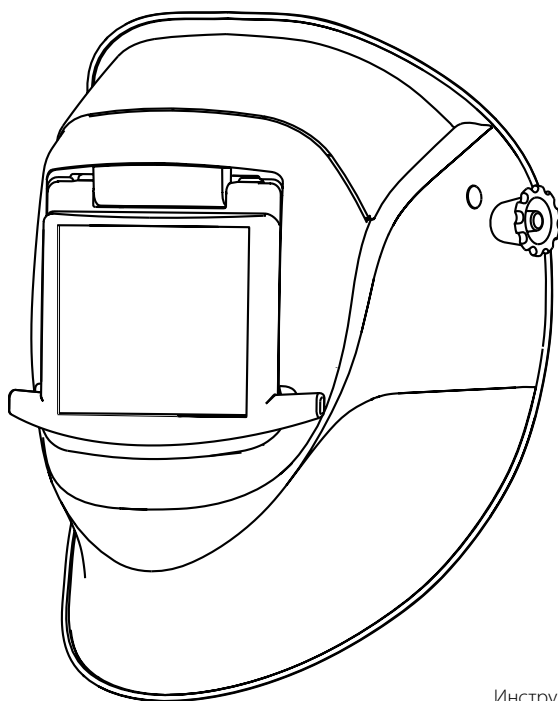


Beta | 60, 90, 90 A, 90 X



Operating manual • English *EN*

Käyttöohje • Suomi *FI*

Bruksanvisning • Svenska *SV*

Bruksanvisning • Norsk *NO*

Brugsanvisning • Dansk *DA*

Gebrauchsanweisung • Deutsch *DE*

Gebruiksaanwijzing • Nederlands *NL*

Manuel d'utilisation • Français *FR*

Manual de instrucciones • Español *ES*

Instrukcja obsługi • Polski *PL*

Инструкции по эксплуатации • По-русски *RU*

OPERATING MANUAL

English

EN

Beta 60, 90, 90 A, 90 X / © Kemppi Oy / 0940

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1. PREFACE

1.1 PRODUCT INTRODUCTION

KEMPPI BETA 60, 90, 90A and 90X are welding helmets for arc welding, carbon arc gouging and plasma cutting, used to protect welder's eyes, and skin of welder's head, neck and throat against arc radiation, environment radiation and welding spatter. In the upper position of the flip-up welding filter lens, protection during grinding and de-slagging is possible.

1.2 BEFORE WELDING

For your own protection read these operation instructions carefully before using the welding helmet.

Make sure that the shade number of your welding filter lens is suitable for your work. The welding helmet is delivered with a welding filter lens or auto darkening welding filter, the shade number of which can be chosen from the spare part list in paragraph 7. The shade number is also always marked on the welding filter lens. Replace the welding filter lens if necessary.

Protection glasses and welding filter lenses of welding helmet are strong, but not unbreakable. The welding helmet does not protect against hard shocks, particles from grinding wheel, explosions or corrosive substances. Always use appropriate safety devices and instruments required for each job.

Adjust the height and girth of the headband for comfort and the welding helmet angle as necessary.

1.3 GENERAL SAFETY INSTRUCTIONS

Kemppi welding equipments conform to international safety standards. Safety is an important issue in equipment design and manufacturing. Therefore, Kemppi welding solutions are unparalleled in safety. There are, however, always certain hazards involved in using welding equipment. Therefore, to ensure your personal safety and the safety of your working environment, carefully read the safety instructions below and respect them.

Use of personal protective equipment

- The arc and its reflecting radiation damage unprotected eyes. Shield your eyes and face appropriately before you start welding or observe welding. As the welding current increases, the welding face screen lens darkness should also increase.
- Arc radiation and spatters burn unprotected skin. Always wear protective gloves, clothing and footwear when welding.

- Always wear hearing protection if the ambient noise level exceeds the allowable limit (e.g., 85 dB).

