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Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



HTG-680 RC Ultra



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Change index			
Date	Rev	Description of Change	Employee
11/28	1	Operating instructions created	PB

This operating manual was created by HTG Europe GmbH. It was compiled to the best of our knowledge, and any changes to the original version are listed here.

If you notice any errors or ambiguities, please let us know. We are also grateful for any comments and suggestions.

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These operating instructions must be kept handy near the machine.

It must be included when the machine is sold.

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2 Notes on reading

2.1 Users of the operating instructions

Chapter	Operators	Qualified	Operators	Support staff
Safety	x	x	x	x
Product description		x	x	
Transport		x		
Assembly		x		
Commissioning		x		
Operation and use	x	x	x	x
Troubleshooting		x	x	
Maintenance	x	x		
Decommissioning		x		

→ For further information, please contact your local dealer.

2.2 Abbreviations, synonyms, symbols

Abbreviation Synonym	Meaning
PPE	Personal protective equipment
Machine	Floor grinding machine HIGH TECH GRINDING 680 RC Ultra

Symbol	Meaning
→	Instruction to perform an action or read a section in this document
●	List, main points
○	List, sub-points
📄	Request to read further documents
<i>Italics</i>	Designation of a document, a key, a button, a switch
! (in blue circle)	This text provides additional information that is necessary for understanding

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2.3 Safety-related information

2.3.1 Overview

The safety-related information explains the hazards associated with the machine and how you can avoid these hazards.

This information can mainly be found:

- As safety instructions and pictograms in [Chapter 3 Safety](#)
- As warnings of imminent danger
- As pictograms and warning text in [Chapter 3 Markings on the machine and packaging](#)

2.3.2 Chapter Safety

This chapter contains general safety information on how to avoid hazards associated with the machine. The information is intended to promote awareness of safe behavior. The aim is to provide a basis for training and instruction.

Compliance with the safety instructions protects personnel, living beings, and the environment from harm.

This chapter uses the following safety symbols:

Safety symbol	Meaning
	Warning of dangerous electrical voltage

2.3.3 Warnings

Meaning

This operating manual contains warnings in several chapters. A warning alerts you to an imminent danger. It must be understood in connection with the situation in which the warning is given. The aim is to prevent accidents and damage during an ongoing action.

Signal words

Signal word	Risk level hazard	Meaning
 DANGER	high	Death or serious bodily injury may occur if the hazard is not avoided.
 WARNING	Medium	Death or serious injury may occur if the hazard is not avoided.
 CAUTION	Low	Minor or moderate injury may

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		is avoided.
WARNING	-	Damage with significant financial consequences to the product or other property is possible.

Presentation

Warnings are displayed as follows in the operating instructions:

Variant 1:

- **DANGER** This warning text identifies the source of the hazard and the area of effect.
This warning text describes the consequences.

→ This instruction specifies the remedy to avoid the hazard.

The warning notice:

- appears in the running text or at the beginning of step-by-step instructions.
- applies to the following passage of text or the entire step-by-step instructions

Variant 2:

1. Step 1
DANGER This warning text identifies the source of the hazard and the area of effectiveness.
This warning text identifies the consequences.
2. Step 2 This instruction describes the remedy to avoid the hazard.
3. Step

The warning notice:

- appears before an action involving immediate danger.
- applies to this action.

2.4 External documents

In addition to this operating manual, external documentation from suppliers must also be observed.

The external documents contain safety-related information. This information is not repeated in this original operating manual.

If the external documents reveal any hazards for the machine as a whole, these have been taken into account in the risk assessment.

3 Safety

3.1 Intended use

The machine was placed on the market by HTG Europe GmbH. The machine is intended for use in craft businesses and similar companies.

The machine is exclusively intended for:

- dry or wet grinding,
- polishing, and
- processing

mineral floor surfaces. Mineral floor surfaces include concrete, screed, natural stone, terrazzo, and similar materials.

The machine is used for:

- surface preparation,
- smoothing, or
- polishing

in industrial, commercial, and construction applications.

The machine may only be operated:

- With suitable tools and original HTG accessories,
- In technically perfect condition.

The machine is used:

- Inside buildings
- in dry outdoor areas - When used outdoors, it must be ensured that the machine is protected from moisture, wetness, and direct weather conditions.

The machine is built according to the state of the art and recognized safety regulations.

Nevertheless, improper or unintended use of the machine may result in danger to the life and limb of the user or third parties, or damage to the machines and other property.

Proper use includes observing these operating instructions and the operating instructions of the suppliers, as well as complying with the inspection and maintenance conditions of the suppliers.

The manufacturer is not liable for non-compliance and any resulting damage. The risk is borne by the operator.

If malfunctions occur during operation:

- Switch off the machine immediately.
- Inform qualified personnel or the dealer.

Reasonably foreseeable misuse

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The situations listed in this section are prohibited.

Any use other than that described in this operating manual is considered foreseeable misuse. This includes:

- Provision and use in the end-user sector.
- The storage and parking of the machine under conditions that allow access and use of the machine by unauthorized persons and persons under the age of 18.
- Use:
 - in rain, lightning, thick fog, strong wind, or other unfavorable conditions.
 - When electronic components have become wet.
 - near explosive or flammable materials or vapors, dust, solvents, thinners, or other combustible items.

- Continuous operation for more than 5 hours at a time.

The actual operating time depends on the conditions of use and may be shorter. In the event of:

- Signs of overload,
- error messages
 - Switch off immediately and allow to cool down.
- operation without covers,
- the mechanical or electrical bypassing of the machine or machine parts,
- the use of parts other than original parts or parts that do not meet the specifications of the replaced part,
- modifications, alterations, and manipulations,
- use for processing materials other than those intended. These include:
 - PVC,
 - linoleum,
 - vinyl,
 - rubber,
 - carpeting,
 - rubber,
 - cork,
 - Tiles,
 - Metal floors,
 - Loose, damaged, or hollow floors.
- Failure to follow the instructions and prescribed operating, maintenance, and servicing conditions.
- Failure to comply with the regulations and provisions in the country of use and the legal provisions and accident prevention regulations when handling the machine.
- Operation of the machine outside the technical data.

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3.2 Legal regulations

3.2.1 Modifications

Modifications can create new hazards on the machine. Serious personal injury is possible.

- Do not make any modifications to the machine.
- Do not operate machines that have been modified by third parties.

Only original spare parts or spare parts that meet the specifications of the original spare parts may be used for maintenance work. The use of other parts may result in a loss of liability on the part of the manufacturer. Liability is then transferred to the converter or operator.

3.2.2 Applicable guidelines

- 📄 See EC Declaration of Conformity.

3.2.3 Sale in the non-European economic area

The manufacturer accepts no liability for the sale of the machine in non-European economic areas. The machine is designed, built, and documented exclusively for the European economic area.

When reselling the machine outside the European Economic Area, the seller must comply with all legal requirements of the respective economic area/country.

3.3 Safety instructions

The safety instructions are sorted according to their area of application.

3.3.1 According to the source of the hazard

Applies to the entire machine in all phases of its life cycle

Energy



Electrical energy

The machine is connected to a supply voltage of 380 V. Touching conductive parts will result in a fatal electric shock.

- Repairs may only be carried out by qualified personnel.
- Before working on the machine, disconnect the power plug and secure it against being reconnected.
- Check the connection cable and power plug for damage before connecting.
- Replace damaged cables immediately.
- Lock the switch box after completing work and remove the key.

Substances, materials

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Dust

Respirable dust is generated during grinding. Respiratory diseases are possible.

- Wear respiratory protection:
 - Respirator with FFP2 filter.
 - FFP3 for dust containing quartz or cement.
- Check the operator's health regularly.

Noise

Entire machine

The machine operates at a harmful noise level during grinding. Serious hearing damage is possible.

- Hearing protection must be worn.

Fire, combustion, explosion

Overheating

The switch box is equipped with a ventilation grille. The ventilation is designed so that overheating inside the switch box is not possible. If ventilation grilles are closed or dirty, heat will build up in the switch box. Cable sheathing may melt. Fires may occur.

Smoke inhalation and burns are possible.

- Keep ventilation grilles open and clean.
- Replace defective ventilation equipment immediately.

Aging, wear

Unnoticed wear

The machine is subject to aging. The components were designed to withstand the expected loads. Nevertheless, they age and wear out. Components may fail earlier than expected. If aging, wear, and defective parts go unnoticed, serious injuries may occur.

- Follow the maintenance schedule.
- Perform regular visual inspections.

Labeling of operating and display elements

The operating and display elements are labeled. This prevents incorrect operation. Warning notices and pictograms are affixed to the machine. Missing labels and pictograms can lead to personal injury and damage to the machine.

- Keep operating and adjustment elements as well as labels and pictograms clean.
- Replace damaged labels and pictograms.

Statics

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Slopes

Stability and safe movement may be restricted on slopes. Safety is no longer guaranteed on steep slopes. The machine may tip over or slip.

See also chapter Sloping ground

3.3.2 After the life cycle

Applies to the entire machine during specific life phases

Transport

Lifting and securing the machine

The handle, frame, and other machine parts are designed to withstand the forces generated during operation. They cannot withstand the forces generated when lifting the machine. Machine:

- Do not lift by the handle, frame, or other machine parts.
- Lift at the attachment points.
- Use a crane or forklift to place the machine on a pallet or skid frame and secure it against falling.

The tool holders and other machine parts are very sensitive to mechanical damage. Tool holders can be completely destroyed.

- Do not drive the forklift truck under the tool holders.

PPE

The machine must be attached to lifting gear for transport. Hands can be crushed or scraped during these operations. Suspended loads can swing. Carelessness can result in the head being struck. Loads can fall or be set down inaccurately. Serious injuries to the feet and toes are possible.

- Wear a protective helmet.
- Wear protective work gloves.
- Wear safety shoes.
- Never stand under suspended loads.

Lifting equipment and transport vehicles

The machine weighs 535 kg when empty. Undersized lifting gear or the use of unsuitable attachment points can cause loads to tip over or lifting gear to tear.

- Work with lifting gear of sufficient size.
- Secure lifting gear to the attachment points and lift.

Transport work may only be carried out by qualified persons in compliance with the safety instructions.

- Comply with regulations for securing loads during transport.
- During transport on open factory premises, provide an accompanying person for safety.

Load-bearing equipment and slings must comply with accident prevention regulations.

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- Only use tested and approved lifting equipment:
 - Shackles in accordance with DIN 82101
 - Lifting chains in accordance with DIN EN 818-2, grade 8
 - Sling ropes in accordance with DIN EN 13414-1
 - Textile lifting gear (round slings) in accordance with DIN EN 1492

Loading transport vehicles

Transport vehicles that are too small can be overloaded by the load. The machine parts may protrude beyond the outer dimensions of the transport vehicle. Functionality and roadworthiness may be impaired. The impairments may not be immediately apparent and may only occur during transport. The loads may slip due to driving movements.

- Ensure that the transport vehicle is sufficiently dimensioned for the weight and dimensions.
- Secure loads on the transport vehicle using suitable means.
- Protect the machine from moisture.

Assembly, disassembly

Storing tools and components

Tools can be stored outside of tool storage areas. Components are ready for installation. People may trip and fall.

- Provide sufficient assembly and storage space.
- Do not store tools and components in traffic areas or in places where visibility is poor.
- Tidy up tools after finishing work.

Commissioning

Before initial commissioning

- Always use the machine with the corresponding operating instructions.
- Read the operating instructions, including the safety-related information, carefully before initial commissioning.

Your knowledge will enable you to recognize dangerous situations and protect yourself and others.
- Only start up the machine once you have read and understood the contents of the operating instructions.
- Train qualified personnel.
- Use qualified specialists.
- Only work with a machine that has not been tampered with and is undamaged.
- Observe local laws and regulations when using the machine.
- Ensure that the operator has taken care of safety and that hazards can be avoided during operation.

Operation, use

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Persons in the danger zone

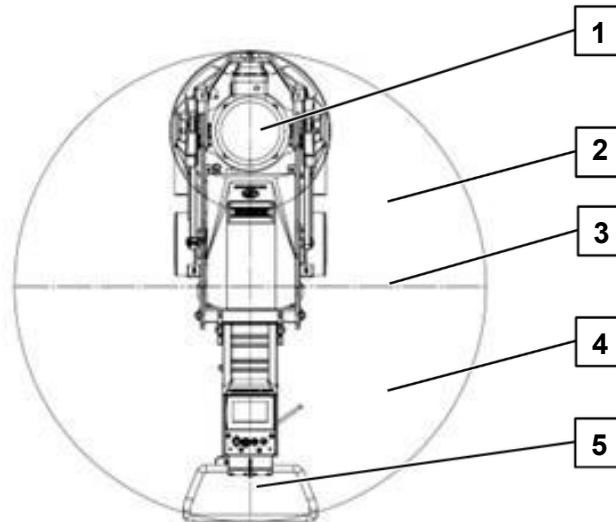


Abb. 1

Fig. 1 Danger zones

Item	Designation	Item	Designation
1	Machine with tools	2	Danger zone for third parties
3	Boundary between the danger zones	4	Danger zone for the operator
5	Handle	-	-

Before switching on the machine, instruct third parties to leave the danger zones.

Operator:

- Move carefully in the danger zone for the operator.
- When using the remote control, keep machines and dangerous objects in your field of vision.

Operating the machine may pose a hazard to bystanders, e.g., due to noise, dust, and the guided movements of the machine.

- Keep people at least 2 m away from the danger zone.
- Observe the "one machine, one person" principle.

Presence of the operator

The rotational movements of the tools can cause the machine to perform uncontrolled movements.

- Hold the machine by the handle during operation.

Overgrinding of the connection cable

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The connection cable runs across the floor. The connection cable may be damaged if driven over. There is a risk of electric shock.

- When moving forward, guide the connection cable behind the machine and to the side of the operator.
- Guide the connection cable by hand when moving backwards. Place the connection cable outside the working area of the machine.

If the connection cable is run over:

- Switch off the machine immediately.
- Check the connection cable for damage and replace it immediately if damaged.

Maintenance

Replacing components

The components of the machine are matched to each other in terms of their parameters and design. Replacing them with unsuitable components can lead to malfunctions and hazards for people working on the machine.

- Only use original spare parts or spare parts that meet the specifications of the original spare parts.

Storage

Access by unauthorized persons

The machine is intended for users with specialist knowledge and who have received training. See chapter User groups

- Store the machine in such a way that unauthorized user groups cannot access it, e.g., locked in a room.

Disposal

Avoid environmental damage

The machine contains components or substances that may harm the environment if disposed of improperly.

- To avoid environmental damage, proceed as follows. Materials and components:

- Sort,



- Do not throw parts into the trash can.
- Dispose of in accordance with legal requirements.
- Have them collected and recycled by a specialized company. Observe the safety data

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sheets.

3.3.3 Depending on the location of the hazard

Applies to special machine parts in all life phases

Safety devices

Regular inspection

The protective devices are designed in such a way that, when used as intended, the risk of injury is reduced to a residual risk. If protective devices are not functional, serious injuries may occur.

- Do not tamper with or modify protective devices.
- Always operate the machine with functional protective devices.
- Only remove protective devices when the main switch is turned off and secured against being turned back on.
- After repair work, reinstall the protective devices and check their function.

Frequency converter

Speed

The speed affects the grinding result. Different tools may require different speeds, which can be set manually. The parameter settings on the frequency converter can only be accessed with a password.

- Only allow persons with password access to change the parameters on the frequency converter.
- Do not disclose the password to unauthorized persons.

Entire machine

PPE

Risk of injury from loose clothing, ribbons, jewelry, and loose hair.

- Wear close-fitting work clothes.
- Tie back long hair and tuck it under a head covering.
- Remove jewelry.

Vibrations and noise

The machine has been designed in accordance with the latest technology to reduce vibration and noise levels as much as possible. In the event of abnormal

- strong vibrations,
- loud noises
 - immediately take the machine out of service and secure it against reuse.
 - Inform the authorized dealer.

The machine may only be inspected and repaired by maintenance personnel approved by the dealer.

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3.4 Operator

The operator:
...fulfills labor law obligations with regard to the operation of the machine.
- operates the machine safely and without tampering in all phases of its life cycle, - ensures that personnel read and understand the operating instructions, - instructs personnel before they start work for the first time, - provides the operating instructions in paper form at the machine, - keeps the operating instructions and external documents in a legible condition. - Provides fire extinguishers and first aid kits
...performs personnel organization tasks.
- Assigns persons to a user group - defines access authorizations for the machine, control panel, control system, and program - instructs the user groups.
...instructs users on how to behave in the event of accidents and malfunctions. The content of the instruction includes, for example:
- the locations of first aid stations, - the location and route of escape routes, - how to behave in emergencies and regular practice of the correct behavior. ➤ After administering first aid, seek professional medical treatment immediately.

3.5 Personnel

3.5.1 Description of user groups

Specialist personnel
...are specialists who, as a result of their vocational training, professional experience, and recent relevant professional activity or personal characteristics, are able to perform specialist work on the machine. They are commissioned and instructed by the operator.
- has successfully completed and is certified in specialized training, has knowledge and experience in working with machines, - can assess the work task and carry it out independently, - has knowledge of the applicable standards or the ability to acquire this knowledge, - has knowledge of the hazards occurring in his field of expertise and knowledge of how to avoid and eliminate them.
...is instructed by the respective dealer before commissioning. The following qualified personnel are required to operate the machine:
for work on the electrical equipment for setup and testing work

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• for maintenance and repair for troubleshooting • for transport, assembly, and disassembly work
Operators
...are persons who work with the machine during grinding operations.
• can read, • understand the symbols and instructions affixed to the machine, can carry out the activities independently and in accordance with the specifications after instruction and training, • recognize the hazards after instruction and can react in accordance with the specifications.
Support staff
...are persons who perform work in the area of the machine that is not related to its operation. This includes cleaning, for example. Auxiliary personnel are not permitted to operate the machine.
• can understand instructions, • can implement instructions during their work, • recognizes the dangers after receiving instruction and can react according to the specifications.
Trainees
...are persons who are undergoing specialist training. They may operate the machine under the supervision of specialist personnel or perform work tasks within their area of expertise.
• can understand instructions, • can implement instructions during their work, • recognize hazards after receiving instruction and can respond appropriately in accordance with the guidelines.
External company personnel
...are external employees who have the same qualifications as the above employee groups under the following circumstances:
• Before work begins, training and safety instructions must be provided by qualified persons and documented in writing. • The work of external company personnel must be coordinated with internal employees to avoid mutual hazards. • Before work begins, a direct contact person in the form of an internal employee who is informed about the work processes and work locations must be designated.

3.5.2 Access restrictions

User groups

User groups may only be granted access to the machine in accordance with their qualifications.

Age

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Users of the machine must be of legal age. Trainees under the age of 18 may only operate the machine for training purposes in the presence of a trainer.

Health

The machine must not be operated by persons who are under the influence of substances that impair their reactions, who are tired, or who are unable to operate the machine for health reasons.

Users must be able to recognize the visual danger signals.

- Remove unauthorized persons from the machine.

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3.5.3 Personal protective equipment - PPE

The personal protective equipment for users includes:

PPE	When?	Pictogram
Safety helmet	For all activities	
Respiratory protection	- During operation: - Respirator mask with FFP2 filter - for quartz or cement-containing dust FFP3	
Certified safety goggles	During the grinding process	
Hearing protection	- During operation: - e.g., ear muffs with SNR a 25 dB	
Certified rubber protective gloves	During the grinding process	
Certified insulated safety shoes	All activities	
Protective clothing	All activities	

4 Machine description

4.1 Technical data

- Operate the machine within the limits of the technical data.

4.1.1 Scope of delivery

The scope of delivery includes:

- one machine with cable and connector plug,
- dust protection tape,
- a remote control,
- charger with charging cable for lead-acid battery,
- integrated tool holder,
- key for switch box.

Not included in delivery:

- Connection cable from the connection plug to the power source,
- grinding tools.

4.1.2 Machine data

Designation	Value
Drive motor speed	350 — 1,950 rpm
Number of tool carriers	3
Gearbox speed	47–261 rpm
Speed of grinding heads	201 – 1121 rpm
Number of tool carriers	4
Gearbox speed	35 – 195 rpm
Grinding head speed	211 – 1175 rpm
Suction connection	Easy Connect 80 mm

Abrasive pressure

Designation	Value
Contact pressure for grinding	202 kg
Swivel weights rear and without additional weights	
Contact pressure grinding Swivel weights front	265
Without additional weights	

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

The grinding pressure can be increased by using suitable additional weights.

4.1.3 Dimensions, weights, and volume of the machine

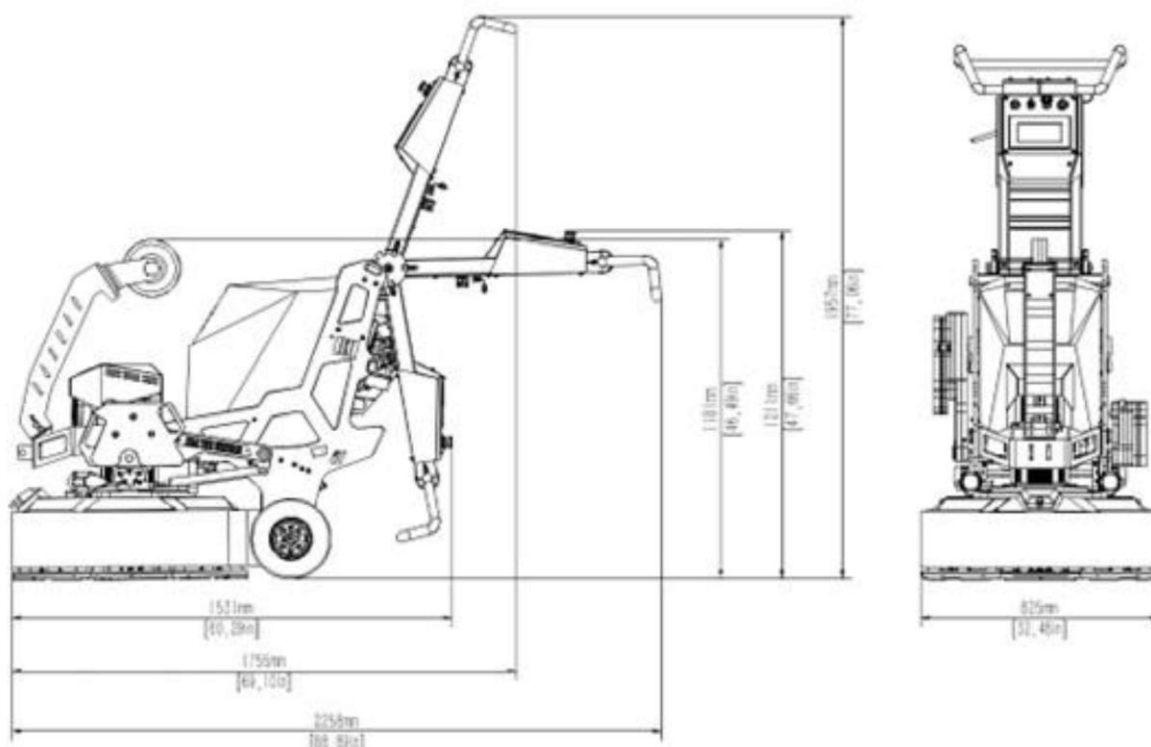


Fig. 2 Dimensions of the machine

Designation	Value
Dimensions in grinding position W x L x H	696 mm x 2,063 mm x 1,255 mm
Dimensions, handle in upper position W x L x H	696 mm x 1,683 mm x 1,802 mm
Dimensions in transport position	696 mm x 1,407 mm x 1,255 mm
Maximum dimensions	696 mm x 2,402 mm x 2,091 mm
Grinding wheel, diameter	230 mm
Tool holder, diameter	230 mm
Grinding width of the machine	680 mm
Total weight, empty	535 kg
Water tank volume	25

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

4.1.4 Environmental conditions

Designation	Value
Maximum angle of inclination of the ground to be worked	6
Operating temperature	-10 to 40°C
Operating and storage temperature	5°C to 60°C
Humidity	max. 90 No condensation

4.1.5 Noise emission

The grinding machine generates significant noise emissions during operation. These depend on:

- the surface,
- tool type,
- Rotational speed,
- Operating environment.

Measured values

Measured variable	Designation	Value	Measurement uncertainty	Standard reference
A-weighted emission sound pressure level at the workplace	L_{pA}	86 dB(A)	+ 2 dB	EN ISO 11201
A-weighted sound power level	L_{WA}	99 dB(A)	± 2 dB	EN ISO 3744
Peak sound pressure level	$L_{pC,peak}$	130 dB(C)	+ 2 dB	EN ISO 11201

The values were determined in accordance with the following recognized procedure:

- EN ISO 11201 - Acoustics - Noise emission from machinery and equipment - Determination of emission sound pressure levels at the workplace and at other specified locations in a substantially free sound field above a reflecting plane with negligible ambient corrections
- EN ISO 3744 - Acoustics - Determination of sound power levels and sound energy levels of noise sources from sound pressure measurements - Envelope method of accuracy class 2 for a free field over a reflecting plane

Original operating instructions

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The noise values determined meet the requirements of the Machinery Directive 2006/42/EC, Annex I, Section 1.7.4.2 (u). They do not constitute a guarantee, but serve to compare different machine models under standardized conditions.

The values apply to intended use under typical operating conditions on concrete floors. The actual noise level may vary.

- Take appropriate noise protection measures.

Noise protection measures

The operator is obliged to regularly check the noise level at the workplace and, if necessary, to take organizational protective measures.

📄 Directive 2003/10/EC.

- Wear hearing protection above 80 dB(A).
- Remove persons without hearing protection from the noise area.

Occupational safety

If the daily noise exposure level exceeds 85 dB(A), the employer must provide personal protective equipment (PPE) for hearing protection and instruct employees on its use.

- Wear hearing protection throughout the entire grinding operation
e.g., ear muffs with an SNR * 25 dB.

4.1.6 Vibration

Vibration-related stress occurs during operation of the machine, influenced by:

- Grinding process,
- machine settings,
- Tool type and condition,
- Substrate,
- The operator's working methods.

The following values were measured under standardized conditions in accordance with EN ISO 20643 and EN ISO 5349-1/-2. They are used to evaluate hand-arm vibration exposure.

Vibration exposure limit values

Type of limit value	Characteristic value	Evaluation
Trigger value	$A(8) = 2.5 \text{ m/s}^*$	If exceeded: Risk assessment required
Exposure limit value	$A(8) = 5.0 \text{ m/s}^*$	Must not be exceeded

The table shows limit values according to EU Directive 2002/44/EC on minimum requirements for the protection of workers from the risks arising from exposure to vibration.

Original operating instructions

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Measured values at the machine

Measured variable	Designation	Measured value	Measure ment uncertainty	Standard reference
Effective Vibration Total value (hand-arm)	a_{hv}	3.2 m/s*	+ 0.5 m/s	EN ISO 20643 / EN ISO 5349-1
Rated daily vibration exposure	A(8)	2.0 m/s	+ 0.5 m/s	EN ISO 5349-2

The measured values were determined under standardized conditions in accordance with EN ISO 20643 and EN ISO 5349-1/-2. They are used to evaluate hand-arm vibration exposure. The specified measured values were determined under practical conditions on a concrete floor.

The vibration values specified meet the requirements of the Machinery Directive 2006/42/EC, Annex I, Section 1.7.4.2 (v). They are used to compare different machine models and do not constitute a guarantee for specific operating conditions.

Result

The measured vibration value of the machine is below the legal trigger value, provided that the machine is operated as intended and with serviced grinding tools.

Measures to reduce vibration

Operator

The employer or operator is obliged to regularly assess the actual vibration exposure at the workplace and, if the limit or trigger values are exceeded, to take appropriate protective measures in accordance with the Noise and Vibration Occupational Safety and Health Ordinance (LärmVibrationsArbSchV).

These include in particular:

- organizational working time limits,
- provision of ergonomic aids,
- regular instruction of employees,
- documentation of measurement results.

Operators

- To reduce vibration exposure, observe the following measures:
 - Regularly check grinding tools for imbalance, wear, or damage and replace them in good time.
 - Always guide the machine with both hands and in a controlled manner.
 - Wear vibration-damping gloves.
 - Limit working intervals and take regular breaks.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



- Apply grinding pressure evenly and do not use excessive force.
- Ensure that the surface is stable and level.

4.1.7 Power supply and operating materials Electrical power supply

Designation	Value
Mains voltage	380 V / 3-,N,PEz
Nominal	11 kW
Nominal current	20 A
Input frequency	50 / 60 Hz
Frequency converter	11 kW
Electrical connection	CEE 32 A — 380 / 400 V

The machine is connected to the power supply with a connection cable. The supply voltage is 380 V.

- Only use the machine with the switch box closed.

After switching off or disconnecting the power plug:

⚠ DANGER. After disconnecting the power plug, high voltage is still present in the frequency converter. Touching electrical components is fatal.

