

Operating Instructions

_____ Automatic Welding Helmet

_____ VarioProtect 3XL-W Digital TC



VarioProtect 3XL-W Digital TC

VARIOPROTECT

Imprint

Product identification

Automatic Welding Helmet Item number
VarioProtect 3XL-W Digital TC 1654030

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Indications regarding the operating instructions

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Subject to technical modifications and error.

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1 Introduction

You have made a good choice by purchasing the Schweißkraft welding helmet.

Read the operating manual thoroughly before commissioning the helmet.

It gives you information about the proper commissioning, intended use and safe and efficient operation and maintenance of your welding helmet.

The operating manual is part of the welding helmet. Always keep this operating manual in the location where your welding helmet is being operated. All local accident prevention regulations and general safety instructions for the operating range of your welding helmet must also be complied with.

The Illustrations in this operating instruction serve for the general understanding and may deviate from the actual design.

1.1 Copyright

The contents of these instructions are copyright. They may be used in conjunction with the operation of the welding helmet. Any application beyond those described is not permitted without the written approval of Stürmer GmbH.

For the protection of our products, we shall register trademark, patent and design rights, as this is possible in individual cases. We strongly oppose any infringement of our intellectual property.

1.2 Customer service

Please contact your dealer if you have questions concerning your Automatic Welding Helmet or if you need technical advice. They will help you with specialist information and expert advice.

Germany:

Stürmer Maschinen GmbH
Dr.-Robert-Pfleger-Str. 26
D-96103 Hallstadt

Repair service:

Fax: 0049 (0) 951 96555-111
Email: service@stuermer-maschinen.de

Spare part orders:

Fax: 0049 (0) 951 96555-119
Email: ersatzteile@stuermer-maschinen.de

We are always interested in valuable experience and knowledge gained from using the application-which then could be shared and be valuable to develop our products even further.

1.3 Limitation of liability

All information and notes in these operating instructions were summarised while taking applicable standards and rules, the state-of-the-art technology and our long-term knowledge and experiences into consideration.

In the following cases the manufacturer is not liable for damages:

- Non-observance of the operating instructions,
- Inappropriate use
- Use of untrained staff,
- Unauthorised modifications
- Technical changes,
- Use of not allowed spare parts.

The actual scope of delivery may deviate from the explanations and presentations described here in case of special models, when using additional ordering options or due to latest technical modifications.

The obligations agreed in the delivery contract, the general terms and conditions as well as the delivery conditions of the manufacturer and the legal regulations at the time of the conclusion of the contract are applicable.

2 Safety

This section provides an overview of all important safety packages for the protection of operating personnel as well as for safe and fault-free operation. Other task-based safety notes are included in the paragraphs of the individual phases of life.

2.1 Symbol explanation

Safety instructions

The safety notes in these operating instructions are highlighted by symbols. The safety notes are introduced by signal words which express the concern of the risk.



DANGER!

This combination of symbol and signal words indicates an imminently dangerous situation which may lead to death or severe injury if not avoided.



WARNING!

This combination of symbol and signal words indicates a potentially dangerous situation which may lead to death or severe injury if not avoided.



CAUTION!

This combination of symbol and signal words indicates a potentially dangerous situation which may lead to slight or minor injury if not avoided.



ATTENTION!

This combination of symbol and signal words indicates a possibly dangerous situation which may lead to property and environmental damages if they are not avoided.



NOTE!

This combination of symbol and signal words indicates a potentially dangerous situation which may lead to material or environmental damage if not avoided.

Tips and recommendations



Tips and recommendations

This symbol highlights useful tips and recommendations as well as information for an efficient and trouble-free operation.

It is necessary to observe the safety notes written in these operating instructions in order to reduce the risk of personal injuries and damages to property.

2.2 Safety regulations



ATTENTION!

Serious injury can occur if the user ignores the warnings and/or refuses to follow the instructions in the operating manual!



ATTENTION!

Before use make sure the protection films on both inside & outside protection lens are removed (if available).

- This welding helmet is not suitable for use in laser welding with gas and/or oxygen and acetylene welding or cutting processes.
- Check the welding helmet for visible damage and defects before use. Repair defects and damage immediately.
- Do not use the welding helmet in wet environments, rain, etc.

- Only use original spare parts and accessories.
- Check the helmet for light transmission
- Never place this welding helmet or filter on a hot surface.
- Protect the filter from dirt.
- Never open the welding filter.
- Before using the welding helmet, make sure that the operating mode is set correctly. - „Welding“ or „Grinding“.
- This welding helmet does not protect you from explosives or corrosive liquids.
- Do not make any changes, not on the welding filter or the welding helmet, unless it is explicitly stated in this manual.
- If the viewing window does not darken immediately after the welding arc is ignited, welding must be stopped immediately. Contact your supervisor or your dealer immediately.
- Do not use any solvents on the window or helmet.
- Only use the welding helmet at temperatures between -5 °C and +50 °C.
- Store the helmet at temperatures between -20 °C and +70 °C.
- Protect the viewing window from liquid and dirt.
- Clean the viewing window regularly and do not use strong cleaning agents.
- Keep the sensors and solar panel clean. Use a clean, lint-free cloth for cleaning.
- Replace the sensors if they are damaged.
- Replace the protective lens regularly or if they are scratched or damaged.
- Set the correct protection level before using the helmet.
- Adjust the headband so that the helmet sits as low as possible on your head and close to your face. Adjust the angle of the helmet in the lowered position by turning the adjustable limiting disc.
- Select the necessary position of the welding/grinding switch before welding.

3 Intended Use

The Automatic Welding Helmet VarioProtect 3XL-W Digital TC protects the eyes and face from sparks, splashes and harmful radiation under normal welding conditions. The welding helmets may only be used for welding and not for other purposes. They are suitable for almost all welding processes, except oxyacetylene, laser and gas welding processes. They do not protect against severe impact, including fragments of grinding wheels, explosive devices, or corrosive liquids. Machine guards and appropriate protection must be used. Avoid work positions where unprotected body areas are exposed to flying sparks, direct and/or reflected radiation. Use appropriate protection when exposure cannot be avoided.

If the auto-darkening filter is cracked, do not continue to use the helmet: UV / IR protection may be compromised and may cause burns to the eyes and skin.

Any use other than that described in these operating instructions is not permitted. Intended use also includes compliance with all the information in these instructions. Any use beyond the intended use or any other use is considered misuse.



WARNING!

Danger in case of misuse!

