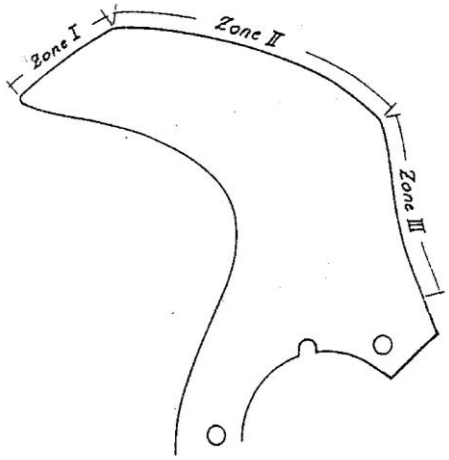
The correct cutting edge profile positively influences the smooth running of the machine.



Wedge angle **„β“**	Range of application
20 degrees	specially for the production of rind emulsions; scalded sausages made of fresh meat
25 degrees	universally applicable wedge angle for the production of scalded, dry and cooked sausage; the input material should not be colder than –10 degrees;
27 degrees	for material frozen to max. –20 degrees

Knives should be ground in pairs to the same shape and weight so that the knife head remains balanced.

Regrind upper surface of the knives with a belt grinding machine and long grinding belts with grain 240. Then polish knife upper surface until shiny with a polishing disc and paste.

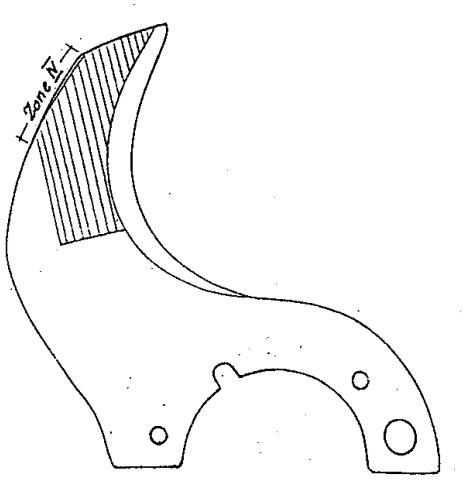


Regrinding zone for cutter knives:

FL/LC – knives:

Frontal view:

Zone I: Must not be ground.
Zone II: Main zone should be regularly ground with the tension device on the stone. Then finely grind and edge zone III on the grinding belt.



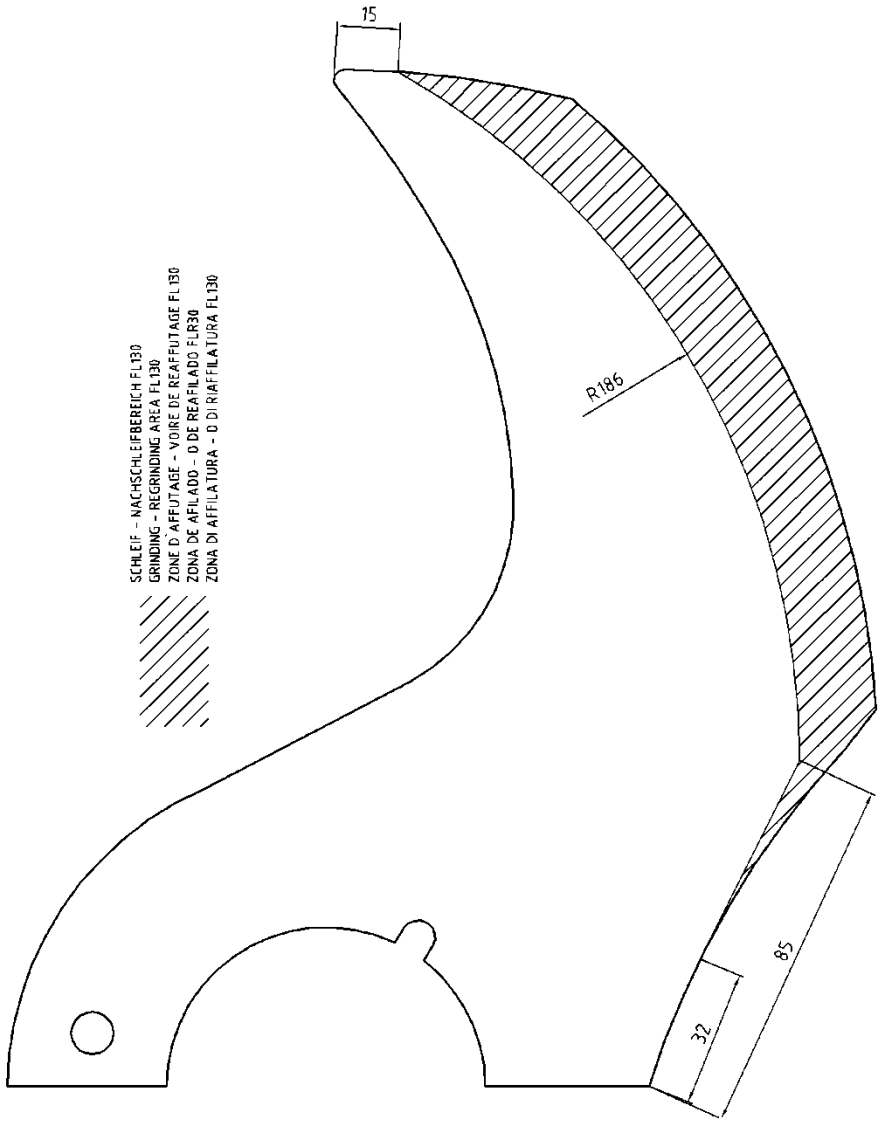
FL/LC – Emulsifying knives with grooves:

View from the rear:

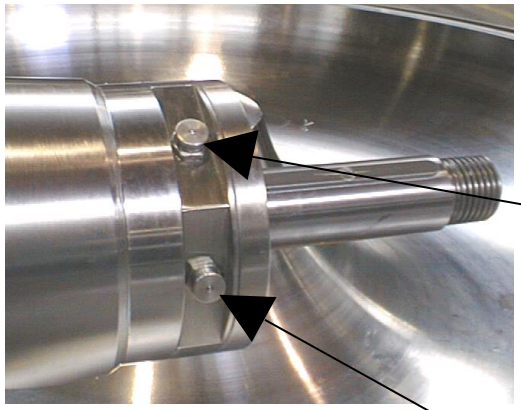
Zone IV: this zone should be slightly counter-ground,
Width of land: about 0.5 to 1 mm.

All guarantees and warranty terms are cancelled for all cutter knives that are not treated according to this guide.

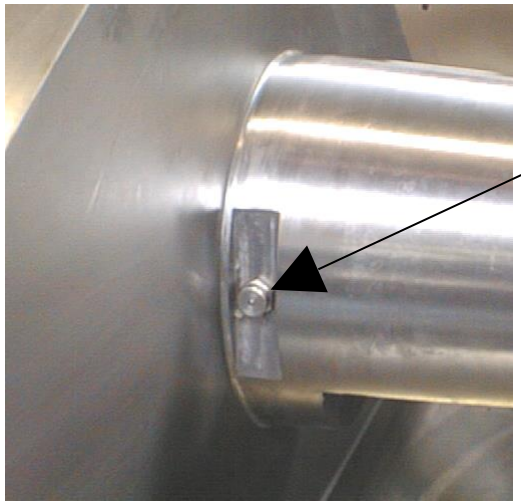
6.8.10 Knife regrinding area FL 130



6.8.11 Lubricant-servicing-points/intervals

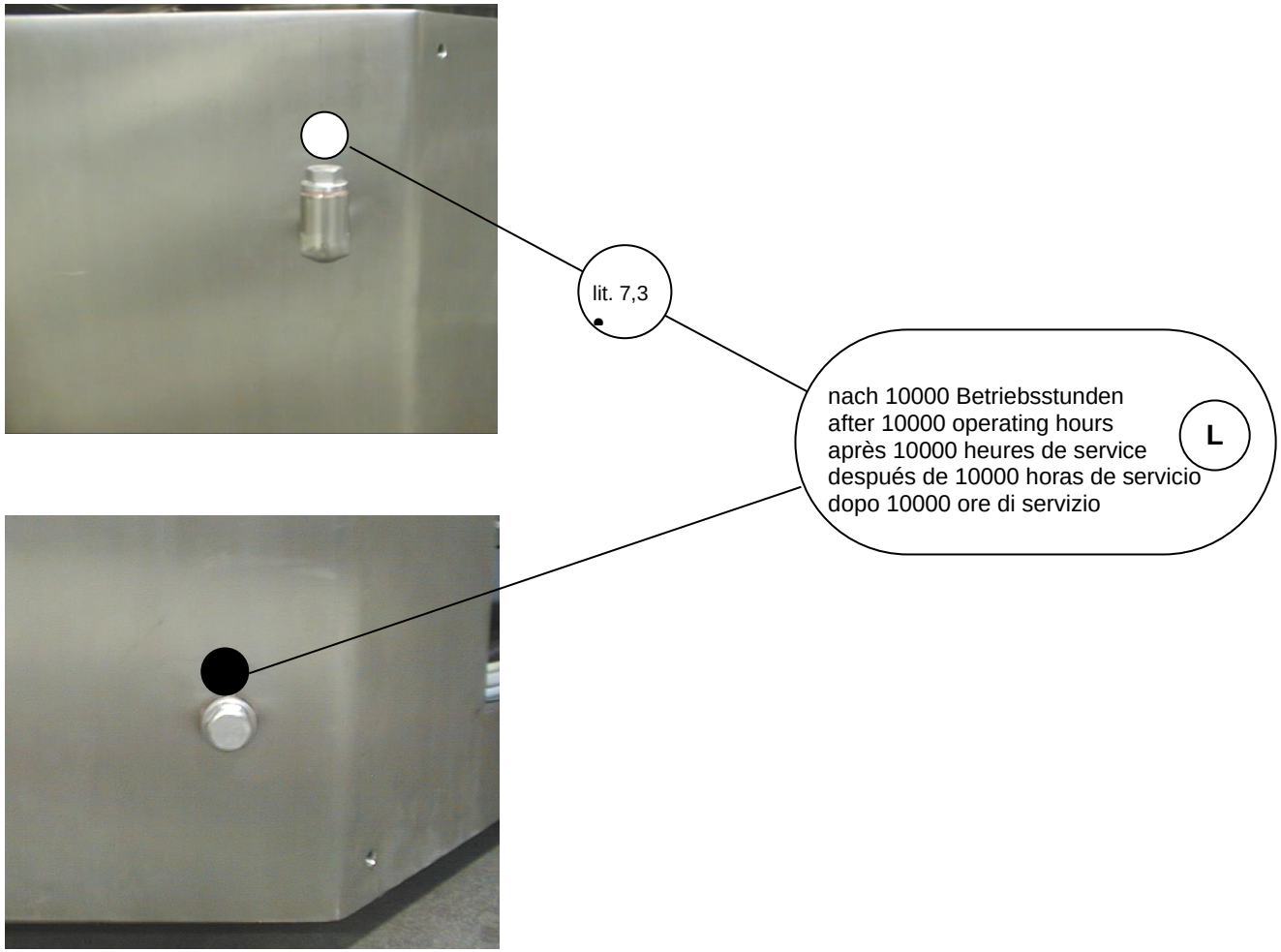


Fettpresse Grease gun Pompe à graisse Bomba engrasadora Lubrificatore a pressione	**1x**	Tag day jour dia giore	**2**	Hübe strokes levees elevaciones colpi	**U**



Fettpresse Grease gun Pompe à graisse Bomba engrasadora Lubrificatore a pressione	**1x**	Woche week semaine semana settimana	**2**	Hübe strokes levees elevaciones colpi	**U**

A B C D G H K L M O P S U	siehe Schmierstoff-Übersicht see recommended-lubricants voir lubrifiants conseilles-vue generale vease lubrificantes recomendados-vista general vedi lubrificanti racommandati- vista generale
▼	mit Fett schmieren grease graisser engrasar ingrassare
○	Öl füllen fill oil remplir d'huile echar aceite mettere olio
⊗	entlüften deaerate desaerer ventilar ventilabe
◒	Kontrolle Ölstand siehe INSTANDHALTUNG – WARTUNG Check oil level see MAINTENANCE – SERVICE Inspection niveau d'huile voir MANUTENTION – ENTRETIEN Inspeccion nivel del aceite vease MANTENIMIENTO – CUIDADO Controllo livello d'olio vedi MANUTENZIONE – CONTROLLO
●	Öl ablassen drain oil vider l'huile escare aceite scarica d'olio


lit. 7,3
nach 10000 Betriebsstunden
after 10000 operating hours
après 10000 heures de service
después de 10000 horas de servicio
dopo 10000 ore di servizio
L

6.8.12 Recommended - Lubricants

Type	Temperature range of use	Viscosity	Flash point	Setting point	Recommended Lubricants
C	-50°C < - > +120°C		+220°C		Klübersynth UH1 14-31 Aral Eural Grease EP 2 Perma SF 10 Texaco Discor 8 EP 2 LF Molykote Low Temp Grease Castrol Molub Alloy 823-1 FM
D	-50°C < - > +120°C		+200°C		Klübersynth UH1 14-1600 Castrol Obeen UF 00
G	-10°C < - > +60°C				Klüberpaste UH1 84-201 Paraliq P 40 Spray Texaco Animal Fat Castrol F+D Fluid Spray
H		46 cSt / 40°C	+200°C	-35°C	Castrol Hyspin ZZ 46 Aral Vitam GF 46 BP Energol SHF 46 Klüberoil GEM 1-46 Klüberoil 4 UH1-46 TexacoTrion EP 46 Molykote Hydraulikoil ISO VG 46 Mobil DTE 25
K		320 cSt / 40°C	+234°C	≤-33°C	Castrol Optileb GT 320
L		220 cSt / 40°C	+200°C	≤-35°C	Castrol Optileb GT 220 Aral Eural Gear 220 Klüberoil 4 UH1-220 Texaco Trion EP 220 Molykote EP Gear Oil 220 Castrol Tribol 1810 / 220 Mobil DTE FM 220

Type	Temperature range of use	Viscosity	Flash point	Setting point	Recommended Lubricants
M		93 cSt / 40°C	+260°C	<-12°C	Aral Motanol HE 100 BP Energol RC 100 Shell Talpa G 100 Mobil Vakuumpumpenoil Heavy Texaco Ursa Oil P 100
O		1500 cSt / 40°C	>200°C	≤-25°C	Aral Eural Chain 220 Klüberoil 4 UH1-1500 Spray Molykote Multi Oil Spray Castrol Viscoleb 1500 Castrol Tribol 1840 / 32 Spray
P	-20°C < - > +250°C	Chain oil			Perma CLASSIC SO 14 Perma STAR L250 SO 32 Castrol Viscogen KL 23 Castrol Viscoleb 280
S		150 cSt / 40°C	+200°C	-35°C	Klüberoil 4 UH1-150 Castrol Optileb GT 150
T		15 cSt / 40°C	+105°C	-50°C	Shell Aero Fluid 4 Klüberoil 4 UH1-15
U	-50°C < - > +120°C		+220°C		Klübersynth UH1 14-31 Tieftemperatur-Fett USDA
W		32 cSt / 40°C	+200°C	-45°C	Mobil DTE 13 M Castrol Tribol 943AW 32
X	-25°C < - > +130°C		+190°C		Aral Aralub 4340 Esso / Unirex N 3 Shell Alvania RL3
Y	-45°C < - > +120°C		+250°C		Klübersynth UH1 14-151

6.9 Trouble shooting

6.9.1 Troubleshooting Guide

Machine does not start:

The knife shaft must be electrically dead **(switch off main switch)** turn manually in clockwise direction

Frequency and mains voltage **must** conform to the voltage given on the rating plate

Control whether the power supply has been interrupted

The main switch **must** be switched on

“EMERGENCY STOP” (if installed) button **must** be unlocked and pulled out

The knife hood **must** be closed

Check the electric safety switch on the knife hood and replace if necessary

Check the functionality of the pushbutton panel

Check the fuses, motor safety switch or the thermo-relay:
Actuate the motor safety switch pushbutton or the thermo-relay pushbutton in the switchbox.
If the safety switch is activated frequently the motor must be checked.

Unloader, loader, knife hood, noise protection – or vacuum cover does not function (when present):

Move the relevant hydraulic cylinders to limits and check the required oil pressure to the hydraulic schedule using the manometer mounted on the hydraulic unit (Open the cutoff valve in front of the manometer and close it immediately after testing the pressure).

Check the power supply and the functionality of the solenoid valve

Check the electric limit switch for functionality and correct position

Necessary hydraulic oil pressure is not attained (if installed):

Pressure regulating valve is defective

Check hydraulic cables, screw joints and pump for tightness

Too little oil in the hydraulic aggregate

Hydraulic motor phase-sequence (right rotary field)

The motor starts only slowly:

Mains voltage too low

Voltage fall is too great in the supply cable

The motor becomes too warm:

The motor may be overloaded: measure current uptake with and without load and compare with the nominal current.

Too high or low voltage (the motor is designed for a maximum deviation of +/- 5 % of the nominal voltage)

Control the current supply cable (all 3 phases)

Insufficient cooling due to motor congestion

Defective cooling

Required vacuum is not achieved (if installed):

Check the suction tubing, seals on the vacuum cover, cleaning covers, knife shaft bearing and bowl bearing and re-adjust or replace

For trouble shooting for rotary disc valve or water vacuum pump see the optional components to the Operating Manual

CAUTION: for further information also see electrical section

6.9.2 Messages - cause

Message	Cause
Machine stop because of temperature setting	Programmed temperature reached
Machine stop because of bowl setting	Programmed bowl revolutions reached
Machine stop because of runtime setting	Programmed knife run time reached
Machine stop because of runtime limit	Machine run time elapsed, consultation of Customer Service Department
Function doesn´t exist	Appears after pressing a key with grey background
Vacuum value setting is 0	Enter value higher 0
Water value setting is 0	Enter value higher 0
Water value setting 1 is 0	Enter value higher 0
Water value setting 2 is 0	Enter value higher 0
Machine service is needed	Maintenance interval elapsed
Vibration control prewarning occured	Excessive vibration, balance knife
Open noise dampening hood	Precondition not met
Close noise dampening hood	Precondition not met
Open vacuum hood	Precondition not met
Close vacuum hood	Precondition not met
Close knife hood	Precondition not met
Swing out unloader	Precondition not met
Lower loader	Precondition not met
Lower loader 1	Precondition not met
Lower loader 2	Precondition not met
Start bowl	Precondition not met
Start knife	Precondition not met
Stop knife	Precondition not met
Water dosage active	Precondition not met
Water dosage 1 active	Precondition not met

Message	Cause
Water dosage 2 active	Precondition not met
Vacuum active	Precondition not met
Gas flushing device active	Precondition not met
Cooking function active	Motor bearing points (main motor) re-lubricating
Please lubricate main motor see Operating Manual	

6.9.3 Warning – cause – remedy

Warning	Cause	Remedy
Remaining runtime brush control	Brushes worn	Replace brushes
Remaining runtime central lubrication	Grease container empty or malfunction of lubricating cycle	Check grease container and lines

6.9.4 Malfunction message – cause - remedy

Malfunction message	Cause	Remedy
Emergency stop activ		Release E-stop pushbutton (turn right and pull out)
Main drive temperatur over level	Motor ventilation defective	Check motor ventilation
Machine lock because of brush control. Renew brushes!	Residual run time of 40 hours elapsed	Consult Customer Service Department
Frequence convertor or rectifier not ready	Frequency converter or rectifier defective	See malfunction message at frequency converter or rectifier
Motor Circuit Protectors mixing gear triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors bowl triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors machine ventilation triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors hydraulic pump triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors vacuum pump triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors unloader triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors central lubrication triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Motor Circuit Protectors ventilator gas flushing triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals

Malfunction message	Cause	Remedy
Motor Circuit Protectors cleaning system triped	Motor circuit-breaker defective, motor current too high	Check and/or acknowledge motor circuit-breaker, check cable connection and terminals
Flow control triped	Filter mat clogged or failure of motor fan	Exchange filter mat, check motor fan
Central lubrication cycle switch triped	Lubrication line clogged or wrong grease	Lubricate lubrication lines manually and check grease
Central lubrication minimum filling amount reached. Fill container!	Container empty	Fill container
Vibration control device not ready	Device failure	Check device, exchange it, if required
Vibration control triped	Excessive vibration on knife shaft	Balance knife, check knife shaft bearing
Machine lock because of central lubrication	Residual run time of 40 hours elapsed	Consult Customer Service Department
Machine lock function applied due to continuous operation. Please wait a moment	Knife hood opened more than once in a single minute	Do not open knife hood twice within a single minute
Communication CAN-Bus failed	Communication between control panel and PLC interrupted	Check CAN bus connection, restart machine
Runtime bowl positioning exeeded	Bowl position not reached	Acknowledge malfunction message, restart
Error in initialising memory. --> PMS not operational	Storage reservation for PMS not successful	Restart machine, consult Customer Service Department

7 Spare parts

7.1.1 Ordering information for spare parts

All important components for the machines are shown in plans and drawings in the “Electrical circuit diagram” and “Components drawings” sections.

Electrical circuit diagram:
The electrical circuit diagram shows all electrical components with their position number

Component overview diagram (BGUS):
The component overview diagram (BGUS): shows the separate component groups into which the machine is divided. The additional information sheet * component names * describes these components by name

Component drawing (AA – ZZ):
The component drawing (AA – ZZ) shows all the parts of an individual component with their position numbers.

Order number and name
The order number and name of the parts is found in the spare parts list.

Spare parts list:
The spare parts list gives the parts shown in the plans and drawings with their numbers (POS. NO.)

To the right of this is the relevant 5-digit order number (ART. NO.) and the name
under which a required order can be made.

In order to make searching easy the parts numbers (POS. NO.) are sorted in ascending order, with the part number letter given before the digits in each case.
e.g.: A107
before AB107
before 1K107
before 0503.8.045.3

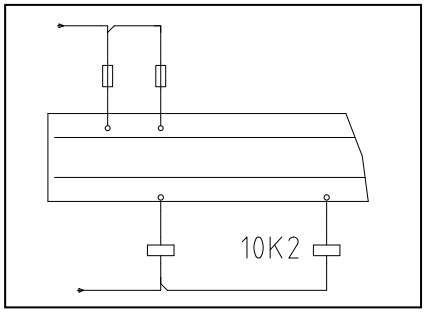
Data on ordering:

The following data should always be given when ordering:	EXAMPLE:
1. **Machine type** and size	**KU 500**
2. **Machine number** (see name plate)	**10555**
3. **Position number (POS. NO.)** to drawing/spare parts list	**0503.8.045.3**
4. **Order number (ART. NO.)** of part to spare parts list	**39184**
5. **Name** of part wanted	**bearing cover**
6. **Quantity** of the parts wanted (amount)	**1 piece**

Your attention is drawn to the fact that all warranty claims are cancelled if any parts other than **Original LASKA** cutters or spare parts are used.

7.1.2 Search for order number

The following is to be noted when searching for the ORDER NUMBER (ART. NO.) of spare parts in the spare parts list:

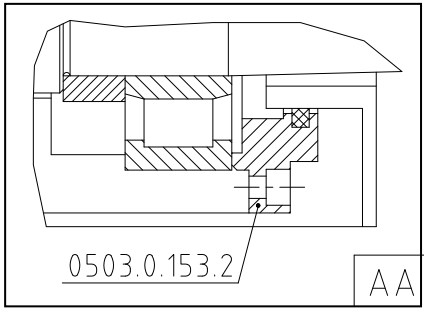


Take the name of relevant part (POS. NO.) from the appropriate drawing.

ELECTRICAL COMPONENTS:

This number (POS. NO.) is to be found in the spare parts list exactly as given in the electrical circuit diagram.

e.g.: **10K2**

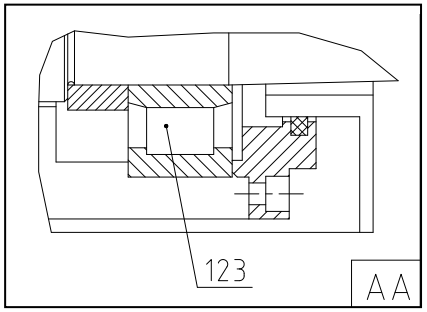


MECHANICAL COMPONENTS:

The name (POS. NO.) can only be given in the drawing by two different number types.

Numbers (POS. NO.) with spacing between the digits:
This number is to be found in the same form in the spare parts list.

e.g.: .. **0503.0.153.2**



Numbers (POS. NO.) without spacing between the digits:
The letter combination given in the lower right corner must always be given for the search in the spare parts list.

e.g.: **AA123**

In the case of some names, the preliminary letter combination can already be placed on drawing.

In such cases this letter combination must not be used again in the search.

7.2 Assembly groups - denominations

(see following pages)

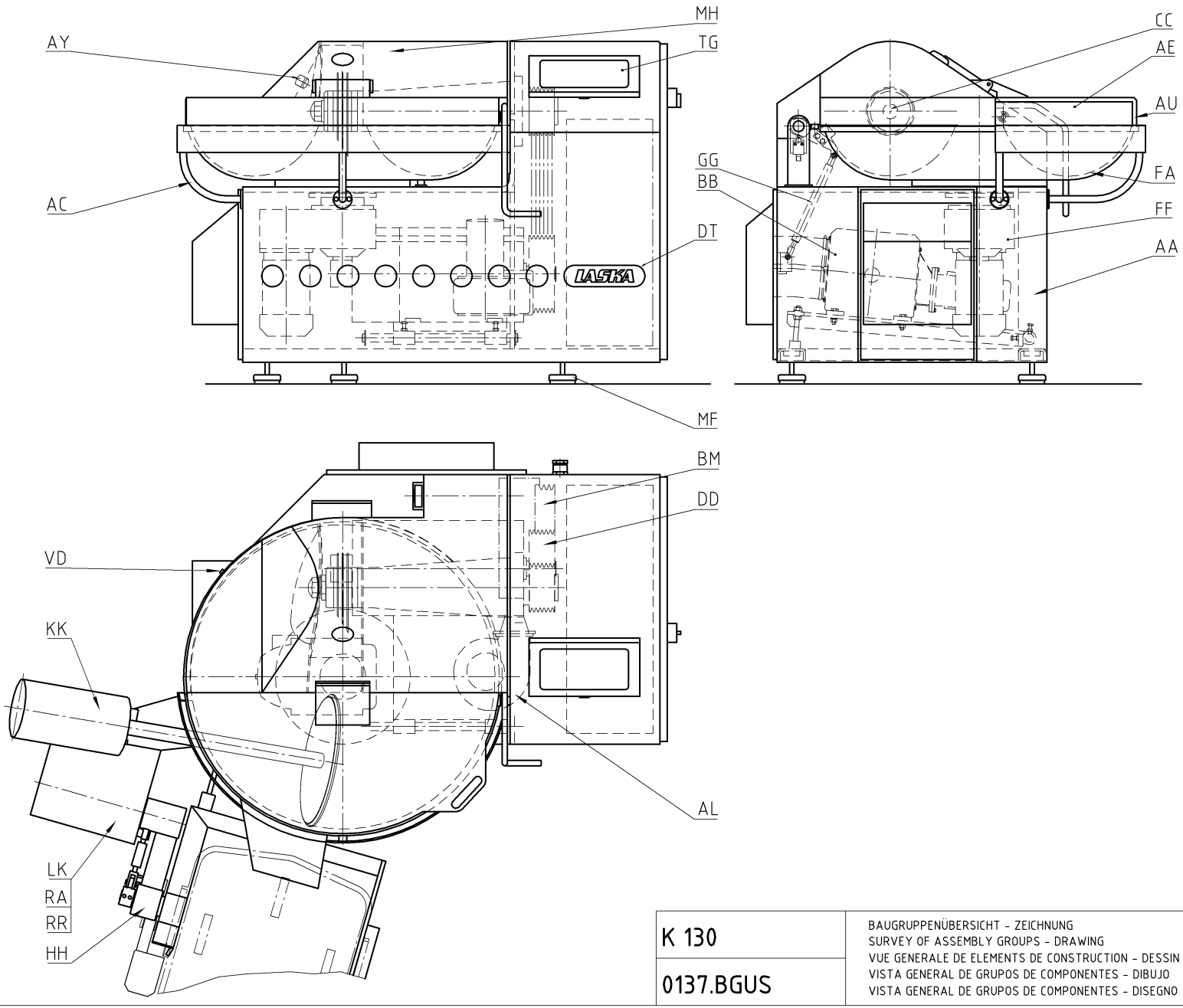
	Baugruppen - Benennungen	Assembly groups - Denominations	Eléments de constructions - Dénominations	Grupos de componentes - Denominaciones	Gruppi di componenti - Denominazionei
AA ...	Maschinengehäuse	Machine housing	Bâti	Estructura de la máquina	Corpo della macchina
AB ...	Messerwellenbremse	Knife shaft brake	Frein arbre porte-couteaux	Freno del eje portacuchillas	Freno per albero portacoltelli
AC ...	Schüsselschutz	Bowl protection	Protection de la cuve	Protección del plato	Protezione vasca
AE ...	Lärmschutzdeckel	Sound dampening hood	Couvercle antibruit	Tapa antisonido	Coperchio antirumore
AF ...	Abstreifer	Stripper	Racleur	Raspador	Rasciatore
AG ...	Deckelbetätigung	Cover activator	Actionnement couvercle	Accionamiento de la tapa	Azionamento del coperchio
AL ...	Ventilator	Fan	Ventilateur	Ventilador	Ventilatore
AN ...	Pneumatik	Pneumatic system	Système pneumatique	Sistema neumático	Sistema pneumatico
AP ...	Stauwandfixierung	Baffle plate fixture	Fixation tôle-chicane	Fijador de la pared de contención	Fissazione lamiera di ritegno
AT ...	Heiz/Kühl-Leitung	Heating/Cooling tube	Conduite à chauffage/refroidissement	Conducción térmica/enfriamiento	Conduttore riscald./refrigerazione
AU ...	Schutzabdeckung	Protection cover	Recouvrement protecteur	Cubierta de protección	Copertura protettiva
AY ...	Thermometerhalter	Thermometer holder	Portethermomètre	Sostén del termómetro	Sostegno del termometro
BB ...	Hauptantrieb	Main drive	Entraînement principal	Accionamiento principal	Azionamento principale
BC …	Getriebe	Gear	Engrenage	Engranaje	Ingranaggio
BD …	Lüftungsdeckel	Venting cover	Couvercle d'aération	Tapa de ventilación	Coperchio ventilatore
BM ...	Mischgangantrieb	Mixing gear drive	Actionnement de la vitesse lente	Accionamiento de marcha de mezcla	Azionamento marcia di mescolazione
BS ...	Schüsselantrieb	Bowl drive	Actionnement de la cuve	Accionamiento del plato	Azionamento vasca
CC ...	Messerkopf	Knife head	Tête porte-couteau	Cabezal de cuchillas	Testa portacoltelli
CR ...	Reinigungssystem	Cleaning system	Système de nettoyage	Sistema de limpieza	Sistema di pulizia
DA ...	Anbau	Attachment	Construction annexe	Anexo	Costruzione annessa
DB ...	Anbau-Deckel	Attachment	Construction annexe	Anexo	Costruzione annessa
DD ...	Messerwellenlagerung	Knife shaft bearing	Logement arbre porte-couteaux	Alojamiento del eje portacuchillas	Supporto albero portacoltelli
DL ...	Dichtleiste	Bar	Liston	Listón	Lista
DT ...	Diverse Teile	Various parts	Pièces diverses	Diversas partes	Parti diverse
EG ...	Elektro - Grundausstattung	Standard electric equipment	Equipement electrique standard	Equipo electrico base	Dotazione basica elettrica
EK ...	Elektro - Verbindungskabel	Electric connecting cables	Cables de connexion electrique	Cables de conexion electrica	Cavo allacciamento
ES ...	Elektro - Steuerung	Electric control	Commande electrique	Comando electrica	Comando elettrica
ET ...	Tasterplatte	Push button plate	Plaque boutons-poussoirs	Placa de pulsadores	Tastiera
FA ...	Schüsselablassschraube	Bowl drain plug	Vis ecoulement cuve	Tornillo de salida del plato	Vite di svuotamento vasca
FF ...	Schüssellagerung	Bowl bearing	Logement de la cuve	Alojamiento del plato	Supporto vasca
FK ...	Koch-Dreheinführung	Rotating lead-in/cooking	Entrée à torsion/cuisson	Entrada rotativa de cocción	Entrata rotativa di cottura
FS …	Getriebeschnecken-lagerung				
GG ...	Deckellagerung	Cover bearing	Logement couvercle	Alojamiento de la tapa	Supporto del coperchio
GK ...	Messerhaubenlagerung	Knife hood bearing	Palier capot couteaux	Alojamiento de la cubierta de cuchillas	Supporto coperchio dei coltelli

	Baugruppen - Benennungen	Assembly groups - Denominations	Eléments de constructions - Dénominations	Grupos de componentes - Denominaciones	Gruppi di componenti - Denominazionei
GL ...	Lärmschutz-Deckel-Lagerung	Noise dampening cover bearing	Logement du couvercle anti-bruit	Rodamiento de tapa anti-sonido	Supporto coperchio antirumore
G0 ...	Beschickungsgondel	Loader fork	Benne de chargeur	Góndola cargadora	Gondola caricatore
GV ...	Vakuum-Deckel-Lagerung	Vacuum cover bearing	Logement couvercle a vide	Rodamiento de tapa de vacio	Supporto coperchio sotto vuoto
HH ...	Beschickung	Loader	Chargeur	Cargador	Caricatore
HK ...	Konsole Beschickung	Bracket loader	Console chargeur	Consola cargador	Mensola caricatore
KA ...	Auswerferblech	Unloader plate	Plaque vide-cuve	Placa del dscargador	Piastra del scaricatore
KK ...	Auswerfer	Unloader	Vide-cuve	Descargador	Scaricatore
KV ...	Kabelverlegung	Cable laying	Pose de câbles	Tendido de cables	Posa di cavi
LK ...	Auswerferkonsole	Unloader bracket	Console vide-cuve	Consola descargadora	Mensola del scaricatore
LL ...	Auswerfer-Lagerung	Unloader bearing	Logement vide-cuve	Rodamiento-descargadora	Supporto scaricatore
MF ...	Maschinenfuß	Machine foot	Pied de machine	Pata de la máquina	Piede della macchina
MH ...	Messerhaube	Knife hood	Capot protecteur couteaux	Cubierta protectora de cuchillas	Coperchio dei coltelli
MS ...	Messerspannvorrichtung	Knife tensioning device	Tendeur de couteaux	Dispositivo tensor de cuchillas	Dispositivo di tensione coltelli
NK ...	Stickstoffkühlung	Nitrogen cooling system	Refroidissement à nitrogene	Enfriamiento por nitrógeno	Raffreddamento a nitrogeno
NN ...	Begasungseinrichtung	Gas flushing device	Dispositif de gazage	Dispositivo de gas	Dispositivo gas
PP ...	Wasserdosierung	Water dosage	Dosage d' eau	Dosificador de agua	Dosatore acqua
RA ...	Hydraulikaggregat	Hydraulic aggregate	Agrégat hydraulique	Agregado hidráulico	Aggregato idraulico
RD ...	Reinigungsdeckel	Cleaning cover	Couvercle nettoyage	Tapa para limpieza	Coperchio di pulizia
RR ...	Hydraulik	Hydraulic system	Système hydraulique	Sistema hidráulico	Sistema idraulico
RS ...	Riemenspannvorrichtung	V-belt tensioning device	Dispositif tendeur de courrois	Dispositivo tensor de correas	Dispositivo tendicinghia
SG ...	Schaltschrank-Gestell	Control box frame	Porte boite armoire commande	Marco de la caja de distribucion	Incastellatura armadio di distribuzione
SS ...	Beleuchtung	Lighting	Eclairage	Alumbrado	Illuminazione
TG ...	Tastergehäuse	Push button housing	Boîte boutons-poussoirs	Caja de pulsadores	Struttura manipolatore
TT ...	Tasterkonsole	Push button bracket	Console boutons-poussoirs	Consola de pulsadores	Mensola manipolatore
VB ...	Schutzblech	Guard plate	Tóle de protection	Chapa protectora	Lamiera di protezione
VC ...	Vakuumdeckel	Vacuum cover	Couvercle a vide	Tapa de vacio	Coperchio sotto vuoto
VD ...	Verriegelung-Dichtung	Locking device / seal	Blocage / joint	Enclavamiento junta de bloqueo	Chiusura a chiavistello
VH ...	Versandhilfe	Transport support	Appui de transport	Soporte de transporte	Aiuto da trasporto
VS ...	Vacuumschale	Vacuum bowl	Cuvette sous vide	Cuba de vacío	Coppa sottovuoto
WW ...	Messereinstellvorrichtung	Knife adjusting device	Dispositif ajustage couteaux	Dispositivo equilibrador de cuchillas	Dispositivo di regolazione coltelli
WZ …	Werkzeug	Tool	Outil	Herramienta	Utensili
XX ...	Vacuumeinrichtung	Vacuum equipment	Equipement sous vide	Dispositivo de vacío	Sistema sottovuoto
ZD ...	Zugabe-Deckel	Additive cover	Couvercle pour additifs	Tapa anadidora	Sportello di aggiunta

	Baugruppen - Benennungen	Assembly groups - Denominations	Eléments de constructions - Dénominations	Grupos de componentes - Denominaciones	Gruppi di componenti - Denominazionei
ZZ ...	Zentralschmierung	Central lubrication	Graissage central	Lubricación central	Lubrificazione centrale

7.3 Survey of assembly groups - drawing

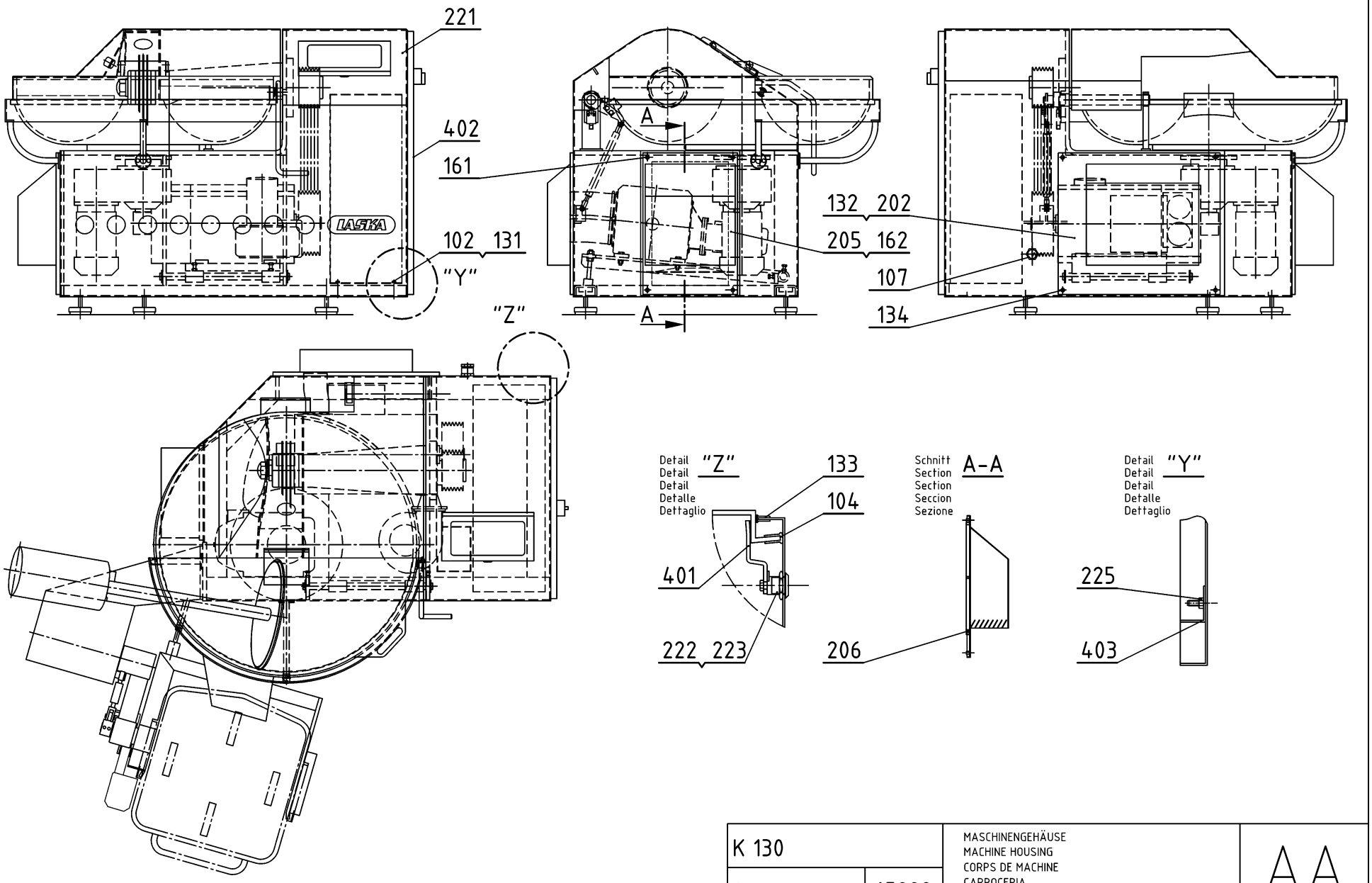
(see following page)