General operating safety

- Exercise caution when handling parts heated during welding. For example, the tip of the welding torch or gun, and the end of the welding rod and the work piece. The temperature of items burn unprotected skin.
- Never wear any welding device on the shoulder during welding and never suspend it by the carrying strap during welding.
- Do not expose the machine to high temperatures, as this may cause damage.
- Keep intermediate and earth return cables as close to each other as possible throughout their length. Straighten any loops in the cables as this limits inductive effects on welding performance. This also minimizes your exposure to harmful magnetic fields, which may, for example, interfere with a pacemaker.
- Do not wrap the welding cables around your body.
- In environments classified as dangerous, only use S-marked welding equipments with a safe idle voltage level. These work environments include, for example, humid, hot or small spaces, where the user may be directly exposed to the surrounding conductive materials.

Spatter and fire safety

- Welding is always classified as hot work, so pay particular attention to the fire safety regulations during welding and after it.
- Remember that fire can break out from sparks, even several hours after the welding work is completed.
- Protect the environment from welding spatter. Remove combustible materials, such as flammable liquid from the welding vicinity, and supply the welding site with adequate fire fighting equipment.
- In special welding jobs, be prepared for hazards such as fire or explosion when welding inside enclosed work spaces, such as tanks and vessels. Ensure you have authority to work.
- Never direct the sparks or cutting spray of a grinder toward the welding machine or flammable materials.
- Beware of hot objects or spatter falling on the machine when working above. Welding in flammable or explosive sites is absolutely forbidden.

General electric safety

- Only connect the welding machine to an earthed electric network. Note the recommended mains fuse size.
- Do not take the welding machine inside a container, vehicle or similar work piece unless authorized to do so.

- Do not place the welding machine on a wet surface and do not work on a wet surface.
- Do not allow the mains cable to be directly exposed to water.
- Ensure cables or welding torches are not squashed by heavy objects and that they are not exposed to sharp edges or a hot work piece.
- Make sure that faulty and damaged welding torches are changed immediately as they may cause electrocution or fire.
- Remember that the cable, plugs and other electric devices may be installed or replaced only by an electrical contractor or engineer authorized to perform such operations.
- Turn off the welding machine when it is not in use.

Welding power circuit

- Insulate yourself from the welding circuit by using dry and undamaged protective clothing.
- Never touch the work piece and welding rod, welding wire, welding electrode or contact tip at the same time.
- Do not put the welding torch or ground cable on the welding machine or other electric equipment.

Welding fumes

- Ensure proper ventilation and avoid inhaling the fumes.
- Ensure a sufficient supply of fresh air, particularly in closed spaces. You can also ensure an adequate supply of clean breathing air by using a filtered fresh-air mask.
- Take extra precautions when working on metals or surface-treated materials containing, for example, lead, cadmium, zinc, mercury or beryllium.

Transportation, lifting and suspension

- Never pull or lift the machine by the welding torch or other cables. Always use the lifting points or handles designed for that purpose.
- Only use a transport unit designed for the equipment. Try to transport the machine in an upright position, if possible.
- Never lift a gas cylinder and the welding machine at the same time. There are separate provisions for gas cylinder transportation.
- Never use a welding machine when suspended unless the suspension device has been designed and approved for that particular purpose.
- Do not exceed the maximum allowable load of suspension beams or the transportation trolley of welding equipment. It is recommended that the wire coil be removed during lifting or transportation.

Environment

- Welding equipment is not recommended for use in rain or snow – see

manual. Protect the equipment against rain and strong sunlight. Always store the machine in a dry and clean space.