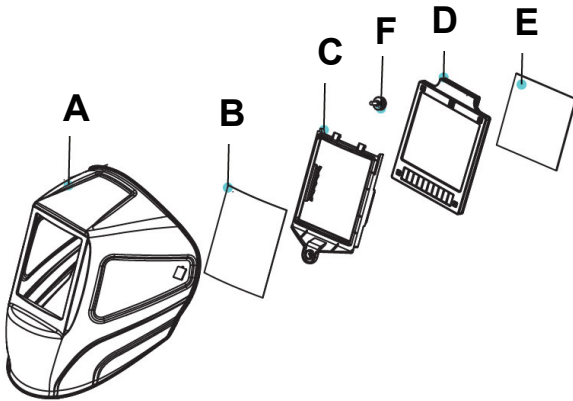
- Misuse of the welding helmet can lead to dangerous situations.
- Only operate the welding helmet in the power range listed in the technical data.
- Never bypass or override the safety devices.
- Only operate the Automatic Welding Helmet when it is in perfect technical condition.

Unauthorized modifications or changes to the welding helmet can invalidate the CE conformity and are prohibited. Stürmer Maschinen GmbH accepts no liability for design and technical modifications to the welding helmet. The non-intended use of the welding helmet as well as the disregard of the safety regulations or the operating instructions exclude a liability of the manufacturer for resulting damages to persons or objects and cause an expiration of the warranty claim!

4 Technical Data

Technical Data	VarioProtect 3XL-W Digital TC
Length x width/depth x height (product) [mm] approx.	252 x 289 x 336
Net Weight approx. [g]	550
Field of view width [mm]	100
Field of view height [mm]	93
Operating temperature [°C]	-5 - +50
Storage temperature [°C]	-20 - +70
Class	1/1/1/1
Switch-over response time from light to dark [ms]	0,04
Switch-over response time measured at temperature [°C]	55
Switch-over response time from dark to light [s]	0.06 - 1.2
Brightening time adjustment [s]	0 - 9, automatic
UV-/IR protection	Up to DIN 16
Shade	-2.0 - + 2.0
Dark protection level	DIN 4-8, DIN 8-13
Safety level at disturbance or in switched off condition	3
Battery replaceable	Replaceable Lithium Batteries (2 pcs.)
Number of sensors	5
Cassette length [mm]	133
Cassette width [mm]	114
Cassette height [mm]	9
Sensitivity	0 -7, automatic
Lens thickness [mm]	1.2

5 Description of the Helmet



- A Helmet shell
- B Outer pane
- C Press frame
- D Auto darkening filter
- E Inner pane
- F Nut



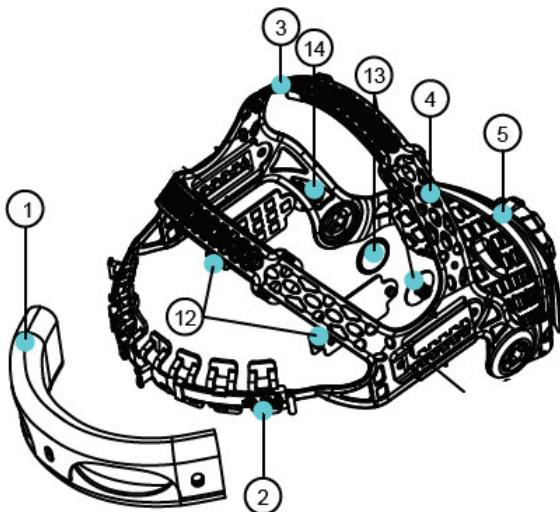
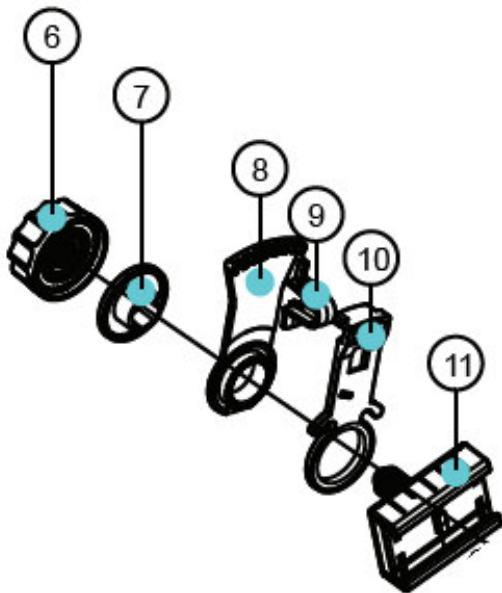
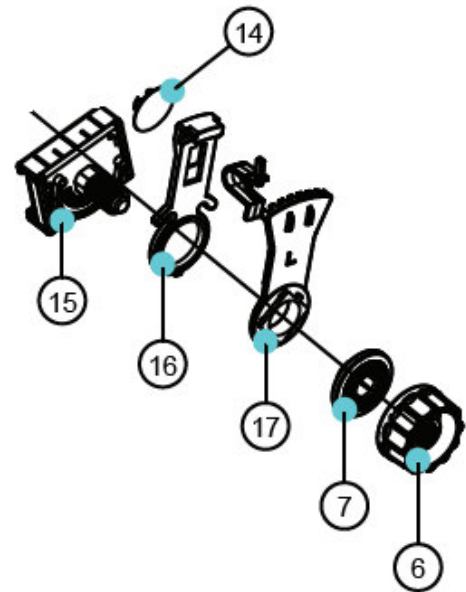
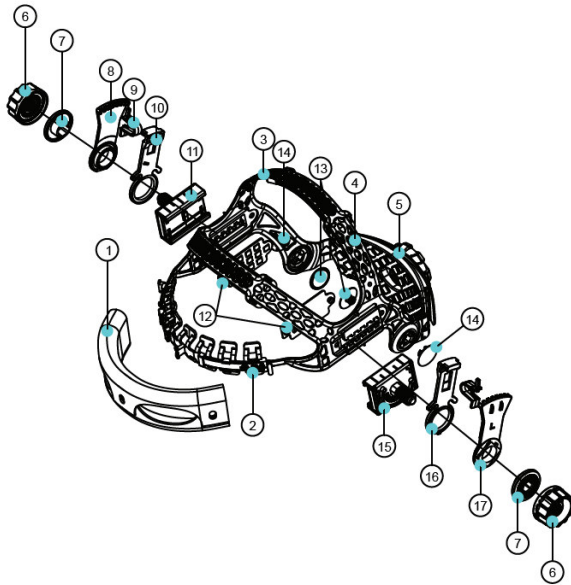
Fig. 1: Description of the helmet VarioProtect 3XL-W Digital TC

The button 11 can be used to switch between the grinding mode (GRIND) and the welding mode (WELD) without taking off the welding helmet.

In GRIND mode, there is no darkening of the filter cassette.