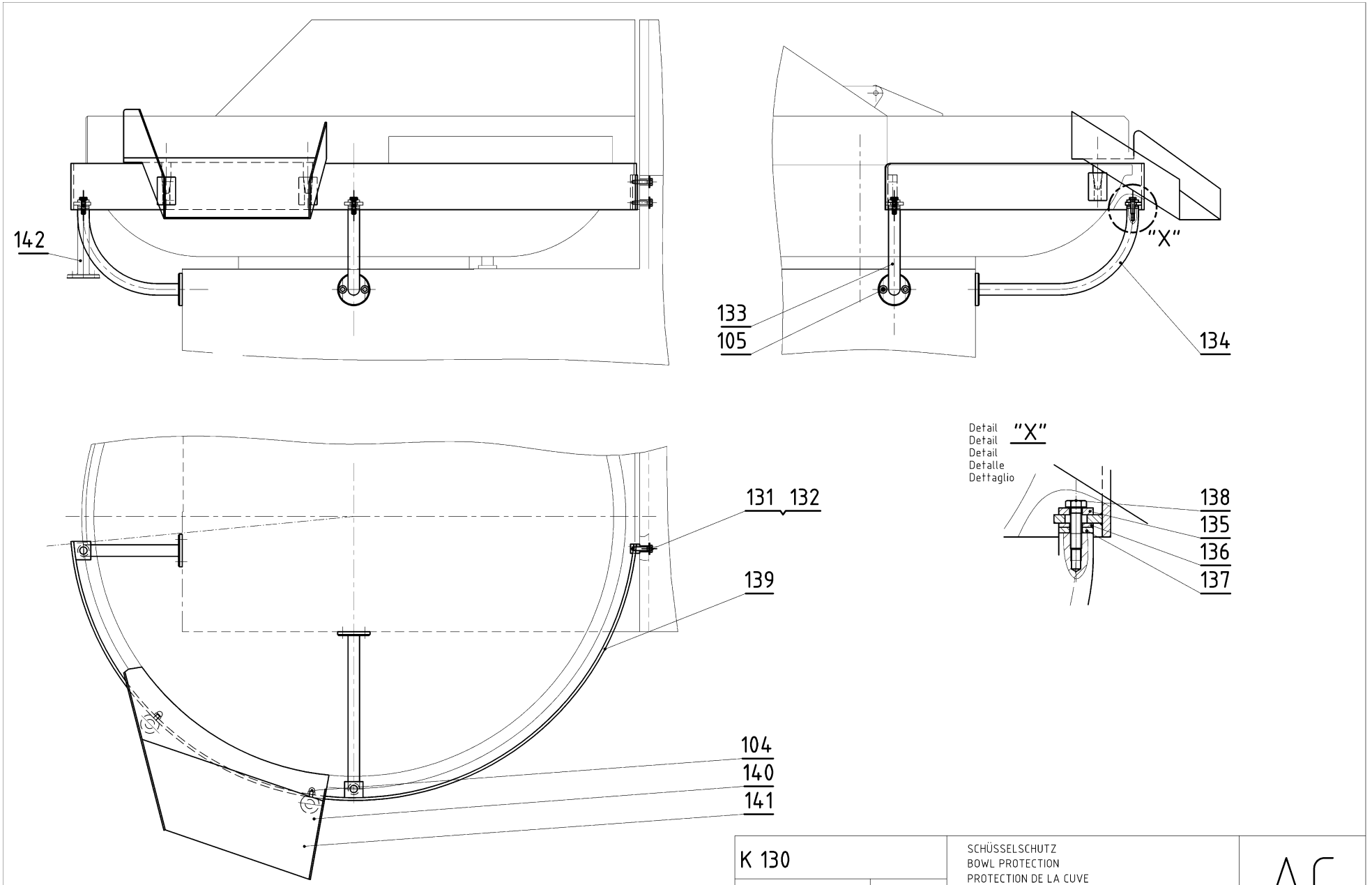
K 130 0137.BGUS	BAUGRUPPENÜBERSICHT - ZEICHNUNG SURVEY OF ASSEMBLY GROUPS - DRAWING VUE GENERALE DE ELEMENTS DE CONSTRUCTION - DESSIN VISTA GENERAL DE GRUPOS DE COMPONENTES - DIBUJO VISTA GENERAL DE GRUPOS DE COMPONENTES - DISEGNO	BGUS

7.3.1 Components drawings

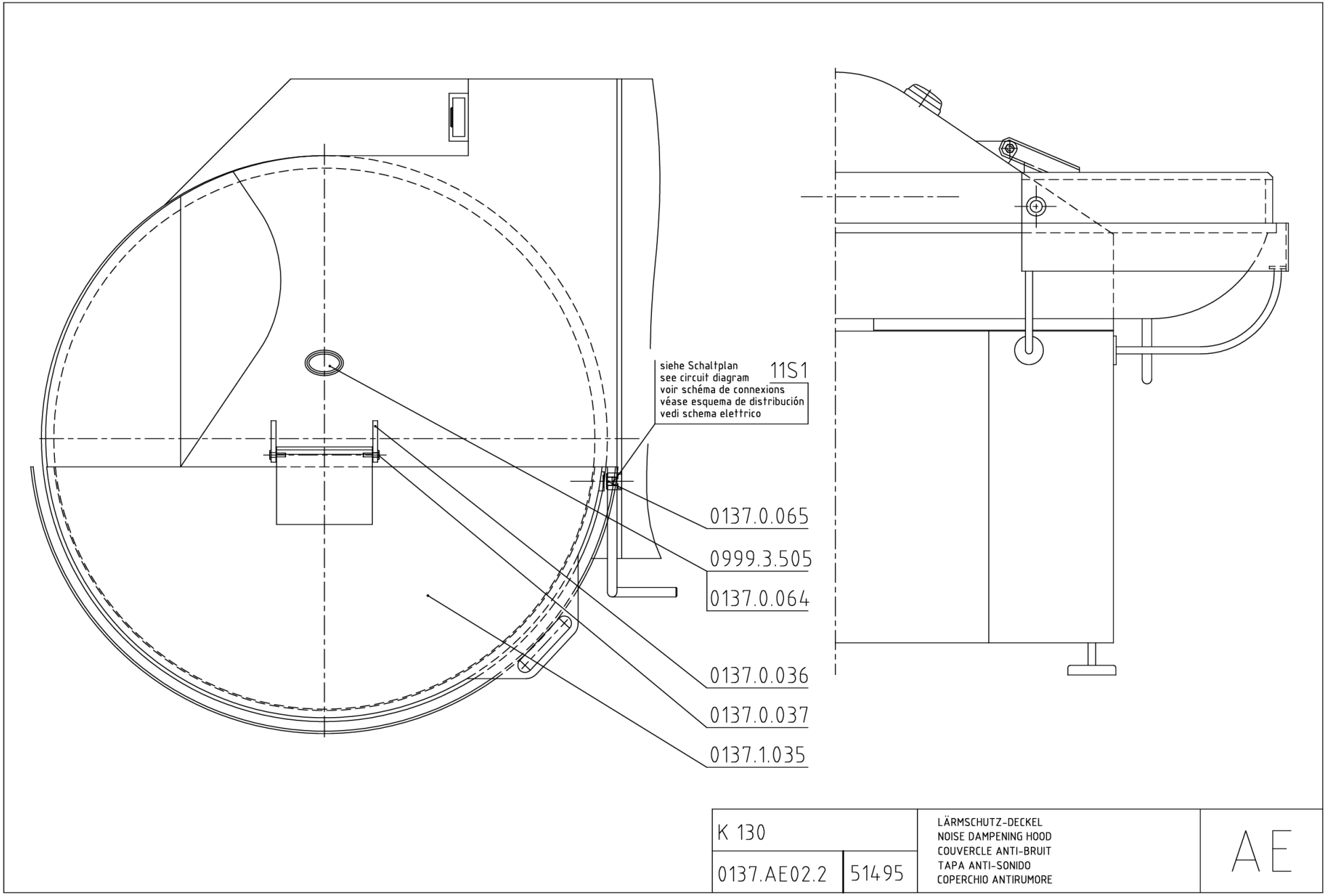
(see following pages)

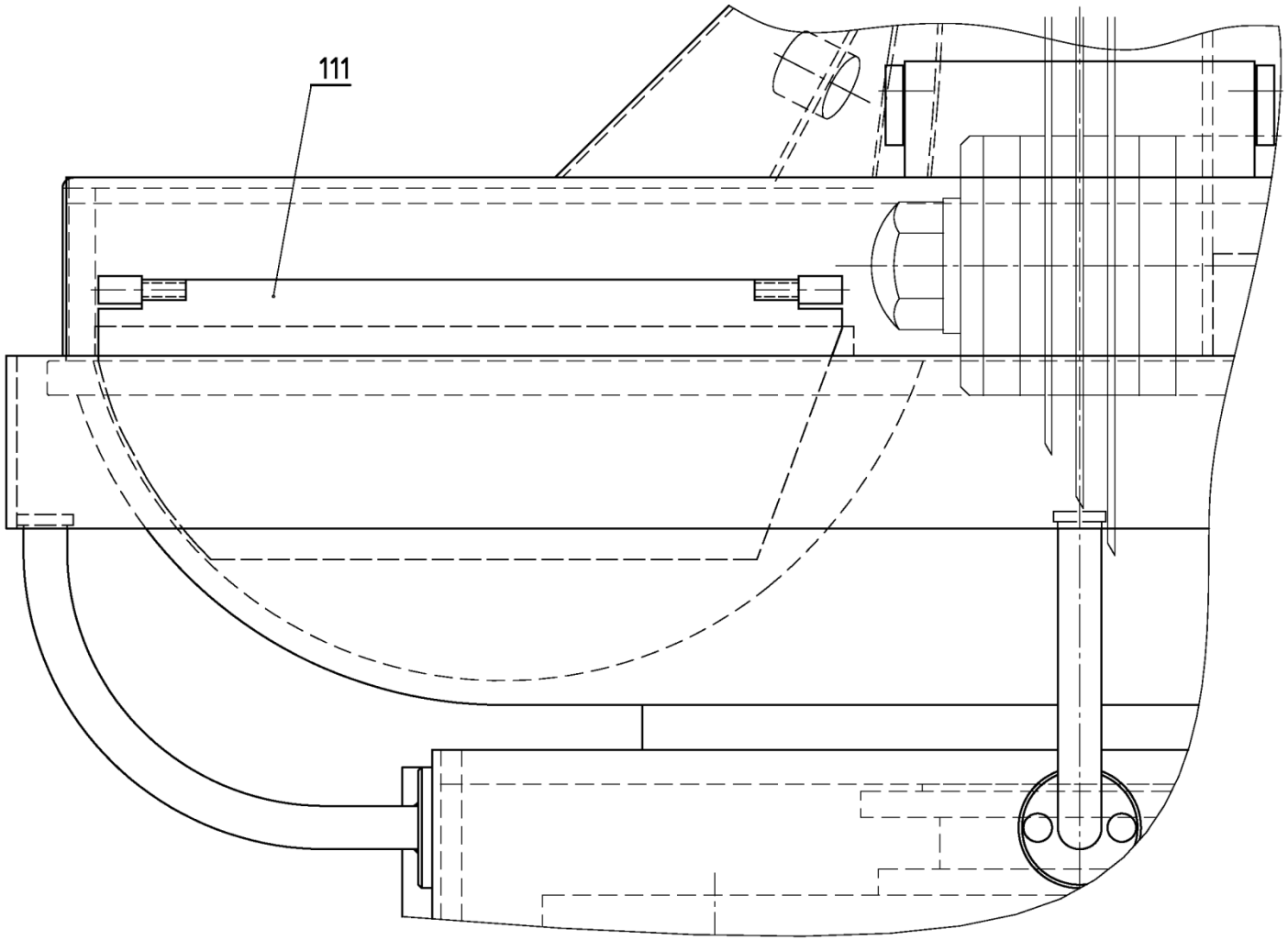


K 130		MASCHINENGEHÄUSE MACHINE HOUSING CORPS DE MACHINE CARROCERIA CORPO DELLA MACCHINA	A A
0137.AA11	65898		

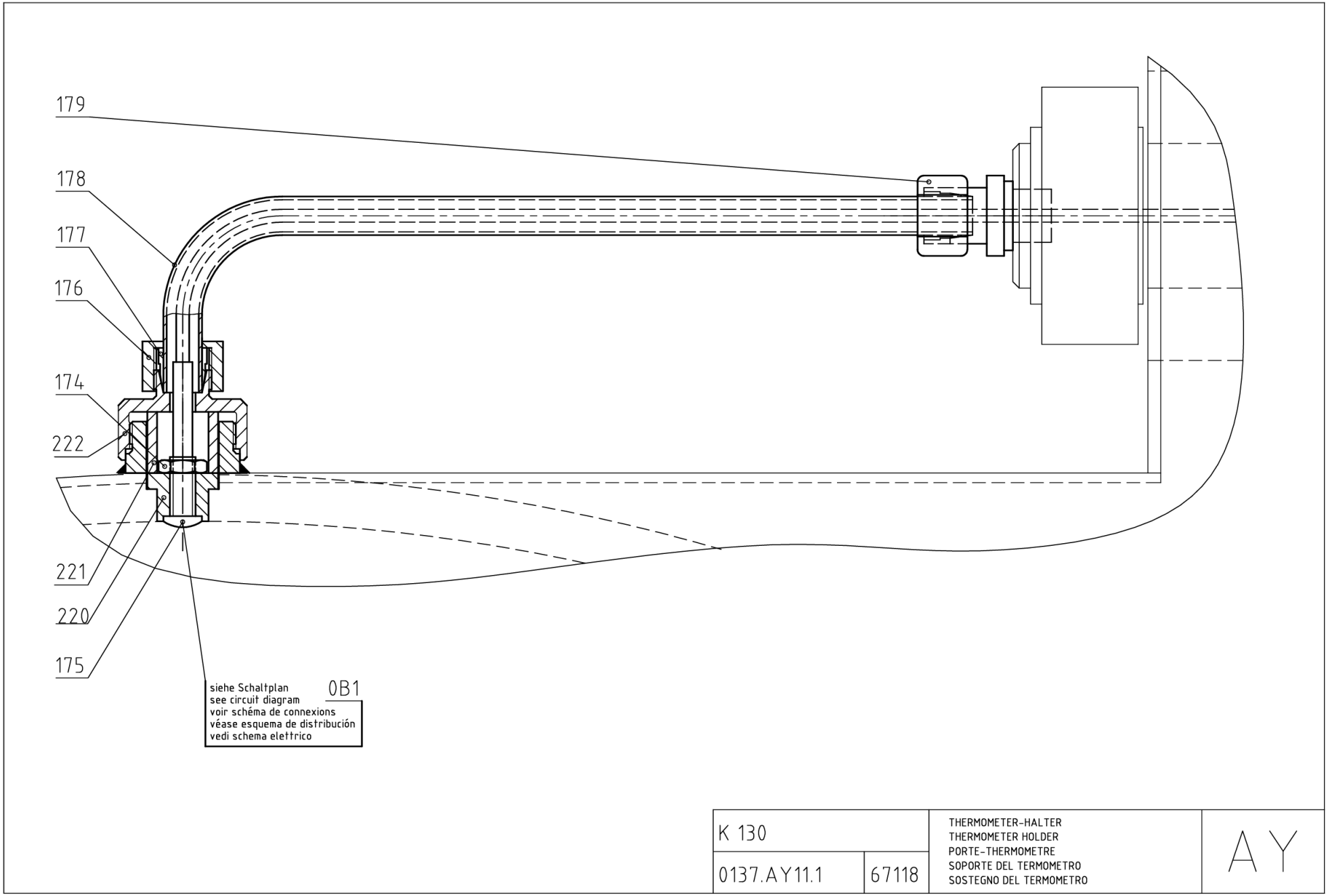


K 130		SCHÜSSELSCHUTZ BOWL PROTECTION PROTECTION DE LA CUVE PROTECTOR DEL PLATO PROTEZIONE VASCA	AC
0137.AC08.2	60539		

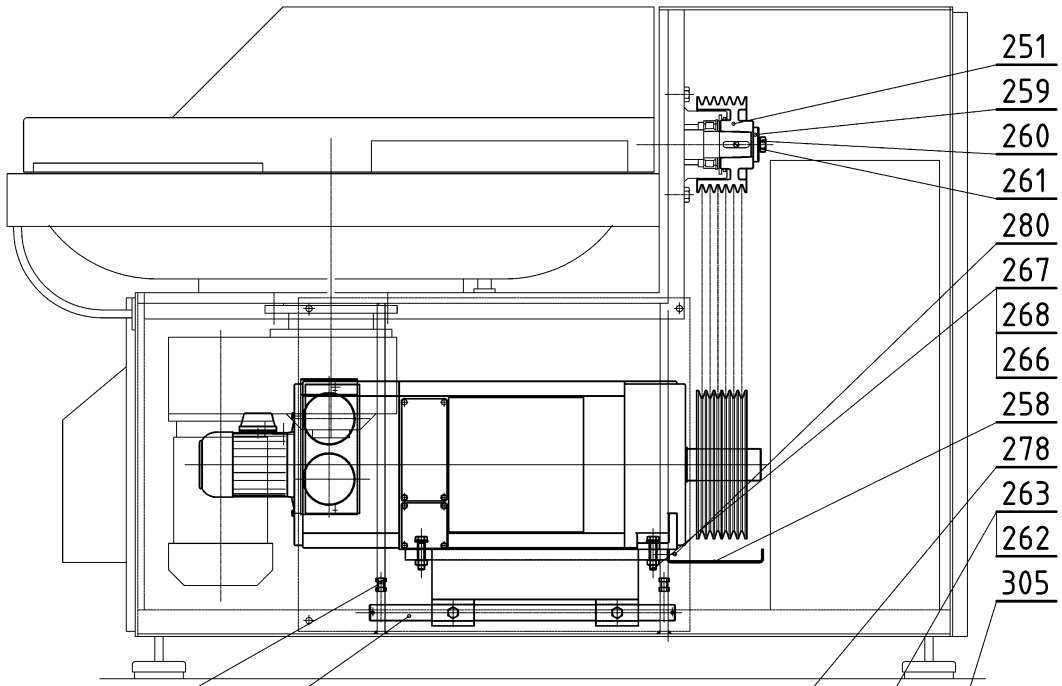

siehe Schaltplan
see circuit diagram
voir schéma de connexions
véase esquema de distribución
vedi schema elettrico
11S1
0137.0.065
0999.3.505
0137.0.064
0137.0.036
0137.0.037
0137.1.035
K 130
0137.AE02.2
51495
LÄRMSCHUTZ-DECKEL
NOISE DAMPENING HOOD
COUVERCLE ANTI-BRUIT
TAPA ANTI-SONIDO
COPERCHIO ANTIRUMORE
AE

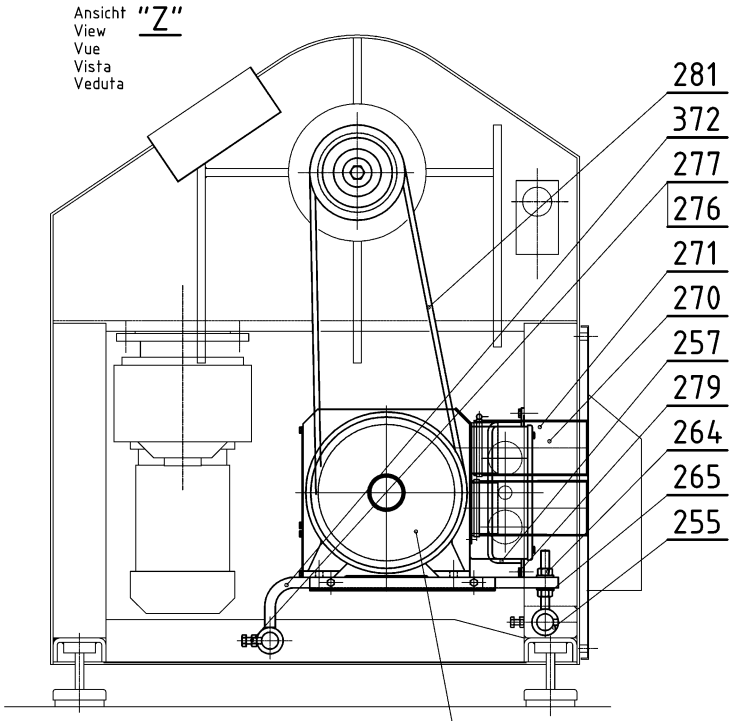


K 130		SCHUTZ-ABDECKUNG PROTECTION-COVER COUVERCLE PROTECTEUR CUBIERTA PROTECTORA COPERTURA PROTETTIVA	AU
0137.AU02	56923		



K 130		THERMOMETER-HALTER THERMOMETER HOLDER PORTE-THERMOMETRE SOPORTE DEL TERMOMETRO SOSTEGNO DEL TERMOMETRO	A Y
0137.AY11.1	67118		

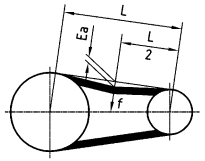




siehe Schaltplan 1M1
see circuit diagram
voir schéma de connexions
véase esquema de distribución
vedi schema elettrico

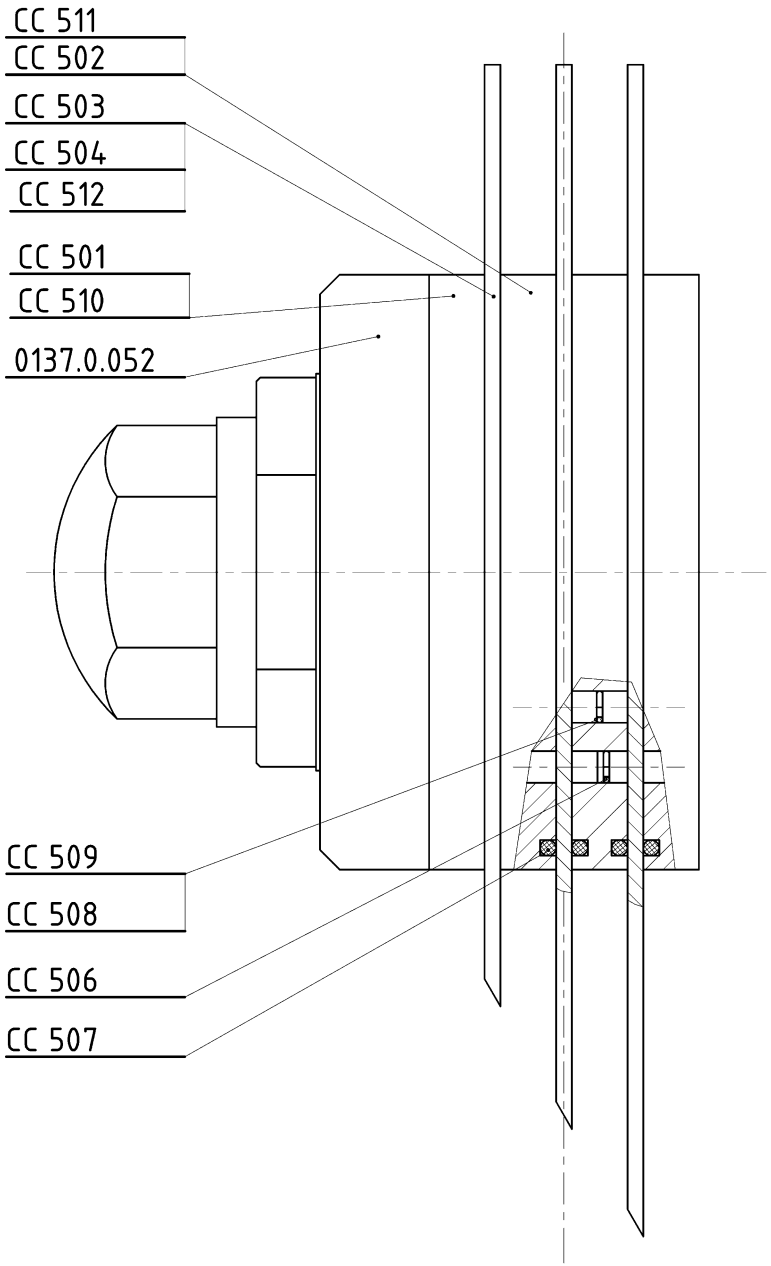
siehe Schaltplan 1M2
see circuit diagram
voir schéma de connexions
véase esquema de distribución
vedi schema elettrico

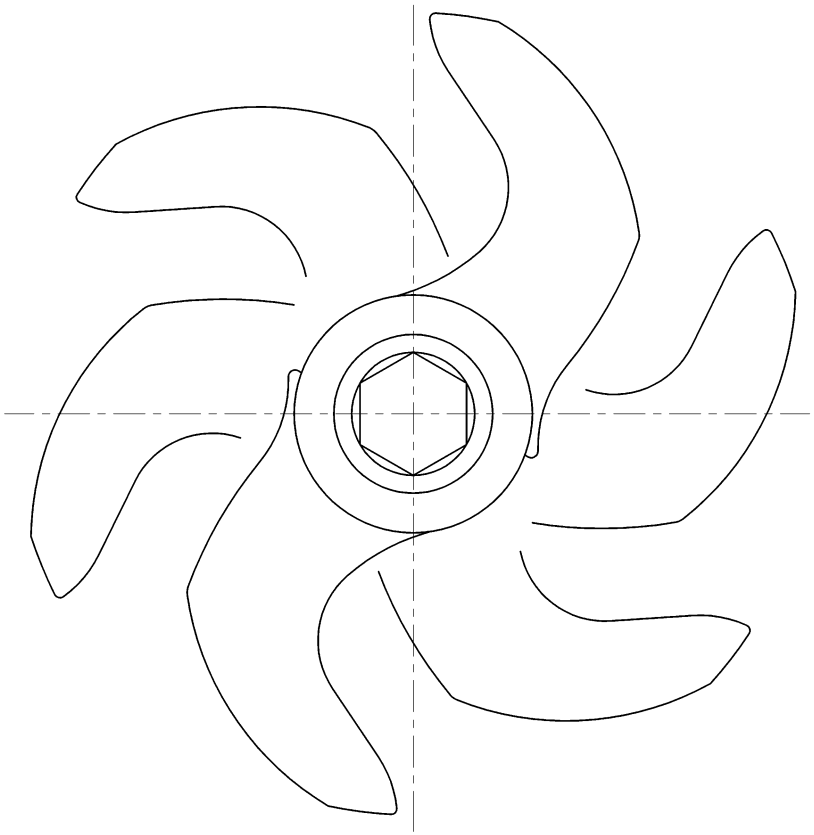
Keilriemen-Vorspannung	Ea = Eindrücktiefe des Trums	= 17 mm
pre-tightening v-belts	Ea = indentation depth of slack side of belt	= 17 mm
pretension des courroies	Ea = profondeur d'empreinte de la veine	= 17 mm
extension de las correas	Ea = profundidad de impresion	= 17 mm
pre-tensione delle cinghie	Ea = profondita' di pressione	= 17 mm



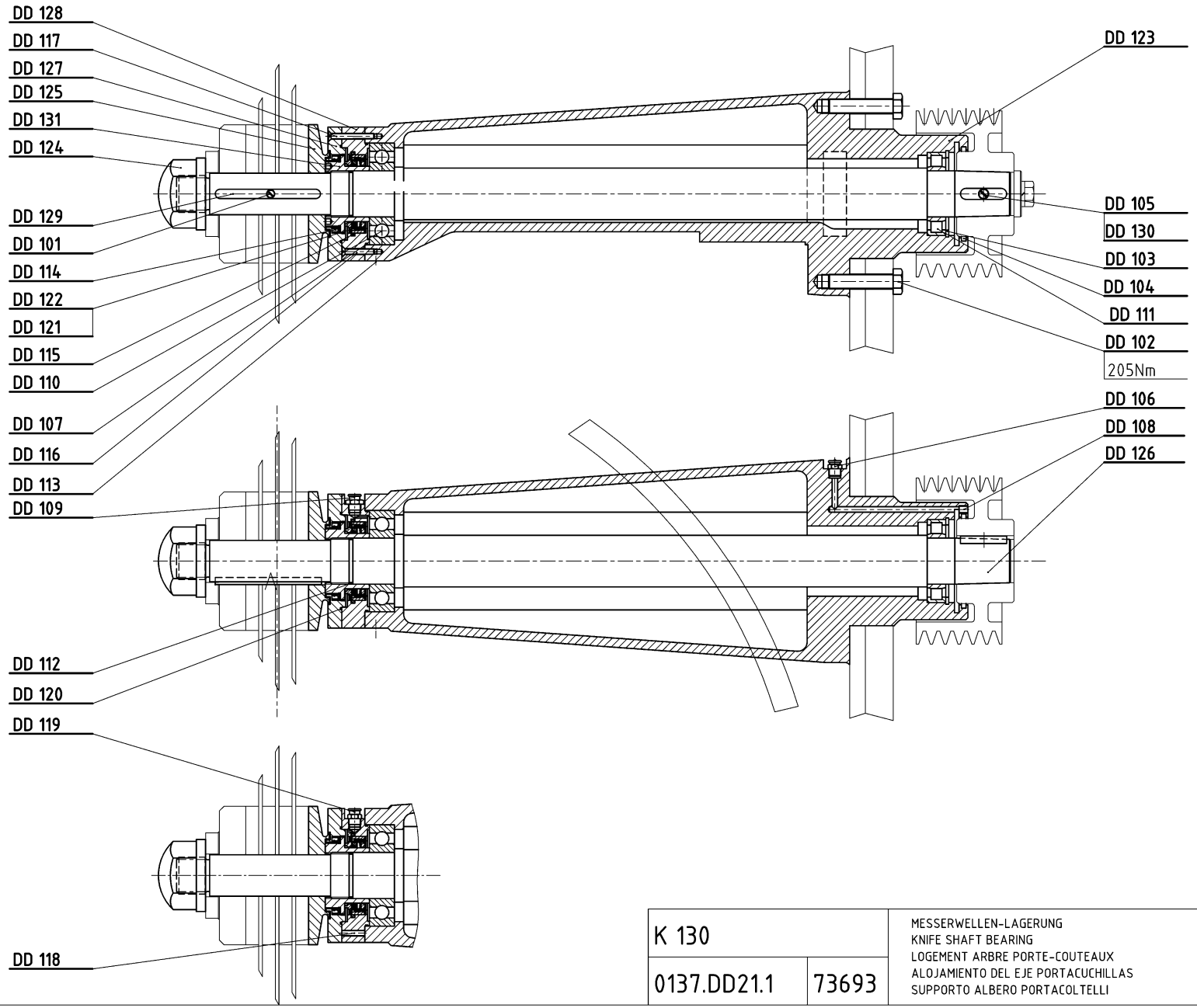
f = Prüfkraft je Keilriemen	= 50 Newton
f = testing strength of each v-belt	= 50 newton
f = force d essai par courrois	= 50 newton
f = fuerza de prueba de cada correa	= 50 newton
f = forza di prova per cinghia	= 50 newton

K 130		HAUPTANTRIEB MAIN DRIVE ACTIONNEMENT PRINCIPAL ACCIONAMIENTO PRINCIPAL AZIONAMENTO PRINCIPALE	BB
0137.BB11	68073		

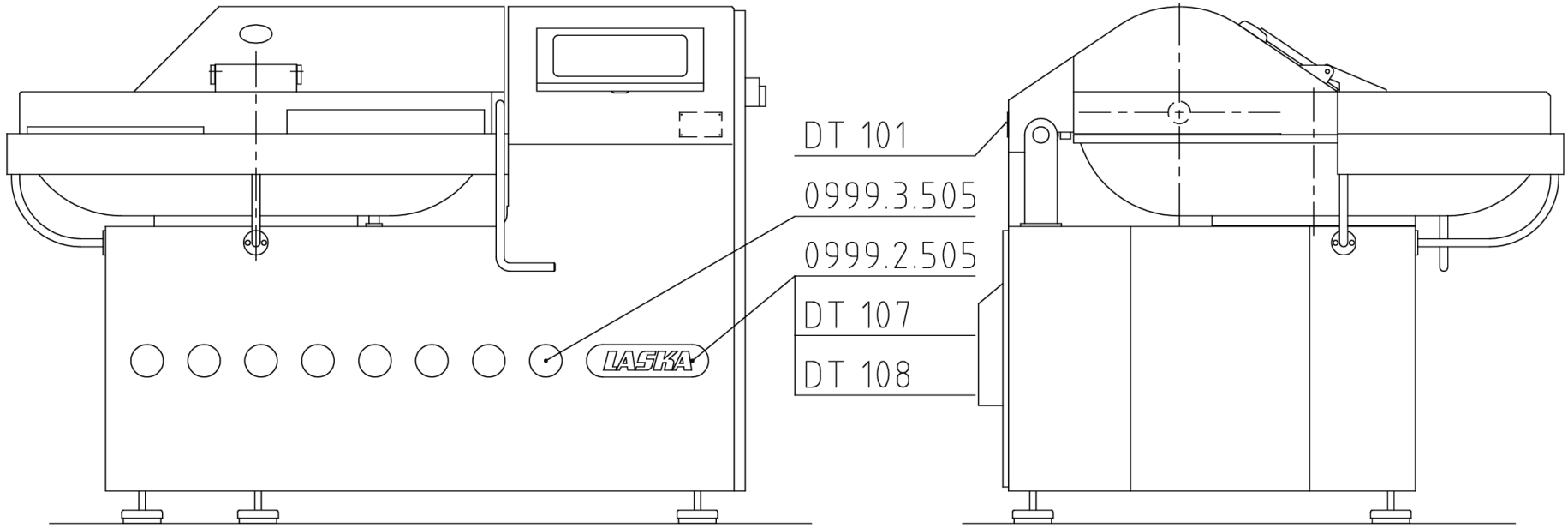




K 130		MESSERKOPF KNIFE HEAD TETE PORTE-COUTEAU CABEZAL DE CUCHILLAS TESTA PORTACOLTELLI	CC
0137.CC51.2	51651		

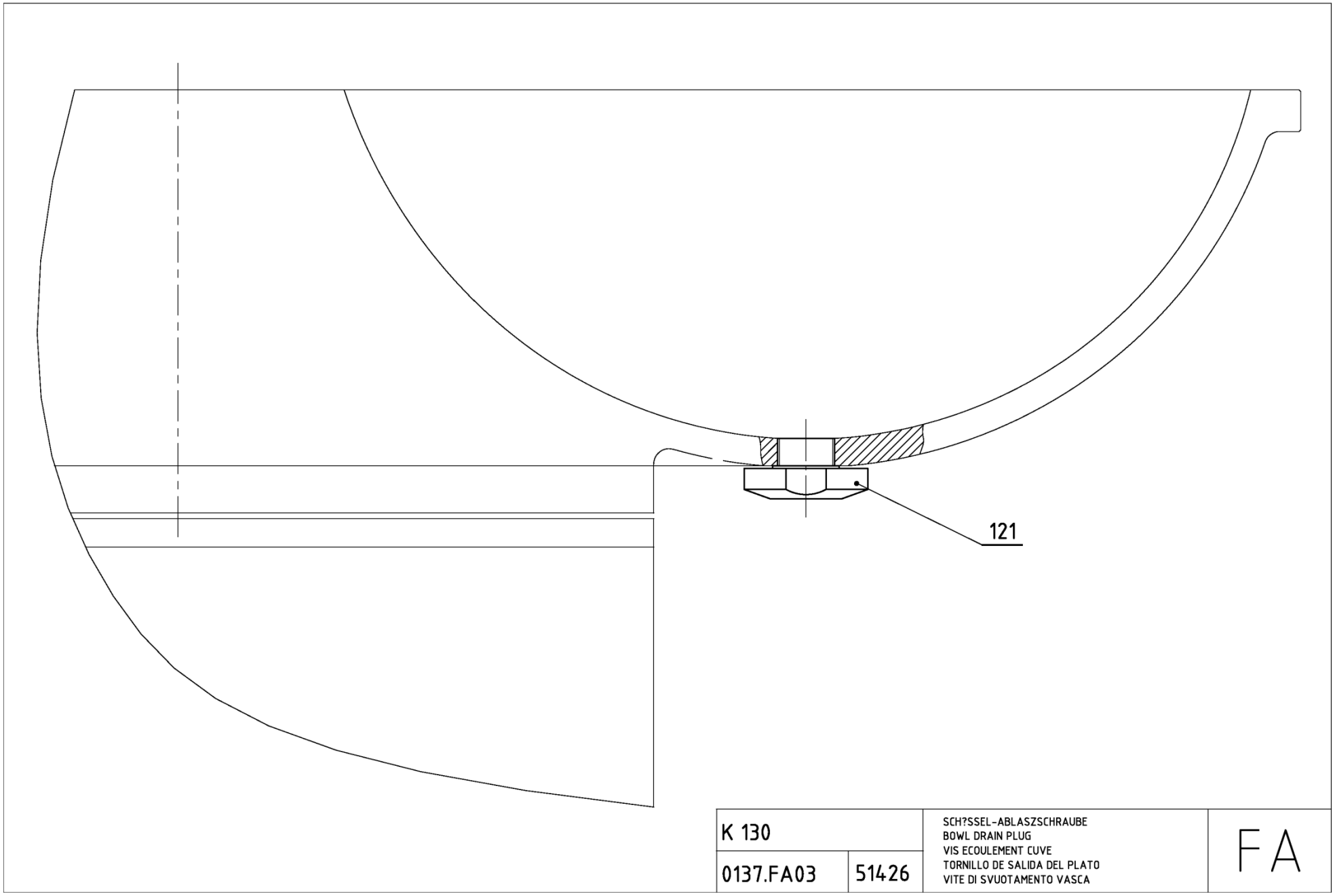


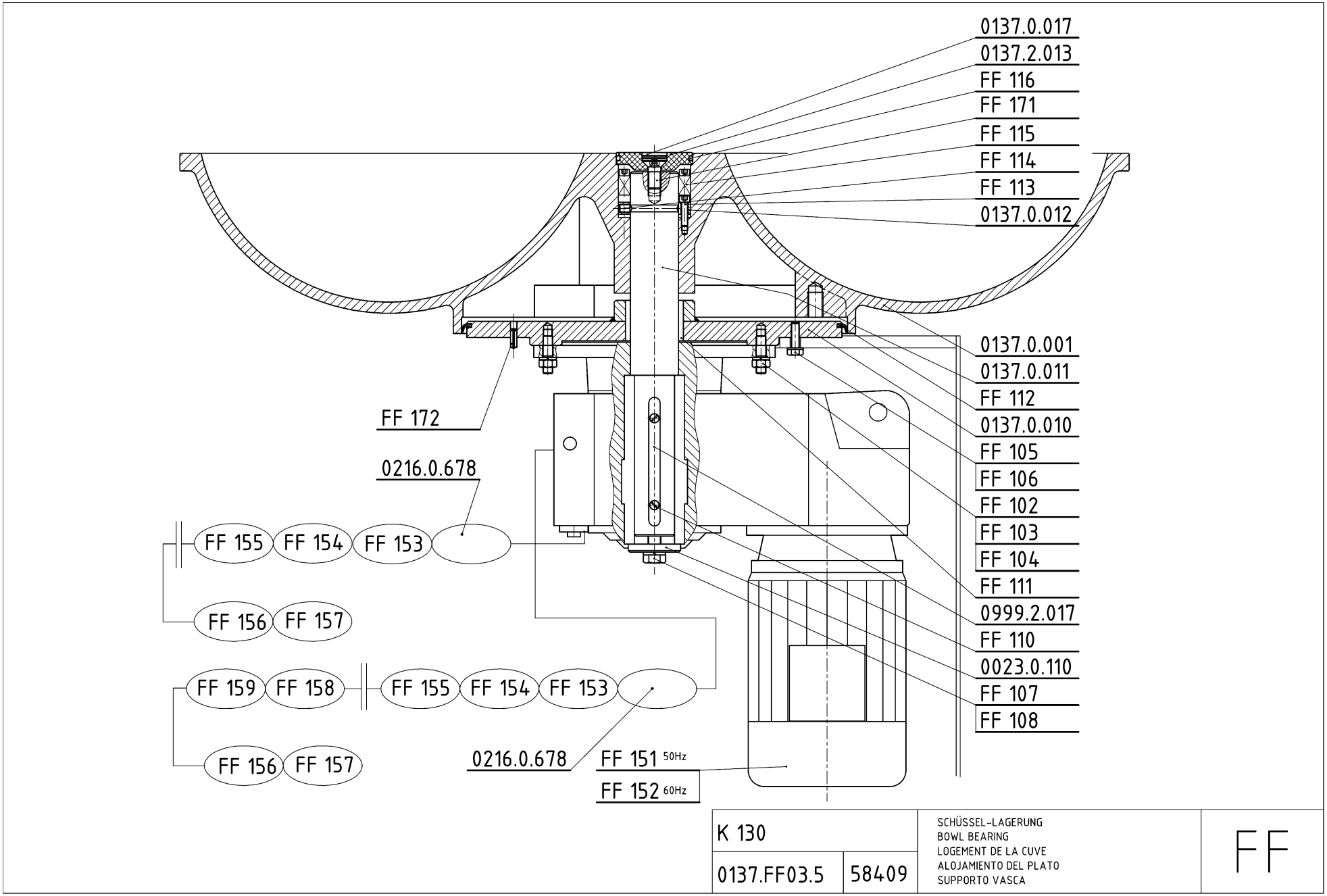
K 130		MESSERWELLEN-LAGERUNG KNIFE SHAFT BEARING LOGEMENT ARBRE PORTE-COUTEAUX ALOJAMIENTO DEL EJE PORTACUCHILLAS SUPPORTO ALBERO PORTACOLTELLI	DD
0137.DD21.1	73693		

