Premium line

BYMAT® GmbH

Operating instructions

9010 RS / 9020 RS / 9030 RS / 9040 RS

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Foreword

Thank you for choosing a BYMAT device. This operating manual is intended to show you how to safely handle and use our Premiumline device.
It also contains practical tips on how to use this device series and its possible applications, because safety is our top priority.
Before you start reading, please make sure that you have checked all the parts supplied and that the device is in perfect condition. If you have any questions or require technical support, please contact our customer service team.
Please note that your opinion is important to us. If you encounter any problems when using the device or have any suggestions for improvement, please let us know. Your feedback helps us to continuously improve our products and services.
We hope you enjoy your new device and thank you for your trust in us.

1.1 Validity and target audience

This operating manual is intended for the operating personnel and users of this device series and refers exclusively to the use of the BYMAT Premiumline device. It is essential that users of the device read the operating manual.
Please take sufficient time to familiarise yourself with the basic features and functions of the Premiumline device. The operating instructions provide you with an overview of the wide range of possible applications and make it easier for you to use the device efficiently.
BYMAT GmbH reserves the right to make technical changes to improve the quality and functionality of the Premiumline device.

1.2 Application and accident prevention (UVV)

This operating manual is intended exclusively for trained or authorised personnel who have the necessary qualifications and training to operate the device safely. Before using the device, make sure that you are completely familiar with the contents of this operating manual. In addition, it is essential that you carefully read the safety data sheets for the electrolytes used before using the device.

1.2.1 Instruction or authorisation of personnel

This device may only be operated by personnel who have been instructed or authorised accordingly. Operating personnel must be familiar with the possible hazards and safety measures associated with the use of the device. Untrained personnel are not permitted to use the BYMAT device. The user must be explicitly instructed in the operation of the device and receive safety instructions regarding the chemicals used. The necessary knowledge and skills may only be imparted by BYMAT GmbH or other authorised persons. The operator undertakes

to instruct its employees regularly in accordance with the legal requirements.

1.2.2 Understanding the operating instructions

Read the entire operating instructions carefully before using the device. Make sure that you have fully understood the instructions, warnings and safety information. If anything is unclear, contact the manufacturer.

1.2.3 Safety data sheets for electrolytes

Electrolytes can pose specific risks. Before use, read the safety data sheets for the electrolytes used carefully. Follow all specified safety and protective measures.

1.2.4 Protective measures and personal protective equipment (PPE)

Always use the recommended personal protective equipment (PPE) as specified in this operating manual and the safety data sheets. Follow the prescribed protective measures to avoid injury.

1.2.5 Contact and support:

If you have any questions or uncertainties regarding operation or safety aspects, please contact us. Further information is available from our customer service department.

1.2.6 Hazards to be observed

- Electric current
- Gases
- Acids
- Electrolytes
- Burns from hot workpieces
- Other harmful substances
- Inattention Observe the hazard warnings

1.2.7 Regulations and information to be observed regarding accident prevention

- DGUV 1 Principles of prevention
- DGUV 3 Electrical systems and equipment
- DGUV 4 Electrical systems and equipment
- DGUV 6 Occupational health care
- DGUV 9 Labelling of safety and health protection in the workplace
- DGVU 209-074 Industrial robots
- DGVU 109-602 Galvanic coating
- DGUV 209-073 Ventilation in the workplace – decision-making aid for employees Operational practice
- DGUV 204-007 First aid manual

- DGUV 204-022 First aid at the workplace
- DGUV 251-003 Current occupational safety and health protection
- Safety data sheets Safety data sheets
- ChemG Law on Protection against Hazardous Substances (Chemicals Act)
- TRGS528 Technical Rules for Hazardous Substances

2 General safety instructions

This chapter provides information about general hazards that may arise when using the device and about the device's area of application.
Please read these instructions carefully.
All instructions marked with a pictogram throughout the operating instructions are intended to convey important information about hazards, tips, safety and other information. Please take the time to read these pictograms and the associated information carefully to ensure safe use.