- Do not touch electrical components.
- Wait until the indicator light goes out.

Battery for moving

The machine has a battery. It provides a voltage of 24 V. The battery only affects the drive wheels. It can be switched on as a movement aid, e.g.: During movement:

- to another location.
- To a means of transport.

It is not intended or suitable for soil cultivation.

The battery is charged:

- automatically when the machine is connected to the internal 380 V power supply. Or:
- via the 230 V connection on the machine. The advantage is that no 32 A mains supply is required.

The charge status is shown on the display on the panel above the switch box.

Water for wet grinding

Designation	Value
-------------	-------

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra

Water tank, volume	25
Water quality	Municipal water

4.2 Construction

4.2.1 Overall views

4.2.2 Views

12



Fig. 3 Overall view - Front view

Item	Designation	Item	Designation
1	Water tank	2	Engine
3	Machine rack	4	Gearbox and grinding wheels

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5	Front nozzle	6	Dust cover
7	Handle	8	Control panel
9	Control and operating console	10	Weights
11	Drive wheels	12	Headlights

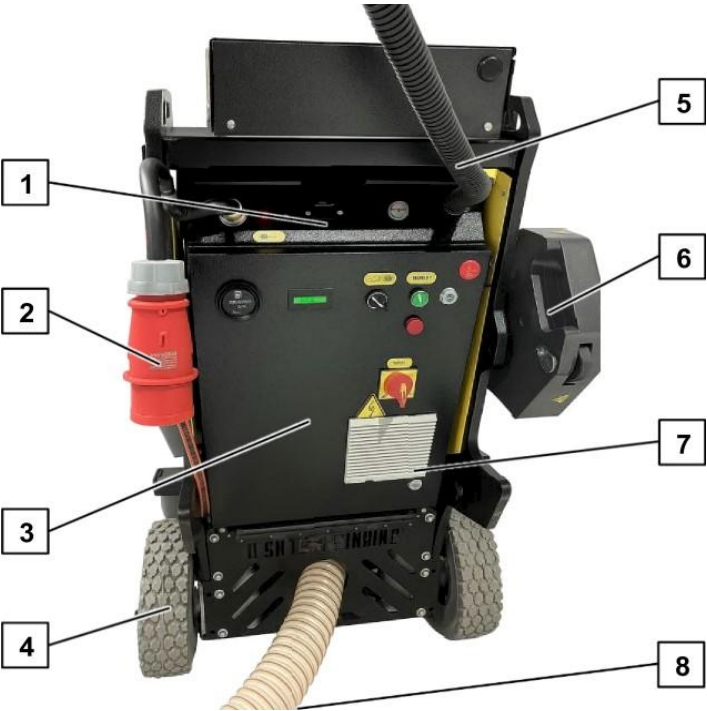


Fig. 4 Overall view — rear view

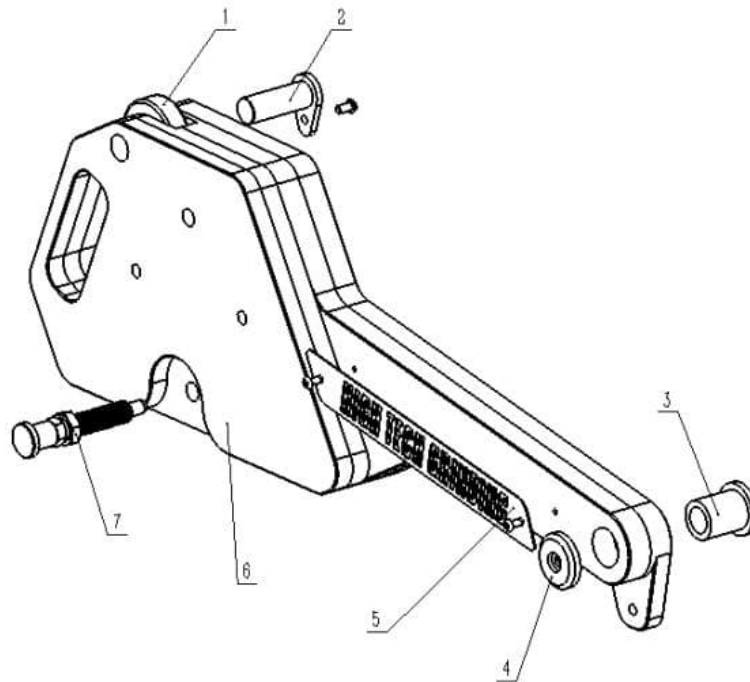
Item	Designation	Item	Designation
1	Panel with control panel	2	Connection plug
3	Control cabinet	4	Drive wheels
5	Cable routing	6	Weights
7	Ventilation opening	8	Vacuum cleaner hose

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

4.2.3 Position of weights

Weight with locking pin



Pos.	Designation
1	Support roller
2	Axle bolt
3	Bushing, copper
4	Cover
5	HIGH TECH GRINDING
6	Weight
7	Locking pin

The machine has a weight on each side with an identical design. Each weight is permanently mounted on a swivel arm. The weights are used to shift the machine's center of gravity. The weights can be adjusted and fixed in three positions.

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra

Positions

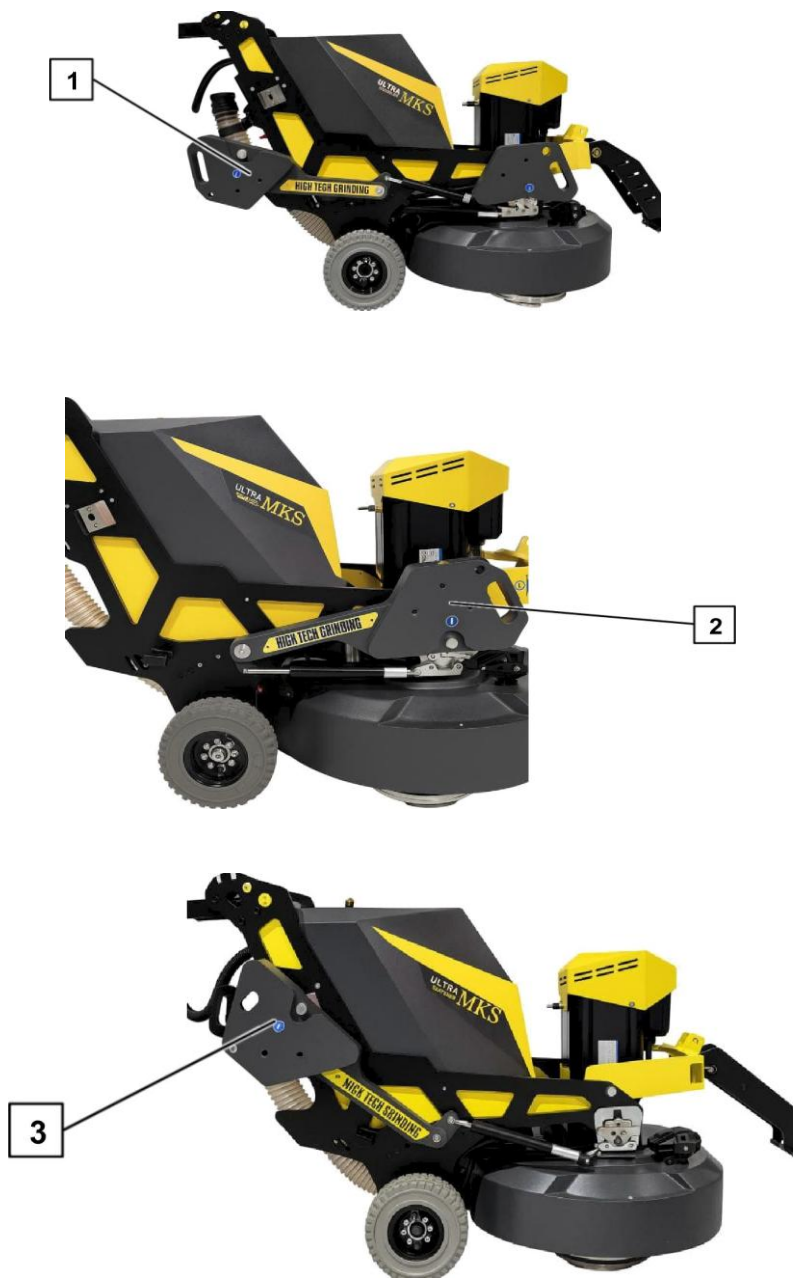


Fig. 6 Weight positions

Pos	Designation	Pos	Designation
1	Tilt position	2	Grinding position
3	Transport position	-	-

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



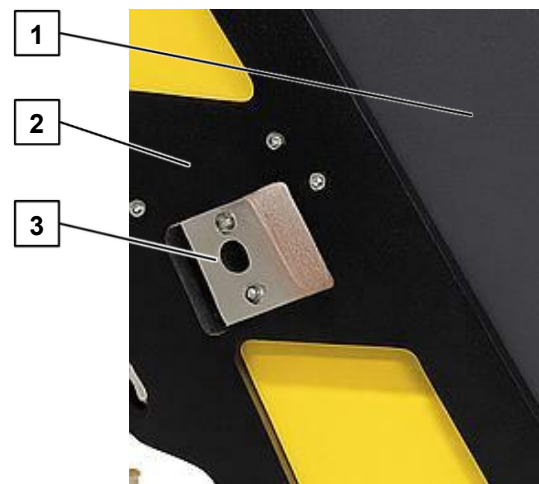
When setting a position, always move both weights to the desired position.

Fixing points and locking pin on the weight



Item	Designation
1	Weight
2	Fixing point for locking pin
3	Drive wheel

Fig. 7 Fixing point for the locking bolt - tilting position

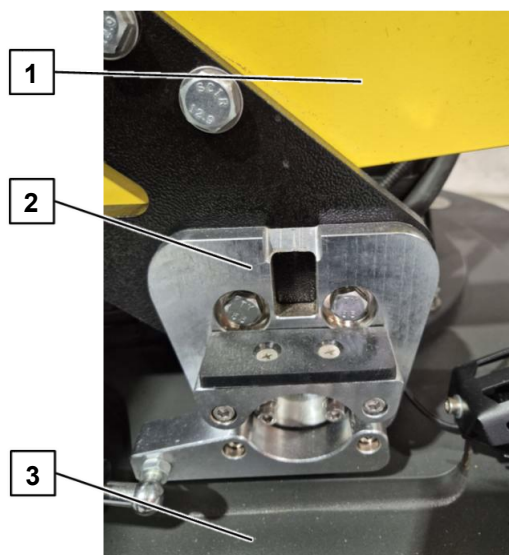


Item	Designation
1	Water tank
2	Control and operating console
3	Fixing point for locking pin

Fig. 8 Fixing point for the locking pin – transport position

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



Item	Designation
1	Bracket for transport wheel
2	Fixing point for locking pin
3	Gearbox area

Fig. 9 Fixing point for the locking pin - grinding position

4.2.4 Drive wheel with locking pin

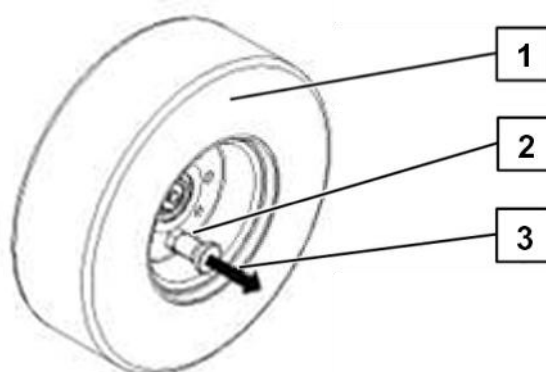


Fig. 10 Drive wheel with locking pin

Item	Designation	Item	Designation
1	Drive wheel	2	Drive wheel with locking pin
3	Direction of movement	-	-

The machine has a drive wheel on each side. Each drive wheel is equipped with a locking pin. The locking pin acts on the drive of the machine.

The locking pin may get stuck when pulling out or pushing in.

- Gently shake the drive wheels while pulling out or pushing in.

Unlock the locking pin

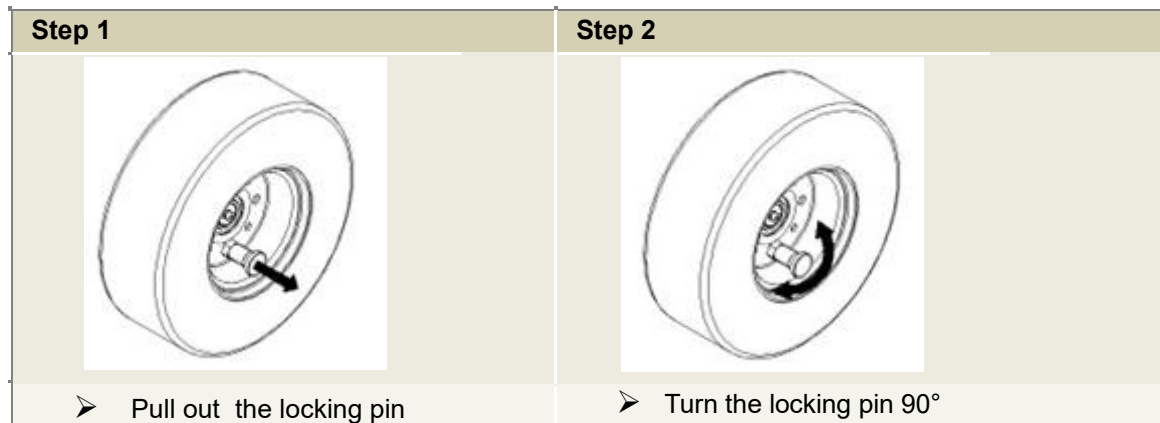


Fig. 11 Unlock the locking pin

The machine's drive does not act on the drive wheels. The machine can be moved by hand.

Lock the locking pin

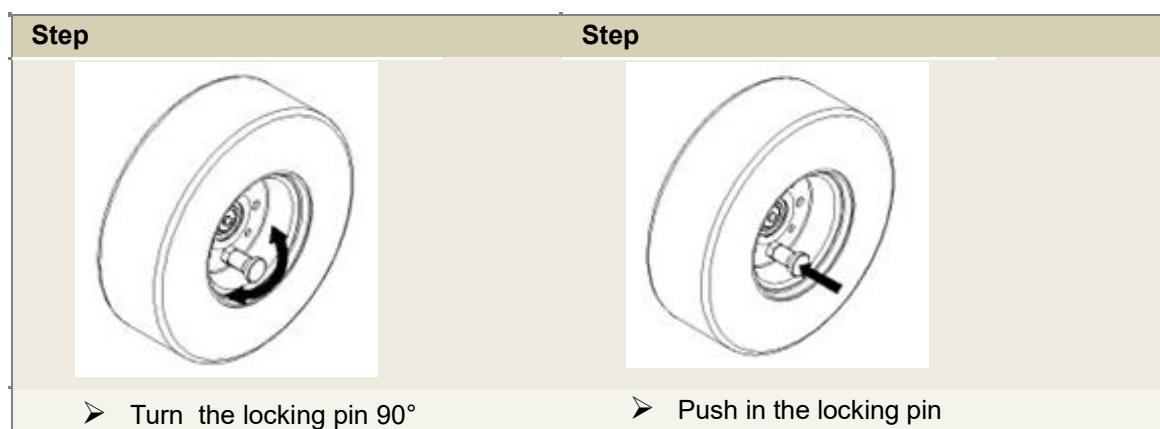


Fig. 12 Lock the locking pin

The machine's drive acts on the drive wheels. The machine can be moved using the remote control.

4.2.5 grinding tools

The grinding tools are not part of the machine or the scope of delivery and must be provided by the operator. The grinding tools must be suitable for the tool holders.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

4.3 Control and display elements

4.3.1 Control panel on the guide and control console

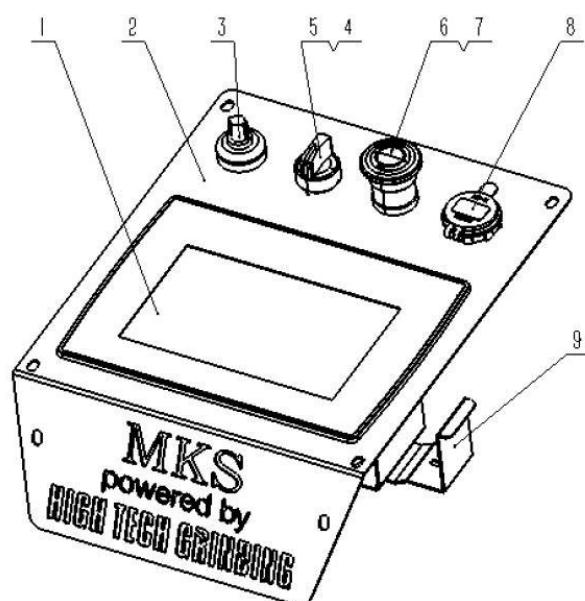


Fig. 13 Control panel

Item	Designation	Function
1	Control panel	Displays the live parameters of the machine
2	Control panel	
3	Speed controller	Sets the speed of the tool heads in the range from 0 to 10 • 0 = turtle symbol: lowest speed • 10 = rabbit symbol: highest speed
4	Auxiliary switch block	



Original operating instructions

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5	Direction selector switch	Three positions:  = Grinding direction counterclockwise 0 = Grinding drive off  = Grinding direction clockwise
6	Emergency stop button	Stops dangerous movements immediately
7	Auxiliary switch block	
8	USB interface	Digital access for display, support, and service access
9	Display bracket	Mounting bracket for display

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

4.3.2 Controls on the switch box

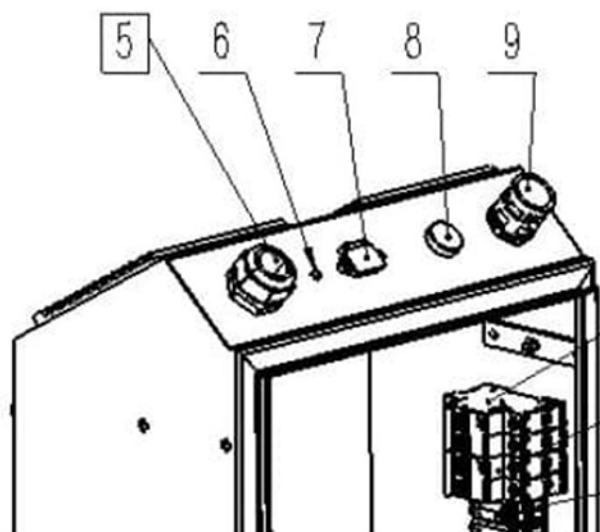


Fig. 14 Control panel switch box cover

Item	Designation	Function
5	Cable gland	Displays the live parameters of the machine
6	Indicator light 	Lights up - red when remote control operation is active - Green when manual operation is active
7	Charging cable connection	230V charging connection for charging the internal battery with a power cord
8	Charging indicator 	Indicates the charge level of the internal battery. - Yellow light: Battery level <50% - Yellow flashing: Battery level 50 - 75% - Flashing green: Battery level 75-99% - Solid green: Battery level 100%
9	Cable protection	

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HIGH TECH Grinder HTG-680RC Ultra

Switch box door

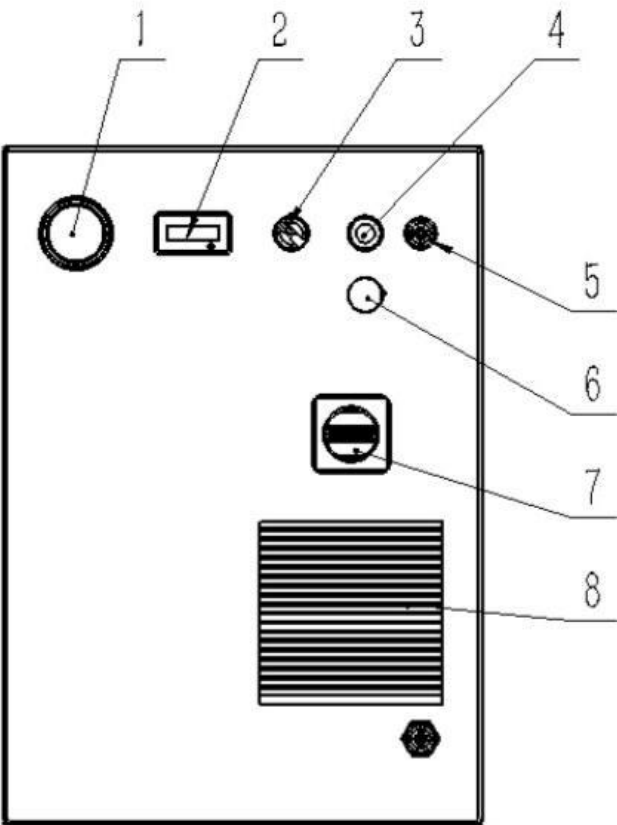
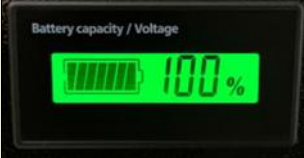


Fig. 15 Operation on the switch box

Item	Designation	Function
1	Operating hours counter	Displays the current number of operating hours
		

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

2"	Battery indicator 	Shows the current battery level
3	Selector switch 	Position: • Left: Remote control operating mode is selected • Right: Manual operation mode is selected
4	Reset button 	Resets the error messages
5	Lock	Keeps the switch box closed. Can only be opened with a special key.
6	Operating light, red	Lights up when the main switch is turned on and the machine is supplied with power.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

		
7	Main switch with emergency stop function 	Switches the power supply on and off. Position 0: - All electrical components are de-energized. - Voltage is present on the supply line up to the main switch. - The frequency converter retains a residual voltage for approx. 7 s after being switched off. Position 1: - Voltage is also applied to electrical components.
8	Outlet filter	Ensures fresh air supply in the switch box.

4.3.3 Remote control

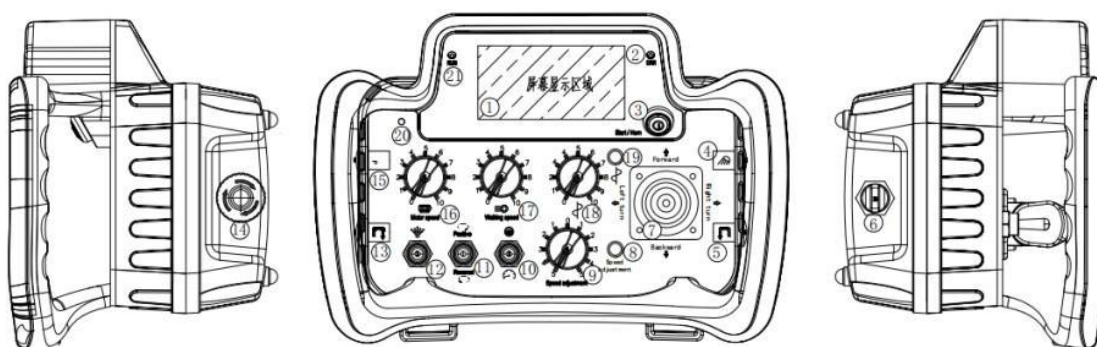


Fig. 16 Remote control – Parts list 40-xx

The remote control:

- has a 3.5-inch control panel.
- has a radio control.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



The settings can be changed and operated with just a few buttons. The digital display on the remote control makes it easier for the operator to adjust settings and monitor system information. This makes operation convenient for the user.

See the operating instructions for the RC remote control for HTG grinding machines in the RC-ULTRA series.

4.4 Workstation

4.4.1 Grinding without remote control

The operator grasps the machine by the handle and guides it in the desired direction. The operator walks directly behind the machine in an upright position.

The operator is directly exposed to noise and dust emissions.

4.4.2 Grinding with remote control

The remote control strap is worn around the neck and upper body. The operator holds the remote control with both hands close to their body and stands upright.

The operator stands a maximum of 5 m away from the machine. They have visual contact at all times, but not necessarily physical contact.

The operator is exposed to noise and dust emissions.

The vacuum cleaner is connected to the grinding machine with a long vacuum cleaner hose. While the optimal grinding route is being worked through, the operator or an assistant moves:

- the vacuum cleaner,
- the suction hose,
- the supply cable.

4.5 Grinding with the machine

4.5.1 Grinding position of the machine

Before starting to grind, the machine is moved into the working position.

4.5.2 Description of the process

Clear the area to be ground.

Grinding tools are mounted in the tool holders. These are electrically driven and move in an oscillating motion. The tool holders are arranged in such a way that a continuous grinding track is created when the machine is moved. The surface of the floor to be ground is removed evenly. The weight in the working position ensures high pressure on the surface to be ground, thereby increasing the quality of the grind.

4.5.3 Dry grinding

⚠ WARNING Danger from dust.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



- Wear respiratory protection.

Dry grinding is

- fast,
- flexible,
- dust-intensive

and suitable for

- rough work,
- renovation work
- preparatory work.

To prevent dust from spreading in the area of the grinding tool, a dust guard is mounted around the tools. In addition, a vacuum cleaner must be connected to the machine. The vacuum cleaner must be switched on separately and runs continuously during dry grinding.

Follow the operating instructions provided by the vacuum cleaner manufacturer.

Dry grinding is possible in remote control mode and in manual mode.

- Switch off the automatic water supply.

4.5.4 Wet grinding

Wet sanding is:

- clean,
- precise,
- slower than dry grinding.

and for:

- fine grinding,
- polishing
- dust-sensitive environments.

The floor surface is sprayed with tap water. To do this, the machine's water tank is filled with tap water. Before starting to sand, the front sprayer is activated on the control panel. When sanding begins, the water supply is switched on on the control panel in manual mode or on the remote control in remote control mode.

The floor area in front of the machine is moistened by spray mist. As a result, dust formation is greatly reduced.

For wet grinding, the automatic water supply can be switched on at the control panel or, in remote control mode, at the remote control.

In remote control mode

Original operating instructions

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- on the remote control - point 12 switch on/off

In manual mode

- Press the F7 button on the control panel.

Manual wet grinding

- Press function key F7 on the machine's control panel

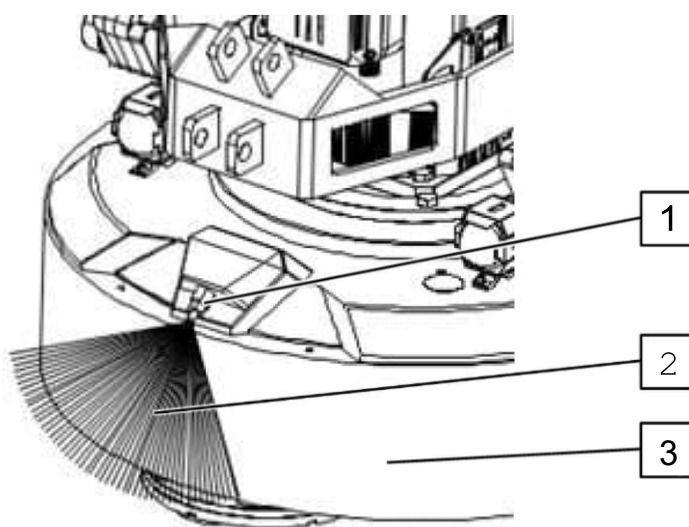


Fig. 17 Spray nozzle in the front area

Item	Designation	Item	Designation
1	Spray nozzle	2	Splash water
3	Housing on the gearbox	-	-

Splash water continuously escapes from the spray nozzle.

Remote-controlled wet grinding

- Switch on water switch
The spray water output is activated.
- Press switch no. 12 on the remote control for front spraying.

4.5.5 Manual grinding

- Unlock the locking bolts on the drive wheels.

When grinding manually, the operator grasps the handle of the machine and guides it in the desired direction. The operator walks behind the machine and looks in the direction of grinding.

The operator keeps an eye on the position of the connection cable and prevents the cable from being ground over.

4.5.6 Grinding with remote control

- Lock the locking pins on the drive wheels.

See operating instructions RC remote control for HTG grinding machines of the RC-ULTRA series

The direction of the machine is determined using the joystick on the remote control. The operator stands in the room with the machine and has visual contact with the machine at all times during grinding.

If the battery in the remote control is too low, the grinding result will deteriorate. If the charge indicator lights up red:

- Stop grinding.
- Charge the battery.

