SPARX SINGLE AIR INSTRUCTION MANUAL

Sparx Single Air
A true winner when it comes to multi-functional disciplines

WARNING **Read and Understand All Instructions Before Using the Equipment.**

SAFETY WARNINGS

The respirator system is intended to be used to provide protection when the user works in the contamination environment. The equipment is able to filter the contaminated air via the filter build in to the blower and then supply fresh air from breathing tube to the welding face shield, so that the user can continue working in the contamination environment. It is a combined face and breathing protection device for increased safety and comfort during welding. Please read the instructions carefully before unpacking. For proper use, see user instructions or contact the manufacturers for help.

The system complies with the requirements of PPE Regulation 2016/425 and European Standard EN 12941: 1998+A2:2008 class TH3 P R S L. The respirator system is designed to provide a supply of filtered air via a breathing tube to a welding headpiece. The equipment can be used in environments that require a TH3P class breathing protection device. It protects against particulate contamination.

All components used in the respirator system must be manufacturer approved parts, and must be used in accordance with the instructions in this manual.

- The approval is not valid if the product is incorrectly used together with non-approved parts or components.
- Only the particle filter and pre-filter can be used together with this system. Filters from other manufactures should under no circumstances be used.

Failure to follow these warnings and/or failure to follow all of the operating instructions could result in severe personal injury.

- Before each use, inspect the respirator system for damage and verify it operates properly. Before using the respirator system, test air flow to verify it is providing an adequate volume of air.
- Always wear the respirator system and do not remove the head top or turn off the air filter unit until outside the contaminated area, otherwise, there is a risk of high concentration of CO_2 while the oxygen level in the head top will fall, thus little or no protection is given.
- If you are not sure about the concentration of pollution, or about equipment performance, ask the industrial safety engineer.

Warnings:

- The respirator system devices should be used by well trained personal and qualified persons only.
- Before using the devices, ensure you have understood that at very high work rates the pressure in the device may become negative at peak inhalation flow.
- Before and during using the devices, attention shall be drawn to possible incorrect use and, where appropriate, the possibility of looped hoses and or cables becoming caught up.
- Before or during using the devices, if the devices are in the power-off state, little or no respirator protection is to be expected. This is considered to be an abnormal situation.
- Please leave the work place and remove the headgear when the devices are in the power off state. A rapid build-up of carbon dioxide and depletion of oxygen within the hood may occur.
- The filters shall only be fitted to the turbo unit and not directly to the helmet
- The user should not confuse the markings on a filter relating to any standard other than EN 12941 with the classification of this device when used with this filter.

Do not:

- DO NOT use the SparX Single Air with the blower unit switched off
- DO NOT use the SparX Single Air in an atmosphere that is immediately hazardous to user hygiene or health and/or has oxygen content of less than 19,5% or contains unknown substances
- DO NOT use the SparX Single Air in an explosive atmosphere
- DO NOT use the SparX Single Air in confined spaces or areas of poor ventilation
- DO NOT use the SparX Single Air in high winds
- DO NOT alter or modify in any way
- DO NOT touch any of the moving parts
- DO NOT allow water or other liquids to enter the impeller chamber, the filter or battery compartment

The manufacturer is not responsible for injury due to the incorrect use or incorrect choice of equipment.

Notified Body: Vyzkumny ustav bezpecnosti prace, v. v. i., Jeruzalemska 9, 116 52 PRAHA 1, Country: Czech Republic (Notified body number 1024).

CONTENTS

1. UNPACKING AND ASSEMBLY

While unpacking and assembling
- Check whether the correct number of components has been supplied as in figure 1.
- Check that the apparatus is complete, undamaged and correctly assembled

Any damaged or defective parts must be replaced before use.

The package must include:
1. The SparX Single Air helmet
2. The respirator protection system (turbo unit + filter + waist belt)
3. Lithium-ion battery
4. The tube, its anti-fire cloth and both end fittings
5. The shoulder harness
6. The air flow tester
7. The lithium-ion battery charger
8. The carrying bag

If any of the above components are not included in your kit, please contact the supplier immediately.

FIGURE 1

2. FILTER REPLACEMENT

The pre-filter and filter expected lifetime is 12 months. When under intensive use, check the filter cleanliness periodically and if needed, change them more often than every 12 months.