- Protect the machine from sand and dust during use and in storage. The recommended operating temperature range is -20 to +40 °C. The machine's operation efficiency decreases and it becomes more prone to damage if used in temperatures in excess of 40 °C.
- Place the machine so that it is not exposed to hot surfaces, sparks or spatter.
- Make sure the airflow to and from the machine is unrestricted.
- EMC classification of this product is class A in accordance with electromagnetic compatibility standards CISPR 11 and IEC 60974-10, and therefore the product is designed to be used in an industrial environment only.
WARNING: This class A equipment is not intended for use in residential locations where the electrical power is provided by a public low-voltage supply system. In those locations it may be difficult to ensure the electromagnetic compatibility due to conducted and radiated disturbances.
- Arc welding equipments cause electromagnetic disturbance. To minimize the harmful effects, strictly use the equipment according to the operating manual and other recommendations.

Gas bottles and pneumatic devices

- Adhere to the instructions for handling pneumatic devices and gas bottles.
- Make sure that gas bottles are used and stored in properly ventilated spaces.
- A leaking gas bottle may replace the breathable air, causing suffocation.
- Before use, make sure that the gas bottle contains gas suitable for the intended welding purpose.
- Always fix the gas bottle securely in an upright position, against a bottle wall rack or purpose-made bottle cart.
- Never move a gas bottle when the regulator or flow adjuster is in place. Replace the valve cover during transportation. Close the bottle valve after use.

Disclaimer

- While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions. Kemppi reserves the right to change the specification of the product described at any time without prior notice. Do not copy, record, reproduce or transmit the contents of this guide without prior permission from Kemppi.

2. DEGREES OF PROTECTION FOR LENSES

Select appropriate welding filter lens for your welding job using the table below. Make sure that other persons working in the area are using suitable protection with appropriate shade number. The shade number (EN number) stands for the degree of protection.

Welding process	MMA	MIG, steel	MIG, aluminiums	TIG, all materials	MAG (CO ₂ -welding)	Carbon arc gouging	Plasma cutting
Shade number selection for arc welding filter (Current in amperes), EN 169				9			
	15						
	20	9			10		
	30						
	40	10			11	10	
	60		10	10			
	80	11				11	11
	100		11	11	12		
	125					12	10
	150						12
	175	12	12	12	13	13	11
	200						
	225						12
	250			13	14		
	275						13
	300	13	13			14	
	350			14			14
	400						
	450					15	15
	500	14	14	15			

EN

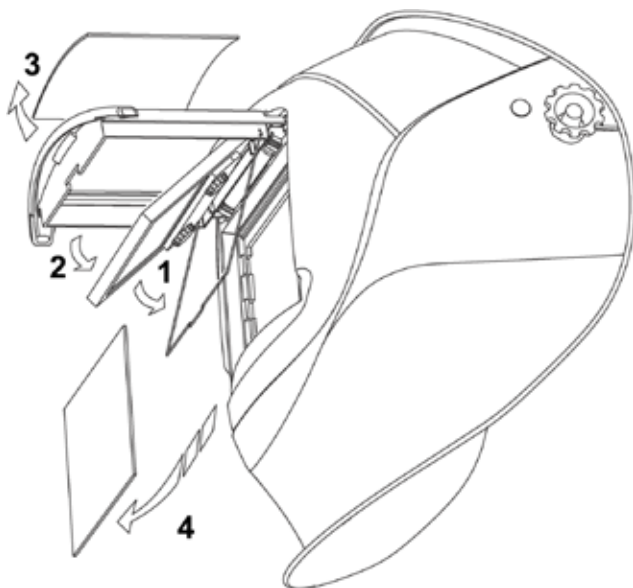
Higher value of the degree of protection means darker welding filter. Kemppi welding filter lenses have the degree of protection and approval markings stamped on the face of welding filter lens. In auto darkening welding filters they are marked on the reverse side.

Do not use any welding filter lens without shade number and approval marking.

3. REPLACEMENT OF FILTER PARTS

Replacement of welding filter lens and front-mounted protection plate:

- Lift up hatch of welding filter lens.
- (1) Release filter retaining spring (3149850/3149840) with finger from hatch slot.
- (2) Remove welding filter lens (and eventual protection plate).
- Mount new welding filter lens (and eventual protection plate) to its place.
- Press filter retaining spring into the slot, in which case it is locked at its place.
- (3) Front-mounted protection plate is removed by drawing it outwards.