2.1 Pictograms

Pictograms	Category	Related information
	Warning sign	W001 General warning sign
	Warning sign	W002 Warning of explosive substances
	Warning sign	W012 Warning of electrical voltage
	Warning sign	W017 Warning of hot surface
	Warning sign	W005 Warning of non-ionising radiation (e.g. electromagnetic fields)
	Warning sign	W023 Warning of corrosive substances

	Prohibition sign	P001 General prohibition sign
	Prohibition sign	P007 Prohibition for persons with pacemakers
	Prohibition sign	P022 No eating or drinking
	Prohibition sign	No access for children
	Mandatory sign	M004 Wear eye and face protection
	Mandatory sign	M009 Wear acid-resistant gloves with long cuffs.
	Mandatory sign	M026 Wear a protective apron.
	Mandatory sign	M011 Hand washing
	Mandatory sign	M021 Disconnect before maintenance or repair
	Mandatory sign	M022 Use skin protection
	Warning sign	Emergency sign Eye wash station, green/white,

	Indicator	Information, tips or other important notes on using the device. Required reading.

2.2 Environment

This device may only be used in industrial and commercial environments. It is important to note that the device is not intended for use in areas where there is a risk of fire or explosion. Do not use the device in rooms or environments where there is an increased risk of fire due to combustible materials or gases.

The device is also not intended for use in damp environments. Therefore, do not use the device in damp or wet environments, as it is not protected against direct water ingress and could be damaged. Observe the protection class of the respective device.

The room in which the device is operated must be well ventilated. Ensure a sufficient supply of fresh air to ensure optimum ventilation. This is particularly important as vapours may be produced during operation of the device.
It is strongly recommended that you wear appropriate personal protective equipment when working. This may include respiratory protection, safety goggles or other protective equipment. Follow the instructions in the relevant safety data sheet.

When using the device, it is advisable to use an extraction device, but this is not mandatory. An extraction device helps to remove vapours effectively.

Stone and concrete floors should be covered in the immediate vicinity of the device. Acids can react with alkaline soils.
If contamination occurs due to electrolyte, it is extremely important to remove it immediately. Clean up spilled electrolyte immediately by rinsing thoroughly with water. This quick response minimises the risk of damage to floors or other surfaces.

For stronger electrolytes, tap water alone may not be sufficient. In such cases, we recommend using Neutralyt, which effectively removes stains and residues. For detailed instructions, please refer to the instructions for use on the Neutralyt packaging.

Detailed information and specific instructions on how to handle the respective electrolyte can be found in the safety data sheet. There you will find important information that will help you to handle the electrolyte safely and minimise potential risks.

2.3 To be checked before starting work

Cable inspection

Before using the device, carefully check all cables for signs of damage or insulation damage. Damaged cables must be replaced immediately. This ensures a reliable power supply and minimises the risk of a short circuit.

Connections and sharp edges

Check that the connections are secure and correctly connected. Avoid sharp edges in the cable working area to prevent chafing and damage. Secure the cables so that they cannot be pulled over sharp edges.

Check plug connections

Check that all connectors are securely and correctly connected. Loose connections can cause malfunctions and should be rectified immediately.

Housing integrity

Look for any cracked or damaged parts of the housing. Any damage to the housing must be repaired immediately to ensure the structural integrity of the device.

Rotary encoders and switches

Check that all buttons and switches are functioning properly. Make sure that they are easy to operate and lock into the correct positions.

Keep the work area clear

Keep the work area free of obstacles to avoid tripping hazards. This is particularly important for creating a safe and efficient working environment.

2.4 Potential hazards and how to avoid them

When handling electrolytes, there is a risk of chemical burns or skin irritation. The liquids can splash onto the skin or accidentally get into the eyes during work. To minimise these risks, it is essential to wear the prescribed acid-resistant personal protective equipment (PPE). This includes suitable acid-resistant protective gloves and goggles, as well as an acid-resistant coat or apron and a protective mask.

In addition, eye wash should be available so that rinsing can begin immediately in the event of contact with electrolyte. It is important that rinsing is carried out as quickly as possible to minimise potential damage. In addition, other means of flushing electrolytes from the body may also be available to ensure a rapid response to accidents.

Training employees in the safe handling of electrolytes and regularly reviewing safety measures are also crucial for accident prevention and ensuring a safe working environment.
It is important to follow applicable safety regulations and instructions carefully in order to identify potential hazards and respond appropriately.

Before use, carefully read the safety data sheets for our electrolytes and follow the safety instructions contained therein.


Keep equipment, chemicals and other accessories out of the reach of children.
Everything must be stored in such a way that it is inaccessible to children.
Unauthorised persons should also be denied access in order to protect them from the above-mentioned risks.


During work and throughout the entire work area,
the consumption of food is prohibited.