- 1 Operation mode switch
- 2 Headband for helmet distance adjustment
- 3 Viewing window, outer lens 5 SWM 1 F CE
- 4 Setting protection levels
- 5 Filter cassette (ADF=Auto Darkening Filter), Inner Pane
- 6 Battery compartment
- 7 Setting sensitivity (SENSITIVITY)
- 8 Setting brightening time (DELAY)
- 9 Battery control indication
- 10 Identification welding helmet (SWM 175 B CE)
- 11 Switchover between grinding and welding mode



- 1 Sweatband
- 2 Front headband
- 3 Right band
- 4 Left band
- 5 Back headband
- 6 Back head rotary knob
- 7 Flat washer
- 8 Right limiting disc
- 9 Angle pin
- 10 Right adjustable disc
- 11 Right slider
- 12 Side cover
- 13 Rotating shaft inside the side panel
- 14 Rotating shaft outside side panel
- 15 Left slider
- 16 Left adjustable disc
- 17 Left limiting disc

Sleep and wake up function

In order to prolong the battery life, under the condition that the ambient light intensity is less than 10 lux and no arc appears for a long time, the auto-darkening welding filter will operate in an inactive state in power saving mode. When the welding helmet is in inactive mode, the automatic darkening filter will operate in normal mode in immediate moment when the ambient light intensity is more than 10 lux. The conditions for sleep mode and wake-up mode are shown in the table below.

Mode	Previous Mode	Condition
Sleep mode (energy saving mode)	Grinding	In grinding mode and without pressing any button for 45 minutes, the filter will go into OFF function. When the ambient light intensity is lower than 10 lux, the device will go into sleep mode.
	Cutting	Without pressing any key for 45 minutes from the last time the arc signal was received, the filter will go into OFF function. When the ambient light intensity is lower than 10 lux, the device will go into sleep mode.
	Welding	Without pressing any key for 45 minutes from the last time the arc signal was received, the filter will go into OFF function. When the ambient light intensity is lower than 10 lux, the device will go into sleep mode.
Wake-up mode	Grinding	If the environmental light intensity is more than 10 lux or any key is pressed for 0.1 s, the filter will become active and changes into the grinding mode.
	Cutting	If the environmental light intensity is more than 10 lux or any key is pressed for 0.1 s, the filter will become active and changes into the cutting mode.
	Welding	If the environmental light intensity is more than 10 lux or any key is pressed for 0.1 s, the filter will become active and changes into the welding-mode.



NOTE!

1. When you want to put the device into sleep mode, you must not press OFF. In OFF mode, the filter only shuts down the screen and reduces power consumption. It is still in working mode. In OFF mode and when the ambient light intensity is less than 10 lx, the filter will switch to sleep mode.
2. After waking up from sleep mode, the filter may not work in normal way for the next 10 s.

5.1 Wearing parts

Designation	Item number	Packing unit / Price unit	Content
Äußere Vorsatzscheibe	1662100	PU	10
Innere Vorsatzscheibe	1662101	PU	10
Seitenscheiben-Set	1662130	1 Set = 2 Pcs.	
Stirnschweißband	1662122	Pcs.	
Stirnband komplett	1662123	Pcs.	
Schweißhelmgehäuse	1662134	Pcs.	
Filterkassette	1662135	Pcs.	
Vergrößerungslinse 2,0	1662106	Pcs.	

6 Transport, Packing, Storage

6.1 Transport

Check the welding helmet on delivery for any visible transportation damage. If you notice any damage to the device please report this immediately to the carrier or dealer.

6.2 Packaging

All used packaging materials and packaging aids are recyclable and should be taken to a materials recycling depot to be disposed of.

The delivery packaging is made of cardboard, so please dispose carefully by having it chopped up and given to the recycling collection

The film is made of polyethylene (PE) and the cushioned parts of polystyrene (PS). Deliver these substances to a collection point for recyclable materials or to the waste disposal company which looks after your region.

6.3 Storage

The welding helmet must be stored thoroughly cleaned in a dry, clean environment at temperatures ranging from -20 °C to +70 °C.

The solar cells of the filter should be stored in the dark or not exposed to light.

The solar cells of the filter should be stored in the dark and not exposed to light.

7 Product characteristics and Adjustment options

The shape of the helmet relieves the head and neck of the welder, so the user feels more comfortable while working.

LCD Screen

The LCD display includes four sections:

- Mode (Mode)
- Protection levels (Shade)
- Sensitivity (Sensitivity)
- Delay time (Delay)

Modus:

GRIND, WELD, CUT shows the current working mode.

Shade:

AUTO / MANUAL shows the current setting mode for the color level.

In manual mode (MANUAL), the currently set color level is displayed on the screen. In automatic mode (AUTO), you can press the keys (LTR and DKR) to set the automatic color level from -2 to +2.

LED Lights

There are two types of LED light types:

Flashing and steady light. The meaning of the different types of indication is described in the table below.

Operating mode	LED Indication
Grinding	Red light for 2 s and lights ON for 0.3 s
Battery too low (empty)	Red light always on



NOTE!

If the battery no longer supplies the device with sufficient power, the LED indicates "Battery low" in grinding mode.

7.1 Selection of delay time

When welding is interrupted, the viewing window automatically changes from dark to light, but with a preset delay so that the glaring light from the afterglow on the workpiece is dimmed each time.

The DELAY area indicates the current number of steps. When the automatic delay time is enabled, the DELAY area will display "AUTO". The number of steps on the screen can be set from -9 to +9. In the welding mode, the screen displays "G" in the DELAY area when the step decrease function is activated.

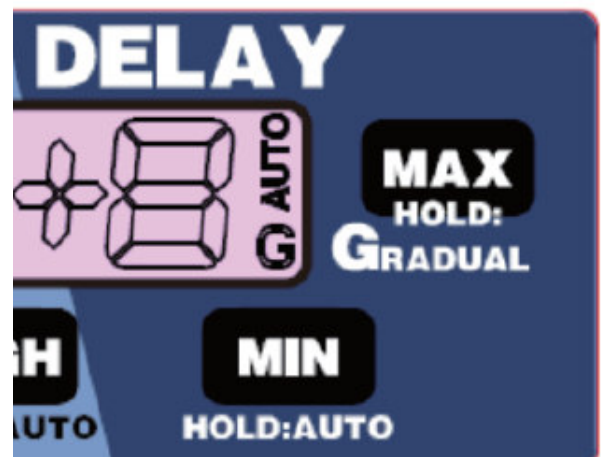


Fig. 2: Setting the delay time

7.2 Setting the sensitivity

In WELD or CUT mode, the number of steps is displayed in the SENS area. 0 for the minimum sensitivity and 7 for the maximum sensitivity. If the automatic sensitivity function is activated, "AUTO" is displayed in the SENS area. The sensitivity levels increase from 0 to 7 and stop at the level number that is automatically set. Then the system quits the automatic sensitivity setting mode.