Replacement of the inner safety plate (9873254), attached to the welding helmet:

- Lift up hatch of welding filter lens.
- (4) Press safety plate out of its place.
- Mount new safety plate by bending it so that its ends slide between the coggings in the helmet. Release the plate at its place by unbending it. Make sure that the plate is fully in the slot.

NOTE! For safety reasons, use only original 1.5 mm thick Kemppi safety plate (9873254).

3.1 VIEWING POSITION OF WELDING HELMET HATCH

The welding filter lens hatch has an intermediate position to make welding start or e.g. short tack welds easier.

NOTE! Through the slit you can check the start point before starting but you should adjust the welding helmet before arc ignition in such a way that the igniting arc can be seen through the welding filter lens.

We recommend that the viewing position is used only temporarily and with low welding currents. At higher currents the radiation coming through the hatch openings may burn the skin and reduce vision through the welding filter lens.

NOTE! Never use the viewing position with auto darkening welding filter. Diffused light hinders normal function of the filter.

NOTE! Never watch the arc through the slit!

3.2 ADJUSTMENTS

Height adjustment of band:

Adjust the headband height so that the band part circling the head is positioned relatively low, in which case the welding helmet stays rigidly positioned on the head. The sweatband should be a little above the eyebrows and the ears.

Lift the right inner strip (C) of band out of the hole of the counterpart (D) and adjust the headband to desired length by moving plastic strips in regard to each other. Press the plastic strips against each other so that the plastic pins are placed into holes of counterpart.

Tightening and neckpart adjustments of band:

Turn the neckpart of the band (L) so that it will be placed in the confluence of back of your head and neck. Adjust the band tightness suitable for your head by rotating the adjusting wheel (G).

Adjustment of welding helmet angle:

Adjust the welding helmet angle in regard to your face so that the lower edge of welding helmet is positioned near your chest in the welding situation, in which case the welding helmet gives the best protection. Bend the adjustment plate (A) inwards so much that the plastic pin (B) of the welding helmet comes out of the hole of the adjustment plate. Turn the adjustment plate and release the plate so that the screw is placed to the desired hole of the adjustment plate.

Tightening adjustment of welding helmet:

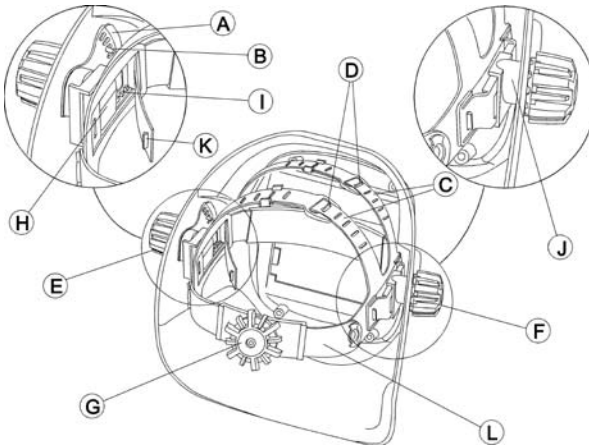
Adjust the tightness of welding helmet in regard to band by rotating the tightening adjustments (E) and (F). Adjust the tightness of helmet so that the high raised helmet stays up, but goes down when you nod your head. If the helmet strikes against your chest when falling, the adjustment is too loose or the helmet angle has been adjusted too near your face from the adjustment plate (A).

Distance adjustment of welding helmet:

Unscrew the tightening adjustments (E and F) of welding helmet until the tightening screw (H) will be released from gear (I). Now you can move the band forward or backward in regard to the welding helmet. Press the gearing of tightening screw (H) between gears (I) and tighten the tightening adjustment (E and F). Make sure that the adjusted length is similar on both sides of the welding helmet.