It is extremely important to wash your hands thoroughly with soap after work and after accidental contact, and then use suitable skin care products to prevent the skin from drying out.
No food may be consumed beforehand.
Otherwise, there is a risk of accidental ingestion of chemicals.
Accidental ingestion of chemicals poses potential health risks. If you realise that you have accidentally ingested chemicals and feel unwell, you should seek medical attention immediately.



Ensure that the handle, carbon fibre brush, carbon anode or other parts connected electrically to the BYMAT device do not come into contact with metallic or electrically conductive surfaces during or after work. This can lead to a continuous flow of electricity, which can not only cause unnecessary heating or even a fire, but also carries the risk of destroying the workpiece. There is also a risk of severe burns.

Always ensure that all electrically conductive elements are stored safely and properly between and after work operations to avoid possible damage or hazards. Improper storage of these elements can not only affect the quality of the end product, but also lead to safety risks.
Switch off the BYMAT device after each use.



During use, the tools used on the device and the workpiece being processed become very hot, depending on the type and duration of use. It is important to protect hot objects from accidental contact by third parties in order to minimise the risk of burns. Therefore, appropriate protective measures such as heat-resistant gloves or grip surfaces should be taken. This not only contributes to personal safety, but also protects the workpiece from unwanted changes.


Improper handling of the device may cause the protective conductor to become detached, resulting in electric shock. If the device is accidentally dropped, contact the dealer or manufacturer immediately.
Repairs may only be carried out by qualified electricians.
In the event of a fall, malfunction or suspected damage to the interior of the device, as well as in the event of visible external damage, the device must be switched off immediately and secured against

accidental restarting. These safety measures are necessary to minimise the risk of electric shock and to ensure the safe use of the device.

People with pacemakers are advised not to operate the device or remain in its immediate vicinity. The electronics in the device generate high frequencies and currents that can create an electromagnetic field. This can interfere with the functioning of the pacemaker and can no longer be guaranteed.

3.0 Disclaimer and warranty

3.1 Improper use

BYMAT GmbH accepts no liability or warranty for damage or problems resulting from improper use, improper handling or failure to follow the instructions in the operating manual or the handling instructions given during training.

3.2 Unauthorised modifications

Any changes, repairs or other modifications that have not been approved by BYMAT GmbH will result in the exclusion of BYMAT GmbH's liability and warranty.

3.3 **Wear parts and normal wear and tear:**

BYMAT GmbH accepts no liability for normal signs of use or wear and tear on consumables.

3.4 Natural disasters or exceptional circumstances

Liability and warranty are excluded for damage caused by natural disasters or other exceptional circumstances, as these circumstances are beyond the manufacturer's control**.**

3.5 External influences

No warranty or liability is assumed for damage caused by failure to observe safety instructions or safety measures.

3.6 External influences

No warranty or liability is assumed for damage caused by improper installation, incorrect power supply or external influences such as lightning strikes.

3.7 Use in unsuitable environments

BYMAT GmbH accepts no liability for the use of the device in unsuitable environments.

3.8 Use of unsuitable operating materials or chemicals

The use of chemicals or tools not supplied by BYMAT GmbH voids the liability and warranty of BYMAT GmbH. We can only guarantee the safety and performance of our products if the recommended materials

and tools are used in accordance with the manufacturer's instructions. Deviations may increase the risk of damage or injury and are not covered by our liability or warranty.

3.9 Material defects

The statutory provisions apply to material defects after delivery or missing delivery items. When complaining about material defects, it is advisable to enclose proof that the corresponding claims are not time-barred.

4.0 Scope of delivery and storage

4.1 Packaging and unpacking

The devices are usually delivered in a cardboard box with appropriate polystyrene protective packaging. Check the box for any external damage. Open the box carefully so as not to damage the device. Lift the device out of the cardboard box by the handle and remove the protective polystyrene packaging. Proceed with caution to ensure that the device remains in perfect condition and is not damaged during unpacking.

After carefully removing the device from the box and removing the polystyrene packaging, you should immediately check it for damage. Carefully inspect the device for external damage or signs of transport damage. If you find any defects, we recommend that you contact the retailer or the manufacturer directly. Contacting the manufacturer quickly will ensure smooth processing.

Be careful when using cutting tools to open the packaging, as there is a risk of cuts. Always wear cut-resistant gloves to protect your hands.