4.5.7 Grinding example Direction of travel

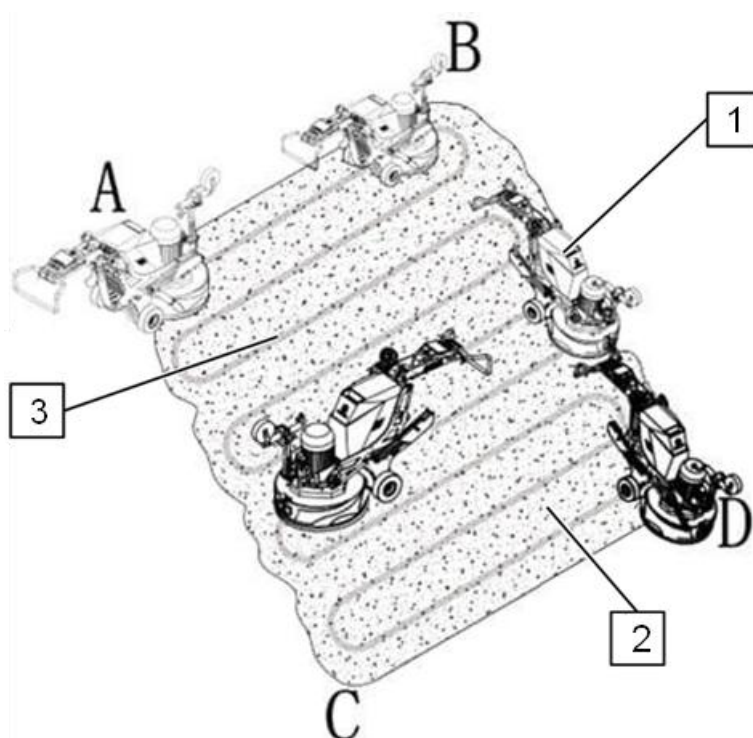


Fig. 18 Grinding path on wide surfaces

Pos	Designation	Item	Designation
A	Starting point	B	Turning point
C	Turning point	D	End point
1	Machine positions	2	Floor space
3	Grinding track	-	-

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

The machine is guided forward in loops over the surface to be processed. The loops are parallel and so close together that the grinding tracks overlap by approx. 20%. Approx. 400 mm to 600 mm before the boundary of the surface, e.g., a wall, the machine is turned around. When turning, the machine drives in a curve. As a result, the machine drives 180° in the opposite direction.

wall, the machine is turned around. When turning, the machine moves in a curve. As a result, the machine moves 180° in the opposite direction.

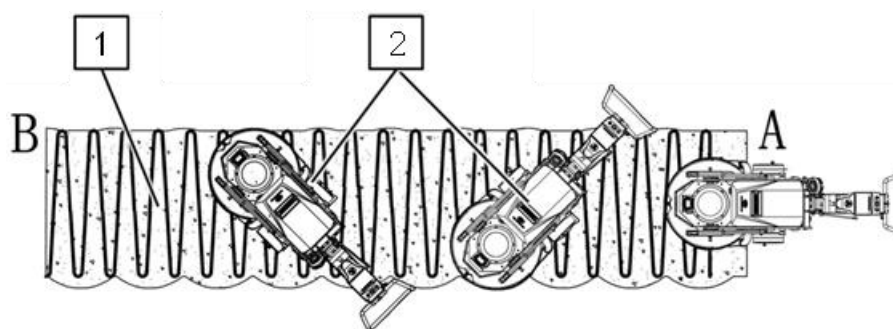


Fig. 19 Sanding path on narrow surfaces

Item	Designation	Item	Designation
A	Starting point	B	End point
1	Skid mark	2	Machine positions

Guide the machine forward in a right-left movement over the surface to be processed. To do this, turn the machine at the edge of the surface with the front facing in the direction of work, without driving in a curve. During grinding, the operator moves slowly but steadily from A towards B. When working with the remote control, the movement is controlled with the remote control.

4.6 Safety concept

4.6.1 Markings on the machine and packaging

Safety-related information is provided on the machine and packaging in the form of pictograms and/or labels. These indicate risks that:

- occur frequently and/or
- have serious consequences.

The following markings are affixed to the machine:

Meaning	Location	Label
Warning of dangerous electrical voltage	Switch box	

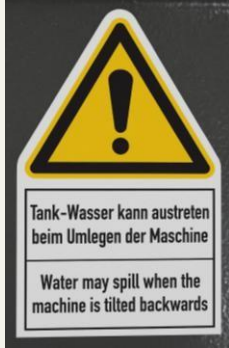
Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

Warning of hand injuries Hand injury On the additional weight		
Warning about vibration On the rack		
Meaning	Location	Marking
Read the operating instructions before using the machine	On the rack	
Wear a protective helmet	On the rack	
Wear hearing protection	On the rack	
Wear safety goggles	On the rack	
Wear vibration-dampening Wear protective work gloves	On the rack	
Wear insulated safety shoes	On the rack	
Markings for attaching the machine to suitable lifting equipment for transport.	Attachment points	
Note Voltage: 380V 3P	Panel on the switch box	

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

Warning of water leakage	On the rack	
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Meaning	Location	Label
Operating mode - Remote control or - Manual operation	On the door of the control box	

4.6.2 Emergency stop, emergency shut-off devices, main switch

Device	Position	Function
Main switch with emergency stop function	On the switch box	Immediately shuts off the supply of electrical energy. ➤ Note residual energy in the frequency converter
Emergency stop button	On the panel above the switch box	Immediately stops dangerous movements. Immediately cuts off the supply of electrical energy. ➤ Note residual energy in the frequency converter
Emergency stop button	On the remote control	Immediately stops dangerous movements.

The emergency stop and emergency shut-off devices:

- are easily accessible,
- lock when activated,
- and have a direct effect.

Emergency stop and emergency shut-off devices are only operated in an emergency. Their

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

malfunction is therefore rarely noticed. In an emergency, malfunction can lead to fatal or serious injuries.

- Check emergency stop and emergency shut-off devices regularly.

Restarting after an emergency stop or emergency shutdown:

- Check the cause of the activation.
- If the cause is unclear, do not start up the machine.
- Rectify the cause.
- Reset the emergency stop or emergency shutdown device.
- Start automatic operation.

During maintenance work, switch off the main switch of the machine, disconnect the power plug, and secure it against being reconnected.

4.6.3 Protective conductor, grounding, and equipotential bonding

The following are installed on the machine:

Designation	Function	Pictogram
Protective conductor	Protects people from electric shock.	
Equipotential bonding	Establishes electrical connections between conductive parts in order to achieve potential equality.	

4.6.4 Dust protection



Item	Designation
1	Gearbox and grinding wheels
2	Dust cover

Fig. 20 - Dust guard

The dust cover prevents dust from escaping during machining.

- Attach the dust guard before starting work.

4.6.5 Overload

The motor is equipped with overload protection that triggers automatically and prevents the machine from operating.

- Do not make any unauthorized modifications.
The overload can be reset by qualified personnel under safe conditions.

In case of overload

- Stop grinding.
- Allow the motor to cool down for 10 to 30 minutes.

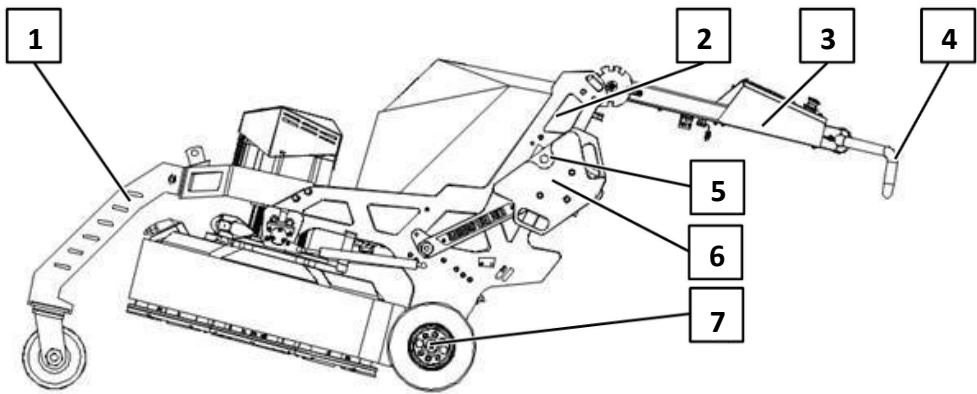
5 Transport

The machine is supplied with a transport wheel to make it easier to move. This is attached to the machine manually and locked in place.

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



5.1 Setting up the transport position



Item	Designation	Item	Designation
1	Transport wheel	2	Rack
3	Guide and control console	4	Handle
5	Locking pin	6	Weight in transport position
7	Drive wheel with locking pin	-	-

Mounting the transport wheel

1. Tilt the machine → Fig. 34



Item	Designation
1	Transport wheel
2	Rack

Fig. 22 Hooking up the transport wheel

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

2. Hook in the transport wheel.

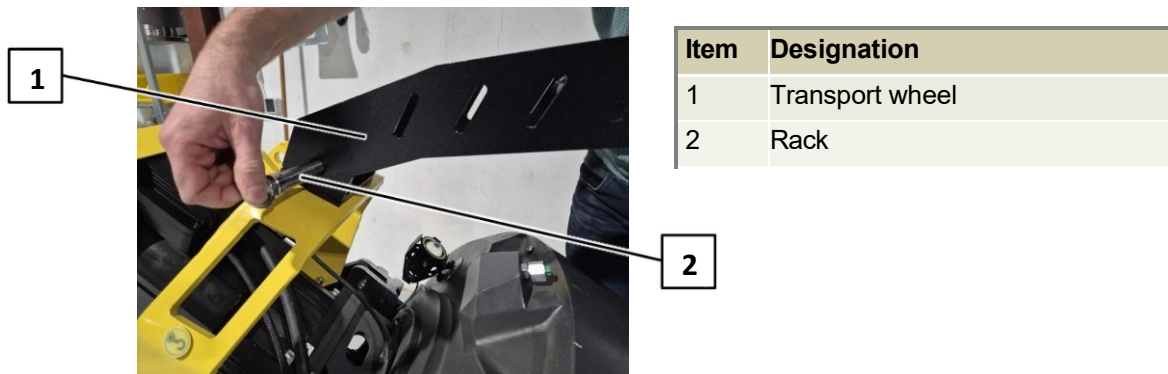


Fig. 23 Connect the transport wheel to the bolt

3. Connect with bolt.

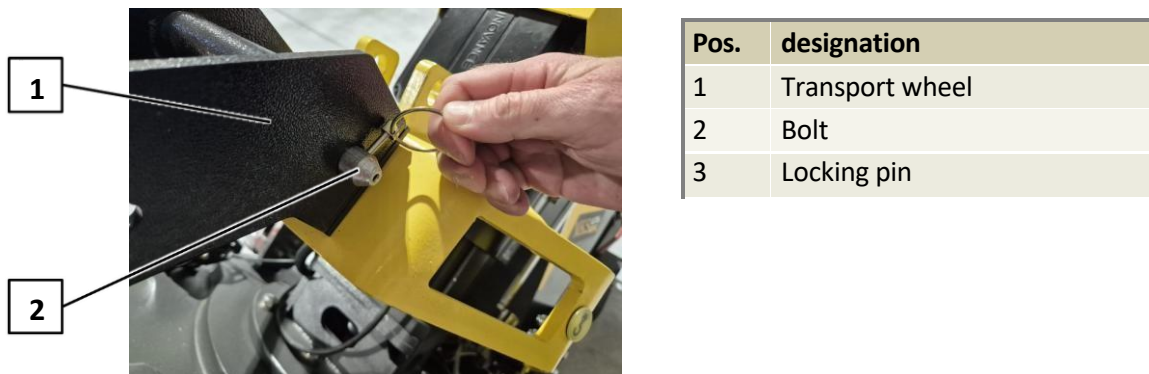


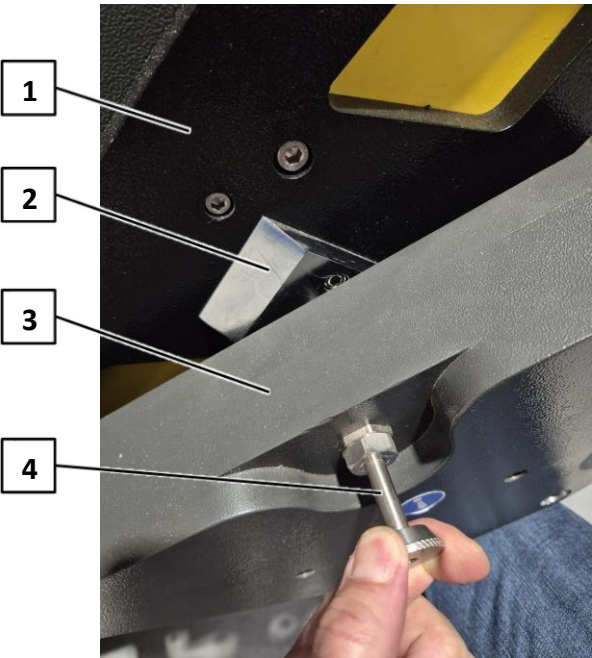
Fig. 24 Locking pin on the bolt of the transport wheel

4. Secure with locking pin.
5. Raise the machine.

5.1.1 Set the transport position of the weights

1. Grasp the weight.
➤ See Fig. 28 for handle

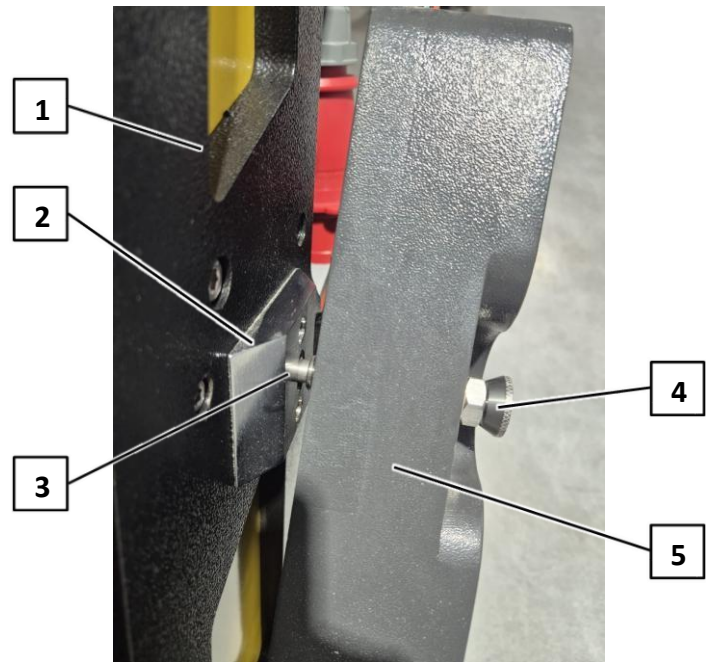
Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



Item	Designation
1	Machine frame
2	Locking block
3	Weight
4	Locking pin

Fig. 25 Adjusting the weight – pulling the locking pin

2. Pull and hold the locking pin
3. Move weight to transport position → Fig. 28



Item	Designation
1	Machine frame
2	Locking block
3	Weight
4	Locking pin
5	Weight

Fig. 25 Adjusting the weight – locking pin engaged

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra

4. Engage the locking pin on the rack.

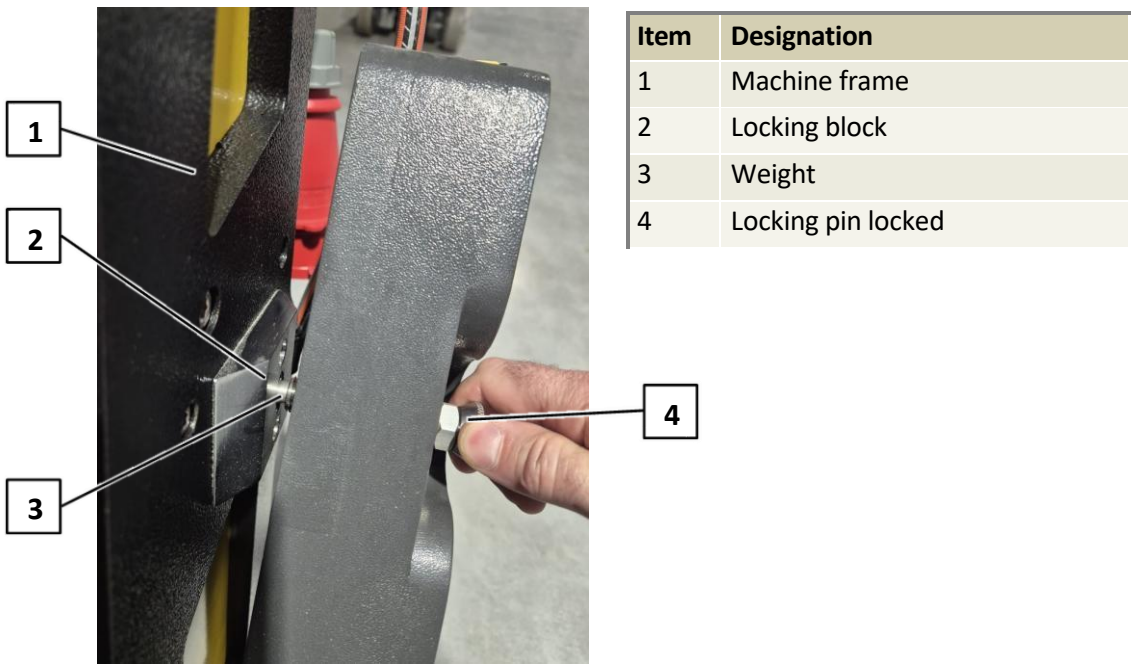


Fig. 27 Adjusting the weight – locking pin engaged



Fig. 28 Position of the weight for transport

Item	Designation	Item	Designation
1	Weight in transport position	2	Drive wheel

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

5. Release the weight. The transport position of the weight is now set. The center of gravity of the machine is slightly offset above the drive wheels.

5.1.2 Machine in transport position

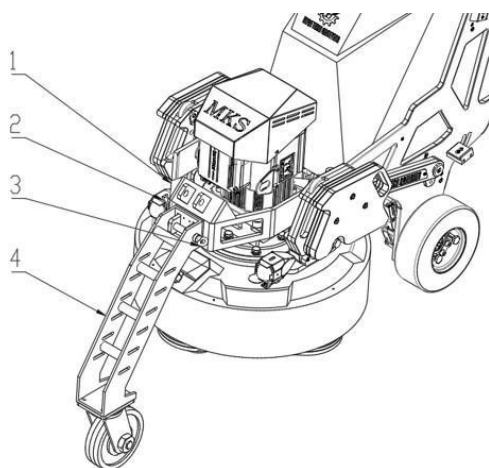


Fig. 29 Transport wheel in mounted position

Item	Designation	Item	Designation
1	Front support frame	2	Safety pin
3	Bolt	4	Transport wheel

To move the machine to the place of use, the transport wheel is mounted as shown in Figure 29. This lifts the grinding tools off the ground and protects them from damage. The machine can be moved more easily to its new location.

In the transport position, the drive wheels are powered by a battery. The machine can be moved manually. By locking the wheels, the machine can also be moved using the remote control.

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



5.2 Preparing the machine for packaging

5.2.1 Packing view and packing dimensions

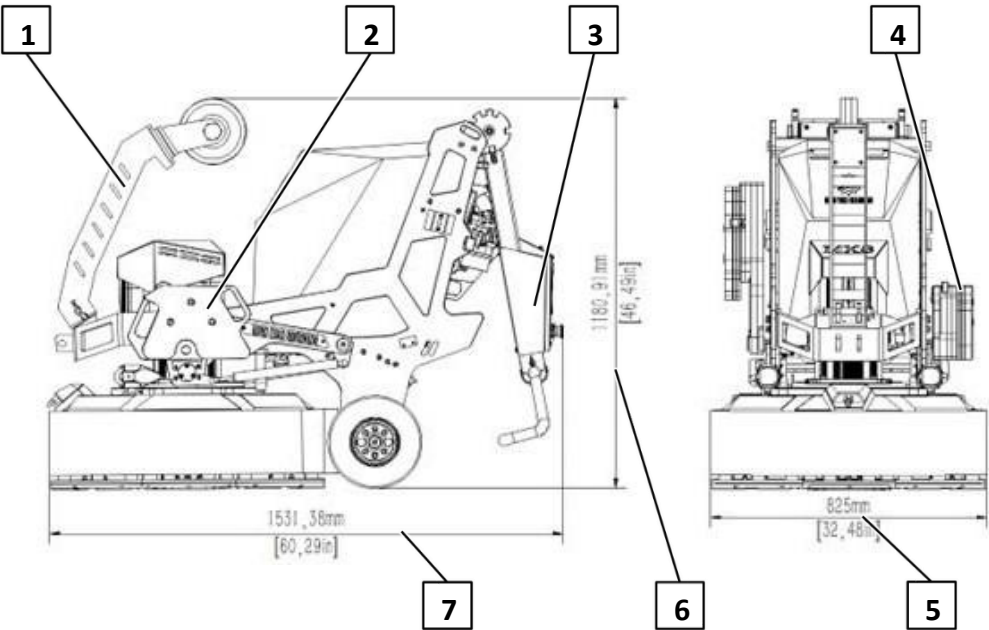


Fig. 30 Packing view and dimensions of the machine

Item	Designation	Item	Designation
1	Transport wheel	2	Weight in working position
3	Guide and control console with handle	4	Weight in standby position
5	Packing width approx. 852 mm	6	Pack height approx. 1,181 mm
7	Package length approx. 1,532 mm	-	-

5.2.2 Raise transport wheel

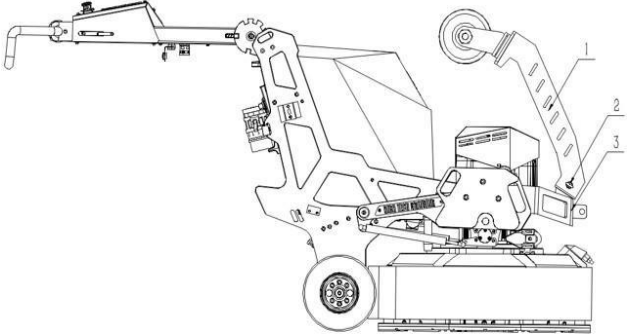


Fig. 31 Side view of transport with transport wheel raised

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

Item	Designation	Item	Designation
1	Transport wheel	2	Bolt with safety pin
3	Support frame	-	-

- Unplug the power cord and secure it against being plugged back in.
- Attach the transport wheel and hold it in place.
- Insert bolt → Fig. 23.
- Insert the safety pin → Fig. 24.

The transport wheel is raised and secured.

5.2.3 Bringing the weight into the working position

- Chapter 7.1.1

Placing the weights in the working position shifts the machine's center of gravity. The machine:

- Can be loaded more easily.
- is more stable on the transport vehicle.

5.2.4 Folding down the guide and control console with handle

- Chapter 7.1.3

5.3 Transporting the machine

Lifting the machine

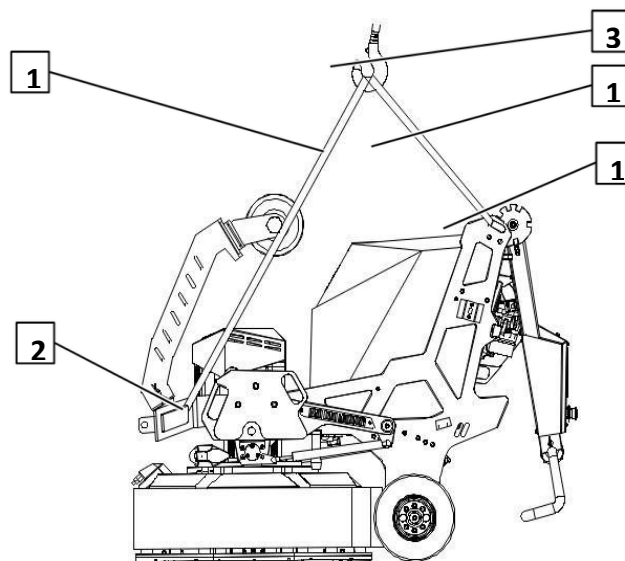


Fig. 32 Machine with lifting gear

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

Item	Designation	Item	Designation
1	Hoisting gear	2	Lifting eyes in the motor area, 2 pieces
3	Crane hook	4	Lifting gear
5	Lifting eyes on the rack	-	Load center of gravity

Attach load

- Design the load capacity of the crane hook and hoists for the machine weight of 535 kg.
- Have two hoists and a crane ready.
- Use undamaged slings and sling eyes.



- Guide one hoist through two lifting eyes in the machine frame near the motor.
- Pass the second hoist through two lifting eyes on the rack.
- Hook the hoists onto the crane hook.
- Check that the hoists are seated correctly.
- Lift the machine slightly and check the load distribution.
The load must not tip over when slightly raised.

Loading the machine

- **DANGER** The load may fall and cause serious or fatal injury to persons.
- Do not stand under suspended loads.
- Raise the load slightly.
- Check the position of the lifting gear and the load distribution.

When craning over high obstacles:

- Use ropes that are sufficiently long and suitable.

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- Adjust the lifting height of the load to suit the local conditions.
- Check the lifting height, slewing and/or travel range.

Crane:

- Lift the load with the crane and place it in a transport crate.
- Depending on:
 - the expected transport route and
 - external influences

Protect the machine against moisture on all sides.

- Secure the machine in the transport crate.
- Seal the transport crate.
- Transport crate:
 - Lift the transport crate using lifting gear at the lifting points and place it on the means of transport.
 - Secure against slipping and tipping.

6 Assembly

6.1 Receive the machine and remove the packaging.

- ⚠ Check the packaging for damage.
If the packaging is damaged, inform the transport company.
- ⚠ Check the machine for damage.
 - If there are signs of damage, report the damage to the dealer.
- ⚠ Check that the machine corresponds to the agreed scope of delivery.
 - If you have any questions, please contact the dealer.

6.2 Mounting grinding tools

CAUTION There are many different grinding tools and systems available on the European market. HTG Europe therefore supplies each grinding machine individually with the tool holders that meet the requirements of the respective customer.

When mounting and using the grinding tools, **always** follow **the instructions and mounting regulations of the respective tool manufacturer**. This is the only way to ensure safe operation of the machine.

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

HTG Europe GmbH accepts no liability for damage, hazards, or malfunctions caused by incorrectly mounted or non-approved tools.

6.2.1 Disconnect the machine from the power supply

- Pull out the mains plug and secure it against being plugged back in.

⚠ DANGER. After disconnecting the power plug, high voltage is still present in the frequency converter. Touching electrical components is fatal.

- Do not touch electrical components.
- Wait until the indicator light goes out.

The machine is now de-energized.

6.2.2 Tilt the machine

Move the weight into the tilting position

- Grasp the weight.
- Pull and hold the locking pin → Fig. 23.
- Move the weight into the tilting position.
- Engage the locking pin.
- Release the weight.

The center of gravity is behind the wheels and stabilizes the subsequent tilting position.

Place the guide and control console and handle in a vertical position.

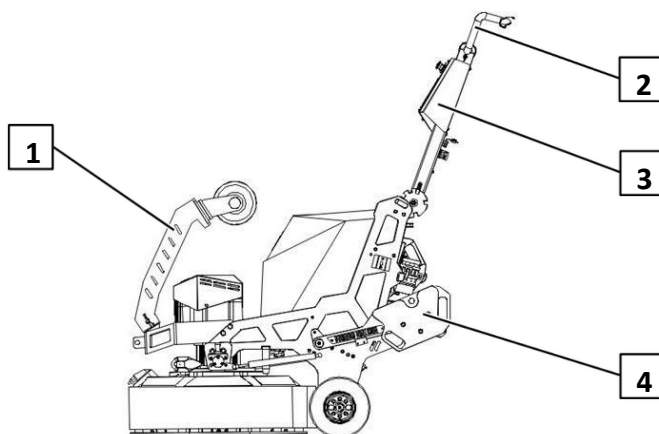


Fig. 33 Machine with vertical guide and control console

Item	Designation	Item	Designation
1	Transport wheel	2	handle

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

3	Guide and control console	4	Weight in tilted position
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- Procedure see section 7.1.3

Tilting the machine



Fig. 34 Machine in tilted position

Item	Designation	Item	Designation
1	Working area for tool change	2	Drive wheel
3	Weight in tilted position	4	Guide and control console

WARNING Risk of tipping on uneven ground.

- Only tilt the machine on level ground.
- Do not place any objects underneath.
- After tilting, check the stability of the tilted position.

If the tilting instructions are followed, the machine will be secure and immovable in the tilted position.

Procedure:

⚠ WARNING The machine weighs approx. 535 kg. The machine is tilted by hand. Tilting requires enormous force. Overstraining is possible.

- If necessary, ask a second person to help with the tilting by holding the handle and tilting the machine.
- Instruct personnel.
- Hold the handle.
- Place one foot on the weight.
- The machine:

Original operating instructions

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- Press the handle firmly toward the floor.
- Place the handle on the floor. The machine is in a tilted position.
- Check the stability of the machine.

6.2.3 Mounting grinding tools

⚠ CAUTION Hot surface. Immediately after using a grinding tool, the grinding tool may be hot.

- Allow the grinding tool to cool down.

Mounting grinding tools

Step 1:

- Disconnect the machine from the power supply → 6.2.1
- Tilt the machine → 6.2.2
- Illuminate the work area.
- If present, thoroughly remove dirt, grinding dust, and chips from the tool holders using a hand brush and vacuum cleaner.