Height adjustment of welding helmet:

If necessary, the height of the helmet in regard to band can be fine adjusted: Loose the tightening adjustments (E and F) until the tightening screws (H) come out of the adjustment case. Now you can choose the height adjustment's position up/down by twisting tightening screws (H) half lap turn. On the right side of the helmet both tightening screw (H) and the piece of adjustment (J) have to be turned. Settle the tightening screws (H) back to gears in adjustment cases and tighten the tightening adjustments (E and F). To facilitate these adjustments releaf the strip of the band for forehead (K) temporarily from the locking cave. Make sure that the adjusted hight is similar on both sides of the welding helmet.



4. INSPECTION AND SERVICE

Always inspect the welding helmet carefully before starting to weld. Cracked, pitted or scratched parts should be replaced immediately.

Never use a damaged welding helmet or a welding helmet with defective or insufficient equipment!

Before use always inspect the condition of welding filter lens, protection plate and plastic safety plate and that these have been mounted in the right way:

- Inspect that the front-mounted protection plate and inner plastic safety plate are undamaged, clean enough and correctly mounted. Replace protection plate or safety plate immediately if they are damaged, or if spatter or scratches reduce vision. Dirty protection glass may hinder normal function of the auto darkening welding filter.
- Inspect that the welding filter lens is undamaged and clean. Damaged welding filter lens impairs protection. Therefore it should be replaced immediately. Make sure that the degree of protection of welding filter lens is appropriate for your work.

Inspect that the welding helmet and headband are undamaged.

Inspect that the hatch of the welding helmet is completely closed when in down position.

Careful use and safe keeping of welding helmet make its operating life longer and improve your safety!

Do not put the welding helmet on hot surface, e.g. on hot welding seam!

4.1 CLEANING

Blow dirt and dust with compressed air off the welding helmet.

Clean the welding helmet with damp cleaning cloth which is watered with mild soap water. To clean the auto darkening welding filter, first remove the filter from its place as described in paragraph 2.1.

Do not use any dissolvents for cleaning the welding helmet.

Do not wipe the plastic safety plates e.g. with gloves because they are easily scratched.

5. USING THE AUTO-DARKENING WELDING FILTER

Auto darkening welding filter is delivered ready for use. Make sure that the filter is mounted to the hatch so that the photocell is directed towards the work piece.

Kemppi Beta 90X:

With the knob (6) you can adjust the shade of the filter in the range of DIN 9 DIN 13. Adjust the shade according to the welding method and current used.

With the sensitivity knob (5) you can adjust the photosensitivity of the filter. The sensitivity increases with a clockwise turn and decreases with a counter clockwise turn. As a simple rule for optimum performance, it is recommended to set sensitivity to the maximum at the beginning and then gradually reduce it, until the filter reacts only to the welding light flash and without annoying spurious triggering due to ambient light conditions, such as direct sun, intensive artificial light, and neighbouring welder's arcs.

With the delay adjustment knob (7) you can adjust the filter brightening time delay from 0.2 to 0.8 seconds. The delay time increases with a clockwise turn and decreases with a counter clockwise turn. It is recommended to use a shorter delay with spot welding applications and a longer delay with applications using higher currents. Longer delays can also be used for low current TIG welding in order to avoid the filter opening when the light path to the sensors is temporarily obstructed by a hand, torch, etc.

The photocells and light detectors of the filter should always be kept clean. Clean them with soft cleaning cloth which is moistened with mild soap water (or alcohol).

The operation temperature range of the filter is – 10 °C...+ 60 °C.

Do not cover the photocells or light detectors! Inspect that the protection plate is not dirty so that it hinders the filter's function.

