

IB 15/120 Service Manual



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1 Preface

Good service work requires extensive and practice-oriented training as well as well-structured training materials.

Hence we offer regular basic and advanced training programmes covering the entire product range for all service engineers.

In addition to this, we also prepare service manuals for important appliances - these can be initially used as instruction guides and later on as reference guides.

Apart from this, we also regular information about product enhancements and their servicing.

If you should require supplements, have corrections or questions regarding this document, please address these citing the following subject to:
international-service@de.kaercher.com

Subject: **Fall 114778**

The responsible product specialist will take care of your issue.

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2 Safety instructions

Service and maintenance tasks may only be performed by qualified and specially trained specialists.

2.1 Hazard levels

⚠ Danger

Immediate danger that can cause severe injury or even death.

⚠ Warning

Possible hazardous situation that could lead to severe injury or even death.

Caution

Possible hazardous situation that could lead to mild injury to persons or damage to property.

2.2 Symbols on the machine



⚠ Danger

Risk of injury on account of flying dry ice pellets. Do not direct the jet pistol on persons. Keep third persons away from the place of use and when the machine is being operated (by cordoning off the area). Do not touch/hold the nozzle or the dry ice jet when the machine is running.



⚠ Danger

Risk of suffocation on account of carbon dioxide. The dry ice pellets are made of solidified carbon dioxide. The carbon dioxide content in the air at the place where the machine is used will increase when the machine is running. Ensure adequate ventilation at the place of use; if possible, use an alarm to warn persons. Symptoms of high levels of carbon dioxide in the air that is breathed in:

- 3...5%: headache, faster breathing.
- 7...10%: headache, nausea and perhaps even unconsciousness.

If any of these symptoms occur, please switch off the machine immediately and get a breath of fresh air; improve the ventilation before starting work again with the machine or use respirators.

Follow the safety specifications of the manufacturer of dry ice.



⚠ Danger

Risk of injury on account of electro-static discharge; risk of damage to the electronic components. The object being cleaned can get charged electrically during the cleaning process. Provide suitable earthing for the object being cleaned and ensure that the earthing remains intact during the entire cleaning process.



⚠ Danger

Risk of cold burns. Dry ice has a temperature of -79 °C. Never touch dry ice or cold parts of the machine without appropriate protection.



⚠ Danger

Risk of injury on account of flying dry ice pellets or dirt particles. Wear close fitting safety goggles.
Risk of hearing impairment. Wear ear-protection aids.



⚠ Danger

Risk of injury on account of flying dry ice pellets or dirt particles.
Wear protective gloves and long-sleeved protective overalls as per EN 511.

| | | | |
|--|--------------|-----------------|-------------------|
| | Vor Öffnen | Before opening | Avant l'ouverture |
| | Netzspannung | switch off main | couper la tension |
| | abschalten | current | de réseau |

⚠ Danger

Risk of injury on account of electric shock. Pull the plug out of the socket before opening the control cabinet.

2.3 General notes on safety

⚠ Danger

Risk of injury if the machine is left running in an unattended state. Disconnect the mains plug from the socket before performing any work.

⚠ Danger

Risk of cold burns on account of dry ice or cold parts of the machine. While working on the machine, wear appropriate safety gear for protection against cold or remove dry ice and let the machine heat up. Never put dry ice in your mouth.

⚠ Warning

Risk of injury on account of the recoil force of the jet pistol. Ensure that you are standing at a safe place and hold the jet pistol properly in your hand before pressing the trigger of the jet pistol.

⚠ Danger

Risk of injury on account of flying objects. Fix light cleaning objects properly to prevent them from being dragged off with the dry ice jet.

Prior to working on the unit close the compressed air supply and open the pressure relief valve on the unit.

⚠ Warning

Danger of crushing on account of the dosing equipment. Always remove the machine plug from the socket before removing the protective shield of the dry ice container.

2.4 Specifications and Guidelines

For the operation of this system the following regulations and directives are applicable in the Federal Republic of Germany (available from Carl Heymanns Verlag KG, Luxemburger Straße 449, 50939 Cologne):

- BGV D 26 Spray jet tasks
- Executing instructions for BGV D 26
- BGR 117 Working in closed rooms
- BGR 189 Using safety gear
- BGR 195 Using of safety gloves
- BGI 534 Working in closed rooms
- BGI 836 Gas warner

3 Technical Features

3.1 Basics of working with the dry ice jet

There is one major difference between dry ice cleaning and any other conventional cleaning method: The surfaces of machines and systems are not attacked during the cleaning process.

3.1.1 What is dry ice?

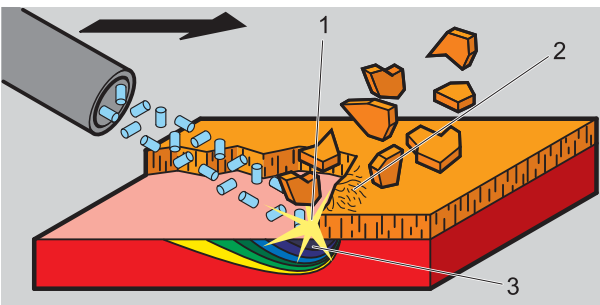
Dry ice is gained from liquid CO₂ by rapid flash. The resulting CO₂ snow of -79°C is pressed in pellets of 0.5-3mm. Dry ice sublimates completely. This means that there is no liquid state of aggregation. It becomes gaseous immediately. Dry ice pellets are available nearly everywhere throughout the world.

3.1.2 How does dry ice blasting work?

Dry ice blasting is basically similar to sand blasting. The jet medium here are dry ice pellets - that sublime immediately when they hit the surface, and return in the atmosphere as CO₂ gas. In the dry ice blaster, the pellets are dosed into a compressed air stream, accelerated to more than 150 m/s, and blasted through a jet hose with gun and nozzle onto the parts to be cleaned.

Dry ice cleaning removes:

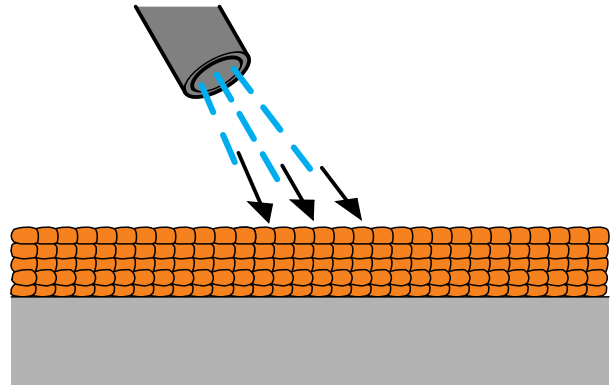
- Paint/varnish
- Oil
- Grease
- Tar
- Bitumen
- Dirt
- Ink
- Resin
- Glue
- Wax
- Bonding agents/parting agents
- Silicone/rubber residues
- Chewing gum
- Graffiti
- and much more



- 1 Impact and sublimation
- 2 Embrittlement
- 3 Local chilling

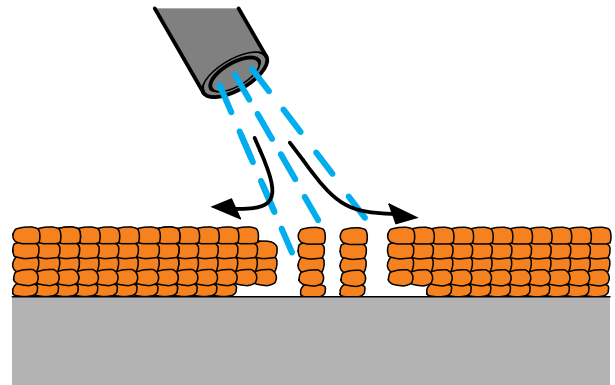
3.1.3 Kinetic cleaning

The dry ice pellets are accelerated to more than 150 m/s, and hit the surface.



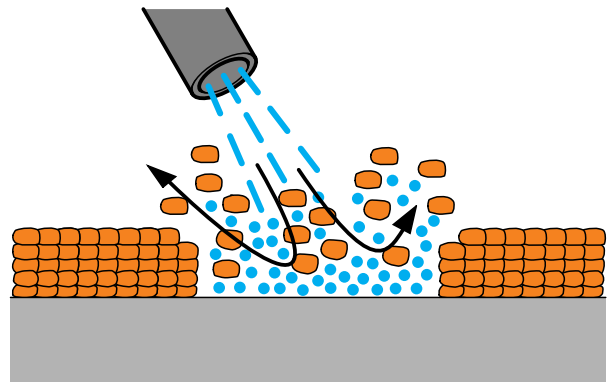
3.1.4 Thermal energy

Embrittlement of the surface by a sudden chilling to -79°C.



3.1.5 Sublimation

The pellets penetrate the cracks produced in the contaminant, sublime (direct transition from the solid state into the gaseous state) there, and increase their volume 700-fold.



3.1.6 Advantages

- No humidity: Brief downtime, no material corrosion.
- No wear & erosion of the material: Long service life of machines / tools.
- No chemicals, no sand, no waste water: Environmentally compatible, cost-efficient, suitable for all areas where water, sand and similar products are not allowed.
- No disassembling of the machines necessary: Brief downtime, cleaning in installed state possible since no cleanser residues exist.

3.1.7 Necessary infrastructure

There are two possibilities of feeding the blaster with dry ice pellets:

- When the required amount of pellets is small, the pellets can be purchased from various manufacturers in a special transport container. This container permits the pellets to be stored for 4...8 days. A loss of approximately 4% per day must be reckoned with.
- When you need large pellet quantities, you can produce them yourself. This requires a tank to store liquid CO₂, and a pelletizer. Pelletizers can be purchased from Kärcher.

To feed the blaster with compressed air you need a compressor of sufficient capacity (see technical data).

3.1.8 Fields of application

Automotive industry and foundries:

- Chilled casting: Removing parting powder from the mould
- Injection moulding: Mould cleaning, removing rubber and silicone residues, parting agent
- Core boxes: Removing parting powder and bonding agent
- Assembly lines: Removing weld chips, grease and paint residues, contaminants
- Machines: Removing oil, dirt in general
- Motors: Removing oil, dirt in general
- Forges: Carrier of drop-forge moulds

Printshops:

- Web presses
- Developing webs
- Gravure machine auxiliaries
- Gravure cylinders
- Ink troughs
- Printing unit accessories
- Screen flex rollers
- Textile printing machines

Steel, metal, machine factories:

- Cleaning in all production areas

- Maintenance work

Plastic industry:

- Mould cleaning, removing rubber and silicone residues
- Deburring parts
- Tool cleaning

Food and drink industry:

- Conveyor belt and transport systems
- Tank cleaning
- Oven cleaning
- Filling systems
- Machinery / production area

Communities:

- Escalators
- Chewing gum removal
- Graffiti removal

Electric industry:

- Generator cleaning / repair
- Turbine cleaning
- witchgear cabinets

Packing industry:

- Conveyor belt and transport systems

3.1.9 Description of the Appliance General

- Dry ice jet unit
- Cleaning with dry ice pellets without solvent
- A large variety of applications (see "Fields of application")
- Housing made from stainless steel
- Sack-trolley principle
- Pneumatic tyres
- Jet hose (8 m)

Control panel with:

- Display to show jet pressure, dry ice quantity and statistics (operating hours, consumption, average consumption)
- Indicator lamps for control voltage, emergency stop, compressed air, dosing device, and jet gun
- Buttons to adjust jet pressure and dry ice quantity
- Power switch
- Emergency-stop button
- Keyswitch to lock the settings
- Button to empty the dry ice container
- Buttons to display the statistic values

Safety equipment:

- Emergency stop button on the control panel
- Connection to external emergency stop circuit possible
- Guard over the revolving dosing device
- Shutdown at insufficient air pressure in the supply line
- Jet gun with protection against inadvertent activation
- Interruption of compressed air and blast medium transport in the event of a voltage drop

Jet gun

- Ergonomically shaped handle
- Safety mechanism, protection against inadvertent activation of the jet gun
- Easy and swift nozzle change
- Low weight, even longer cleaning work possible without tiring
- Additional with Advanced variant: Buttons to adjust jet pressure and dry ice quantity, and for switching dry ice dosing on / off

Jet nozzles:

Different jet nozzles are used for different cleaning tasks

- Flat jet nozzles for large surfaces
- Round jet nozzles (accessory) for für aggressive cleaning jet to release clinging contaminants
- Angular nozzles (accessory) to work in confined spaces
- Nozzle extensions (accessory) to work in cavities
- Scrambler (accessory) to crush the dry ice pellets for cleaning highly sensitive surfaces

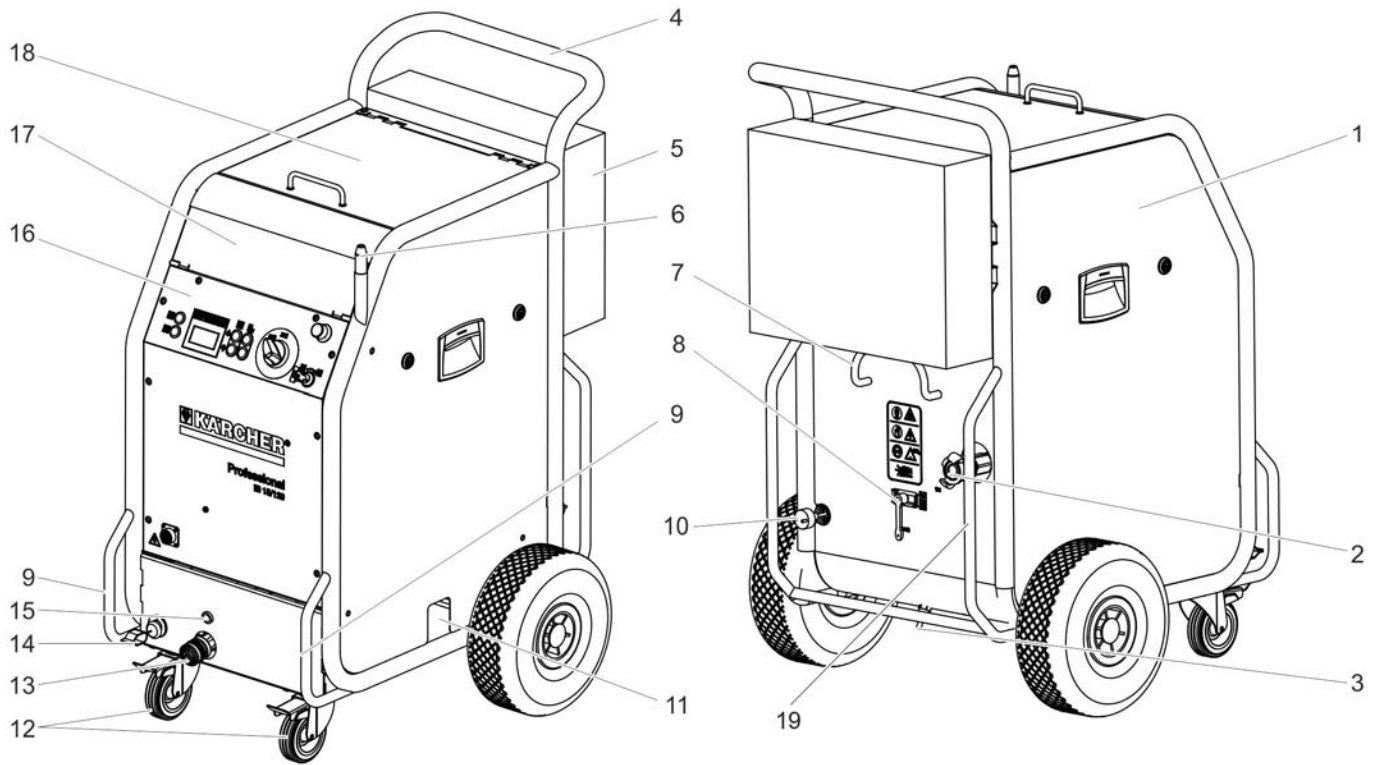
Specifications:

- Dry ice consumption: 30..0.120 kg/h
- Dry ice capacity: 40 kg

For other values refer to technical data.

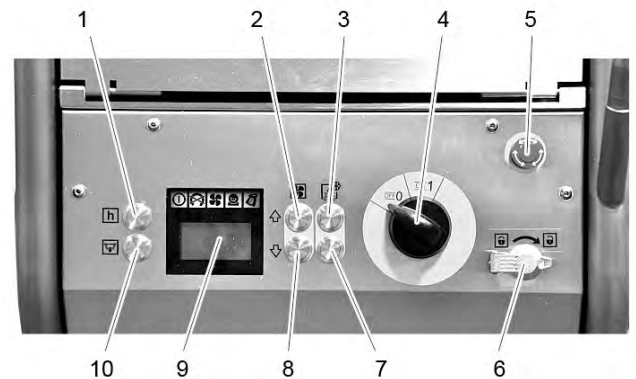
4 Setup and function

4.1 Device



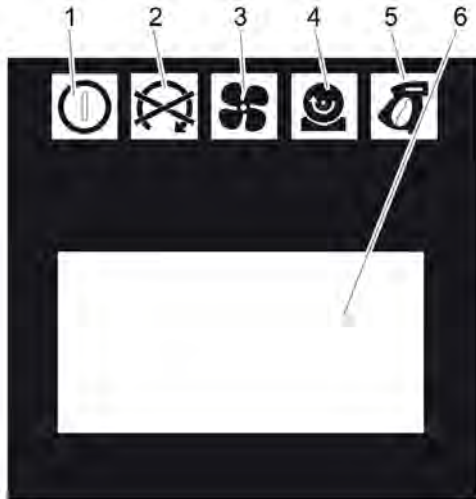
- 1 Fuse F1, below the side panel
- 2 Compressed air connection
- 3 Condensate drain-out
- 4 Push handle
- 5 Case for accessories
- 6 Holder for jet pistol
- 7 Cable clamp
- 8 Pressure relief valve, condensate draining of the water separator
- 9 Transport handle, bumper at the rear
- 10 Mains cable with mains plug
- 11 Dry ice outlet for emptying the container
- 12 Guiding roll with fixed position brake
- 13 Coupling spray agent hose
- 14 Earth wire with clamp
- 15 Coupling of the control cable
- 16 Operating field
- 17 Storage compartment for accessories
- 18 Cover of the dry ice container
- 19 Protective bow in the back, skids for mobility on the stairs

4.2 Operating field



- | | | |
|----|------------------------------------|----|
| 1 | Statistics key, reset counter | S8 |
| 2 | Key "increase jet pressure" | S6 |
| 3 | Increase the dry ice dosing | S4 |
| 4 | Power switch | S1 |
| 5 | Emergency-stop button | S2 |
| 6 | Key switch | S3 |
| 7 | Decrease the dry ice dosing | S5 |
| 8 | Key "decrease jet pressure" | S7 |
| 9 | Display | A1 |
| 10 | Key to empty the dry ice container | S9 |

4.3 Display



- 1 Indicator lamp - control voltage
green: Control voltage OK
red: Control voltage too low
yellow: Emptying of dry ice container active
- 2 Indicator lamp emergency STOP
red: Emergency stop button activated
green: Emergency stop button not activated
- 3 Indicator lamp - compressed air
green: Pressure OK
orange: selected jet pressure not reached
red: Pressure too low (below 0.15 MPa/1.5 bar)

Note

The indicator lamp for the compressed air also illuminates in orange when the appliance is switched on, but is not in jet operation.