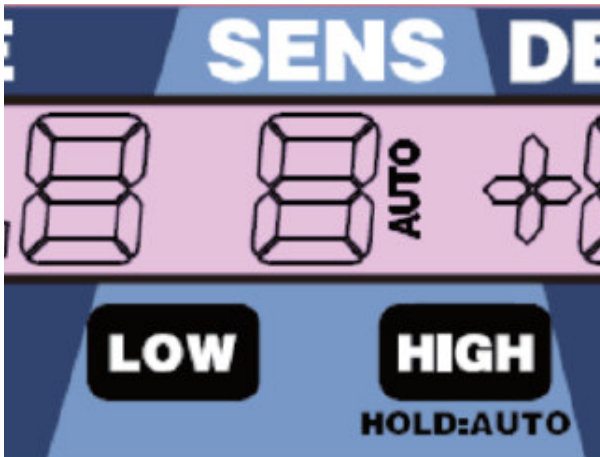


Fig. 3: Setting the sensitivity

7.3 Setting the operating mode

Basic function parameters

The welding helmet VarioProtect 3XL-W Digital TC has three operating modes: GRINDING, WELDING and CUTTING. The specific function of the three operating mode parameters is shown in Table 1.

Table 1 with the function parameters of the three operating modes:

Parameter /Operating mode	Color level	Sensitivity	Delay
Grinding	3	No indicator	No indicator
Welding	8-14	0 - 7	0 - 9
Cutting	4-8	0 - 7	0 - 9



NOTE!

Level 0 to 9 of the delay time equals 0.06 s to 1.2 s. Level 0 is suitable for TAC welding. Various sensitivities and delays can be set in the Welding and Cutting mode.

Advanced Function

To improve the comfort and convenience of users, 4 optional functions can be added to the Automatic Welding Helmet VarioProtect 3XL-W Digital TC:

Automatic color level adjustment, automatic sensitivity adjustment, automatic delay time adjustment and gradual decrease. The optional functions of three modes are listed in the table below.

Optional Feature/Mode of Operation	Step adjustment Automatic Color level	Automatic sensitivity adjustment
Grinding	No	No
Welding	Yes	Yes
Cutting	No	Yes

Optional Feature/Mode of Operation	Step adjustment Automatic Color level	Automatic sensitivity adjustment
Grinding	No	No
Welding	Yes	Yes
Cutting	No	No

7.4 Display area functions

The control panel area has 8 function keys. It is composed of an LCD display and LED lights, which are described below.

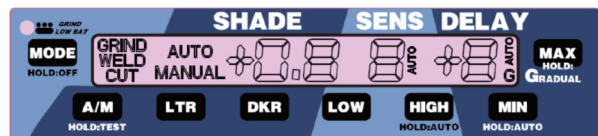


Fig. 4: Control panel


Function keys

Key		
MODE HOLD: OFF	Function	<ol style="list-style-type: none"> Short keystroke: Change mode: grinding-welding-cutting-grinding. Long keystroke: Switching off the display.
	Actuation type	<ol style="list-style-type: none"> Short keystroke: The mode will be switched if the key is pressed for 0.1 s. Release the key and then press the key again to change the mode. Long keystroke: Press for more than 1.5 s to switch off the device (note: in the OFF function, the display can be re-activated by pressing any key)
A/M HOLD: TEST	Function	<ol style="list-style-type: none"> Short keystroke: For switching between automatic or manual setting of the shade level in welding mode. Long keystroke: Test function: screen lights up - grinding - cutting - welding.
	Actuation type	<ol style="list-style-type: none"> Short keystroke: Pressing the key for 0.1 s toggles between automatic and manual setting of the tinting level. Long keystroke: Press for more than 1.5 s to start the device test once.
LTR	Function	<ol style="list-style-type: none"> Short keystroke: The tinting level is reduced. Long keystroke: Rapid reduction of the tinting level in welding mode.
	Actuation type	<ol style="list-style-type: none"> Short keystroke: If the key is pressed for 0.1 s, the tinting level is decreased. Releasing the key and pressing it again increases the tinting level again. Long keystroke: Press for more than 1.5 s to decrease the tint level quickly.
DKR	Function	<ol style="list-style-type: none"> Short keystroke: The tinting level is increased. Long keystroke: Quick increase of the tinting level in welding mode.
	Actuation type	<ol style="list-style-type: none"> Short keystroke: If the key is pressed for 0.1 s, the tinting level is increased. Releasing the key and pressing it again increases the tinting level again. Long keystroke: Press for more than 1.5 s to quickly increase the tint level.

Key		
LOW	Function	Reduction of sensitivity.
	Actuation type	Short keystroke: If the key is pressed for 0.1 s, the sensitivity is reduced. Release the button and then press the button again to decrease the sensitivity.
HIGH HOLD: AUTO	Function	<ol style="list-style-type: none"> Short keystroke: Increasing the sensitivity. Long keystroke: In cutting or welding mode, the sensitivity is set automatically. (In the operation of the automatically set sensitivity, "AUTO" is displayed in the SENS display area, the sensitivity level again increases from 0 to 7).
	Actuation type	<ol style="list-style-type: none"> Short keystroke: The mode is toggled if the button is pressed for 0.1 s. Release the key and then press the key again to change the mode. Long keystroke: Press for more than 1.5 s to switch off the device (Note: In the OFF function, the display can be re-activated by pressing any key).
MIN HOLD: AUTO	Function	<ol style="list-style-type: none"> Short keystroke: Reduces the delay time. Long keystroke: Enter or exit the delay time function (When the automatic delay time function is activated, "AUTO" is displayed in the DELAY display section).
	Actuation type	<ol style="list-style-type: none"> Short keystroke: Pressing the key for 0.1 s changes the mode. Release the key and then press the key again to change the mode. Long keystroke: Press for over 1.5 s to enter automatic time delay mode and press again for over 1.5 s to exit.

Key		
MAX	Function	1. Short keystroke: Decreases the delay time. 2. Long keystroke: In welding mode, enter or exit the gradual decrease of the automatic colour tone level (When the gradual decrease of the colour tone level is activated, "G" is displayed in the DELAY display area).
	Actuation type	1. Short keystroke: If the key is pressed for 0.1 s, the delay time increases. Release the button and then press the button again to increase the delay time. 2. Long keystroke: Press for 1.5 s to enter the gradual decrease area of the automatic colour level. Press again for 1.5 seconds to exit the gradual decrease.

When grinding, the helmet protects against impacting particles. The blackout function is switched off.

 **ATTENTION!**
 Before starting the welding process, it is essential that the operating mode switch is set back to a protection level for welding.

7.5 Protection level setting

 **CAUTION!**
 If the welding helmet is used for a long time with the wrong protection level, the eyes can be injured.

7.6 Power supply

A battery provides the current supply for the welding helmet. If the LED lights up continuously, the battery level is too weak and must be replaced.