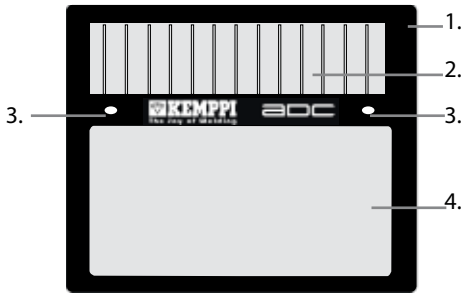
Do not immerse in liquid!

Do not drop!

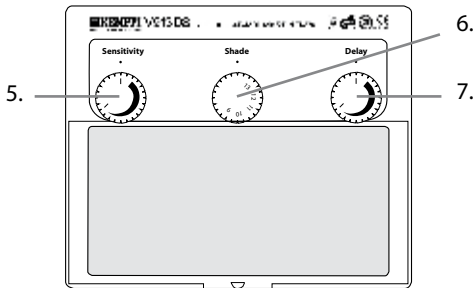
Do not try to open the filter!

Protect from heat and direct sunlight.

Store at dark and dry room temperature.



- 1 Filter housing
- 2 Photocell
- 3 Photo-sensors
- 4 Liquid crystal active light filter



- 5 Sensitivity adjustment knob*)
 - 6 Shade adjustment knob*)
 - 7 Delay adjustment
- *) Only in Kemppe Beta 90X helmet

6. TECHNICAL DATA

Manufacturer	Kemppi Oy, Box 13, FIN-15801 LAHTI, FINLAND
Size of welding filter lens	60 x 110 mm / 90 x 110 mm
Degrees of protection of welding filter lenses	8 - 14
Operation temperature range	-20...+60 °C / auto darkening welding filter -10...+60 °C
Storage temperature range	-40...+70 °C / auto darkening welding filter -20...+60 °C
Welding helmet material	impact resistant plastic
Welding helmet meets conformity requirements for the standard EN 175: 1997	CE-marking: EN 175 B EN 175: standard number B: Medium energy impact, mechanical strength.
The product has been type inspected by Finnish Institute of Occupational Health, Dept. of Physics, Notified Body No. 0403. Address: Topeliuksenkatu 41 A, FIN-00250 HELSINKI, FINLAND.	

EN

7. TERMS OF GUARANTEE

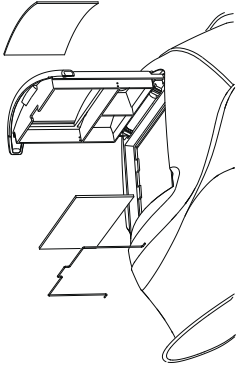
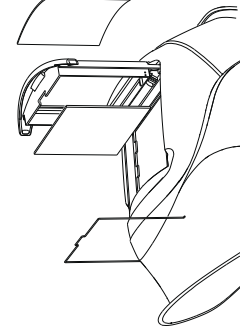
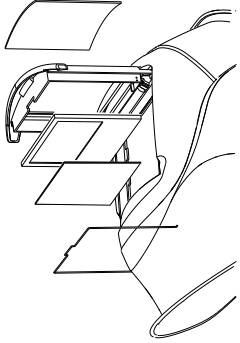
KEMPPI OY gives the auto darkening welding filters of Kemppi Beta welding helmets a guarantee of 2 (two) years, provided that the helmet is used for single-shift operation.

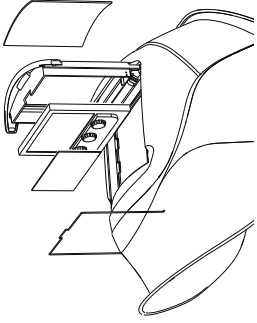
Guarantee does not cover damage caused by use not in accordance with the instructions, carelessness, damages during transportation or storing, or caused by fire or natural phenomena.