4.2 Packaging/scope of delivery:

Only the device itself, including the IEC plug, is supplied as standard. This means that no other accessories or cables are included in the scope of delivery apart from the device itself. In this case, we recommend that you check in advance whether you need additional accessories such as starter kits or special adapters. If necessary, these can be purchased separately to ensure proper operation of the device. Thoroughly checking the scope of delivery and knowing which accessories are required will make it easier to prepare and use your new device.
To find the necessary accessories, please contact your dealer or manufacturer, consult our catalogue or visit our website.

4.3 Storage:

Ideally, store the device at room temperature in a dry environment. The recommended storage temperature should be between 2 and 40 degrees Celsius. Do not expose the device to direct weather conditions to avoid possible damage. To ensure optimal functionality, it is also important to protect the device from external influences such as moisture and dust.

5.0 General commissioning

Ensure that you have followed the instructions in section 2.3. Before

starting up the device, it is important to place it on a stable surface to ensure that it is secure and cannot fall over. Only use a suitable power source that meets the required specifications. Connect the device to this power source by inserting the IEC plug into the corresponding socket on the device. Then plug the earthed plug of the cable into the mains socket.

Use the switch on the back of the device to turn it on.


Only switch on the device after you have connected all the necessary working materials to the device.

6. Operation

6.1 General information 9010 RS / 9020 RS / 9030 RS / 9040 RS and required materials:

The models 9010 RS / 9020 RS / 9030 RS / 9040 RS do not differ in terms of their operation.
The devices are operated using a single button.
After switching on the device, the programme selection screen appears. The desired programme can be selected using the switch.
You can select the desired programme item by turning the rotary encoder. Pressing the rotary encoder on the selected menu item takes you to the selected programme.
Note: The device is ready for operation as soon as you are in the

selected operating programme. To set the language, select the "Language" option.
By turning the rotary knob in the corresponding menu item " ", you can regulate the output voltage and adjust it to the work process. You can find which programme you need and which voltage is recommended in the description of the respective work process.
The four Premiumline devices are equipped with a connection for an automatic electrolyte feed pump. The use of this pump is explained in the operating instructions for the electrolyte pump (1200 EP).

Recommended accessories:

Image	Designation	Item number
	Ground cable with clamp and bayonet plug	5024 KR
	Working cable with male/female bayonet lock	5024 KF
	Copper paste	5400 KP
	10 mm carbon fibre brush incl. PTFE adjustment sleeve	6026 PI
	PTFE handle with bayonet lock	5024 HG
	Spare O-rings 26x2mm, bag with 10 pieces	1205 OR
	Cleaning and marking felt (pack of 20)	1206 SF

	Marking stamp "Premium Line" with 90° anode	5025 ST
	Wide-neck container 500 ml	2500 WB
	Electrolyte A (yellow, mild)	2030 DH (1 litre) 2035 DH (5 L)
	Electrolyte C+ (pink, extra strong)	2040 DC (1 L) 2045 DC (5 L)
	Neutralyt	2211 NT (1 L) 2250 NT (5 L)
	Electrolyte EC-S, ET (dark sign)	2111 EC-S (1 L) 2115 EC-S (5 L)
	Electrolyte EN (Light sign)	2171 EN (1 L) 2185 EN (5 L)
	Marking template	Available on request from your dealer or directly from BYMAT GmbH

The selection of the carbon fibre brush and electrolyte is only a suggestion; you are of course free to use larger or smaller brushes as required, as the handling remains the same. For heavier contamination, we recommend using a more intensive electrolyte. However, it is important to note that stronger electrolytes have a higher acid content and are therefore more corrosive. For applications in the food industry, it may be advisable to use the LF electrolyte (acid-free) to ensure that no harmful acid residues remain . Choosing the right cleaning agent is crucial to maximise cleaning effectiveness while

ensuring that the application meets specific requirements and standards. For further information, please visit our website or contact your dealer or the manufacturer.

6.2 Cleaning with 9010 RS / 9020 RS / 9030 RS / 9040 RS

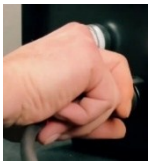
Prepare your tools and the necessary materials and proceed as follows:

Connecting the earth clamp

Connect the bayonet locks of the earth cable and earth connection on the device (marked red) to each other and tighten them securely. Connect the earth clamp directly to the workpiece or to another point with good electrical conductivity across the workpiece. Correct placement of the earth clamp ensures effective and safe earthing during the work process. By attaching the clamp directly to the workpiece or to an area with good electrical conductivity, you ensure that the circuit is closed and the necessary earthing is provided.
This is particularly important to prevent potential electrostatic charges and ensure a safe working environment.
Be sure to attach the ground clamp carefully to establish a reliable connection and thus create efficient working conditions. A poorly connected ground clamp can significantly restrict the work process.