Fig. 5: Battery indication

7.7 Headband adjustment options

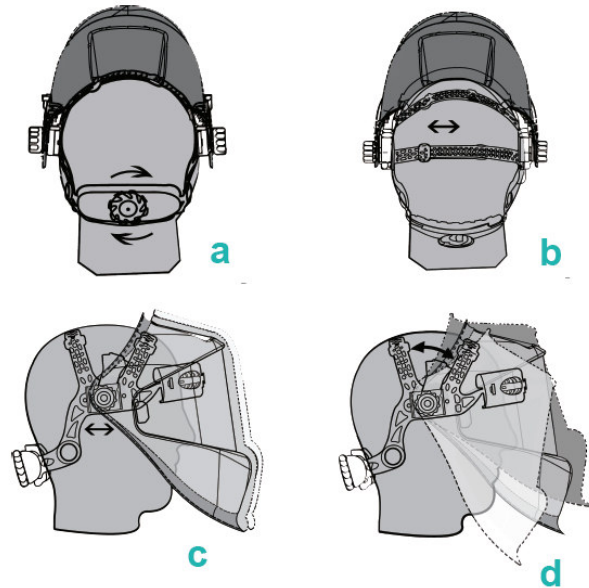


Fig. 6: Headband adjustment

Adjust headgear:

The helmet should be adjusted to effectively protect the eyes and face during welding. The position of the headband and the rear headband can be adjusted manually to ensure a secure fit. Turn the gear to adjust the tightness until it feels comfortable. The front and back headband should be adjusted so that the forehead and back of the head are firmly covered. See figure 6a.

Headgear depth:

The depth of the headgear can be adjusted to the position where it sits over your forehead. Tighten the two slotted straps to fit the top of your head. See figure 6b.

Distance between viewing window and face:

The distance to the viewing window can be adjusted by pressing the lateral pins and moving the sliders at the same time. There are 5 distance positions available for adjustment. See figure 6c.

Angle limitation position:

The ideal helmet position is reached when your eyes are at a 90 ° angle behind the viewing window. There are 7 angle limit positions available for adjustment. Press the side buttons and move the sliders at the same time so that the helmet reaches the desired angle limit. See figure 6d.

After the adjustment mechanisms have been carried out, the helmet should feel more comfortable for the welder to wear than before. Work can be performed with high precision throughout.

8 Notes before commissioning

- Before first commissioning, remove the protective films on both sides of the protective screens (if present).
- Before using the helmet for the first time, inspect all parts for signs of use and damage. Scratched, torn or holey parts should be replaced immediately before the helmet is used again to avoid serious injury.



ATTENTION!

You may not use the welding helmet without the front screens in front of and behind the filter cassette!



CAUTION!

Before each use of the welding helmet, check the darkening function of the filter cassette (ADF) with the help of a bright lamp.

- Make sure the helmet is firmly in place before each use.
- Select the shade level you require for the application. Make sure the setting is correct by using the colour chart.
- Adjust the head straps so that the welding helmet sits as low on the head and close to the face as possible. When using the welding helmet at a lower position, adjust the angle.
- Set the operating mode (welding or grinding). In GRINDING mode, the filter remains bright.
- Set the protection level, delay time and sensitivity.
- Put on the helmet and check its tight fit and appropriate position.
- Before starting welding work, check the correct settings with a function test.
- VAPORS AND GASES can be harmful to your health. Keep your head away from fumes.
- Provide adequate ventilation, exhaust at the arc or both to keep fumes and gases away from your breathing zone and the general area.
- ARC arcs can injure eyes and cause skin burns.
- Always check the helmet and filter lens before welding to ensure they are fitted properly, in good condition and undamaged.
- Check that the clear lens is clean and securely attached to the helmet.
- Always wear safety glasses under the welding helmet and protective clothing to protect your skin from radiation, burns and splashes.
- Make sure that optical radiation from the arcs of other welders in the immediate vicinity does not

enter the helmet and the automatic dimming filter from behind.

Welding produces sparks and drops of molten metal that fly in all directions.

- The safety helmet must be worn to avoid serious physical damage.
- Suitable additional safety clothing must be worn to protect the rest of the body.

Correct use of the welding helmet

Before using the helmet, make sure that:

- The front cover and the filter are in the right position and correctly fixed.
- All sensors and cells are not blocked.
- The protective films on both screens are removed.
- The red light is off, otherwise change the batteries.
- Keep the viewing area of the filter as close to your eyes as possible during welding.
- If you weld for a long period of time, check the helmet occasionally and make sure there are no signs of deformation or wear.
- Do not use the helmet without the transparent filter protector (inside and outside): failure to do so may result in a safety hazard or irreparably damage the filter.
- People with particularly sensitive skin must be especially careful: Materials that may come into contact with the skin may cause allergic reactions.
- Check that the protection level corresponds to your welding process. If the helmet has operating problems, refer to the chapter "Troubleshooting". If the problem persists, stop using the helmet and contact the person in charge or a dealer.

9 Operation

Application

Check the front cover to make sure it is clean and that the sensors on the front of the filter cartridge are not dirty. Also check the front/rear cover lens and the front lens holder snap connection to make sure they are fastened.

Check the helmet and viewing window for signs of wear or damage before each use. Scratched, cracked or scarred parts should be replaced immediately before re-use to avoid serious injury.

Adjust the headband so that the helmet sits as low as possible on your head and close to your face. Adjust the angle of the helmet in the lowered position by pressing the side adjustment knob.

Do not make any modifications to the welding lens or helmet other than those specified in this manual.

Failure to observe these warnings and / or to follow all operating instructions may result in serious injury.

10 Troubleshooting

Problem	Possible Cause	Solution
The filter does not darken or is unstable when switching from light to dark and back again.	The external transparent protection of the filter is dirty or damaged.	Replace the external transparent protection.
	The sensors are dirty.	Clean the surface of the sensor.
	The welding current level (sensitivity) is too low.	Increase the sensitivity.
	The batteries are not in good condition or are not inserted correctly.	Replace or remove the batteries and reinsert them properly.
	Battery clamps and the contact surfaces of the filter are dirty or oxidised.	Clean both.
	The "WELD-GRIND" switch on the filter is in the "GRIND" position.	Set the switch to the "WELD" position.
Switching over too slow	Die Anwendungstemperatur ist zu niedrig.	Do not use the device at temperatures below -5°C (+23°F).
Bad visibility	Der externe oder/und interne Schutz des Filters ist /sind dreckig oder beschädigt.	Clean the dirty components and replace the damaged parts.
	Nicht genug Licht im Umgebungsreich.	Ensure adequate lighting.
	Wert in der Ziffernskala ist nicht korrekt gesetzt, oder der festgesetzte Wert der Ziffernskala ist ungeeignet.	If possible, use the correct number.
Filter darkening occurs without previous arc signal	Empfindlichkeit ist zu hoch.	Adjusting the sensitivity to the correct level.
Filter remains darkened after completing the welding process	Verzögerung zu hoch eingestellt. Umgebungslicht ist zu hell.	Set delay. Reduce the light level.
Welding splashes damage the filter	Fehlende, beschädigte, gebrochene, verzerrte Frontabdeckung.	Replace the front cover shield.



WARNING!

The user must immediately remove the welding helmet if the above problems cannot be solved. Contact your dealer.