- 4 Indicator lamp – dosing device
green: Drive OK
red: Error in drive
- 5 Indicator lamp - jet pistol
green: Jet pistol OK
orange: The trigger of the jet pistol was activated during the switch-on process
red: Jet pistol disconnected or control line damaged
- 6 Display field

4.3.1 Fault codes

In Chapter "Faults with display" the error codes are described in detail

| Code | Significance |
|------|--|
| E001 | Control voltage too low |
| E002 | Emergency-stop button has been pressed. |
| E003 | Pressure of the compressed air supply too low |
| E004 | Interference in the dosing |
| E005 | Connection between the device and the jet pistol is faulty. |
| E006 | Short in jet pistol or control cable |
| E007 | Fault in the compressed air regulator valve |
| E008 | The trigger of the jet pistol was activated during the switch-on process or the releasing of the emergency stop key. |

4.4 Appliance with side parts removed



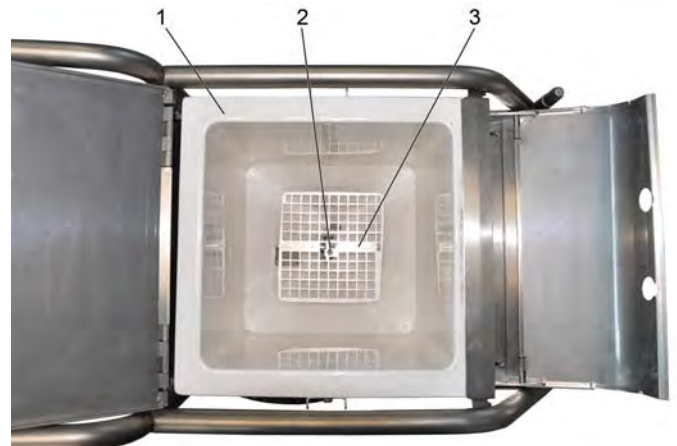
- 1 Shaker
- 2 Pressure release valve
- 3 Dry ice outlet (remainder emptying)



- 1 Dry ice container
- 2 Shaker
- 3 Water separator
- 4 Pressure release valve

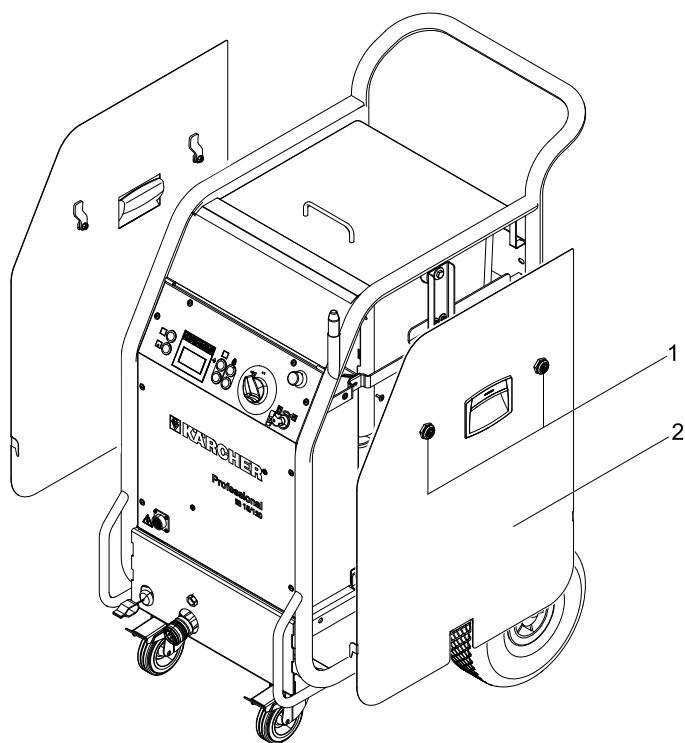


- 1 Tool storage
- 2 Nameplate
- 3 Electric casing
- 4 Earth wire retractor
- 5 Earth cable
- 6 Dosing unit
- 7 Pressure control valve, pneumatically actuated
- 8 Water separator
- 9 Dry ice container
- 10 Dry ice container support



- 1 Dry ice container
- 2 Screw protective grid
- 3 Protective grid

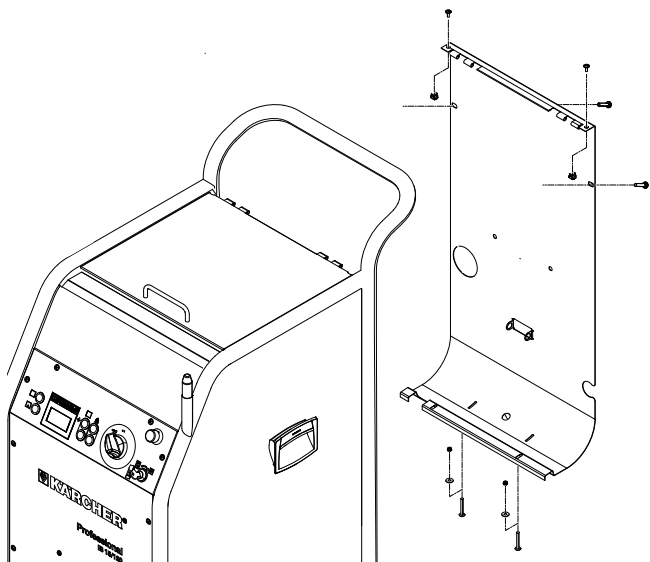
4.4.1 Remove side panel



- 1 Side panels
- 2 Snap closure

- ➔ Turn the snap closure counter-clockwise.
- ➔ Remove side panel.

4.4.2 Remove rear panel



- ➔ Loosen 6 screws.
- ➔ Lift the lid of the dry ice container and swing rear panel outward.
- ➔ Open the quick-action connection and pull off the compressed air hose.
- ➔ Unhook the rear panel from the tubular frame.
- ➔ Installation: Align the lid (front gap of the lid), tighten the top screws. Check gap.

4.4.3 Removing the dry ice container

- ➔ Remove side panels.



- ➔ Unscrew 4 screws for the dry ice container support.
- ➔ Pull both supports from the side out of the bearing.
- ➔ Pull the dry ice container from the top out of the device.

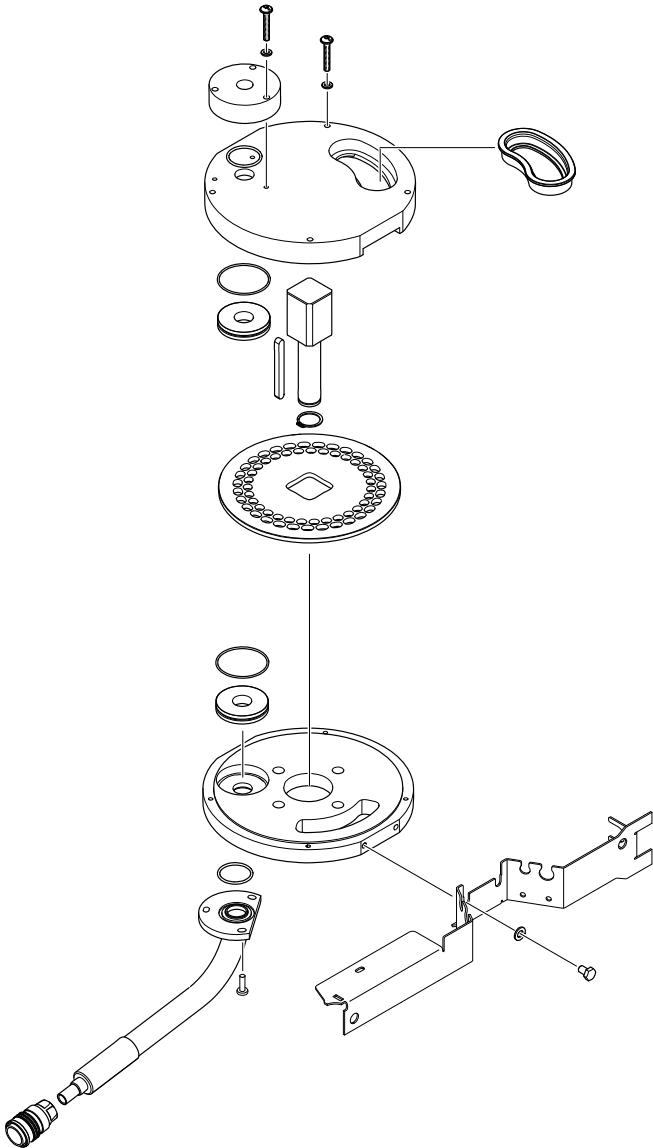


Note

The shaker can remain connected. The dry ice container may be placed on the device.

4.5 Dosing unit

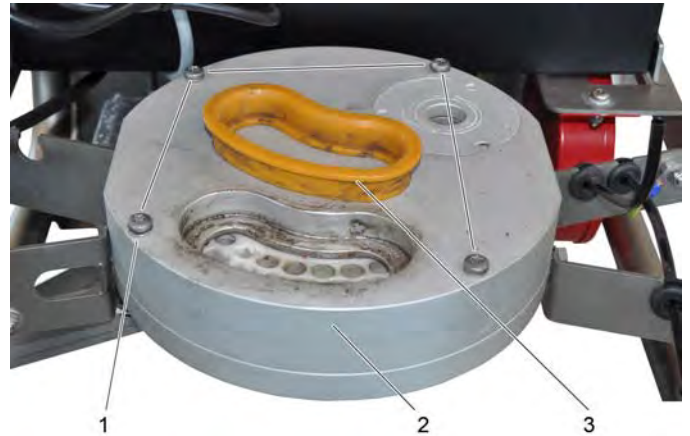
4.5.1 Overview



- 1 Dosing unit
- 2 Dry ice container seal
- 3 Dosing disk

4.5.2 Replacing the dosing disk

- Unpressurize the appliance.
- Disconnect the mains plug from the socket.
- Remove the panels.
- Open the quick-action connection at the pressure control valve and pull off the compressed air hose.
- Open the quick-action connection at the control air connection and pull off the compressed air hose.
- Unscrew 3 screws at the compressed air flange.
- Unscrew 2 screws at the water separator.
- Remove the pipe module and put it aside.



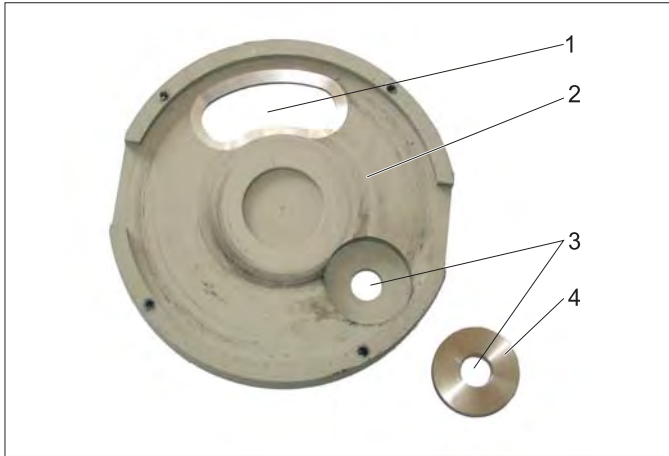
- 1 Dosing unit screw
- 2 Dosing flange, top
- 3 Dry ice container seal

- Remove the seal.
- Unscrew 4 screws of the dosing unit.
- Remove the upper dosing flange.

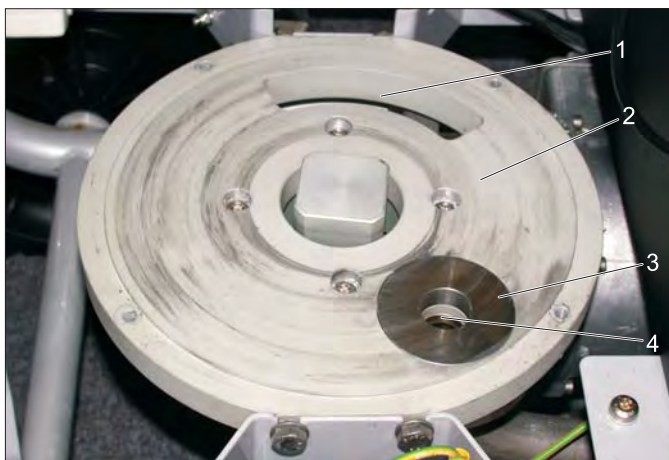


- 1 Dosing disk
- 2 Towing arm

- Remove the dosing disk



- 1 Dry ice pellet inlet opening
- 2 Upper dosing flange, inner side
- 3 Compressed air inlet opening
- 4 Insert with O-ring



- 1 Dry ice pellet outlet opening for dry ice emptying
- 2 Lower dosing flange, inner side
- 3 Insert with O-ring
- 4 Dry ice jet outlet opening

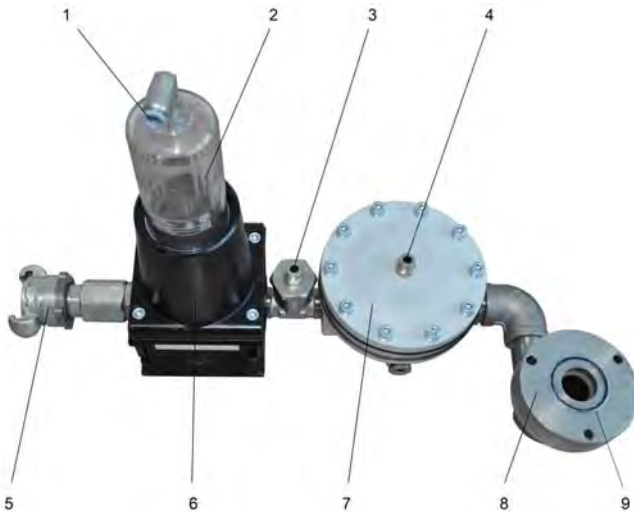
Note: The inserts are movable in the dosing flanges. They are pressed on the dosing disk by the compressed air.

When changing the inserts, the O-rings must be greased prior to installation. Do not use silicone grease! Part number special grease: 6.288-225.0

Clean the dosing flanges with a dry cloth before you install the dosing disk.

The new dosing disk is installed in reverse sequence. Torque, dosing flange screws: 8Nm

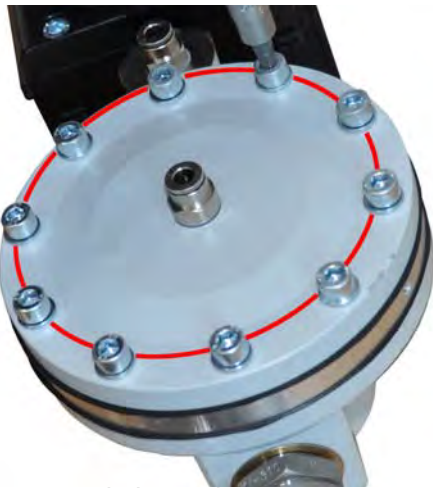
4.6 Pipe assembly



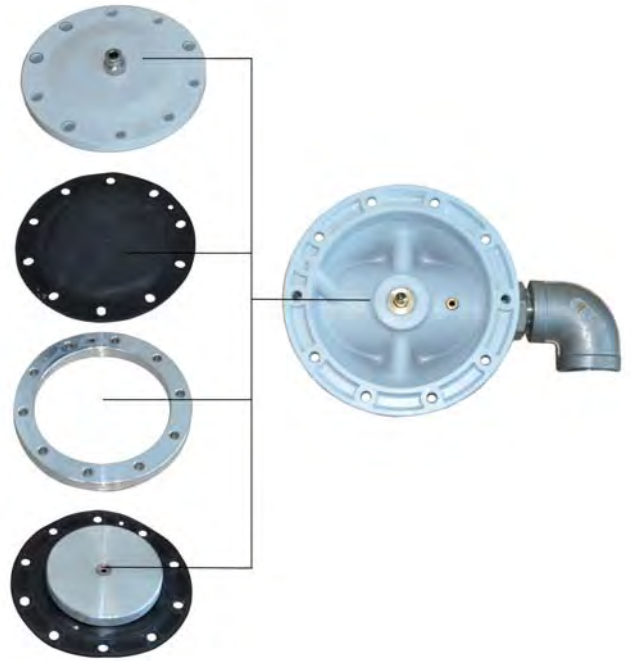
- 1 Condensate drain-out
- 2 Collecting tank
- 3 Branch control air
- 4 Compressed air connection
- 5 Compressed air inlet
- 6 Water separator
- 7 Cover of regulator diaphragms
- 8 Flange ring of dosing unit
- 9 O ring

4.6.1 Replace membrane of the pressure-regulating valve

→ Dismantle the pipe assembly.



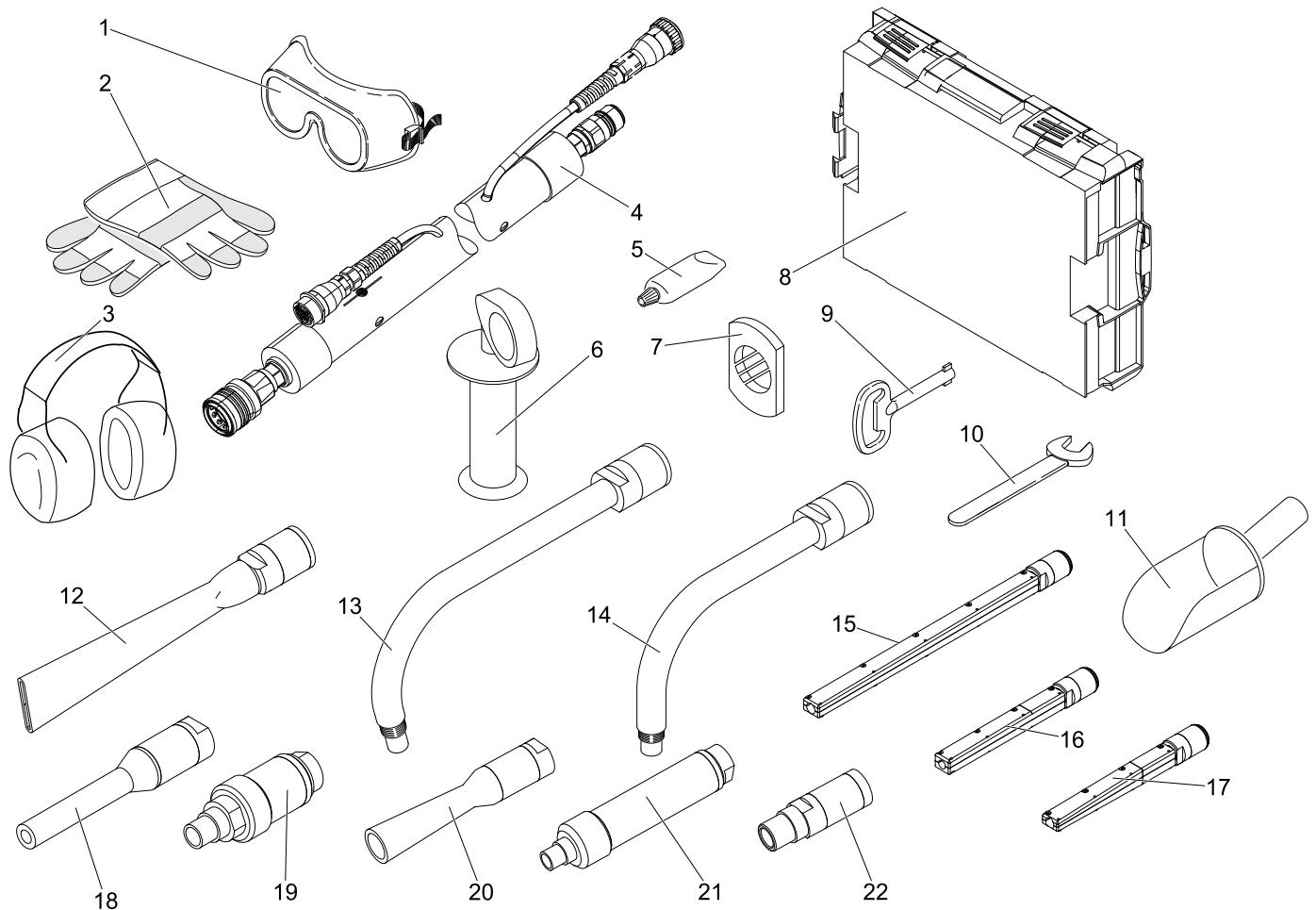
- Loosen screws evenly in a criss-cross pattern.
- Remove the screws from the membrane ring.