Connecting the working cable and carbon fibre brush

To prevent the threads of the brush from seizing up, it is advisable to moisten the threads with a drop of copper paste before screwing them together. The application of copper paste forms a protective layer that ensures smooth rotation of the threads. This is particularly important as the working material can expand and contract due to temperature fluctuations. Without the use of copper paste, it could be difficult or even impossible to unscrew the brush.
The copper paste creates a barrier against friction and corrosion, which makes maintenance and replacement of the brush much easier. Regular application of copper paste helps to extend the service life of the tools and ensures that they function reliably even under changing environmental conditions.



Now that you have applied copper paste to the thread of the brush, screw it onto the handle.
You can now attach the brush with the handle to the working cable. To do this, tighten the bayonet lock again securely.

Now connect the working cable to the corresponding socket on the device.

By turning the adjustment sleeve, you can adjust the brush bundle, allowing the brush to be operated more gently and accurately.
The further the brush protrudes, the more the bristles spread apart. This can result in ineffective cleaning.

The adjustment sleeve on the brush plays a crucial role in generating

the desired pressure on the workpiece and thus achieving an effective cleaning result. Without this sleeve, there is a risk that the carbon fibres will give way and shift to the side, meaning that the necessary pressure is not transferred efficiently to the workpiece. This can cause the metal holder of the carbon fibres to come into contact with the workpiece, which can lead to discolouration of the workpiece. There is also a risk of a short circuit, which not only increases the wear and tear on the brush enormously, but also leads to uneconomical use.
The carbon fibre brush is worn out as soon as the carbon fibre reaches a length of 1 cm. Once this wear limit is reached, the brush should be replaced. Compliance with this guideline is crucial, as anything less could lead to a potential short circuit.
The risk of sparks and a possible short circuit can not only impair the functionality of the device, but also lead to more serious damage or even destruction of the device. It is therefore advisable to check the condition of the brushes regularly and to replace them immediately when the specified wear limit is reached. This ensures that the device operates safely and efficiently and minimises potential risks due to insufficient brush wear.

Now pour some electrolyte into the wide-necked container, taking care not to spill anything.
Do not leave the brush in the container, as it may tip over due to the weight of the handle.

Now switch on the device. Select the desired programme option "Cleaning (brush)". Caution: Once the programme has been selected, the device is immediately ready for use. You can vary the voltage (here between 4-12 V AC) by turning the switch. We recommend starting with a voltage of 10 V AC. You can find your optimal voltage by working with the device. However, it is important to note that increasing the voltage also increases wear on the brush.

Differences between the cleaning and cleaning (brush) programmes:

Essentially, the two programmes do not differ in the way they clean. The only difference is in the selection of the voltage, which is significantly higher in cleaning mode (6-24 V AC).

Now you can start cleaning. Dip the brush into the electrolyte and let it drip off.

Place the brush on the workpiece and start cleaning. Apply light, constant pressure to the area to be cleaned. Move the brush back and forth. Do not press too hard on the brush. Ensure that the maximum contact surface of the brush is in contact with the workpiece, as this ensures better cleaning effectiveness.

The brush should not dry out during the process; keep dipping it back into the electrolyte as described above. Stir the brush a little in the container to remove dissolved oxides from the carbon fibre and to cool the brush, thereby reducing wear.
The duration of the cleaning process varies depending on the degree of contamination.
Choose your electrolyte according to the degree of contamination.

When you are satisfied with the result, neutralise the cleaned area with Neutralyt.
By using Neutralyt, you will avoid lime deposits or other salt deposits on the surface of your workpiece later on.
Now dry the workpiece; a paper towel is sufficient to remove any remaining residue.

A spray bottle (item no. 2100 SF) is ideal for rinsing off the electrolyte.

Ensure that the electrolyte can drain off easily during the work process and flows into a separate disposal container.