11 Color Table

Recommended shade guide according to EN 169.

Welding Process	Arc Current (Amperes)												
	0.5	2.5	10	20	40	80	125	175	225	275	350	450	
	1	5	15	30	60	100	150	200	250	300	400	500	
SMAW					9	10	11	12	13	14			
MIG (heavy)							10	11	12	13	14		
MIG (light)							10	11	12	13	14	15	
TIG,GTAW			9	10	11	12	13	14					
MAG/CO ₂						10	11	12	13	14	15		
SAW							10	11	12	13	14	15	
PAC							11	12	13				
PAW			8	9	10	11	12	13	14	15			

Note:	
<ul style="list-style-type: none"> - SMAW-Shielded Metal Arc Welding. - TIG, GTAW-Gas Tungsten Arc Welding. - MIG (heavy)-MIG on heavy metals. 	<ul style="list-style-type: none"> - SAW Shielded Semi-Automatic Arc Welding. - MIG (light)-MIG on light alloys. - PAC-Plasma Arc Cutting. - PAW-Plasma Arc Welding.

Fig. 7: Color table

12 Meaning of the Marking

Each product is marked with a corresponding protection level (DIN 4 to DIN 8 and DIN 9 to DIN 13). Make sure that the correct protection level has been set before starting the welding process. The classification for eye protection is according to EN 379. Other markings on the product are in accordance with the corresponding European standards.

Example filter (EN 379): VarioProtect 3XL-W Digital TC:

Marking 3 / 4-8 / 8-13 SWM 1/1/1/379 CE
3 / 4-8 / 8<13M SWM 1/1/1/379 CE

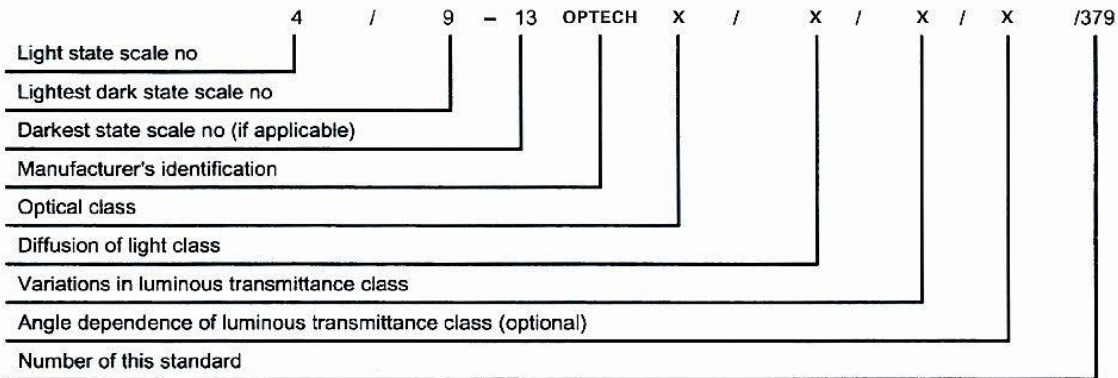


Fig. 8: Classification for eye protection

The welder's head part and the face shields are marked with code letters which indicate the protection class against impact energy (flying parts).

Safety helmet: SWM 175 B CE

SWM: Identification of the manufacturer
 175: Standard
 B: Average impact energy (impact 120 m/s).
 CE: CE marking

Front pane (welding protection filter for peripheral perception): 5 SWM 1 F CE

SWM: Identification of the manufacturer
 1: Optical class;
 F: Mechanical strength low impact energy (impact 45 m/s)
 CE: CE marking

The protective equipment must comply with the requirements for

Operating temperatures from -5 °C to +50 °C. Otherwise, the eye protection device may only be used at room temperature.



CAUTION!

The mechanical strength of the helmet can only be as strong as its weakest part.

13 Care, Maintenance and Repair



WARNING!
Danger in case of insufficient qualification of persons!

Insufficiently qualified persons cannot evaluate the risks to the user resulting from improper repair work on the welding helmet and expose themselves and others to the risk of serious injury.

All maintenance work must only be carried out by qualified persons.



NOTE!

After care, maintenance and repair work, check that all coverings and protective devices are properly refitted to the Automatic Welding Helmet.

Damaged guards and equipment parts must be repaired or replaced by the customer service.

13.1 Care by cleaning

Keep the filter, sensor and solar cell clean. After use and before taking off the helmet, check the integrity of the helmet and remove any droplets of melted metal.

The cartridge and front cover lens must be cleaned periodically with clean cotton, a soft cloth or a special lens cloth. Do not use strong detergents or solvents: clean the inside and outside of the helmet with a neutral disinfectant.



ATTENTION!

Failure to comply with this instruction may expose the operator to health risks and invalidate the warranty.

We accept no liability if the welding helmet is used for other purposes or these instructions are not followed.

13.2 Replace front pane and filter

Replacing the outer pane if it is damaged (cracked, scratched, dirty or full of holes).

1. Unscrew the nut (A) and remove the complete frame (B) (Fig. 9).

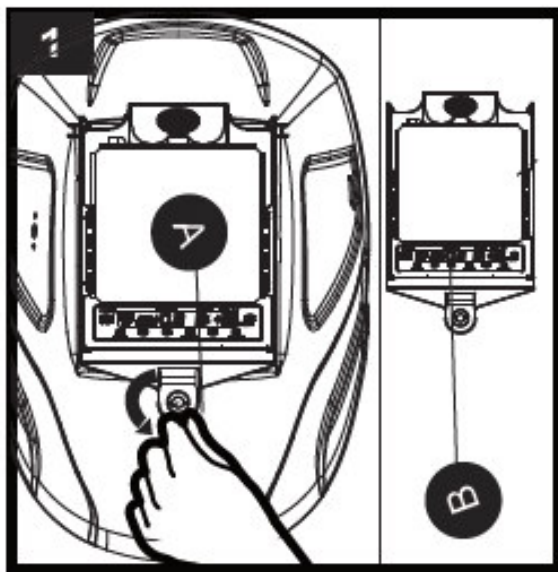


Fig. 9: Replacing filter and front pane

2. Gently push out the old front screen and place the new outer front screen in the previous position (C).

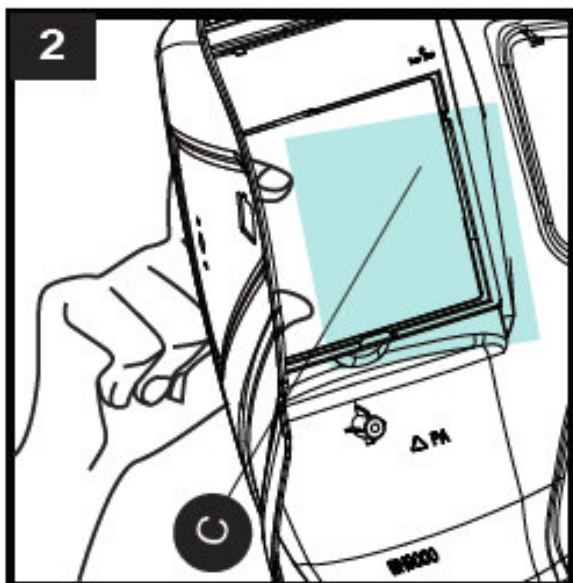


Fig. 10: Replacing filter and front pane

3. Remove the welding filter from the frame (D). Place a finger in the semi-circular hole and pull out the inner lens (E). Place the new inner screen by inserting one side of the protective plate into one of the two side slots and bending the protective plate only until it slides into the slot on the other side.