Step 2:

- Use grinding tools in accordance with the manufacturer's specifications.
- The grinding tools must be:
 - symmetrical,
 - firm, and
 - be free of playin the tool holders.
- Hold the machine by the handle and swing it back to the working position.

Start up the machine after mounting the tool

- Move the machine to the working position.
- Unlock the emergency stop switch.
- Plug in the power cord.
- Switch on the machine.
- Start the motor in the ON – OFF direction of rotation using the switch.
- Set the speed control to 1.
The motor runs at the lowest speed. The tool movement starts.
- Check the tool movement.

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➤ If any of the following occur:

- unusual noises,
- vibrations,
- imbalances.

Switch off the machine and disconnect it from the power supply.

➤ Check the mounting of the grinding tools.

6.2.4 Remove the grinding tools

- Disconnect the machine from the power supply → 6.2.1
- Tilt the machine → 6.2.2
- Illuminate the work area.
- Carefully loosen the grinding tool depending on the grinding tool used with:
 - Rubber mallet or
 - slotted screwdriver.
- Dispose of worn grinding tools in accordance with the manufacturer's instructions.

6.2.5 Connect the vacuum cleaner

hose

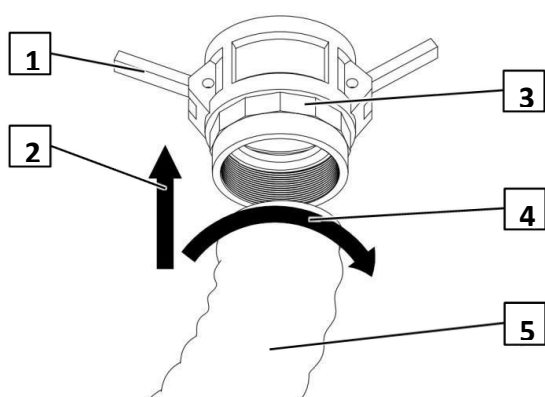


Fig. 36 Connection of the vacuum cleaner tube – 1

Item	Designation	Item	Designation
1	Clamping bracket	2	Vacuum cleaner tube insertion direction
3	Quick-release fastener on vacuum cleaner side	4	Direction of rotation of the vacuum cleaner hose

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

5	Vacuum cleaner hose	-	-
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Screw the vacuum cleaner hose into the quick-release fastener on the vacuum cleaner side.

! Damage to property

- Do not pull the machine by the suction hose.
- Always hold the machine by the handles and grips provided for this purpose.

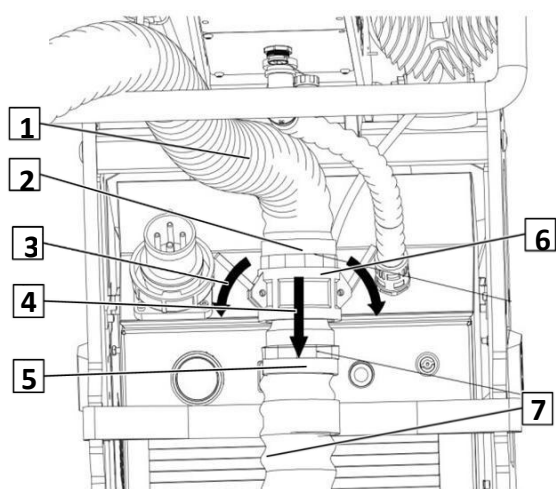


Fig. 37 Connection of the vacuum cleaner tube –

2

Item	Designation	Item	Designation
1	Vacuum cleaner hose	2	Quick release vacuum cleaner side
3	Closure direction of the clamping bracket	4	Attachment direction of the quick release fastener on the vacuum cleaner side
5	Quick-release fastener machine side	6	Clamping bracket locking direction
7	Suction hose of the machine	-	-

- Place the quick-release fastener on the vacuum cleaner side onto the quick-release fastener on the machine side and screw it tight.
- Close both clamping brackets.

The vacuum cleaner hose is now attached to the machine.

7 Start-up

7.1 Set the grinding position

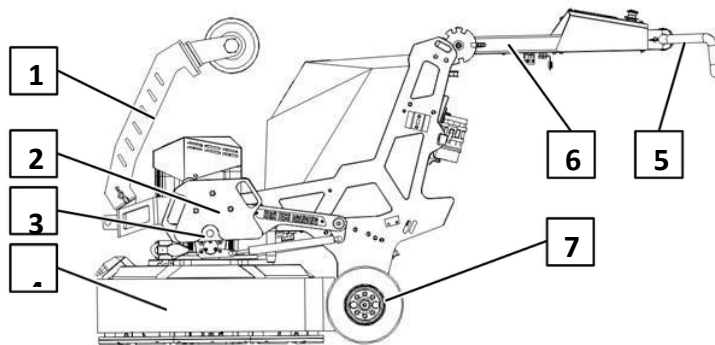


Fig. 38 Machine with transport wheel in grinding position

Item	Designation	Item	Designation
1	Transport wheel	2	Weight in working position
3	Locking pin	4	Drive with gearbox
5	Handle	6	Guide and control console
7	Drive wheel with locking pin	-	-

7.1.1 Adjusting the working position of the weights

Grasp the weight.

- Pull and hold the locking pin.
- Move the weight into the working position.
- Engage the locking pin in the fixed block on the rack.
- Release the weight.

The center of gravity is above the grinding discs. This increases the pressure on the floor surface being worked on. The machine grinds evenly and intensively.

7.1.2 Adjusting the grinding position of the machine

The machine is brought into the grinding position. This includes:

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CAUTION Do not grind with the transport wheel lowered.

- Raise the transport wheel → 5.2.2
- Alternatively, the transport wheel can also be removed.
- Adjusting the handle → 7.1.3
- Adjust the guide and control console → 7.1.3
- Weight in working position → 7.1.1
- Mounting the tool → 6.2
- Filling the water tank → 7.2

7.1.3 Adjusting the handle and the guide and control console

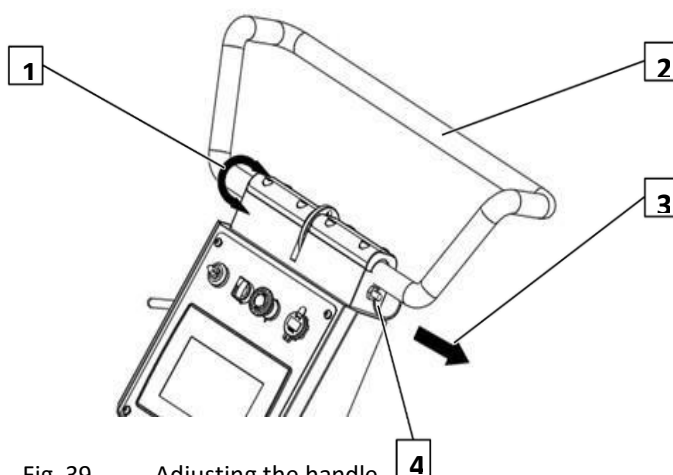


Fig. 39 Adjusting the handle

Item	Designation	Item	Designation
1	Swivel movement of the handle	2	Handle
3	Extension direction	4	Adjustment pin

The handle

can be adjusted to the operator's ergonomics in several stages. Position the handle:

- Hold the handle firmly.
- Pull out the adjustment pin and hold it.
- Move the handle up or down slightly to the desired position.
- **WARNING** If the adjustment pin is not fully retracted, the machine cannot be operated safely. The handle may become misaligned.
- Release the adjustment pin.

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The adjustment pin slides automatically into the correct position. The position of the handle is locked.

- Only operate the machine with the adjustment pin fully inserted.

If the adjustment pin does not immediately slide into the round hole by itself:

- Move the handle slightly by shaking it.
- Gently shake the adjustment pin, but do not pull it out or push it into the round hole with force.

Guide and control console

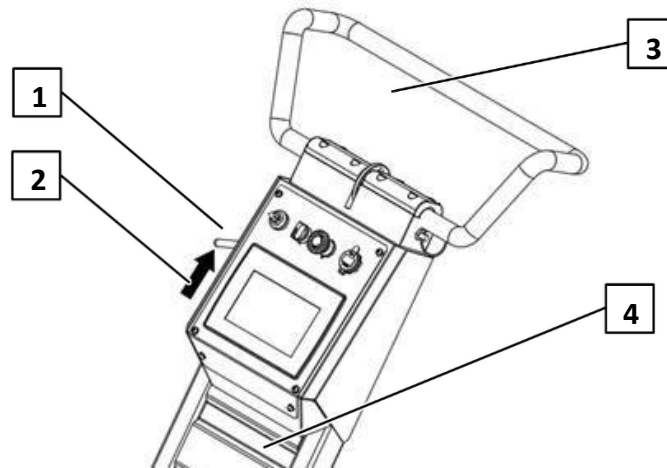


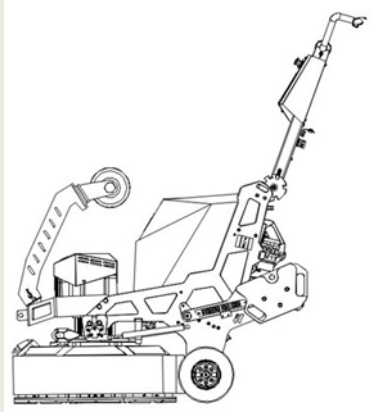
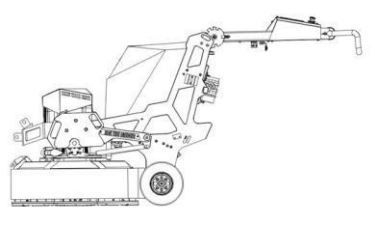
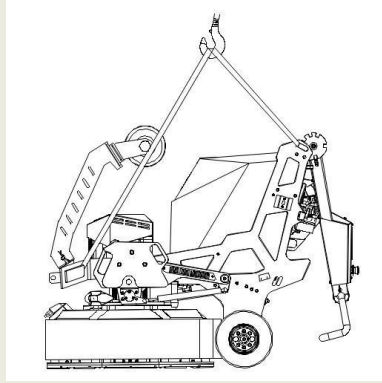
Fig. 40 Adjusting the guide and control console

Item	Designation	Item	Designation
1	Adjusting handle	2	Lifting direction of the adjustment bracket
3	Handle	4	Guide and control console

The guide and control console can be adjusted in several stages:

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Maximum upper position	Middle position	Maximum lower position
		
Example: in preparation for the tilt position	Example: in working position	Example: in transport position

⚠ WARNING The detached guide and control console will tip over due to gravity.

- Hold the guide and control console by the handle.
- Grasp the adjustment handle and loosen it.
- Move the guide and control console to the desired position.
- Lock the adjustment handle into place.

7.2 Filling the water tank

Filling the water tank is only necessary for wet grinding.

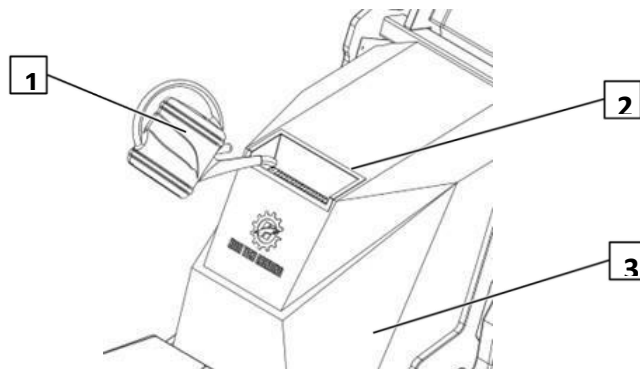


Fig. 41 Filling the water tank

Item	Designation	Item	Designation
1	Water jug	2	Filling opening
3	Water tank	-	-

⚠ Fill the water tank with tap water using the water jug.

The water tank has a maximum capacity of 25 l.

7.3 Switching on

⚠ Sections 8.2.2 and 8.3.2

→ Observe external documentation.

8 Operation and use

8.1 Machine in transport position

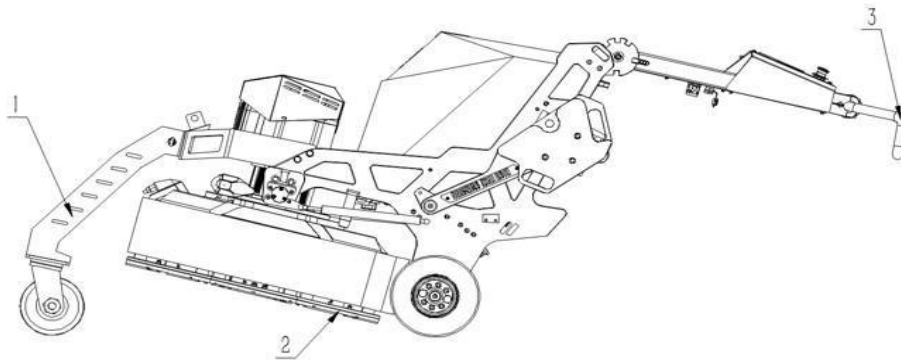


Fig. 42 Machine view in transport position

Item	Designation	Item	Designation
1	Transport wheel	2	Grinding wheel
3	Handle	-	-

8.2 Manual procedure

8.2.1 Moving the machine to the place of use

When moving manually, the machine is pushed by the operator.

- Release the locking pins on the wheels.
- The machine can only be moved with the locking pins released.
- ⚠ Push the machine to the place of use.

8.2.2 Switch on

Step 1:

- ⚠ Move the machine into the working position → 7.1
- ⚠ Plug in the power cord.
- ⚠ When dry sanding, connect the vacuum cleaner and switch it on. → 6.3
- ❗ The vacuum cleaner is not part of the machine described in this operating manual.
- Follow the manufacturer's instructions.
- For wet grinding, fill the water tank → 7.2

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Step 2:

On the control box:

- Set the selector switch for manual operation/remote control to manual operation.
- Check that the grinding direction selector switch is set to "0".
- Switch on the main switch.

The control panel on the guide and control console starts up and displays the user interface with all machine parameters.

On the control panel below the control panel:

- Set the speed for driving the grinding wheels on the speed controller.
- Select the grinding direction on the selector switch to start the machine.
- For wet grinding, press F7 on the control panel.

The front sprayer sprays city water.

Step 3:

- Hold the handle.
- Guide the machine by hand.

8.2.3 Switch off

Step 1:

On the control panel below the control panel:

- Use the speed control to reduce the speed of the drive.
- Set the selector switch for the grinding direction to "0".

Step 2:

- Switch off the vacuum cleaner when dry grinding.
- Press F7 on the control panel for wet grinding.

The spray mist in the front area is turned off.

- Switch off the main switch

The control panel on the guide and control console moves down.

- Unplug the power cord.

8.3 Motorized movement

8.3.1 Drive the machine to the place of use

When moving the machine by motor, it is moved using the remote control and motor power. It

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



is operated using the remote control.

- Switch on the main switch.
- Set the selector switch to remote control.
- Switch on the remote control.
- Lock the drive wheels with the locking pins.
- The machine can now be moved using the joystick on the remote control. See the remote control instructions.

Step 1:

- Mount the transport wheel in the support position.
 - Set weights to transport position → 5.1.1
 - Place the handle and guide and control console in the working position → 7.1.3
 - Lock the locking pin → 4.2.4
- The drive acts on the drive wheels.

Step 2:

- Check the charge status of the remote control.
- On the switch box
 - Switch on the main switch.
 - Set the selector switch for remote control/manual mode to remote control mode.
- Control the machine with the remote control

8.3.2 Switch on

Step 1:

- Raise or remove the transport wheel
 - Set weights to working position → 7.1.1
 - Set the handle and guide and control console to the working position → 7.1.3.
 - Lock the locking pin → 4.2.4
- The drive acts on the drive wheels.

Step 2:

- Set the grinding direction selector switch to "0".
 - Plug in the power cord.
 - For dry sanding, connect the vacuum cleaner and switch it on → 6.3.
- ❗ The vacuum cleaner is not included with the machine described in this operating manual.

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- Follow the manufacturer's instructions.
- For wet sanding, fill the water tank → 7.2

Step 3:

On the control box:

- Switch on the main switch.
The control panel on the guide and control console will rise.
- Set the selector switch to remote control.

Step 4:

- Switch the remote control.
- Start grinding on the remote control:
→ Follow the operating instructions for the remote control for HTG grinding machines in the RC ULTRA series.

8.3.3 Switch off

Step 1:

- Switch off the remote control.
- Refer to the operating instructions for the remote control for HTG grinding machines of the RC-ULTRA series.

Step 2:

- Switch off the vacuum cleaner for dry grinding.
- For wet sanding, press F7 on the control panel.
- The spray mist in the front area is turned off.
- Switch off the main switch.
- The control panel on the guide and control console will lower.
- Unplug the power cord.

8.4 Floors with a slope

⚠ WARNING. Danger when working on sloping surfaces. If the slope is too steep, the machine may tip over or slip.

- Check the slope before starting work on an inclined surface.

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8.4.1 Sanding floors

For manual work and work with the remote control:

- Slope up to max. 6°:
 - No special precautions are necessary
- ⚠ **WARNING** Slope gradient >6°. The machine may tip over and slip
 - Floor grinding is prohibited.

8.4.2 Drive the machine to the place of use

- Slope inclination up to max. 6°
 - No special precautions are necessary
- Slope gradient >6°:
 - Move the machine into the transport position.

When driving uphill or downhill, the machine must:

- Secure with a winch or
- transport it to the place of use with a forklift or crane.
- When driving downhill, drive slowly in reverse.
 - When driving uphill, drive forward and walk behind the machine with particular care when using manual control.

Manual movement:

- Check that the locking pins on the drive wheels are unlocked.
- Ask anyone else to leave the danger zone.

Moving with the remote control:

- Check that the locking pins on the drive wheels are locked.
- If the battery indicator on the remote control is red, charge the battery to at least 40%.

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8.5 Menu screens on the machine's control panel

8.5.1 Screen interface



Fig. 43 Example view of the control panel on the machine

Item	Designation	Function
1	Current date	-
2	Radio connection	Red display: - Manual mode is set Display blue: - Remote control is active
3	Spotlight	White: - Light is off Blue: - Light is on Function key F6
4	Water tank fill level	Only active when the front sprayer is switched on: Red: - Water tank empty Green: - Water tank full
5	Front spray	White: Water supply is turned off

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		Blue:
		• Water supply is turned on
		Function key F7
6	Current time	-
7	Header	-
8	Menu screen	-
9	Function keys F1 to F8	→Sections 8.5.2 to 8.5.8

In manual mode, all buttons can be used for operation.

- Press the F function key to access the menu screen.

8.5.2 Press the F1 function key

- Press F1.

The menu screen appears.



Fig. 44 Function key F1

Item	Designation	Item	Designation
1	Speed of the drive motor	2	Working hours
3	Speed	4	Voltage

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8.5.3 Function key F2

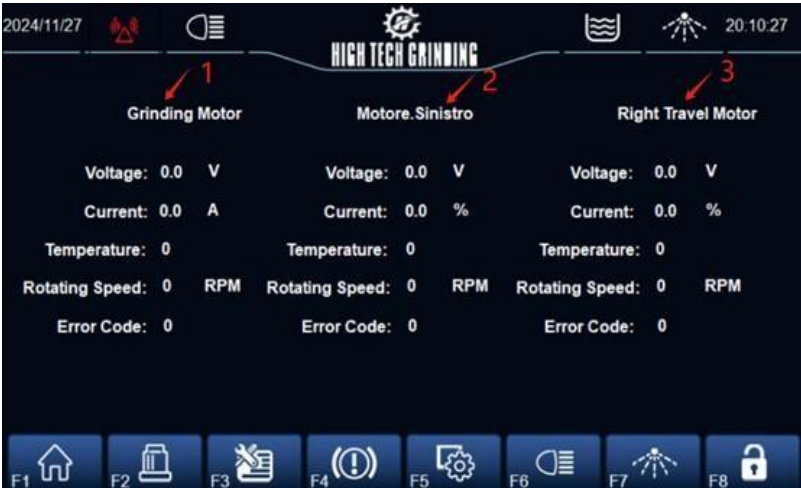


Fig. 45 Function key F2

Item	Designation	Detail
1	Technical parameters of the grinding motor	➤ Voltage, ➤ Current, ➤ Temperature, ➤ Speed, ➤ Error code
2	Technical parameters of the left drive motor	Voltage, Torque, Temperature, Speed, Error code
3	Technical parameters of the right drive motor	Voltage, Torque, Temperature, Speed, Error code

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8.5.4 Function key F3



Fig. 46 Function key F3

Item	Designation
1	Displays the time remaining until the next maintenance

- After maintenance is complete, press and hold F3 for three seconds.
The maintenance time will be reset.

8.5.5 Function key F4



Fig. 47 Function key F4

Item	Designation
1	Error list

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If an error occurs during operation, the error content is displayed.

8.5.6 Function key F5



Fig. 48 Function key F5

Item	Designation	Explanation
1	Language selection	For example: - English - German - Italian
2	Brightness	Digital adjustment
3	Counting coefficient for maintenance	Display in percent
4	System import time	Setting the date and time
5	F3	Press once: The active display jumps to the previous display field.
6	F4	Press once: The active display jumps to the next display field.
7	F6	Press once: Increases the number in the display field by 1.
8	F7	Press once: Decreases the number in the display field by 1.

8.5.7 Function keys F6 and F7



Fig. 49 Front view with headlights and front sprayer

Item	Designation	Function
1	F7 Front sprayer	ON / OFF Sprays city water in front of the grinding area.
3	F6 Headlight	ON / OFF Illuminates the area in front of the machine.

8.5.8 Function button F8

The F8 function key opens the manufacturer's service mode. It is password-protected and not accessible to the user.

9 Error handling

- If errors cannot be resolved, contact your dealer.

Error	Possible causes	Remedy
Machine does not start	Power plug not plugged in	Check the power connection
	Main switch set to "OFF"	Set main switch to "ON"
	Fuse blown or no mains voltage	Check fuse
	Emergency stop activated	Unlock emergency stop
Overload	Excessive material removal or excessive contact pressure	Reduce grinding pressure, Adjust speed
	Grinding tool blocked	Check and clean tools
	Incorrect motor setting in the frequency converter	Contact manufacturer
Overcurrent	Short circuit at motor connection	Check cable connections and insulation
	Damaged motor cable	
	Blocked machine or stuck tool	Check and clean tools
	Faulty motor parameters in the frequency converter	Contact manufacturer
Input phase missing	Mains voltage missing on one phase	Check power supply, all 3 phases
	Connection cable or socket defective	
Output phase missing	Defect in frequency converter	Check motor–frequency converter connection, reset frequency converter, If the error persists, contact the manufacturer

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

Frequency converter overheating	Permanent overload of the motor	Allow machine to cool down Adjust operating parameters if necessary
	Insufficient ventilation of the control cabinet	Ensure air supply, clean ventilation slots
	Ambient temperature too high	Allow machine to cool down
	Fan defective or dusty	Check/replace fan
Abnormal power consumption	Defective motor or bearing problem	Measure motor current and compare with nominal value
	Incorrect motor parameter in the frequency converter Short circuit or phase closure	Check the rated current and voltage parameters
	Mechanical blockage in the drive system	Check mechanical parts for smooth running
Irregularity in motor tuning	Motor tuning started with incorrect parameters	Only perform engine tuning when the engine is unloaded
	Machine not unloaded	Check and correct motor parameters
	Sensor error or cable error	Check cables and feedback sensors
	FU not matched to motor type	If necessary, perform automatic tuning again
Motor runs unevenly or intermittently	Grinding tools unevenly worn	Check/replace tools
	Voltage fluctuations	Check power supply
	Frequency converter incorrectly parameterized	Contact manufacturer
Grinding performance insufficient	Frequency converter incorrectly parameterized	Select suitable grinding tools
	Incorrect tool selection	Replace tools

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

	Worn tools	Adjust speed to material
	Insufficient speed set	Increase contact pressure
Dust extraction not working	Vacuum cleaner switched off or not connected	Switch on vacuum cleaner / check connection
	Hose clogged	Clean the hose
	Filter in vacuum cleaner clogged	Change or clean the filter
Excessive vibration during operation	Grinding tools unevenly mounted	Mount tools correctly
	Imbalance due to damaged segments	Replace damaged segments
	Floor unevenness too severe	Adjust speed, guide machine smoothly
Frequency converter not working / display dark	No mains voltage at the frequency converter	Check power supply
	Internal frequency converter error	Check fuse in control cabinet
	Control line interrupted	Restart frequency converter, replace if necessary
Fuse trips	Short circuit in cable or motor	Check cable, plug, and motor
	Overload due to blocked tool	Check/replace tools
Machine is running, but no grinding effect visible	Incorrect tool type	Select suitable tools
	Tool worn	Replace tools
	Speed too low	Increase speed
Excessive heating of the machine	Grinding load too high	Reduce load
	Ventilation slots blocked	Clean machine
	Frequency converter fan failed	Check/replace fan

10 Maintenance

⚠ DANGER. After disconnecting the power plug, high voltage is still present in the frequency

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converter. Touching electrical components is fatal.

- Do not touch electrical components.
- Wait until the indicator light goes out.

10.1 Maintenance schedule

10.1.1 Daily

Component	Activity
Check switches and indicators	Switch on the machine. Check: • Check the functions of all switches and indicators • power connection
Emergency stop switch	Turn the emergency stop switch to its release position and then press the start button. • Does the machine start up correctly? Then press the emergency stop switch again. • Does the machine stop reliably?
Machine	Cleaning the machine • Blow off the machine with compressed air
Dust extraction parts up to the connection to the vacuum cleaner	Unplug the power cord. Switch off the main switch. Remove any blockages.
Grinding tools and tool holders	Unplug the power cord. Switch off the main switch. Tilt the machine. Remove dirt from grinding tools and tool holders.
Battery	Check the battery capacity and charge if necessary.
Dust cover	Check the dust cover for damage and replace if necessary.

10.1.2 Monthly

Component	Action
-----------	--------

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HIGH TECH Grinder HTG-680RC Ultra

Remote control battery	Store the remote control at 0°C to 40°C. If the machine is not used for more than one month, remove the battery from the remote control.
Spare battery for remote control	Store at 0°C to 40°C. Recharge monthly. Regular charging protects the battery from damage. Use the manufacturer's original charger and charging cable.
	Store at room temperature.
Check the outlet filter	Check for contamination
Wheels	Check that the wheels are running smoothly

10.1.3 Quarterly

Component	Action
Outlet filter	Replace every 3 months Use filter mat of class G4 in accordance with EN ISO 16890
Transmission	Change oil

10.2 Cleaning

Cleaning interval:

- Daily after the working day

Before each cleaning:

- Disconnect the power plug.
- Switch off the main switch.

Component	Action
Controls and displays	Clean the exterior with a brush if it is dirty. Have dirt in the switch box or control elements removed regularly by qualified personnel.

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Grinding disc cover	Remove the vacuum cleaner connection Shine a flashlight into the suction opening Remove dust from the suction opening with a soft brush.
Grinding discs	Tilt the machine. Loosen grinding tools with a suitable tool. Remove dust or grinding residue with a brush or scraper.
Remote control	Switch off the remote control. Clean dry with a brush or cotton cloth. Keep the battery compartment clean.
Ventilation opening on the switch box	Unplug the power cord. Switch off the main switch. Clean the fan opening daily. Have the fan opening cleaned inside by qualified personnel.

External cleaning

- Clean external parts, e.g., housing parts, with a slightly damp cloth.
- Do not use dripping wet cloths.
- Do not clean with a high-pressure cleaner.

11 Maintenance

11.1 Decommissioning

When decommissioning, the machine's functionality is:

- interrupted indefinitely or
- interrupted for a longer period of time,

so that maintenance work according to the maintenance schedule and other monitoring measures are not carried out.

The following measures are necessary:

- Disconnect the power plug and secure it against being switched back on.
- Prevent unauthorized persons from restoring the power supply.
- Machines:

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HIGH TECH Grinder HTG-680RC Ultra



- Move to the travel position.
- Place on a horizontal and level surface.
- Lower the guide and control console to the transport position.
- Secure against collision with other machines or vehicles.
- Keep the operating instructions in a safe place.
- Prevent contamination from deposits.
- Perform regular visual inspections.

11.2 Storage

Storage conditions

The storage location must meet the following conditions:

- dry at room temperature
- protected from the weather
- sufficiently solid floor
 - $\Phi \text{ m} \times \text{m} \times \text{m} \rightarrow 4.1.3$
- low dust formation.

If the storage conditions are not observed, components may corrode or age prematurely. The service life of the machine will be reduced.

Check stored goods

Unpredictable events can occur during storage. These include:

- Weather conditions
- Building damage
- Pest infestation
- Carelessness during further storage work

Damage may occur to the machine.

- Check the storage location, condition, and position of the machine at regular intervals.