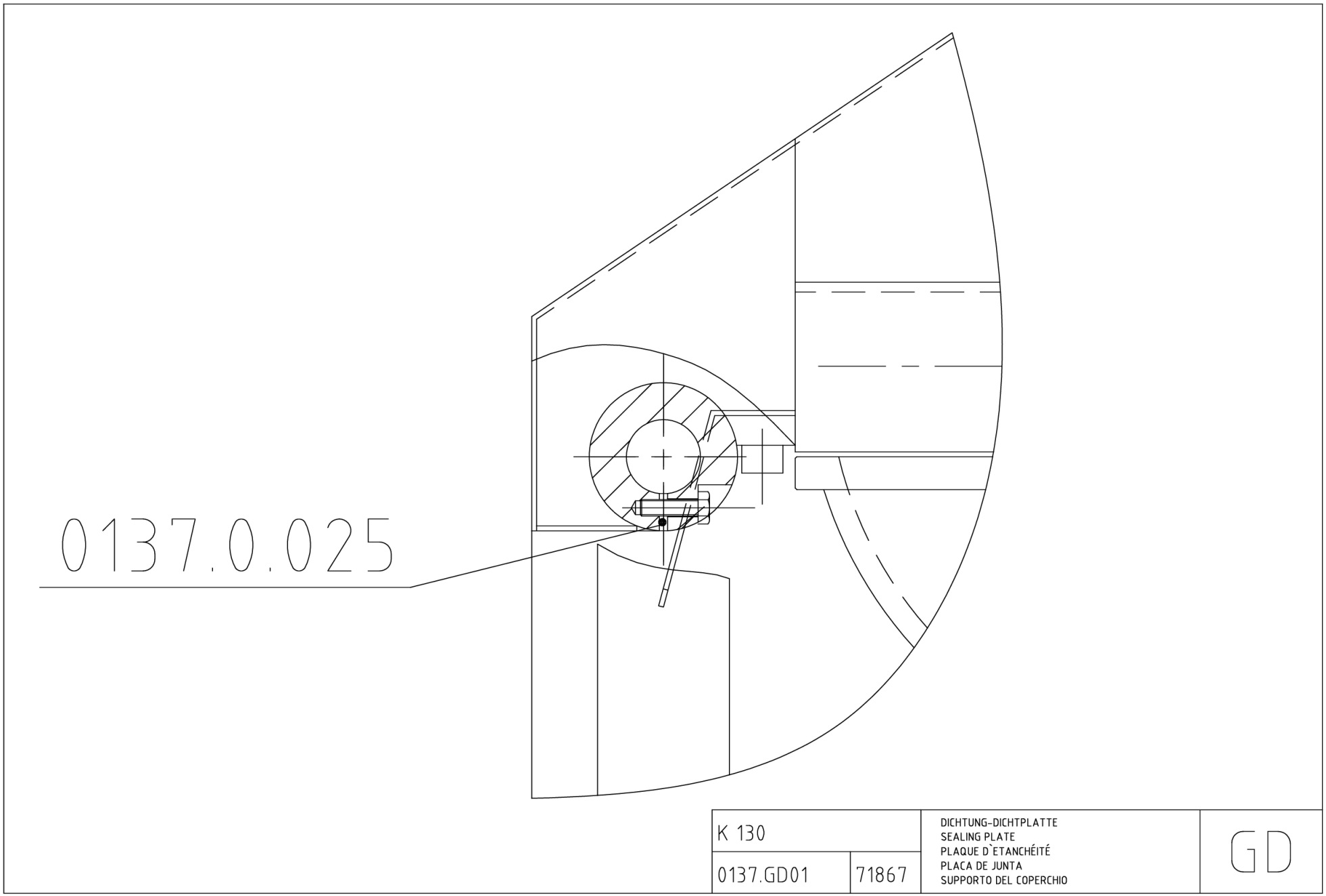


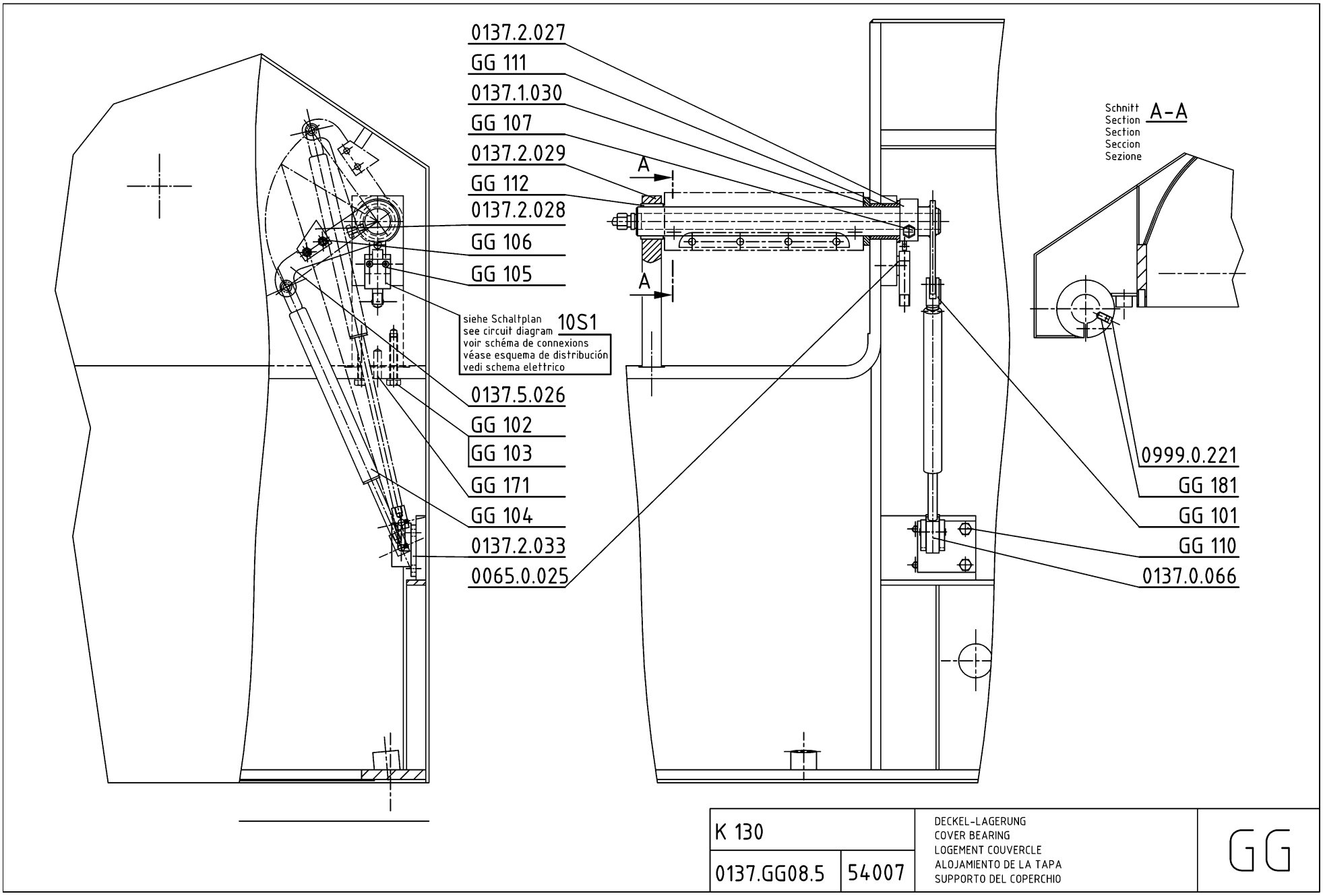
103	Hebelpresse Pump Pompe Bomba Pompa
104	Fettkartusche Grease Graisse Grasa Grasso
105 106	Schlüssel Wrench Clé Llave Chiave
109 110	Schaltschrankschlüssel Control box key Clé d'armoire de commande Llave de armario de distribución Chiave quadro di distrib. ad armadio
111	Anschlußstück Joint coupling Piéce assemblage Pieza de empalme Pezzo di raccordo

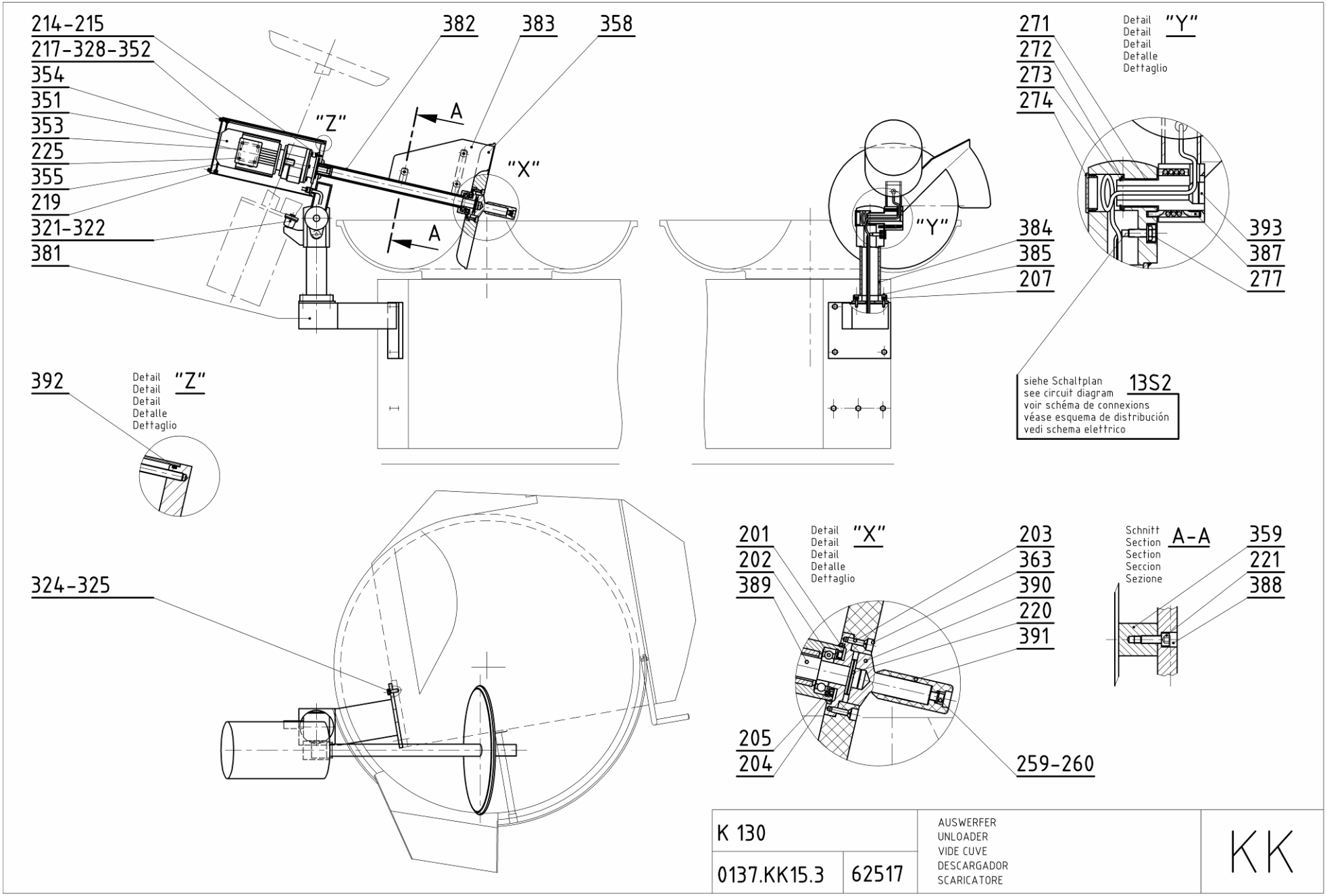
K 130		DIVERSE-TEILE VARIOUS PARTS PIECES DIVERSES DIVERSAS PARTES PARTI DIVERSE	DT
0137.DT01.5	48765		

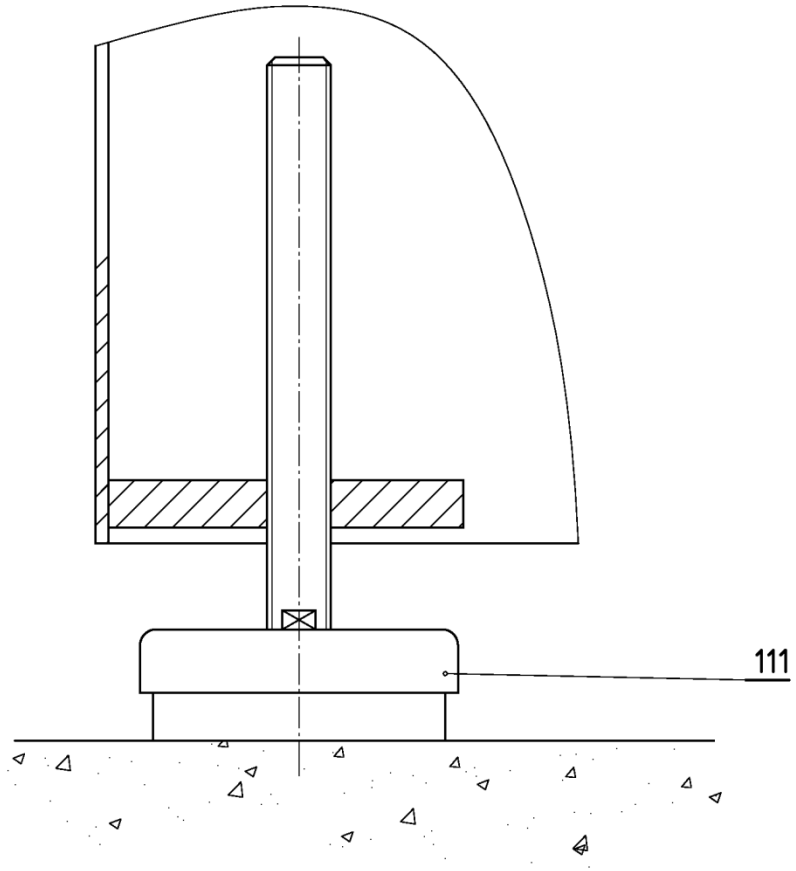

121
K 130
0137.FA03
51426
SCH?SSEL-ABLASZSCHRAUBE
BOWL DRAIN PLUG
VIS ECOULEMENT CUVE
TORNILLO DE SALIDA DEL PLATO
VITE DI SVUOTAMENTO VASCA
FA


0137.0.017
0137.2.013
FF 116
FF 171
FF 115
FF 114
FF 113
0137.0.012
0137.0.001
0137.0.011
FF 112
0137.0.010
FF 105
FF 106
FF 102
FF 103
FF 104
FF 111
0999.2.017
FF 110
0023.0.110
FF 107
FF 108
FF 172
0216.0.678
FF 155
FF 154
FF 153
FF 156
FF 157
FF 159
FF 158
FF 155
FF 154
FF 153
FF 156
FF 157
0216.0.678
FF 151 50Hz
FF 152 60Hz
K 130
0137.FF03.5
58409
SCHÜSSEL-LAGERUNG
BOWL BEARING
LOGEMENT DE LA CUVE
ALOJAMIENTO DEL PLATO
SUPPORTO VASCA
FF

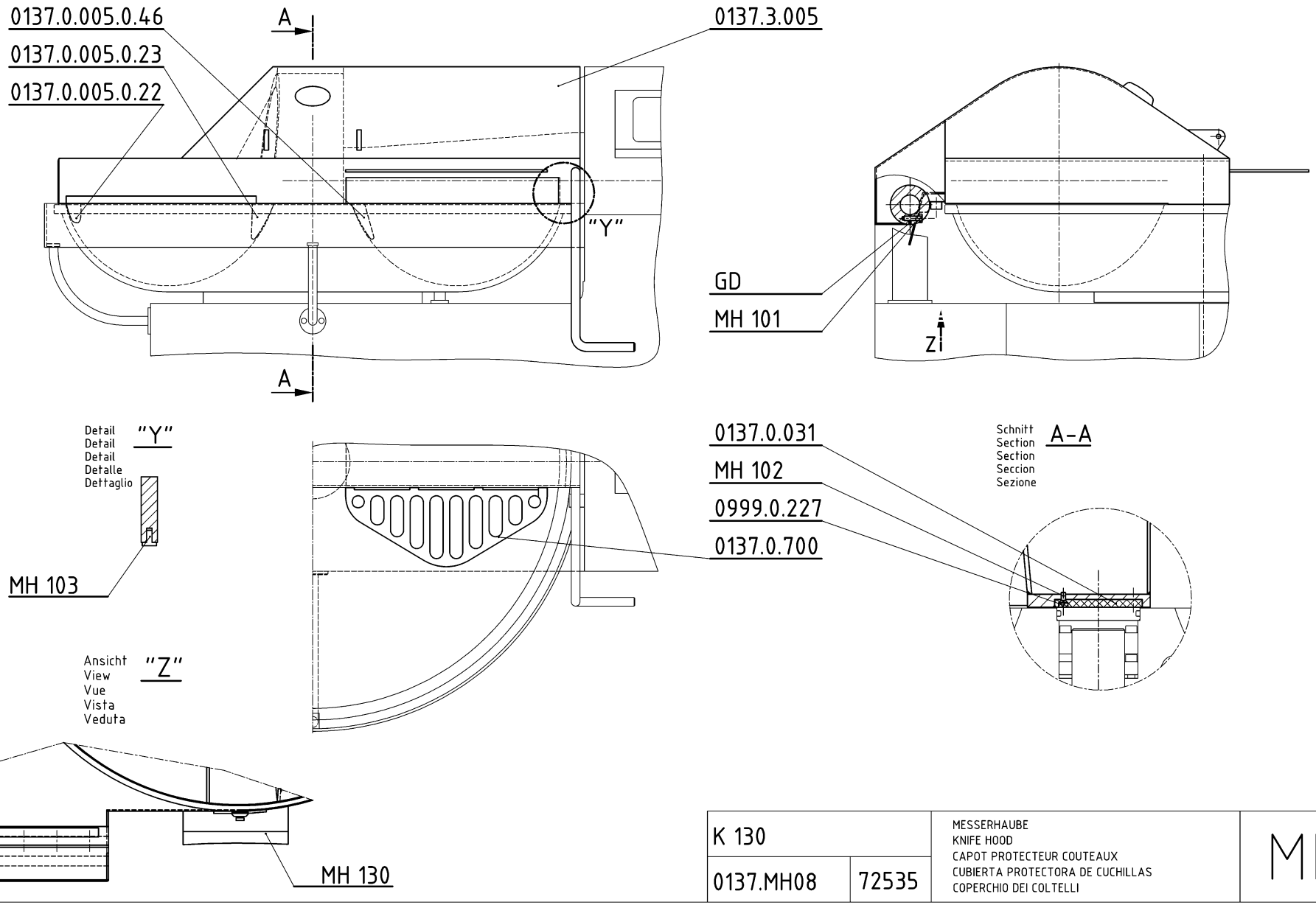

0137.0.025
K 130
0137.GD01
71867
DICHTUNG-DICHTPLATTE
SEALING PLATE
PLAQUE D`ETANCHÉITÉ
PLACA DE JUNTA
SUPPORTO DEL COPERCHIO
GD


0137.2.027
GG 111
0137.1.030
GG 107
0137.2.029
GG 112
0137.2.028
GG 106
GG 105
siehe Schaltplan 10S1
see circuit diagram
voir schéma de connexions
véase esquema de distribución
vedi schema elettrico
0137.5.026
GG 102
GG 103
GG 171
GG 104
0137.2.033
0065.0.025
A
A
Schnitt A-A
Section
Section
Seccion
Sezione
0999.0.221
GG 181
GG 101
GG 110
0137.0.066
K 130
0137.GG08.5
54007
DECKEL-LAGERUNG
COVER BEARING
LOGEMENT COUVERCLE
ALOJAMIENTO DE LA TAPA
SUPPORTO DEL COPERCHIO
GG

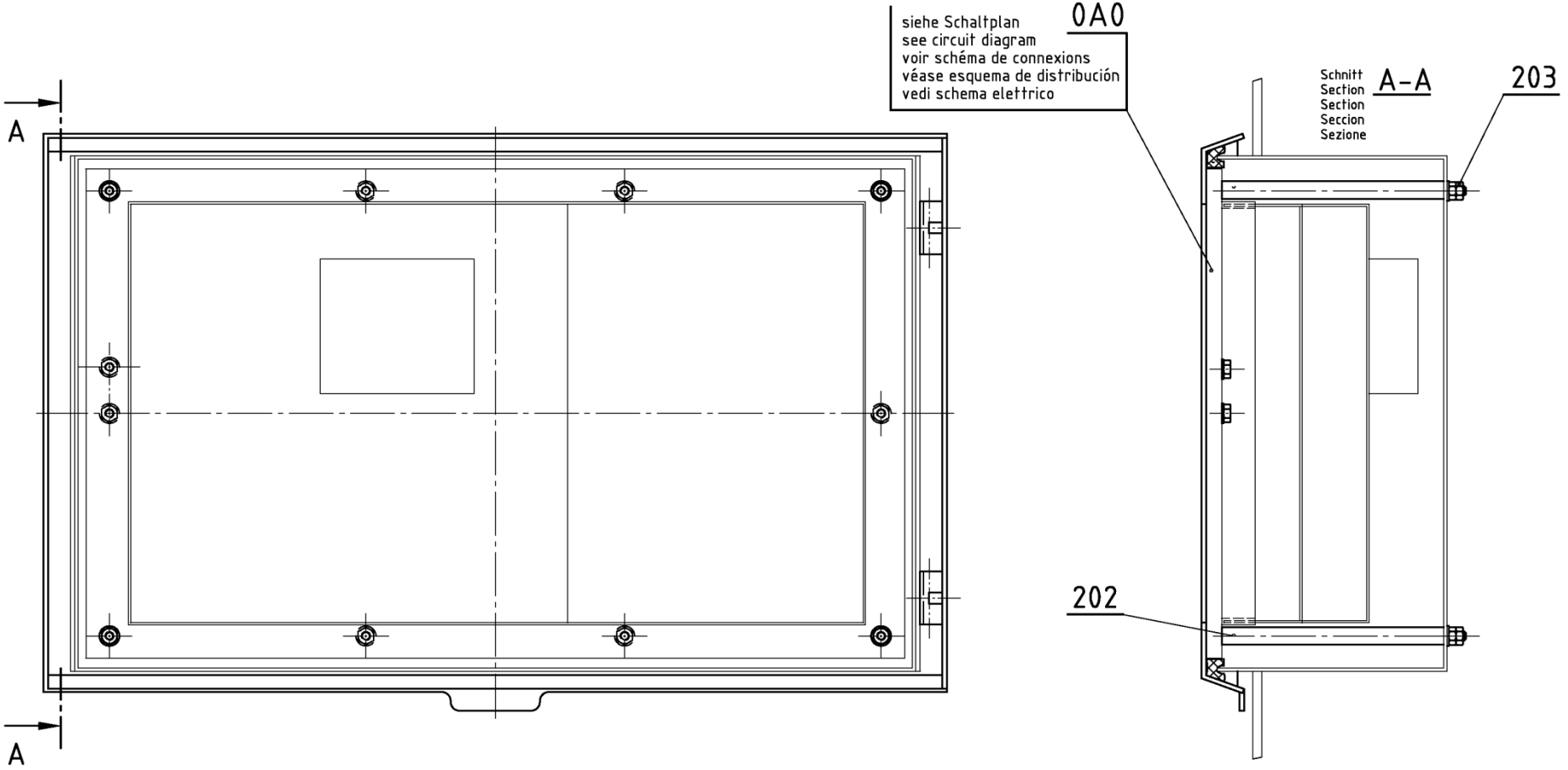

214-215
217-328-352
354
351
353
225
355
219
321-322
381
382
383
358
"Z"
A
A
"X"
"Y"
271
272
273
274
Detail "Y"
Detail
Detail
Detalle
Dettaglio
384
385
207
393
387
277
siehe Schaltplan
see circuit diagram
voir schéma de connexions
véase esquema de distribución
vedi schema elettrico
13S2
392
Detail "Z"
Detail
Detail
Detalle
Dettaglio
324-325
201
202
389
Detail "X"
Detail
Detail
Detalle
Dettaglio
203
363
390
220
391
205
204
259-260
Schnitt A-A
Section
Section
Seccion
Sezione
359
221
388
K 130
0137.KK15.3
62517
AUSWERFER
UNLOADER
VIDE CUVE
DESCARGADOR
SCARICATORE
KK



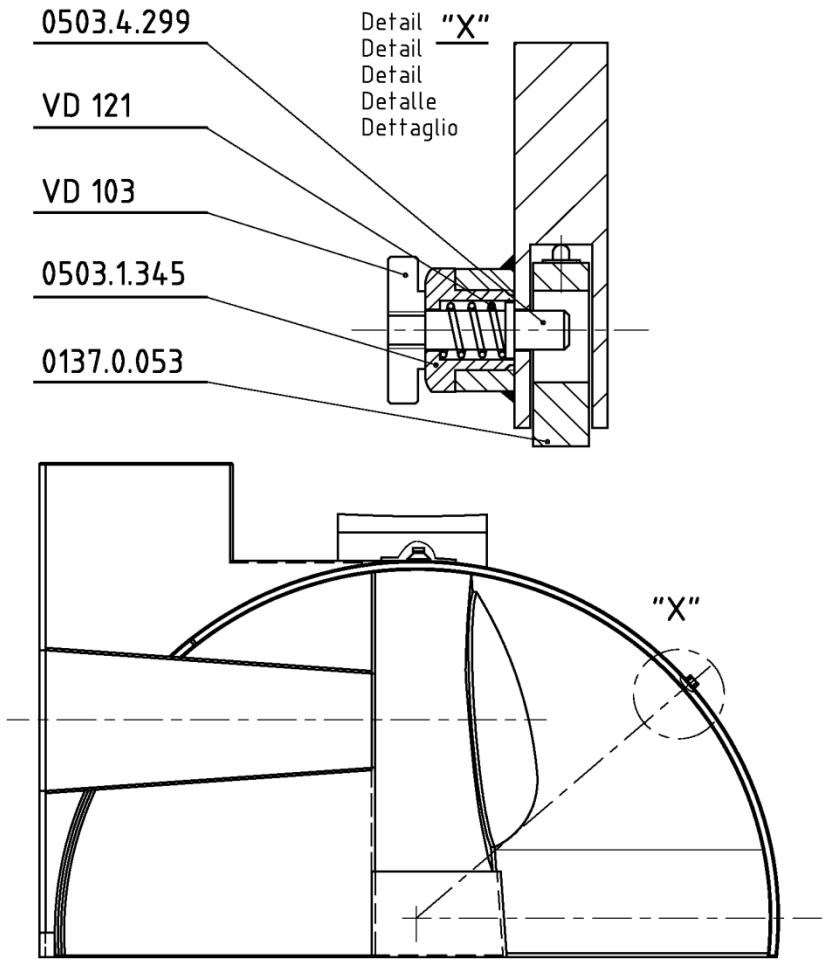
XXX		MASCHINENFÜSZE MACHINE FOOT PIED DE MACHINE PATAS DE LA MAQUINA PIEDE DELLA MACCHINA	MF
0252.MF03.2	30054		



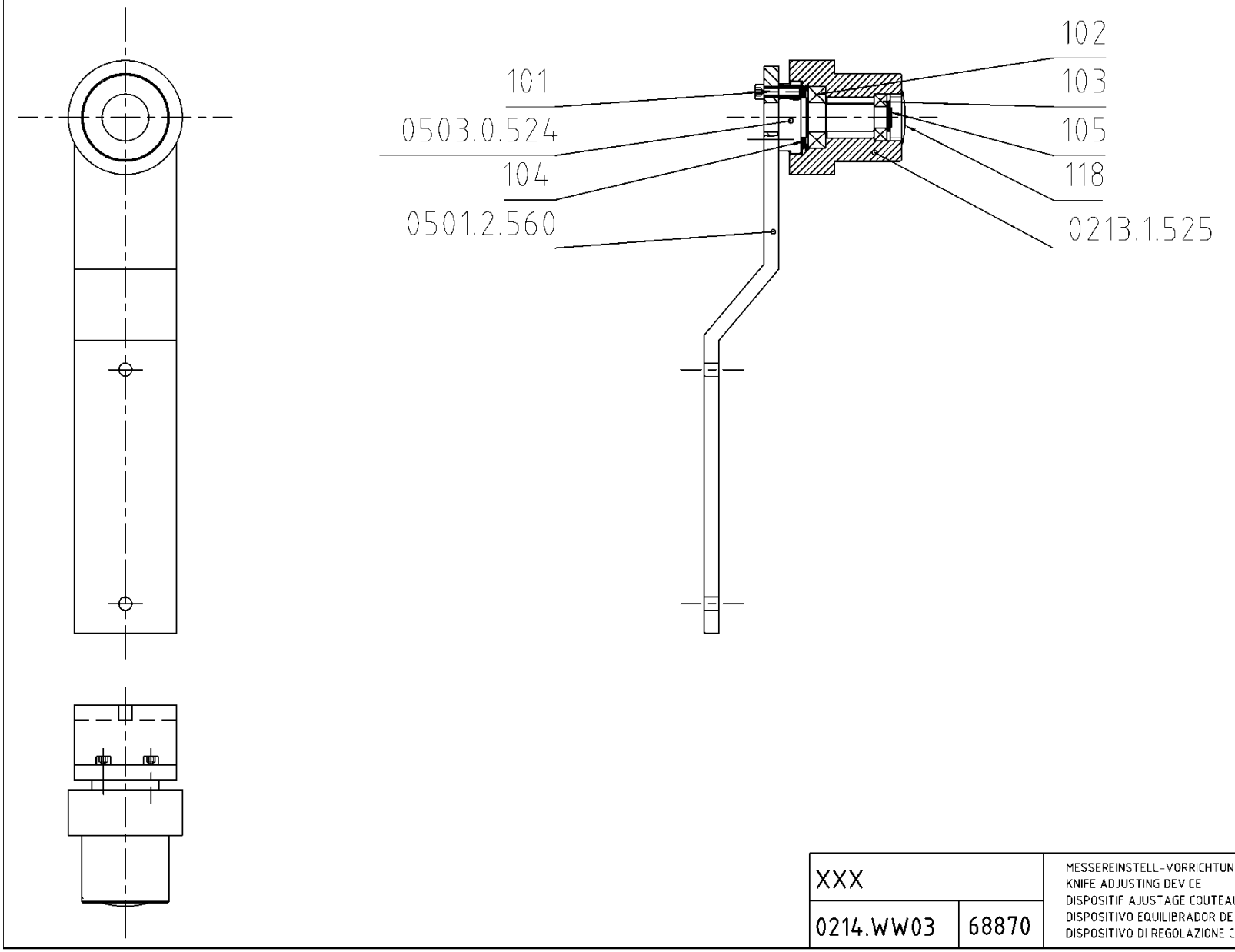
K 130		MESSERHAUBE KNIFE HOOD CAPOT PROTECTEUR COUTEAUX CUBIERTA PROTECTORA DE CUCHILLAS COPERCHIO DEI COLTELLI	MH
0137.MH08	72535		



XXX		TASTERGEHÄUSE PUSH BUTTON HOUSING BOITE BOUTONS-POUSSOIRS CAJA DE PULSADORES STRUTTURA MANIPOLATORE	TG
0009.TG10.3	52166		



K 130		VERRIEGELUNG-DICHTUNG LOCKING DEVICE / SEAL BLOCAGE / JOINT ENCLAVAMIENTO JUNTO DE BLOQUEO CHIUSURA A CHIAVISTELLO	VD
0137.VD01.4	48928		



XXX		MESSEREINSTELL-VORRICHTUNG KNIFE ADJUSTING DEVICE DISPOSITIF AJUSTAGE COUTEAUX DISPOSITIVO EQUILIBRADOR DE CUCHILLAS DISPOSITIVO DI REGOLAZIONE COLTELLI	WW
0214.WW03	68870		

7.4 Spare parts list

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
AA102	12763	Federring	Spring ring	Bague de ressort	STK	4
AA104	46747	Profil	Profile	Profilèe	M	4
AA107	54384	Anbauverschraubung	Attachment joint	Raccord d`assemblage	STK	1
AA131	12240	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
AA132	46232	Profil	Profile	Profilée	M	2,8
AA133	46232	Profil	Profile	Profilée	M	4
AA134	39274	Linsensenkschraube	Raised countersunk head screw	Vis à tête fraisée bombée	STK	4
AA161	39274	Linsensenkschraube	Raised countersunk head screw	Vis à tête fraisée bombée	STK	4
AA162	46232	Profil	Profile	Profilée	M	2,2
AA202	51449	Deckel	Cover	Couvercle	STK	1
AA205	55204	Deckel	Cover	Couvercle	STK	1
AA206	57422	Filter	Filter	Filtre	STK	1
AA221	58270	Ständer	Housing	Bâti	STK	1
AA222	50206	Verriegelung	Locking device	Blocage	STK	6
AA223	21289	Gehäuse	Housing	Carter	STK	6
AA225	13062	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	3
AA401	65271	Zunge	Tongue	Langue	STK	6
AA402	65896	Deckel	Cover	Couvercle	STK	1
AA403	65894	Winkel	Angle	Angle	STK	1
AC104	13100	Hutmutter	Cap nut	Ecrou à capuchon	STK	4
AC105	12449	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	4
AC131	12244	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
AC132	25982	Scheibe	Disc	Disque	STK	2
AC133	60534	Stütze	Support	Support	STK	1
AC134	60533	Stütze	Support	Support	STK	1
AC135	60535	Scheibe	Disc	Disque	STK	2
AC136	60536	Scheibe	Disc	Disque	STK	2
AC137	60537	Scheibe	Disc	Disque	STK	2
AC138	12244	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
AC139	60532	Schüsselschutz	Bowl protection	Protection de la cuve	STK	1
AC140	48888	Nabe	Hub	Moyeu	STK	2
AC141	57705	Auswerferblech	Unloader plate	Plaque vide-cuve	STK	1
AU111	56922	Spritzblech	Splashboard	Tôle éclaboussage	STK	1
AY174	62211	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	1
AY175	52404	Sensor	Sensor	Sonde	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
AY176	54036	Überwurfmutter	Union nut	Ècrou à capuchon	STK	1
AY177	54037	Ring	Ring	Anneau	STK	1
AY178	53997	Kabelkanal	Cable conduit	Conduite de câbles	STK	1
AY179	35518	Verschraubung	Coupling	Joint	STK	1
AY220	66272	Hülse	Sleeve	Manchon	STK	1
AY221	66273	Rohr	Pipe	Tuyau	STK	1
AY222	66271	Muffe	Socket	Manchon	STK	1
BB251	48630	Riemenscheibe	V-belt pulley	Poulie	STK	1
BB255	51704	Halterung	Fixture	Fixation	STK	2
BB256	48648	Welle	Shaft	Arbre	STK	2
BB257	53075	Bügel	Bow	Etrier	STK	1
BB258	57611	Schutzblech	Guard plate	Tôle de protection	STK	1
BB259	03574	Scheibe	Disc	Disque	STK	1
BB260	12335	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	1
BB261	12769	Federring	Spring ring	Bague de ressort	STK	1
BB262	48688	Riemenscheibe	V-belt pulley	Poulie	STK	1
BB263	51486	Büchse	Bushing	Douille	STK	1
BB264	13081	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
BB265	13153	Beilage	Shim	Rondelle	STK	4
BB266	12298	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
BB267	13073	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
BB268	13132	Scheibe	Disc	Disque	STK	4
BB270	11701	Schutzschlauch	Protection hose	Tube de protection	M	0,5
BB271	27308	Schlauchbinder	Hose camp	Collier de serrage	STK	2
BB274	12265	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
BB275	13069	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
BB276	12288	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
BB277	13073	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
BB278	13047	Splint	Cotter pin	Goupille fendue	STK	4
BB279	12237	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
BB280	12237	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
BB281	27018	Keilriemen	V-belt	Courroie conique	STK	6
BB305	57017	Stopfen	Stopper	Bouchon	STK	4
BB372	68071	Motorplatte	Motor plate	Plaque du moteur	STK	1
BB373	68077	Lüftungskanal	Venting channel	Canal d`aération	STK	1
BB374	12219	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
CC501	32161	Ring	Ring	Anneau	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
CC502	32160	Ring	Ring	Anneau	STK	3
CC503	32162	Kuttermesser K 130 FL	Cutter knife K 130 FL	Couteau du cutter K 130 FL	STK	6
CC504	34680	Blindmesser	Spacer knife	Faux-couteau	STK	2
CC506	45623	O-Ring	O-ring	Anneau en "O"	STK	12
CC507	33969	O-Ring	O-ring	Anneau en "O"	STK	6
CC508	50493	Ausgleichsgewicht	Balancing weight	Contre-poids	STK	15
CC509	45623	O-Ring	O-ring	Anneau en "O"	STK	15
DD101	12402	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	1
DD102	48853	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	6
DD103	12978	Seeger-Ring	Circlip lock ring	Anneau Seeger	STK	1
DD104	14318	Filzstreifen	Felt strip	Bande de feutre	M	0,32
DD105	12417	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	1
DD106	34382	Schmiernippel	Lubricating nipple	Nipple lubrification	STK	1
DD107	51662	O-Ring	O-ring	Anneau en "O"	STK	1
DD108	13217	Gewindestift	Threaded pin	Boulon filetée	STK	1
DD109	34382	Schmiernippel	Lubricating nipple	Nipple lubrification	STK	1
DD110	51451	Rillenkugellager	Grooved ball bearing	Roulement rainuré à billes	STK	1
DD111	51804	Zylinderrollenlager	Cylinder roller bearing	Roulement à rouleaux cyl.	STK	1
DD112	52493	O-Ring	O-ring	Anneau en "O"	STK	1
DD113	54973	Gewindestange	Threaded rod	Barre filetée	M	0,001
DD114	55891	Wellendichtring	Oil seal ring	Joint d`arbre	STK	1
DD115	14178	O-Ring	O-ring	Anneau en "O"	STK	1
DD116	12441	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	3
DD117	12445	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	3
DD118	13210	Gewindestift	Threaded pin	Boulon filetée	STK	2
DD119	34382	Schmiernippel	Lubricating nipple	Nipple lubrification	STK	1
DD120	51662	O-Ring	O-ring	Anneau en "O"	STK	1
DD121	56380	Scheibe	Disc	Disque	STK	2
DD122	73596	Gleitringdichtung	Slide ring sealing	Joint à glissement	STK	1
DD123	48639	Lagerarm	Bearing arm	Bras de palier	STK	1
DD124	04400	Messerwellenmutter	Knife shaft nut	Ecrou arbre porte-couteaux	STK	1
DD125	56370	Deckring	Cover ring	Bague recouvrement	STK	1
DD126	48783	Messerwelle	Knife shaft	Arbre porte-couteaux	STK	1
DD127	56372	Deckel	Cover	Couvercle	STK	1
DD128	56373	Lagerdeckel	Bearing cover	Couvercle de palier	STK	1
DD129	63524	Paßfeder	Fitting key	Clavette	STK	1
DD130	63523	Paßfeder	Fitting key	Clavette	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
DD131	66860	Mutter	Nut	Ecrou	STK	1
DT101	41309	Schild	Plate	Plaque	STK	1
DT103	16245	Pumpe	Pump	Pompe	STK	1
DT104	55565	Fett	Grease	Graisse	STK	1
DT105	48851	Schlüssel	Wrench	Clé	STK	1
DT106	04508	Schlüssel	Wrench	Clé	STK	1
DT107	12220	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	3
DT108	13124	Scheibe	Disc	Disque	STK	3
DT109	67205	Schaltschrankschlüssel	Control box key	Clè d'armoire de commande	STK	1
DT110	67206	Schaltschrankschlüssel	Control box key	Clè d'armoire de commande	STK	1
DT111	16250	Anschlußstück	Joint coupling	Piéce assemblage	STK	1
FA121	51421	Ablaßschraube	Discharge bolt	Vis de déchargement	STK	1
FF102	12534	Stiftschraube	Stud bolt	Goupille	STK	4
FF103	13073	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
FF104	12766	Federring	Spring ring	Bague de ressort	STK	4
FF105	12265	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	8
FF106	13129	Scheibe	Disc	Disque	STK	8
FF107	12331	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	1
FF108	12769	Federring	Spring ring	Bague de ressort	STK	1
FF109	65075	Paßfeder	Fitting key	Clavette	STK	1
FF110	12490	Senkschraube ISK	Hexagonal countersunk screw	Vis tête fraisée hexagonale	STK	2
FF111	13886	Gleitlager	Sliding bearing	Palier à glissement	STK	1
FF112	48771	Dichtung	Seal	Joint de couvercle	STK	1
FF113	12644	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	3
FF114	13234	Gewindestift	Threaded pin	Boulon filetée	STK	3
FF115	48686	Spannelement	Clamping element	Elément tendeur	STK	1
FF116	14209	O-Ring	O-ring	Anneau en "O"	STK	1
FF151	56120	Getriebemotor	Gear motor	Moteur d`engrenage	STK	1
FF153	15218	Verschraubung	Coupling	Joint	STK	2
FF154	35786	Hydraulikschlauch	Hydraulic hose	Tuyau flexible	STK	2
FF155	25962	Verschraubung	Coupling	Joint	STK	2
FF156	14314	Dichtring	Sealing ring	Bague étanchéité	STK	2
FF157	12388	Verschlußschraube	Closing bolt	Vis de fermeture	STK	2
FF158	14598	Nippel	Nipple	Nipple	STK	1
FF159	14562	Winkel	Angle	Angle	STK	1
FF171	36659	Senkschraube ISK	Hexagonal countersunk screw	Vis tête fraisée hexagonale	STK	1
FF172	30417	Kerbstift	Grooved pin	Goupille canelée	STK	2