1

Remove the filter cover by pressing in the latch of the filter cover.

2

The filter cover is released.

3

Remove the used filter by lifting it out from the filter cover.

4

5

Remove the pre-filter.

6

Clean the spark arrestor if necessary.

3. INSTALLING BATTERY & CHARGING

Battery indication:
- The battery is partially charged when delivered. It must be charged to 100% (4 bars) before the first use.
- It is recommended to charge the batteries to 100% before each use

Charger:
- The charger must not be used for anything else than it was designed for.
- Do not charge the battery in a potentially explosive area.
- The charger must only be used indoors

Battery storage:
- The battery will discharge itself after long storage periods
- Always charge the battery if the device was stored for more than 15 days.
- When the battery is new or has been stored for more than 3 months, charge it and discharge it at least twice in a row to reach the nominal/rated charge capacity

Battery charge:
1. Connect the battery to the charger. The connector is above the battery.
2. Connect the charger to the mains.
3. The state of charge is displayed via a red LED on the mains charger
4. Once the charge is finished, the floating charge becomes active: the red LED switches off and a green LED switches on.
5. Disconnect the charger from the mains

DO NOT keep the charger plugged to the mains if it's not in use.

1

Slide the battery towards the back of the filtration unit.

2

Make sure that the battery is locked in position.

The battery can be charged on the filtration unit or separately.

4. CONNECTING THE TUBE

Check that the respirator tube is strongly connected. If the tube is broken, replace it.

1

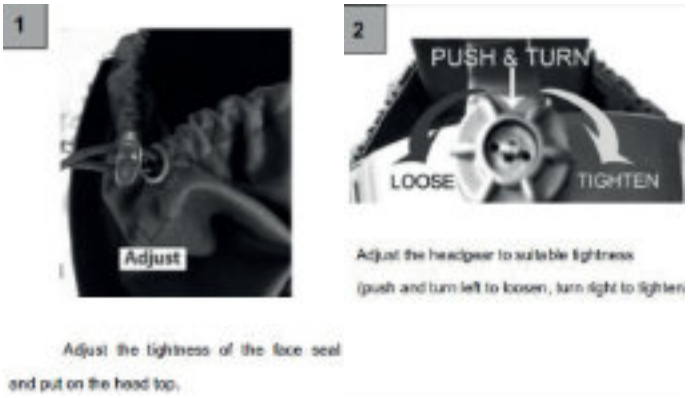
Connect the air tube to the respirator system and twist it clockwise to lock its position.

2

Connect the other end of the tube to the headgear in the same way.

5. FITTING

Make sure the face seal is positioned properly, otherwise you can not get sufficient sealing needed to offer the correct protection factor.

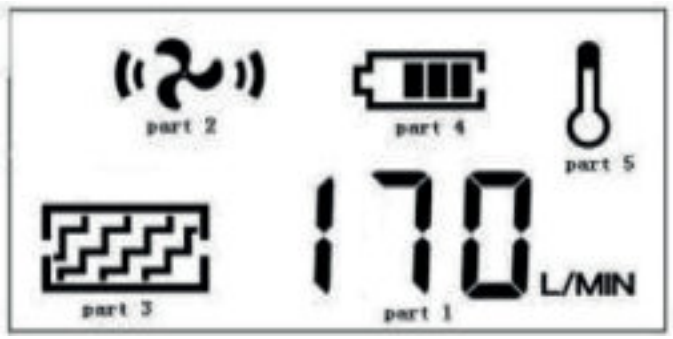


6. LCD

LCD DISPLAY SCREEN
There is a LCD display screen on the SparX Single Air unit to show the SparX Single Air working condition.

1. Shows the data of current air flow
2. Shows the level of the airflow
3. Shows the filter condition
4. Shows the battery
5. Shows the temperature of the battery

Any of them will flash if there are SparX Single Air disfunctions.



7. MAINTENANCE AND STORAGE

Inspect the equipment daily and always check it if any sign of malfunction occurs.

MAINTENANCE
- The respirator system unit must be checked regularly and must be changed if it is damaged and causes leakage.
- The filter must be changed if it is broken, or it is blocked and does not give enough airflow.
- The breathing tube must be changed if it is broken or has crevasse.
- The batteyr must be charged when the low battery alarm rings.
- Use a soft cloth to wipe the external surfaces. DO NOT use water.
- The filter should be replaced together with the pre-filter.