6.3 General cleaning tips

- Cleaning only removes oxides, tarnish and dirt; it does not alter the material.
- Use Neutralyt to remove electrolyte residues. Compared to water, you will use significantly less liquid for the same or even better results, which saves time and ensures that no white spots appear after drying.
- To achieve a perfect result, neutralise the warm workpiece while the electrolyte is still in the wet phase.
- Matt spots (chromium depletion) remain in the heat-affected zone of the weld seam after cleaning, as cleaning cannot remove the chromium depletion caused by welding. However, the surface can be visually adjusted by light polishing.
- Further tips and information can be found in the catalogue or on the website

6.4 Instructions for use – booster function

(Structured according to the requirements of DIN EN 82079-1)

Purpose of the function
The booster function is used to temporarily increase the cleaning performance in **"Brush cleaning**" mode. It is intended exclusively for intensive cleaning processes on metallic surfaces.

Intended use
Activate the booster function only with a compatible handle (hose package) with integrated button (normally open contact).
Use only in the "**Brush cleaning**" menu mode.
Use only with the recommended electrolytes **C** or **C Plus**.

Any other or deviating use is considered **improper**.

Safety instructions
DANGER
Possible damage to equipment due to continuous activation of the booster.
→ Do **not** activate the booster function **for longer than necessary**.

CAUTION
Inadequate cleaning performance with incorrect electrolytes.
→ Only use **C** or **C Plus** electrolytes to ensure correct operation.

NOTE
After releasing the button, the device automatically returns to the default setting of the **"Clean brush"** menu item.

Requirements

- The device is ready for operation and correctly connected.
- The handle (hose package) with integrated button is correctly connected.
- The menu navigation is accessible and functional.

Operating sequence
Selecting the operating mode

1. Press the rotary encoder.
2. Select the menu item **"Clean brush"**.
3. Confirm your selection.

Preparation
1. Position the high-performance brush on the surface to be cleaned.
2. Ensure that there is secure contact between the brush and the workpiece.

Activating the booster function

1. Press the button on the handle to activate the booster.
2. Keep the button pressed until the desired cleaning effect is achieved – especially for:
    - heavy burn marks
    - heat-affected zones
    - locally increased soiling

Return to default setting
As soon as the button is released, the device automatically switches back to the **"Clean brush"** operating mode.

Maintenance and functional safety

- Regularly check the condition of the handle and the integrated button.
- Only use suitable electrolytes to ensure consistent cleaning performance and the service life of the device.

6.5 Polishing with 9010 RS / 9020 RS / 9030 RS / 9040 RS

The polishing process does not differ significantly from the cleaning process.
To do this, select the programme item "Polishing (brush)" (4-12V DC).

Differences between the programme items Polishing and Polishing (brush):

Essentially, the two programmes do not differ in terms of the type of polishing, only in the selection of the voltage, which is significantly higher in "Polishing" mode (6-24V DC).
We recommend a voltage of 12V for polishing.

Caution:

Use polishing electrolyte C or C+ for polishing. We recommend our electrolyte C+.

Dip the brush into the electrolyte container much more frequently during polishing, as the workpiece and the brush become hotter than during cleaning. Polishing is abrasive and removes microscopic material peaks. Polish until you have achieved the desired result. The longer you polish, the shinier and smoother the surface becomes (peak removal).

For longer polishing, it is advisable to cool the workpiece with deionised water.
water.

Now follow the work instructions from step 6.2

6.6 Marking light with 9010 RS / 9020 RS / 9030 RS / 9040 RS

Ground cable, working cable, marking template, marking stamp with anode and marking felt, wide-necked container, electrolyte EN, Neutralyt

When marking, all safety instructions from the previous points must be followed.
Set up the device and the tool as described in point 6.2.
Instead of the carbon fibre brush, install the marking stamp and attach a marking felt to it using an O-ring, as shown in the illustration.

Ensure that the marking felt cannot slip during the work process. Attach the marking felt as shown in the illustration.

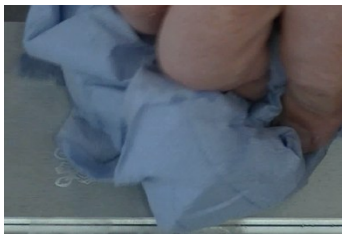
A worn or missing marking felt can cause serious problems during work, such as short circuits. If it slips, there is a risk of a short circuit on the workpiece, which can lead to deep burn marks. This in turn can destroy the carbon anode and even damage or destroy the entire device. In addition, there is a serious risk of flying sparks, which can pose a potential threat in addition to the other risks. It is therefore essential to check the condition of the marking felt regularly and ensure that it does not slip during operation in order to prevent accidents and damage. Careful handling of the marking felt contributes significantly to the safety and efficient functioning of the device. We recommend replacing the marking felt after approximately 10 uses.