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
GD101	53290	Leiste	Bar	Liston	STK	1
GG101	43249	Gleitlager	Sliding bearing	Palier à glissement	STK	1
GG102	12298	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
GG103	12766	Federring	Spring ring	Bague de ressort	STK	2
GG104	62076	Gasdruckfeder	Gas pressure spring	Ressort à pression de gaz	STK	1
GG105	36995	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	2
GG106	12237	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
GG107	12256	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	1
GG110	12256	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	3
GG111	31124	Bundlager	Collar end bearing	Palier à bride	STK	1
GG112	50442	Gleitlager	Sliding bearing	Palier à glissement	STK	1
GG171	13028	Spannstift	Clamping pin	Boulon tendeur	STK	1
GG181	13237	Gewindestift	Threaded pin	Boulon filetée	STK	2
KK201	37155	Abstreifer	Stripper	Racleur	STK	1
KK202	27546	Rillenkugellager	Grooved ball bearing	Roulement rainuré à billes	STK	1
KK203	12499	Senkschraube ISK	Hexagonal countersunk screw	Vis tête fraisée hexagonale	STK	4
KK204	13979	Wellendichtring	Oil seal ring	Joint d`arbre	STK	1
KK205	12976	Seeger-Ring	Circlip lock ring	Anneau Seeger	STK	1
KK207	12646	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	4
KK214	12220	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
KK215	12761	Federring	Spring ring	Bague de ressort	STK	4
KK217	13099	Hutmutter	Cap nut	Ecrou à capuchon	STK	3
KK219	13062	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	6
KK220	13022	Spannstift	Clamping pin	Boulon tendeur	STK	1
KK221	12622	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	3
KK225	12209	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4
KK257	12284	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	3
KK259	12638	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	1
KK260	13128	Scheibe	Disc	Disque	STK	1
KK271	52323	Büchse	Bushing	Douille	STK	2
KK272	12986	Stützscheibe	Supporting disc	Disque de support	STK	1
KK273	12943	Seeger-Ring	Circlip lock ring	Anneau Seeger	STK	1
KK274	52325	Stopfen	Stopper	Bouchon	STK	1
KK277	52690	Stopfen	Stopper	Bouchon	STK	1
KK321	53166	Puffer	Buffer	Butoir	STK	1
KK322	24120	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	1
KK324	12292	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	4

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
KK325	12767	Federring	Spring ring	Bague de ressort	STK	4
KK326	12767	Federring	Spring ring	Bague de ressort	STK	3
KK328	30599	Scheibe	Disc	Disque	STK	3
KK351	59465	Getriebemotor	Gear motor	Moteur d`engrenage	STK	1
KK352	65137	Gewindestange	Threaded rod	Barre filetée	STK	3
KK353	52132	Deckel	Cover	Couvercle	STK	1
KK354	55982	Abdeckung	Cover	Couvercle	STK	1
KK355	50112	Scheibe	Disc	Disque	STK	1
KK358	51877	Auswerferscheibe	Unloader disc	Disque videcuve	STK	1
KK359	42502	Nabe	Hub	Moyeu	STK	3
KK363	36974	Stopfen	Stopper	Bouchon	STK	4
KK381	53889	Konsole	Bracket	Console	STK	1
KK382	62512	Auswerferrohr	Unloader pipe	Tuyau vide-cuve	STK	1
KK383	62514	Auswerferblech	Unloader plate	Plaque vide-cuve	STK	1
KK384	53148	Gehäuse	Housing	Bâti	STK	1
KK385	36973	Stopfen	Stopper	Bouchon	STK	4
KK386	37965	Stopfen	Stopper	Bouchon	STK	1
KK387	53152	Schenkelfeder	Spring clip	Ressort à branches	STK	1
KK388	52267	Stopfen	Stopper	Bouchon	STK	3
KK389	52320	Welle	Shaft	Arbre	STK	1
KK390	52319	Flansch	Flange	Bride	STK	1
KK391	48958	Rohr	Pipe	Tuyau	STK	1
KK392	60433	O-Ring	O-ring	Anneau en "O"	STK	1
KK393	64750	Stopfen	Stopper	Bouchon	STK	1
MF111	53676	Maschinenfuß	Machine foot	Pied de machine	STK	4
MH101	12264	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	6
MH102	12415	Senkschraube	Countersunk screw	Vis à tête fraisée	STK	3
MH103	04119	Deckeldichtung	Cover seal	Joint de couvercle	M	0,3
MH130	68120	Blech	Plate	Tôle	STK	1
N1	11791	Kabelkanal	Cable conduit	Conduite de câbles	M	2
N1	11846	Platte	Plate	Plaque	KG	0,1
N1	16582	Klemme	Terminal	Borne	STK	1
N1	17410	Halterung	Fixture	Fixation	STK	1
N1	22885	Kabelkanal	Cable conduit	Conduite de câbles	M	1,5
N1	26299	Bügel	Bow	Etrier	STK	8
N1	29980	Ankerschiene	Anchor rail	Rail d`ancrage	M	0,25
N1	30368	Schiene	Rail	Rail	M	0,4

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
N1	36499	Klemme	Terminal	Borne	STK	2
N1	36500	Brücke	Bridge	Pont	STK	4
N1	36505	Abdeckung	Cover	Couvercle	STK	1
N1	36561	Aufkleber	Label	Etiquette adhésive	STK	1
N1	36629	Schiene	Rail	Rail	M	1
N1	37723	Klemme	Terminal	Borne	STK	6
N1	37724	Klemme	Terminal	Borne	STK	1
N1	37725	Klemme	Terminal	Borne	STK	5
N1	38232	Bügel	Bow	Etrier	STK	2
N1	49278	Klemme	Terminal	Borne	STK	1
N1	54384	Anbauverschraubung	Attachment joint	Raccord d`assemblage	STK	1
N1	66730	Klemme	Terminal	Borne	STK	1
N1	66731	Klemme	Terminal	Borne	STK	1
N1	66732	Klemme	Terminal	Borne	STK	1
N1	66733	Platte	Plate	Plaque	STK	1
N1	66735	Platte	Plate	Plaque	M	0,2
N1	66736	Klemme	Terminal	Borne	STK	1
N1	67276	Klemme	Terminal	Borne	STK	10
N1	67276	Klemme	Terminal	Borne	STK	2
N1	69701	Schaltkasten	Control box	Armoire commande	STK	1
N1	69702	Platte	Plate	Plaque	STK	1
N1	70106	Platte	Plate	Plaque	STK	2
N1	73042	Kabelflansch	Cable flange	Bride à câble	STK	1
TG202	52165	Distanz	Spacer	Ecartement	STK	4
TG203	13055	Sechskantmutter	Hexagonal nut	Ecrou hexagonal	STK	4
VD103	46075	Mutter	Nut	Ecrou	STK	1
VD121	60007	Druckfeder	Pressure spring	Ressort à pression	STK	1
WW101	12624	Zylinderschraube ISK	Socket head cap screw	Vis à tête cyl. à 6 pans creux	STK	3
WW102	30455	Rillenkugellager	Grooved ball bearing	Roulement rainuré à billes	STK	1
WW103	13495	Rillenkugellager	Grooved ball bearing	Roulement rainuré à billes	STK	1
WW104	30932	Seeger-Ring	Circlip lock ring	Anneau Seeger	STK	1
WW105	30931	Seeger-Ring	Circlip lock ring	Anneau Seeger	STK	1
WW118	68876	Abdeckung	Cover	Couvercle	STK	1
W0B1	35679	Kabel	Cable	Câble	M	5
W0Q0	16443	Kabel	Cable	Câble	M	8
W0Q1	70290	Kabelschelle	Cable clip	Bride de càble	STK	1
W1L1	16443	Kabel	Cable	Câble	M	2,2

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
W1L1	70290	Kabelschelle	Cable clip	Bride de càble	STK	1
W1L1.1	16443	Kabel	Cable	Câble	M	3,2
W1L1.1	70290	Kabelschelle	Cable clip	Bride de càble	STK	1
W1M1	68103	Kabel	Cable	Câble	M	3,5
W1M1	70290	Kabelschelle	Cable clip	Bride de càble	STK	1
W1R2	16434	Kabel	Cable	Câble	M	2
W10S1	44561	Kabel	Cable	Câble	M	5
W11S1	44561	Kabel	Cable	Câble	M	2,5
W13S2	44561	Kabel	Cable	Câble	M	4
W21A1	56156	Kabel	Cable	Câble	M	3
W3M1	33070	Kabel	Cable	Câble	M	3,5
XT1	37716	Klemme	Terminal	Borne	STK	1
0AX0	60934	Stecker	Plug	Fiche	STK	1
0A0	60596	Tasterplatte	Push button plate	Plaque boutons-poussoirs	STK	1
0E1	51933	Lampe	Lamp	Lampe	STK	1
0F2	37712	Klemme	Terminal	Borne de conexion	STK	1
0F2	55643	Sicherung	Fuse	Fusible électrique	STK	1
0F3	37712	Klemme	Terminal	Borne de conexion	STK	1
0F3	55642	Sicherung	Fuse	Fusible électrique	STK	1
0F4	37712	Klemme	Terminal	Borne de conexion	STK	1
0F4	55642	Sicherung	Fuse	Fusible électrique	STK	1
0G1	69489	Netzgerät	Power pack unit	Unité de courant	STK	1
0Q1	36654	Schalter	Switch	Interrupteur	STK	1
0Q2	62390	Motorschutzschalter	Motor overload switch	Interrupteur de démarrage	STK	1
0T1	25033	Transformator	Transformer	Transformateur	STK	1
0U1	37402	Modul	Module	Module	STK	1
0X0	62507	Schiene	Rail	Rail	STK	1
0X0	65962	Schiene	Rail	Rail	STK	2
0X0	65965	Schiene	Rail	Rail	STK	2
0X0	65965	Schiene	Rail	Rail	STK	1
0009.TG10.3	52166	Tastergehäuse	Push button housing	Boîte boutons-poussoirs	STK	1
0023.0.110.2	03574	Scheibe	Disc	Disque	STK	1
0065.0.025.1	43702	Platte	Plate	Plaque	STK	1
0100.0.039.8	58256	Messerwellenmutter	Knife shaft nut	Ecrou arbre porte-couteaux	STK	1
0137.AA11	65898	Maschinengehäuse	Machine housing	Bâti	STK	1
0137.AC08.2	60539	Schüsselschutz	Bowl protection	Protection de la cuve	STK	1
0137.AE02.2	51495	Lärmschutzdeckel	Sound dampening hood	Couvercle antibruit	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
0137.AU02	56923	Abdeckung	Cover	Couvercle	STK	1
0137.AY11.1	67118	Halterung	Fixture	Fixation	STK	1
0137.BB11	68073	Hauptantrieb	Main drive	Entraînement principal	STK	1
0137.CC51.2	51651	Messerkopf	Knife head	Tête porte-couteau	STK	1
0137.DD21.1	73693	Messerwellenlagerung	Knife shaft bearing	Logement arbre porte-couteaux	STK	1
0137.DT01.5	48765	Diverse Teile	Various parts	Pièces diverses	STK	1
0137.EG22.2	68106	Baugruppe	Construction group	Ensemble en pièces	STK	1
0137.EK24.4	68561	Verbindungskabel	Connecting cables	Câbles de connexion	STK	1
0137.ES23.0.14	68329	Steuerung	Control	Commande	STK	1
0137.ES23.1.15	68330	Steuerung	Control	Commande	STK	1
0137.ES23.1.19	69703	Steuerung	Control	Commande	STK	1
0137.ES23.2	68315	Steuerung	Control	Commande	STK	1
0137.ES23.5.01	68316	Steuerung	Control	Commande	STK	1
0137.ES23.5.10	68325	Steuerung	Control	Commande	STK	1
0137.FA03	51426	Ablaßschraube	Discharge bolt	Vis de déchargement	STK	1
0137.FF03.5	58409	Schüssellagerung	Bowl bearing	Logement de la cuve	STK	1
0137.GD01	71867	Deckellagerung	Cover bearing	Logement couvercle	STK	1
0137.GG08.5	54007	Deckellagerung	Cover bearing	Logement couvercle	STK	1
0137.KK15.3	62517	Auswerfer	Unloader	Vide-cuve	STK	1
0137.MH08	72535	Messerhaube	Knife hood	Capot protecteur couteaux	STK	1
0137.VD01.4	48928	Verriegelung	Locking device	Blocage	STK	1
0137.0.001.8	48621	Kutterschüssel	Cutter bowl	Cuve du cutter	STK	1
0137.0.005.0.23	50065	Abstreifer	Stripper	Racleur	STK	1
0137.0.005.1.22	50064	Abstreifer	Stripper	Racleur	STK	1
0137.0.005.2.46	63405	Abstreifer	Stripper	Racleur	STK	1
0137.0.010.5	48626	Lagerflansch	Bearing flange	Bride de palier	STK	1
0137.0.011.2	48627	Schüsselwelle	Bowl shaft	Arbre de la cuve	STK	1
0137.0.011.2	58342	Schüsselwelle	Bowl shaft	Arbre de la cuve	STK	1
0137.0.012	48628	Stellring	Adjusting ring	Anneau ajustage	STK	1
0137.0.017.1	58407	Stopfen	Stopper	Bouchon	STK	1
0137.0.031.1	48849	Scheibe	Disc	Disque	STK	1
0137.0.036.1	51659	Lasche	Strap	Couvre-joint	STK	2
0137.0.037.2	48682	Bolzen	Bolt	Boulon	STK	2
0137.0.052.1	48854	Beilage	Shim	Rondelle	STK	1
0137.0.053.1	48850	Leiste	Bar	Liston	STK	1
0137.0.064.1	55426	Platte	Plate	Plaque	STK	1
0137.0.065.2	51480	Nabe	Hub	Moyeu	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
0137.0.066	51809	Befestigung	Fixture	Fixation	STK	1
0137.0.700.4	63403	Bügel	Bow	Etrier	STK	1
0137.1.030	50050	Scheibe	Disc	Disque	STK	1
0137.1.035.3	51468	Lärmschutzdeckel	Sound dampening hood	Couvercle antibruit	STK	1
0137.2.013.1	58405	Abdeckung	Cover	Couvercle	STK	1
0137.2.027.3	50380	Scheibe	Disc	Disque	STK	1
0137.2.028.1	51824	Anschlag	Stop	Arrêt	STK	1
0137.2.029.1	51498	Stütze	Support	Support	STK	1
0137.2.033.6	51825	Halterung	Fixture	Fixation	STK	1
0137.3.005.2	67114	Messerhaube	Knife hood	Capot protecteur couteaux	STK	1
0137.5.026.1	53998	Welle	Shaft	Arbre	STK	1
0137.6.453.0.01	62513	Blech	Plate	Tôle	STK	1
0213.1.525	68754	Wellenstummel	Shaft end	Bout d`arbre	STK	1
0214.WW03	68870	Messer-Einstellvorrichtung	Knife adjust a bal	Asus. èquil. couteaux	STK	1
0216.ET01	67580	Tasterplatte	Push button plate	Plaque boutons-poussoirs	STK	1
0216.0.678	58241	Stütze	Connection piece	Support	STK	2
0252.MF03.2	30054	Maschinenfuß	Machine foot	Pied de machine	STK	4
0501.0.569	07338	Bolzenzieher	Bolt drawer	Tire-boulon	STK	1
0501.2.560.2	49500	Grundplatte	Base plate	Plaque de base	STK	1
0503.0.524.2	30452	Wellenstummel	Shaft end	Bout d`arbre	STK	1
0503.1.345.1	30007	Verschraubung	Coupling	Joint	STK	1
0503.4.299.2	46736	Stift	Stud	Goupille	STK	1
0999.0.221	36971	Stopfen	Stopper	Bouchon	STK	2
0999.0.227	37960	Stopfen	Stopper	Bouchon	STK	3
0999.2.505	50260	Rammschutz	Impact protection	Parachoc	STK	1
0999.3.505	50261	Rammschutz	Impact protection	Parachoc	STK	1
0999.3.505	50261	Rammschutz	Impact protection	Parachoc	STK	8
1F1	17320	Schalter	Switch	Interrupteur	STK	3
1F1	30340	Sicherung	Fuse	Fusible électrique	STK	3
1K1	47714	Netzschütz	Power contactor	Contacteur réseau	STK	1
1K1	47723	Schützabdeckung	Contactor cover	Recouvrement contacteur électr	STK	2
1K1.1	51352	Relais	Relay	Relais	STK	1
1K1.1	51353	Relaissockel	Relay socket	Socle de relais	STK	1
1K10	26817	Relais	Relay	Relais	STK	1
1K2	47708	Netzschütz	Power contactor	Contacteur réseau	STK	1
1K2.1	44063	Relais	Relay	Relais	STK	1
1K20	67325	Zeitrelais	Time relay	Relais temporisé	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
1K3.1	44063	Relais	Relay	Relais	STK	1
1L1	68363	Netzdrossel	Control	Commande	STK	1
1M1	67970	Motor 75 KW	Motor 75 KW	Moteur 75 KW	STK	1
1M1	74191	Anbauverschraubung	Attachment joint	Raccord d`assemblage	STK	1
1M1	74193	Anbauverschraubung	Attachment joint	Raccord d`assemblage	STK	1
1P1	51350	Betriebsstundenzähler	Operation hour counter	Compte-heures service	STK	1
1Q2	62389	Motorschutzschalter	Motor overload switch	Interrupteur de démarrage	STK	1
1Q2	62402	Hilfskontakt	Auxiliary contact	Contact auxiliaire	STK	1
1R1	68364	Bremswiderstand	Braking resistor	Resistance de freinage	STK	1
1R1	69142	Platte	Plate	Plaque	STK	1
1U1	66892	Digital Operator	Nut	Ecrou	STK	1
1U1	68122	Frequenzumformer	Frequency converter	Convertisseur de fréquences	STK	1
10K1	51352	Relais	Relay	Relais	STK	1
10K1	51353	Relaissockel	Relay socket	Socle de relais	STK	1
10S1	26910	Endschalter	Limit switch	Fin de course	STK	1
11S1	48669	Schalter	Switch	Interrupteur	STK	1
11S1	48670	Stecker	Plug	Fiche	STK	1
13S2	40914	Schalter	Switch	Interrupteur	STK	1
2014054	49883	Schutzschlauch	Protection hose	Tube de protection	M	0,5
2020562	49872	Schrumpfschlauch	Shrinkage hose	Tube flexible contractible	M	1,5
20310294	24913	Kunststoff	Plastic	Plastique	KG	0,008
20310294	24913	Kunststoff	Plastic	Plastique	KG	0,012
2031041	11815	Kunststoff	Plastic	Plastique	KG	0,035
2031041	11815	Kunststoff	Plastic	Plastique	KG	0,014
2032008	33739	Kunststoff	Plastic	Plastique	KG	0,165
2032008	33739	Kunststoff	Plastic	Plastique	KG	0,216
2033208	11856	Kunststoff	Plastic	Plastique	KG	0,08
2033225	25956	Kunststoff	Plastic	Plastique	KG	0,1
2034251	11885	Kunststoff	Plastic	Plastique	M	0,3
21AX1	60934	Stecker	Plug	Fiche	STK	1
21A1	60930	Modulträger	Module rack	Support du module	STK	1
21A1	60931	Buscontroller	Buscontroller	Buscontroller	STK	1
21A1	65964	Modulträger	Module rack	Support du module	STK	1
21A2	60933	Modul	Combination module	Module	STK	1
21A2	60935	Klemme	Terminal	Borne de conexion	STK	2
21A3	60936	Klemme	Terminal	Borne	STK	3
21A3	62593	Digitales Eingangsmodul	Module	Module	STK	1

POS. NO.	ART.NO.	ERSATZTEIL	SPARE PART	PIECE DE RECHANGE	UNIT	NO.
21A4	65179	Ausgangsmodul	Power pack unit	Unitè de courant	STK	1
21F1	37712	Klemme	Terminal	Borne de conexion	STK	1
21F1	55643	Sicherung	Fuse	Fusible électrique	STK	1
3K1	47708	Netzschütz	Power contactor	Contacteur réseau	STK	1
3K1	49784	Schützhilfsschalter	Auxiliary contactor switch	Interrupteur aux contacteur	STK	1
3K2	47708	Netzschütz	Power contactor	Contacteur réseau	STK	1
3K2	49784	Schützhilfsschalter	Auxiliary contactor switch	Interrupteur aux contacteur	STK	1
3K3	47708	Netzschütz	Power contactor	Contacteur réseau	STK	1
3K3	49784	Schützhilfsschalter	Auxiliary contactor switch	Interrupteur aux contacteur	STK	1
3Q1	62390	Motorschutzschalter	Motor overload switch	Interrupteur de démarrage	STK	1
3Q1	62402	Hilfskontakt	Auxiliary contact	Contact auxiliaire	STK	1
4	45044	Gewindestift	Threaded pin	Boulon filetée	STK	4
4K1	47708	Netzschütz	Power contactor	Contacteur réseau	STK	1
4Q1	62389	Motorschutzschalter	Motor overload switch	Interrupteur de démarrage	STK	1
4Q1	62402	Hilfskontakt	Auxiliary contact	Contact auxiliaire	STK	1
5	44825	Gewindestift	Threaded pin	Boulon filetée	STK	2
5016058	12262	Sechskantschraube	Hexagonal screw	Vis hexagonale	STK	2
50520007	38046	Gewindestange	Threaded rod	Barre filetée	M	1,362
6	45041	Gewindestift	Threaded pin	Boulon filetée	STK	4
6079615	31861	Dichtung	Seal	Joint de couvercle	M	1,5
61330003	25076	Stopfen	Stopper	Bouchon	STK	1
7	69289	Gewindestift	Threaded pin	Boulon filetée	STK	4
7F1	37711	Klemme	Terminal	Borne	STK	1
7F1	55643	Sicherung	Fuse	Fusible électrique	STK	1
7010191	16397	Draht	Wire	Fil	M	3,5
7023013	57888	Verschraubung	Coupling	Joint	STK	2

8 Electrical parts

Observe safety rules without fail

1. Disconnecting:
   Actuate main switch, remove melt inserts, actuate line cut-out switch etc.

2. Secure against being switched on again:
   remove controller fuse, release compressed air, keep melt inserts in safe place, use locking device on switches. Ensure that a warning notice is placed reliably while work is being carried out.

3. Establishing zero potential:
   The all-poled zero potential must be established at the workplace using a two-poled voltage tester, measuring device or the like. Voltage detectors must be tested for functionality before use.

4. Earthing and by-passing:
   Earth first and then by-pass. The earthing and by-passing must be visible from the workplace.
   If cables are cut, both sides must be earthed and by-passed.

5. Cover any live parts in the vicinity with insulating material.

E L E K T R I S C H E R S C H A L T P L A N
E L E C T R I C A L D I A G R A M
D I A G R A M M E E L E C T R I Q U E
D I A G R A M A E L E C T R I C O
D I A G R A M M A E L E C T R I C O

Type: Ser.Nr.:	Type: Ser.Nr.:	Type: N° série:	Tipo: Nr. ser.:	Tipo: Nr.ser.:	KU 130 12667
Gesamtleistung: Netzspannung: Steuerspannung: Toleranz: SPS-Spannung: Frequenz:	Rated power: Supply Voltage: Control Voltage: Tolerance: SPS-Voltage: Frequency:	Puissance totale: Tension séseau: Tension commande: Tolérance: Tension CPU: Fréquence:	Potencia total: Tensión alimentación: Tensión mando: Tolerancia: CPU-Voltaje: Frecuencia:	Potenua totale: Tensione di rete: Tension commando: Tolleranca: Tensione CPU: Frequenza:	62 kW 3x400 VAC 230 VAC ±5% 24 VDC 50 Hz

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/2	-Inhaltsverzeichnis -Page overview -Table des matières -Indice de contenido -Indice	30.10.07 SCH
/2a	-Inhaltsverzeichnis -Page overview -Table des matières -Indice de contenido -Indice	30.10.07 SCH
/2b	-Inhaltsverzeichnis -Page overview -Table des matières -Indice de contenido -Indice	30.10.07 SCH
/3	-Projekt Information -Project information -Informations sur le projet -Información del proyecto -Informazioni sul progetto	30.10.07 LAS
/4	-Schaltschrankaufbau -Design Control box -Armoire commande -Armario de distribución -Quadro di distrib. ad armadio	30.10.07 LAS
/5	-Einspeisung -Power supply -Alimentation -Alimentación -Alimentazione	30.10.07 LAS
/6	-Steuerspannung -Control Voltage -Tension de commande -Tensión de mando -Tensione di comando	30.10.07 LAS
/7	-Messerwelle -Knife shaft -Convertisseur -Convertidor estático -Convertitore corrente	30.10.07 LAS
/8	-Schüsselantrieb -Bowl drive -Actionnement de la cuve -Accionamiento del plato -Azionamento vasca	30.10.07 LAS
/9	-Auswerferantrieb -Unloader drive -Vide cuve -Descargador -Scaricatore	30.10.07 LAS
/10	-Maschinenbelüftung -Machine ventilation -Aération de machine -Ventilatión de la máquina -Ventilazione macchina	30.10.07 LAS
/11	-Steuerung -Control -Commande -Control -Comando	30.10.07 LAS
/12	-Bedientableau -Control panel -Interface opérateur -Placa de plusadores -Interfaccia operatore	30.10.07 LAS
/13	-SPS - Versorgung -PLC supply -PLC alimentation -PLC alimentación -PLC alimentatione	30.10.07 LAS
/14	-SPS - Versorgung -PLC supply -PLC alimentation -PLC alimentación -PLC alimentatione	30.10.07 LAS
/15	-Digitaler Eingang -Digital Input -Entrées num. -Entrada digitala -Entrate digitali	30.10.07 LAS
/16	-Digitaler Eingang -Digital Input -Entrées num. -Entrada digitala -Entrate digitali	30.10.07 LAS
/17	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	30.10.07 LAS
/18	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	30.10.07 LAS
/19	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	30.10.07 LAS
/20	-Analoger Eingang/Ausgang -Analog Input/Output -Entrées/Sorties analog. -Entrada/Salida analógica -Entrate/Uscite analogiche	30.10.07 LAS
/21	-Sensoren -Sensors -Sonde -Sensor -Sensore	30.10.07 LAS
/22	-SPS - Übersicht -PLC - Overview -Aperçu commande par logiciel -Vista general PLC -Sinossi PLC	30.10.07 LAS
/23	-SPS - Übersicht -PLC - Overview -Aperçu commande par logiciel -Vista general PLC -Sinossi PLC	30.10.07 LAS
/24	-SPS - Übersicht -PLC - Overview -Aperçu commande par logiciel -Vista general PLC -Sinossi PLC	30.10.07 LAS

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/51	W21A2.2	30.10.07 SCH
/52	W21A2.3	30.10.07 SCH

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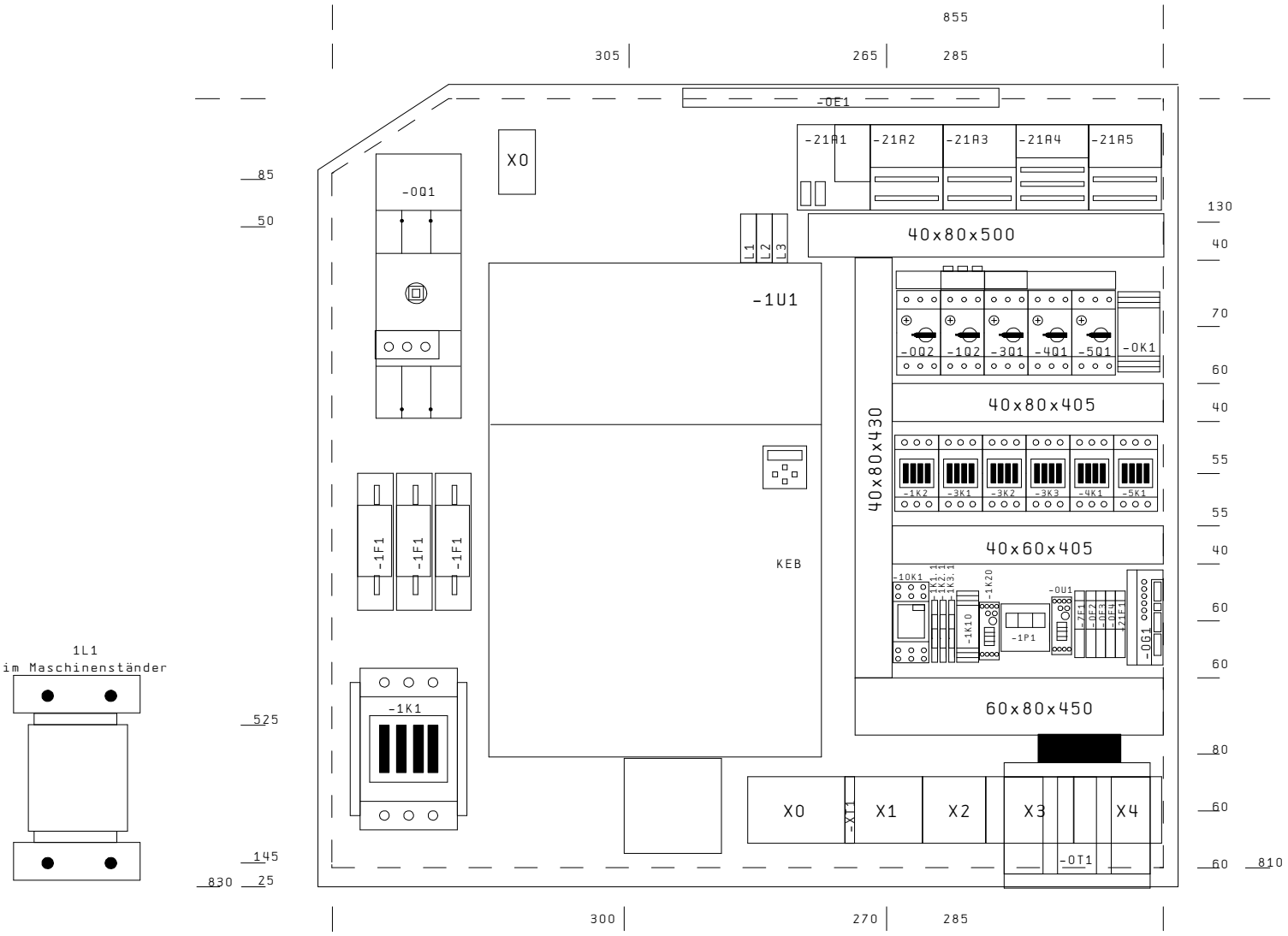
Gruppenbezeichnung	Building Groupe Division	Désignation des groupes	Denominación de grupos	Denominazione dei gruppi
0 -Allgemein	0 -General	0 -Général	0 -General	0 -Generalità
1 -Hauptantrieb	1 -Main drive	1 -Entraînement principal	1 -Accionamiento principal	1 -Azinomaneto principale
2 -Mischgang	2 -Mixing drive	2 -Mélange	2 -Velocidad de mezcla	2 -Miscelazione
3 -Schüssel	3 -Bowl	3 -Cuve	3 -Plato	3 -Chiave
4 -Auswerferscheibe	4 -Unloader disc	4 -Disque vide-cuve	4 -Disco descargador	4 -Disco del scaricatore
5 -Hydraulikpumpe	5 -Hydraulik pump	5 -Pompe hydraulique	5 -Bomba hidraulica	5 -Pompa idraulica
6 -Vakuum	6 -Vacuum	6 -Sous vide	6 -Vacío	6 -Vuoto
7 -Maschinenbelüftung	7 -Machine ventilation	7 -Aération de machine	7 -ventilación de la máquina	7 -Ventilazione macchina
8 -	8 -	8 -	8 -	8 -
9 -	9 -	9 -	9 -	9 -
10 -Messerhaube	10 -Knife hood	10 -Capot protecteur couteaux	10 -Cubierta protectora de chuchillas	10 -Coperchio del coltelli
11 -Lärm-/Vakuum-Deckel	11 -Noise-/Vacuum-Hood	11 -Couvercle antibruit/sous vide	11 -Tapa antisonido/de vacio	11 -Coperc. antirumore/sottov.
12 -Beschickung	12 -Loading Device	12 -Chargeur	12 -Cargador	12 -Caricatore
13 -Auswerfer	13 -Unloader	13 -Vide cuve	13 -Descargador	13 -Scaricatore
14 -Wasserdosierung	14 -Water dosage	14 -Dosage d' eau	14 -Dosificador de agua	14 -Dosatore acqua
15 -Begasungseinrichtung	15 -Gas flushing device	15 -Dispositif de gazage	15 -Dispositivo de gas	15 -Dispositivo gas
16 -Zentralschmierung	16 -Lubrication	16 -Graissage central	16 -Lubricación central	16 -Lubrificazione centrale
17 -	17 -	17 -	17 -	17 -
18 -	18 -	18 -	18 -	18 -
19 -Kocheinrichtung	19 -Boiling gear	19 -Dispositif à temp. élevée	19 -Equipo de cocción	19 -Apparecchiat. di cottura
20 -	20 -	20 -	20 -	20 -
21 -SPS	21 -PLC	21 -PLC	21 -PLC	21 -PLC
22 -	22 -	22 -	22 -	22 -
23 -Reinigungssystem	23 -Cleaning system	23 -Systeme de nettoyage	23 -Sistema de limpieza	23 -Sistema di pulizia
24 -Schwingungsüberwachung	24 -Vibration monitoring	24 -Surveillance d` osziallation	24 -Observcion de vibracione	24 -Monitora. delle vibrazioni
25 -Füllstandseinrichtung	25 -Level indication device	25 -Disp. indicateur niveau de remplissage	25 -Dispositivo del nivel de llenado	25 -Dipositivo di controllo livello materiale
26 -Metalldedektor	26 -	26 -	26 -	26 -

Klemmleisten	Terminals	Plaques à bornes	Regletas de bornes	Morsettiere
-X0 -400VAC	-X0 -400VAC	-X0 -400VAC	-X0 -400VAC	-X0 -400VAC
-X1 -230VAC	-X1 -230VAC	-X1 -230VAC	-X1 -230VAC	-X1 -230VAC
-X2 -24VDC	-X2 -24VDC	-X2 -24VDC	-X2 -24VDC	-X2 -24VDC
-X3 -Binäre Signale	-X3 -Binary signal	-X3 -Signaux binaires	-X3 -Señales binarias	-X3 -Segnali binari
-X4 -Magnet Ventile 230VAC	-X4 -Magnet valves 230VAC	-X4 -Vannes magnétiques 230VAC	-X4 -Válvulas magnéticas 230VAC	-X4 -Valvole elettromag. 230VAC
-X6 -Analog Signal	-X6 -Analog signal	-X6 -Signaux analogiques	-X6 -Señales análogicas	-X6 -Segnali analogici
-X7 -Not Aus	-X7 -Emergency stop	-X7 -Arrêt d'urgence	-X7 -Emergencia off	-X7 -Arresto d'emergenza
-X8 -Potentialfreie Signale	-X8 -Potentialfree signal	-X8 -Signaux potentiel libre	-X8 -Señales potential libres	-X8 -Segnali potenziale liberi
-X9 -	-X9 -	-X9 -	-X9 -	-X9 -

Verdrahtungsfarben	Wiring color code	Couleurs des cablages	Colores de cableado	Colori dei cablaggi
Schwarz -Hauptstrom	Black -Main circuit	Noir -Courant principal	Negro -Corriente principal	Nero -Corrente principale
Gelb-Grün -Schutzleiter	Yellow green -Potential earth	Jaune vert -Conducteur de protection	Amarillo verde -Conductor protector	Giallo verde -Conduttore di protezione
Rot -Steuerspannung AC	Red -Control voltage AC	Rouge -Tension de commande AC	Rojo -Tensión de mando AC	Rosso -Tensione commando AC
Dunkel-blau -Steuerspannung DC	Dark blue -Control voltage DC	Bleu foncé -Tension de commande DC	Azul oscuro -Tensión de mando DC	Blu -Tensione commando DC
Weiss -Messleitungen	White -Measuring wires	Blanc -Ligne de mesure	Blanco -Linea de medida	Bianco -Linea di misura
Orange -Fremdspannung	Orange -External voltage	orange -Tension externe	Naranja -Tensión ajena	Arancione -Tensione esterna

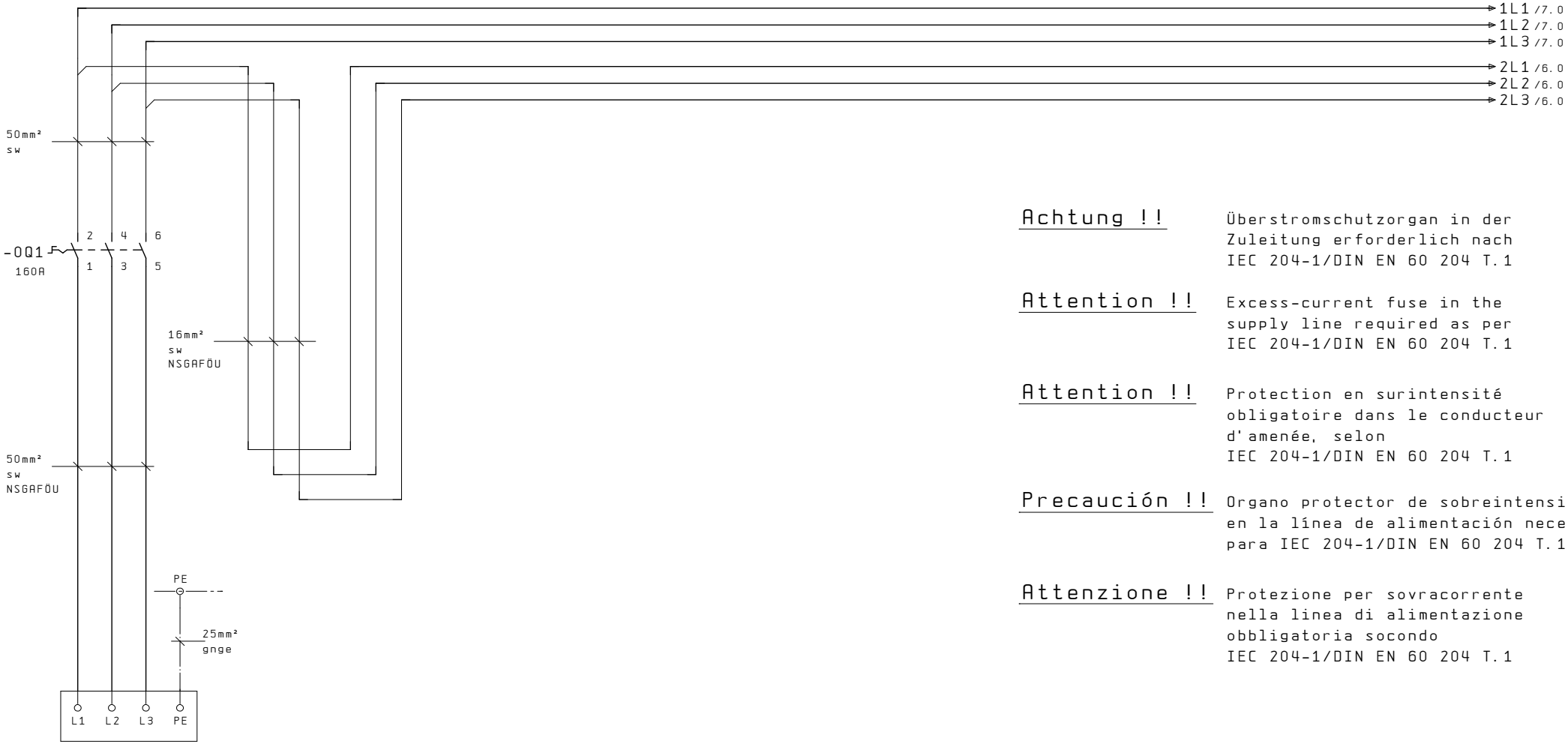


1L1
im Maschinenständer

5

KU 130.AC	-Schaltschrankaufbau -Design Control box -Armoire commande -Armario de distribución -Quadro di distrib. ad armadio	Bl. 4
L-12667.2008		52 Bl.