11.3 Recommissioning

- Chapters 6, 7, and 8

11.4 Disposal

11.4.1 Dry grinding dust

The dry sanding dust produced during the sanding process may contain mineral,

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



cementitious, metallic, or asbestos-containing components, depending on the material being processed .

- **WARNING** Inhalation of grinding dust. Grinding dust may contain fine dust that is hazardous to health, e.g., quartz dust, metal oxides, and cement components. The grinding dust is respirable and can cause serious damage to the respiratory tract.

- Wear PPE:
 - FFP2 respirator,
 - protective gloves,
 - safety goggles,
 - Disposable protective suit, type 5/6.

Dry grinding dust:

- Collect in closed containers or vacuum cleaner containers and dispose of.
- Do not allow to enter the environment, sewage system, or unpaved areas.
- Dispose of in accordance with applicable environmental, hazardous materials, and waste disposal regulations.

11.4.2 Wet grinding slurry

Wet grinding produces wet grinding slurry, which may contain mineral, cementitious, metallic, or asbestos-containing components, depending on the material being processed.

- **CAUTION** Wet grinding dust can be alkaline or chemically irritating. Skin, respiratory, and eye irritation are possible.

- Wear PPE:
 - FFP2 respirator mask,
 - protective gloves,
 - safety goggles.

Wet grinding dust:

- Collect in suitable, sealed, and chemically resistant containers.
- Do not allow to enter the sewage system, surface water, or soil.
- Dispose of in accordance with applicable environmental, hazardous materials, and waste disposal regulations.
- After drying, treat and dispose of the settled solids as dry grinding dust.

11.4.3 Sanding dust containing asbestos

When sanding old floors, adhesives, fillers, or coatings applied before 1995, there is a risk of asbestos-containing dust.

- **WARNING** Serious damage to the respiratory tract and carcinogenic. The dust

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra



absorbed by the is hazardous: Waste code 17 06 05* – "Building materials containing asbestos."

→ The provisions of TRGS 519 Technical Rules for Asbestos - Demolition, Renovation, or Maintenance Work must be strictly observed.

- Work with materials containing asbestos must be carried out by competent personnel in accordance with TRGS 519 Annex 3 or 4 with appropriate asbestos expertise.
- Pack the dust in dust-tight, labeled asbestos bags with a red warning label "A" or in big bags.
- Dispose of waste via approved disposal companies in accordance with the hazardous substances and waste regulations
 - KrWG - Law on the Promotion of Recycling and Ensuring Environmentally Compatible Waste Management
 - TRGS – Technical Rules for Hazardous Substances
 - AVV – Ordinance on the European Waste Catalog.
- Do not allow wet asbestos-containing grinding sludge to dry.

11.4.4 Other waste

Designation	Removal
Grinding tools	Observe legal regulations and manufacturer's instructions.
Filter material	According to the filtered dust See sections 11.4.1 to 11.4.3
Battery in the remote control	Dispose of in accordance with legal requirements.
Battery in the switch box	Do not dispose of in household waste.

Depends on duration of use and soil material

11.4.5 Disposal upon final decommissioning and disassembly

The machine contains components that pose a risk to the environment if disposed of improperly:

- Components from the electrical and electronic systems:
 - Cables
 - Switches
 - Control elements

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

- Lights
- Displays
- Rubber on the tires.
- Plastics, e.g., remote control housing.
- Observe disposal instructions under 3.3.2.

12 Equipment for documentation

12.1 Internal documentation

Designation	Identification
Parts list	HTG 680 RC Ultra
Remote control	Operating instructions RC Remote Remote control Remote control for HTG grinding machines of the RC-ULTRA series

12.2 Type plate

Floor grinding machine			
Model:	HTG-680RC Ultra	Power:	11,0 kW
Serial No:	XY202411X27121	Nominal voltage:	400V/3ph/N/PE
Remote Control:	4540	Nominal current:	20A
Baujahr:	2025	Weight:	535 kg
Manufacturer:		Exclusive distribution partner europe:	
High Tech Grinding Systems Co.,Ltd		HTG Europe GmbH	
Fujian Xingyi Intelligent Equipment Co.,Ltd		Im Fisserhook 3-5, 46395 Bocholt	
Factory: NO.34, Juxian Road, Jinjiang		www.htgeurope.com	
Quanzhou City, Fujian Ultravince, China		info@htgeurope.com	
			
			

Fig. 50 Type plate, example

The type plate provides the minimum information about the machine. The minimum information has been supplemented with connection data.

EG-/EU- Konformitätserklärung

nach der Maschinenrichtlinie
2006/42/EG Anhang IIA



HTG EUROPE

Hiermit erklären wir, dass die nachfolgend bezeichnete Maschine aufgrund ihrer Konzipierung und Bauform sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-/EU-Richtlinien entspricht.

We hereby declare that the machine described below complies with the relevant basic safety and health requirements of the EC/EU directives in terms of its design and construction, as well as in the version marketed by us.

Bezeichnung:	HIGH TECH GRINDING - 250 Ultra, CG250 Ultra, 250S Ultra, 460 Ultra, 550 Ultra, 550RC Ultra, 680 Ultra, 680RC Ultra, 680SP Ultra, 680GBD Ultra, 800SP Ultra, 820RC Ultra, 820GBD Ultra
Description:	

entspricht folgenden EG-Richtlinien:	Maschinenrichtlinie 2006/42/EG	<i>Machinery Directive 2006/42/EG</i>
	EMV-Richtlinie 2014/30/EU	<i>EMV Directive 2014/30/EU</i>
Complies with the following EG directives:		

Angewandte harmonisierte insbesondere: <i>Applied harmonized standards, in specific:</i>	EN ISO 13849-1:2023	Sicherheit von Maschinen – Sicherheitsbezogene Teile von Steuerungen <i>Safety of machinery – Safety-related parts of control systems</i>
	EN ISO 12100:2011	Sicherheit von Maschinen – Allgemeine Gestaltungsgrundsätze – Risikobeurteilung und Risikominderung <i>Safety of machinery – General principles for design – Risk assessment and risk reduction</i>
	EN ISO 13857:2020	Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen und unteren Gliedmaßen <i>Safety distances to prevent upper and lower limbs from reaching hazardous areas</i>
	EN ISO 13854:2019	Sicherheit von Maschinen – Mindestabstände zur Vermeidung des Quetschens von Körperteilen <i>Safety of machinery – Minimum gaps to prevent crushing of body parts</i>
	DIN EN ISO 14118:2018	Sicherheit von Maschinen – Vermeidung von unerwartetem Anlauf <i>Safety of machinery – Prevention of unexpected start-up</i>
	EN 60204-1:2019	Sicherheit von Maschinen – Elektrische Ausrüstungen von Maschinen <i>Safety of machinery – Electrical equipment of machines</i>

Bei einer Änderung dieser Maschine verliert diese Erklärung ihre Gültigkeit. Die speziellen technischen Unterlagen nach Anhang VII Teil A sind für die Maschine erstellt worden.

This declaration loses its validity if this machine is modified. The specific technical documentation in accordance with Annex VII, Part A has been prepared for the machine.

Hersteller: High Tech Grinding Systems Co., Ltd
Manufacturer Fujian Xingyi Intelligent Equipment Co., Ltd
Factory: NO.34, Juxian Road, AnPing Development Area, Jinjiang, China

Exklusiver Vertriebspartner: HTG Europe GmbH
Exclusive distribution partner Im Fisserhook 7, 46395 Bocholt, Deutschland

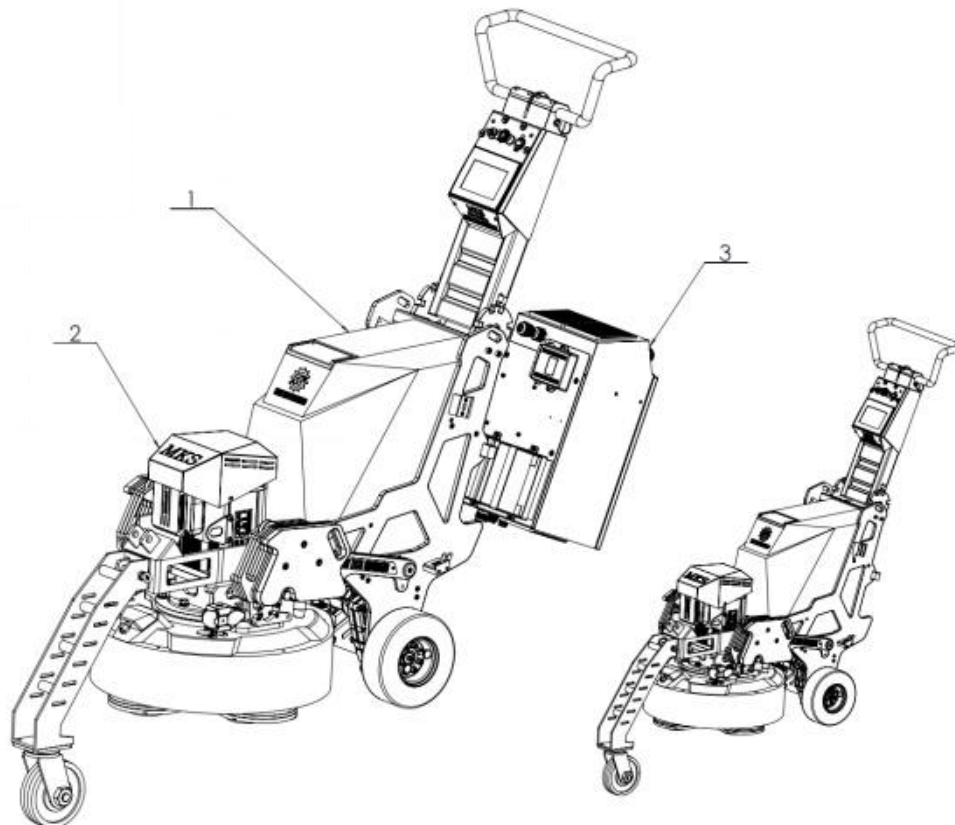
Bocholt, 04.12.2025

Peter Bußmann – HTG Europe GmbH - Managing director


HTG EUROPE GMBH
IM FISSETHOOK 7
46395 BOCHOLT | GERMANY

13 Exploded drawings

13.1 Overall view

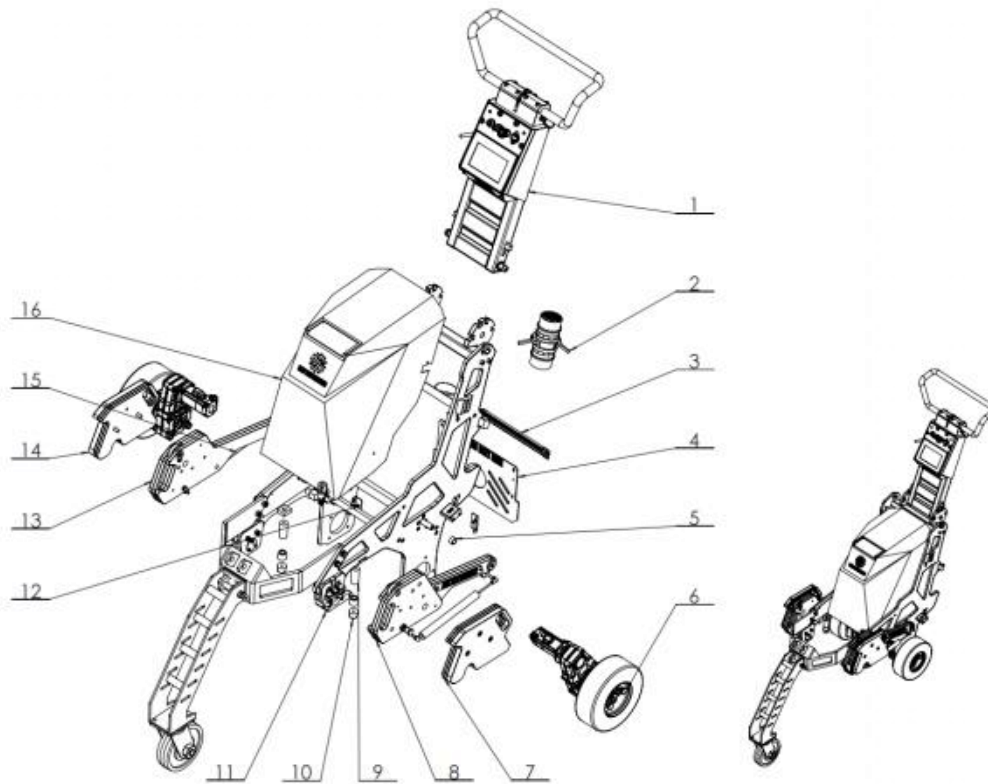


Pos	Item no	Description	Pcs
1	2.11.018.006	Rack components	1
2	2.12.018.017	Gearbox components	1
3	2.13.018.012	Electric control box component	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.2 Rack assembly



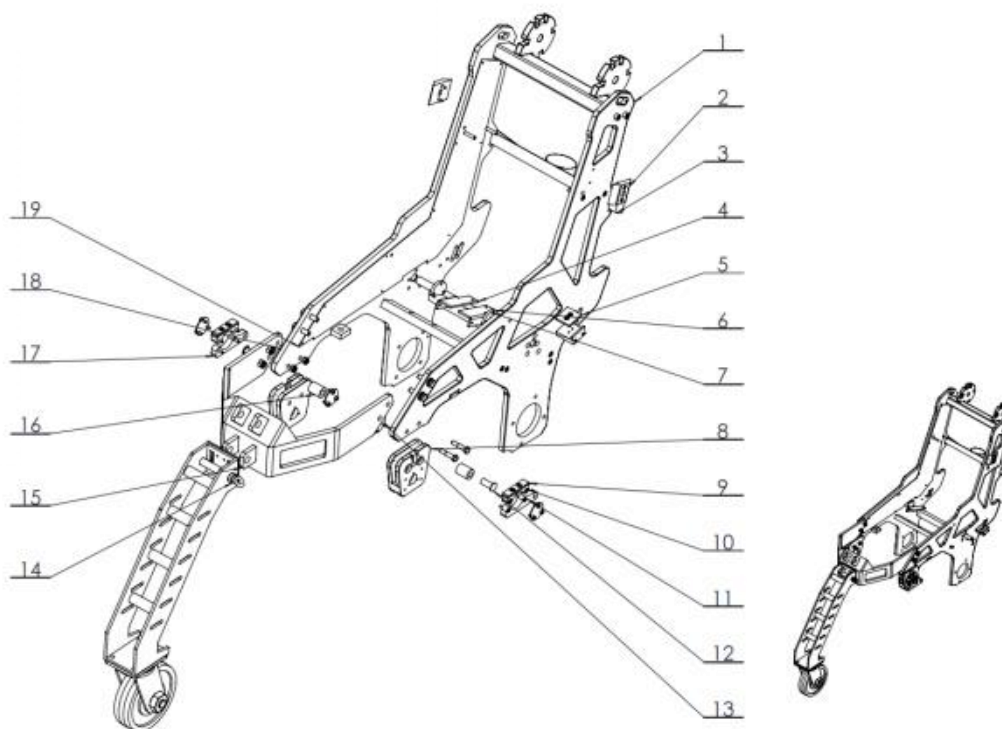
Pos	Item no	Description	Pcs
1	2.41.018.029	Swing bar component	1
2	2.41.018.011	Quick connectors	1
3	3.21.116.010	LED Light	1
4	4.11.018.181	Side panel	1
5	4.11.029.076	Spacer	2
6	2.41.018.026	Wheel axle component	2
7	2.41.018.036	Left counterweight	1
8	2.41.018.035	Left weighted iron	1
9	4.11.018.001	Support column	2
10	3.22.117.003	Machine foot pad	4

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

11	2.41.018.028	Rack components	1
12	4.11.018.191	Transfer sheet metal	2
13	2.41.018.037	Right weighted iron	1
14	4.11.018.166	Right counterweight	1
15	3.22.120.013	Gas springs	2
16	2.41.018.030	Water tank components	1

13.3 Rack components



Item	Item no	Description	Pcs
1	2.21.018.027	Rack welding	1
2	4.11.001.033	Intermediate fixing block	2
3	5.11.102.003	Fixing strap	1
4	4.11.018.140	Fixed sheet metal	1

Original operating instructions

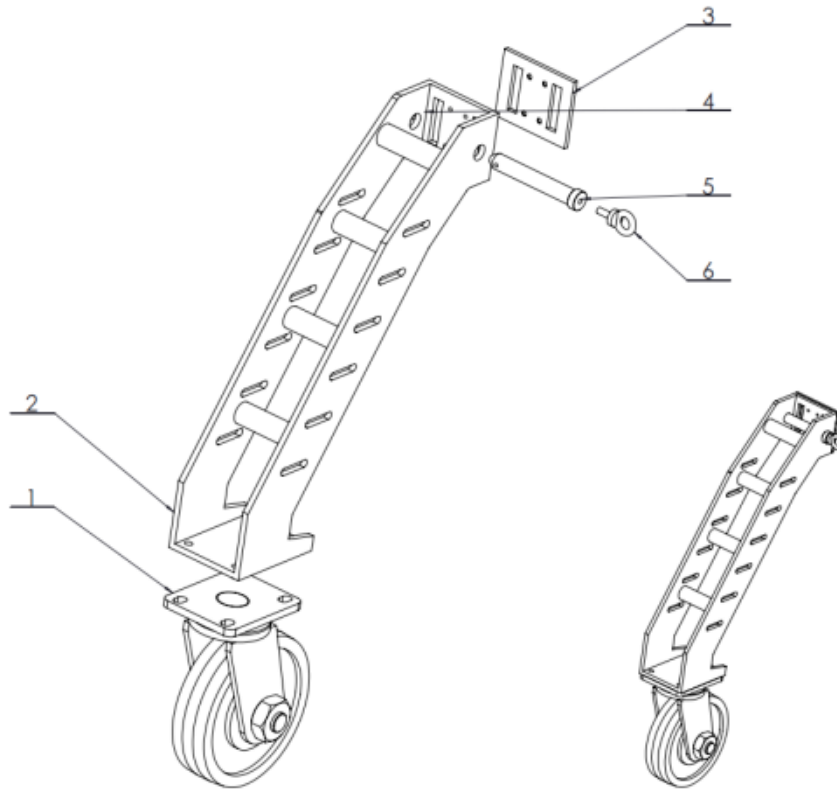
HIGH TECH Grinder HTG-680RC Ultra

5	4.11.018.086	Shock-absorbing rubber	2
6	4.11.018.142	Fixed sheet metal	1
7	4.11.018.015	Weighted iron shaft	2
8	4.11.018.104	Connection ears	2
9	4.11.018.116	Shock-absorbing pads	2
10	4.11.018.092	Front fixing block	2
11	4.11.018.016	Fixing block	1
12	4.11.001.048	Dynamic balancing pin	2
13	4.11.001.047	Dynamic balancing cover	4
14	2.41.018.038	Front guide wheel	1
15	4.11.018.180	Support plate	1
16	3.22.122.003	Rubber sleeve	2
17	4.11.018.017	Fixing block	1
18	5.11.101.037	Screws	4
19	4.11.018.141	Rack decorative panel	2

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.4 Support wheel assembly

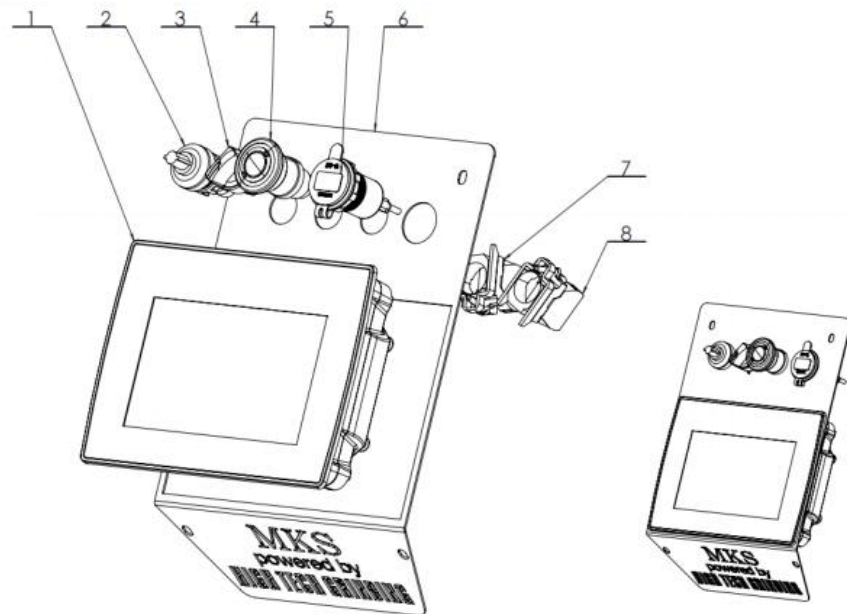


Pos	Item no.	Description	Pcs
1	3.22.111.059	Universal wheel	1
2	4.11.018.179	Support frame	1
3	3.22.117.045	Shock absorbing rubber	1
4	3.22.121.004	R-type pin	1
5	4.11.049.013	Fixing pin	1
6	5.11.161.001	Eyebolt	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.5 Control panel components

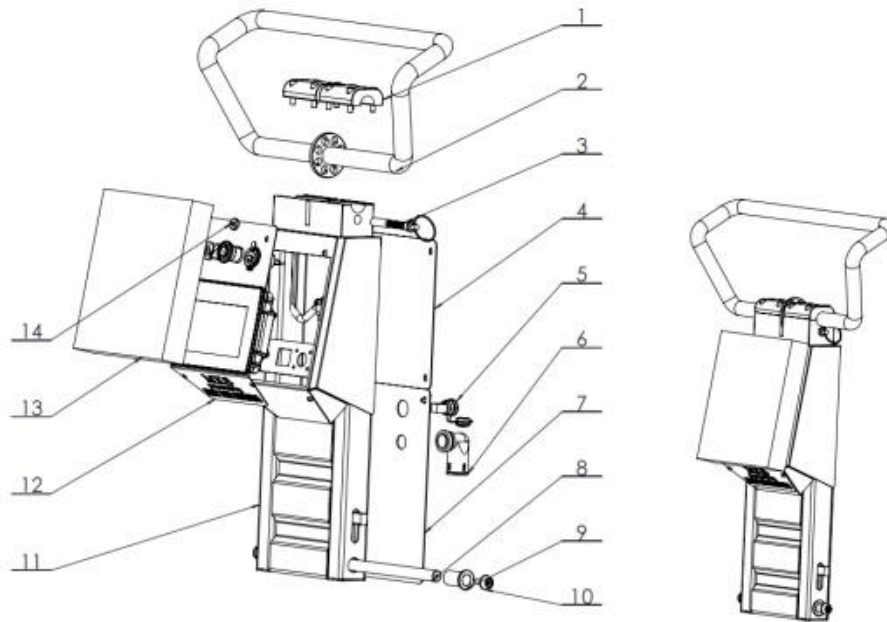


Pos	Item no.	Description	Pcs
1	3.21.124.014	Display	1
2	3.21.117.007	Integrated potentiometer	1
3	3.21.114.084	Switch head	1
4	3.21.114.080	Switch head	1
5	3.21.118.002	USB interface	1
6	4.11.018.184	Operation panel	1
7	3.21.114.083	Switch seat	1
8	3.21.114.079	Switch seat	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.6 Control handle assembly



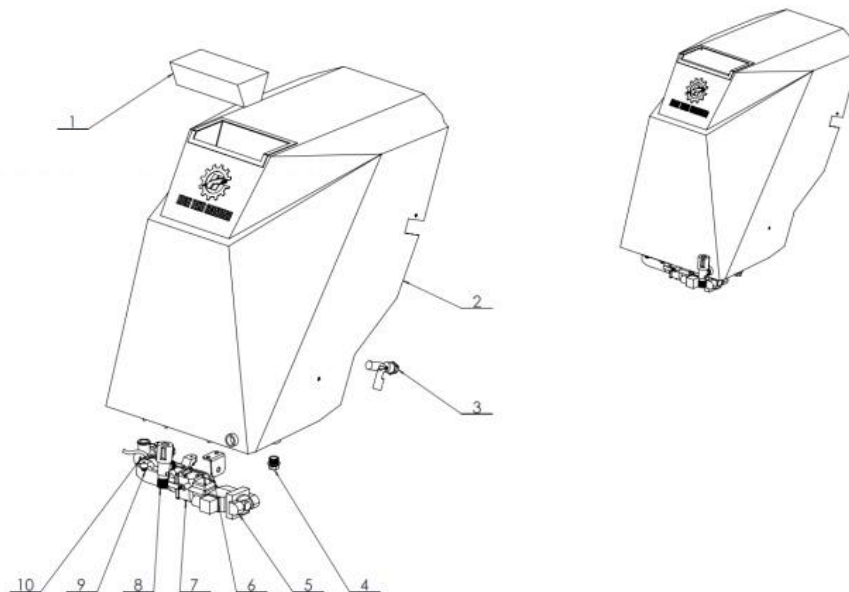
Pos	Item no.	Description	Piece
1	4.11.018.136	Clamping cover	2
2	4.11.022.043	Swing bar handle	1
3	3.31.101.007	Swing bar latch	1
4	4.11.018.137	Rear cover	1
5	3.22.201.077	Network cable connector	1
6	5.11.110.006	Cable guard	1
7	4.11.018.139	Rear cover	1
8	4.11.018.055	Rotation axis	1
9	4.11.018.056	Pin bushing	2
10	4.11.001.034	Decorative cover	2
11	2.21.018.026	Swing bar	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

12	3.31.151.198	Swing bar panel	1
13	4.11.018.109	Protective cover	1
14	3.22.114.002	Magnet	4

13.7 Components of the water tank



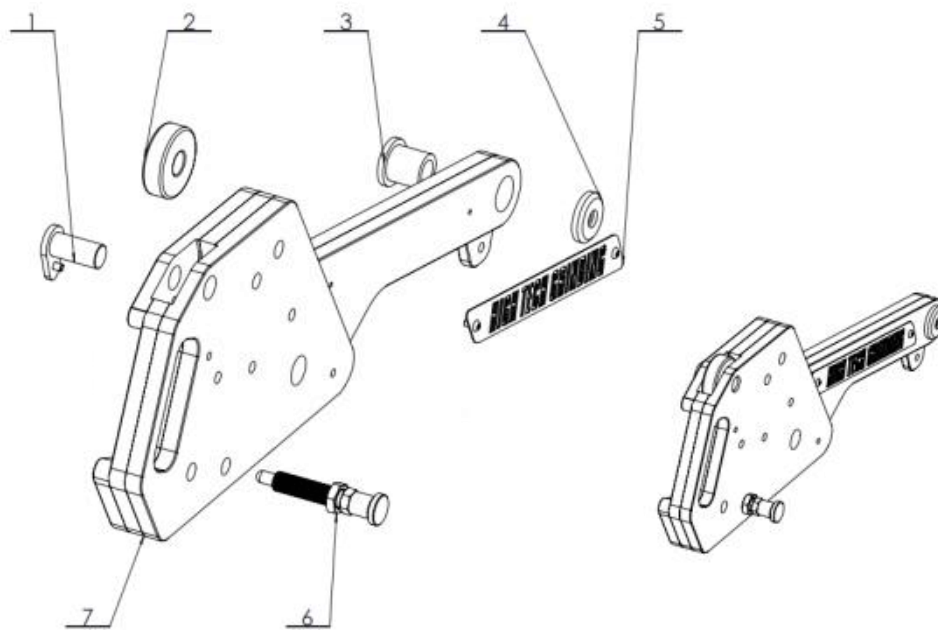
Item	Item no.	Description	Pcs
1	4.11.018.117	Radiator cap	1
2	4.11.018.130	Water tank	1
3	5.51.105.002	Water level detector	1
4	3.22.126.001	Plug	1
5	3.12.161.001	Solenoid valve	1
6	4.11.029.152	Fixing seat	1
7	3.11.151.001	Dust pump	1
8	3.15.113.001	Water switch	1
9	5.11.106.015	Nylon cap	6