- Remove the membranes from the casing and replace them if necessary.
- Pay attention to the correct orientation of the components during assembly.
- Tighten screws in a criss-cross pattern.

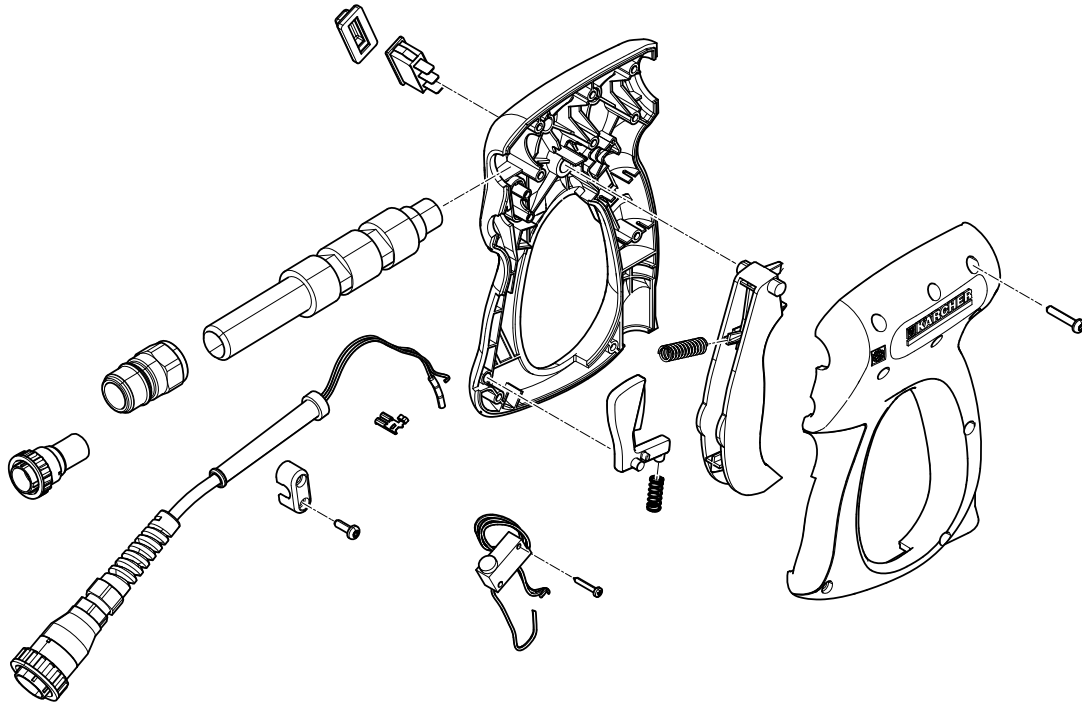
4.7 Overview over accessories

Illustration also shows optional accessories

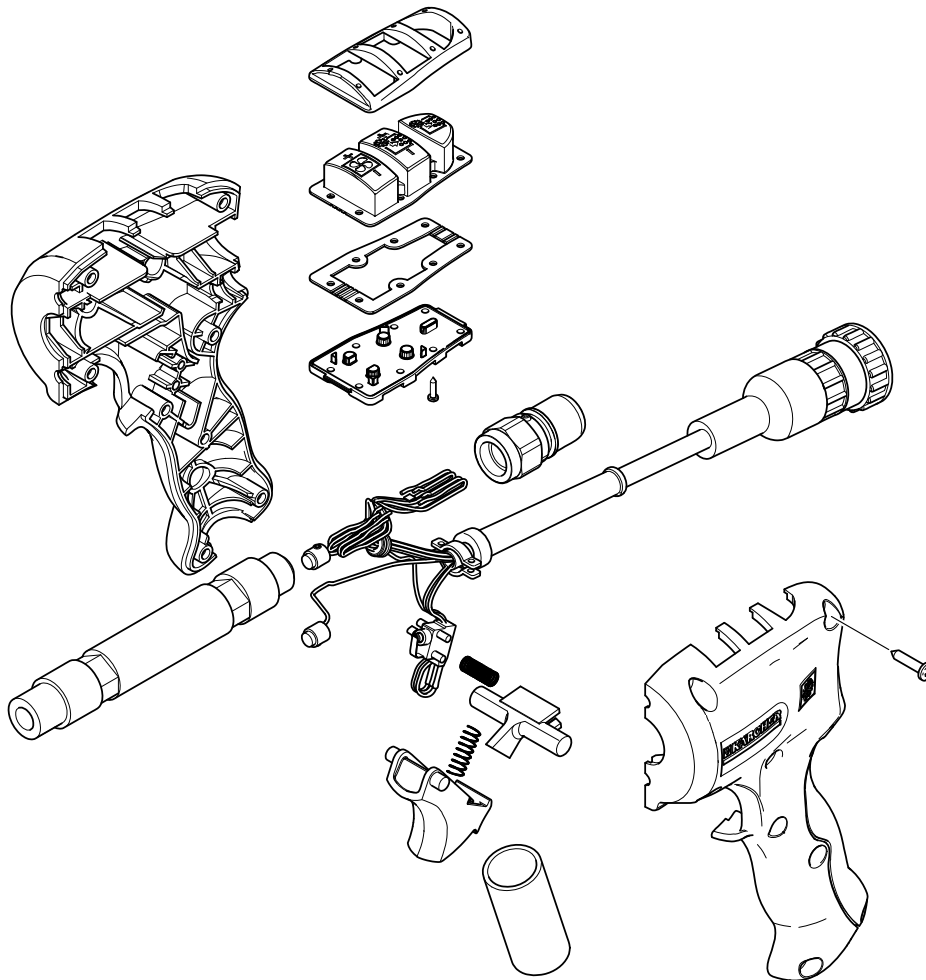


- 1 Safety goggles
- 2 Protective gloves
- 3 Hearing protection
- 4 Jet hose (8 m)
- 5 PFAE grease 5g.
- 6 Handle
- 7 Insert scrambler
- 8 Carrying case Sortimo
- 9 Key
- 10 Open wrench SW 27
- 11 Shovel
- 12 Flat jet nozzle
- 13 Angular nozzle 105°
- 14 Angular nozzle 90°
- 15 Round jet nozzle 14x9x16
- 16 Round jet nozzle 14x7x13
- 17 Round jet nozzle 14x9x16 / 245
- 18 Round jet nozzle
- 19 Scrambler
- 20 Round jet nozzle
- 21 Extension piece
- 22 Reduction piece

4.8 Jet equipment

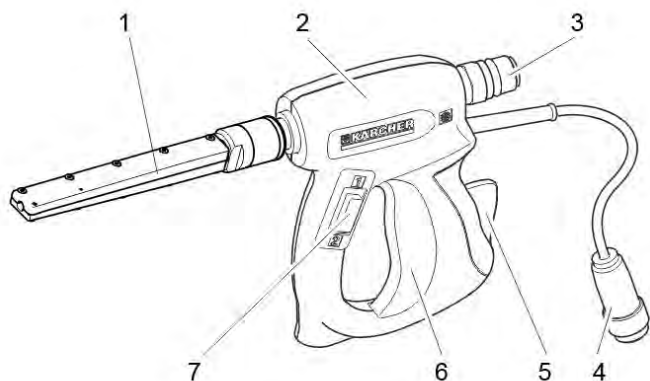


HEAVY DUTY



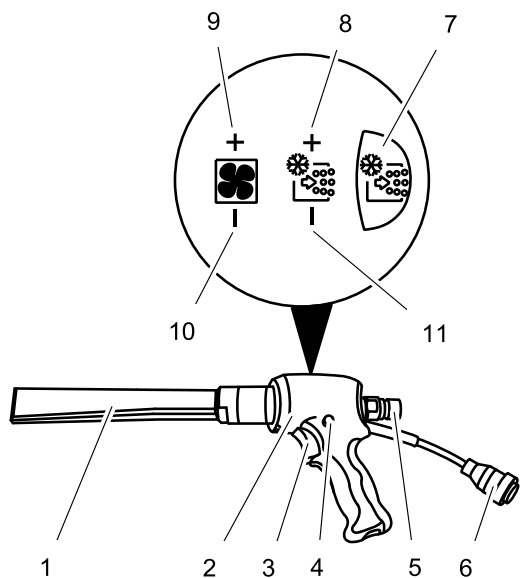
ADVANCED

4.8.1 Jet pistol Heavy Duty



- 1 Nozzle
 - 2 Jet pistol
 - 3 Coupling spray agent hose
 - 4 Coupling of the control cable
 - 5 Safety lever
 - 6 Triggering lever
 - 7 Operating type switch
- Position "1": Compressed air jet
 Position "2": Dry ice jet (compressed air and dry ice pellets)

4.8.2 Jet pistol Advanced



- 1 Nozzle
- 2 Jet pistol
- 3 Triggering lever
- 4 Safety button
- 5 Coupling spray agent hose
- 6 Coupling of the control cable
- 7 Button "Dry ice dosing on/off" (S12)
Illuminates red when dry ice dosing is switched off (V1)
- 8 Button "Increase dry ice dosing" (S13)
- 9 Button "Increase jet pressure" (S15)
- 10 Button "Decrease jet pressure" (S16)
- 11 Button "Decrease dry ice dosing" (S14)

4.8.3 Disassemble jet pistol Heavy Duty



- 1 Control cable
 - 2 Spray lance
 - 3 Casing shell
 - 4 Helical spring of the trigger
 - 5 Safety lever
 - 6 Helical spring of safety lever
 - 7 Triggering lever
 - 8 Micro switch
 - 9 Cover support
 - 10 Operating type switch
- Unscrew the screws from the casing.

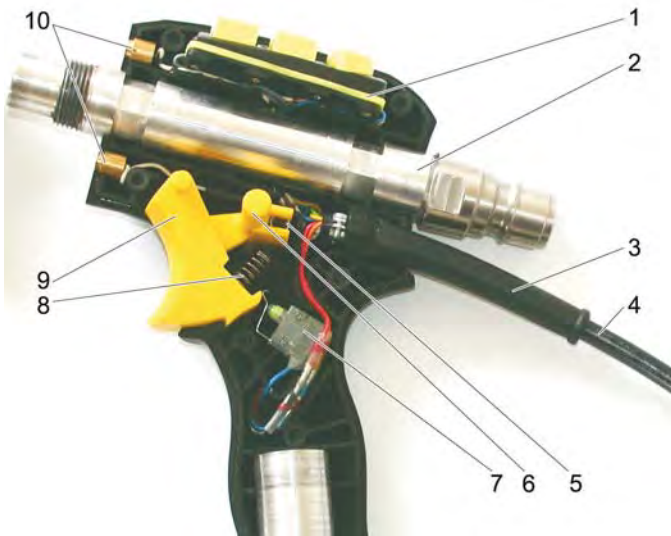


- Replace steel pipe if the thread is damaged.
 → Ensure that the helical springs are properly inserted during assembly.
 → Check safety equipment for proper function after assembly.

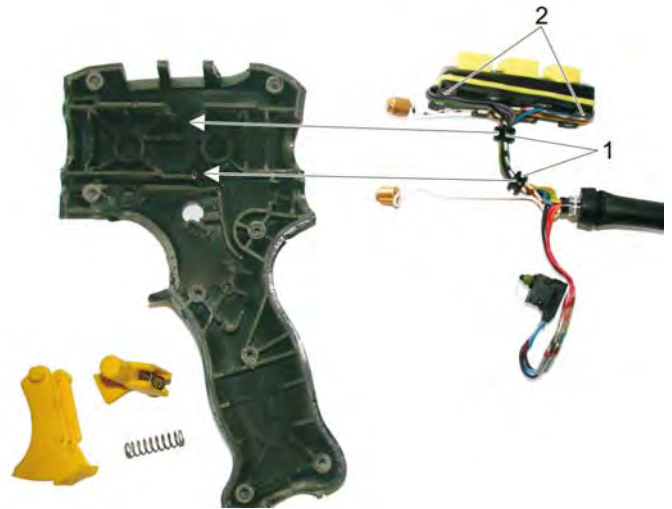
4.8.4 Dismantle jet pistol Advanced



→ Unscrew 8 screws.



- 1 Keypad
- 2 Spray lance
- 3 Kink protection
- 4 Control cable
- 5 Helical spring of safety button
- 6 Safety button
- 7 Micro switch
- 8 Helical spring of the trigger
- 9 Triggering lever
- 10 Contact pin for working light power supply



- 1 Cable sleeve
- 2 Keypad screw (8x)



- 1 Bottom housing part
- 2 Keypad board
- 3 Seal
- 4 Button caps
- 5 Housing top

4.8.5 Spray agent hose



- 1 Safety hose coupling
- 2 Female connector, control cable on the jet gun
- 3 Male connector, control cable on the unit
- 4 Safety hose coupling, connection on the unit

4.9 Nozzles

Note

The choice of the nozzle depends on the material of the object to be cleaned and the contamination.

The available air volume also significantly influences the selection of the nozzle.

All nozzles can be screwed on top of the threading of the jet pistol without using any tools. The threaded surfaces on the nozzle are to be used to loosen tight nozzles using a spanner.

4.9.1 Selecting the nozzle

The following table shows the air consumption with different nozzles.

Each nozzle is marked with an air volume index XS - XXL.

By means of the nozzle table the air consumption for each nozzle can be determined.

Caution

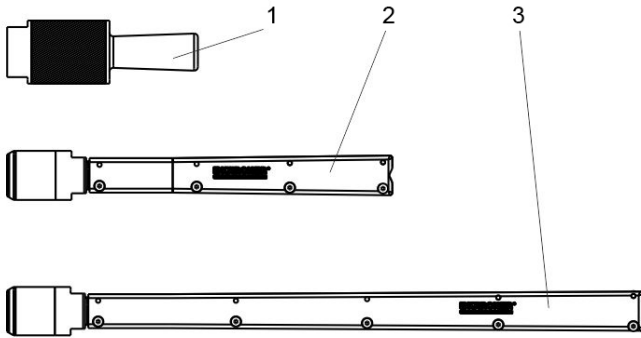
Risk of cold welding Smear the enclosed grease on the nozzle threading before installing it.

| Area capacity | Jet aggressiveness | | very low | | low | | | medium | | | | high | | | very high | | |
|---------------|--------------------|--------|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| | Pressure (bar) | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | Nozzle size | | | | | | | | | | | | | | | | |
| | XS | Ø5 mm | 0,4 0 | 0,7 0 | 0,9 0 | 1,1 0 | 1,3 0 | 1,6 0 | 1,8 0 | 2,0 0 | 2,3 0 | -- | -- | -- | -- | -- | -- |
| | S | Ø6 mm | 0,7 0 | 1,0 5 | 1,4 5 | 1,8 0 | 2,0 7 | 2,4 0 | 2,7 8 | 3,1 4 | 3,4 8 | 3,7 8 | 4,1 3 | 4,3 5 | 4,70 | 5,10 | 5,40 |
| | M | Ø7 mm | 0,9 3 | 1,3 8 | 1,8 5 | 2,2 8 | 2,6 4 | 3,0 5 | 3,6 3 | 4,0 3 | 4,5 7 | 4,8 0 | 5,3 0 | 5,8 0 | 6,22 | 6,65 | 7,15 |
| | L | Ø8 mm | 1,0 9 | 1,6 4 | 2,2 6 | 2,7 8 | 3,2 0 | 3,7 9 | 4,4 0 | 4,9 5 | 5,4 5 | 5,9 0 | 6,4 0 | 7,1 5 | 7,67 | 8,15 | 8,80 |
| | XL | Ø9 mm | 1,5 0 | 2,1 6 | 2,8 8 | 3,5 0 | 4,0 3 | 4,6 0 | 5,4 1 | 6,0 1 | 6,5 3 | 7,2 7 | 8,0 8 | 8,7 0 | 9,28 | 9,80 | 10,4 0 |
| | XXL | Ø10 mm | 1,5 2 | 2,2 0 | 2,9 7 | 3,6 6 | 4,2 7 | 5,0 0 | 5,8 2 | 6,5 2 | 7,4 0 | 8,0 0 | 8,9 0 | 9,5 0 | 10,0 5 | 10,7 0 | 11,3 0 |
| | | | Air consumption in m ³ /min | | | | | | | | | | | | | | |

| | m ³ /min | |
|--|---------------------|--|
| | ...1 | Industrial compressed air service network Entry-level compressor e.g. Käser M 17, Compair C 14 |
| | 1...2 | Industrial compressed air service network small compressor e.g. Käser M 31, Compair C 20GS |
| | 2...3 | medium compressor |
| | 3...5 | e.g. Käser M 57, Compair C 35 |
| | 5...7 | medium compressor e.g. Käser M 80, Compair C 55 |
| | 7...10 | large compressor e.g. Käser M 122, Compair C 105 |
| | 10... | extra large compressor e.g. Käser M 250, Compair C 200 |

4.9.2 Round jet nozzle

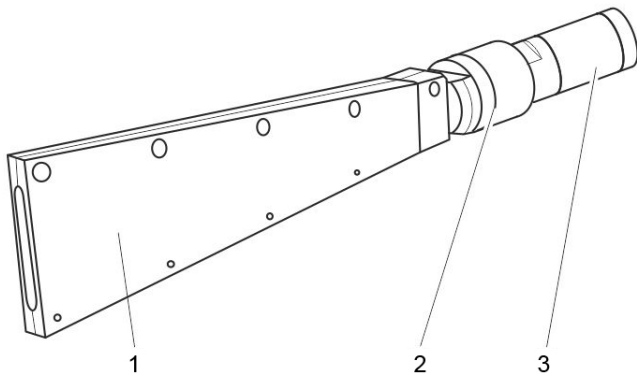
Apart from the round jet nozzle delivered with the machine, other round jet nozzles with varying cross-sections are available as accessories.



- 1 Round jet nozzle, short
- 2 Round jet nozzle, long
- 3 Round jet nozzle, extra long

→ Place the round jet nozzle on the threaded support of the jet pistol and tighten it by hand.