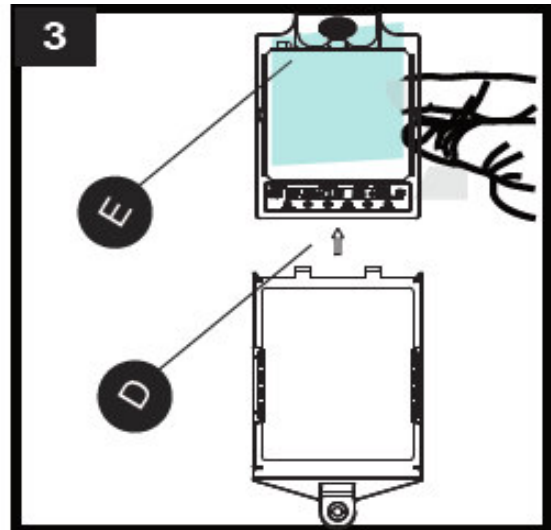


Fig. 11: Replacing filter and front pane

13.3 Replace the batteries

4. Gently press the battery cover until it is open (F).

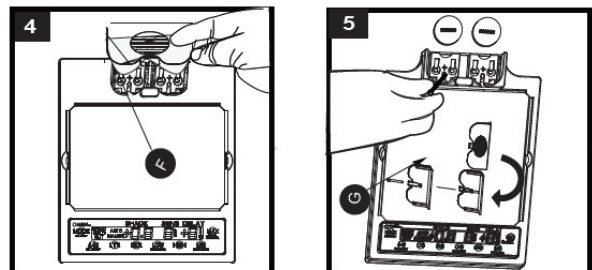


Fig. 12: Battery replacement

5. Use the tool (at the back of the battery compartment cover) to remove the batteries (G). Insert new batteries and close the battery compartment cover again.

13.4 Change welding filter

6. Change the welding filter and slide the new welding filter into the frame, put the frame back and fasten the screw (H).

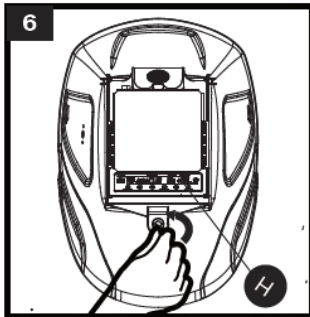


Fig. 13: Change welding filter

13.5 Maintenance/Repair



ATTENTION!

- Repairs or maintenance work may only be carried out by qualified and trained personnel.
- Only use original spare parts.

If the welding helmet does not function properly, contact a specialised dealer or our customer service. The contact details can be found in chapter 1.2 Customer service.

- Regularly check the condition of the helmet and replace damaged parts.
- Replace the external / internal transparent filter protector if it is damaged.
- Do not immerse the filter in water or other liquids. Do not use solvents to clean the filter.
- Do not put heavy tools / objects in or on the helmet to avoid damaging the filter or the protective screens.
- Keep the helmet away from flames.
- Do not allow the helmet to fall down.
- Do not place the helmet too close to the welding area.
- Be aware of the temperature:
 - Remove the batteries if the helmet is not used for a long time.
 - Place the helmet so that its dimensions cannot deform or the viewing filter cannot break.
 - Do not allow the filter to come into contact with liquid or dirt.
 - Do not open the filter container. Do not use tools or other sharp objects to remove parts of the filter or helmet.

14 Disposal, Recycling of used Devices

Please take care in your own interest and in the interest of the environment that all component parts of the machine are only disposed of in the intended and permitted way.

14.1 Decommissioning

Discarded devices must be taken out of service immediately in a professional manner in order to avoid later misuse and danger to the environment or persons.

- Remove batteries and accumulators, if available.
- If necessary, dismantle the welding helmet into manageable and recyclable assemblies and components.
- Dispose of the components in the designated disposal channels.

14.2 Disposal of the new equipment packaging

All packaging materials and packaging aids used are recyclable and must always be sent for material recycling.

These components are to be disposed of separately and in a professional manner. In case of doubt, contact the municipal waste disposal service.

If necessary, use the services of a specialised waste disposal company for processing.

15 Spare Parts



DANGER!

Danger of injury by the use of wrong spare parts!

Dangers may result for the user and damages as well as malfunctions may be caused by using wrong or damaged spare parts.

- Only use original spare parts of the manufacturer or spare parts admitted by the manufacturer.
- Always contact the manufacturer in case of uncertainties.



Tips and recommendations

Use of non-approved spare parts will invalidate the manufacturer's warranty.

15.1 Ordering spare parts

The spare parts may be purchased with the authorised dealer or directly with the manufacturer. Please find the corresponding contact data in Chapter 1.2 Customer service.

Indicate the following basic information for requests or orders of spare parts:

- Type of device
- Item number
- Position number
- Year of construction:
- Quantity
- Required mode of dispatch (mail, freight, sea, air, express)
- Address of dispatch

Spare part orders which do not include the above indications may not be taken into consideration. If the indications regarding the mode of dispatch are missing, the product is dispatched at the discretion of the supplier.

You will find information regarding the device type, item No. and year of manufacture on the type plate fixed to the welding helmet.

Example

The outer pane for the welding helmet VarioProtect 3XL-W Digital TC must be ordered. The outer pane has the position number 19 in the spare parts drawing.

When ordering spare parts, send a copy of the spare parts drawing with the marked component (outer pane) and marked position number (19) to the authorised dealer or the spare parts department and provide the following information:

Type of the device: **VarioProtect 3XL-W Digital TC**
Item number: **1654030**
Position number: **19**

15.2 Spare parts drawing

The following drawing should help you to identify necessary spare parts in case of service. If necessary, send a copy of the parts drawing with the marked components to your dealer.