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

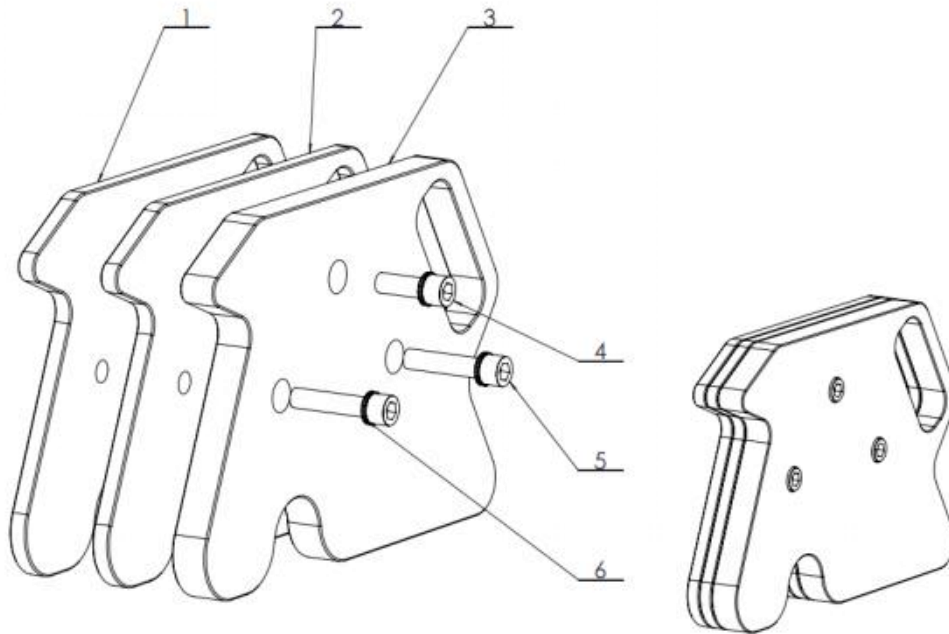
10	3.22.201.005	Filters	1
11	4.11.018.128	Water tank filter	1
12	5.11.101.036	Screws	4

13.8 Weights



Pos	Item no.	Description	Pcs
1	4.11.018.101	Weighted iron pin	1
2	4.11.022.076	Weighted iron wheels	1
3	3.22.112.078	Copper sleeve	1
4	4.11.022.061	Shaft cover	1
5	4.11.029.155	Weighted iron nameplate	1
6	3.22.121.001	Reset indexing plunger	1
7	4.11.018.188	Left weighted iron	1

13.9 Additional weight

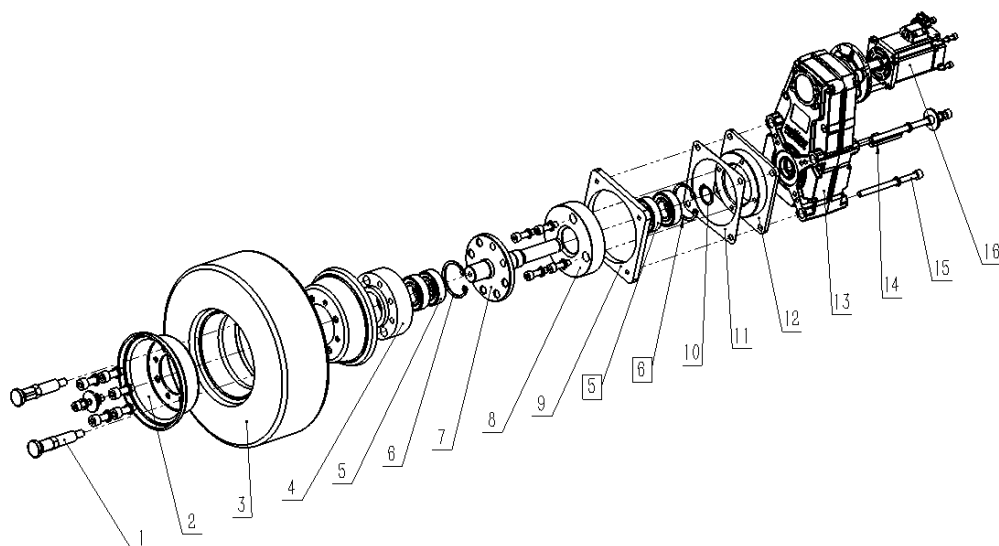


Pos	Item no	Description	Pcs
1	4.11.018.190	Counterweight 3	1
2	4.11.018.185	Counterweight 2	1
3	4.11.018.186	Counterweight 1	1
4	5.11.101.245	Screw	1
5	5.11.101.406	Screw	2
6	5.11.109.058	Lock washer	3

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.10 Wheel axle assembly



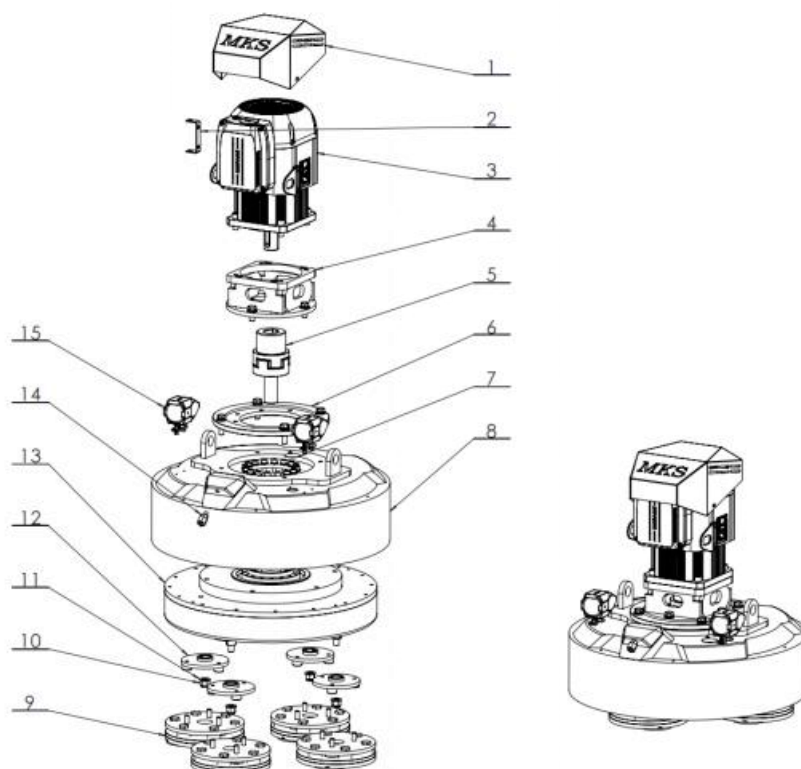
Pos	Item no.	Description	Pcs
1	3.22.121.003	Indexing plungers	2
2	3.22.111.017	Wheels	2
3	3.22.111.016	Rear axle wheels	1
4	4.11.018.105	Wheel plate	1
5	4.11.018.031	Power shaft	1
6	4.11.022.020	Bearing seat	1
7	3.22.112.077	Bearings	4
8	5.11.108.001	Inner retaining ring	2
9	3.22.118.002	Key bar	1
10	4.11.022.021	Reinforcement plate	1
11	4.11.022.127	Coaxial seat gasket	2
12	4.11.022.019	Coaxial seat	1
13	4.11.018.030	Gasket	2

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

14	3.11.112.006	Reducer	1
15	3.11.112.045	Servo motor	1

13.11 Gearbox and drive – 4 discs



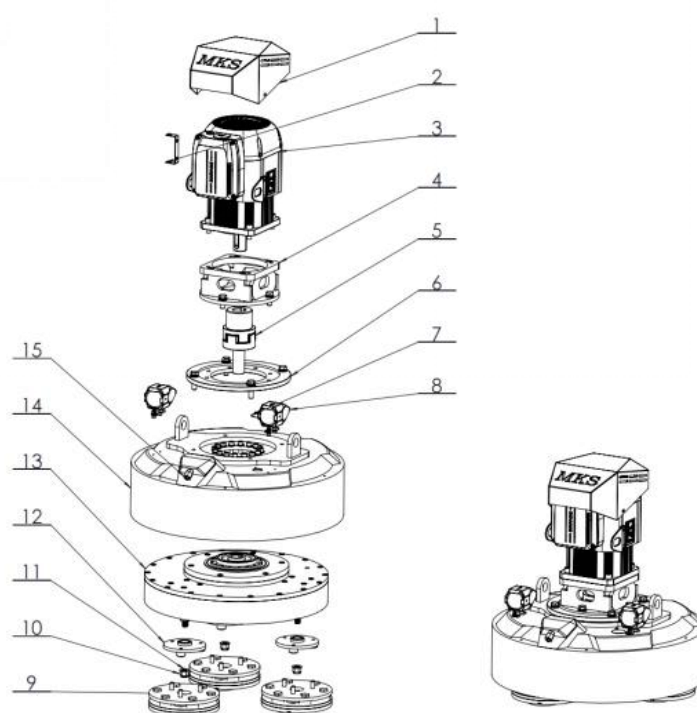
Item	Item no	Description	Pcs
1	4.11.018.183	Motor cover	1
2	4.11.029.172	Wrench fixing plate	1
3	3.11.112.049	Servo motor	1
4	4.11.086.013	Motor connector	1
5	3.22.128.005	Couplings	1
6	4.11.018.145	Motor adapter plate	1
7	3.22.163.021	Oil cover	1
8	4.11.018.182	Gearbox cover	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

9	3.31.162.074	Grinding disc component	4
10	5.11.106.016	Nylon cap	4
11	5.11.109.012	Flat washers	4
12	3.22.116.006	Upper flange	4
13	3.13.112.006	Gearbox	1
14	2.41.017.005	Sprinkler head component	1
15	3.21.116.011	LED light	2

13.12 Gearbox and drive – 3 discs



Pos	Item no	Description	Pcs
1	4.11.018.183	Motor cover	1
2	4.11.029.172	Wrench fixing plate	1
3	3.11.112.049	Servo motor	1

Original operating instructions

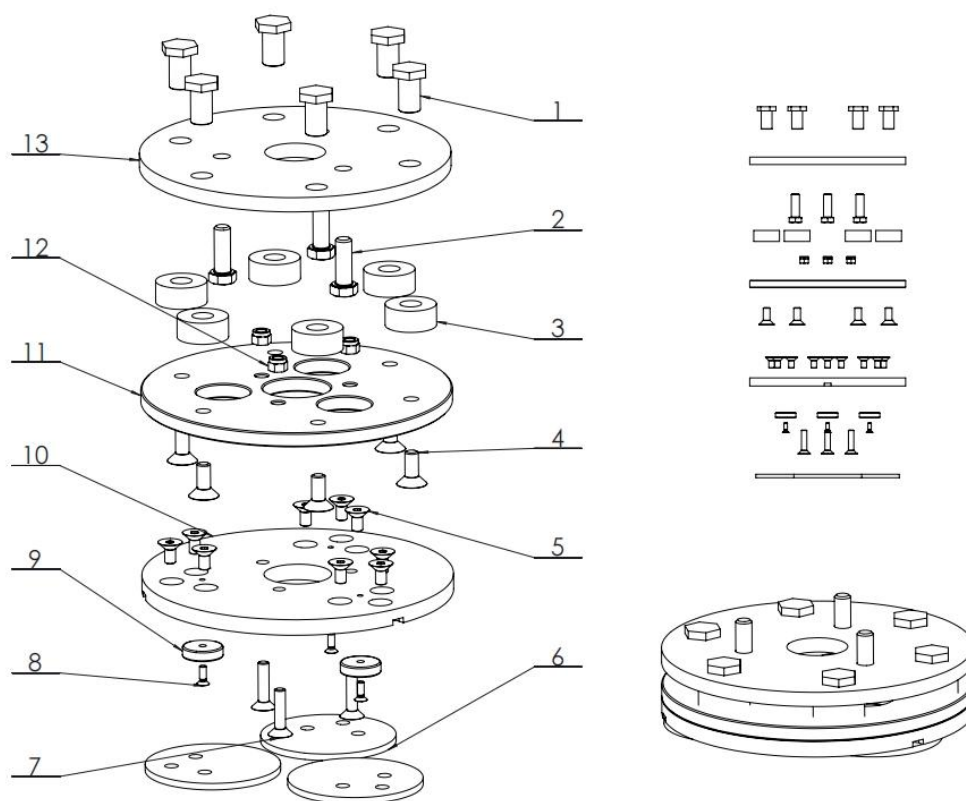
HIGH TECH Grinder HTG-680RC Ultra

4	4.11.086.013	Motor connector	1
5	3.22.128.005	Couplings	1
6	4.11.018.145	Motor adapter plate	1
7	3.22.163.021	Oil cover	1
8	3.21.116.011	LED light	2
9	3.31.162.074	Grinding disc component	3
10	5.11.106.016	Nylon cap	3
11	5.11.109.012	Flat washers	3
12	3.22.116.006	Upper flange	3
13	3.13.112.017	Gearbox	1
14	4.11.018.182	Gearbox cover	1
15	2.41.017.005	Sprinkler head component	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.13 Grinding wheel assembly



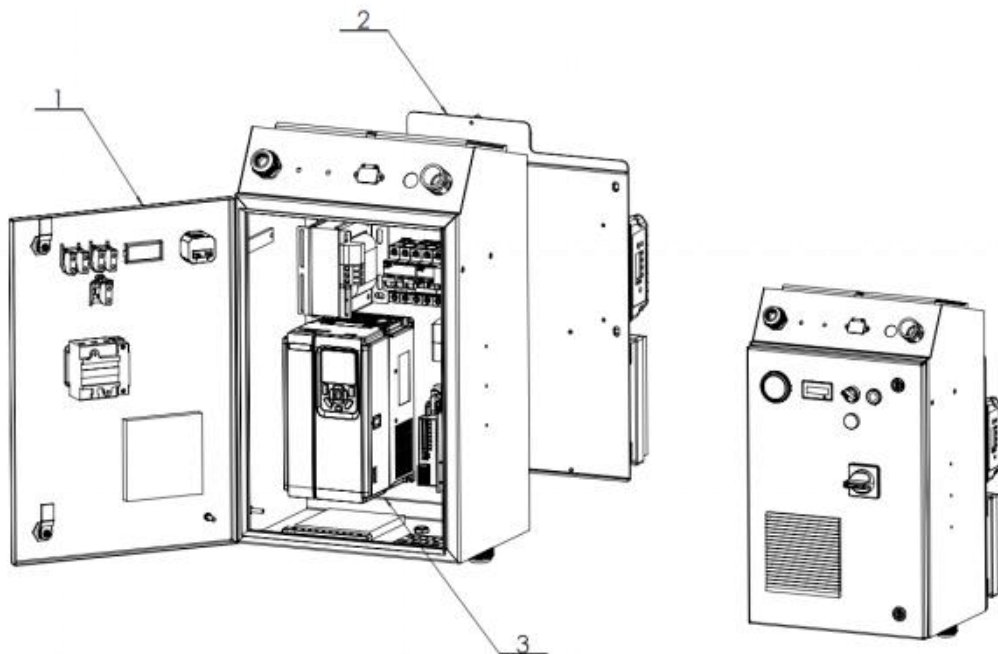
Pos	Item no	Description	Pcs
1	4.11.054.014	Contour sleeve	6
2	5.11.101.169	Screws	3
3	3.22.117.035	Rubber pad	6
4	5.11.101.043	Screws	6
5	5.11.101.118	Screw	9
6	3.22.115.002	100 conversion block	3
7	5.11.101.078	Screws	3
8	5.11.101.278	Screws	3
9	3.22.114.001	Magnet	3

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

10	3.14.112.087	Round grinding disc	1
11	4.11.041.052	Fixed plate	1
12	5.11.106.002	Nylon cap	3
13	4.11.041.051	Connecting plate	1

13.14 Components of the control cabinet

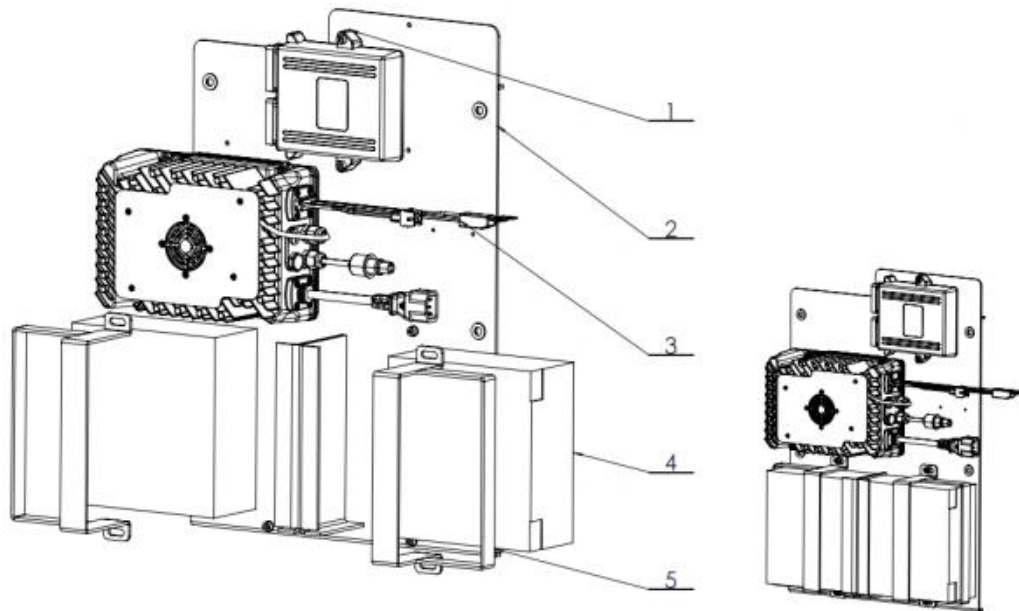


Item	Item no.	Description	Pcs
1	2.42.018.017	Inverter components	1
2	2.42.018.015	Electronic control components	1
3	2.42.018.016	Electrical installation components	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.15 External electrical plate assembly

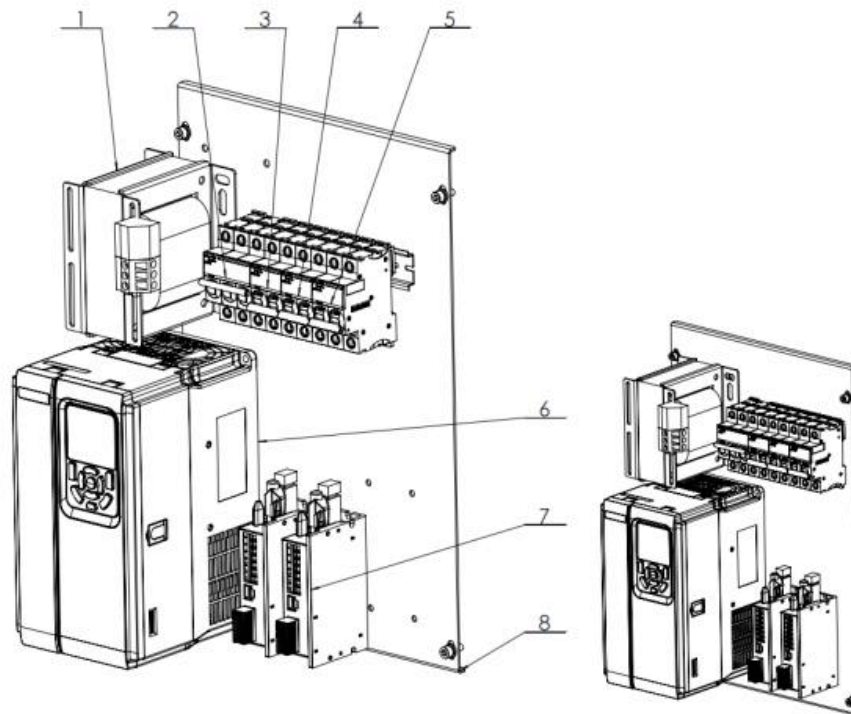


Item	Item no	Description	Pcs
1	3.12.115.014	Remote control	1
2	4.11.018.133	Mounting plate	1
3	3.21.121.002	Car charger	1
4	3.21.120.015	Lead-acid batteries	2
5	4.11.018.132	Fixing sheet metal	2

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.16 Internal electrical plate assembly

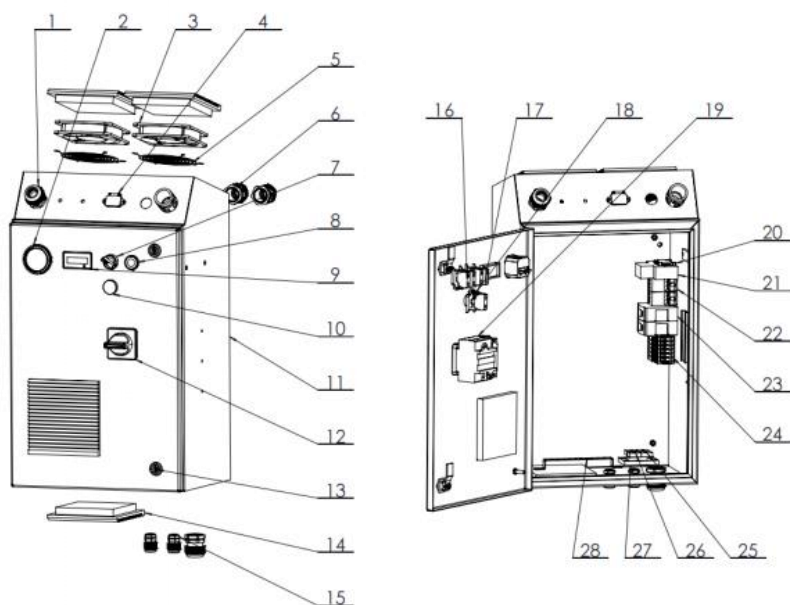


Pos	Item no	Description	Pcs
1	3.12.162.017	Transformer	1
2	3.21.114.140	breaker	1
3	3.21.114.137	breaker	1
4	3.21.114.143	breaker	1
5	3.21.114.136	breaker	1
6	3.12.111.063	Inovance inverter	1
7	3.12.113.015	DC servo drive	2
8	4.11.018.192	Mounting plate	1

Original operating instructions

HIGH TECH Grinder HTG-680RC Ultra

13.17 Switch cabinet assembly



Pos	Item no.	Description	Pcs
1	5.11.110.021	Cable guard	1
2	3.21.119.001	Timer	1
3	3.21.115.008	fan	2
4	3.21.118.005	Charging port	1
5	3.21.115.004	Fan cover	2
6	5.11.110.002	Cable guard	3
7	3.21.114.094	2-position switch	1
8	3.21.114.101	Start switch head	1
9	3.21.124.001	Battery indicator	1
10	3.21.116.019	Red indicator lamp	1
11	4.11.018.152	Electric control box	1
12	3.21.114.114	Disconnecter	1
13	3.22.123.001	Cam lock	2

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HIGH TECH Grinder HTG-680RC Ultra

14	3.21.115.002	Outlet filter	4
15	5.11.110.001	Cable guard	2
16	3.21.114.083	Switch seat	1
17	3.21.114.095	Switch seat	1
18	3.21.116.018	White light base	1
19	3.21.123.056	Main pole module	1
20	3.21.123.001	Terminal fixings	3
21	3.21.114.102	breaker	1
22	3.22.201.015	Junction box	2
23	3.21.201.049	BUSSMANN fuse base	2
24	3.21.123.050	Fuse terminals	6
25	3.21.122.035	KT module (small)	2
26	3.21.122.036	KT module (small)	2
27	3.22.201.009	KEL frames	1
28	3.21.129.002	Ground row	1
29	5.11.110.008	Cable guard	1

November 13, 2025

Original operating instructions RC Remote Control



Remote Control



for HTG grinding machines of the RC-ULTRA series



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Building 17, Innovation Base, Science and Technology Park,

Huazhong University of Science and Technology, Wuhan East Lake

High-tech Development Zone

November 13, 2025

Original operating instructions
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November 13, 2025

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Original operating instructions

RC Remote Control

1. Controls and components



Original operating instructions

RC Remote Control

Position	Designation	Description
1	Display	Display of information and live parameters After a certain period of time, the display switches to sleep mode. The machine continues to operate. To exit sleep mode, press button "14".
2	RUN display / Status LED	System RUN display Blue flashing = Remote control connected Red = not connected / connection being established
3	Error display	Error display Red = Error present
4	Motor speed control	Adjustment of grinding speed 1-10
5	Travel speed control	Adjusting the travel speed 0-10
6	Joystick (forward, backward, right, left)	Forward direction = tap joystick upwards – grinding machine moves forward Reverse direction = tap joystick down – grinding machine moves backward Right direction = Hold joystick to the right – grinding machine turns right (light movement = slow turning) Left direction = Hold joystick to the left – Grinding machine moves to the left (light movement = slow turning)
7	Water nozzle switch	Turns the water nozzle on and off
8	Right-left rotation and neutral switch	Switches between clockwise and counterclockwise rotation of the grinding wheels. Neutral position = grinding process switched off
9	Wedge function control	Setting of the wedge function 0-10
10	Waving function display	When the waving function is active, the LED lights up green.
11	Control adjustment for direction of travel	For adjusting the direction of travel. Setting > 0 corrects the direction of travel to the right. Setting < 0 corrects the direction of travel to the left.

Original operating instructions

RC Remote Control

12	Direction adjustment indicator	When the direction of travel adjustment is active, the LED lights up green.
13	Manual/automatic operating mode switch	Switch for normal remote control/fully automatic grinding mode Switch position down = the machine is in normal remote control mode Switch position up = fully automatic grinding mode.
14	Remote and info button	Button for initial remote connection to the grinding machine. Display of information about the frequency converter, drive, and hardware. Button to exit display sleep mode
15	Park button	Stops the drive wheels and moves to the parking position.
16	On/Off switch	Turns the remote control on and off.
17	Right turn button 180°	When this button is pressed, the grinding machine performs two 90° movements in a clockwise direction.
18	Left turn 180° button	When this button is pressed, the grinding machine performs two 90° counterclockwise movements.
19	Light on/off button	Switches the LED lighting on the grinding machine on and off.
20	EMERGENCY STOP	Command to immediately stop the machine in order to avert danger caused by movement by stopping the dangerous movement in a controlled manner.
25	Handle	Haptic handles for safe operation.
26	Eyelets for carrying strap	Eyelets for attaching the carrying strap

Original operating instructions

RC Remote Control



Position	Designation	Description
30	Complete remote control	Complete remote control
31	Battery	Battery for remote control
32	Charger for battery	Charger for remote control batteries
33	Power supply	Power supply for charger
34	Carrying strap	Carrying strap for hanging the remote control around your neck
35	Case	Storage case for remote control

Original operating instructions

RC Remote Control

2. Display



Position	Designation	Description
40	Machine speed	Display of the set speed of the grinding machine
41	Operating hours counter	Displays the operating time in hours
42	Travel speed	Displays the set driving speed in M/min.
43	Voltage	Display of the applied voltage (when power cable is connected)
44	Bar display Current	Visual bar Display of the current requirement for the grinding disc and wheel drive
45	Water tank message	Blue = Water tank sufficiently filled Red = Water tank empty
46	Power	Display of power consumption in amperes
47	Battery	Display of battery level
48	Signal	Display of the signal strength of the remote control
49	Wheel drive power	Display of the power requirement for the wheel drive in %

Original operating instructions

RC Remote Control



3. Safety

General safety rules

- The machine may only be operated by trained personnel
- Never operate the machine unattended; remain ready to intervene at all times.
- Ensure that the machine is stable and in a stable environment.
- Only connect the machine to a proper power source.
- Cordon off the work area (secure trip hazards, cables/hoses).
- Check the emergency stop/fall monitoring system before each use.
- Do not work on steeply sloping or conductive surfaces without approval.
- Only trained personnel; no modifications to protective or safety devices.

Personal protective equipment (PPE)

- Safety shoes (S3), safety goggles/visor, hearing protection.
- Gloves when changing tools
- If dust is generated: use a fine dust mask (at least FFP2) or extraction system.

Residual hazards

- Crush/shear points on the grinding head.
- Kickback when starting up or during abrupt changes in direction.
- Electrical hazard if cables/connectors are damaged.

4. Operation of the remote control

4.1. Preparation & daily checklist

Before starting work (daily):

- Visual inspection of machine, cables, plugs, connecting elements, carrying strap.
- Tool condition/fastening OK, suction system ready for operation.
- **Trigger and reset emergency stop** – function confirmed.
- Remote control switches on, **status LED** operational.
- Establish radio connection, check signal.
- Work area free of obstacles; escape routes planned.
- Check that all protective devices are installed.
- Wear protective equipment.
- Ensure that the vacuum cleaner is plugged in.

Initial start-up (once or after servicing):

Original operating instructions

RC Remote Control

- Remove transport locks; check firmware/type plate.
- Check that the scope of delivery is complete; check that the charger has the correct mains voltage.

4.2. Using the remote control

Switch on

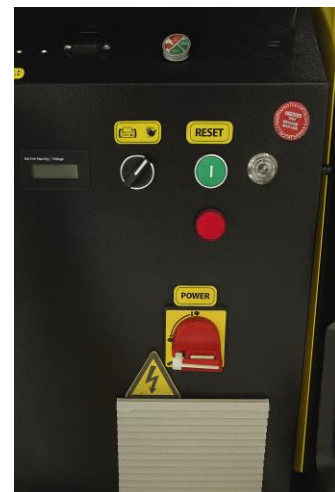
1. Insert the fully charged battery into the battery compartment.
2. Unlock the emergency stop on the remote control (e.g., pull out or turn to unlock).
3. Press the on/off switch (16) until the status LED lights up blue and flashes every second.
→ The device is ready for operation.