3



Einspeisung
3*400V/50Hz

Power supply
3*400V/50Hz

Alimentation
3*400V/50Hz

Alimentación
3*400V/50Hz

Alimentazione
3*400V/50Hz

Achtung !! Überstromschutzorgan in der Zuleitung erforderlich nach IEC 204-1/DIN EN 60 204 T.1

Attention !! Excess-current fuse in the supply line required as per IEC 204-1/DIN EN 60 204 T.1

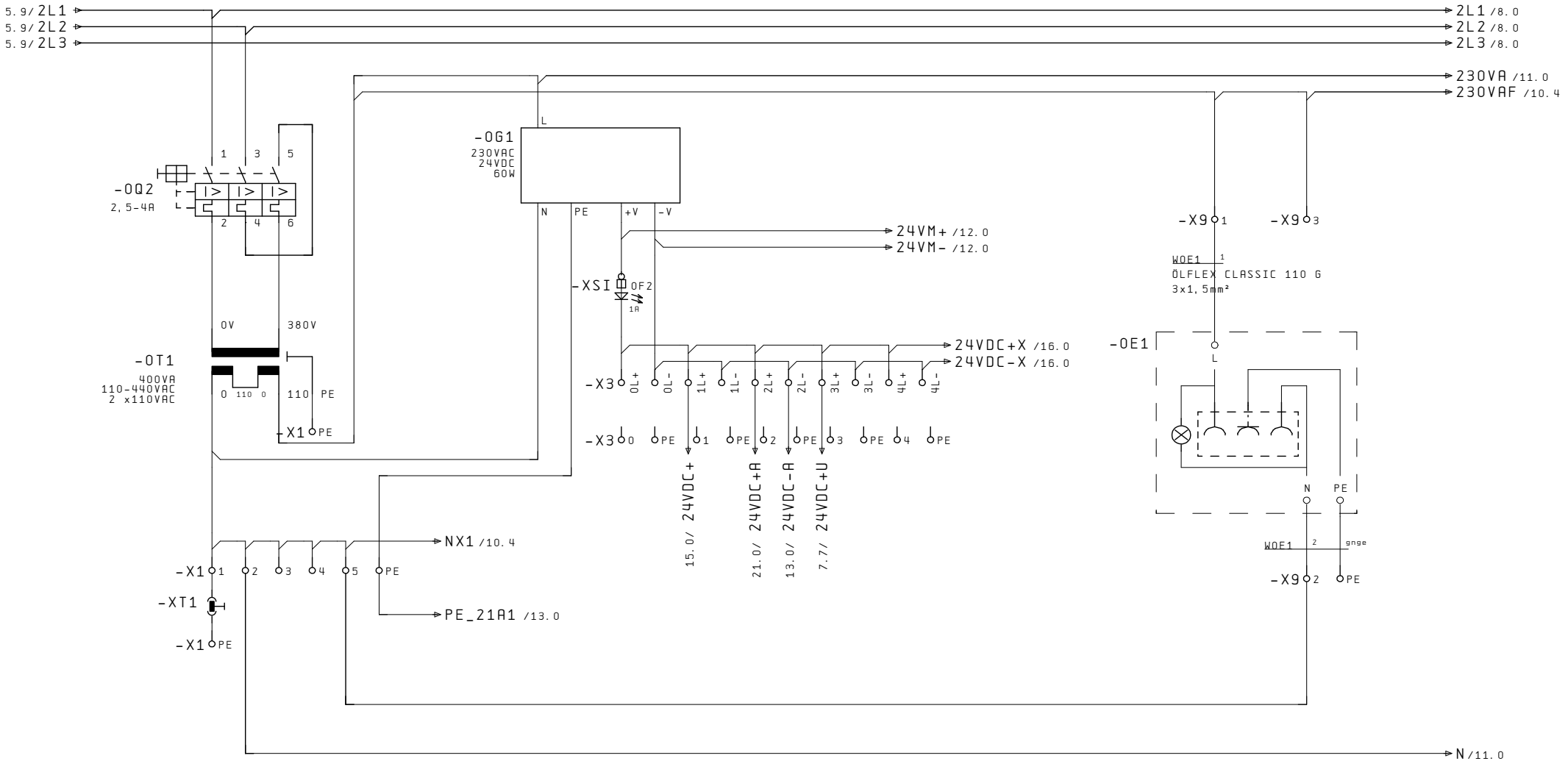
Attention !! Protection en surintensité obligatoire dans le conducteur d'amenée, selon IEC 204-1/DIN EN 60 204 T.1

Precaución !! Organo protector de sobreintensidad en la línea de alimentación necesaria para IEC 204-1/DIN EN 60 204 T.1

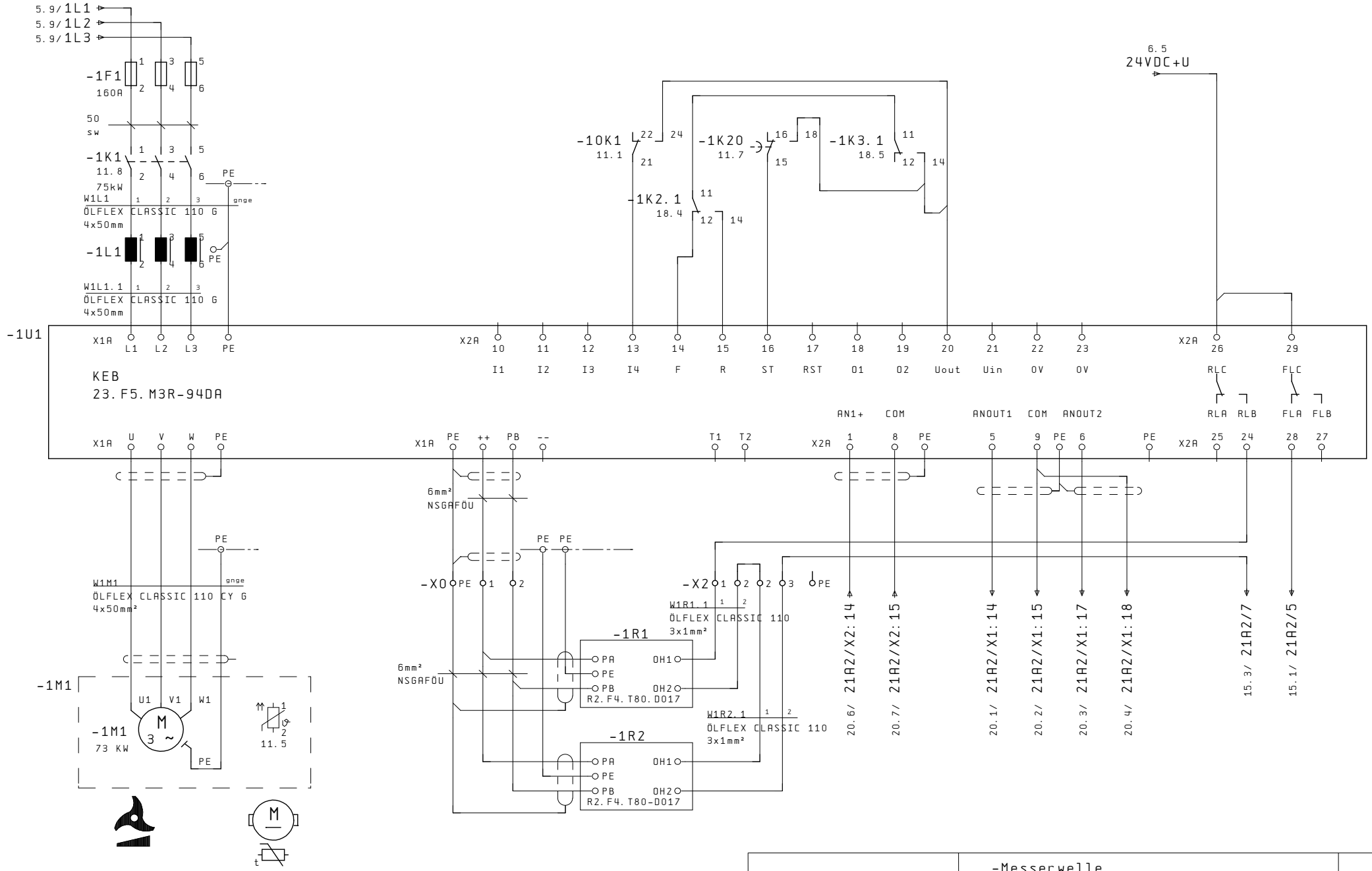
Attenzione !! Protezione per sovracorrente nella linea di alimentazione obbligatoria socondo IEC 204-1/DIN EN 60 204 T.1

6

KU 130.AC	-Einspeisung -Power supply -Alimentation -Alimentación -Alimentazione	Bl. 5
L-12667.2008		52 Bl.



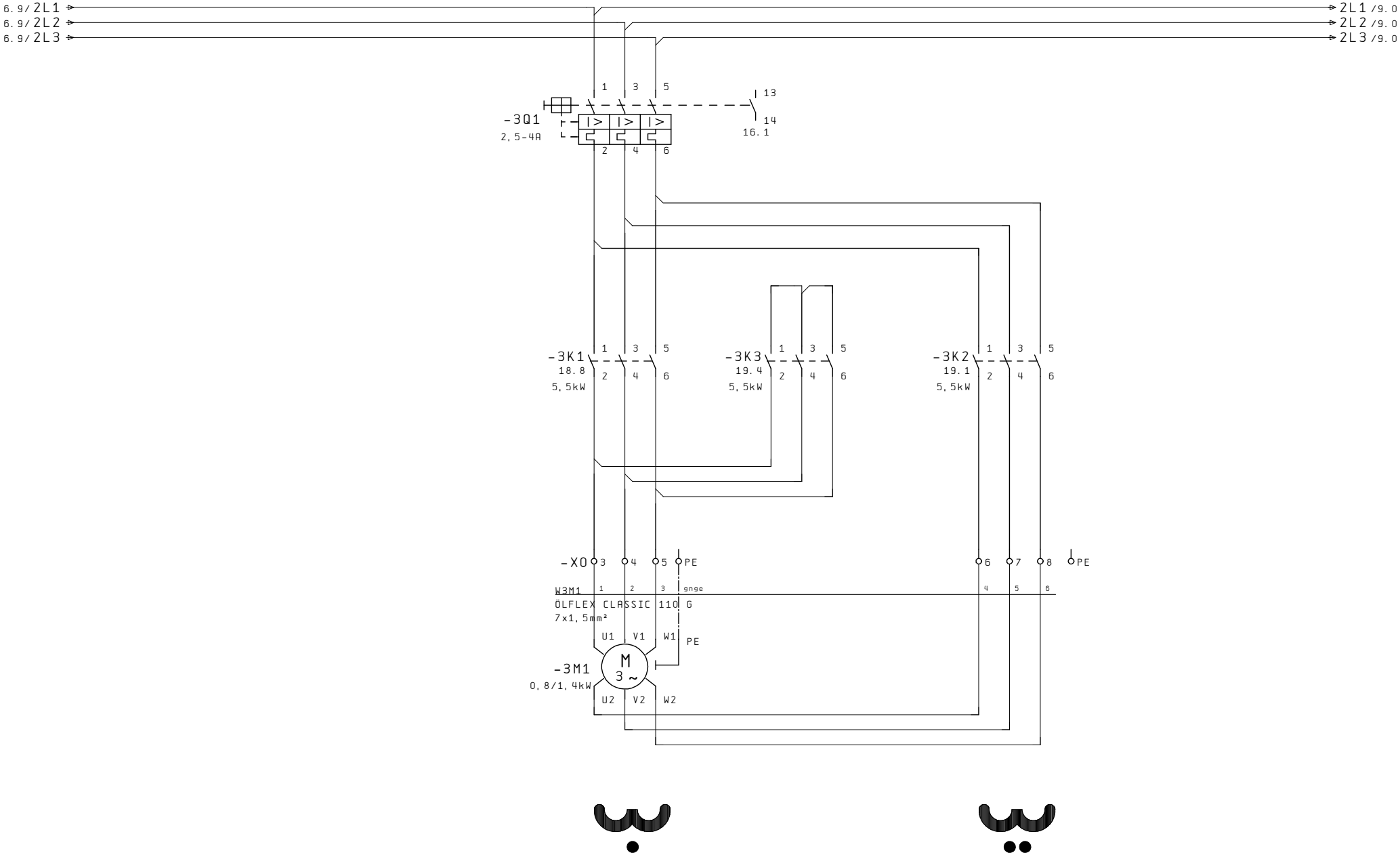
KU 130.AC	-Steuerspannung -Control Voltage -Tension de commande -Tensión de mando -Tensione di comando	Bl. 6
L-12667.2008		52 Bl.



KU 130.AC	-Messerwelle -Knife shaft -Convertisseur -Convertidor estático -Convertitore corrente	Bl. 7
L-12667.2008		52 Bl.

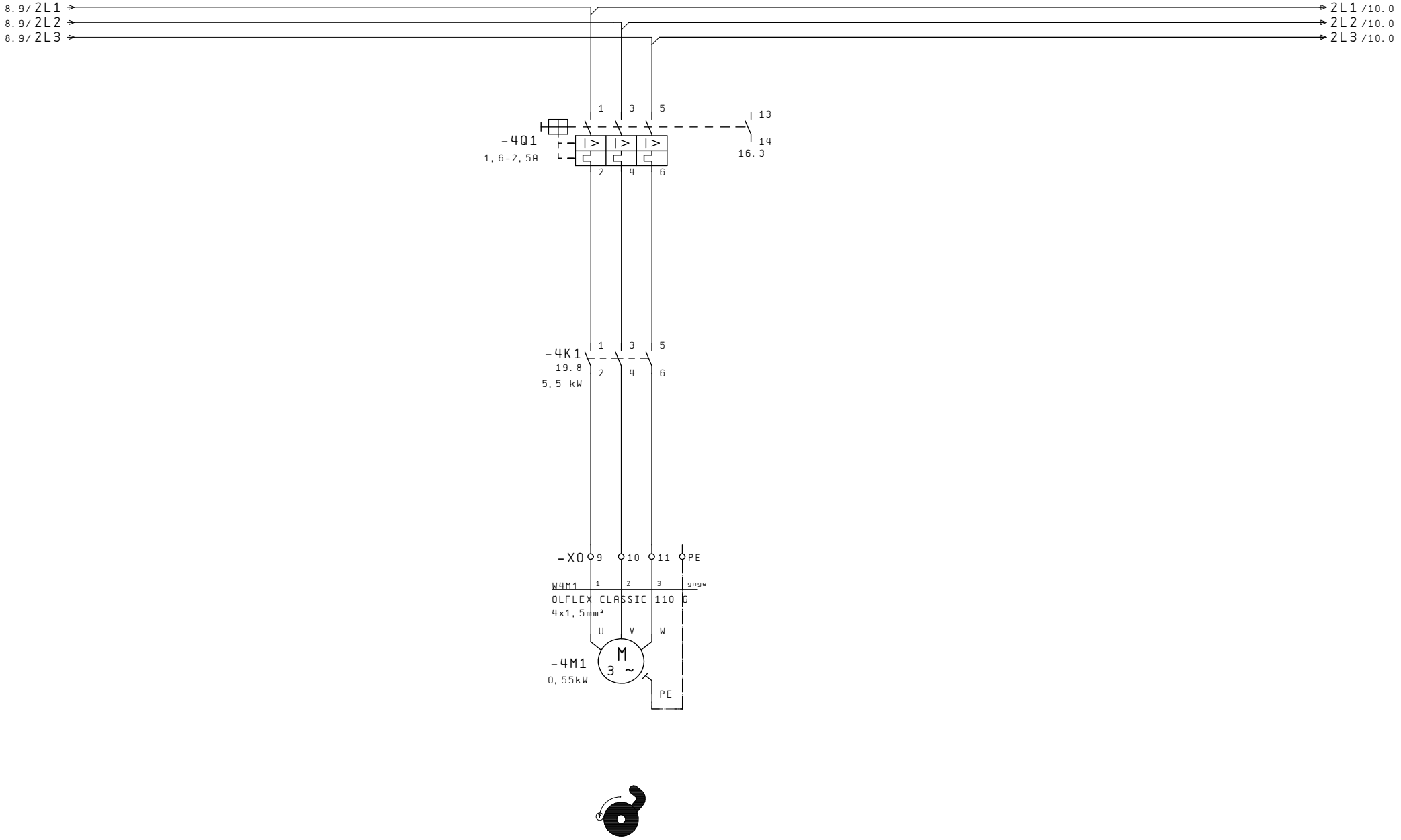
8

6



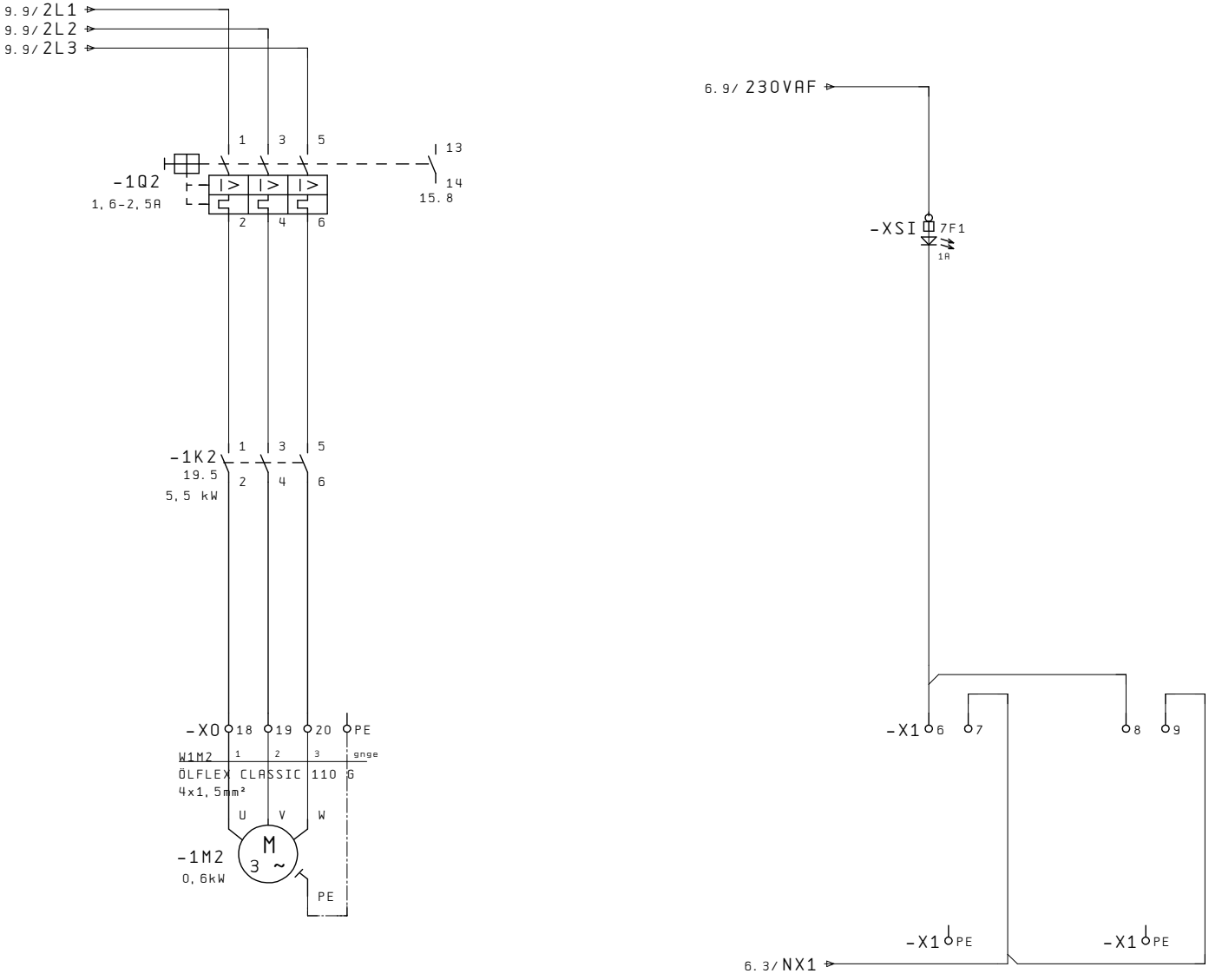
9

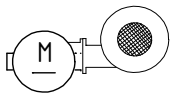
KU 130.AC	-Schüsselantrieb -Bowl drive -Actionnement de la cuve -Accionamiento del plato -Azionamento vasca	Bl. 8
L-12667.2008		52 Bl.

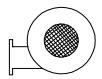


10

KU 130.AC	-Auswerferantrieb -Unloader drive -Vide cuve -Descargador -Scaricatore	Bl. 9
L-12667.2008		52 Bl.

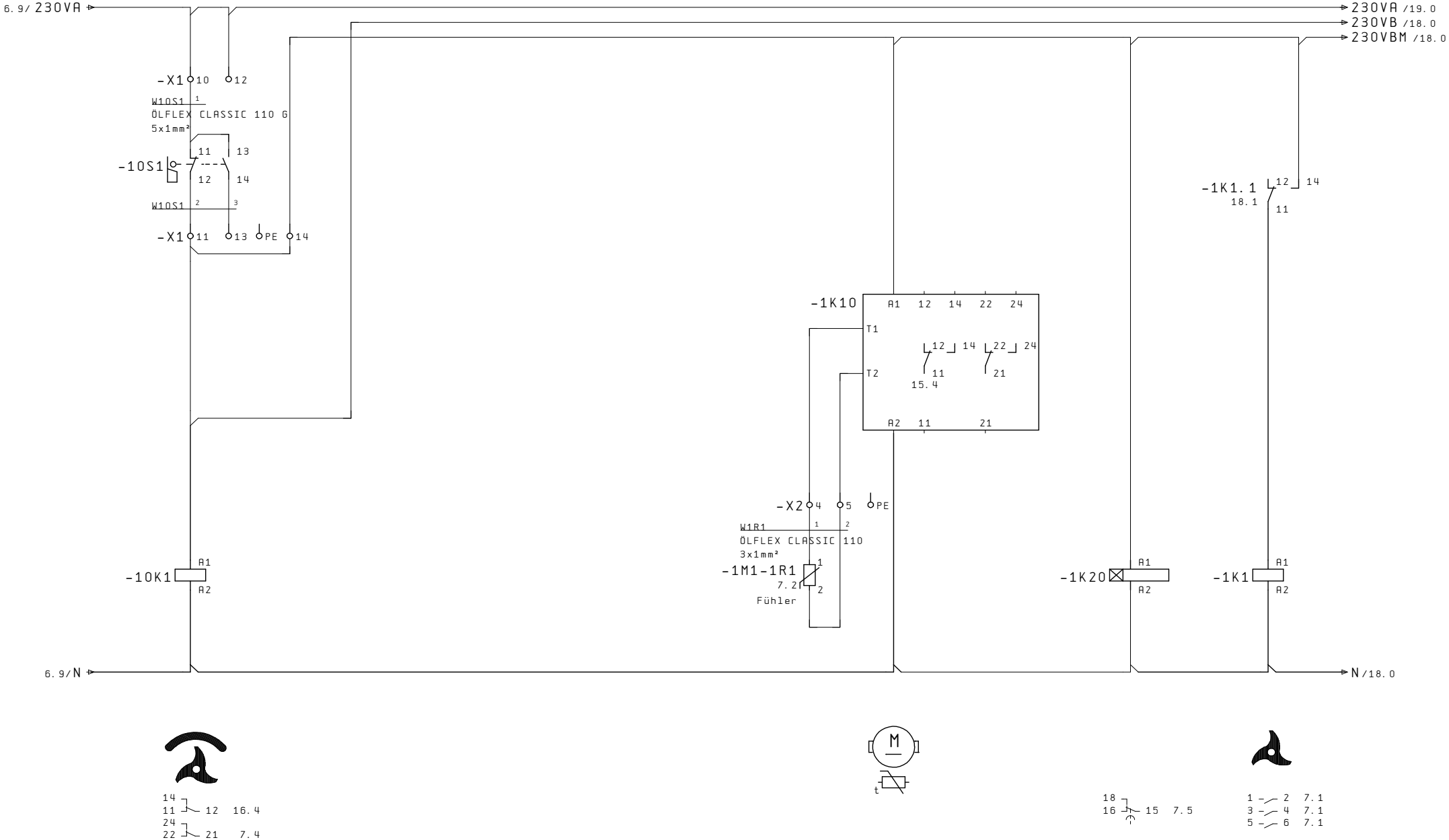






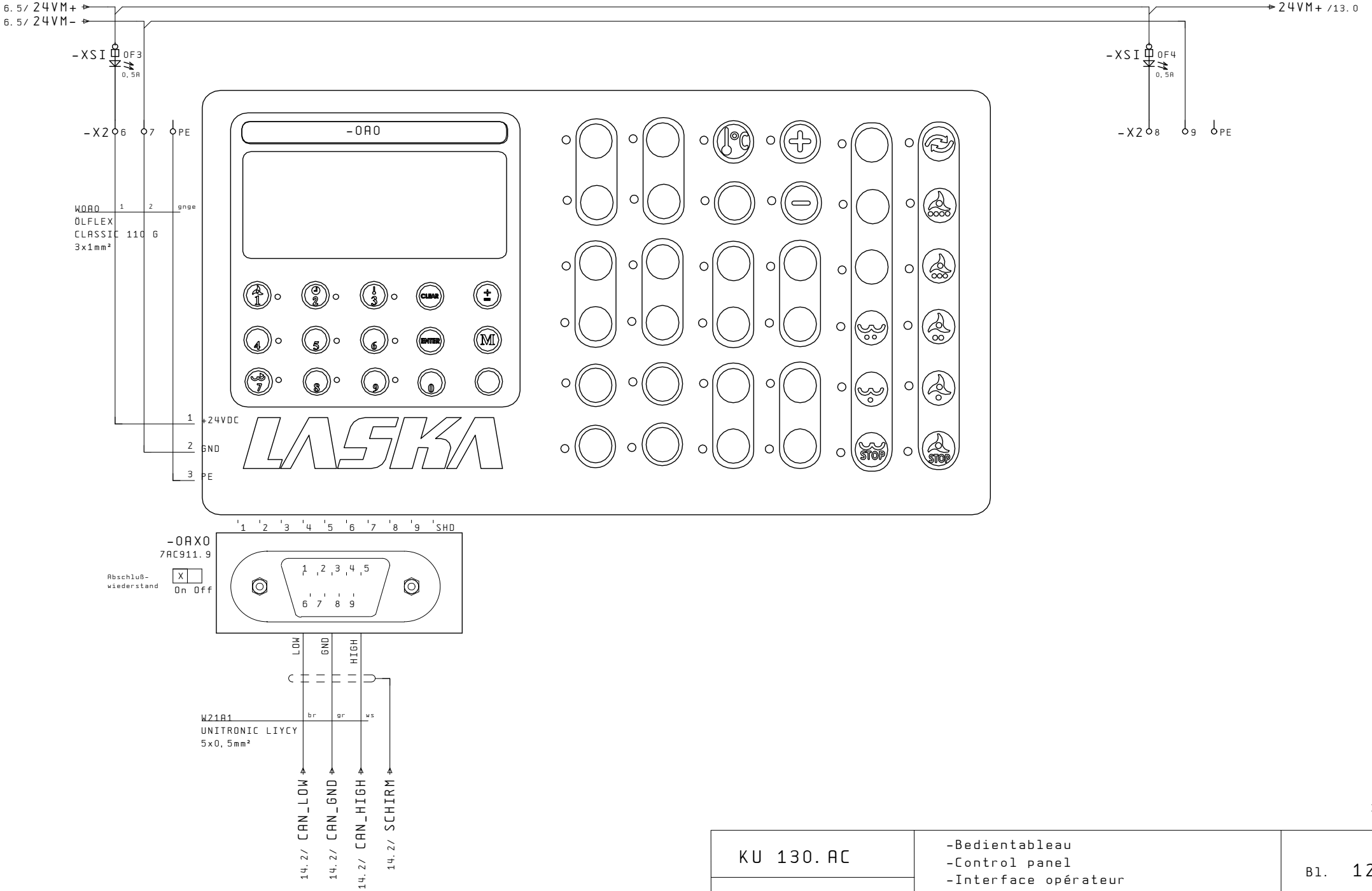
11

KU 130.AC	-Maschinenbelüftung -Machine ventilation -Aération de machine -Ventilatión de la máquina -Ventilazione macchina	Bl. 10
L-12667.2008		52 Bl.



12

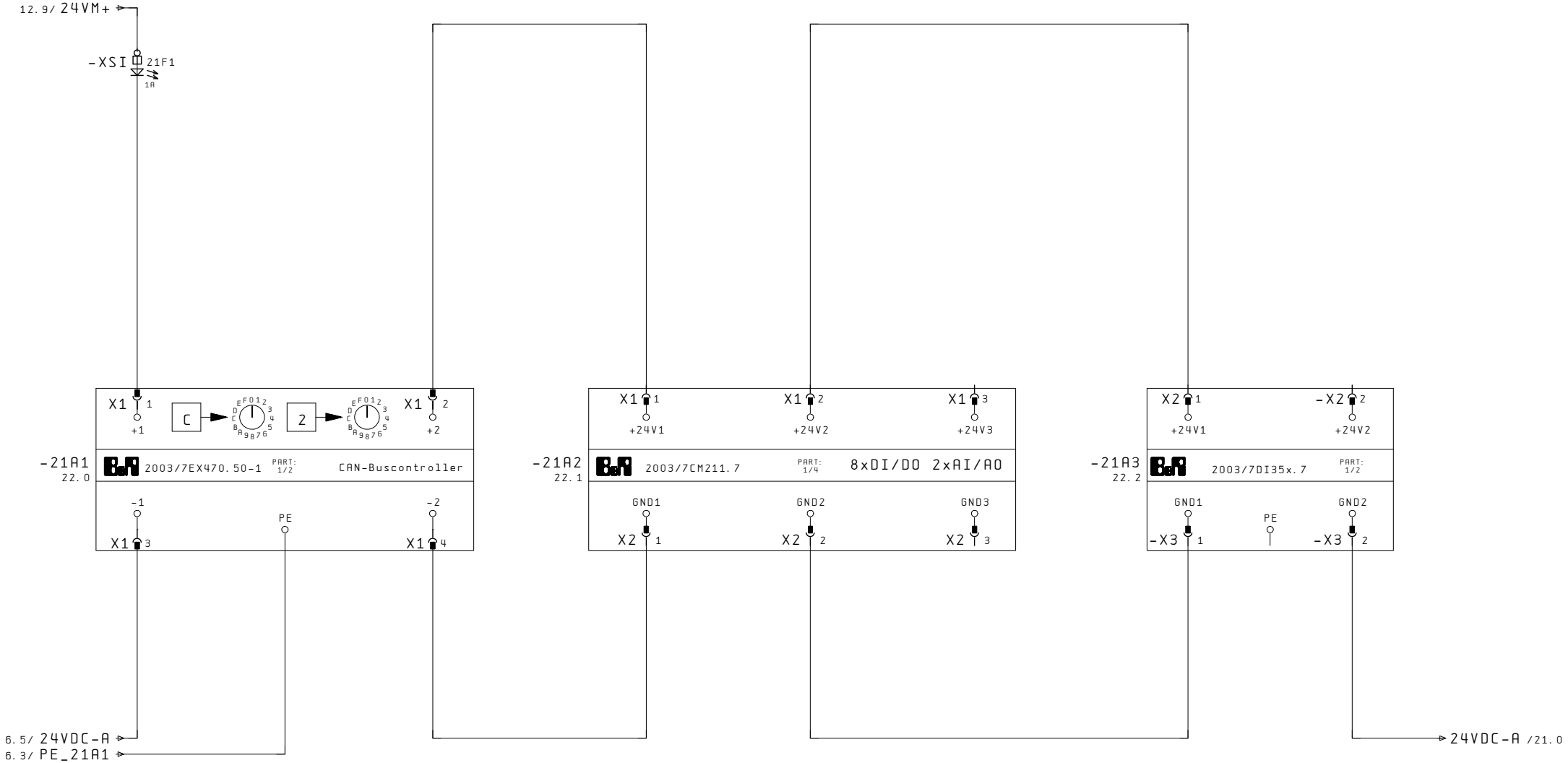
KU 130.AC	-Steuerung -Control -Commande -Control -Comando	Bl. 11
L-12667.2008		52 Bl.



13

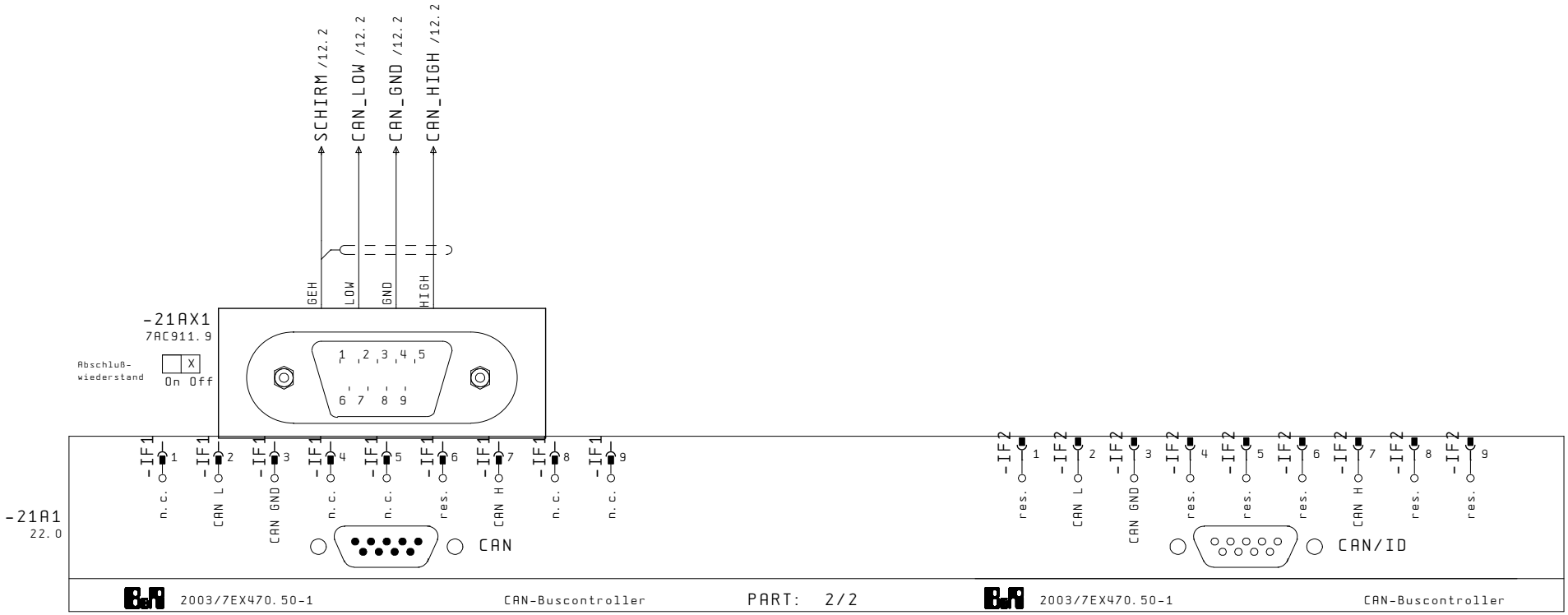
KU 130.AC	-Bedientableau -Control panel -Interface opérateur -Placa de plusadores -Interfaccia operatore	Bl. 12
L-12667.2008		52 Bl.

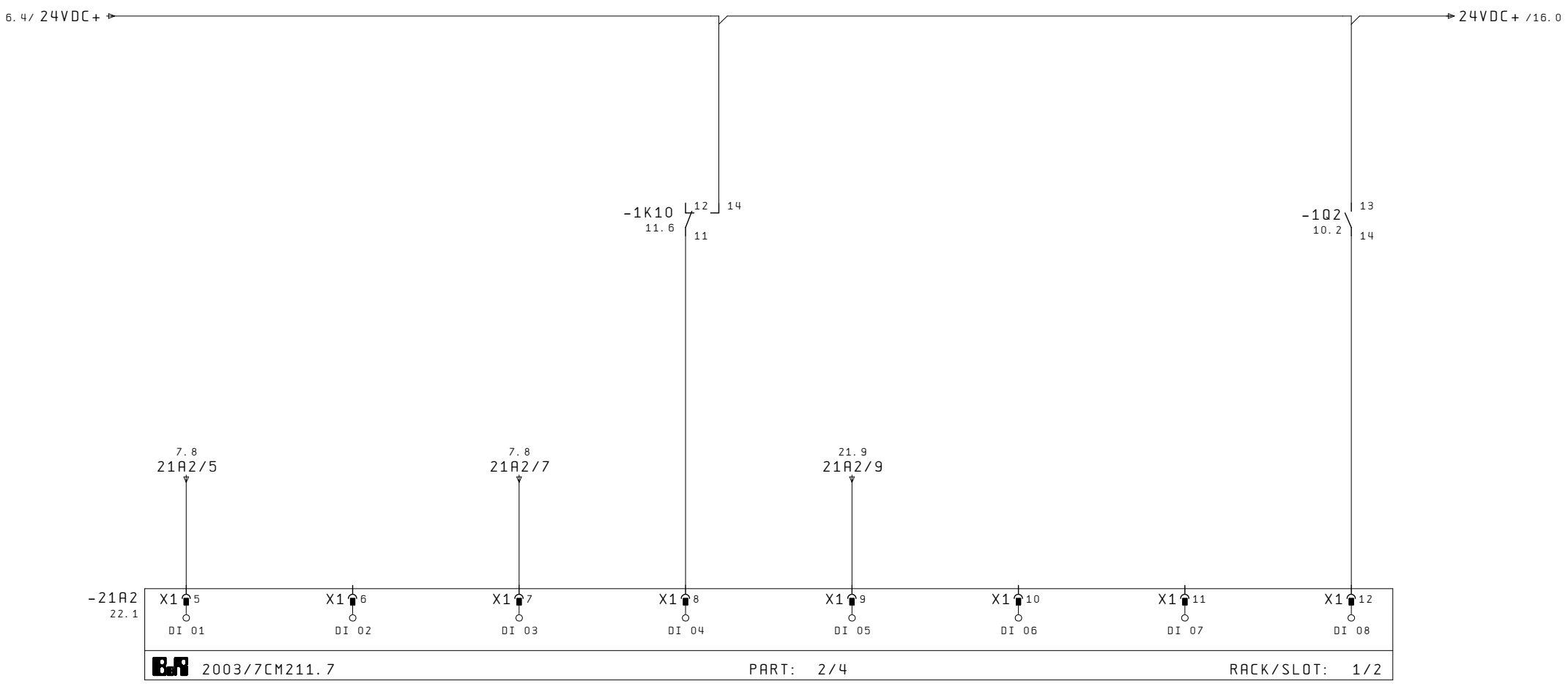
11



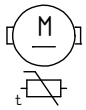
14

KU 130.AC	-SPS - Versorgung -PLC supply -PLC alimentation -PLC alimentación -PLC alimentatione	Bl. 13
L-12667.2008		52 Bl.

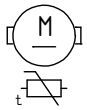

SCHIRM /12.2
CAN_LOW /12.2
CAN_GND /12.2
CAN_HIGH /12.2
GEH
LOW
GND
HIGH
-21AX1
7AC911.9
Abschluß-
wiederstand
X
On Off
1 2 3 4 5
6 7 8 9
-21A1
22.0
-IF1 1 n.c.
-IF1 2 CAN L
-IF1 3 CAN GND
-IF1 4 n.c.
-IF1 5 n.c.
-IF1 6 res.
-IF1 7 CAN H
-IF1 8 n.c.
-IF1 9 n.c.
CAN
2003/7EX470.50-1
CAN-Buscontroller
PART: 2/2
-IF2 1 res.
-IF2 2 CAN L
-IF2 3 CAN GND
-IF2 4 res.
-IF2 5 res.
-IF2 6 res.
-IF2 7 CAN H
-IF2 8 res.
-IF2 9 res.
CAN/ID
2003/7EX470.50-1
CAN-Buscontroller



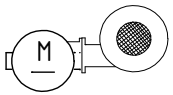
1/min=0



-1A1
-1R1

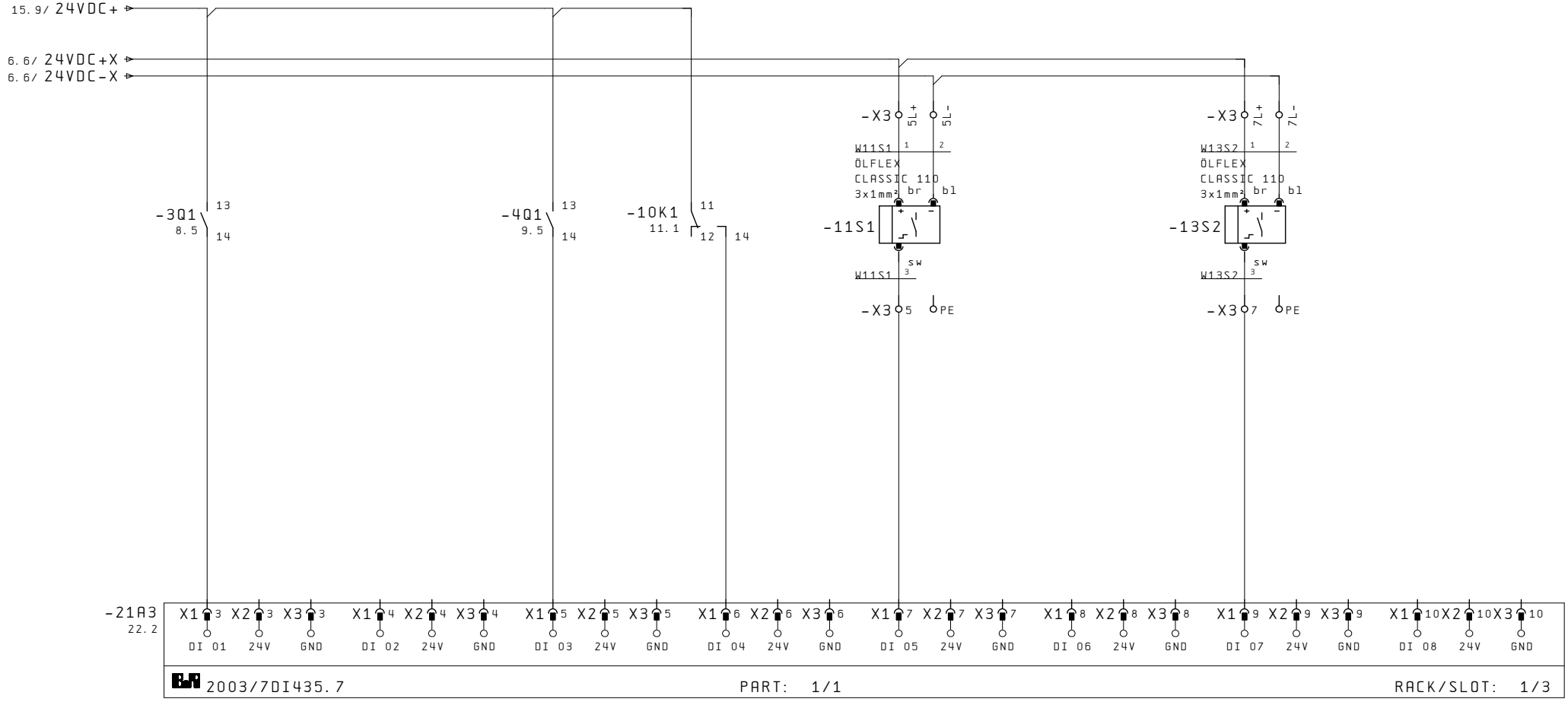


-1M1



16

KU 130.AC	-Digitaler Eingang -Digital Input -Entrées num. -Entrada digitala -Entrate digitali	Bl. 15
L-12667.2008		52 Bl.