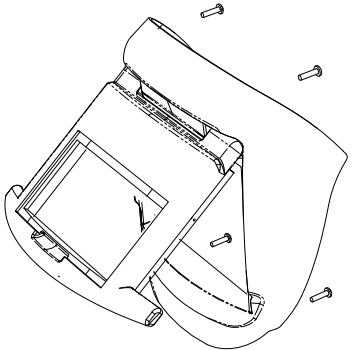
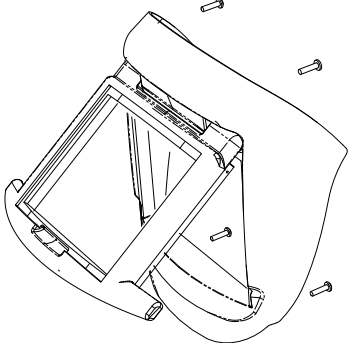
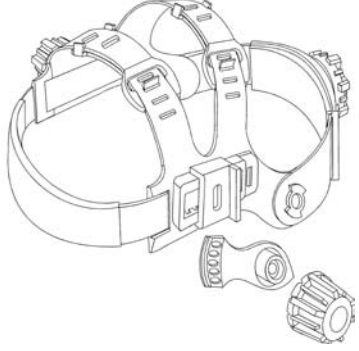
Guarantee does also not cover direct or indirect travel expenses caused by guarantee repair, or direct or indirect damage caused by defective product.

Guarantee defects must be informed to Kemppi Oy or authorised Kemppi service workshop. Part replaced under the terms of guarantee remains the property of Kemppi Oy and is to be returned to Kemppi Oy.

8. ORDERING NUMBERS

KEMPPI BETA 60	9873040	
Protection plate	9873252	
Safety plate	9873254	
Welding filter lens	9873181	
Filter retaining spring	3149840	
KEMPPI BETA 90	9873045	
Protection plate	9873253	
Welding filter lens	9873243	
Welding filter lens	9873254	
Filter retaining spring	3149850	
KEMPPI BETA 90 A	9873046	
Protection plate	9873253	
Auto darkening welding filter/90 A	9873051	
Protection plate	9873253	
Filter retaining spring	3149850	
Safety plate	9873254	

KEMPPI BETA 90 X	9873047	
Protection plate	9873253	
Auto darkening welding filter/90 X	9873055	
Protection plate	9873251	
Filter retaining spring	3149850	
Safety plate	9873254	
NOTE! For safety reasons, use only original Kemppi spare parts.		

Hatch set Beta 60	4301040	
Hatch set Beta 90	4301050	
Head band	4306370	
Sweat band	9873018	

Welding filter lenses		Standard (pcs)	Use/version
Beta 60			
9873161	DIN 8 60X110		spare part
9873171	DIN 9 60X110		spare part
9873181	DIN 10 60X110	1	60
9873191	DIN 11 60X110		spare part
9873202	DIN 12 60X110		spare part
9873211	DIN 13 60X110		spare part
9873212	DIN 14 60X110		spare part
Beta 90			
9873241	DIN 8 90X110		spare part
9873242	DIN 9 90X110		spare part
9873243	DIN 10 90X110	1	90
9873244	DIN 11 90X110		spare part
9873245	DIN 12 90X110		spare part
9873246	DIN 13 90X110		spare part
9873247	DIN 14 90X110		spare part
Auto darkening welding filters			
9873051	DIN 3 / 11	90x110	1 90 A
9873055	DIN 4 / 9 – 13	90x110	1 90 X
Springs			
3149840	Filter retaining spring 60	1	60
3149850	Filter retaining spring 90	1	90, 90 A, 90 X
4300700	Hatch spring	2	all
Protection plates			
9873251	Protection plate 51x107x1	1	90 X
9873252	Protection plate 60x110x1	1	60
9873253	Protection plate 90x110x1	1 / 2	90X / 90, 90A
9873254	Safety plate 90x110x1,5	1	all
Other spare parts			
4301040	Hatch set 60		
4301050	Hatch set 90		
4306370	Headband		
9873018	Sweat band		

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