Switching off

- Press the On/Off switch (16). The operating/power LED goes out; the remote control is switched off.

4.3. Connecting the remote control

- Switch on the main switch on the grinding machine.
- Set the operating mode selector switch from manual operation to remote control.
- Switch on the remote control: Press and hold the on/off button (16) until the status LED lights up blue and flashes every second. The remote control is now ready for operation.
- Start pairing/connecting: Press the remote button (14) on the machine.
- The connection between the machine and the remote control is established.



4.4. Grinding process

Starting the grinding process

- Set the desired speed for grinding using the control (4).
- Start the grinding process by switching the switch (8) from the neutral position to the upper or lower position.
 - Upper position = grinding clockwise
 - Lower position = counterclockwise grinding

Forward/reverse

- Set the speed of the drive using the controller (5).
- Use the joystick (6) to tap the forward or reverse direction of travel

Stop wheel drive

- Stop the drive using the parking button (15)

Swivel left/right

- The joystick (6) can be used to swivel the grinding machine to the left or right.



Original operating instructions RC Remote Control

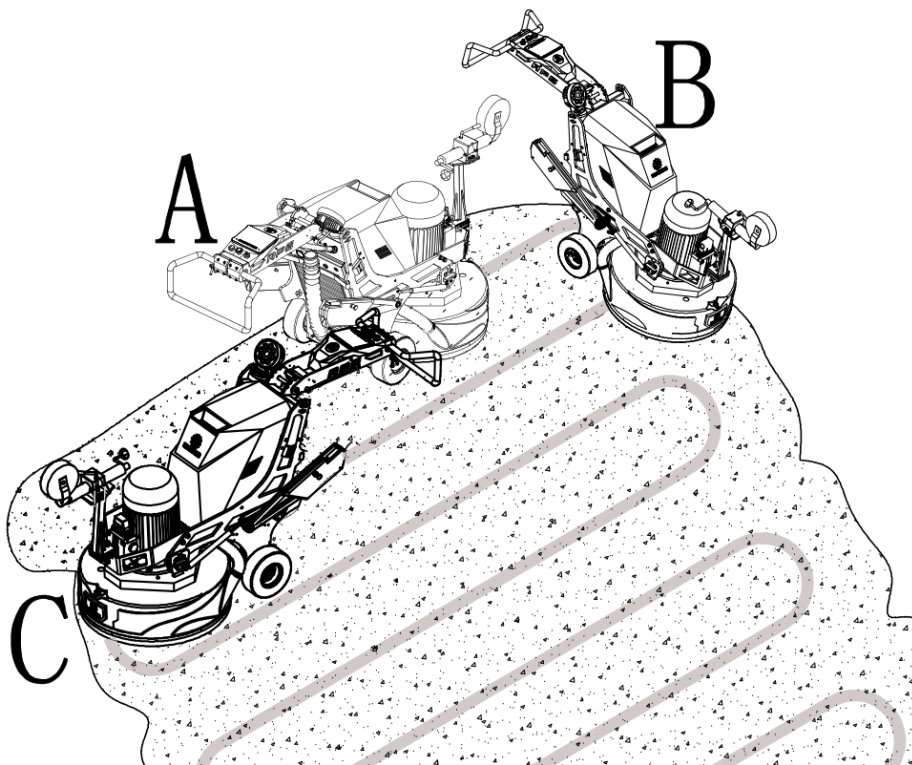
- Light pressure = slow swiveling
-
- Strong pressure = fast swiveling

4.5. Automatic turning

Pressing the "Turn" buttons (17+18) allows the machine to automatically turn 180°. This is done in 2 steps. After the first 90° turn (A), the grinding machine moves straight ahead (B) and then makes the second 90° turn (C). This puts you parallel to the previously ground track.

Depending on which button is pressed, the machine can turn clockwise or counterclockwise.

Note: The actual turning point is between the two rear wheels, so a distance of 40-60 cm must be maintained at the front when turning. Beginners are not recommended to turn near a wall with a button.



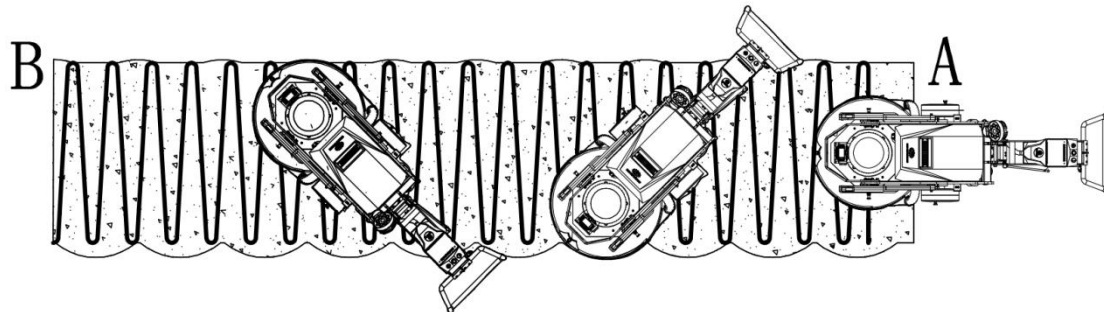
4.6. Sanding process with wiggle function

This waving sanding function is mainly used to prevent edges/ridges from forming between passes by slightly waving the machine from left to right during the sanding process.

The intensity of the waving motion can be adjusted using the control (9).

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RC Remote Control

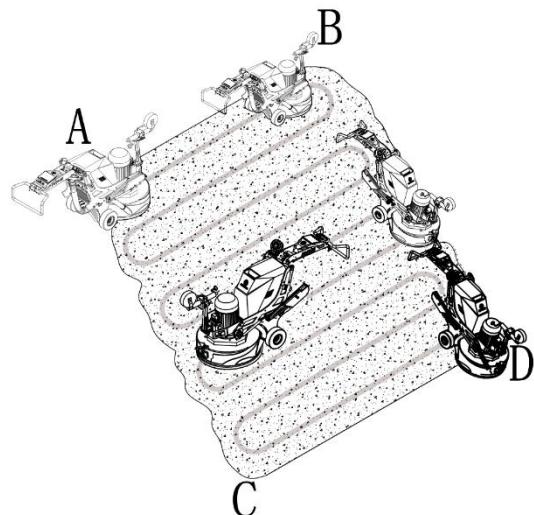


4.7. Fully automatic grinding mode (learning and memory mode)

Example: Rectangular surface ABCD. Start at point A, end at point D.

Procedure

1. Positioning: Align the machine at point A.
2. Select mode: Set switch (13) to automatic grinding mode.
 - Select grinding wheel rotation direction (8)
3. Set speeds:
 - Motor speed controller (4),
 - Drive wheel speed controller (5)
4. Feed/direction: Move the joystick (6) forward to set the grinding direction.
5. Start grinding.
6. Turning point B: Shortly before point B, press the turn button (17) – the machine swivels to the right and then continues to work automatically in tracks between A and B.
7. End at point D: Stop the machine at point D to end the grinding process.



Safety instructions

- Automatic mode is **an assistance function**, not autonomous operation.
- Never operate the machine unattended.



Original operating instructions

RC Remote Control

- Remain ready to intervene: Stay alert and ready to intervene at all times during the grinding process.
- Always carry the remote control on your body (use the carrying strap; do not put it down).
- Automatic mode = assistance function: Serves exclusively as an aid for grinding in parallel paths; not autonomous operation.
- Before starting work: Check that the emergency stop is working and clear the work area.
- Obstacles/people in the path → emergency stop immediately.



Working instructions

- Path guidance: Depending on the ground conditions, slight deviations may occur in automatic mode – correct manually if necessary.
- In case of noticeable path deviations: Briefly correct the direction of travel manually, re-record the learning path if necessary.
- Plan paths with 3–5 cm overlap; correct edges/fixtures manually.
- Turning/swiveling: The turning point is between the two rear wheels. A distance of 40–60 cm must be maintained at the front when turning.
Note for beginners: Do not turn near walls.

4.8. Emergency stop and fall monitoring

Function: The emergency stop on the remote control **immediately** switches the machine to a safe state. The drive and grinding functions are deactivated immediately.

Operation:

- Activation: Press the emergency stop button.
- Effect: Machine stops immediately; drives are switched off
- Restart: Eliminate the cause → Unlock the emergency stop → Switch on the control system → Perform a function test.

The machine automatically performs an emergency stop if the remote control:

- falls down,
- detects an unnatural movement/position (e.g., severe tilt, violent impact),
- indicates a situation such as a fall/loss of consciousness of the operator.
- loses radio contact with the machine (signal interruption/timeout),
- reaches a critically low battery level (remote control battery protection).

Notes:

- After each emergency stop, determine and remedy the cause (e.g., tripping hazard, defective carrying strap, sensor activation) before resuming operation.
- Always carry the remote control on your body (belt/clip) to avoid false triggering and ensure the protective function.
- Check the battery level regularly and charge/replace it in good time; test the radio connection and range before starting work.

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RC Remote Control

5. Battery and charger

Battery

- Check condition: Before starting operation, check the charge status and voltage of the battery to avoid malfunctions due to undervoltage.
- Installation: Insert the battery with the correct polarity and lock/secure it firmly.
- Standstill: If not in use for a long period of time, remove the battery and store it separately in a dry place.

Using the charger

Preparation

- Supply voltage: Connect the mains voltage according to the type plate on the charger.

Charging

1. Inserting the battery: Insert the battery into the charger completely and with the correct polarity.
2. Observe the LED display:
 - Green → Red (steady): Normal charging process started.
 - Green → Red flashing:
 - Case A (typical): Battery deeply discharged; charger is in pre-maintenance/pre-charging mode. After a short time, the indicator changes to red (steady) and normal charging begins.
 - Case B (possible): Battery defective → Interrupt charging process and replace battery.
3. End of charging: Red → Green (steady) = Battery fully charged.



Notes / Troubleshooting

- Check the mains voltage and device specifications (type plate).
- Check that the battery is fully seated in the slot and has a secure connection.
- Duration > 4 hours and no change to green: Check charger and battery for proper condition (contacts, temperature, defect).

6. Maintenance & cleaning

Intervals

- Daily: Visual inspection, function test of emergency stop/fall sensor, cleaning of controls, remove battery during storage.
- Monthly: Check switches, buttons, joystick, and LEDs for function and smooth operation

Cleaning

- Disconnect the device from the power supply
- Wipe the housing with a damp cloth; keep contacts dry
- Do not use high-pressure cleaners or solvent-based cleaning agents.
- Remove dust from the case/padding.

Original operating instructions

RC Remote Control



7. Transport, handling, storage

- Store/keep the remote control in a visible, dry, and secure location to prevent damage from falling.
- After use, store safely in the remote control case.
- Transport in protective case; avoid shocks/vibrations.
- When carrying, use only the handles provided; pay attention to the center of gravity.
- Storage: dry, dust-free, -10 ... +40 °C; for longer storage, charge the battery to ~50–70% and disconnect it from the device.

8. Disposal / Environment

- Dispose of batteries in accordance with **battery regulations/WEEE** at collection points; protect terminals from short circuits.
- Recycle electronics/metal in accordance with local regulations.

9. Technical data Remote control

Parameters	Remote control	Charger
Power	Li-ion battery 7.4V / 37Wh	100–240V AC - 50/60Hz
Radio	863–870 MHz	
Protection	IP64	IP64
Ambient	0–40 °C – 10–85% RH	Charging: 10–30 °C
Charging time		3.5 – 4.0 h
Range	50 m clear line of sight	

Attestation of Conformity

Registration No. AGC11532230703E0

Applicant Wuhan Doman Intelligent Technology Co., Ltd.
Building 17, Innovation Base, Science and Technology park,
Huazhong University of Science and Technology, Wuhan East Lake
High-tech Development Zone

Product Designation remote controller

Brand Name 
杜曼智能

Model / Series Models DMRC

Manufacturer Wuhan Doman Intelligent Technology Co., Ltd.
Building 17, Innovation Base, Science and Technology park,
Huazhong University of Science and Technology, Wuhan East Lake
High-tech Development Zone

Requirement	Applied Standards	Document Evidence	Result
Art.3.1(a) Health	EN 62479:2010 EN 50663:2017	Test Report: AGC11532230703EH02	Conform
Art.3.1(a) Safety	EN IEC 62368-1:2020+A11:2020	Test Report: AGC11532230703ES01	Conform
Art.3.1(b) EMC	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	Test Report: AGC11532230703EE01	Conform
Art.3.2 Radio	ETSI EN 300 220-1 V 3.1.1(2017-02) ETSI EN 300 220-2 V 3.2.1(2018-06)	Test Report: AGC11532230703EE25	Conform



Signed by General Manager (King Zhang)
Issue Date: August 18, 2023



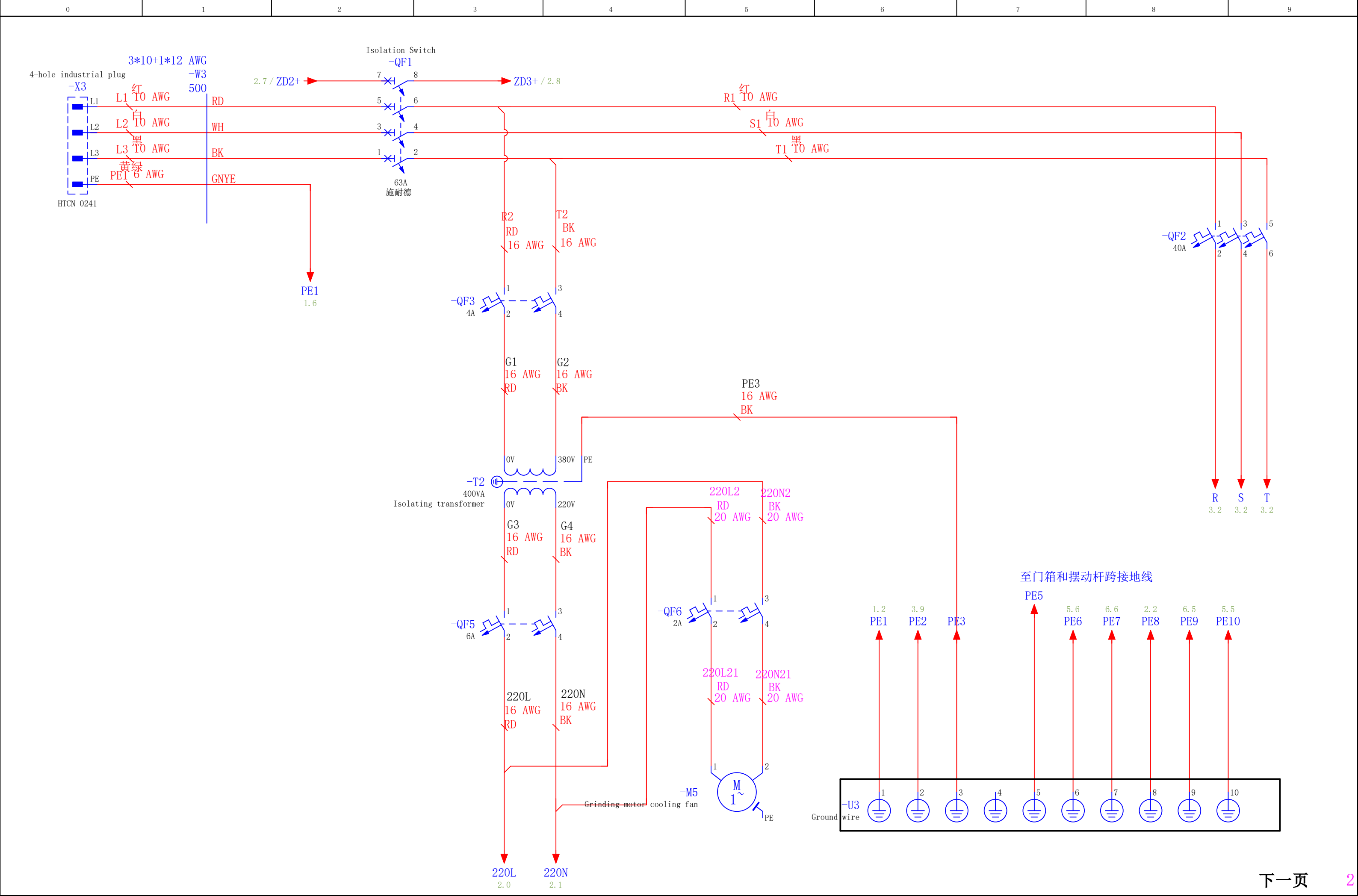
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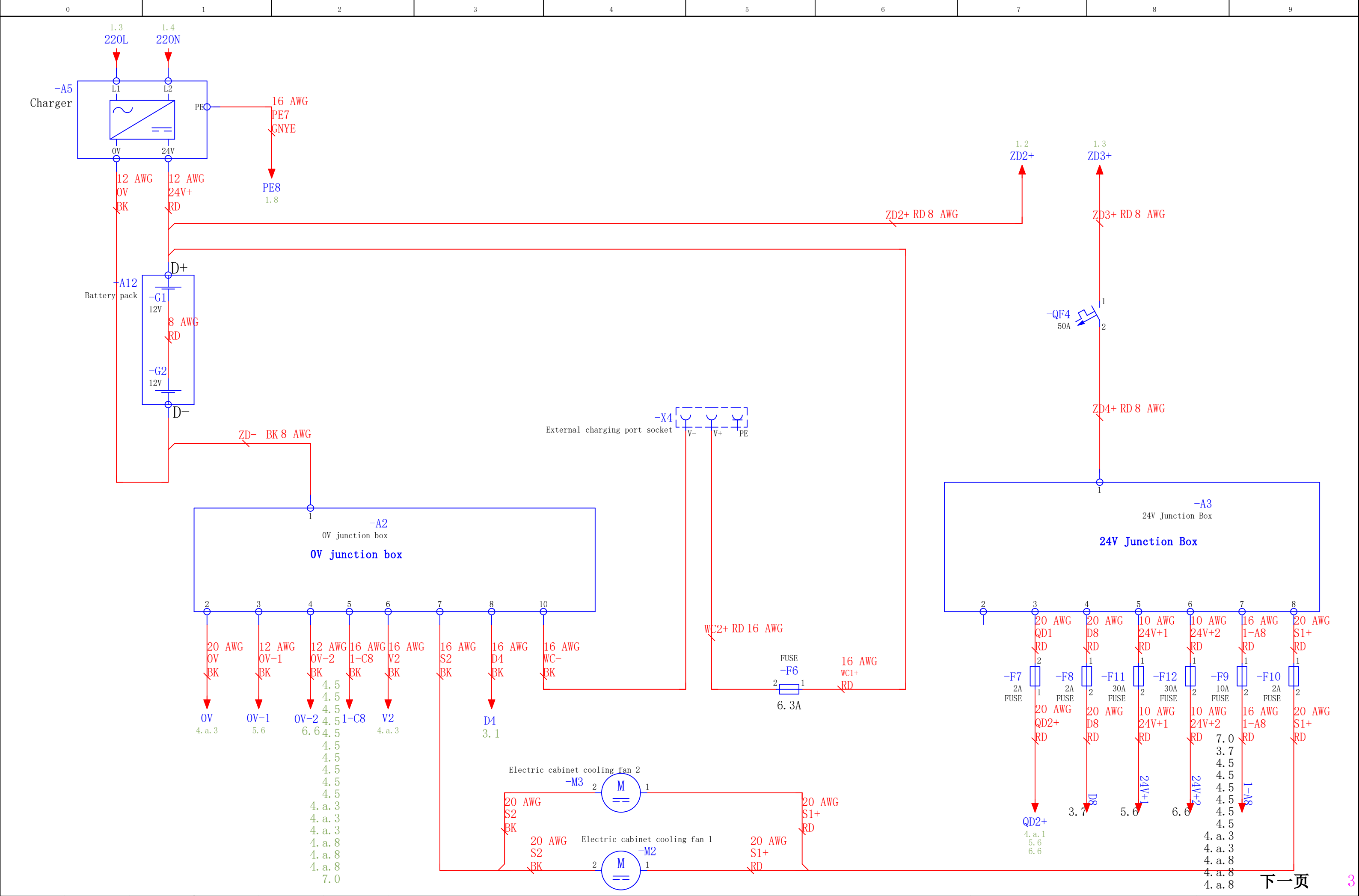


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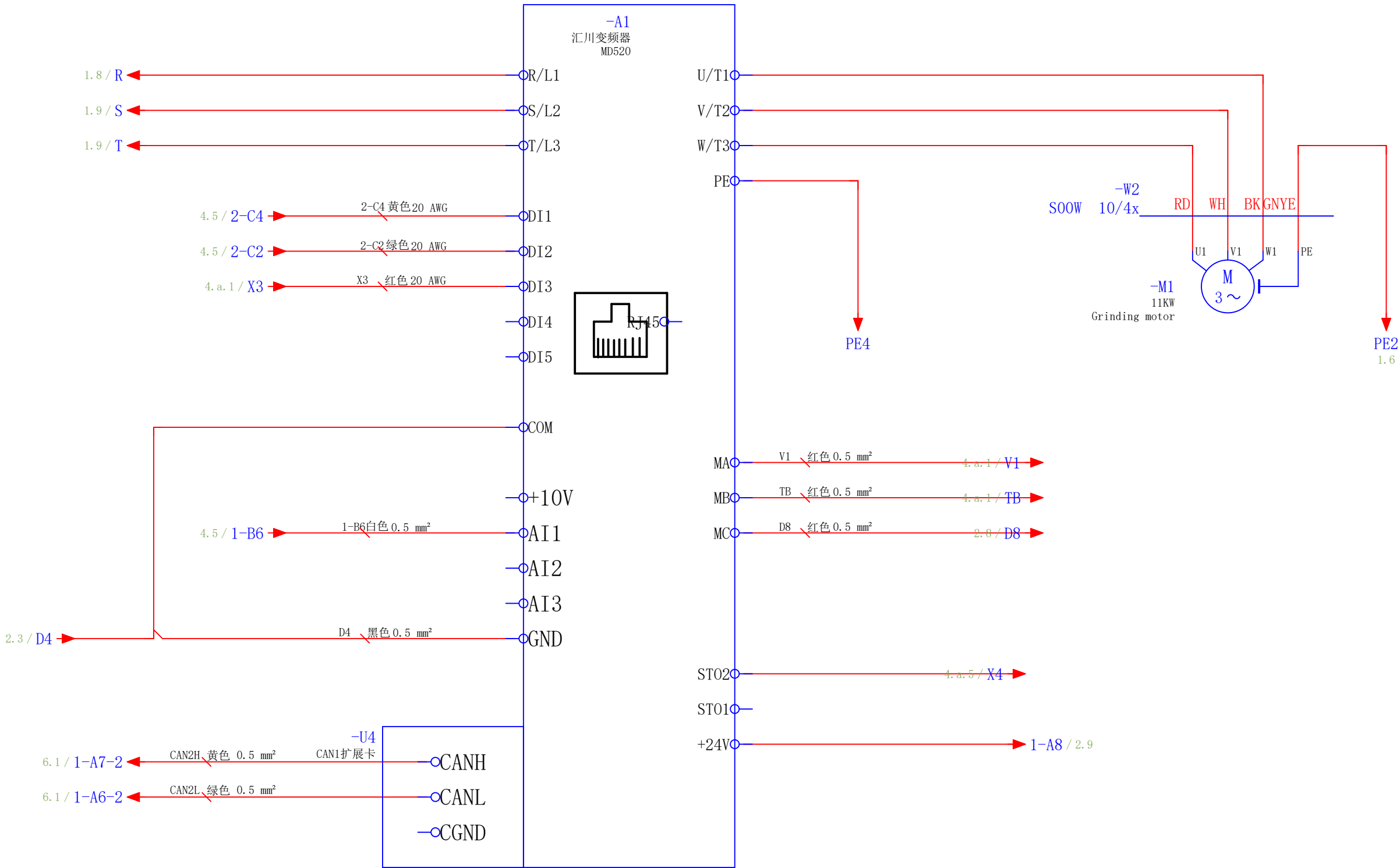
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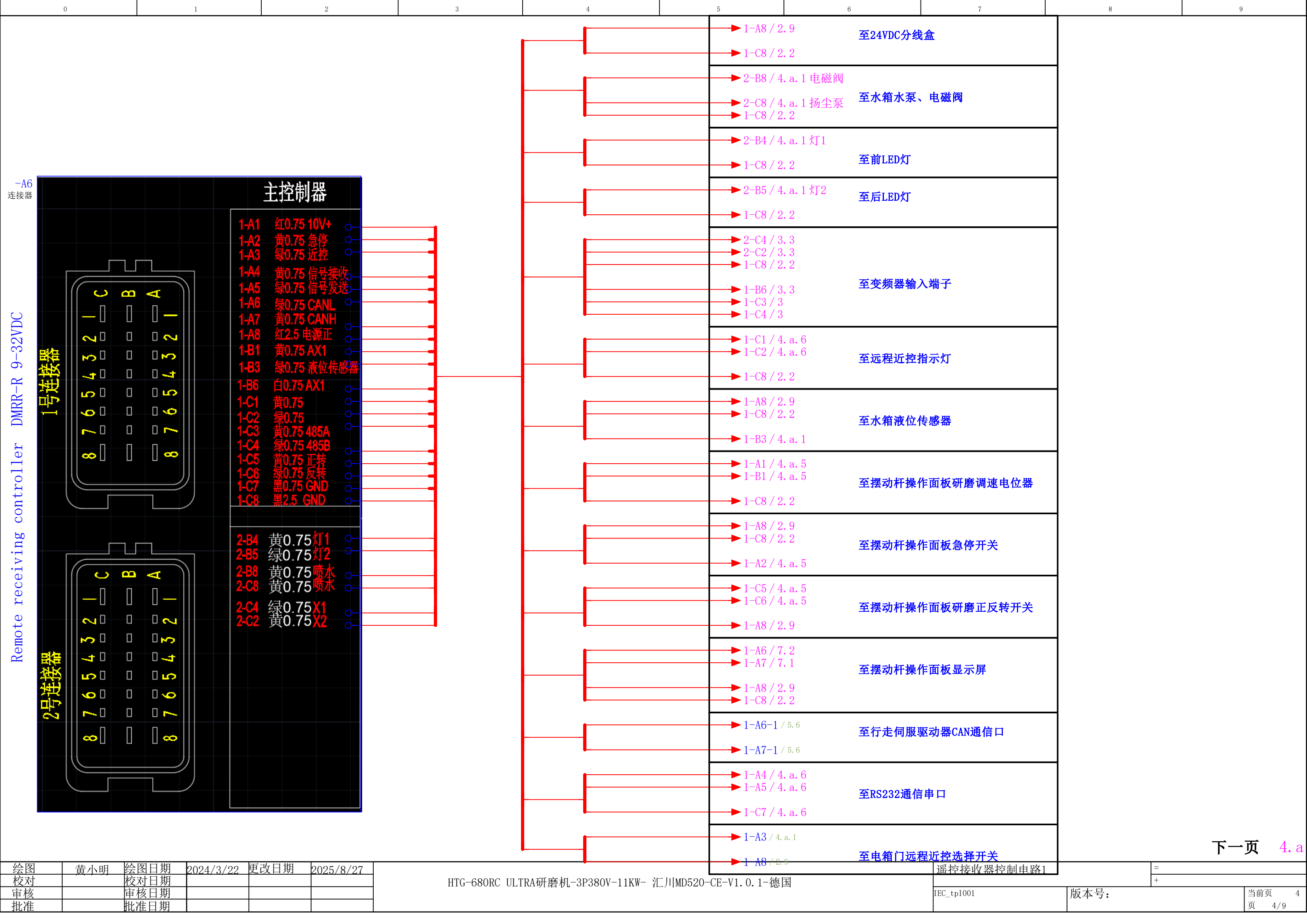