17

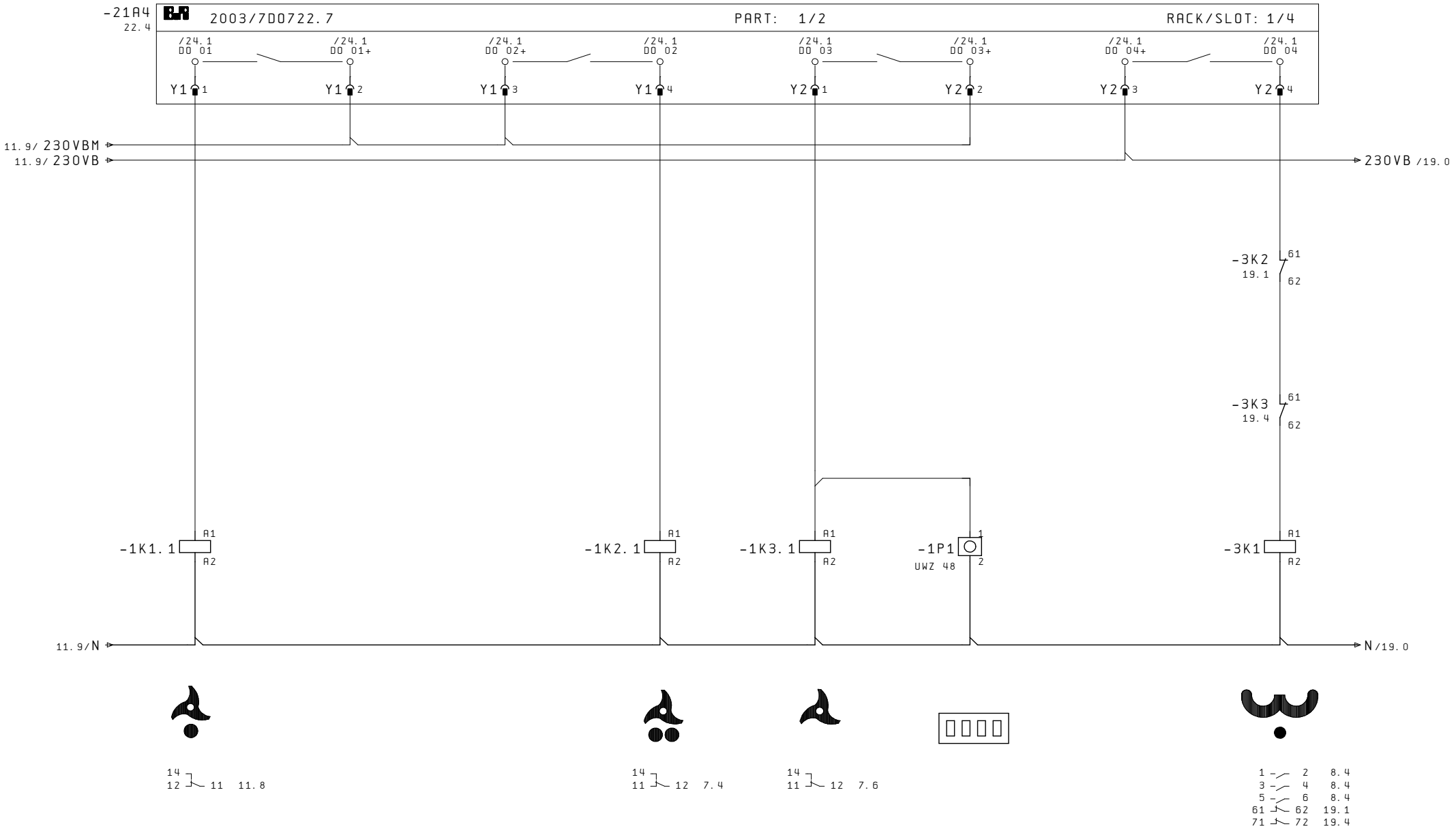
KU 130.AC	-Digitaler Eingang -Digital Input -Entrées num. -Entrada digitala -Entrate digitali	Bl. 16
L-12667.2008		52 Bl.

-21A2
22.1

2003/7CM211.7 PART: 3/4 RACK/SLOT: 1/2

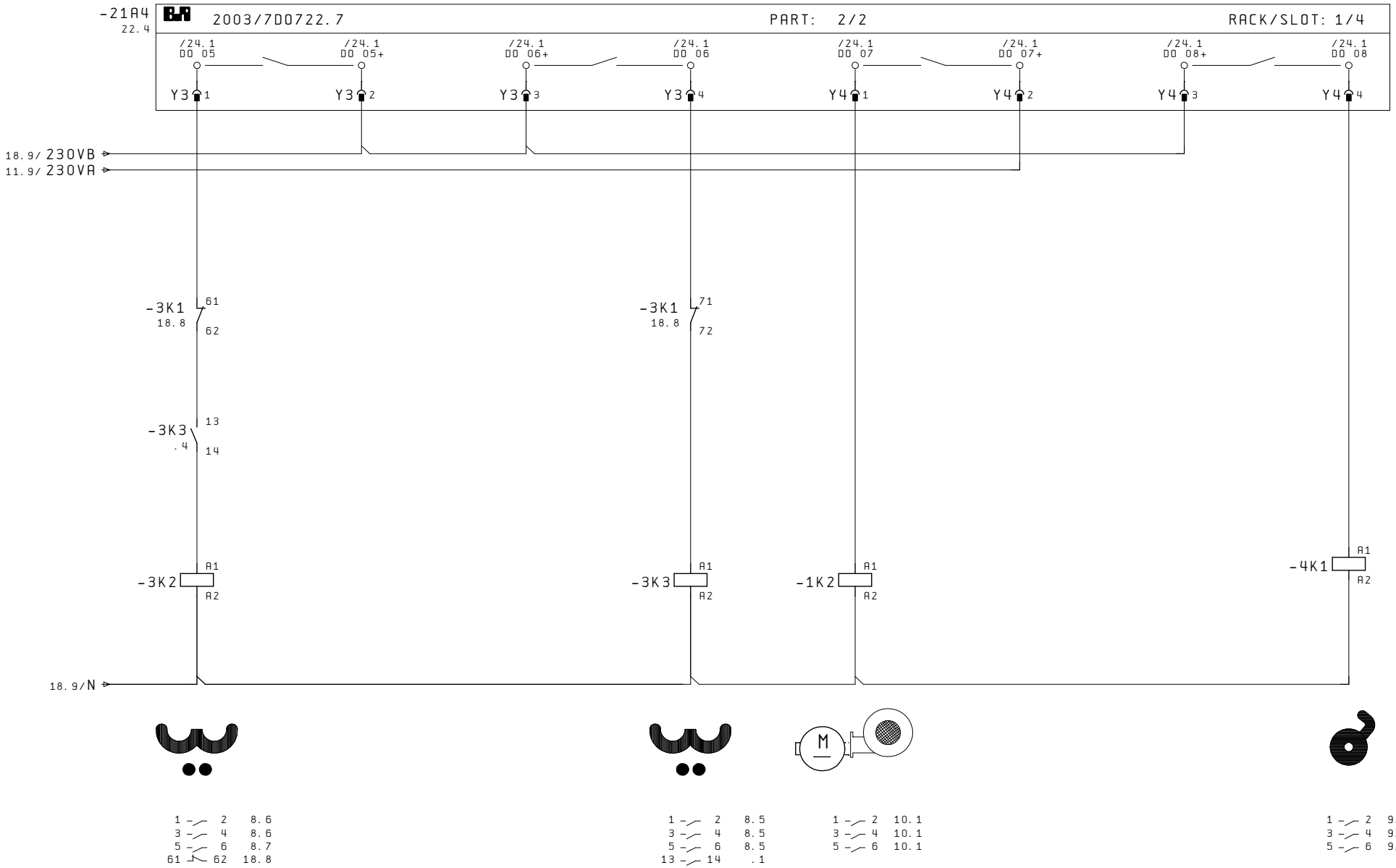
18

KU 130.AC	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	Bl. 17
L-12667.2008		52 Bl.



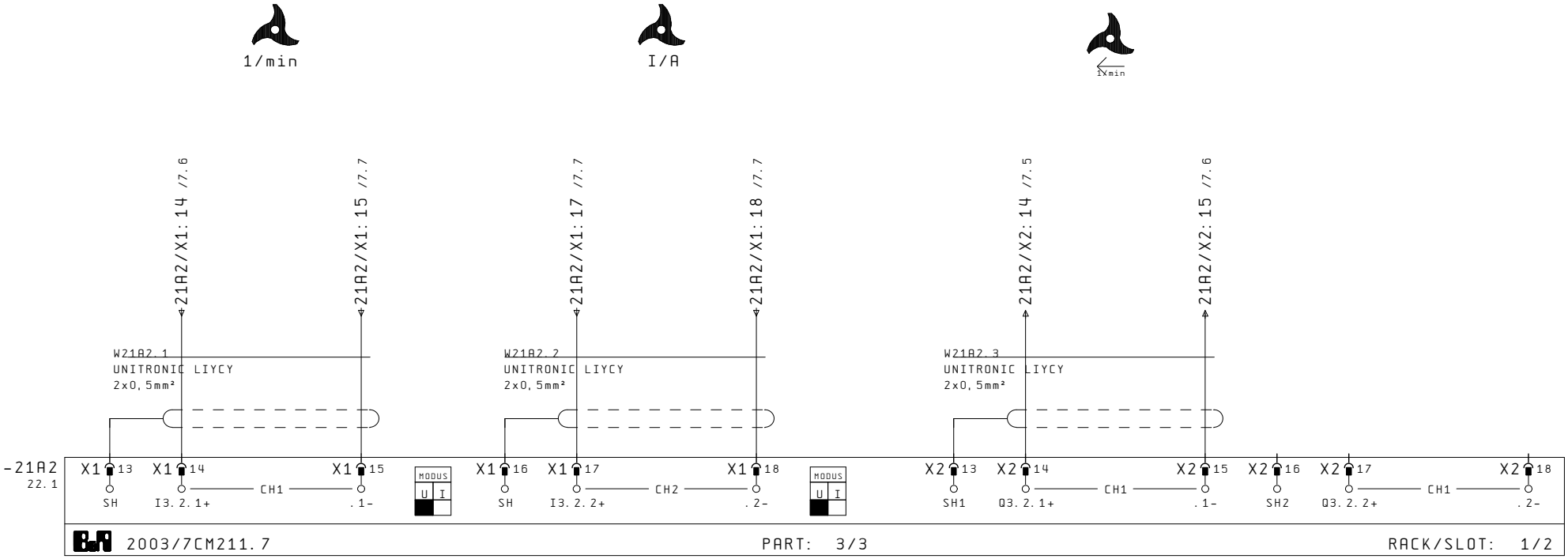
19

KU 130.AC	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	Bl. 18
L-12667.2008		52 Bl.

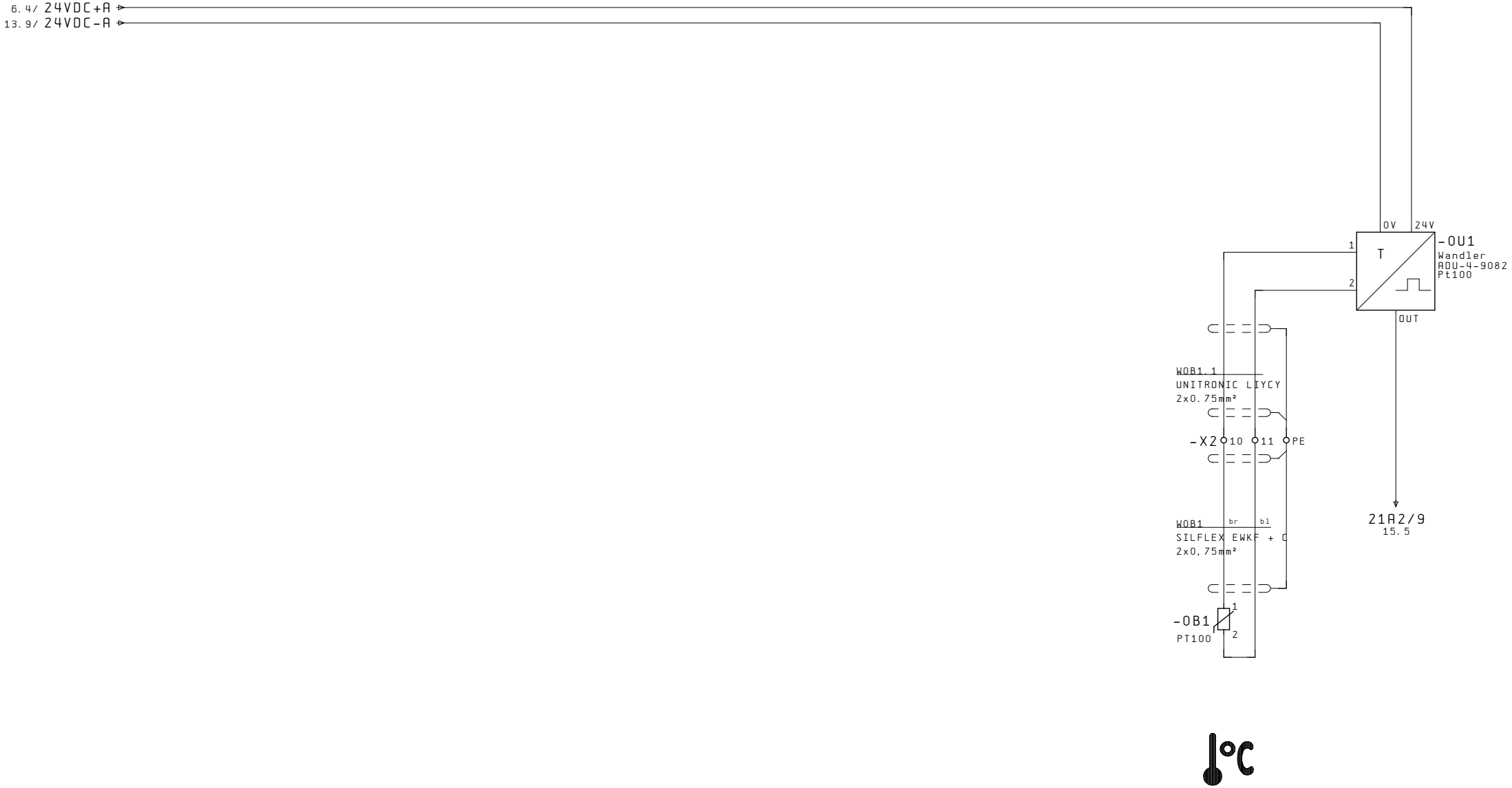


20

KU 130.AC	-Digitaler Ausgang -Digital Output -Sorties num. -Salida digitala -Uscite digitali	Bl. 19
L-12667.2008		52 Bl.



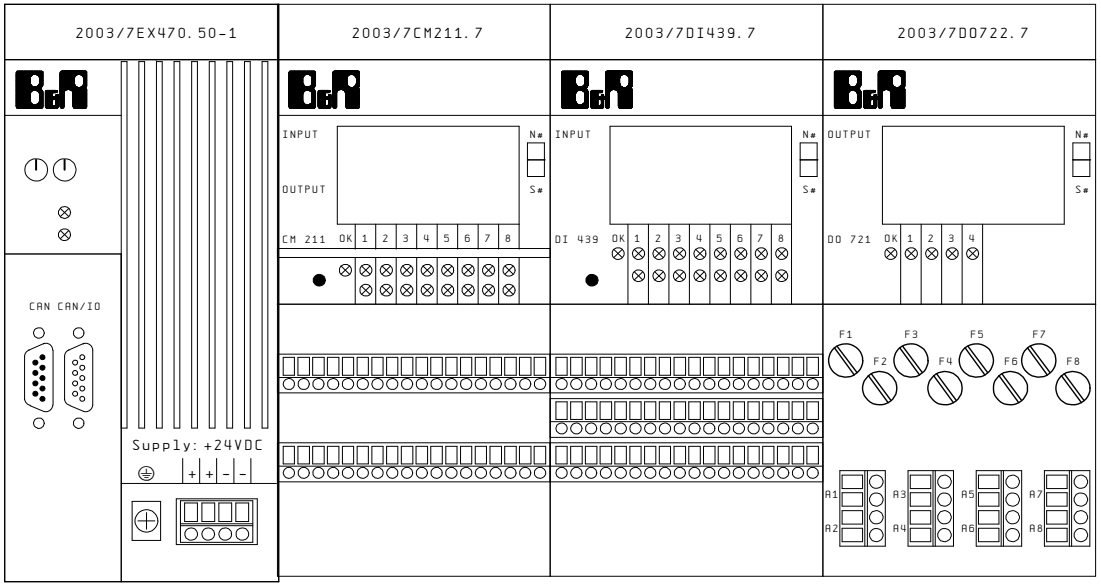
KU 130.AC	-Analoger Eingang/Ausgang -Analog Input/Output -Entrées/Sorties analog. -Entrada/Salida analógica -Entrate/Uscite analogiche	Bl. 20
L-12667.2008		52 Bl.

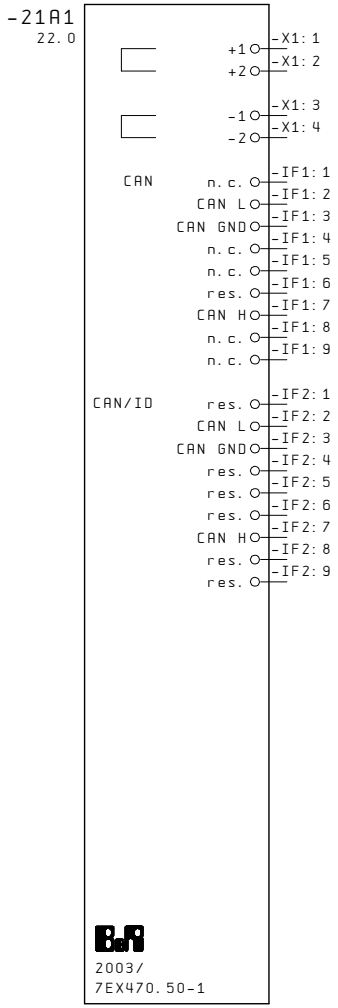


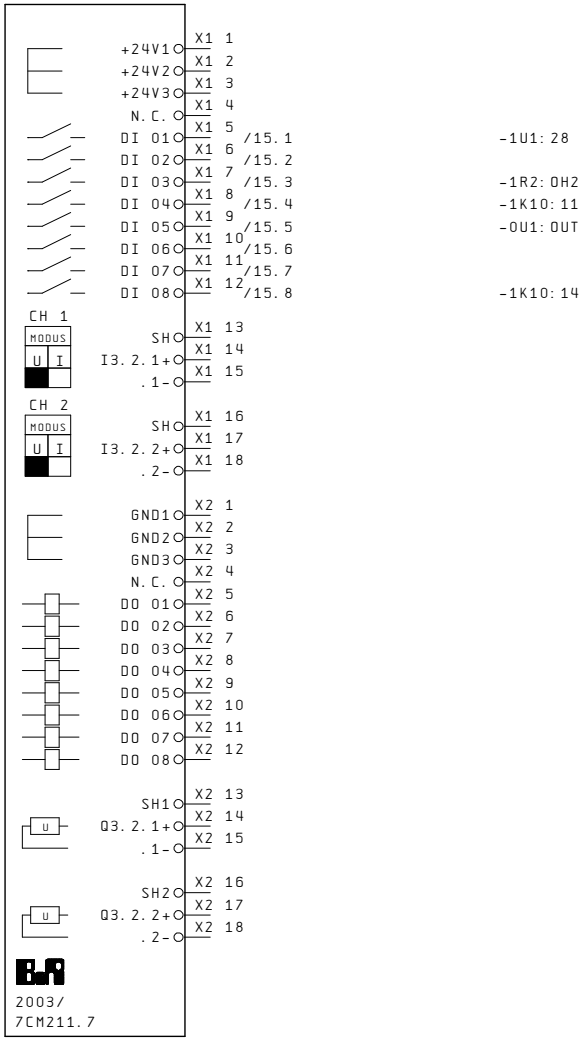
22

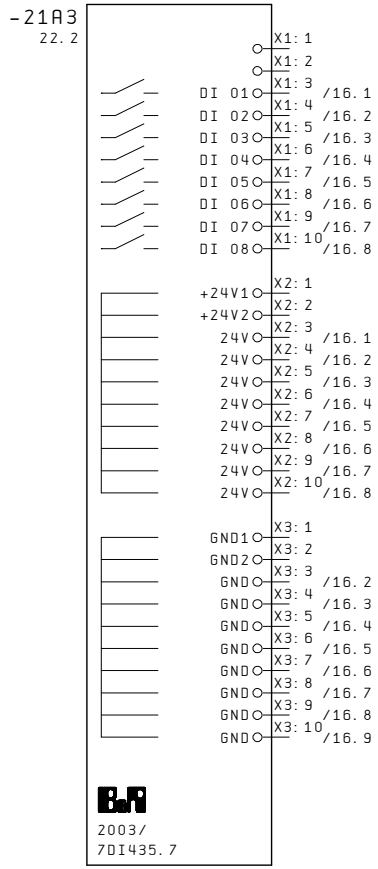
KU 130.AC	-Sensoren -Sensors -Sonde -Sensor -Sensore	Bl. 21
L-12667.2008		52 Bl.

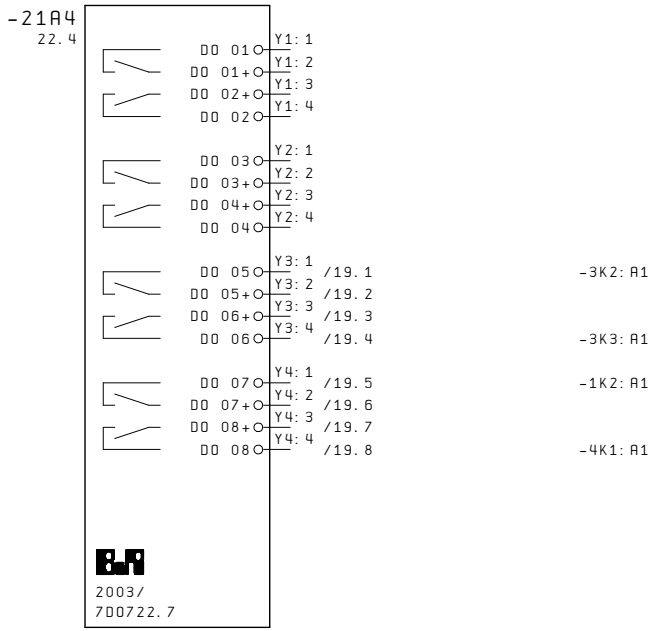
-21A1	-21A2	-21A3	-21A4
13.0	13.3	13.7	18.1
2003/7EX470.50-1	2003/7CM211.7	2003/7DI439.7	2003/7DO722.7




-21A1
22.0
+1
+2
-1
-2
CAN
n.c.
CAN L
CAN GND
n.c.
n.c.
res.
CAN H
n.c.
n.c.
CAN/ID
res.
CAN L
CAN GND
res.
res.
res.
CAN H
res.
res.
-X1:1
-X1:2
-X1:3
-X1:4
-IF1:1
-IF1:2
-IF1:3
-IF1:4
-IF1:5
-IF1:6
-IF1:7
-IF1:8
-IF1:9
-IF2:1
-IF2:2
-IF2:3
-IF2:4
-IF2:5
-IF2:6
-IF2:7
-IF2:8
-IF2:9
2003/
7EX470.50-1


-21A2
22.1
+24V1
+24V2
+24V3
N.C.
DI 01
DI 02
DI 03
DI 04
DI 05
DI 06
DI 07
DI 08
CH 1
MODUS
U I
SH
I3.2.1+
.1-
CH 2
MODUS
U I
SH
I3.2.2+
.2-
GND1
GND2
GND3
N.C.
DO 01
DO 02
DO 03
DO 04
DO 05
DO 06
DO 07
DO 08
SH1
Q3.2.1+
.1-
SH2
Q3.2.2+
.2-
X1 1
X1 2
X1 3
X1 4
X1 5
X1 6
X1 7
X1 8
X1 9
X1 10
X1 11
X1 12
X1 13
X1 14
X1 15
X1 16
X1 17
X1 18
X2 1
X2 2
X2 3
X2 4
X2 5
X2 6
X2 7
X2 8
X2 9
X2 10
X2 11
X2 12
X2 13
X2 14
X2 15
X2 16
X2 17
X2 18
/15.1
/15.2
/15.3
/15.4
/15.5
/15.6
/15.7
/15.8
-1U1:28
-1R2:OH2
-1K10:11
-0U1:OUT
-1K10:14
2003/
7CM211.7


-21A3
22.2
DI 01
DI 02
DI 03
DI 04
DI 05
DI 06
DI 07
DI 08
+24V1
+24V2
24V
24V
24V
24V
24V
24V
24V
24V
GND1
GND2
GND
GND
GND
GND
GND
GND
GND
GND
X1:1
X1:2
X1:3
X1:4
X1:5
X1:6
X1:7
X1:8
X1:9
X1:10
X2:1
X2:2
X2:3
X2:4
X2:5
X2:6
X2:7
X2:8
X2:9
X2:10
X3:1
X3:2
X3:3
X3:4
X3:5
X3:6
X3:7
X3:8
X3:9
X3:10
/16.1
/16.2
/16.3
/16.4
/16.5
/16.6
/16.7
/16.8
/16.9
-21A2:DI08
-21A3:DI01
-10K1:14
-X3:4L+
-21A3:DI05
2003/
7DI435.7



25

KU 130.AC	-SPS - Übersicht -PLC - Overview -Aperçu commande par logiciel -Vista general PLC -Sinossi PLC	Bl. 24
L-12667.2008		52 Bl.

Klemmenleisten- und Steckerübersichtsplan

Terminal strip summary

Tableau synoptique des plaques à bornes et connecteurs

Regleta de bornes y plan de enchufes

Tavola sinottica delle morsettiere e delle spine

Klemmenleisten- und Stecker- Bezeichnung Strip designation Désignation des plaques à bornes et connecteurs Denominación de la regleta de bornes y de los enchufes Denominazione delle morsettiere e delle spine	Text der Klemmenleisten. und Steckerdefinition Text of the strip definition Texte des plaques à bornes et définition des connecteurs Texto de definición de regleteros y conectores Testo delle morsettiere e definizione delle spine	Klemmen / Stecker Bornes / conectores Terminals Bornes/Connecteurs Morsetti/spine					Grafikseite - der Klem./Steck.-Pläne Graphics page of the terminal strip Page graphique des plans bornes/conn. Página-gráfica de plano bornes/conect. Pagina grafica degli schemi dei morsetti
		erste first primier primera primo	letzte last dernier última ultimo	Summe PE sum PE somme PE suma PE somma PE	Summe N sum N somme N suma N somma N	Gesamt Anzahl total number Nb. appareils Cantidad total quantità totale	
-X0	-X0	1	PE	5	0	19	/26
-X1	-X1	PE	14	6	0	20	/27
-X2	-X2	1	PE	5	0	17	/28
-X3	-X3	0	PE	7	0	28	/29
-X9	-X9	1	PE	1	0	4	/30
-XSI	-XSI	7F1	21F1	0	0	5	/31

Klemmenplan Terminal diagram Plan des bornes Plan de bornes Schema dei mosetti

Leistenbezeichnung Terminal strip desigation Désignation des plaques Denominación de listones Denominazione delle morsettiere

Kabelname Cable desigantion Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
	NSGAFÖU		-1R2	PA	1		10mm²	-1U1	++		NSGAFÖU		/7.3
	sw		Schirm		PE		10mm²	-1U1	PE		SHD		/7.3
	NSGAFÖU		-1R2	PB	2		10mm²	-1U1	PB		NSGAFÖU		/7.3
W3M1	1	ÖLFLEX CLASSIC 110 G	-3M1	U1	3		2,5mm²	-3K1	2		sw		/8.4
W3M1	2	ÖLFLEX CLASSIC 110 G	-3M1	V1	4		2,5mm²	-3K1	4		sw		/8.4
W3M1	3	ÖLFLEX CLASSIC 110 G	-3M1	W1	5		2,5mm²	-3K1	6		sw		/8.4
W3M1	gnge	ÖLFLEX CLASSIC 110 G	-3M1	PE	PE		2,5mm²						/8.4
W3M1	4	ÖLFLEX CLASSIC 110 G	-3M1	U2	6		2,5mm²	-3K2	2		sw		/8.6
W3M1	5	ÖLFLEX CLASSIC 110 G	-3M1	V2	7		2,5mm²	-3K2	4		sw		/8.6
W3M1	6	ÖLFLEX CLASSIC 110 G	-3M1	W2	8		2,5mm²	-3K2	6		sw		/8.7
					PE		2,5mm²						/8.7
W4M1	1	ÖLFLEX CLASSIC 110 G	-4M1	U	9		2,5mm²	-4K1	2		sw		/9.4
W4M1	2	ÖLFLEX CLASSIC 110 G	-4M1	V	10		2,5mm²	-4K1	4		sw		/9.4
W4M1	3	ÖLFLEX CLASSIC 110 G	-4M1	W	11		2,5mm²	-4K1	6		sw		/9.4
W4M1	gnge	ÖLFLEX CLASSIC 110 G	-4M1	PE	PE		2,5mm²						/9.4
W1M2	1	ÖLFLEX CLASSIC 110 G	-1M2	U	18		2,5mm²	-1K2	2		sw		/10.1
W1M2	2	ÖLFLEX CLASSIC 110 G	-1M2	V	19		2,5mm²	-1K2	4		sw		/10.1
W1M2	3	ÖLFLEX CLASSIC 110 G	-1M2	W	20		2,5mm²	-1K2	6		sw		/10.1
W1M2	gnge	ÖLFLEX CLASSIC 110 G	-1M2	PE	PE		2,5mm²						/10.2

Klemmenplan — Terminal diagram — Plan des bornes — Plan de bornes — Schema dei mosetti

Leistenbezeichnung — Terminal strip desigation — Désignation des plaques — Denominación de listones — Denominazione delle morsettiere

Kabelname Cable desigantion Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
	gnge		-XT1		PE		2,5mm²						/6.1
	gnge		-0T1	PE	PE		2,5mm²						/6.2
	rt		-XT1		1		2,5mm²	-0T1	0		rt		/6.1
	rt		-10K1	A2	2		2,5mm²						/6.1
					3		2,5mm²						/6.2
					4		2,5mm²						/6.2
	rt		-X9	2	5		2,5mm²						/6.2
	gnge		-21A1	PE	PE		2,5mm²	-0G1	PE		gnge		/6.2
					6		2,5mm²	-XS1	7F1		rt		/10.5
					7		2,5mm²						/10.5
					PE		2,5mm²						/10.5
					8		2,5mm²						/10.6
					9		2,5mm²						/10.6
					PE		2,5mm²						/10.6
W10S1	1	ÖLFLEX CLASSIC 110 G	-10S1	11	10		2,5mm²	-0G1	L		rt		/11.1
W10S1	2	ÖLFLEX CLASSIC 110 G	-10S1	12	11		2,5mm²	-10K1	A1		rt		/11.1
					12		2,5mm²	-21A4-Y4	2		rt		/11.1
W10S1	3	ÖLFLEX CLASSIC 110 G	-10S1	14	13		2,5mm²						/11.1
					PE		2,5mm²						/11.1
	rt		-1K10	A1	14		2,5mm²						/11.2

Klemmenplan Terminal diagram Plan des bornes Plan de bornes Schema dei mosetti

Leistenbezeichnung Terminal strip desigation Désignation des plaques Denominación de listones Denominazione delle morsettiere

Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
W1R1.1	1	ÖLFLEX CLASSIC 110	-1R1	OH1	1		2,5mm²	-1U1	24		dbl		/7.4
W1R1.1	2	ÖLFLEX CLASSIC 110	-1R1	OH2	2		2,5mm²						/7.5
W1R2.1	1	ÖLFLEX CLASSIC 110	-1R2	OH1	2		2,5mm²						/7.5
W1R2.1	2	ÖLFLEX CLASSIC 110	-1R2	OH2	3		2,5mm²	-21A2-X1	7		dbl		/7.5
					PE		2,5mm²						/7.5
W1R1	1	ÖLFLEX CLASSIC 110	-1M1-1R1	1	4		2,5mm²	-1K10	T1		ws		/11.5
W1R1	2	ÖLFLEX CLASSIC 110	-1M1-1R1	2	5		2,5mm²	-1K10	T2		ws		/11.5
					PE		2,5mm²						/11.5
W0A0	1	ÖLFLEX CLASSIC 110 G	-1		6		2,5mm²	-XS1	0F3		dbl		/12.1
W0A0	2	ÖLFLEX CLASSIC 110 G	-2		7		2,5mm²	-0G1	-V		dbl		/12.1
W0A0	gnge	ÖLFLEX CLASSIC 110 G	-3		PE		2,5mm²						/12.1
					8		2,5mm²	-XS1	0F4		dbl		/12.8
					9		2,5mm²						/12.8
					PE		2,5mm²						/12.8
W0B1	br	SILFLEX EWKF + C	-0B1	1	10		2,5mm²	-0U1	1	W0B1.1	ws	UNITRONIC LIYCY	/21.8
W0B1	bl	SILFLEX EWKF + C	-0B1	2	11		2,5mm²	-0U1	2	W0B1.1	br	UNITRONIC LIYCY	/21.8
	sw		Schirm		PE		2,5mm²	Schirm			sw		/21.8

Klemmenplan — Terminal diagram — Plan des bornes — Plan de bornes — Schema dei mosetti

Leistenbezeichnung — Terminal strip desigation — Désignation des plaques — Denominación de listones — Denominazione delle morsettiere

Kabelname Cable desigantion Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
					0		2,5mm²						/6.4
					0L+		2,5mm²	-XS1	0F2		dbl		/6.4
					0L-		2,5mm²	-0G1	-V		dbl		/6.4
					PE		2,5mm²						/6.4
					1		2,5mm²						/6.4
	dbl		-1K10	14	1L+		2,5mm²						/6.4
					1L-		2,5mm²						/6.4
					PE		2,5mm²						/6.4
					2		2,5mm²						/6.4
	dbl		-0U1	24V	2L+		2,5mm²						/6.4
	dbl		-21A1-X1	3	2L-		2,5mm²						/6.5
					PE		2,5mm²						/6.5
					3		2,5mm²						/6.5
	dbl		-1U1	26	3L+		2,5mm²						/6.5
					3L-		2,5mm²						/6.5
					PE		2,5mm²						/6.5
					4		2,5mm²						/6.5
					4L+		2,5mm²						/6.5
					4L-		2,5mm²						/6.5
					PE		2,5mm²						/6.5
W11S1	3	ÖLFLEX CLASSIC 110	-11S1	sw	5		2,5mm²	-21A3-X1	7		dbl		/16.5
W11S1	1	ÖLFLEX CLASSIC 110	-11S1	br	5L+		2,5mm²						/16.5
W11S1	2	ÖLFLEX CLASSIC 110	-11S1	bl	5L-		2,5mm²						/16.5
					PE		2,5mm²						/16.5
W13S2	3	ÖLFLEX CLASSIC 110	-13S2	sw	7		2,5mm²	-21A3-X1	9		dbl		/16.7
W13S2	1	ÖLFLEX CLASSIC 110	-13S2	br	7L+		2,5mm²						/16.7
W13S2	2	ÖLFLEX CLASSIC 110	-13S2	bl	7L-		2,5mm²						/16.7
					PE		2,5mm²						/16.7

Klemmenplan — Terminal diagram — Plan des bornes — Plan de bornes — Schema dei mosetti

Leistenbezeichnung — Terminal strip desigation — Désignation des plaques — Denominación de listones — Denominazione delle morsettiere

Kabelname Cable desigantion Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
WOE1	1	ÖLFLEX CLASSIC 110 G	-0E1	L	1		2,5mm²	-0T1	110		rt		/6.7
WOE1	2	ÖLFLEX CLASSIC 110 G	-0E1	N	2		2,5mm²	-X1	5		rt		/6.8
					3		2,5mm²	-XSI	7F1		rt		/6.8
WOE1	gnge	ÖLFLEX CLASSIC 110 G	-0E1	PE	PE		2,5mm²						/6.8

Klemmenplan Terminal diagram Plan des bornes Plan de bornes Schema dei mosetti

Leistenbezeichnung Terminal strip desigation Désignation des plaques Denominación de listones Denominazione delle morsettiere

Kabelname Cable desigantion Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kl.-Nr No. N°bor. Nr.bor Nr.mor	Brücke Jumper Cav. Puente Pont	Ge.-Ans. Dev.con. Racc.app. Con. apa. Quant tot	Zielbezeichnung Designation Désignat. cible Destinación Denomin. dest.	Anschl. Conn. Racc. Conex. Coll.	Kabelname Cable designation Nom du câble Nombre del cable Nome del cavo	Ader No. Brin Conduc Filo	Kabeltyp Cable type Type câble Tipo cable Tipo di cavo	Seite/Pfad Page/path Page Página Pg./percorso
	rt		-X1	6	7F1		2,5mm²	-X9	3		rt		/10.5
	dbl		-X3	0L+	0F2		2,5mm²	-0G1	+V		dbl		/6.4
	dbl		-X2	6	0F3		2,5mm²						/12.1
	dbl		-X2	8	0F4		2,5mm²						/12.8
	dbl		-21A1-X1	1	21F1		2,5mm²						/13.1

Kabelübersicht Overview of cables Carnet de câbles Rsumen de cables Sommario cavi

Kabelname Cable name Nom de câble Denominación de cable Nome cavo	Quelle Source Source Fuente Sorgente	Ziel Target Cible Meta Scopo	Kabeltyp Cable type Type de câble Tipo de cable Tipo cavo	Adern gesamt Leads total Brins totaux Cond. totales Fili in totale	Adern verwendet Cores used Brins utilisés Cond. utilizados Impiego fili	Querschnitt Section Coupe trans. Sección Sezione mm²	Länge Length Longueur Largo Longitudine m	Bemerkung Comment Remarque Comentario Osservazione	Blatt Page Page Página Pagina
W0A0	-X2	-1	ÖLFLEX CLASSIC 110 G	3/PE	3/PE	1	-		/33
W0B1	-X2	-0B1	SILFLEX EWKF + C	2+Schirm	2	0.75	-		/34
W0B1.1	-X2	-0U1	UNITRONIC LIYCY	2+Schirm	2	0.75	-		/35
W0E1	-X9	-0E1	ÖLFLEX CLASSIC 110 G	3/PE	3/PE	1.5	-		/36
W1L1	-1K1	-1L1	ÖLFLEX CLASSIC 110 G	4/PE	4/PE	50	-		/37
W1L1.1	-1L1	-1U1	ÖLFLEX CLASSIC 110 G	4/PE	3	50	-		/38
W1M1	-1M1-1M1	-1U1	ÖLFLEX CLASSIC 110 CY G	4/PE+Schirm	4/PE	50	-		/39
W1M2	-X0	-1M2	ÖLFLEX CLASSIC 110 G	4/PE	4/PE	1.5	-		/40
W1R1	-X2	-1M1-1R1	ÖLFLEX CLASSIC 110	3	2	1	-		/41
W1R1.1	-X2	-1R1	ÖLFLEX CLASSIC 110	3	2	1	-		/42
W1R2.1	-X2	-1R2	ÖLFLEX CLASSIC 110	3	2	1	-		/43
W3M1	-X0	-3M1	ÖLFLEX CLASSIC 110 G	7/PE	7/PE	1.5	-		/44
W4M1	-X0	-4M1	ÖLFLEX CLASSIC 110 G	4/PE	4/PE	1.5	-		/45
W10S1	-X1	-10S1	ÖLFLEX CLASSIC 110 G	5/PE	3	1	-		/46
W11S1	-X3	-11S1	ÖLFLEX CLASSIC 110	3	3	1	-		/47
W13S2	-X3	-13S2	ÖLFLEX CLASSIC 110	3	3	1	-		/48
W21A1	-0AX0	-21AX1	UNITRONIC LIYCY	5+Schirm	3	0.5	-		/49
W21A2.1	-21A2-X1	-1U1	UNITRONIC LIYCY	2+Schirm	2	0.5	-		/50
W21A2.2	-21A2-X1	-1U1	UNITRONIC LIYCY	2+Schirm	2	0.5	-		/51
W21A2.3	-21A2-X2	-1U1	UNITRONIC LIYCY	2+Schirm	2	0.5	-		/52