STORAGE
- The respirator system must be stored in a dry, clean area, in the temperature range of -10 °C to +55 °C and relative humidity less than 90%RH.
- If the equipment is stored at temperature below 0 °C, the battery must be allowed to warm up to achieve full battery capacity. The equipment must be protected from dust, particles and other contamination.
- If the equipment is not going to be used for a long time, the battery should be fully charged, removed from respirator system unit and stored separately.
- Transport the equipment with original packaging box and keep away from direct sunlight.

8. WARRANTY

- The SparX Single Air blower unit is guaranteed for a period of 12 months from date of purchase against mechanical or electrical defects.
- The SparX Single Air battery is guaranteed for a period of 6 months from the date of purchase.

The company undertakes to exchange or repair without charge, any part found to be defective within this period alternatively and at its discretion. The company may replace.

This guarantee is subject to:
- The SparX Single Air unit has been used solely for the purpose for which it is intended.
- The SparX Single Air unit has not been subject to misuse, accident, modification or repair.

In the event of a claim, contact the retailer from which the SparX Single Air was purchased.

This guarantee does not cover normal wear and tear.

9. INSTALLING ON THE BELT

Make sure the belt is securely fastened.

1

Remove the belt's release buckle.

2

Remove the fastening belt from the waist connector's 2 belt loops.

3

Make the fastening belt pass through the respirator system's 2 belt loops.

4

Position the Velcro® between the 2 loops.

5

Flip the filtration system and attach the Velcro on the belt.

6

Put the fastening belt back through the 2 belt loops.

7

Put the buckle back.

8

Attach the harness to the belt's 4 plastic rings.

10. AIR FLOW AND ALARM TEST

AIR FLOW TEST
The airflow must be tested before using.
If the marble can't reach the minimum flow level, do not use the system. Change the filter or the battery and retest the air flow.

MUST TEST

1	 Connect the breathing tube to the turbo unit and twist it clockwise to lock it.	2	 Insert the flow meter at the top of the tube.
3	 Press the ON button and maintain the tube in a vertical position at eyes' height.	4	 The air flow is sufficient if the marble reaches the minimum flow level O.

AIR FLOW ALARM TEST
If the alarm does not work, please repair or change respirator system.

1	 Remove the tube from the helmet and press the ON button.	2	 Cover the air output with your hand and wait approximately 15 seconds.

11. OPERATION

- The respirator system will turn off the turbo unit if the OFF button is pressed for more than 3 seconds.
- The respirator system will cut off the entire circuit and switch to sleep mode if the turbo unit has turned off for more than 30 minutes. Pressing the ON button can activate the system.
- The respirator system must be operated in the temperature range of -5°C to +55°C and relative humidity less than 90%RH.

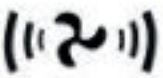
Switch the device on by pressing the ON button once.

Press the ON button once again, the air flow is at level 1 (~170L/min).

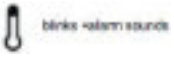
Press the ON button once again, the air flow is at level 2 (~200L/min).

Press the ON button once again, the air flow is at level 3 (~230L/min)

Press the ON button once again, the air flow reverts to level 1 (~170L/min).



12. TROUBLE SHOOTING

Problem	Probable cause	Action
	• Motor is stuck • Motor is damaged • Blower structure failure caused by outer force • Circuit failure	Check and remove physical failure and restart the system. Return to dealer if LCD still shows E01
	• Motor is damaged • Motor impeller rubs blower shell • Circuit has ecessive current	Check and remove physical failure and restart hte system. Return to dealer if LCD still shows E02
	• Low battery	Change the battery
	• Filter blocked • Tube blocked	• Remove obstruction and/or change the filter • Clean the tube
	• Battery high temperature	Stop working and rest

No air flow, no alarm	• No power • Battery contact damaged	Charge the battery and check battery contact
Battery run time is too short	• Battery is not fully charged • Filter is blocked • Battery is damaged	• Charge the battery • Remove obstruction and/or change the filter • Change the battery
Air supply to hood smells unusual	• Filter is broken • Tube is broken • ADF helmet is broken	Leave current area immediately • Change filter • Change tube • Change ADF helmet
Supply insufficient air to helmet	• Breathing tube broken off • Breathing tube broken • Filter is blocked	• Check the tube connection to hood and respirator system unit • Change breathing tube • Remove obstruction, change filter