Switch off the device when changing any work items that can be connected to it.

Before switching on the device, make sure that the tool you have connected is not lying on an electrically conductive surface.
Once you have followed all the instructions to be completed before switching on, switch on the device. Now go to the "Signing Bright" programme item (6-16V DC).
For bright signing, we recommend a voltage of 12V.
However, this is only a recommendation and not a guideline; try out which setting is most effective for you.

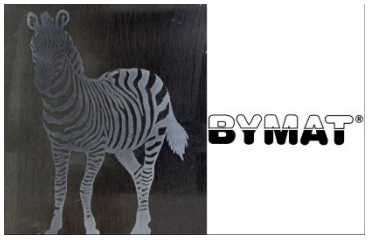
Pour a little EN electrolyte into a clean wide-necked container. Fill it with enough electrolyte to moisten the marking felt well, but do not dip the carbon anode too deeply into the electrolyte. Alternatively, the felt can also be dripped on directly.

Tip: For better distribution of the marking electrolyte and optimal moistening of the marking felt, we recommend placing a sponge in the wide-necked container. This allows you to soak it with the electrolyte. Now all you have to do is press the marking stamp onto the sponge to ensure optimal moistening of the marking felt.



Now place the template on the area of the workpiece where you want to apply the light marking.

Now press the moistened marking stamp onto the template at a 90° angle, holding the template firmly with your other hand or securing it well, as the marking stamp requires slightly firmer pressure. Now move the stamp over the template several times in a circular motion. Be very thorough and take your time this process to achieve the best possible marking.
Over time, you will develop a good feel for marking. It is advisable to practise a little on scrap pieces beforehand.



Once you have finished the process, remove the template and spray the signed area with Neutralyt.
Wipe the area dry with a paper towel.

Finished!

6.7 Dark marking with 9010 RS / 9020 RS / 9030 RS / 9040 RS

Ground cable, working cable, marking stamp, wide-necked container, electrolyte ET, Neutralyt

When marking, all safety instructions in the previous points must be followed.
Set up the device and the tool as described in section 6.2.
Instead of the carbon fibre brush, install the marking stamp and attach a marking felt to it using an O-ring, as shown in the illustration.

It is now important that you attach a marking felt to the carbon anode using an O-ring.
Ensure that the marking felt cannot slip off during the working process .
Attach the marking felt as shown in the illustration.

A worn or missing marking felt can cause serious problems, such as short circuits, during work. If it slips, there is a risk of a short circuit on the workpiece, which can lead to deep burn marks. This in turn can destroy the carbon anode and even damage or destroy the entire device. In addition, there is a serious risk of flying sparks, which can pose a potential threat in addition to the other risks. It is therefore essential to check the condition of the marking felt regularly and ensure that it does not slip during work in order to prevent accidents and damage. Careful handling of the marking felt contributes significantly to the safety and efficient functioning of the device. We recommend replacing the marking felt after approximately 10 uses.

Switch off the device when changing any work items that can be connected to it.

Before switching on the device, make sure again that the tool you have connected is not lying on an electrically conductive surface. Once you have followed all the instructions to be carried out before switching on, switch on the device. Now go to the programme item "Marking Dark" (6-14V AC).
For light marking, we recommend a voltage of 12V.
However, this is only a recommendation and not a guideline. Try to find out which settings are most effective for you.

Pour a little ET electrolyte into a clean wide-necked container. Fill it with enough electrolyte to moisten the marking felt well, but do not dip the carbon anode too deeply into the electrolyte. Alternatively, the felt can also be sprinkled directly.

Tip: For better distribution of the electrolyte for marking and optimal moistening of the marking felt, we recommend placing a sponge in the wide-necked container. This allows you to soak it with the electrolyte. Now all you have to do is press the marking stamp onto the sponge to ensure optimal moistening of the marking felt.

Now place the template on the area of the workpiece where you want to apply the light marking.

Now press the moistened marking stamp onto the marking template at a 90° angle, holding the template firmly with your other hand or securing it well, as you will need to apply slightly more pressure with the marking stamp. Now move the stamp over the template several times in a circular motion.

Be very thorough and take your time with this process to achieve the best possible marking.
Over time, you will develop a good feel for marking; it is advisable to practise a little on scrap pieces beforehand.