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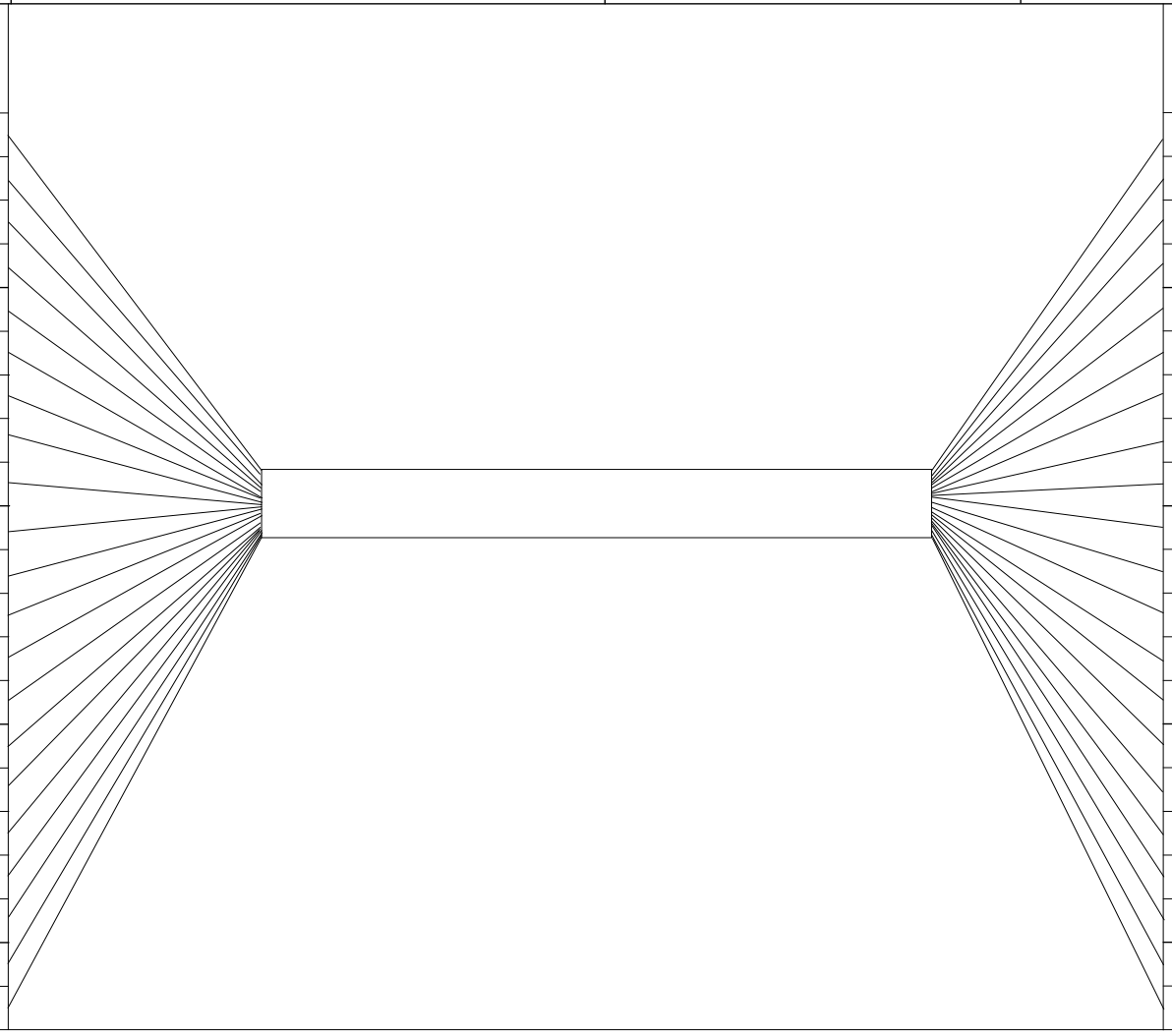
Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

LASKA01 17.06.2004

Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
WOAO	ÖLFLEX CLASSIC 110 G	3/PE	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/12.1	-X2	PE	
/12.1	-X2	6	
/12.1	-X2	7	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge			
1			
2			

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

LASKA01 17.06.2004

Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
WOB1	SILFLEX EWKF + C	2+Schirm	0.75 mm²	- m

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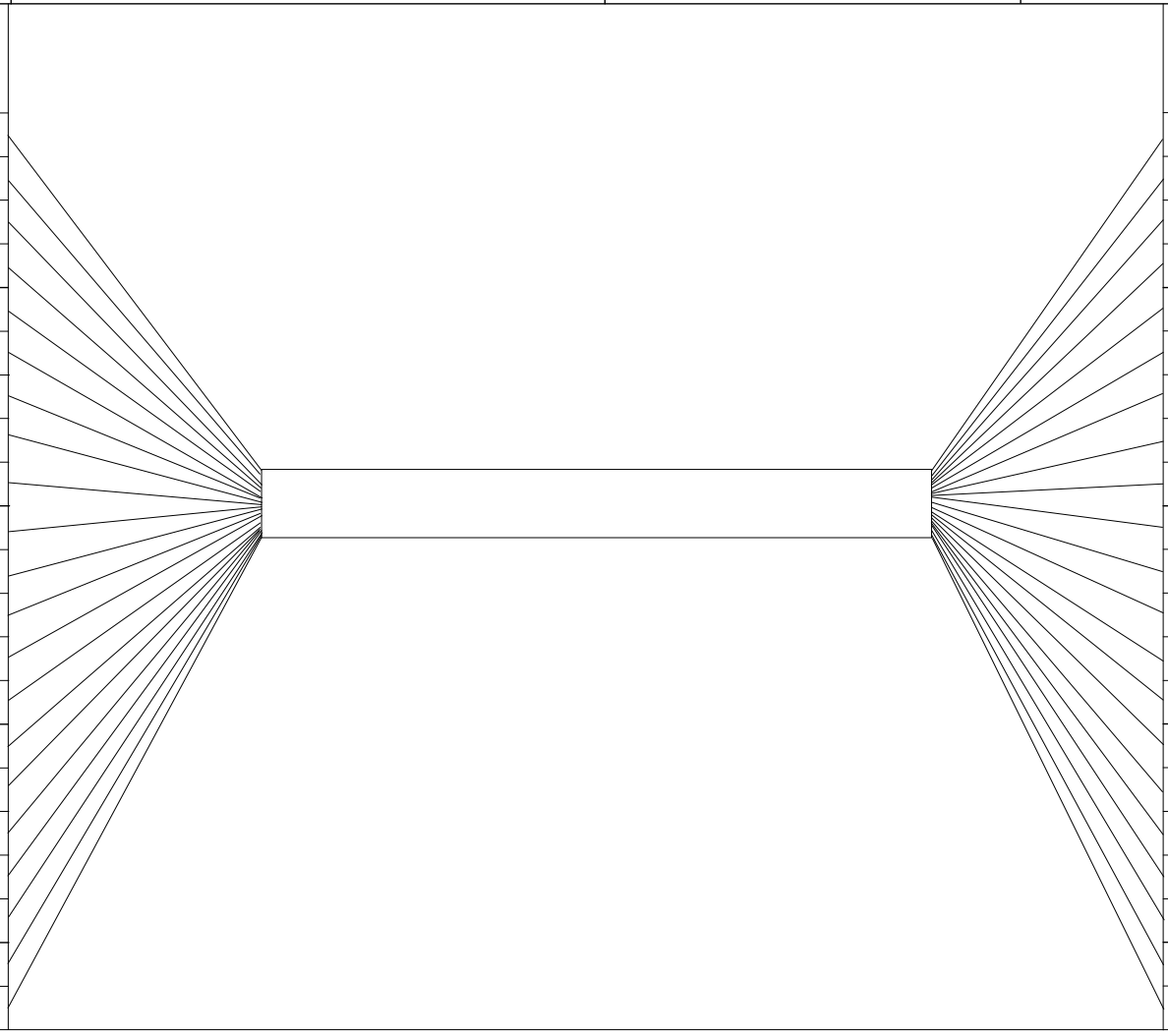
/21.8	-X2	10	
/21.8	-X2	11	



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br	1	-OB1	/21.8
bl	2	-OB1	/21.8
SH			

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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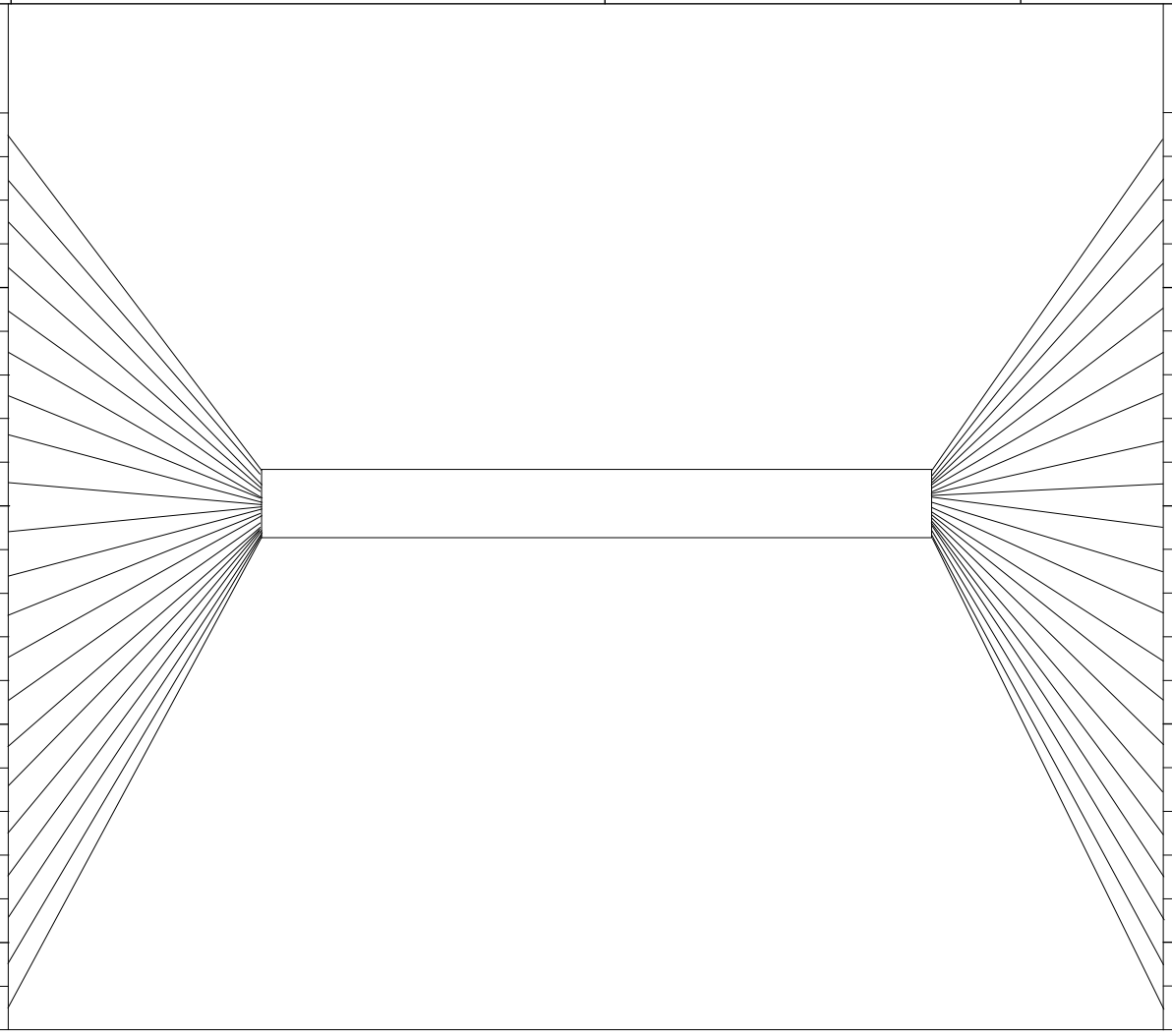
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
WOB1.1	UNITRONIC LIYCY	2+Schirm	0.75 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/21.8	-X2	10	
/21.8	-X2	11	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
ws	1	-OU1	/21.8
br	2	-OU1	/21.8
SH			

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WOB1.1

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Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
WOE1	ÖLFLEX CLASSIC 110 G	3/PE	1.5 mm²	– m

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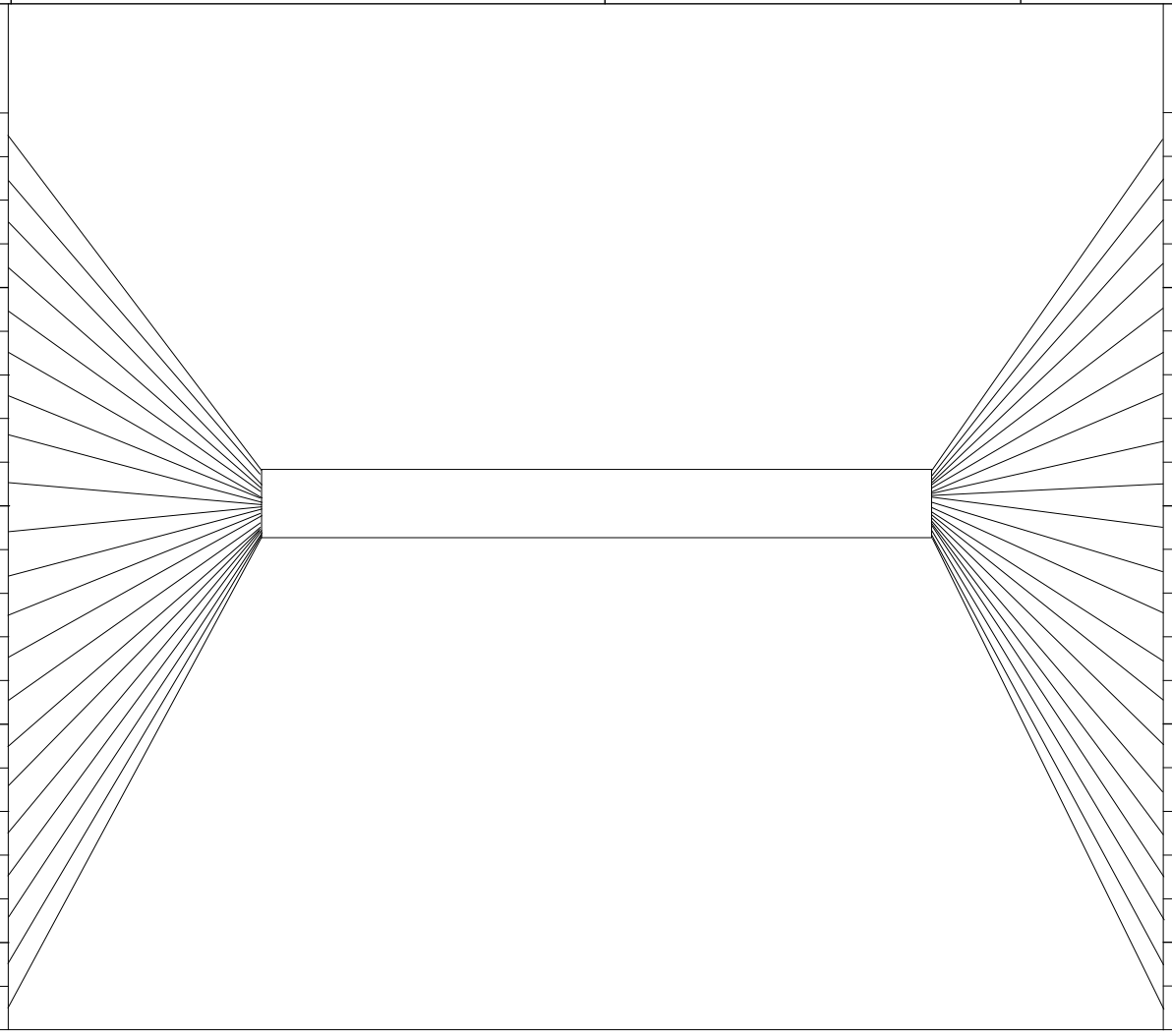
/6.8	-X9	PE	
/6.7	-X9	1	
/6.8	-X9	2	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge	PE	-OE1	/6.7
1	L	-OE1	/6.7
2	N	-OE1	/6.7

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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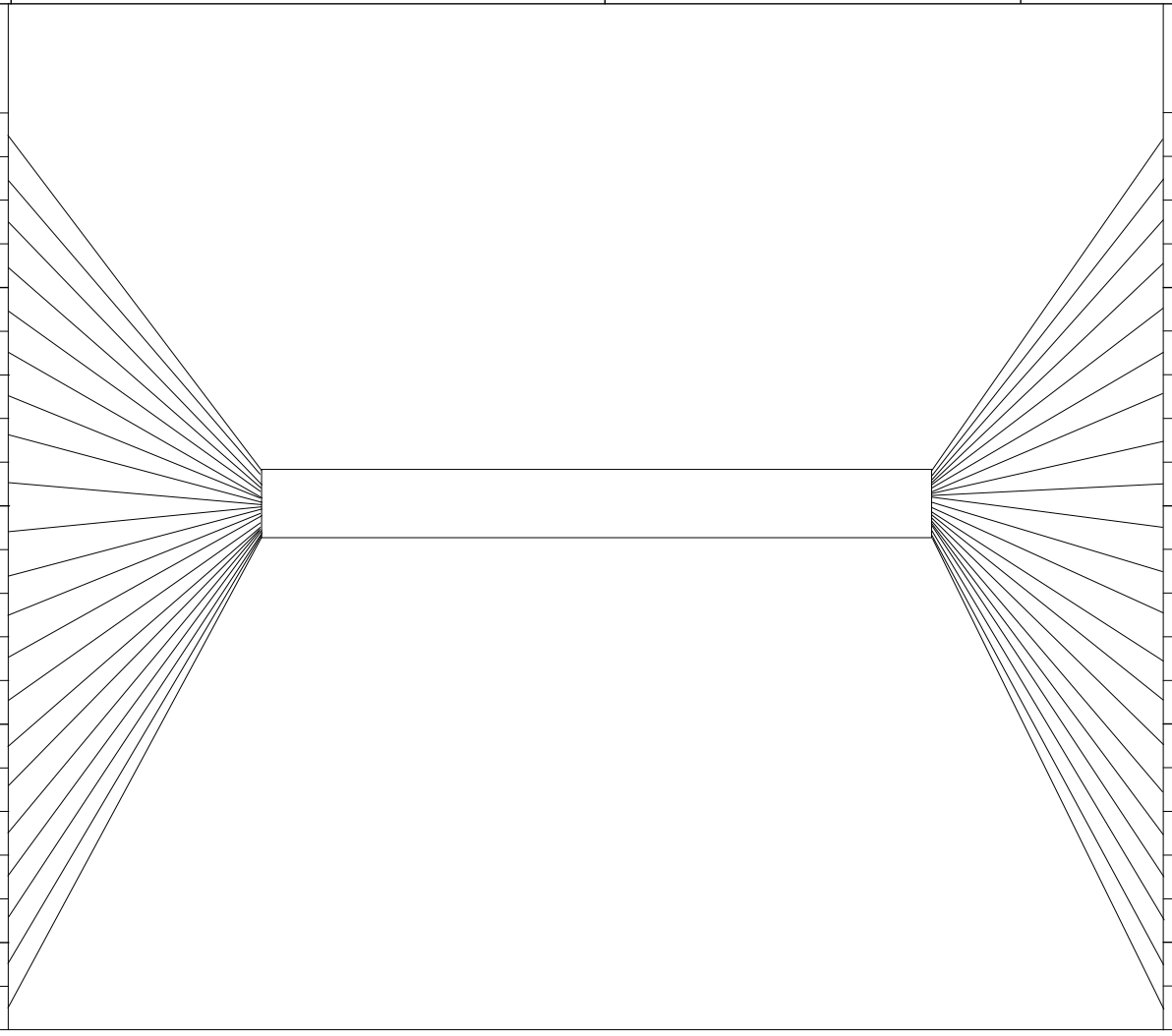
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1L1	ÖLFLEX CLASSIC 110 G	4/PE	50 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/7.1	-1U1	PE	
/7.1	-1K1	2	
/7.1	-1K1	4	
/7.1	-1K1	6	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge		-PE	/7.1
1	1	-1L1	/7.1
2	3	-1L1	/7.1
3	5	-1L1	/7.1

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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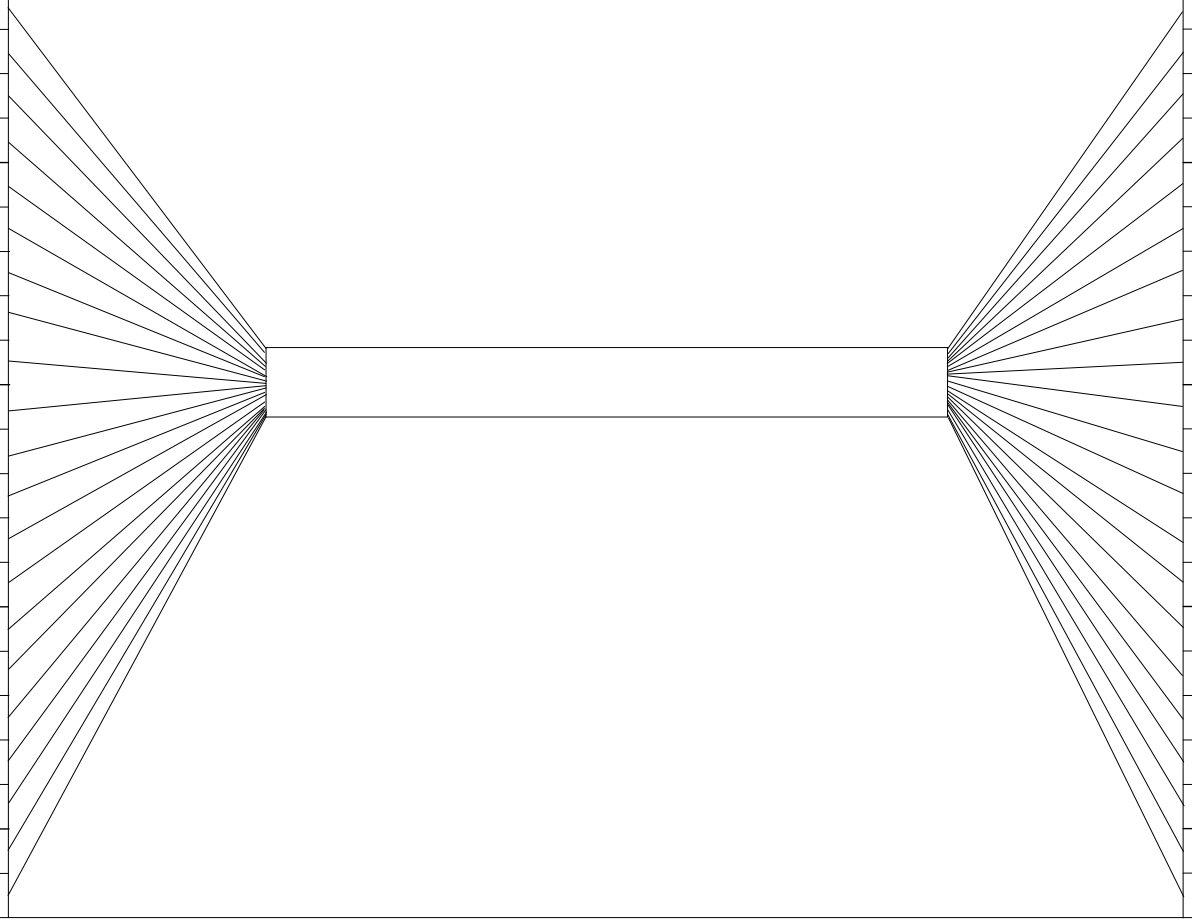
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1L1.1	ÖLFLEX CLASSIC 110 G	4/PE	50 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/7.1	-1L1	2	
/7.1	-1L1	4	
/7.1	-1L1	6	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge			
1	L1	-1U1	/7.1
2	L2	-1U1	/7.1
3	L3	-1U1	/7.1

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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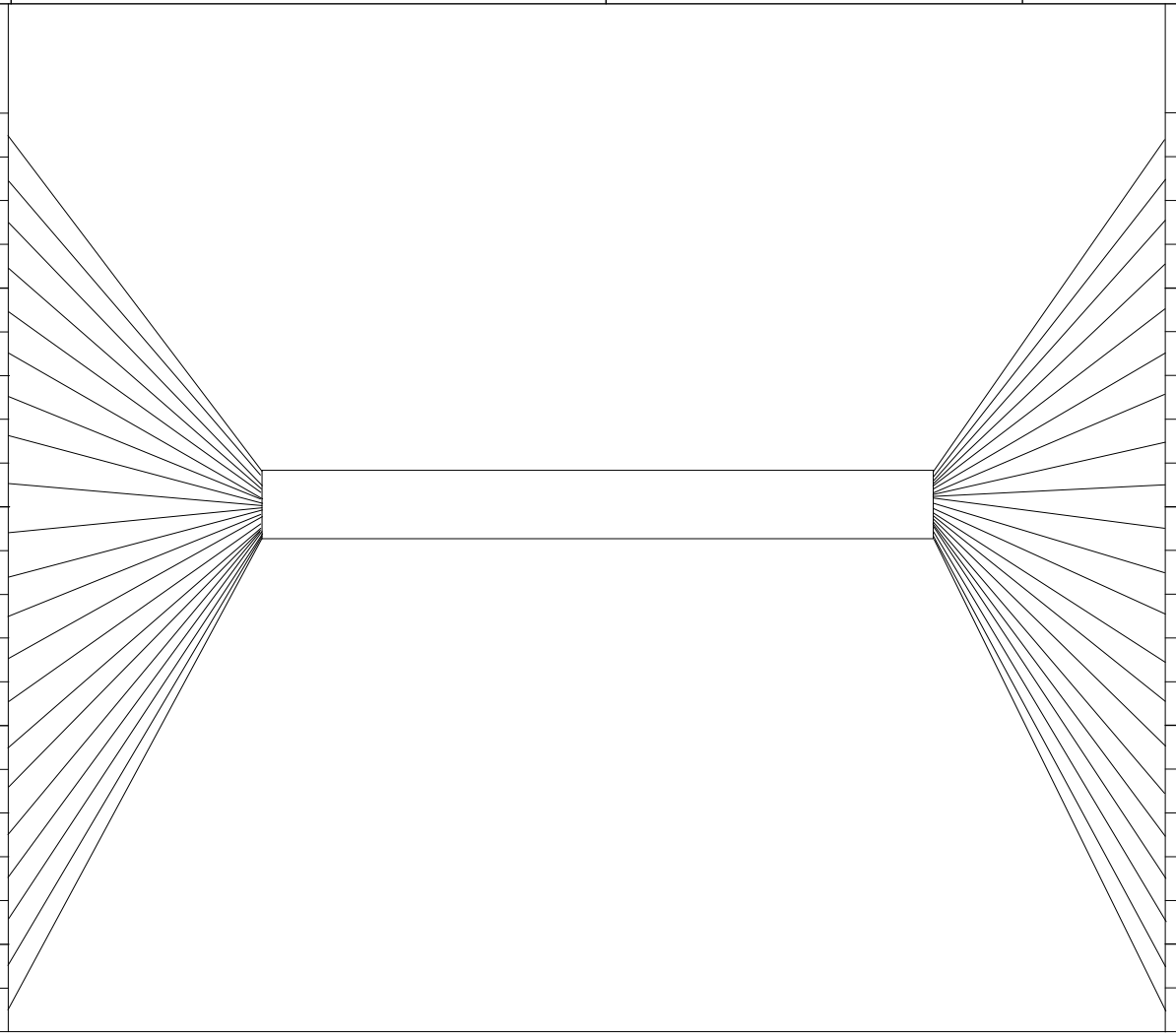
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1M1	ÖLFLEX CLASSIC 110 CY G	4/PE+Schirm	50 mm²	- m

Blatt / Page / Página / Pagina	Quelle / Source / Fuente / Sorgente	Anschl. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond.
/7.1	-1M1-1M1	PE	
/7.1	-1M1-1M1	U1	
/7.1	-1M1-1M1	V1	
/7.1	-1M1-1M1	W1	



Ader / Cond. / Cond. / Cond.	Anschl. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Página / Pagina
gnge		-PE	/7.1
1	U	-1U1	/7.1
2	V	-1U1	/7.1
3	W	-1U1	/7.1
SH			

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W1M1

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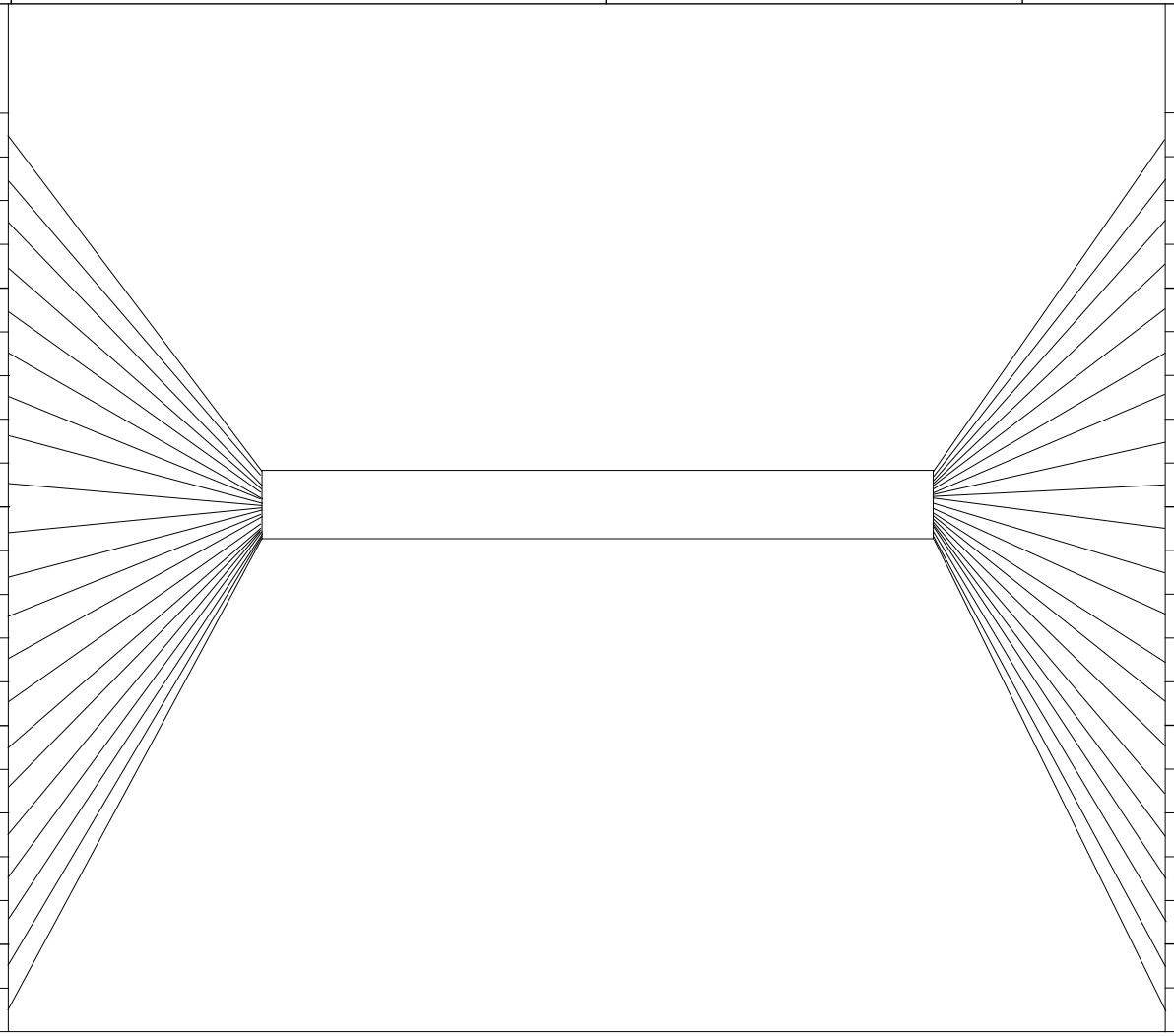
LASKA01 17.06.2004

Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1M2	ÖLFLEX CLASSIC 110 G	4/PE	1.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/10.2	-X0	PE	
/10.1	-X0	18	
/10.1	-X0	19	
/10.1	-X0	20	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge	PE	-1M2	/10.1
1	U	-1M2	/10.1
2	V	-1M2	/10.1
3	W	-1M2	/10.1

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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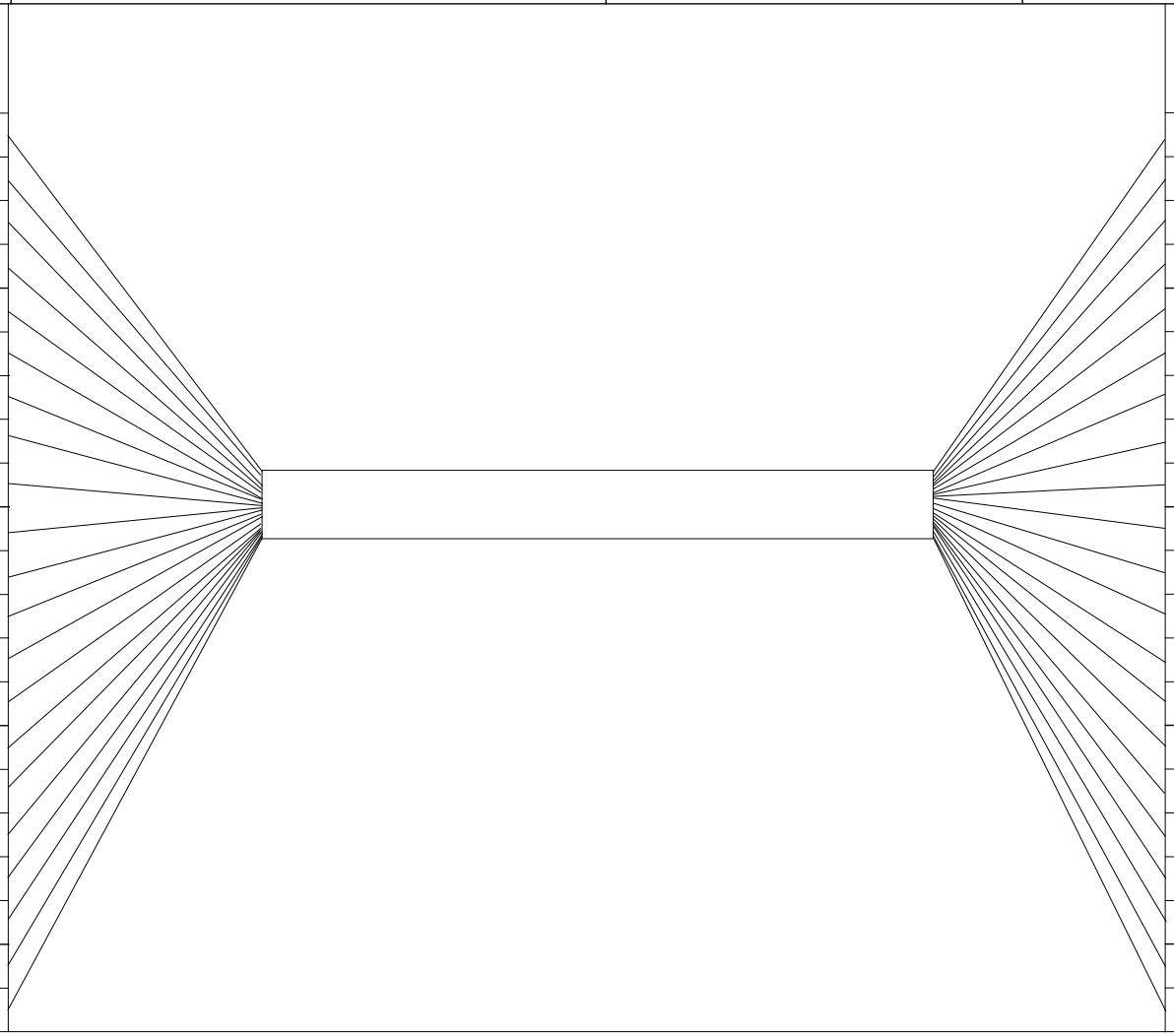
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1R1	ÖLFLEX CLASSIC 110	3	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/11.5	-X2	4	
/11.5	-X2	5	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
1	1	-1M1-1R1	/7.2
2	2	-1M1-1R1	/7.2
3			

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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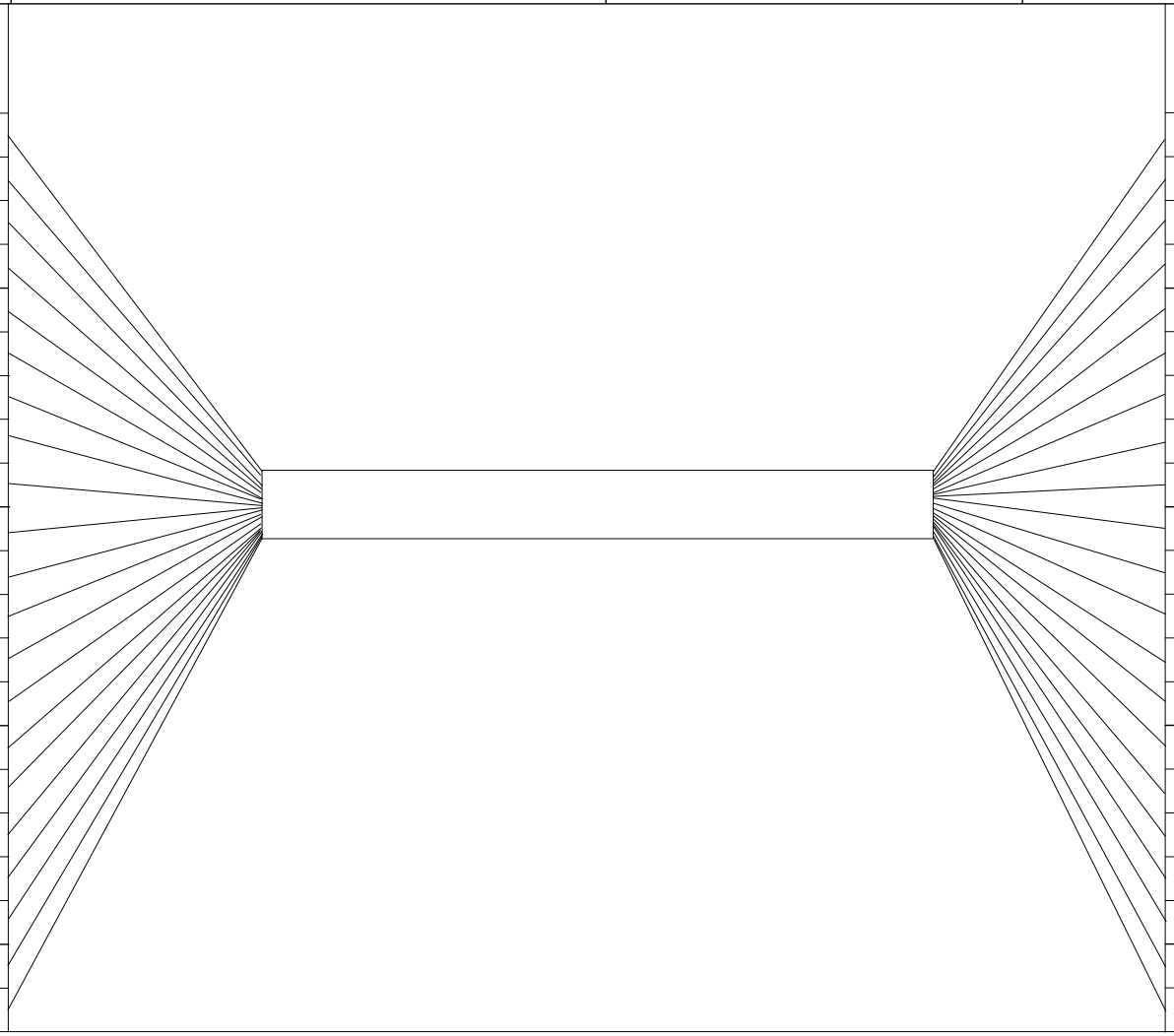
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1R1.1	ÖLFLEX CLASSIC 110	3	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/7.4	-X2	1	
/7.5	-X2	2	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
1	OH1	-1R1	/7.4
2	OH2	-1R1	/7.4
3			