13. SPECIFICATION

Size (blower assembly)	9-2/5 x 6-1/2 x 2-3/4 in. (240 x 165 x 70 mm)
Weight	2.4 KG
Particle Filter	1*TH3 P R SL
Air Flow	Manufacturer minimum design flow rate: 165 L/Min Nominal airflow: • Level 1: 170 L/Min • Level 2: 200 L/Min • Level 3: 230 L/Min
Noise level	Max 75dB
Operate Temperature	23°F to 131°F (-5°C ~ 55°C)
Storage Temperature	14°F to 131°F (-10°C ~ 55°C)
Battery Type	1. Standard Battery Rechargeable Li-ION 4400mAh 2. Heavy duty Rechargeable Li-ION 6800mAh
Expected Battery Operation Time Battery Charging Time	**Standard Battery** • Level 1 > 10h • Level 2 > 8h • Level 3 > 6h 3.5 Hours **Heavy-Duty Battery (Optional)** • Level 1 > 15h • Level 2 > 12h • Level 3 > 10h 5 Hours
Battery Life	500 Charges Run Time Dependent On Air Flow Rate and Filter Load.
LCD Display	Air flow level and data Battery capacity Filter status
Belt Size	35-2/5 x 51-2/5 in. (900mm x 1300mm)

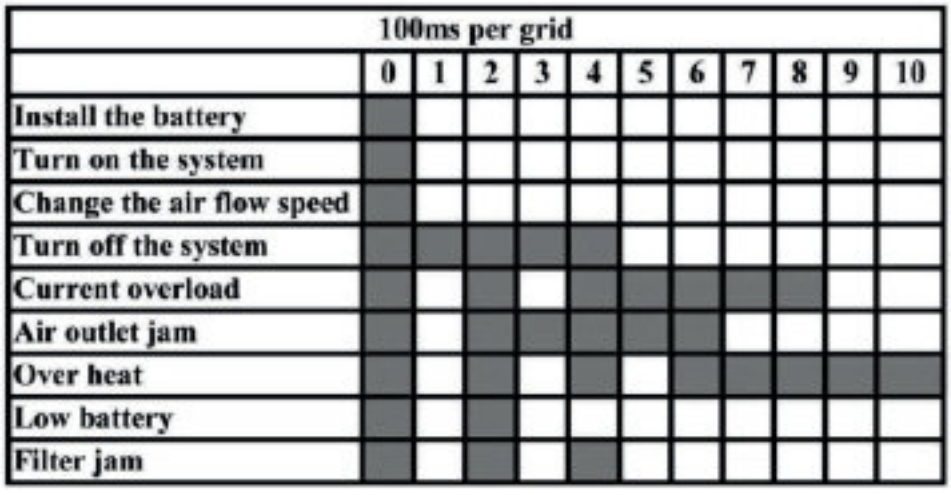
14. MARKING EXPLANATION

Powered filtering device

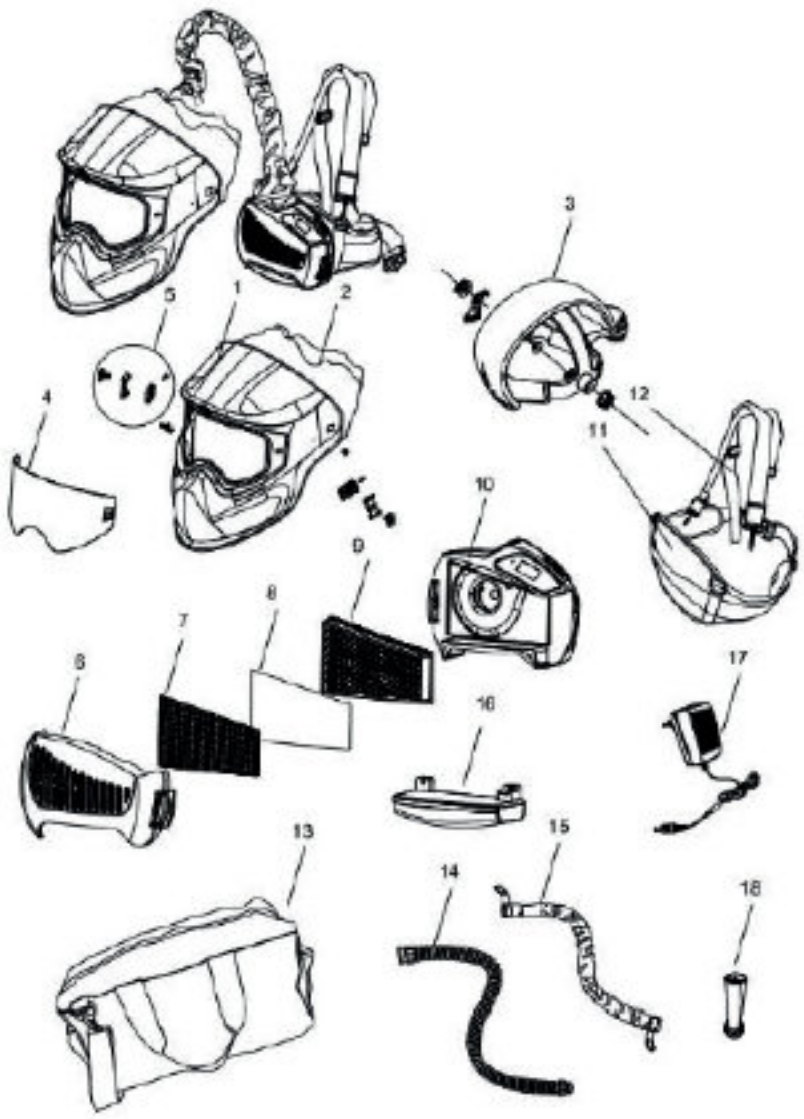
- EN 12941:1998 respirator protective decies – Powered filter devices incorporating a helmet or hood – requirements, testing, marking.
- TH3 P R (SL) classification of the unit. “TH3” defines the level of protection “P R” indicates the filter type (“P” = particle filter, “R” = Reusable type of particle filters) and “SL” reflects the filter has been tested against particles of liquid and solid matter.