Once you have finished, remove the template and spray the signed area with Neutralyt or demineralised water.

Wipe the area dry with a paper towel.

Finished!

6.8 Electroplating

For zinc plating, gold plating, chrome plating, etc., turn the selector switch to Galvanising and confirm. Proceed in exactly the same way as for signing. The differences lie in the voltage setting and the selection of the electrolyte. Find out more about electrochemical metal deposition in our ECME manual, where you will find safety instructions and application examples. You do not need a template for electroplating.
Two examples of electroplating:

Gilding: Electrolyte GG, voltage 8V.
Zinc plating: Electrolyte GZ, voltage 12-14V.

7. Maintenance and servicing

The operator is authorised to carry out all cleaning work on the tool and the housing of the devices independently. However, it is important to note that all work requiring screws to be tightened on the device may only be carried out by a qualified electrician or a person who is specially qualified for the device in question. Any screwdriving or maintenance work that goes beyond cleaning must always be carried out by a qualified specialist.

Please only use surface cleaners intended for stainless steel surfaces when cleaning the housing. This protects against damage and helps to maintain the aesthetic appearance in the long term. Avoid abrasive or aggressive cleaning agents to prevent scratches or damage.
Use a stainless steel care product after each cleaning.

For optimal cleaning, we recommend our in-house stainless steel cleaners/care products.

The black appliances are significantly less sensitive and can be cleaned effortlessly, even with ordinary washing-up liquid.

Regular cleaning of the appliances depends largely on various factors, including wear and tear, the nature of the working environment and frequency of use. The intensity with which the appliances are used and the specific conditions at the workplace have a significant influence on the necessity and timing of cleaning measures. By carefully considering these aspects, effective cleaning plans can be drawn up that both ensure the optimal functionality of the appliances and extend their service life.

Clean everything that has come into contact with electrolytes on a daily basis. This is not only to extend the service life of the equipment, but also to keep it looking clean. The insulation of the equipment's cables is particularly vulnerable. Regular drying of the electrolytes causes them to become brittle more quickly, so make sure you clean them thoroughly.

Only clean the devices with a slightly damp cloth.

Please clean the device exclusively with a damp cloth. The device's protection class is not designed to come into direct contact with water or other liquids.
Only clean and maintain the device when it is switched off. To do this, visibly disconnect the device from the mains.

8. Troubleshooting

In the event of an error, we recommend that you check your procedure. Please ensure that the earth clamp is correctly attached, that you are using the correct programme, that you have selected the appropriate electrolyte and that you are using the correct tools.

Please note that you should wait at least 30 seconds before switching the device back on after switching it off. Observing this waiting time is crucial to avoid possible error conditions.

If you have any questions or unresolved errors, please contact your dealer or manufacturer.
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9. Disposal

9.1 Disposal of electrolytes

Avoid releasing electrolytes into the environment. In the event of accidental spillage, use suitable binding agents, lime or plenty of water to ensure environmentally friendly containment. More detailed instructions can be found in the safety data sheet for the respective electrolyte. Proper disposal of these substances is very important in order to minimise environmental impact while ensuring compliance with applicable regulations and safety guidelines. Always follow the instructions in the safety data sheet to ensure safe and environmentally sound disposal.

9.2 Disposal of electronic waste

The label on the product or packaging indicates that it must not be disposed of in household waste. Instead, you should take it to a collection point for recycling electronic equipment. This approach not only helps to protect the environment, but also ensures the safety of others from the potential dangers of improper disposal.

It is important to obtain the correct information at the local level in order to find the appropriate recycling options. By disposing of electronic waste correctly, you are actively contributing to reducing environmental impact and promoting sustainable waste management. Always follow local guidelines and responsible disposal practices to make a positive contribution to environmental protection.

10. Technical data

Device	9010 RS	9020 RS	9030 RS	9040 RS
Power	960 VA	1920 VA	2880 VA	3840 VA
Weight	8,8 kg	10,7 kg	13,2 kg	14,98 kg
Output current	40 A	80 A	120 A	160 A
Dimensions LxWxH	385x175x310	385x175x310	385x175x310	385x175x310
Cleaning	☑	☑	☑	☑
Polishing	☑	☑	☑	☑
Dark marking	☑	☑	☑	☑
Light marking	☑	☑	☑	☑
Electroplating	☑	☑	☑	☑