4.9.3 Flat jet nozzle



- 1 Diffuser
- 2 Union joint
- 3 Nozzle insert

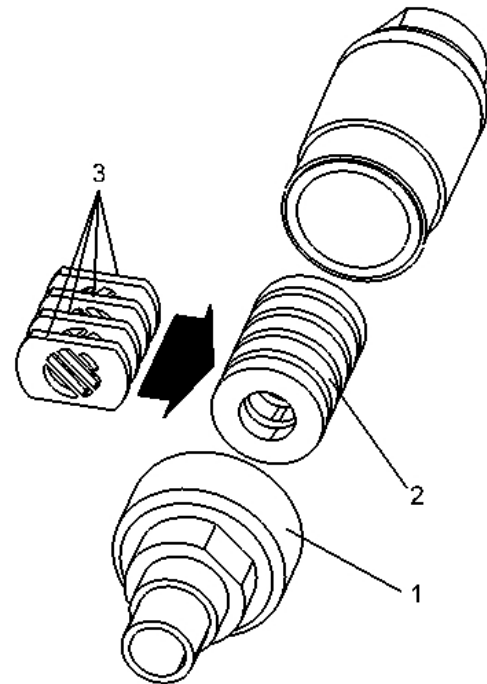
The flat jet nozzle consists of a nozzle insert and a diffuser. Nozzle inserts with varying cross-sections are available as accessories.

- Place the nozzle insert on the threaded support of the jet pistol and tighten it by hand.
- Place the diffuser on the nozzle attachment.
- Turn the diffuser in such a way that the flat jet is properly aligned with the jet pistol.
- Tighten the union joint by hand.

4.9.4 Scrambler (accessory)

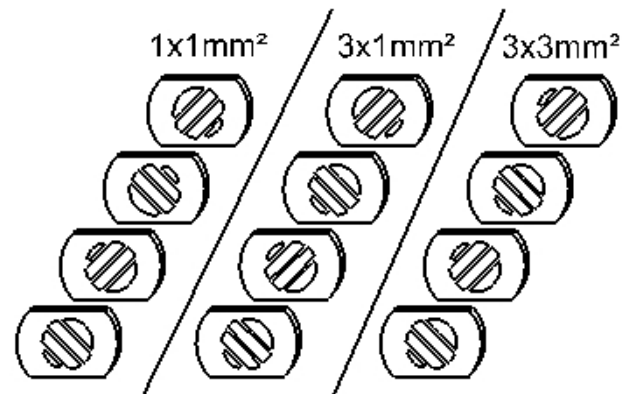
The scrambler crushes the dry ice pellets and is mounted between the jet pistol and the nozzle. The alignment of the 4 holes plates in the scrambler indicates the degree of comminution.

Select the degree of comminution:



- 1 Screw connections
- 2 Magazine
- 3 Hole plate

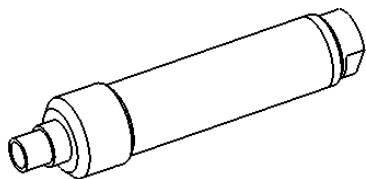
- Remove the screw connection.
- Remove the magazine with hole plates.



- Align the hole plates, as shown above, in the magazine (3 possibilities). The above specifications in the illustration refer to the size of the permeation openings.
- Insert the magazine with hole plates into the scrambler.
- Unscrew the screw connection and tighten it.

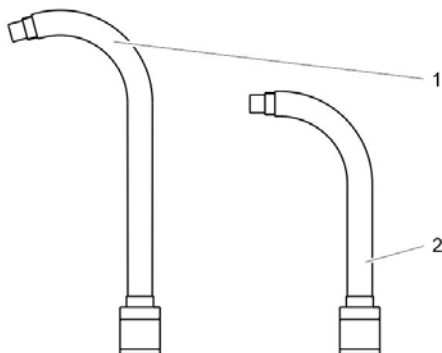
4.9.5 Nozzle extension (accessory)

An extension piece can be inserted between the jet pistol and the nozzle.



4.9.6 Angle jet pipe (accessories)

An angle jet pipe is installed between the jet gun and the nozzle.



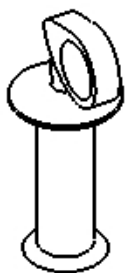
- 1 Angle jet pipe 105°
- 2 Angle jet pipe 90°

⚠ Warning

Risk of injury. When the angle jet pipe is used, a torsional moment acts on the jet pistol in addition to the repulsion power. Hold the jet pistol tightly. Start your work with low jet pressure and increase the jet pressure as necessary.

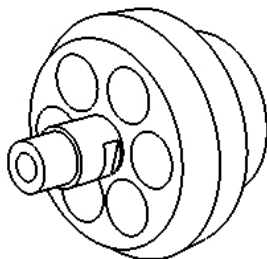
4.9.7 Handle (accessory)

The handle can be fastened on the extension piece.



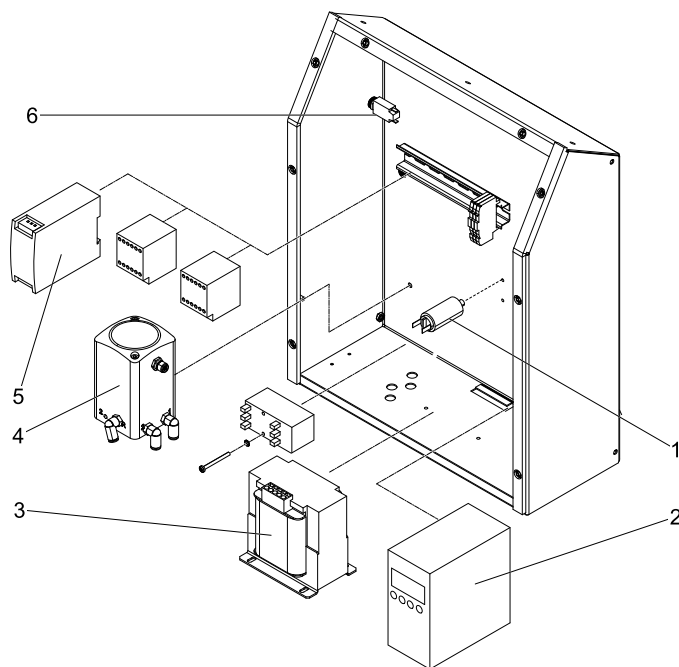
4.9.8 Working light (accessory)

(only with Advanced jet pistol)

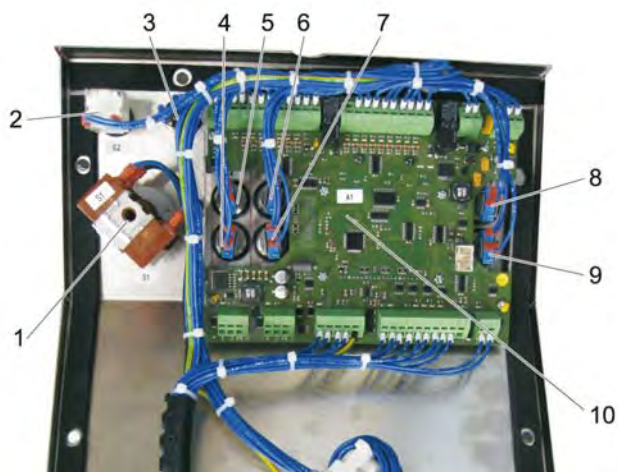


The working light is arranged between jet gun and nozzle.

4.10 Control board

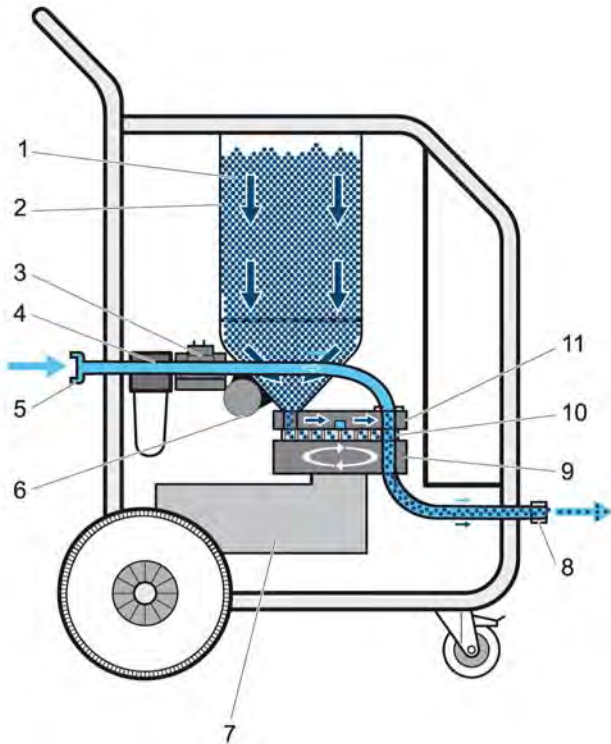


- 1 Capacitor C2
- 2 Frequency converter (U1)
- 3 Transformer (only with 120V model)
- 4 Pressure control valve (Y1)
- 5 Power supply (N1)
- 6 Fuse (F1)



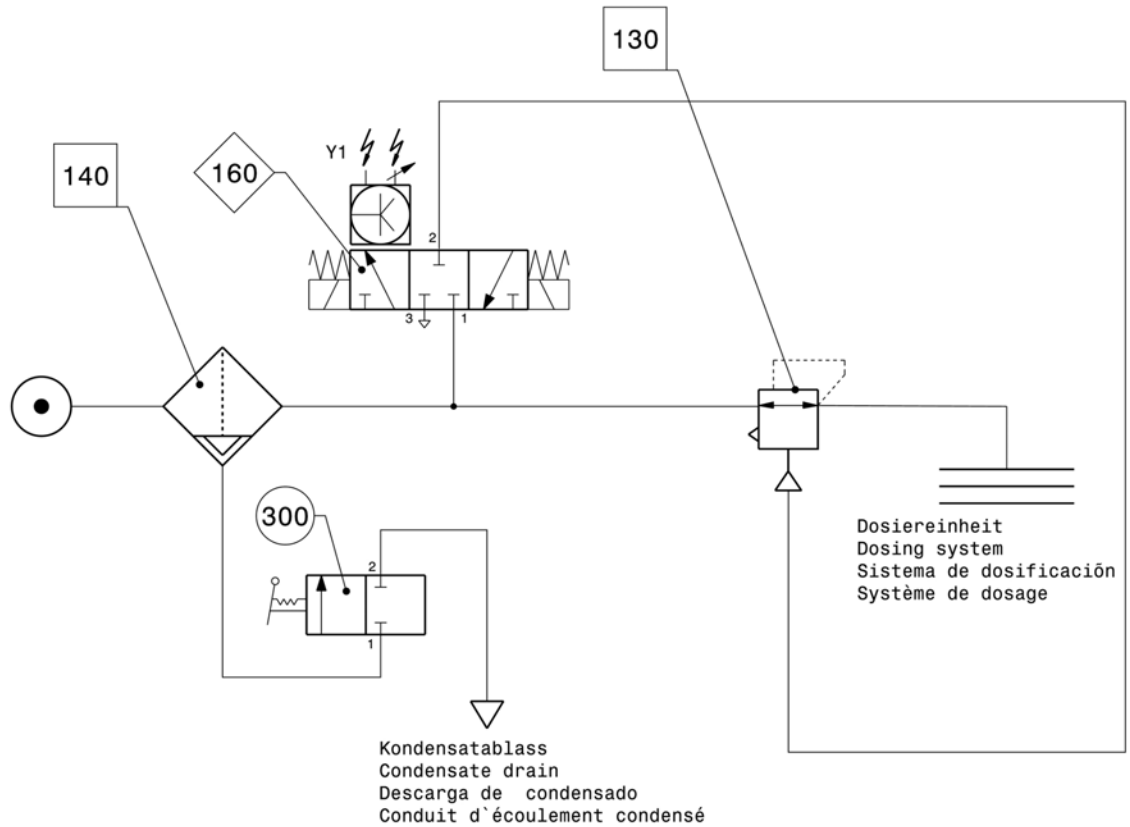
- 1 Appliance switch (S1)
- 2 Emergency-stop button (S2)
- 3 Key switch (S3)
- 4 Button "Decrease dry ice dosing" (S5)
- 5 Button "Increase dry ice dosing" (S4)
- 6 Button "Increase jet pressure" (S6)
- 7 Button "Decrease jet pressure" (S7)
- 8 Statistics button, reset counter (S8)
- 9 Button "Empty dry ice" (S9)
- 10 Controller with display (A1)


5 Functional diagram





- 1 Dry ice pellets
- 2 Dry ice container
- 3 Pressure regulation valve
- 4 Water separator
- 5 Compressed air connection
- 6 Shaker
- 7 Dosing motor
- 8 Coupling spray agent hose
- 9 Dosing flange, bottom
- 10 Dosing disk
- 11 Dosing flange, top

6 Pneumatic diagram



Pos. mit/Item with/Posición con/Pos. avec  siehe/see/véase/voir 4.812-111.0

Pos. mit/Item with/Posición con/Pos. avec  siehe/see/véase/voir 4.574-013.0

Pos. mit/Item with/Posición con/Pos. avec  siehe/see/véase/voir 2.851-386.0

130 Pressure control valve, pneumatically actuated

140 Water separator

160 Pressure regulation valve Y1

300 Pressure release valve
 Condensate drain-out

7 Troubleshooting

⚠ Danger

Risk of accident while working on the appliance. Before you start working on the unit, close the compressed air supply, open the pressure relief valve, empty the dry ice container, disconnect the unit from the power supply and from the compressed air supply.

⚠ Danger

Risk of cold burns on account of dry ice or cold parts of the machine. While working on the machine, wear appropriate safety gear for protection against cold or remove dry ice and let the machine heat up. Never put dry ice in your mouth.

7.1 Faults with display

| Display | Indicator lamp (KL) | Possible cause | Remedy |
|---------|------------------------------|---|---|
| E001 | KL control voltage glows red | Control voltage too low Input A1 X1:1+2 | Turn off the appliance, wait briefly, turn on the appliance once again. Have the socket checked. Check supply voltage. |
| E002 | KL emergency stop glows red | Emergency-stop button has been pressed. Input A1 X2:3+4 | Release emergency-stop button by turning. Check emergency-stop button. |
| E003 | KL compressed air glows red | Pressure of the compressed air supply too low Input A1 X2:3+4 | Increase the pressure. Turn off the appliance, wait briefly, turn on the appliance once again. |
| E004 | KL dosing glows red | Interference in the dosing Input A1 X6:2 | Turn off the appliance, wait briefly, turn on the appliance once again. Check frequency converter and pay attention to the error message on the frequency converter. |
| E005 | KL jet pistol glows red | Connection between the device and the jet pistol is faulty. Input A1 X7:3 | Check for correct connection of the couplings in the control line. Check control cable for damages. Check microswitch of jet pistol. |
| E006 | KL jet pistol glows red | Short in jet pistol or control cable A1 X7:3+4 simultaneously active | Replace the jet pistol or the jet hose with a control cable. |
| E007 | KL compressed air glows red | Fault in the compressed air regulator valve A1 X2:1 current too high/low | Check pressure-regulating valve. Current at pressure-regulating valve too high / too low. |
| E008 | KL jet pistol glows orange | The trigger of the jet pistol was activated during the switch-on process or the releasing of the emergency stop key. A1 X7:4 | Release the trigger of the jet pistol. Check cable connections. |

7.2 Faults without display on the console

| Fault | Possible cause | Remedy |
|---|---|---|
| No compressed air jet despite the trigger being drawn | Compressed air supply has too little pressure Indicator lamp compressed air orange, "Low pressure" is indicated on the display. | Check pressure level. |
| | Jet pressure is set too low | Set the jet pressure to a higher level. |
| | Power supply has been interrupted | Check power supply. Indicator lamp "Device on" must glow green. |
| | Emergency-stop button has been pressed. E002 is shown on the display | Release emergency-stop button by turning. Indicator lamp "Device on" must glow green. |
| | Control cable not connected properly | Check connection between control cable and the jet pistol and between the control cable and the device. |
| | Control cable is defective E006 or E008 is shown on the display | Replace spray agent hose. |
| Compressed air jet is too weak | Jet pressure is set too low | Set the jet pressure to a higher level. |
| | Compressed air supply has too little pressure or the compressor output is low. Indicator lamp compressed air orange, "Low pressure" is indicated on the display. | Check pressure and output. |
| | The filter insert in the water separator is plugged. | Replace the filter inlay in the water separator. |
| | Spray agent hose or jet pistol is blocked | Let the spray agent hose and jet pistol come to room temperature and remove the blocking. Increase working pressure and / or reduce the dry ice dosing. |
| No dry ice pellets in the compressed air jet | Dry ice dosing switched off, "Dry ice dosing on/off" button on the jet pistol illuminates red, display shows "Ice off". | Press the dry ice dosing key on the jet pistol. |
| | Dry ice container is empty | Refill the dry ice container |
| | Dry ice stuck | Empty the dry ice container and refill it with fresh dry ice pellets. |
| | Vibrator on the dry ice container is not working | Check supply voltage. Check capacitors. |
| | Drive motor of the dosing equipment is overloaded | Let the dosing thaw |
| | Compressed air is exiting into the dry ice container | Clean the pressure balance channel in the dosing equipment. |
| | Dosing disc in the dosing unit is defective | Replace the dosing disc. |

8 Technical specifications

| Electrical connection | | |
|--|---------------------|-----------|
| Voltage | V | 220...240 |
| Current type | | 1~ |
| Frequency | Hz | 50 |
| Connected load | kW | 0,6 |
| Protective class | | IPX4 |
| FI safety switch | delta I in A | 0,03 |
| Leakage current, typ. | mA | 7,5 |
| Compressed air | | |
| Nominal width of hose | Inch | 3/4 |
| Pressure supply (max.) | MPa (bar) | 1,6 (16) |
| Pressure supply (min.) | MPa (bar) | 0,2 (2) |
| Compressed air consumption | m ³ /min | 2...12 |
| Quality of compressed air | dry, oil-free | |
| Performance data | | |
| Jet pressure (max.) | MPa (bar) | 1,6 (16) |
| Diameter of dry ice pellets (max.) | mm | 3 |
| Dry ice consumption | kg/h | 30...120 |
| Dimensions | | |
| Contents of dry ice container | kg | 40 |
| Width | mm | 716 |
| Depth | mm | 850 |
| Height | mm | 1102 |
| Weight with accessories | kg | 101,5 |
| Weight, operational, with filled dry ice container | kg | 140 |
| Weight of the jet equipment (spray agent hose, spray gun, tool case) | kg | 10 |
| Recoil force of hand spray gun (max.) | N | 100 |
| Torque of jet pistol (max.), only with angled nozzle | N | 40 |
| Sound pressure level L_{pA} | dB(A) | 114 |
| Sound pressure level L_{WA} | dB(A) | 136 |
| Uncertainty K | dB(A) | 5 |
| Machine vibrations | | |
| Jet pistol | m/s ² | 1,2 |
| Hose for spraying agent | m/s ² | 1,2 |

8.1 Special tools

| | |
|--|-------------|
| Torque wrench | 6.815-090.0 |
| Claw coupling adapter to standard quick coupling | 4.422-063.0 |

8.2 Torques

| | |
|--------------------|------|
| Dosing flange, top | 8 Nm |
|--------------------|------|