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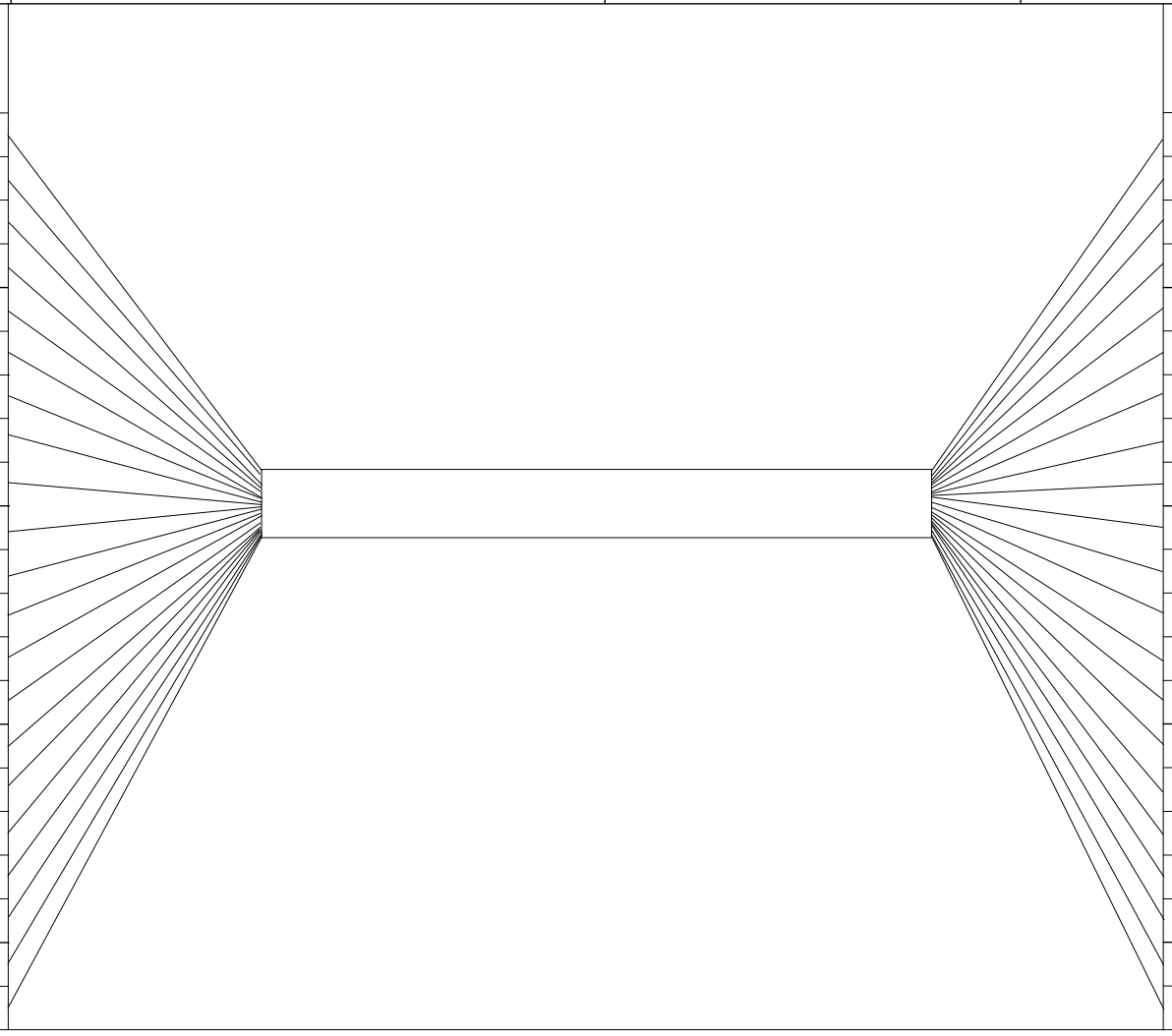
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W1R2.1	ÖLFLEX CLASSIC 110	3	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/7.5	-X2	2	
/7.5	-X2	3	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
1	OH1	-1R2	/7.4
2	OH2	-1R2	/7.4
3			

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W1R2.1

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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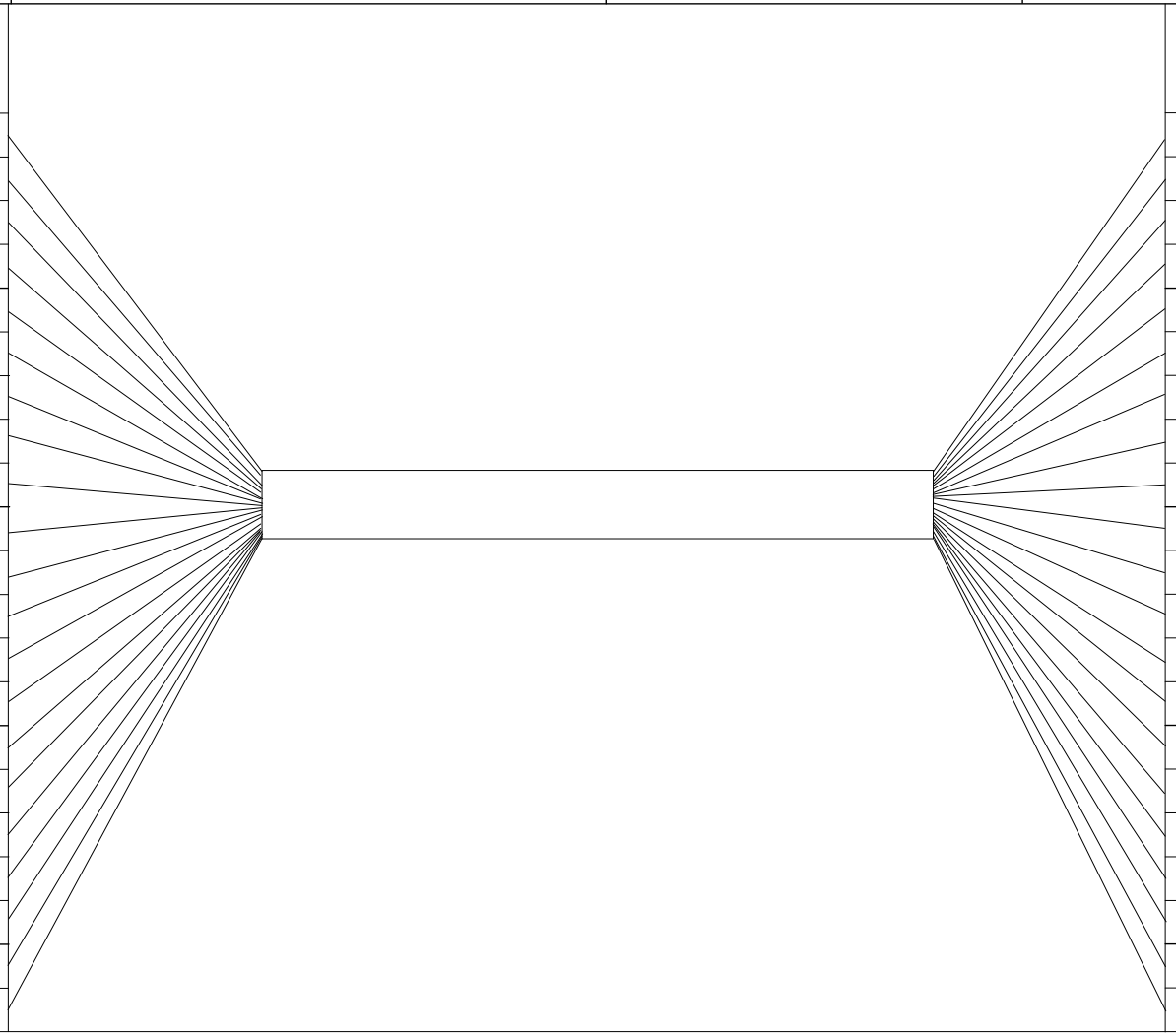
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W3M1	ÖLFLEX CLASSIC 110 G	7/PE	1.5 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/8.4	-X0	PE	
/8.4	-X0	3	
/8.4	-X0	4	
/8.4	-X0	5	
/8.6	-X0	6	
/8.6	-X0	7	
/8.7	-X0	8	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge	PE	-3M1	/8.4
1	U1	-3M1	/8.4
2	V1	-3M1	/8.4
3	W1	-3M1	/8.4
4	U2	-3M1	/8.4
5	V2	-3M1	/8.4
6	W2	-3M1	/8.4

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W3M1

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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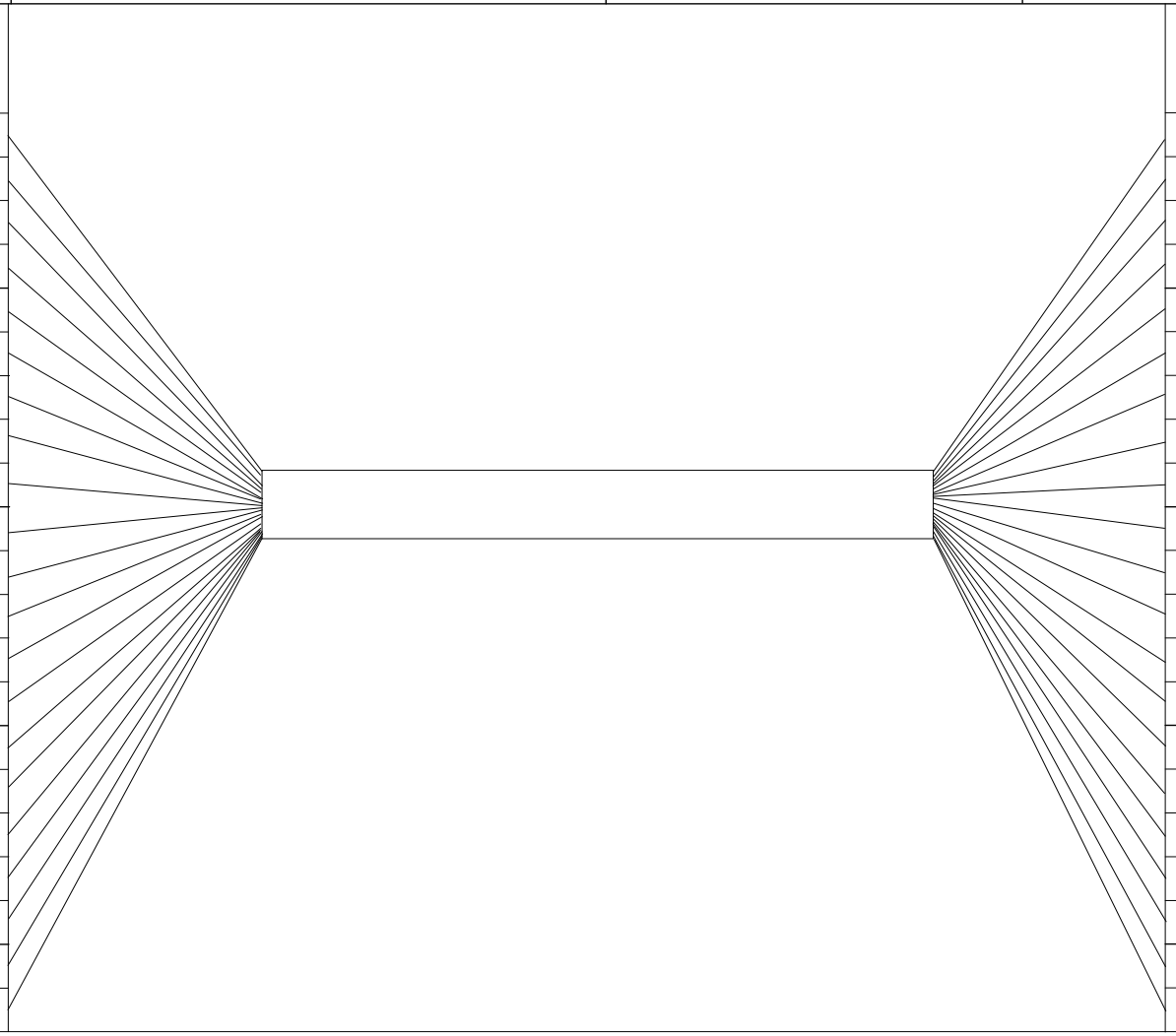
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W4M1	ÖLFLEX CLASSIC 110 G	4/PE	1.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/9.4	-X0	PE	
/9.4	-X0	9	
/9.4	-X0	10	
/9.4	-X0	11	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
gnge	PE	-4M1	/9.4
1	U	-4M1	/9.4
2	V	-4M1	/9.4
3	W	-4M1	/9.4

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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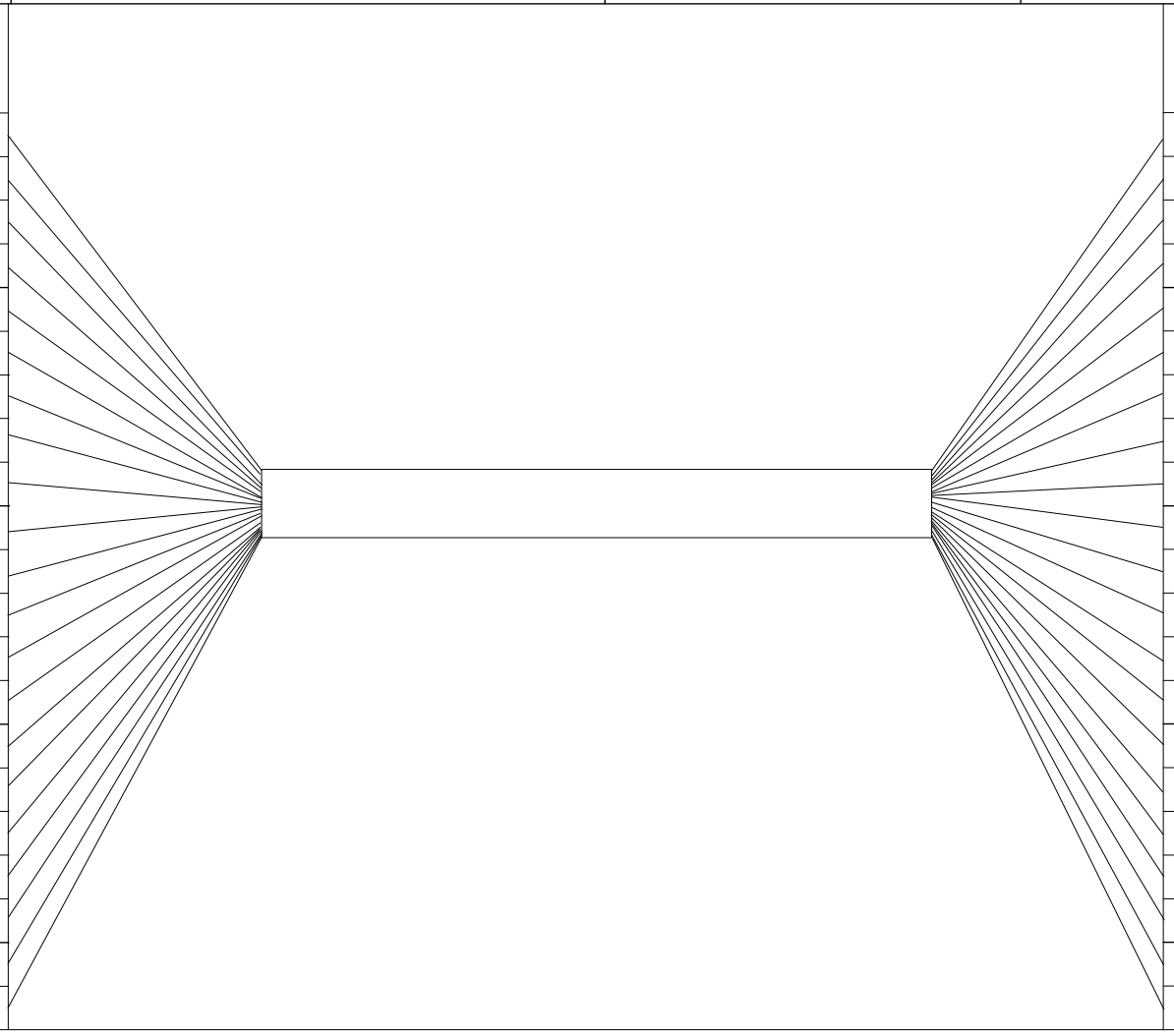
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W10S1	ÖLFLEX CLASSIC 110 G	5/PE	1 mm²	– m

Blatt / Page / Página / Pagina	Quelle / Source / Fuente / Sorgente	Anschl. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond.
/11.1	-X1	10	
/11.1	-X1	11	
/11.1	-X1	13	



Ader / Cond. / Cond. / Cond.	Anschl. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Página / Pagina
gnge			
1	11	-10S1	/11.1
2	12	-10S1	/11.1
3	14	-10S1	/11.1
4			

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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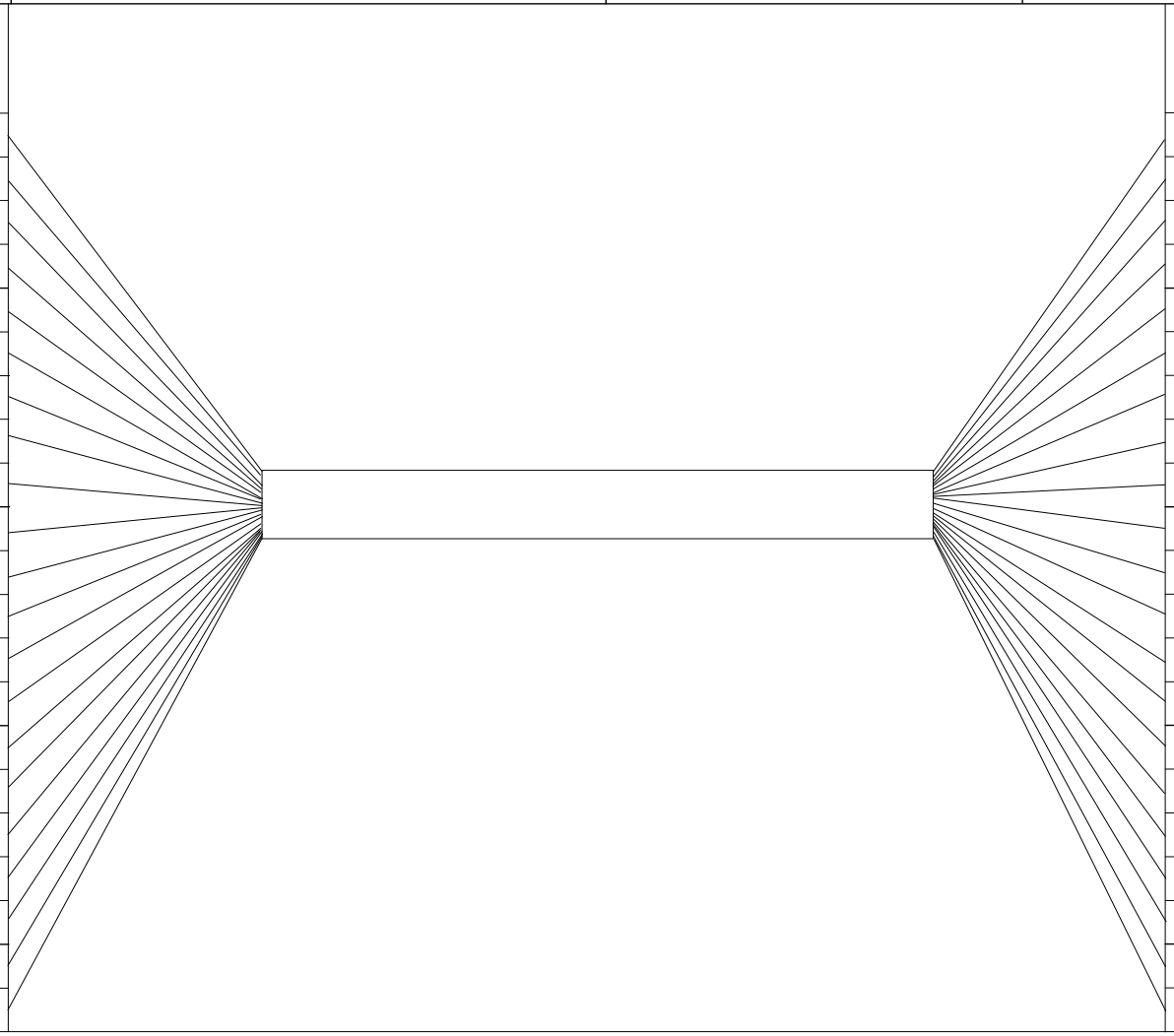
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W11S1	ÖLFLEX CLASSIC 110	3	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/16.5	-X3	5L+	
/16.5	-X3	5L-	
/16.5	-X3	5	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
1	br	-11S1	/16.5
2	bl	-11S1	/16.5
3	sw	-11S1	/16.5

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Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

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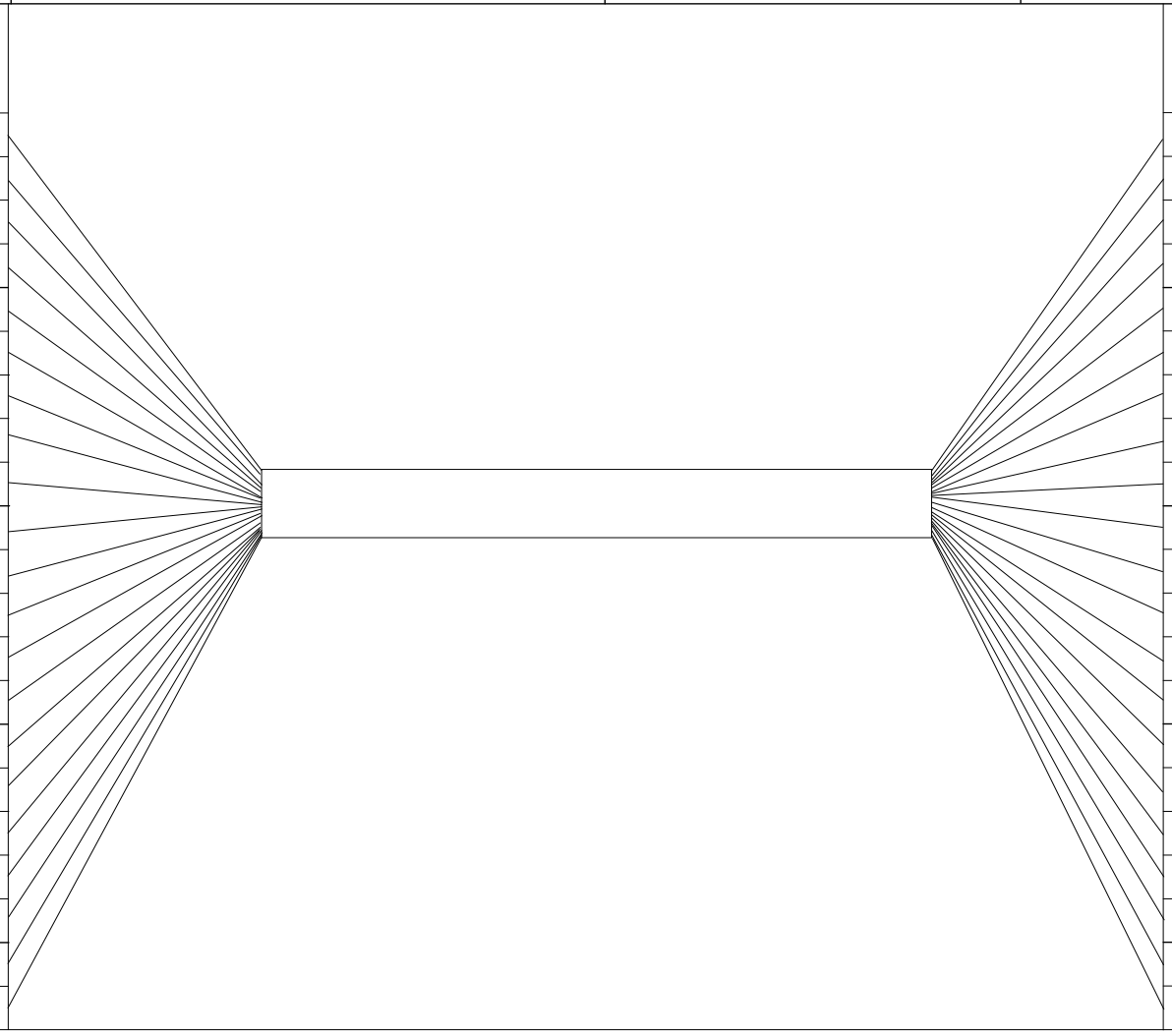
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W13S2	ÖLFLEX CLASSIC 110	3	1 mm²	– m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/16.7	-X3	7L+	
/16.7	-X3	7L-	
/16.7	-X3	7	



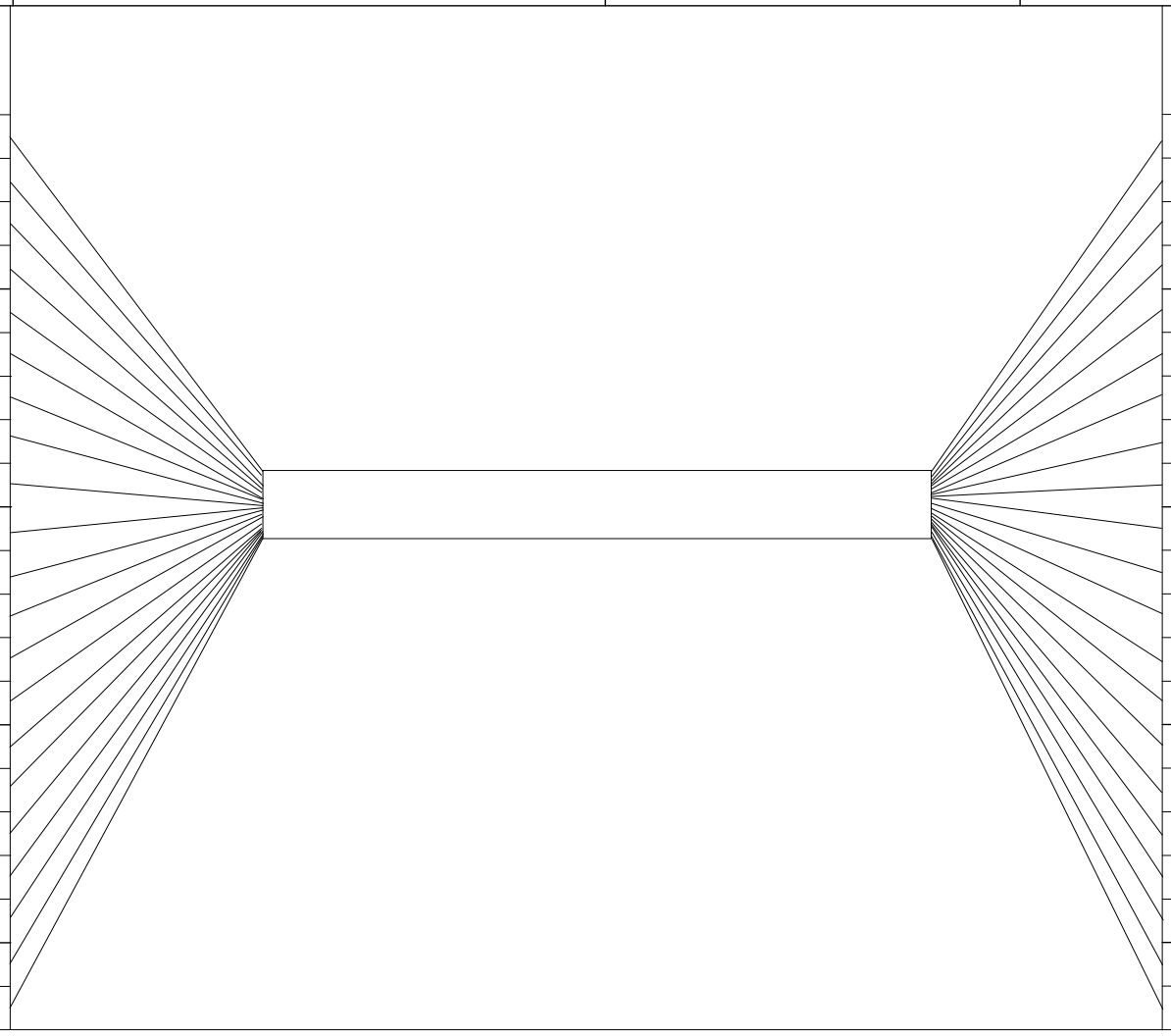
Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
1	br	-13S2	/16.7
2	bl	-13S2	/16.7
3	sw	-13S2	/16.7

Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

LASKA01 17.06.2004

Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W21A1	UNITRONIC LIYCY	5+Schirm	0.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/12.2	-0AX0	HIGH	
/12.2	-0AX0	LOW	
/12.2	-0AX0	GND	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
ws	HIGH	-21AX1	/14.2
br	LOW	-21AX1	/14.2
gn			
ge			
gr	GND	-21AX1	/14.2
SH			

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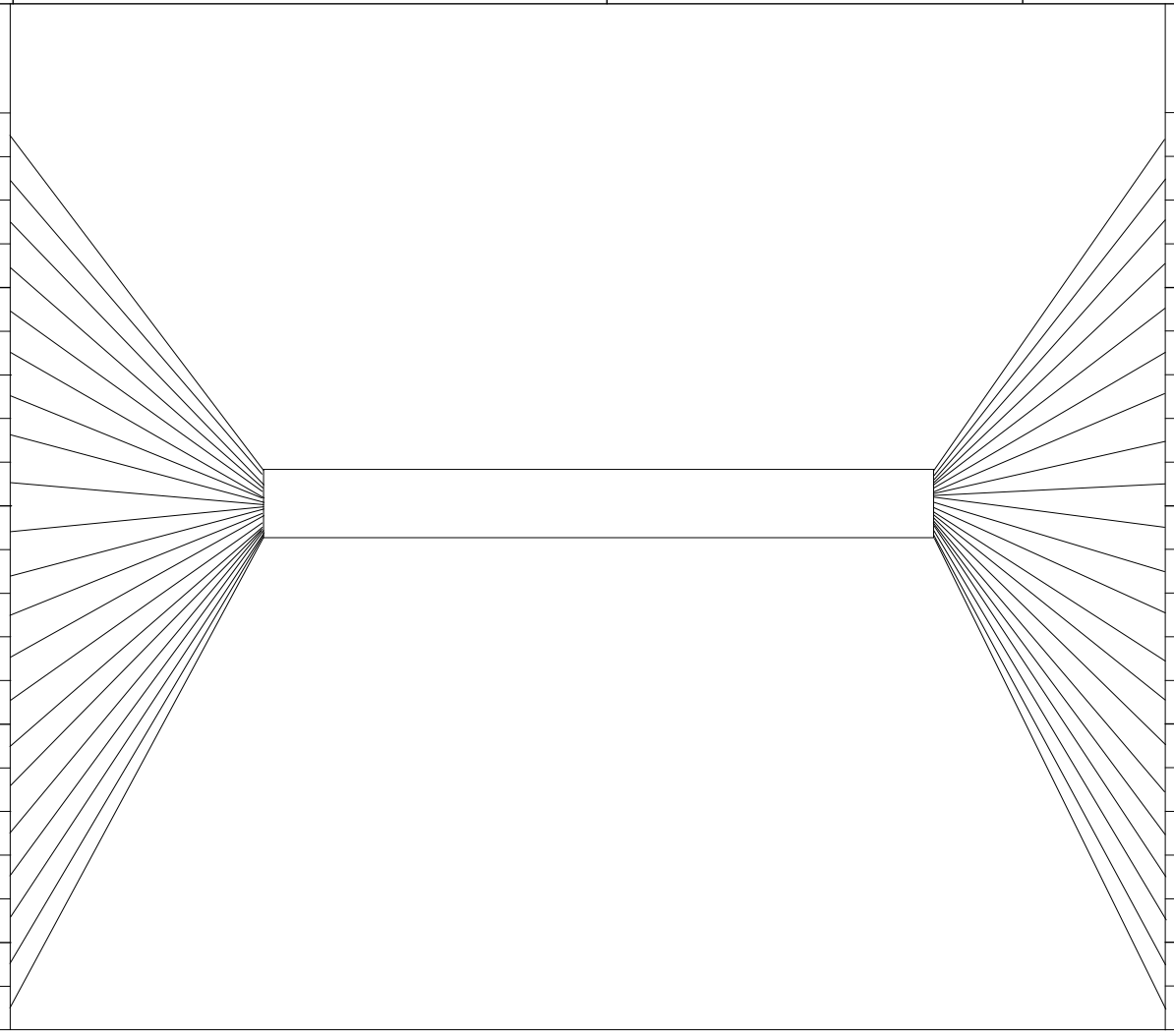
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W21A2.1	UNITRONIC LIYCY	2+Schirm	0.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/20.1	-21A2-X1	14	
/20.2	-21A2-X1	15	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
ws	5	-1U1	/7.6
br	9	-1U1	/7.7
SH			

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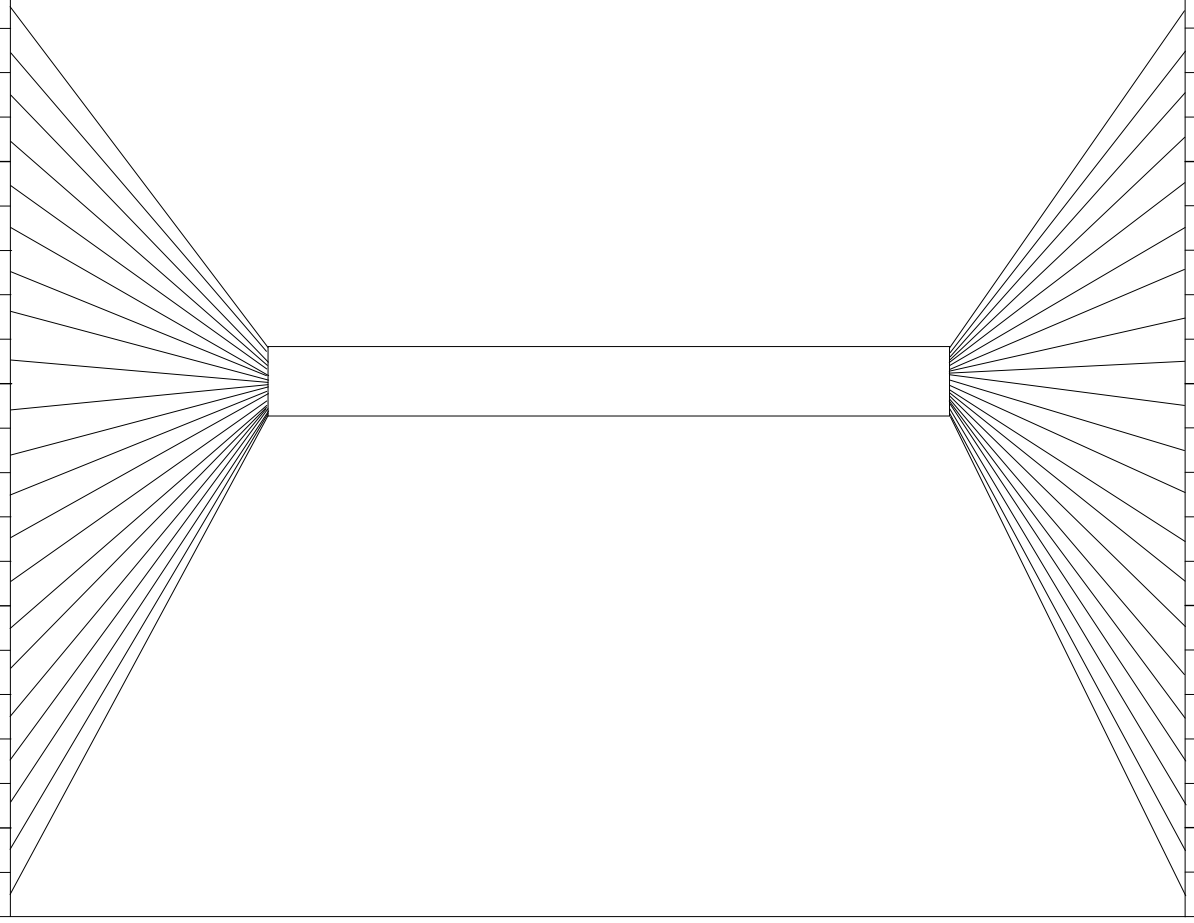
Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W21A2.2	UNITRONIC LIYCY	2+Schirm	0.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/20.3	-21A2-X1	17	
/20.4	-21A2-X1	18	



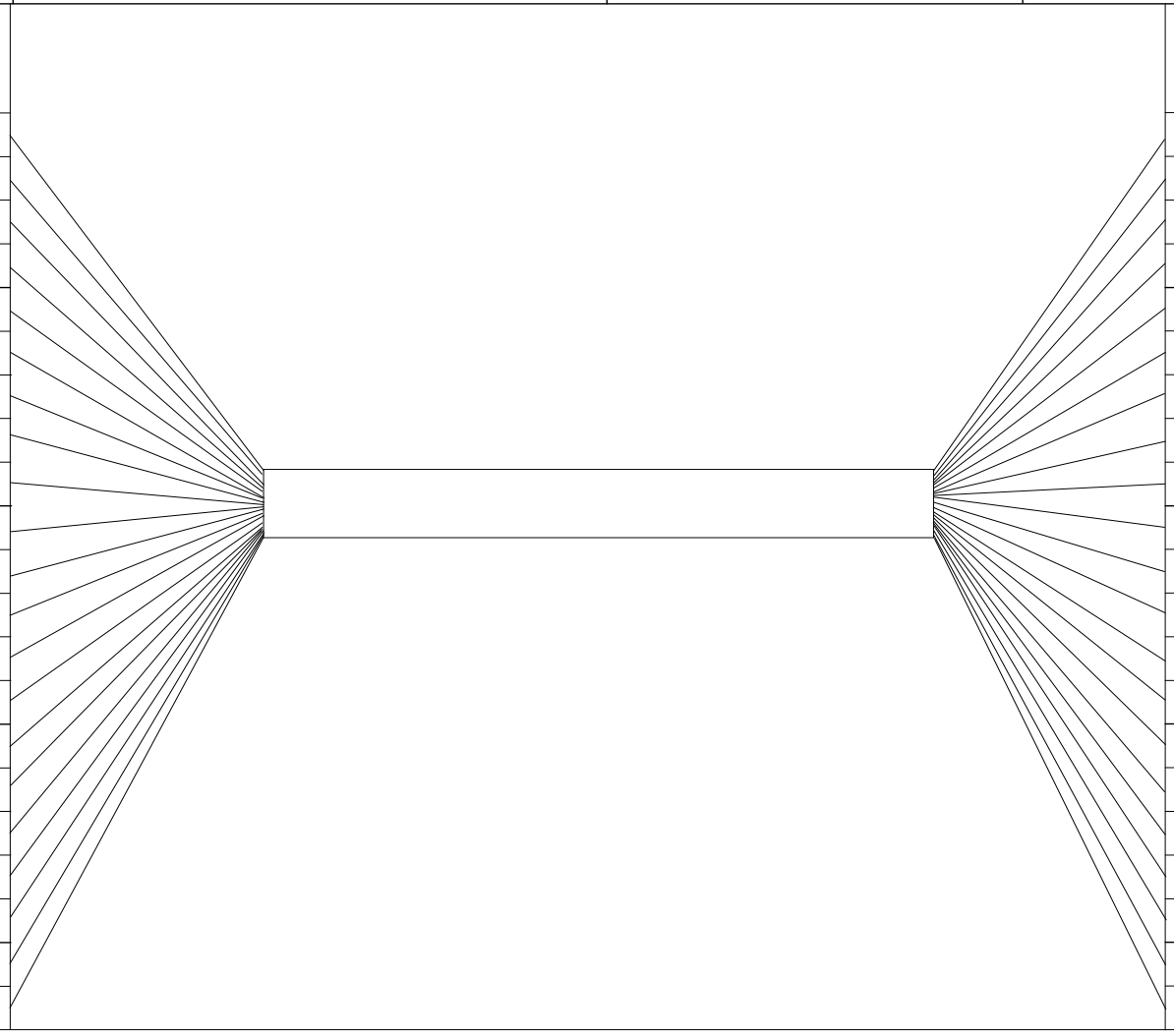
Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
ws	6	-1U1	/7.7
br	9	-1U1	/7.7
SH			

Kabelplan Interconnection diagram Plan de raccordement câble Plano de cables Lista cavi

LASKA01 17.06.2004

Kabelname / Cable name / Nom de câble / Denominación de cable / Nome cavo	Kabeltyp / Cable type / Type de câble / Tipo de cable / Tipo cavo	Aderzahl / No. of cores / Nbr. de cond. / SNº cond. / Nº cond.	Querschnitt / Cross-section / Coupe transver. / Sección / Sezione	Kabellänge / Cable length / Longueuer du câble / Long. de cable / Lungh.
W21A2.3	UNITRONIC LIYCY	2+Schirm	0.5 mm²	- m

Blatt / Page / Page / Página / Pagina	Quelle / Source / Source / Fuente / Sorgente	Anschl. / Conn. / Conn. / Conex. / Pin.	Ader / Cond. / Cond. / Cond. / Cond.
/20.6	-21A2-X2	14	
/20.7	-21A2-X2	15	



Ader / Cond. / Cond. / Cond. / Cond.	Anschl. / Conn. / Conn. / Conex. / Pin.	Ziel / Target / Cible / Meta / Scopo	Blatt / Page / Page / Página / Pagina
ws	1	-1U1	/7.5
br	8	-1U1	/7.6
SH			

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