



USER INSTRUCTION MANUAL

MOMENTUM / HORIZON PAPR system.

Approved to BS EN12941: 1998

**RESPIRATORY PROTECTIVE DEVICE - POWERED FILTERING
DEVICE, INCORPORATING A HORIZON WELDING HELMET**

CLASS TH3 P R SL



IMPORTANT

Read & Understand All Instructions Before Using



**This user instruction manual must be read and fully understood before using the Air unit.
The user instruction manual must be retained for future reference.**

COMPULSORY INFORMATION

It is important that these user instructions are strictly followed when using / operating the Momentum Horizon PAPR System. Failure to follow these instructions may invalidate any warranty protection that is offered or available to you in respect of the product(s). Please refer to the terms of your purchase contract in respect of the product(s) for the specific details of such warranty cover.

The product(s) are designed to protect your health and wellbeing. Failure to comply with these user instructions may also adversely affect your health / wellbeing.

Please read these user instructions carefully before unpacking your product(s).

No recommendation is given as regards the suitability of this product for your needs. If you have any questions regarding the suitability of this product to your task, please contact an occupational hygienist or call the manufacturer's technical help line.

Address and Telephone number contact information is printed at the back of this leaflet.

Contents:

1. Introduction
2. Range of application
3. Approvals
4. Preconditions for use
5. System Overview
6. Unpacking / Assembly / Usage
7. Before Use
8. Maintenance / Cleaning
9. Fault finding
10. Storage and transportation
11. List of Parts and Assembly Drawing
12. Technical data
13. Warranty

1. Introduction

The **Momentum Horizon PAPR** system is a respiratory protective system which is based on the principle of circulated over pressured air in the hood. The belt-mounted blower unit delivers air through a filter and via an air hose into a headpiece (a hood or mask). The supply of filtered air creates positive pressure inside of the headpiece, which prevents the external contaminated air from entering the user's breathing zone.

2. Range of Application

Welding in confined spaces please see 4.0

3. Approvals

The Momentum PAPR System has been designed and manufactured to comply with EN12941: 1998 as a TH 3 P R

SL device.

BS4275 (Guide to implementing an effective respiratory protective device program), which the user is advised to read, defines an EN12941 TH3 P R SL device as offering an Assigned Protection Factor of 50.

The Momentum PAPR system can only provide this level of protection when used with filters provided by the manufacturer marked "Momentum" and "EN12941:1998 TH3P R SL".

Welding helmet Horizon is certified to EN 175B

The Momentum Horizon PAPR System is manufactured under ISO 9001:2000 Quality System.

4. Preconditions for use

This Respirator must be used strictly in accordance with this user instruction manual and the instructions supplied with the corresponding head-units (hoods).

The user must read and understand all the following "Instructions for Use" well to be able to use the respiratory protective system correctly. Any questions should be directed to the manufacturer contact points noted below.

When the blower unit is switched off, little or no respiratory protection is to be expected. When the blower unit is switched off a rapid build up of carbon dioxide and depletion of oxygen within the head unit may occur and so **it is essential not to use the blower unit when it is switched off.**

THE UNIT MUST NOT BE USED:

- 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.
- In confined spaces or unventilated areas such as tanks, pipes, canals etc.
- Near to flames and or sparks
- In areas with danger of explosion.
- In an area where there are high winds.
- If the blower unit stops working due to any reason, the user must leave the contaminated area immediately.

It is also essential that:

- Nothing is allowed to touch the moving parts.
- There is no attempt to modify or alter the unit or filter in any way
- Water or other liquids enter the unit in any way – in particular the motor and fan, the filter or the battery.

Make sure that the headpiece fits the user's face perfectly. Only then is the efficiency of the system sufficient. The protective factor of the complete system is reduced if the seal of the headpiece is not fitted properly, for eg. Due to beards or long hair intervening into the seal line.

There is a possibility that the hose to the head unit may become caught up in use. The blower unit should be positioned on the person in such a way as to reduce this possibility.

Filters cannot be fitted directly to the head units and should not be adapted to do so.

Correct respiratory protection will not be provided if any parts of the equipment are modified in any way.

At very high work rates the pressure in the device may become negative at peak inhalation flow.

The Momentum PAPR systems are for use only by competent, trained personnel.

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

The user is advised to leave the contaminated area immediately if:

The Manufacturer's Minimum Design Flow (MMDF) warning Alarm sounds.

Breathing becomes difficult.

Dizziness or distress occurs.

Any part of the system becomes damaged.

Airflow into the Head-Unit decreases or stops.

Contaminant can be smelt or tasted inside the Head-Unit

Materials that may come into contact with the user's skin are not known to cause allergic reactions to the majority of individuals but in the unlikely event of a reaction, the user should immediately leave the contaminated area, remove the unit and seek medical advice.

5. System Overview

The Momentum unit is a belt mounted powered respirator with a replaceable, disposable high efficiency particle filter system. The system is certified with the helmets covered in section 10 and they cover head sizes from 535 to 600mm circumference.

The Momentum unit contains a removable 8 hour rechargeable battery pack. (8 hours in a clean environment – in a workshop the time can be significantly reduced depending on the particulate levels in the atmosphere)

The Momentum unit will warn the user when the MMDF of 170 L/min, is not achieved with its audible alarm and flashing LED's.

In operation once the alarm sounds, the user must immediately leave the work area and reach an area nominated to be safe. The unit has visual alarm for a low battery and a multiple alarm – audible and visual for a blocked filter. Depending on the fault, the user should replace the Filter with a new one (In very dusty environments the Filter will need changing frequently) and or re-charge or change the battery for a fully charged one. Only when the unit will function with the alarm switched off and the flow rate has been tested to be acceptable, should the user return to the work place.