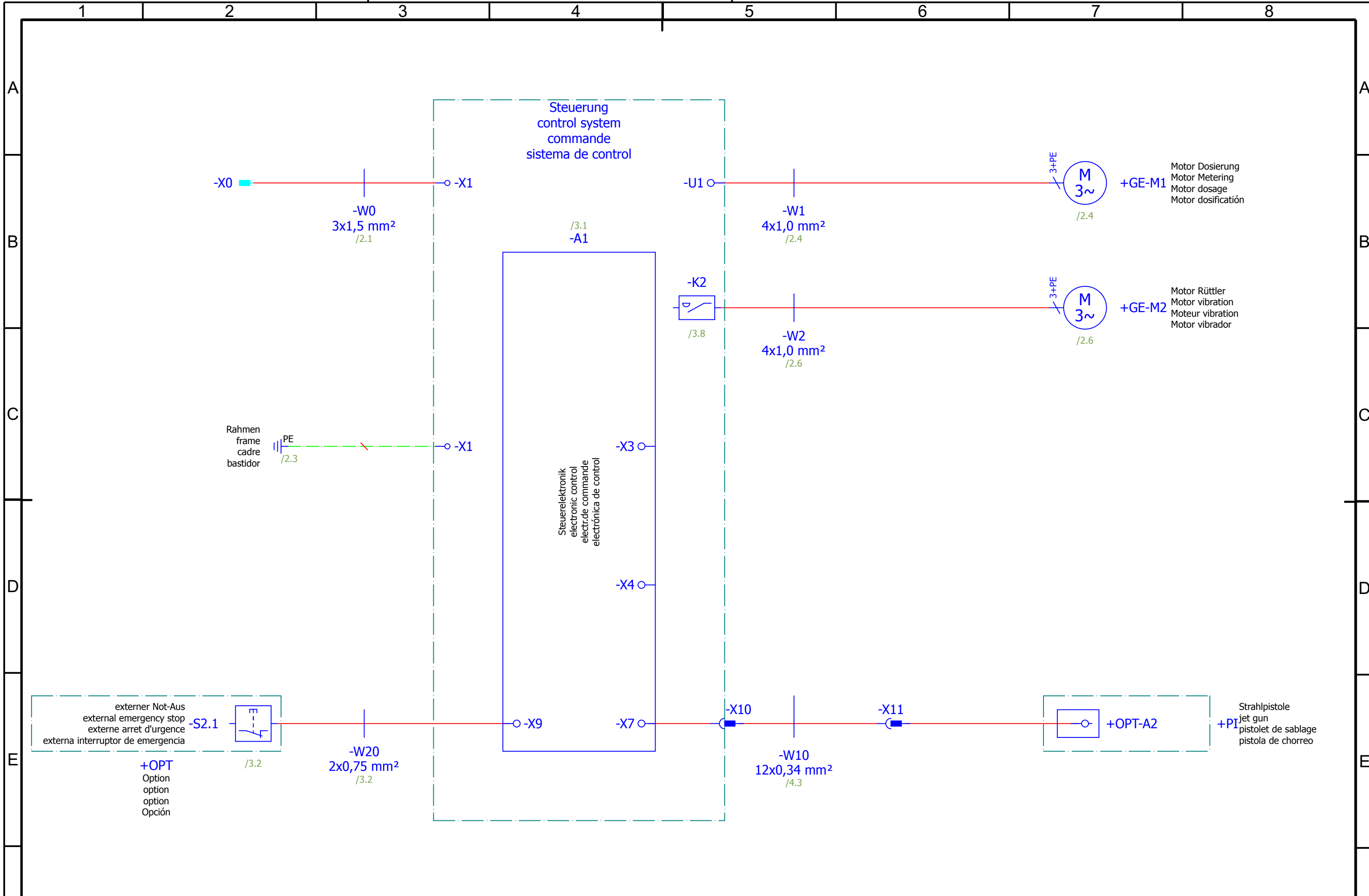
9 Technical Documentation

| Device | operating instructions | Spare parts list | Circuit diagram | Pneumatic diagram |
|-------------|------------------------|------------------|-----------------|-------------------|
| 1.574-104.0 | 5.964-738.0 | 5.964-740.0 | 0.089-502.0 | 0.089-512.0 |
| 1.574-105.0 | 5.964-738.0 | 5.964-740.0 | 0.089-528.0 | 0.089-512.0 |

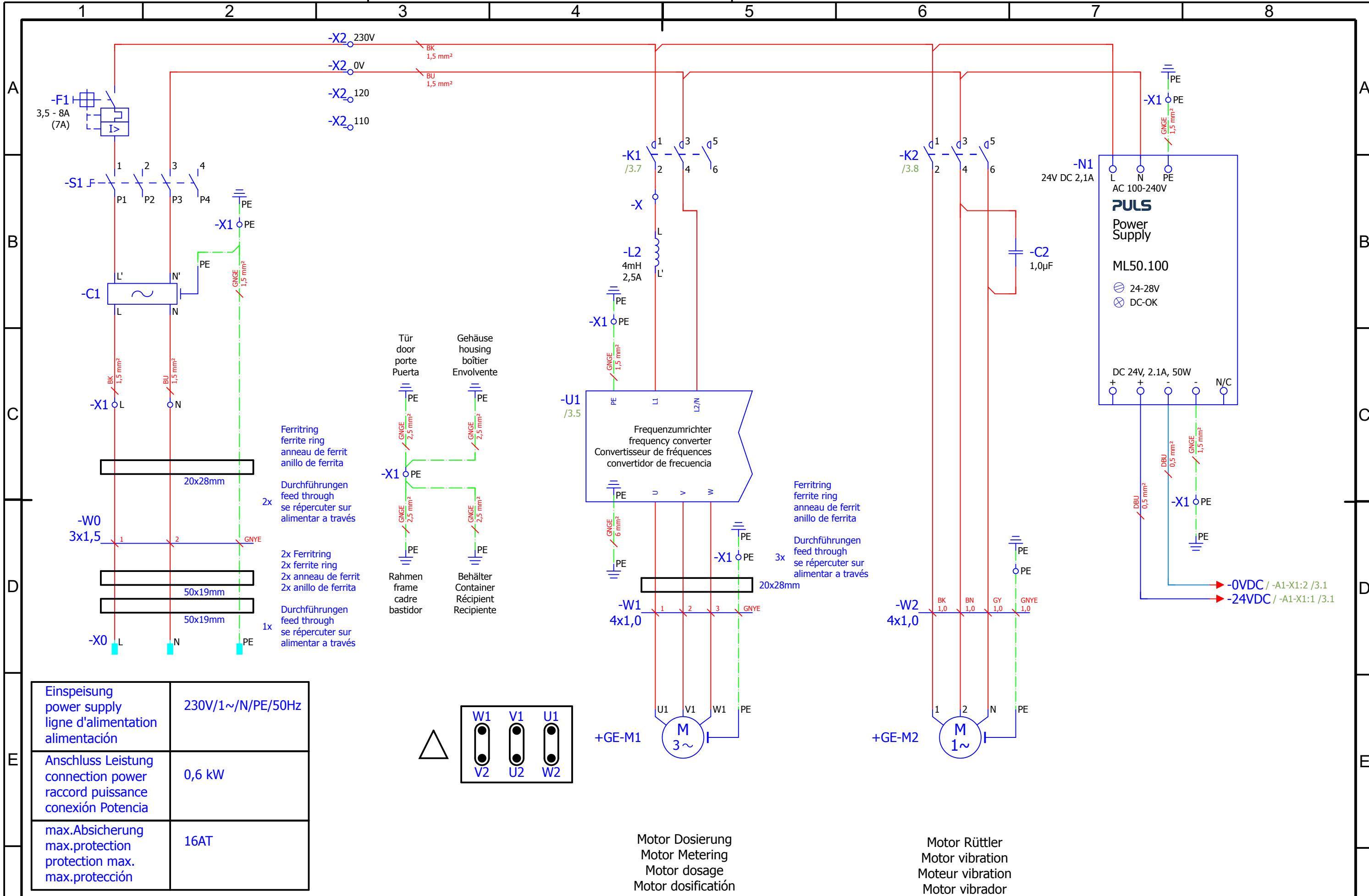
10 Circuit diagram

See next pages.

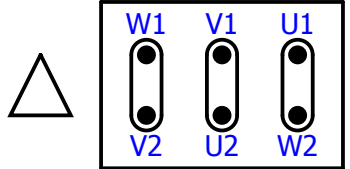
Note: Please use the circuit diagram that is valid for the actual version of the unit.



| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|---------------|------------------------|------------------------|--------------------------------|-------------------------------|----------------|---------|-----------------------|-------|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-502.0 | Benennung description | SLP IB15/120 EU Wiring diagram IB15/120 EU | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 EU | 5307459 | SLP | 00 | FR | | 1 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | | Ersatz für / replaces | | |
| =TE | +HS | 4.812-111.0 | Übersicht | | | 2012-07-24 | IL02277 | IL02277 | AW03260 | index | Anzahl / count | number | Datum / date | index | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | |



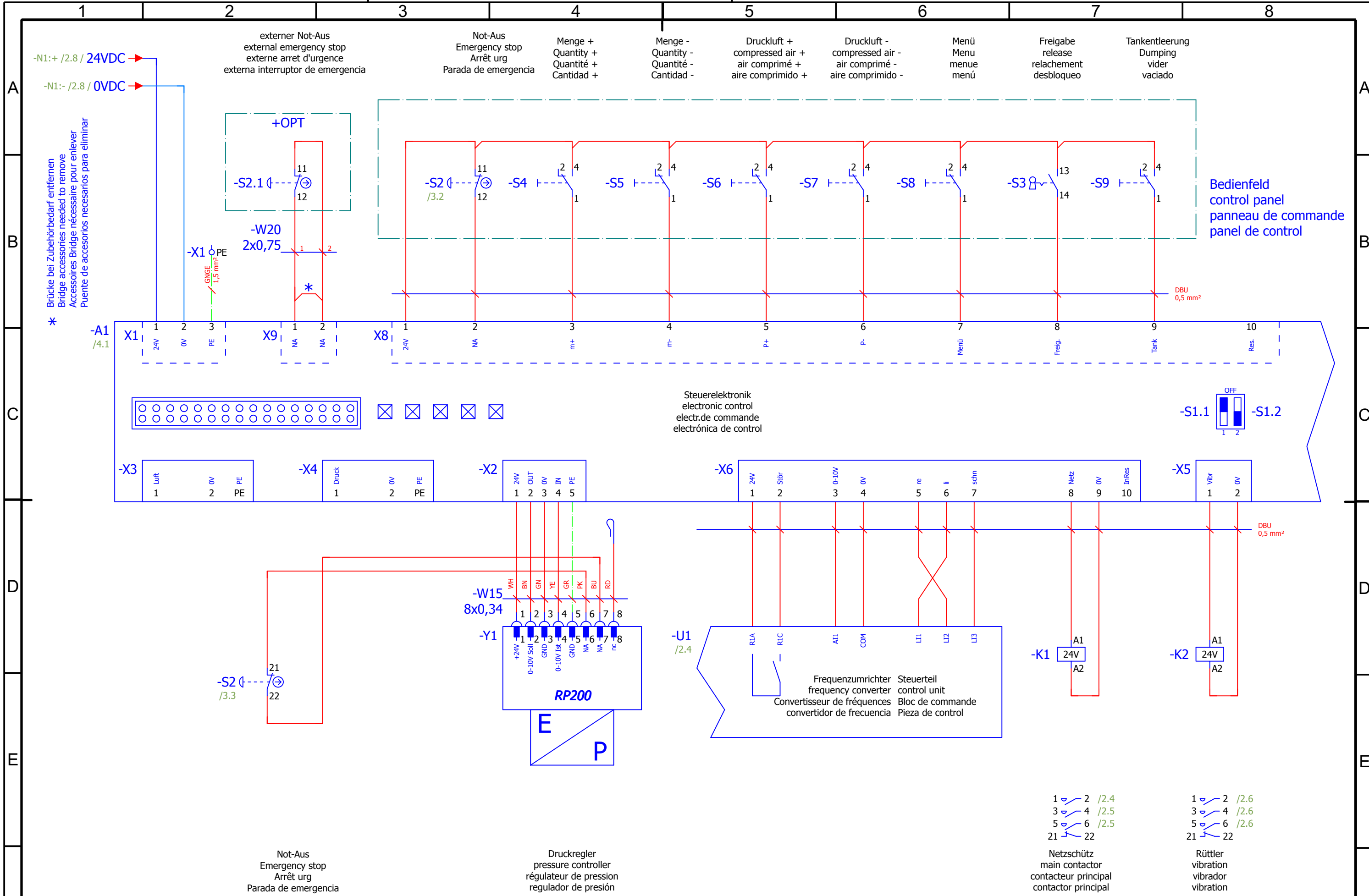
| | |
|--|-------------------|
| Einspeisung power supply ligne d'alimentation alimentación | 230V/1~/N/PE/50Hz |
| Anschluss Leistung connection power raccord puissance conexión Potencia | 0,6 kW |
| max.Absicherung max.protection protection max. max.protección | 16AT |



Motor Dosierung
Motor Metering
Motor dosage
Motor dosificación

Motor Rüttler
Motor vibration
Moteur vibration
Motor vibrador

| | | | | | | | | | | |
|-------------------------------|-------------------------------|---|---|------------------------------------|--|--|--|--|-------------------|---|
| | | Material-Nr. material no. 0.089-502.0 | Benennung description SLP IB15/120 EU Wiring diagram IB15/120 EU | document SLP IB15/120 EU | number 5307459 | type SLP | version 00 | status FR | sheet 2 | of 10 |
| Anlage plant =TE | Ort location +HS | Auftrag order 4.812-111.0 | Blattbenennung / sheet description Hauptstromkreis | Datum date 2012-07-24 | Gezeichnet drawn by IL02277 | Gepreüft checked by IL02277 | Normgeprüft std. checked by AW03260 | Änderung / Engineering change index Anzahl / count number | | Ersatz für / replaces Datum / date index |
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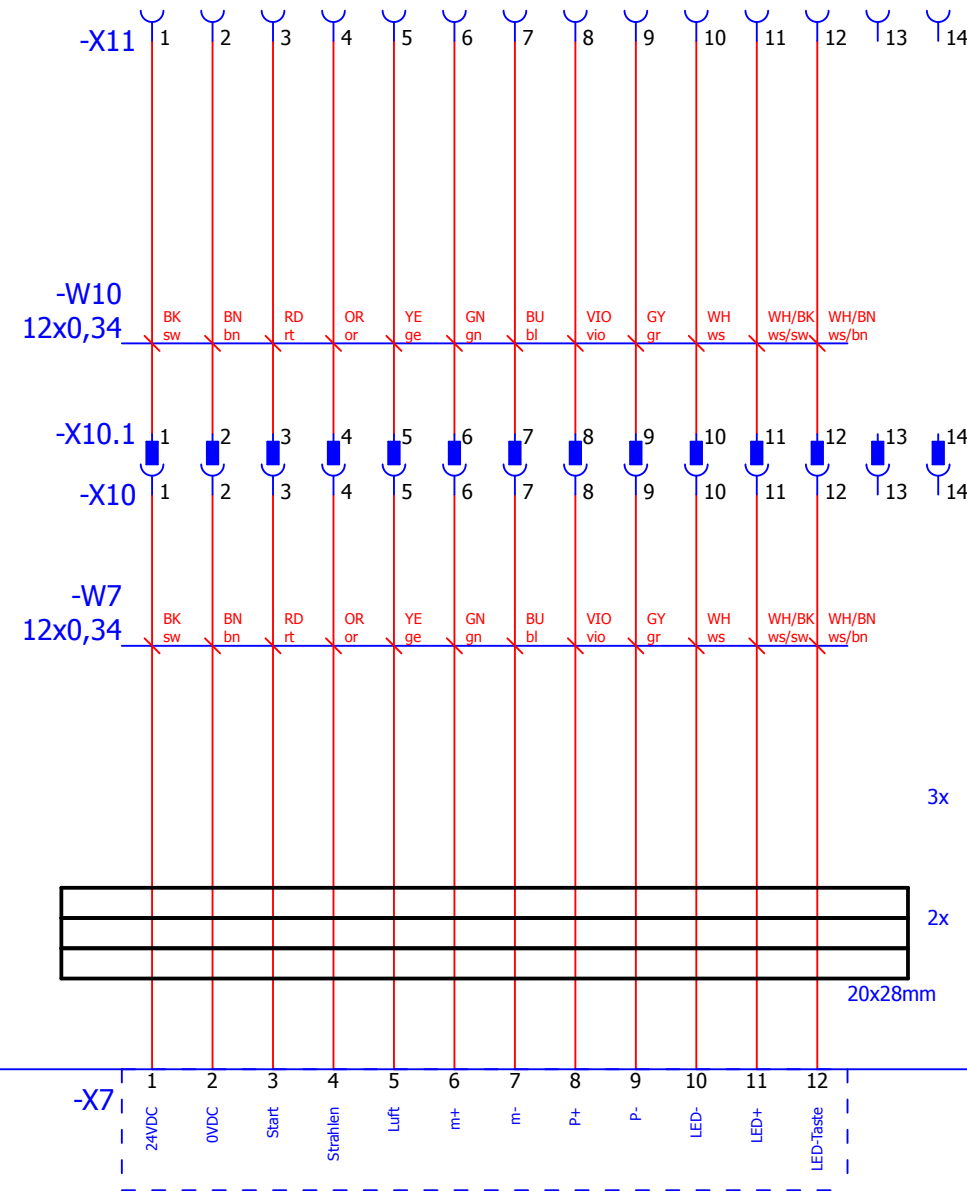


- 1 2 /2.4
 - 3 4 /2.5
 - 5 6 /2.5
 - 21 22
 - 1 2 /2.6
 - 3 4 /2.6
 - 5 6 /2.6
 - 21 22
- Netzschütz
main contactor
contacteur principal
contactor principal
- Rüttler
vibration
vibrador
vibration

| | | | | | | | | | | |
|-----------------|-----------------|---|--|------------------------|------------------------|------------------------|--------------------------------|-------------------------------|----------------|-----------------------|
| KÄRCHER | | Material-Nr. material no. 0.089-502.0 | Benennung description SLP IB15/120 EU Wiring diagram IB15/120 EU | document | number | type | version | status | sheet | of |
| | | | | SLP IB15/120 EU | 5307459 | SLP | 00 | FR | 3 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | Ersatz für / replaces |
| =TE | +HS | 4.812-111.0 | Anschluss Elektronik | 2012-07-24 | IL02277 | IL02277 | AW03260 | index | Anzahl / count | number |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 2040759 | | | A3 |

Anschluß Strahlpistole
 Connection jet gun
 Raccord pistolet de sablage
 Toma pistola de chorreo

siehe folgende Seiten
 See the following pages
 Voir les pages suivantes
 Veá las siguientes páginas