Warning sound indicator

- The SparX Single Air PAPR has sound and vibration alarm function. Each grid stands for a period of 100ms. Grey is the beep sound and blank grid is a quiet period. If several continued grids are in grey hen there’s a continuous beep sound. For example, when the current is overloaded, the system sounds like beep~beep~beep~~~~~.



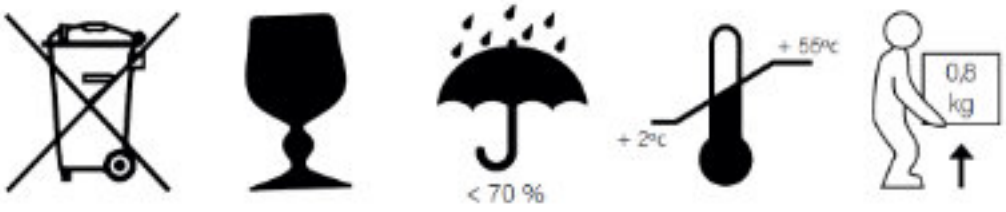
15. PARTS LIST



Drawing No.	Part No.	Description
1	13.02.410	SparX Single prepared for air helmet
2	13.02.412	SparX Single Air Face Seal
3	13.02.111	Airduct with headgear
4	13.02.411	Inner visor clear lens
5	13.01.043	Lock sliders
6	13.03.101	Filter cover
7	13.03.104	Spark Arrestor
8	13.03.103	Pre-filter
9	13.03.102	P3 level filter
10	13.03.118	Turbo unit
11 & 12	13.03.108	Waist belt + shoulder strap
13	13.03.111	Carrying bag
14 & 15	13.03.107	Breathing tube hose and cover
16	13.03.106	Rechargeable battery
	13.03.114	Heavy duty battery
17	13.03.110	Battery charger
18	13.03.109	Air Flow Tester

DIN EN 379: 2003 + A1:2009
DIN EN 175: 1997-08
DIN EN 166: 2002-04

CE



ATTENTION **if any of these conditions is not kept or followed, the warranty is automatically invalid.**