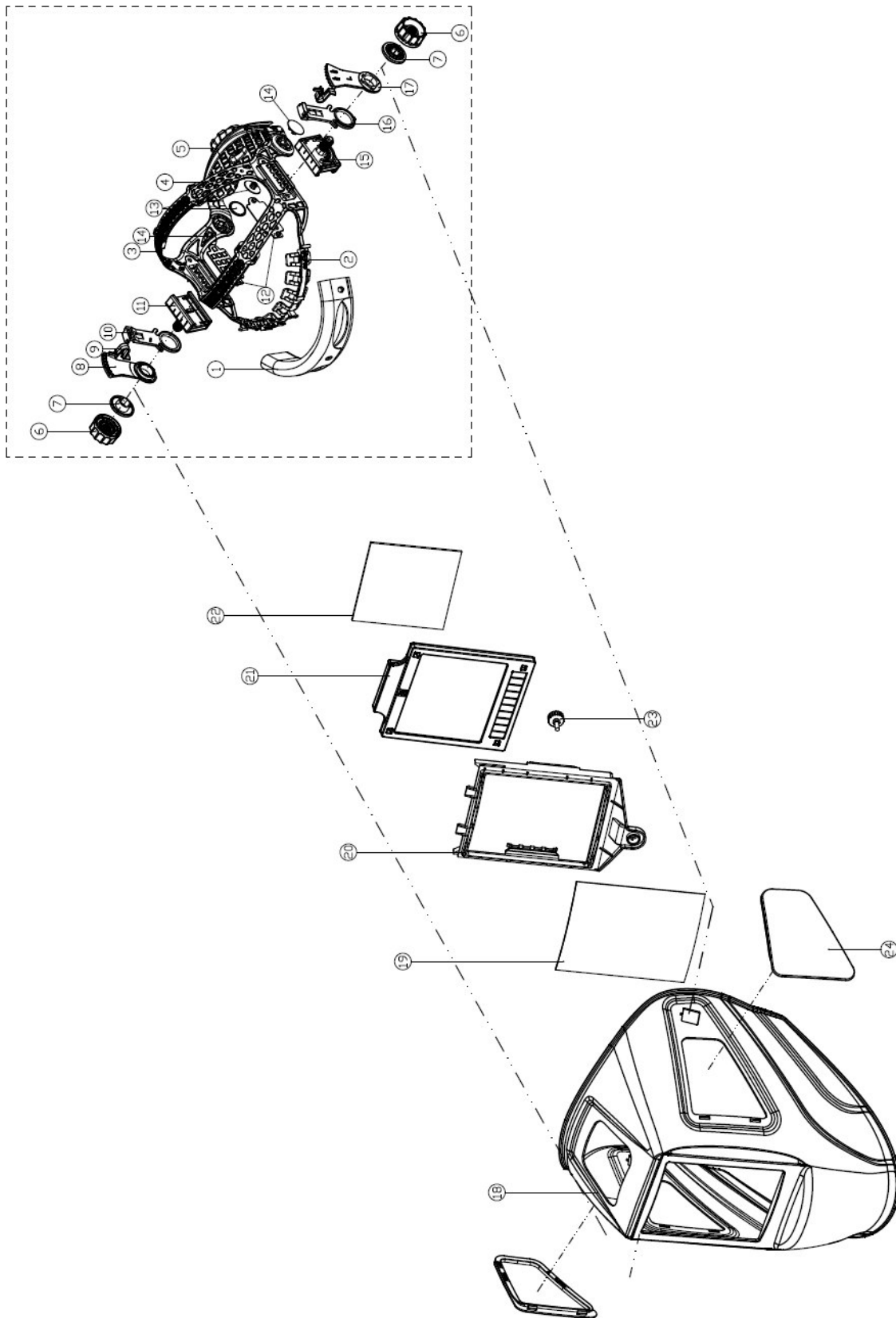


Fig. 14: Spare parts drawing VarioProtect 3XL-W Digital TC

Pos.	Description (German)	Description (English)
1	Schweißband	sweatband
2	Stirnband	Forehead band
3	rechter Riemen	Right belt
4	Linker Riemen	Left belt
5	Hinterkopfpolster	Occipital pad
6	Kopfband Einstellmutter	Headband adjusting nut
7	Beilagscheibe	Washer
8	Rechte Begrenzungsscheibe	Right Limitation Washer
9	Winkelstift	Angle pin
10	Rechte einstellbare Scheibe	Right Adjustable Washer
11	Rechter Schieber	Right slider
12	Seitenverkleidung	Side trim
13	Drehender Schaft in der Seitenverkleidung	Rotating shaft inside trim
14	Drehender Schaft außerhalb der Seitenverkleidung	Rotating shaft outside trim
15	Linker Schieber	Left slider
16	Linke einstellbare Scheibe	Left Adjustable Washer
17	Linke Begrenzungsscheibe	Left Limitation Washer
18	Helmschale	Helmet shell
19	Äußere Vorsatzscheibe	Front protection plate
20	Pressrahmen	Press frame
21	Automatikabdunkelfilter	Auto darkening Filter
22	Innere Vorsatzscheibe	Rear protection plate
23	Mutter	Nut
24	Peripherie-Wahrnehmungsfiter	Peripheral awareness filter

16 EU - Declaration of Conformity

Manufacturer/ Distributor: Stürmer Maschinen GmbH
Dr.-Robert-Pfleger-Straße 26
D-96103 Hallstadt

hereby declares that the Personal Protective Equipment (PPE) described below complies with the provisions of the PPE Regulation 2016/425/EU and the Product Safety Directive 2001/95/EC, and is identical to the PPE that is the subject of the test performed by the accredited testing institute.

Welding protection filter for peripheral perception / front pane	Automatic welding protection filter	Face protection shield (helmet)
Certification authority	Certification authority	Certification authority
ECS GmbH Hüttfeldstraße 50 73430 Aalen	ECS GmbH Hüttfeldstraße 50 73430 Aalen	ECS GmbH Hüttfeldstraße 50 73430 Aalen
Identification number 1883	Identification number 1883	Identification number 1883
issued EU type examination certificate was.		
C2944.1SWM	C2943.1SWM	C2945.1SWM

Product group: Schweißkraft® Welding technology
Type of device: Automatic Welding Helmet
Designation: VarioProtect 3XL-W Digital TC
Item number: 1654030
Serial number *: _____
Year of manufacture *: 20____

* please fill in these fields according to the information on the type plate

Relevant EU-Directives 2011/65/EU RoHS-Directive

The following harmonised standards were applied:

DIN EN 175:1997 Personal protection - Equipment for eye and face protection during welding and allied processes
DIN EN 166: 2001 Personal eye protection - Requirements
DIN EN 169: 2002 Personal eye protection - Filters for welding and allied techniques - Transmittance requirements and recommended use
ISO / DIS 16321-2: 2017 Eye and face protection for occupational use - Part 2: Additional requirements for protectors used during welding and related techniques
DIN EN 379: 2003 + A1:2009 Personal eye protection - Automatic welding protection filters

Responsible for documentation: Kilian Stürmer, Stürmer Maschinen GmbH,
Dr.-Robert-Pfleger-Str. 26, D-96103 Hallstadt

Hallstadt, 20.04.2020



Kilian Stürmer
Managing Director



17 Notes