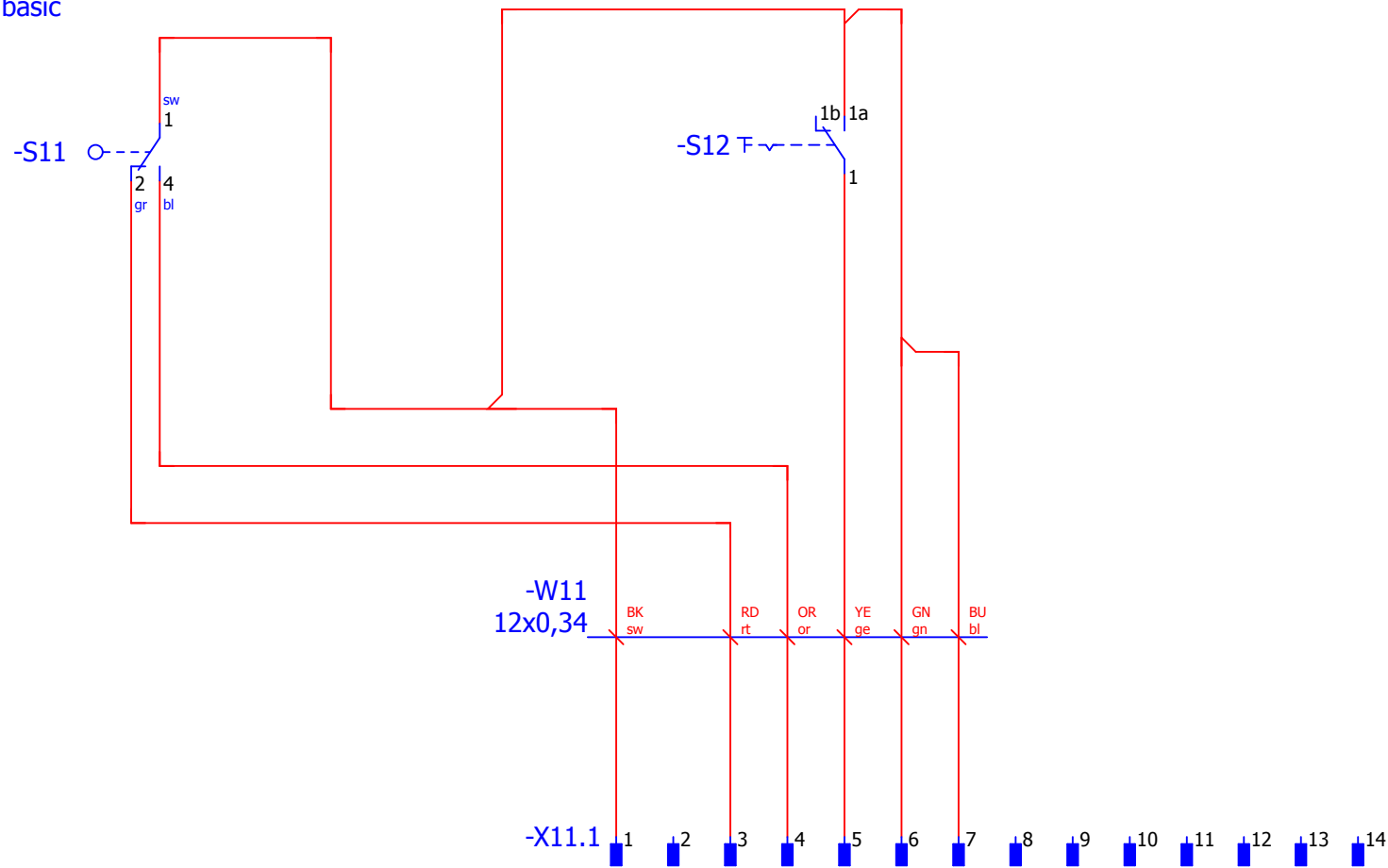
-A1
/3.1

Steuerelektronik
 electronic control
 electr.de commande
 electrónica de control

| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|---------------|------------------------|------------------------|--------------------------------|-------------------------------|----------------|-----------------------|--------------|-------|----|
| KÄRCHER® | | Material-Nr. material no. | 0.089-502.0 | Benennung description | SLP IB15/120 EU Wiring diagram IB15/120 EU | | | | document | number | type | version | status | sheet | of |
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| =TE | +HS | 4.812-111.0 | Anschluss Strahlpistole | | | 2012-07-24 | IL02277 | IL02277 | AW03260 | index | Anzahl / count | number | Datum / date | index | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | |

Anschluss Pistole basic
 Connection pistol basic
 raccor pistolet de sablage basic
 conexión pistola basic

Luft
 air
 air
 aire



| | | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|-----------------|------------------------|-----------------------|--------------------------------|-------------------------------|----------------|---------|-----------------------|-------|----|---|
| F | | Material-Nr. material no. | 0.089-502.0 | Benennung description | SLP IB15/120 EU Wiring diagram IB15/120 EU | document | | | | number | type | version | status | sheet | of | F |
| | | | | | | SLP IB15/120 EU | | | | 5307459 | SLP | 00 | FR | 5 | 10 | |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | | Datum date | Gezeichnet drawn by | Gepüeft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | | Ersatz für / replaces | | | |
| =TE | +HS | 4.812-111.0 | Pistole basic | | | 2012-07-24 | IL02277 | IL02277 | AW03260 | index | Anzahl / count | number | Datum / date | index | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | | |

Anschluss Pistole advanced
 connection pistol advanced
 raccord pistolet de sablage advanced
 conexión pistola advanced

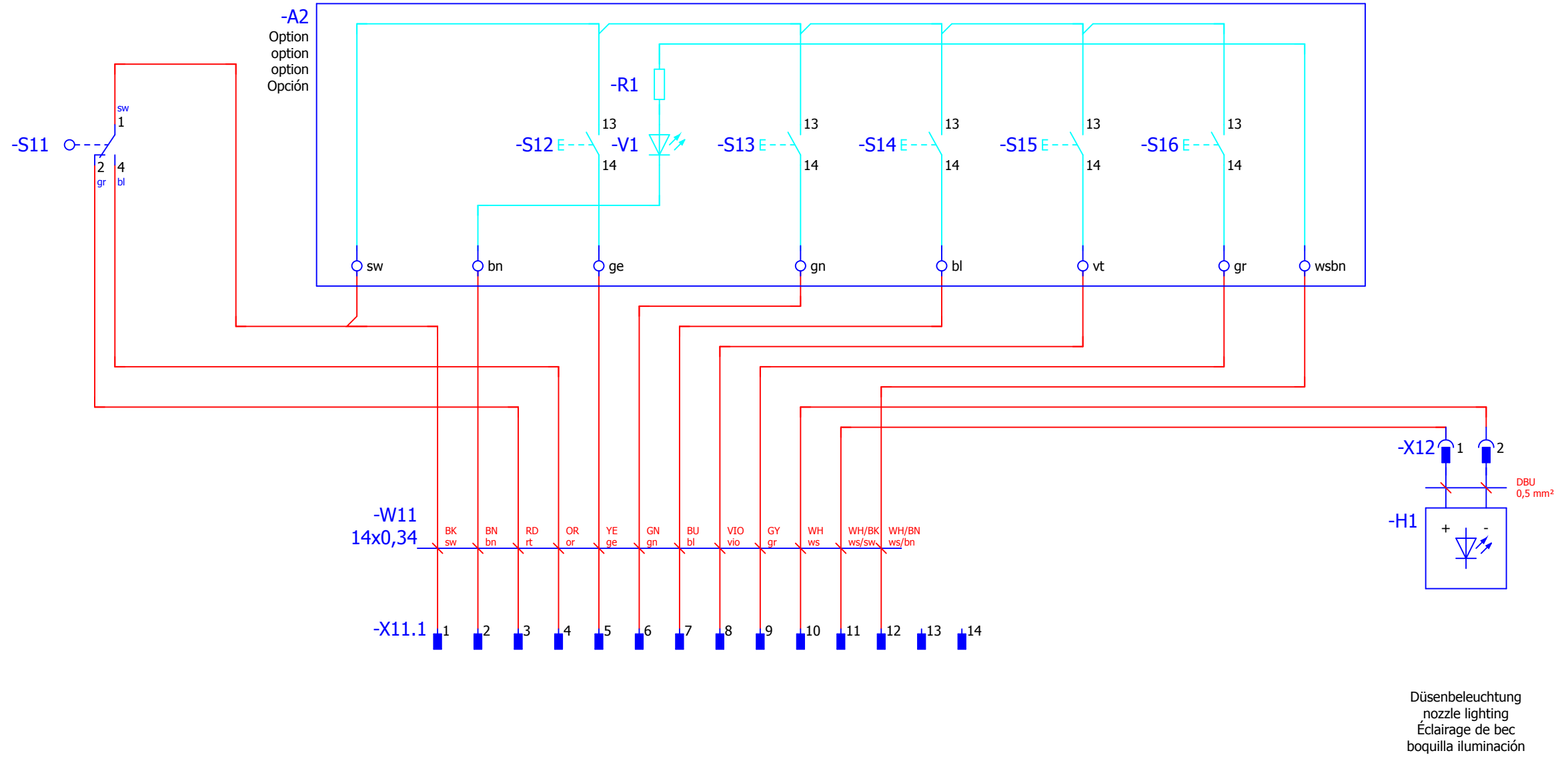
Luft
 air
 air
 aire

Menge +
 Quantity +
 Quantité +
 Cantidad +

Menge -
 Quantity -
 Quantité -
 Cantidad -

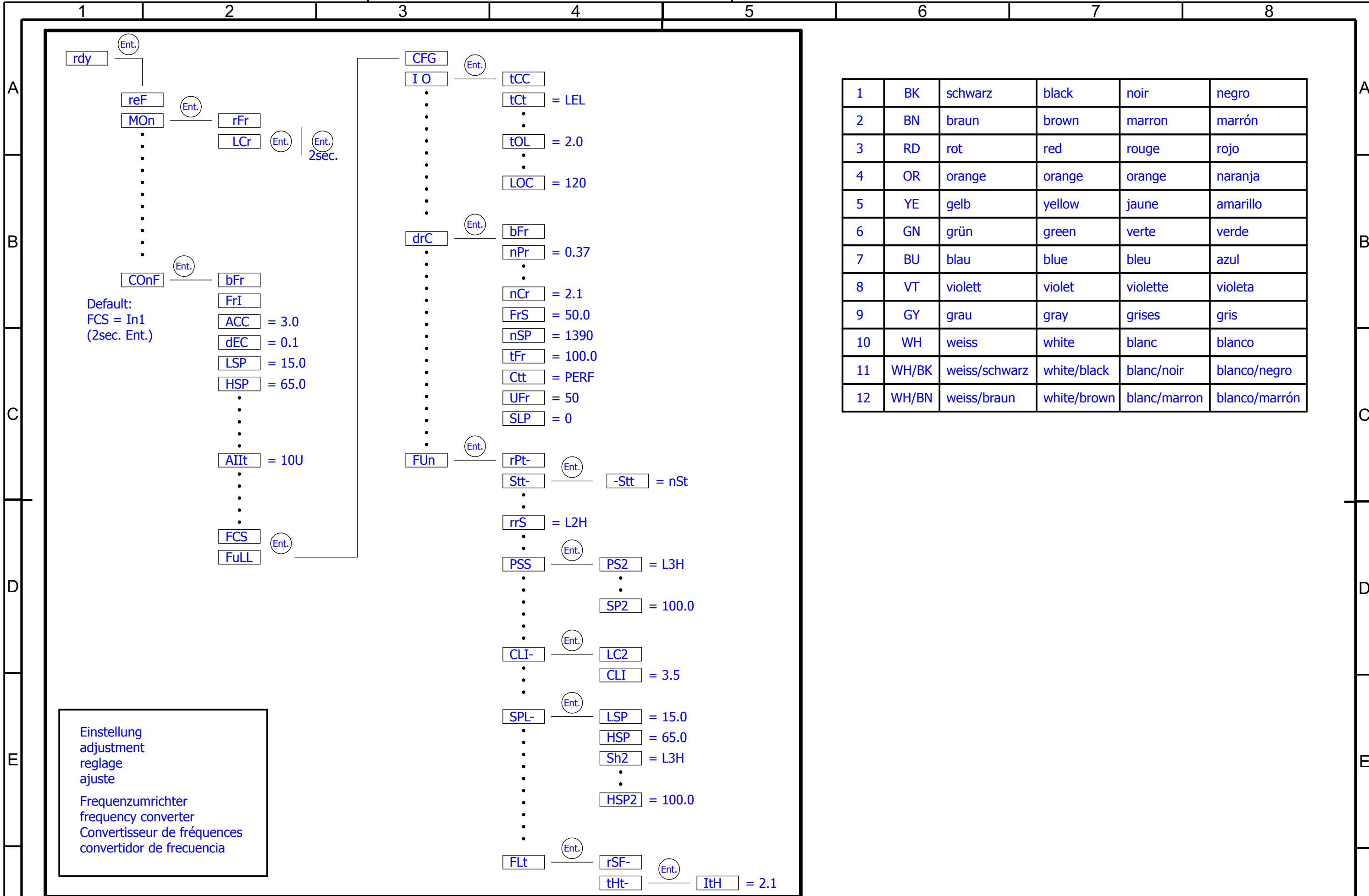
Druckluft +
 compressed air +
 air comprimé +
 aire comprimido +

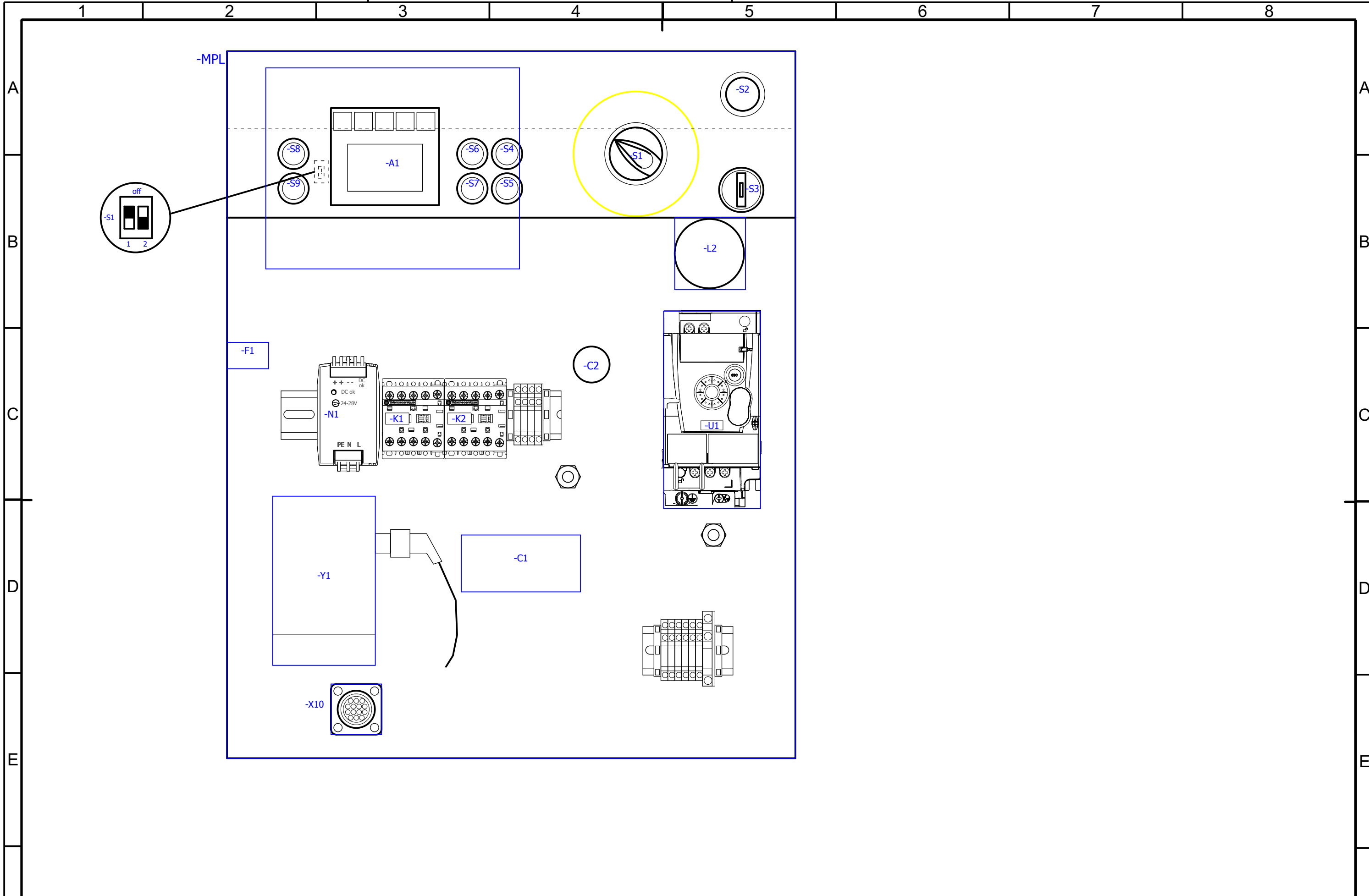
Druckluft -
 compressed air -
 air comprimé -
 aire comprimido -



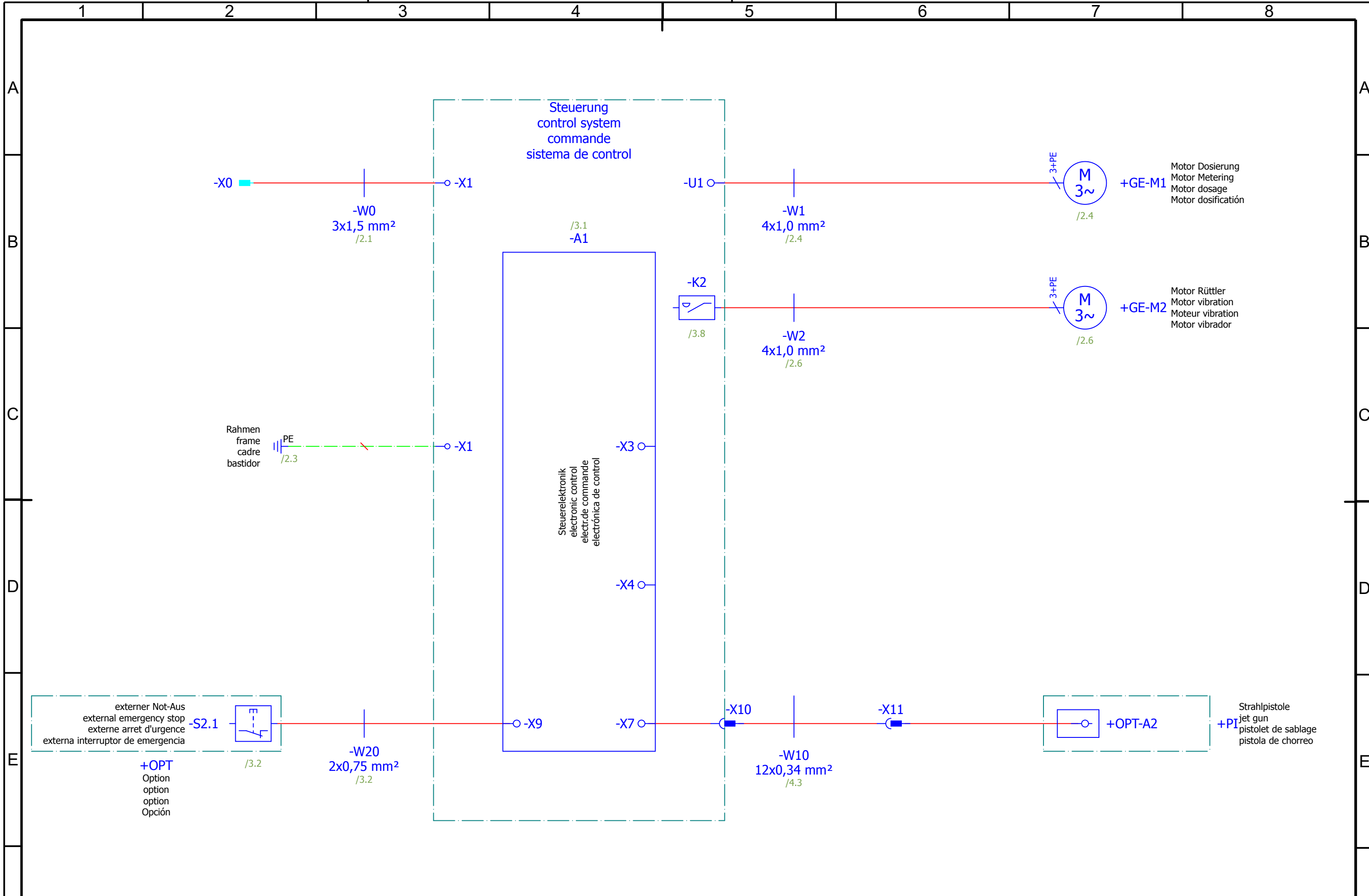
Düsenbeleuchtung
 nozzle lighting
 Éclairage de bec
 boquilla iluminación

| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|--|--------------------------|---|------------------------|------------------------|--------------------------------|-------------------------------|----------------|--------|-----------------------|--------|-------|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-502.0 | Benennung description | SLP IB15/120 EU Wiring diagram IB15/120 EU | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | | SLP IB15/120 EU | 5307459 | SLP | 00 | FR | 6 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description Pistole advanced | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | | Ersatz für / replaces | | | |
| =TE | +HS | 4.812-111.0 | | | 2012-07-24 | IL02277 | IL02277 | AW03260 | index | Anzahl / count | number | Datum / date index | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | |

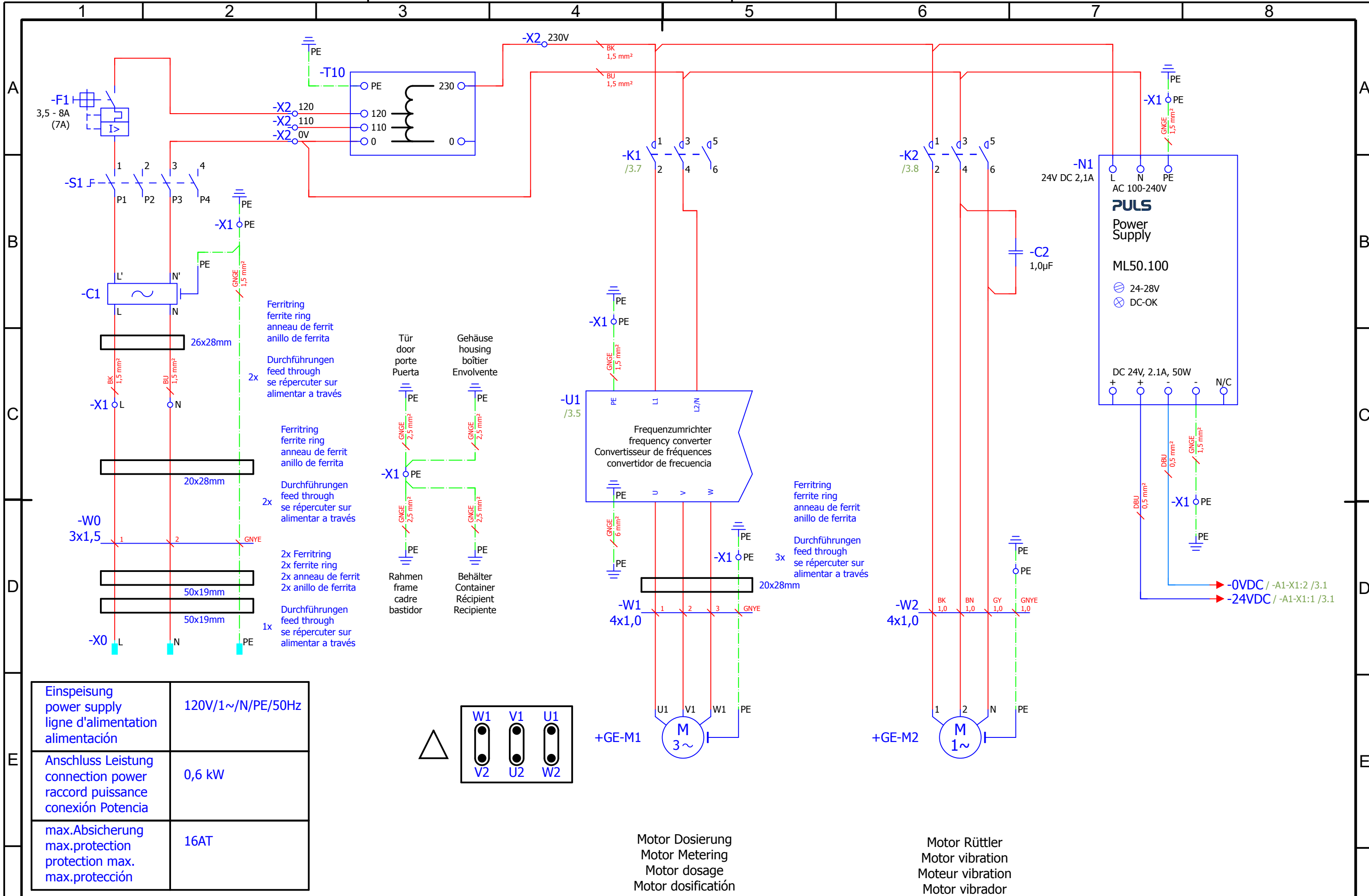




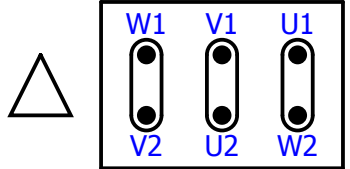
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|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|---------------|------------------------|------------------------|--------------------------------|------|-------------------------------|---------|-----------------------|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-502.0 | Benennung description | SLP IB15/120 EU Wiring diagram IB15/120 EU | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 EU | 5307459 | SLP | 00 | FR | 8 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | | Änderung / Engineering change | | Ersatz für / replaces | |
| =TE | +HS | 4.812-111.0 | Schaltschrankaufbau | | | 2012-07-24 | IL02277 | IL02277 | AW03260 | 0 | 0 | 2040759 | Datum / date index | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | |



| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|---------------|------------------------|------------------------|--------------------------------|--------|-------------------------------|----------------|-----------------------|--------------|----|
| KÄRCHER® | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | | 1 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | | Änderung / Engineering change | | Ersatz für / replaces | | |
| =TE | +HS | 4.812-170.0 | Übersicht | | | 2012-09-11 | IL02277 | IL02277 | ----- | | index | Anzahl / count | number | Datum / date | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | |



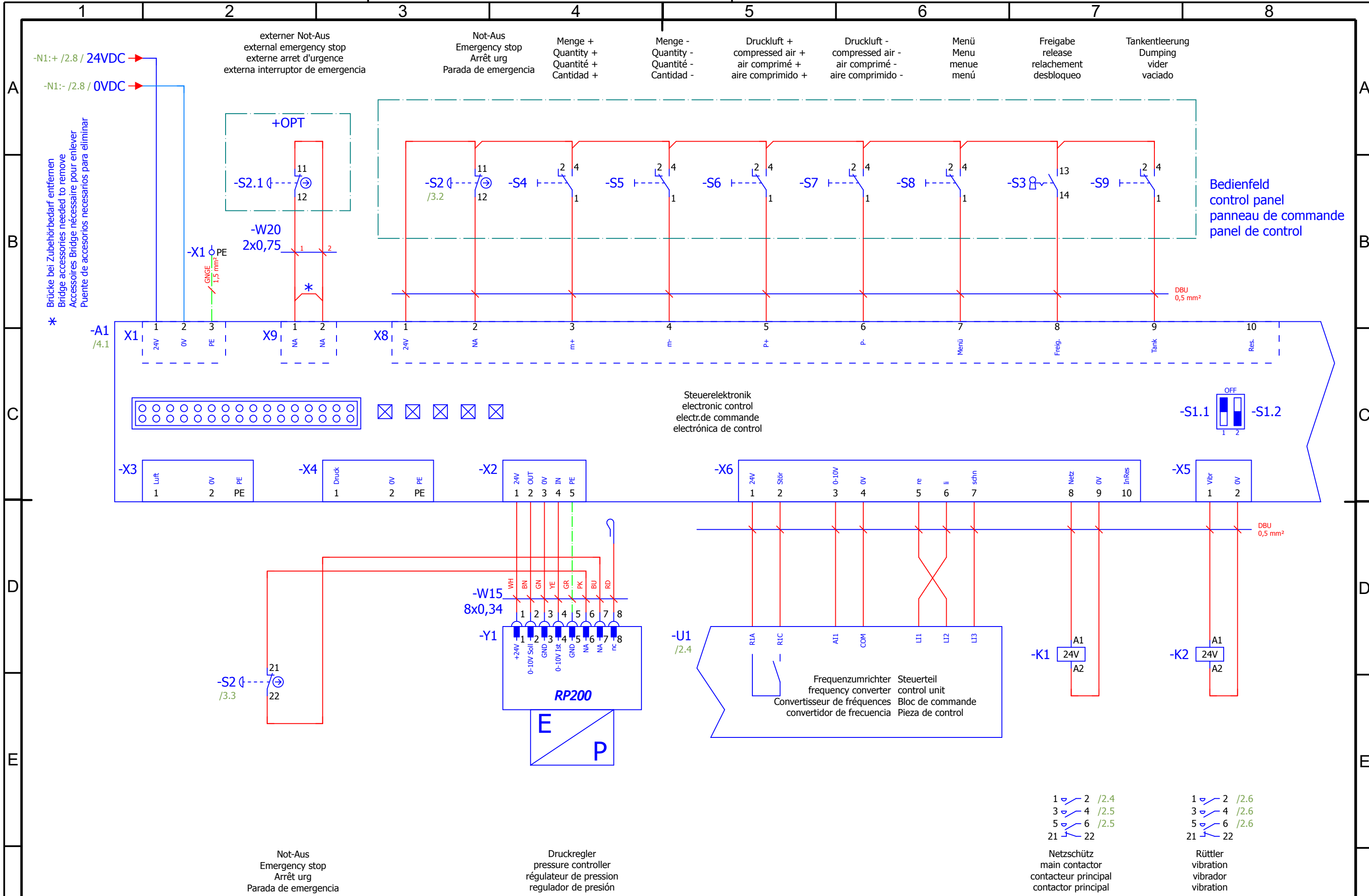
| | |
|--|-------------------|
| Einspeisung power supply ligne d'alimentation alimentación | 120V/1~/N/PE/50Hz |
| Anschluss Leistung connection power raccord puissance conexión Potencia | 0,6 kW |
| max.Absicherung max.protection protection max. max.protección | 16AT |



Motor Dosierung
Motor Metering
Motor dosage
Motor dosificación

Motor Rüttler
Motor vibration
Moteur vibration
Motor vibrador

| | | | | | | | | | | | |
|-----------------------------------|-----------------|---|---|-----------------|------------------------|------------------------|--------------------------------|-------------------------------|----------------|-----------------------|--------------|
| KÄRCHER | | Material-Nr. material no. 0.089-528.0 | Benennung description SLP IB15/120 GB | document | | number | type | version | status | sheet | of |
| Wiring diagram IB15/120 GB | | | | SLP IB15/120 GB | | 5331783 | SLP | 00 | PN | 2 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | Ersatz für / replaces | |
| =TE | +HS | 4.812-170.0 | Hauptstromkreis | 2012-09-11 | IL02277 | IL02277 | ----- | index | Anzahl / count | number | Datum / date |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | |

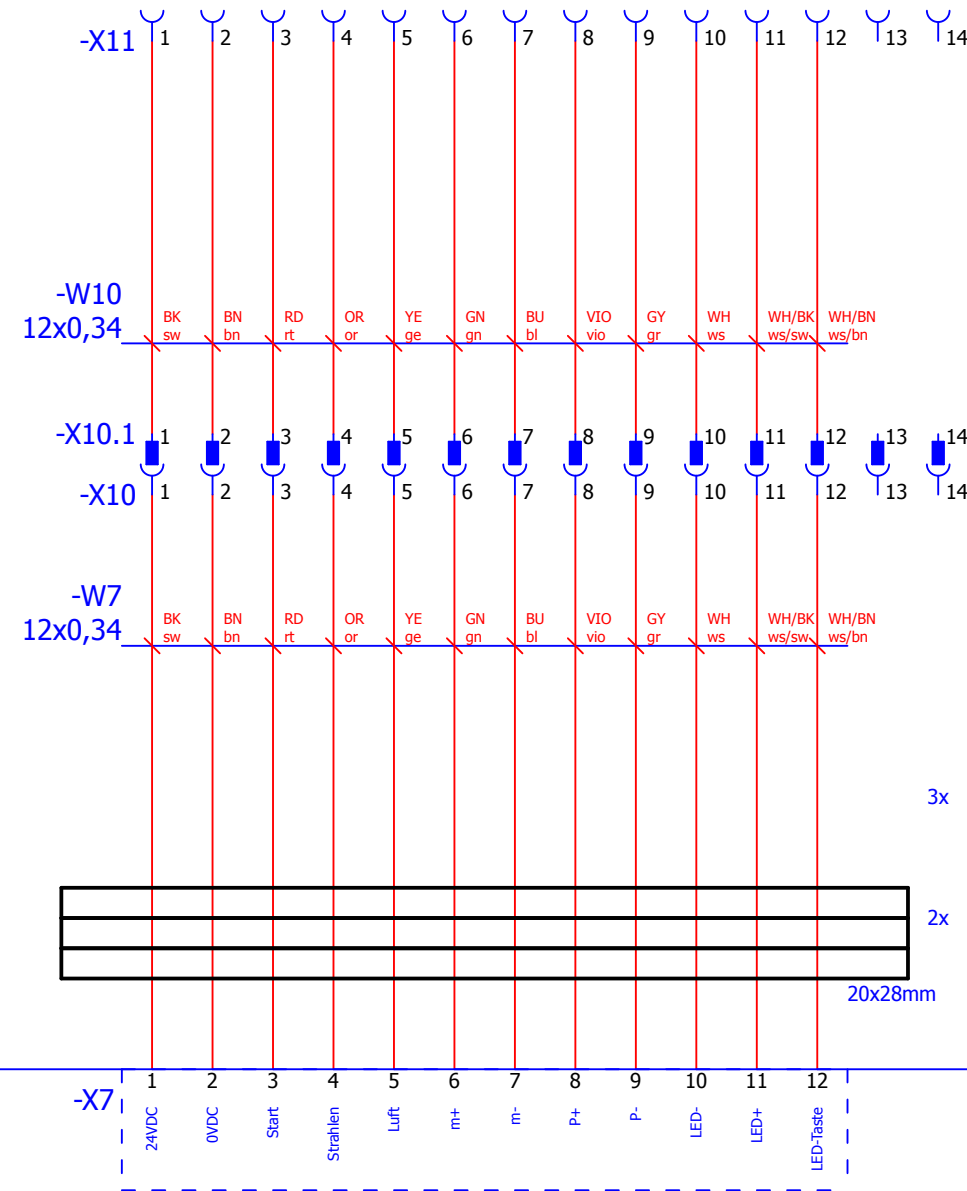


- 1 2 /2.4
 - 3 4 /2.5
 - 5 6 /2.5
 - 21 22
 - 1 2 /2.6
 - 3 4 /2.6
 - 5 6 /2.6
 - 21 22
- Netzschütz
main contactor
contacteur principal
contactor principal
- Rüttler
vibration
vibrador
vibration

| | | | | | | | | | | |
|-----------------|-----------------|---|--|------------------------|------------------------|------------------------|--------------------------------|--|----------|---|
| KÄRCHER | | Material-Nr. material no. 0.089-528.0 | Benennung description SLP IB15/120 GB Wiring diagram IB15/120 GB | document | number | type | version | status | sheet | of |
| | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | 3 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description Anschluss Elektronik | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change index Anzahl / count number | | Ersatz für / replaces Datum / date index |
| =TE | +HS | 4.812-170.0 | | 2012-09-11 | IL02277 | IL02277 | ----- | 0 | 0 | 2042004 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | |

Anschluß Strahlpistole
 Connection jet gun
 Raccord pistolet de sablage
 Toma pistola de chorreo

siehe folgende Seiten
 See the following pages
 Voir les pages suivantes
 Veá las siguientes páginas



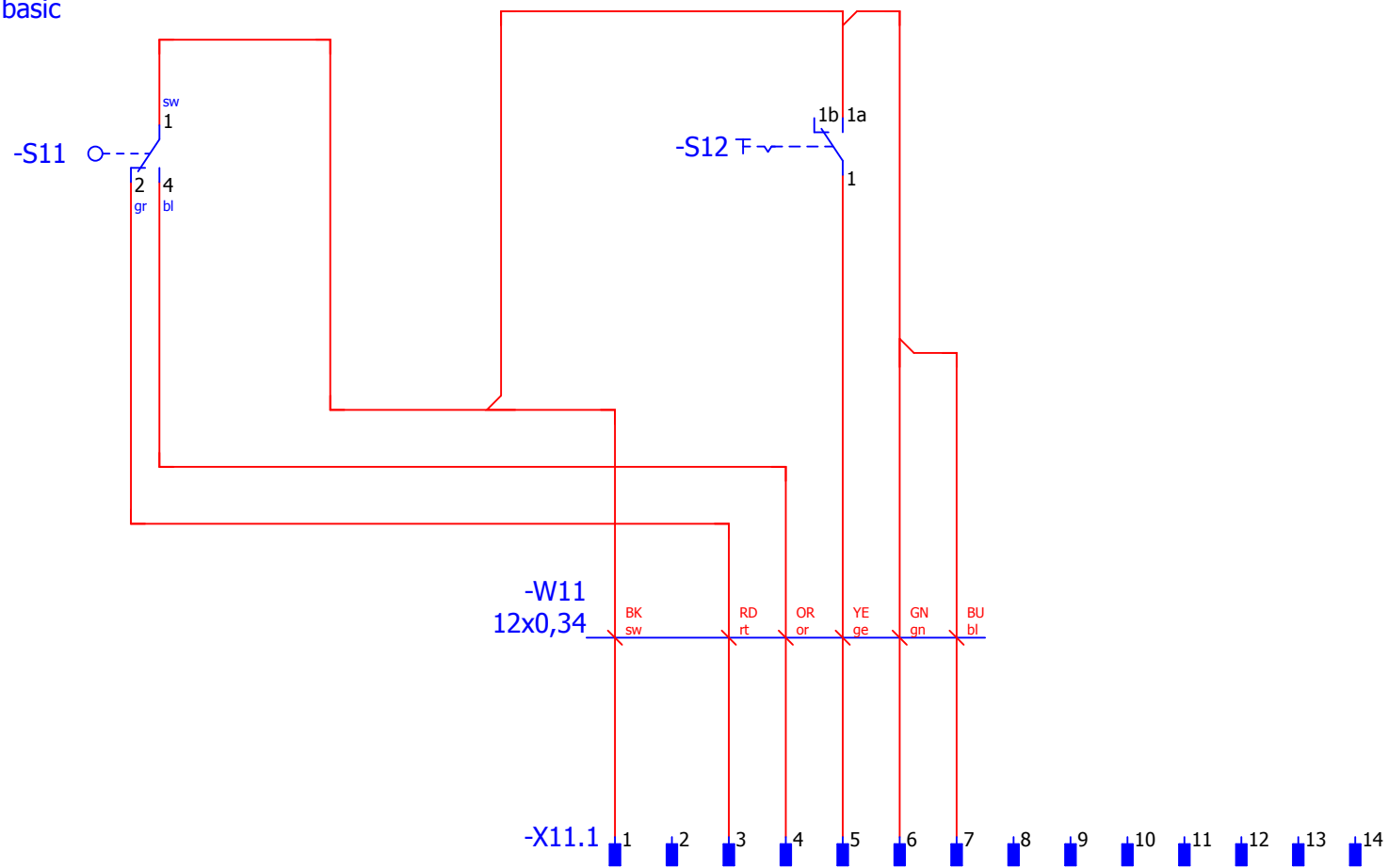
-A1
/3.1

Steuerelektronik
 electronic control
 electr.de commande
 electrónica de control

| | | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|--------------------|------------------------------------|---|---|---|-----------------|------------------------|------------------------|--------------------------------|---------|-------------------------------|----------------|-----------------------|--------------|
| KÄRCHER | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | | document | number | type | version | status | sheet | of | |
| | | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | | 4 | 10 | |
| Anlage plant | Ort location | Auftrag order | | Blattbenennung / sheet description | | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | | Änderung / Engineering change | | Ersatz für / replaces | |
| =TE | +HS | 4.812-170.0 | | Anschluss Strahlpistole | | | | 2012-09-11 | IL02277 | IL02277 | ----- | | index | Anzahl / count | number | Datum / date |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | A3 | | |