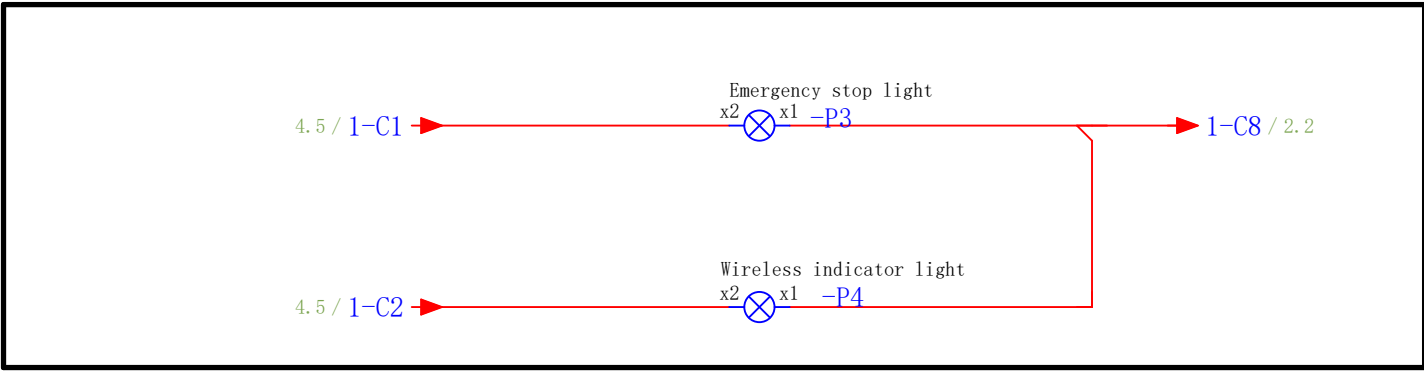
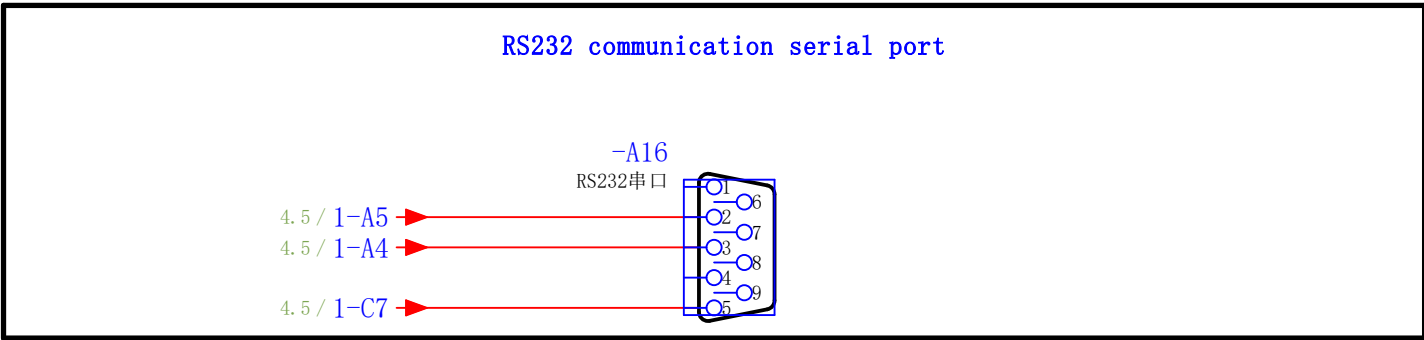
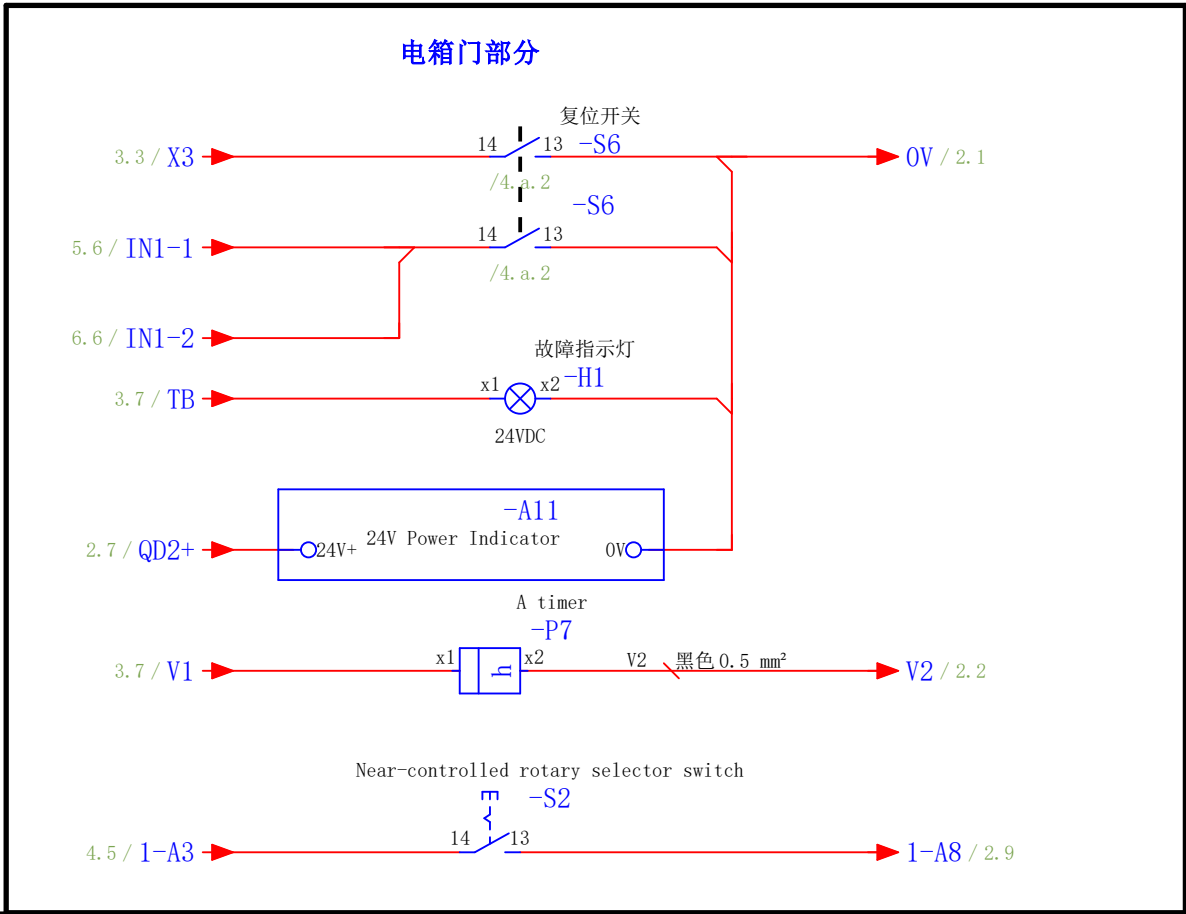
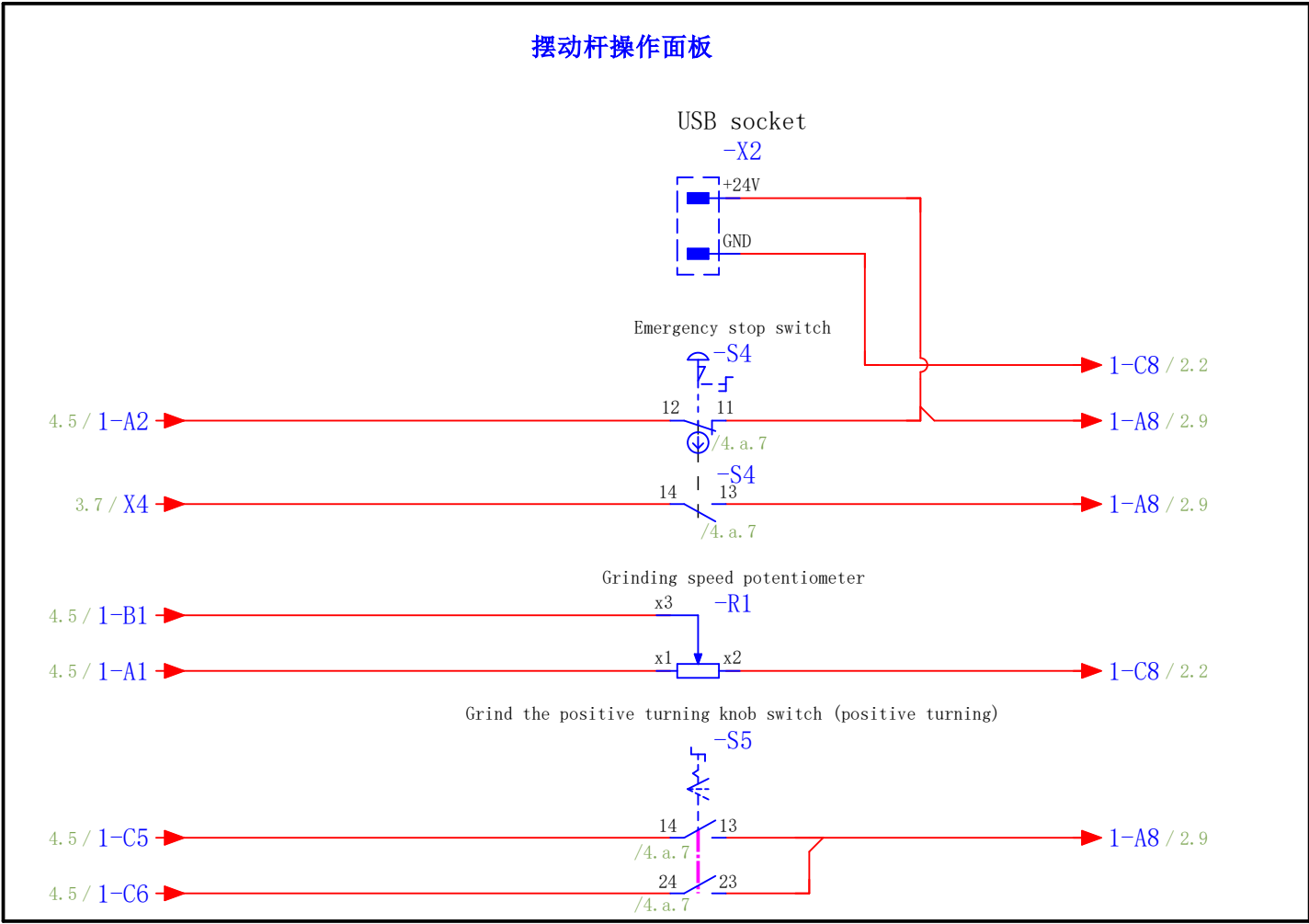
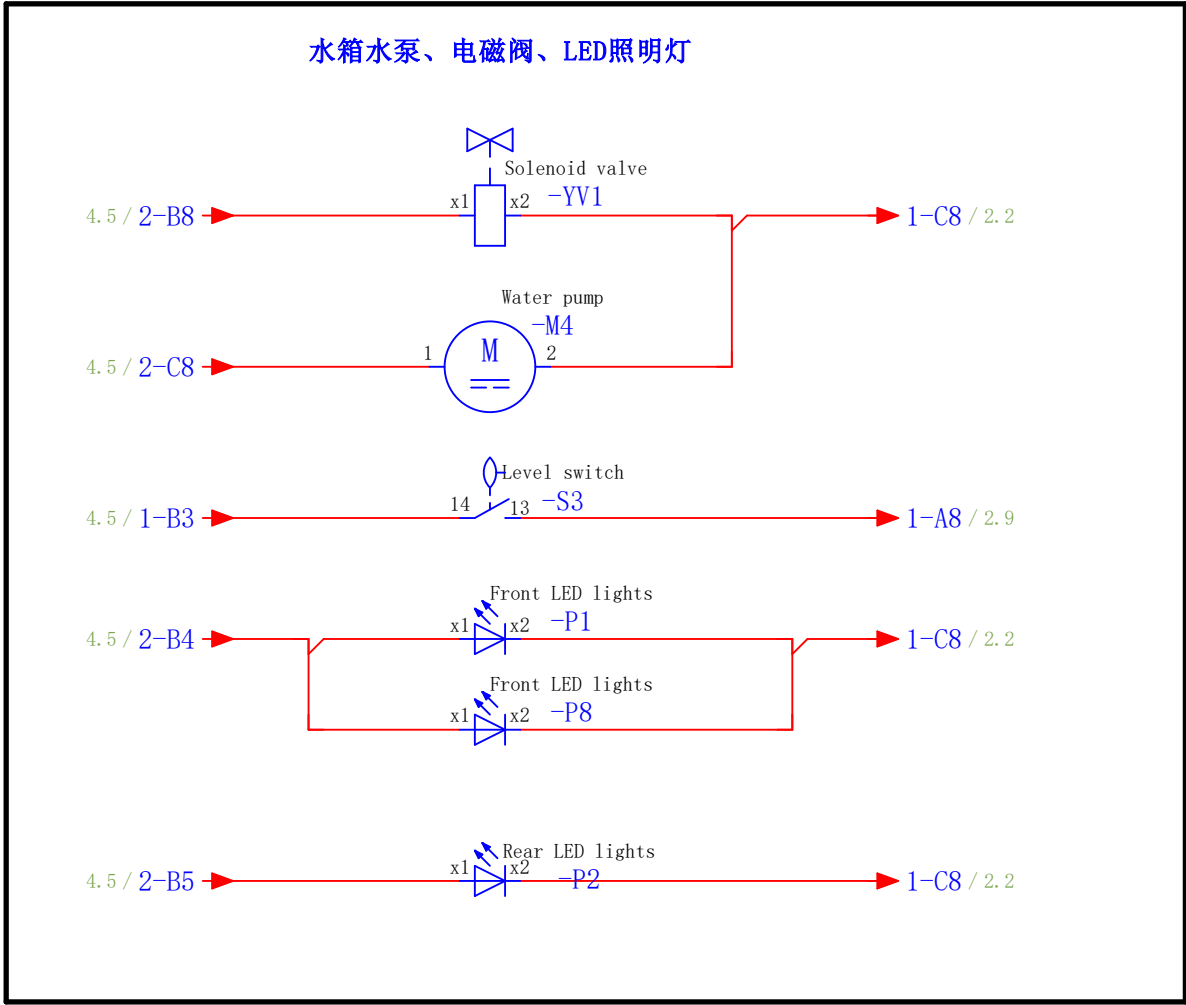
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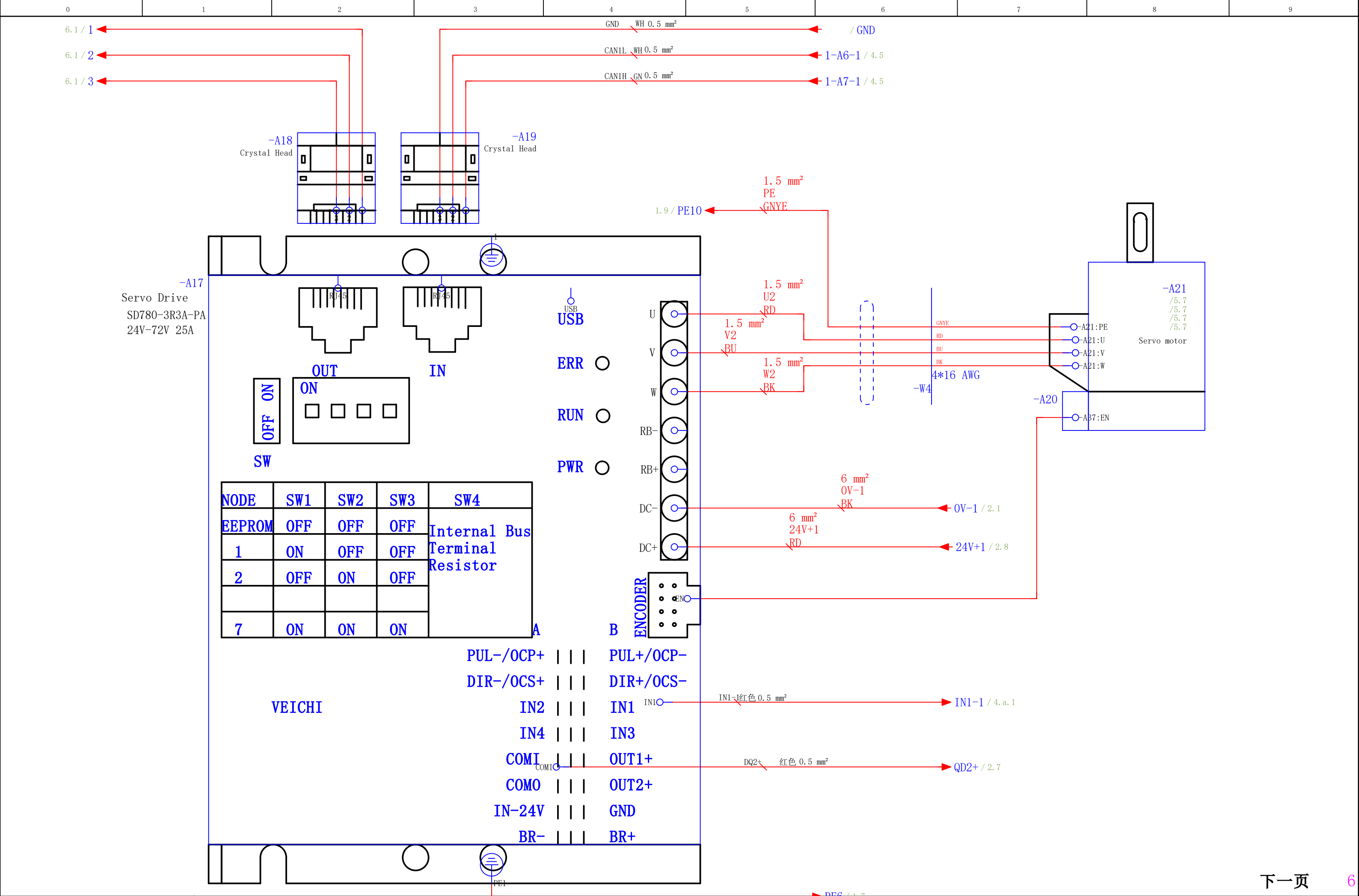
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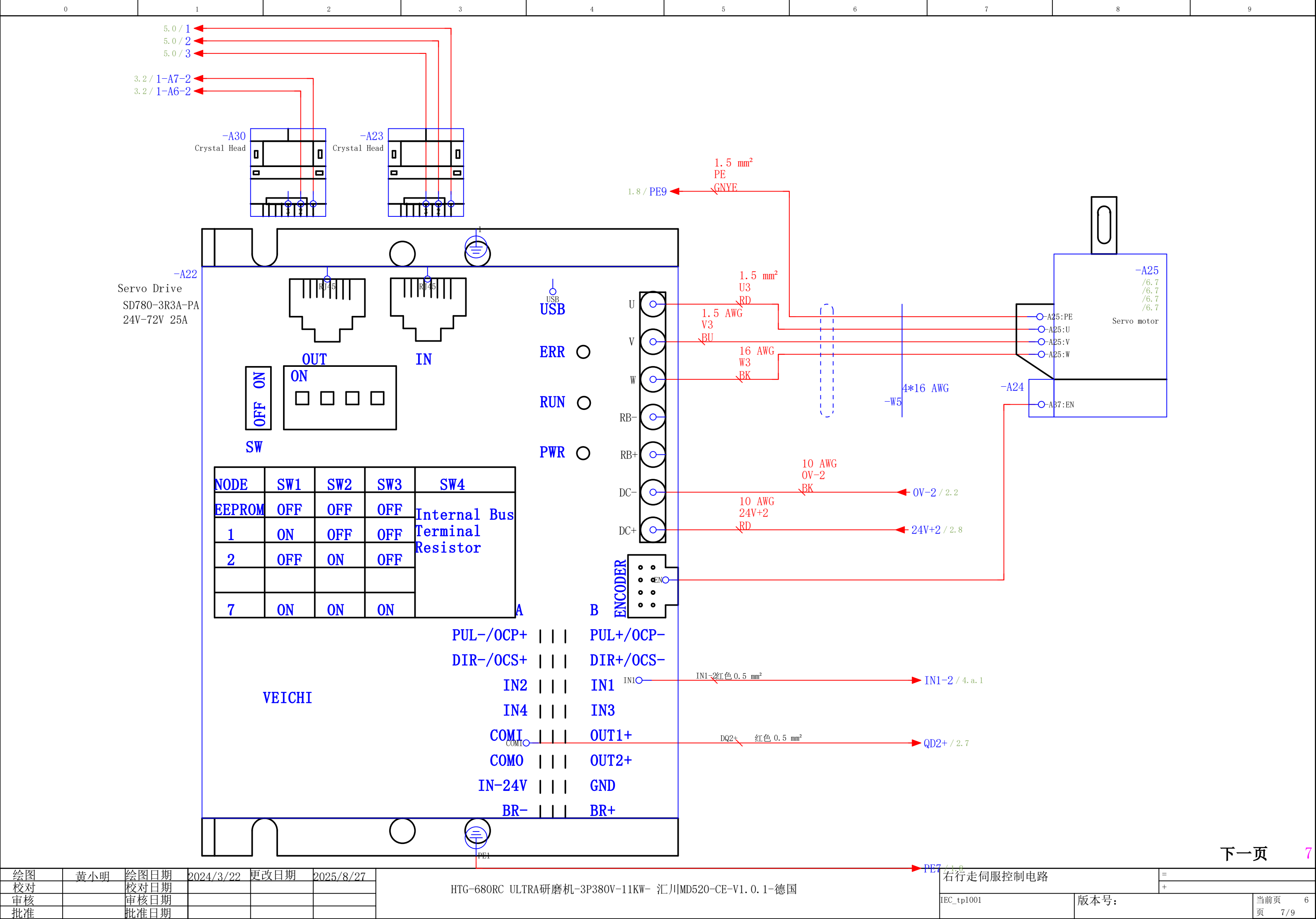
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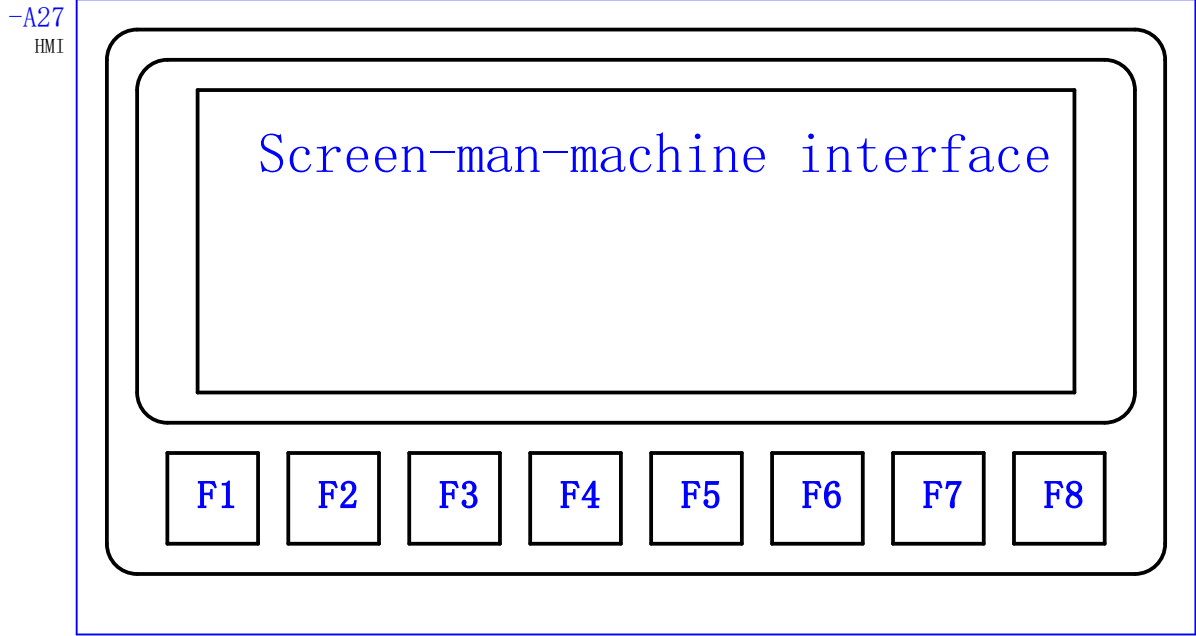




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批准		批准日期			

HTG-680RC ULTRA研磨机-3P380V-11KW- 汇川MD520-CE-V1.0.1-德国

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POWER 电源

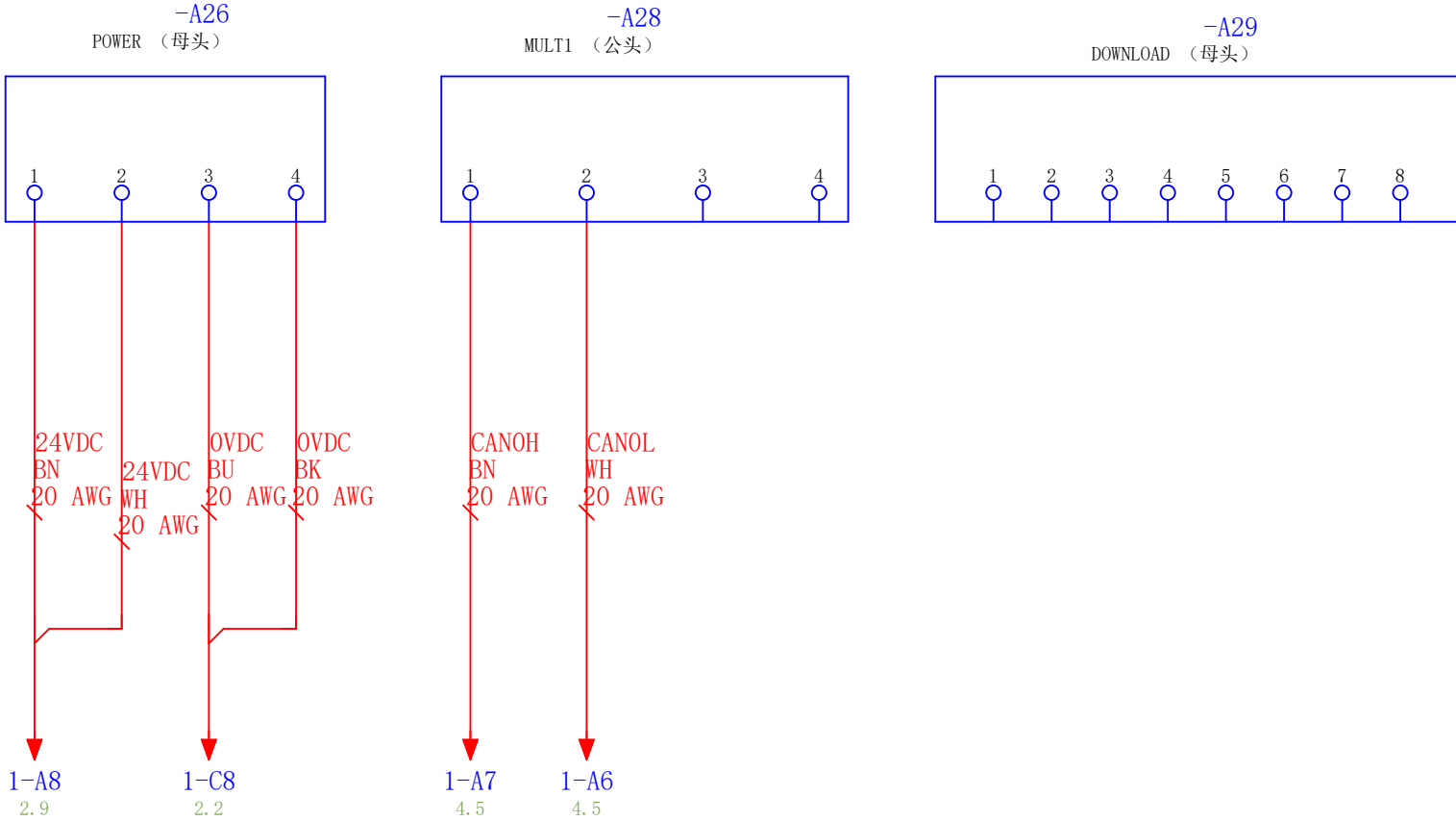
端口	功能	说明	接口图
1	24VDC	正极	
2	24VDC	正极	
3	GND	负极	
4	GND	负极	

MULT1 CAN 总线

端口	功能	说明	接口图
1	CAN_H	CAN 高	
2	CAN_L	CAN 低	
3	-	-	
4	-	-	

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端口	功能	说明	接口图
1	RX-	以太网	
2	TX-	以太网	
3	TX+	以太网	
4	RX+	以太网	
5	+5V	USB	
6	D-	USB	
7	D+	USB	
8	GND	USB	



电缆规格:

电缆规格: 3*10+1*12 AWG

The diagram shows a central cable labeled $-W3$ with a length $L1$. On either side of this central cable are two side cables, each with a length $L2$. The side cables are color-coded: White, Red, Yellow-Green, and Black. The central cable is shown with a break in the middle, indicated by two wavy lines.

电缆规格: 4*16 AWG

电缆规格: 4*16 AWG

The diagram shows a cable assembly with a central cable labeled $-W5$. The cable is connected to two connectors. The left connector has three pins labeled BK, BU, and RD. The right connector has three pins labeled BK, BU, and RD. Dimensions $L1$ and $L2$ are indicated for the cable length from the connectors to the end of the assembly.

			日期	2025/8/27	EPLAN 带 IEC 标准标识结构的项目模板:带有高层代号和位置代号的结构		EPLAN Software & Service Center 电缆图表:W2 :W3 :W4 :W5				=	
			校对	LENOVO							+	
			审核								IEC_tpl001	
修改	日期	姓名	原始项目		替换	替换人					页	9/9

November 28, 2025

Original operating instructions
HIGH TECH Grinder HTG-680RC Ultra



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Notes

This image shows a full page of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

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Notes

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