Anschluss Pistole basic
 Connection pistol basic
 raccor pistolet de sablage basic
 conexión pistola basic

Luft
 air
 air
 aire



+PI_bas

| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|------------------------|-----------------------|--------------------------------|-------------------------------|----------------|--------|-----------------------|--------|-------|----|
| KÄRCHER® | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | | 5 | 10 |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | Datum date | Gezeichnet drawn by | Gepüeft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | | Ersatz für / replaces | | | |
| =TE | +HS | 4.812-170.0 | Pistole basic | | 2012-09-11 | IL02277 | IL02277 | ----- | index | Anzahl / count | number | Datum / date | index | | |
| | | | | | | | | 0 | 0 | 2042004 | | | | | |

Anschluss Pistole advanced
 connection pistol advanced
 raccord pistolet de sablage advanced
 conexión pistola advanced

Luft
 air
 air
 aire

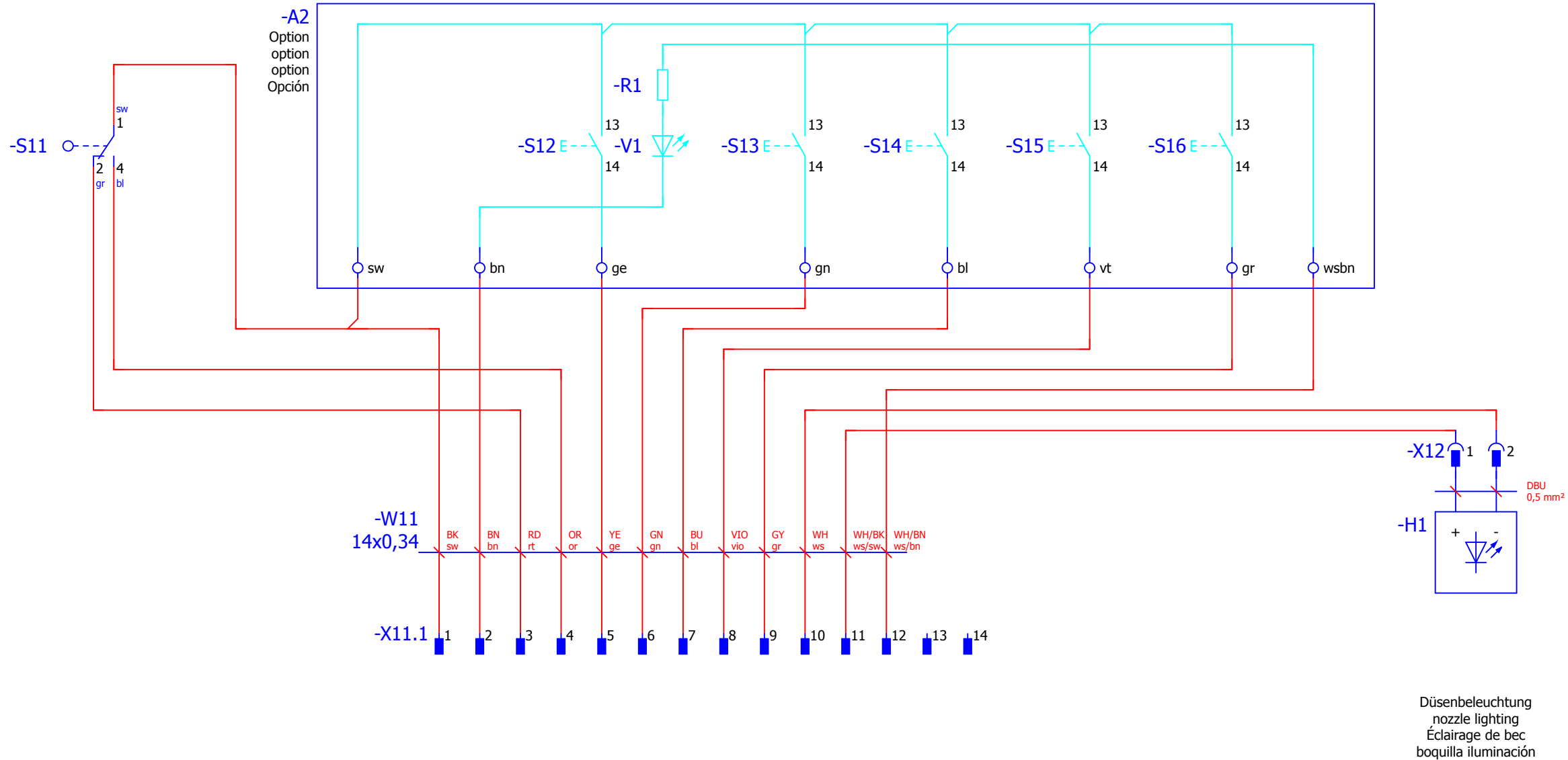
Menge +
 Quantity +
 Quantité +
 Cantidad +

Menge -
 Quantity -
 Quantité -
 Cantidad -

Druckluft +
 compressed air +
 air comprimé +
 aire comprimido +

Druckluft -
 compressed air -
 air comprimé -
 aire comprimido -

-A2
 Option
 option
 option
 Opción



Düsenbeleuchtung
 nozzle lighting
 Éclairage de bec
 boquilla iluminación

+PI_adv

| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|-------------|--|---|--|--|-----------------|------------------------|------------------------|--------------------------------|--|--------|---|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | | 6 | 10 |
| Anlage plant | Ort location | Auftrag order | | Blattbenennung / sheet description Pistole advanced | | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change index Anzahl / count number | | Ersatz für / replaces Datum / date index | |
| =TE | +HS | 4.812-170.0 | | | | | | 2012-09-11 | IL02277 | IL02277 | ----- | 0 | 0 | 2042004 | |

1

2

3

4

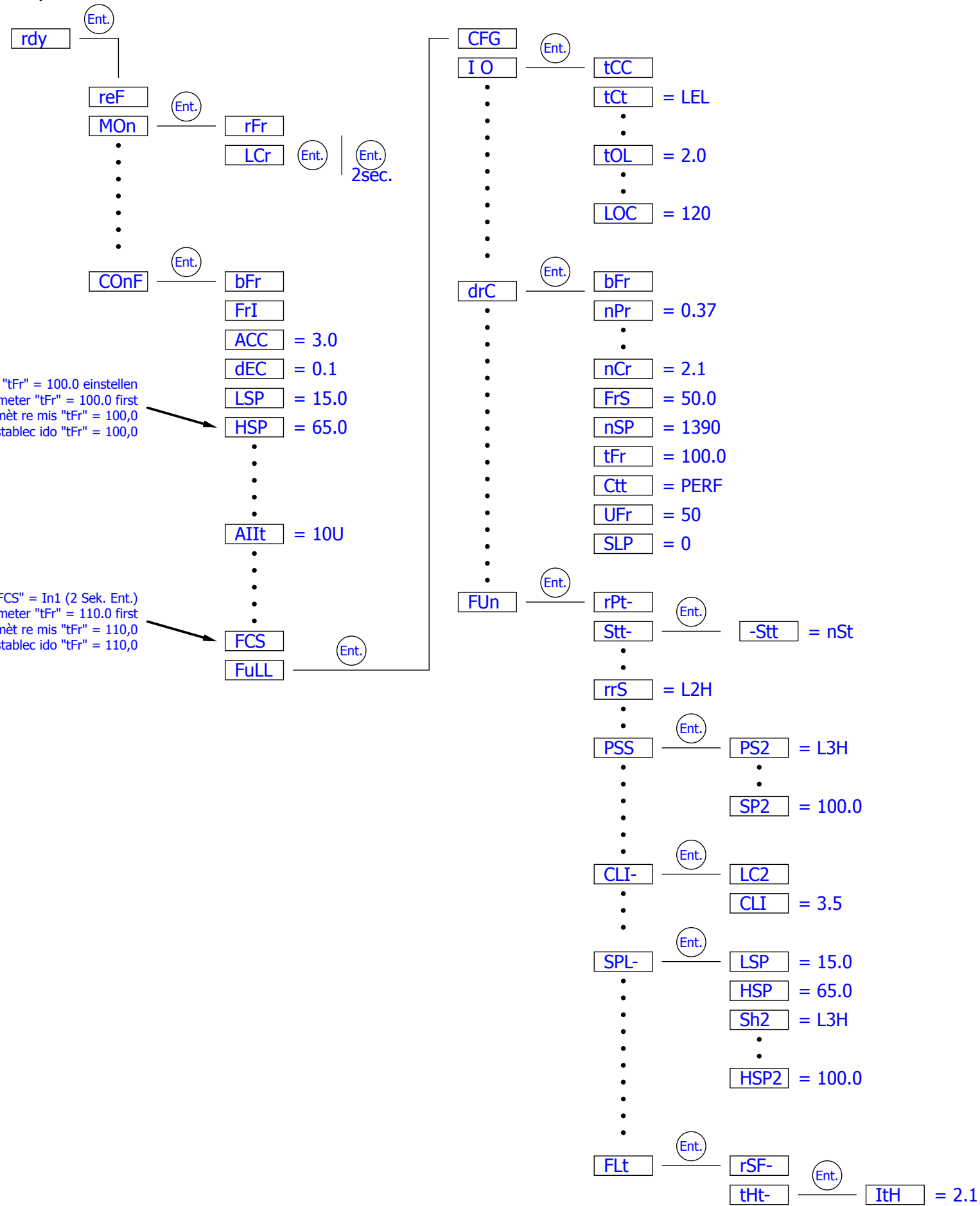
5

6

7

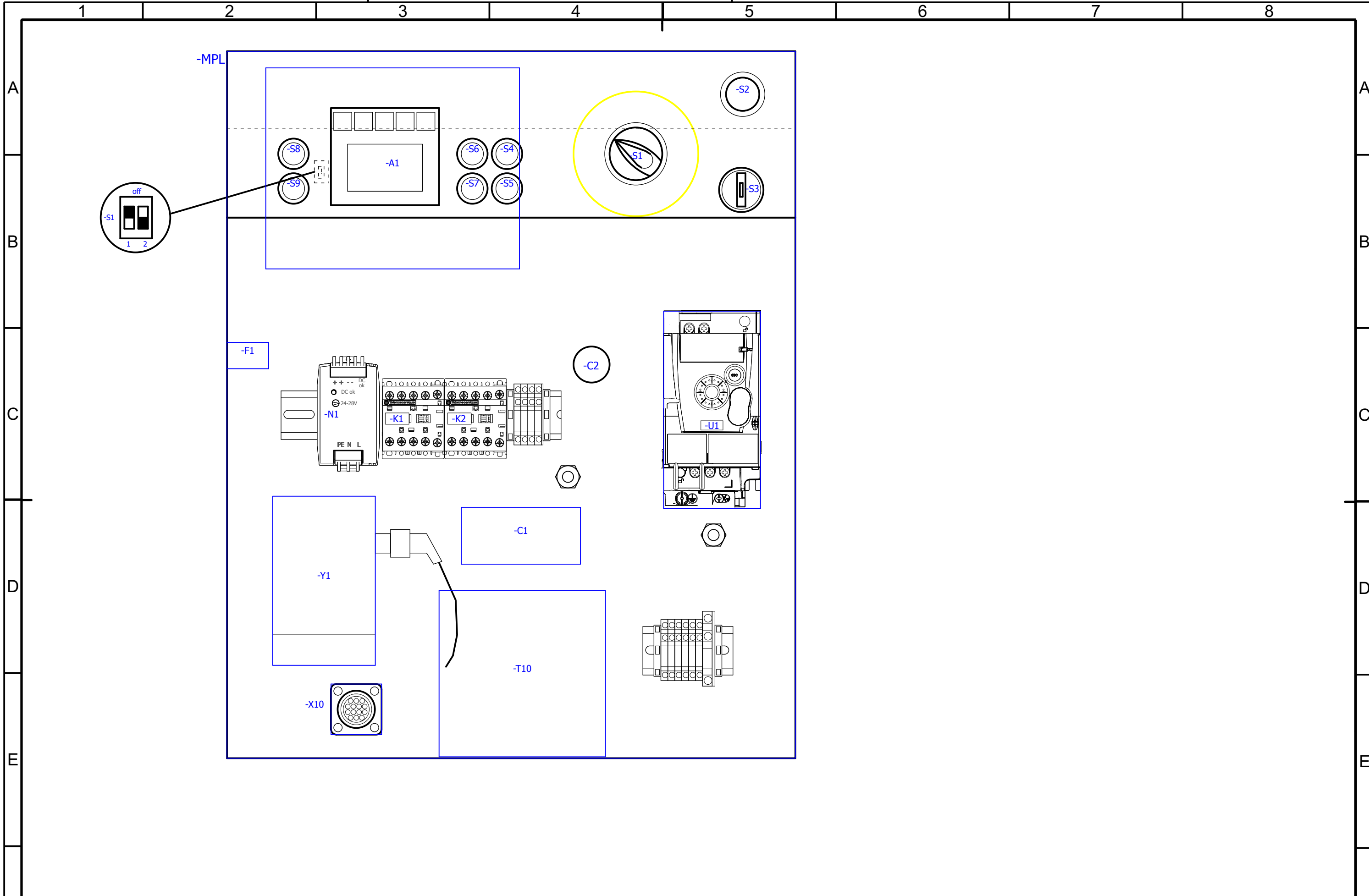
A3

Einstellung Frequenzumrichter
 adjustment frequency converter
 réglage Convertisseur de fréquences
 ajuste convertidor de frecuencia



Aderfarben
 Color of wires
 la couleur des fils
 color de los cables

| | | | | | |
|----|-------|---------------|-------------|--------------|---------------|
| 1 | BK | schwarz | black | noir | negro |
| 2 | BN | braun | brown | marron | marrón |
| 3 | RD | rot | red | rouge | rojo |
| 4 | OR | orange | orange | orange | naranja |
| 5 | YE | gelb | yellow | jaune | amarillo |
| 6 | GN | grün | green | verte | verde |
| 7 | BU | blau | blue | bleu | azul |
| 8 | VT | violett | violet | violette | violeta |
| 9 | GY | grau | gray | grises | gris |
| 10 | WH | weiss | white | blanc | blanco |
| 11 | WH/BK | weiss/schwarz | white/black | blanc/noir | blanco/negro |
| 12 | WH/BN | weiss/braun | white/brown | blanc/marron | blanco/marrón |



| | | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|-------------|---|---|---|----|-----------------|------------------------|----------------------|--------------------------------|--|--------|---|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | | document | number | type | version | status | sheet | of |
| | | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | | 8 | 10 |
| Anlage plant | Ort location | Auftrag order | | Blattbenennung / sheet description Schaltschrankaufbau | | | | Datum date | Gezeichnet drawn by | Gepüft checked by | Normgeprüft std. checked by | Änderung / Engineering change index Anzahl / count number | | Ersatz für / replaces Datum / date index | |
| =TE | +HS | 4.812-170.0 | | | | | | 2012-09-11 | IL02277 | IL02277 | ----- | 0 | 0 | 2042004 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | | |

Klemmenplan

Kaercher_f13_01

Leiste
=TE+HS-X1

| Funktionstext | Kabelname | Kabeltyp | Anschluss | | | Anschluss | | | Seite / Spalte |
|---------------|-----------|-----------------------|-----------------|--------|--------|-----------------|--------|------|----------------|
| | | | Zielbezeichnung | Klemme | Brücke | Zielbezeichnung | Klemme | | |
| | -W0 | 3x1,5 mm ² | -X0 | L | . | -C1 | L | /2.1 | |
| | -W1 | 4x1,0 mm ² | -X0 | N | . | -C1 | N | /2.2 | |
| | | | -X0 | PE | . | -PE0 | PE | /2.2 | |
| | | | -C1 | PE | | | | | |
| | | | -PE2 | PE | | -PE1 | PE | /2.3 | |
| | | | -PE4 | PE | | -PE10 | PE | | |
| | | | -U1 | PE | | -PE | PE | /2.4 | |
| | | | +GE-M1 | PE | | -PE5 | PE | /2.5 | |
| | | | -N1 | PE | | -PE7 | PE | /2.7 | |
| | | | -PE8 | PE | | -N1 | - | /2.8 | |
| | | | -A1-X1 | 3 | PE | | | /3.2 | |

| | | | | | | | | | | | | | | |
|-----------------|-----------------|------------------------------|------------------------------------|--------------------------|---|---------------|------------------------|------------------------|--------------------------------|-------------------------------|----------------|-----------------------|--------------|----|
| KÄRCHER | | Material-Nr. material no. | 0.089-528.0 | Benennung description | SLP IB15/120 GB Wiring diagram IB15/120 GB | | | document | number | type | version | status | sheet | of |
| | | | | | | | SLP IB15/120 GB | 5331783 | SLP | 00 | PN | 9 | 10 | |
| Anlage plant | Ort location | Auftrag order | Blattbenennung / sheet description | | | Datum date | Gezeichnet drawn by | Gepreüft checked by | Normgeprüft std. checked by | Änderung / Engineering change | | Ersatz für / replaces | | |
| =TE | +HS | 4.812-170.0 | Klemmenplan =TE+HS-X1 | | | 2012-09-11 | IL02277 | IL02277 | ----- | index | Anzahl / count | number | Datum / date | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | A3 | | | | | | | |