The filter has been developed especially for this unit. It is used to filter the air the user will breathe. It is essential that the user checks the filter for any signs of damage or deformation that could potentially let contaminated air into the unit. The filter must be disposed of if the filter is damaged or if clogged to the point of triggering the systems alarm mechanism.

The removable rechargeable battery used is a Lithium Iron cell. When supplied the battery may hold a small charge, the unit should be run flat and then charged for sixteen hours before the first use.

6. Unpacking / Assembly / Usage

6.1. Unpacking:

Check that the package is complete and that no part is damaged due to the transport or for other reasons.

A package with the complete system including accessories contains:

1. Blower unit incl. Battery and P R SL Filter and Pre Filter
2. Belt
3. Air hose
4. Air flow indicator
5. Battery charger
6. User Instructions

6.2. Assembly:

Attach the respiratory unit onto the belt: Pass the inner strap through the back of the blower loops. The pass through the 2 belt loops and then through the buckle.



Fit the battery to the Blower unit:

Please ensure the battery is this way up



Ensure the battery is snapped into position



6.2.1. Waist-Belt Adjustment:

Put the belt around your waist with the blower unit to the back and fasten the two ends together.

If the belt is too loose, slide the male adjuster down the belt, towards the female half. If the belt is too tight, slide the male adjuster away from the female half.

Repeat the above processes until a comfortable and secure fit is achieved. Once the belt fits correctly, secure any excess belt material using the Velcro sections.

Loosen



Tighten



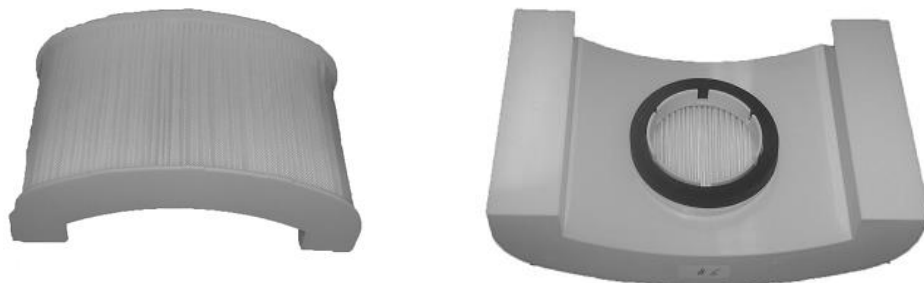
6.2.2. Particulate Filter:

Use only Momentum filters as supplied by Universal PPE & welding supplies Ltd. Using any other filter **will cause**

invalidation of any warranty protection and/ or a serious risk to the health of the user operating the product (s).

It should first be ascertained by consulting an occupational hygienist or by calling the manufacturers technical help line as to whether the Momentum Filter will offer suitable protection from the hazard.

The respiratory power unit is equipped with a high efficiency particle filter of class P R SL.



As soon as the warning alarm sounds, the pre filter should be exchanged or checked. In very dusty area's this can be necessary on a frequent basis.

The filters must be regularly checked (see Air Flow Test) and replaced. **Filters are intended to be replaced and not cleaned / re-used.**

Make sure that the new filters are within their expiry date, unused and not evidently damaged.

From the hygienic point of view the maximum working time of a main filter is 2 weeks or 90 hours whichever is the greater and should not be exceeded.

Warning!

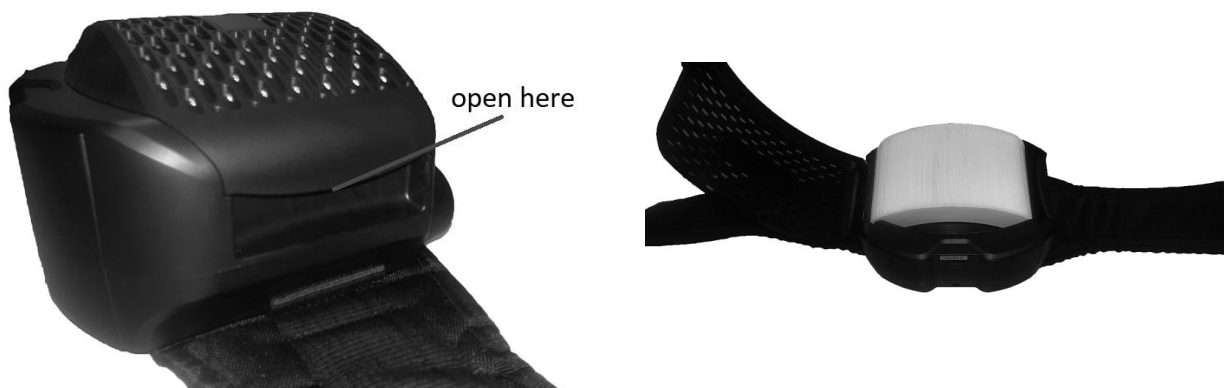
It is essential that the user must not confuse the markings on the filter relating to any other standard other than EN12941 with the classification of the device when used with this filter.

6.2.3. Removing the Filter:

Opening the filter cover: Grip the blower and pull up the cover from the right side of the blower.

ATTENTION! It is strictly forbidden to use any tools to open the filter cover.

To remove the filter, pull it out of the unit. Clean the unit from dust ensuring no dust enters the air inlet.



6.2.4. Fitting a new Filter:

Inserting a new filter: Put the filter back into position and gently push until it fits well on the body of the unit.

Closing the filter Cover; simply snap the cover into place. Pay special attention to snap the cover properly into the blower. Do not attempt to use the blower unit without the cover fitted correctly.

6.2.5. Changing the Pre Filter

The pre filter is a sleeve which is fitted over the main filter. To remove / replace simply pull off the old filter and stretch the new one into position. It's important to ensure that the filter media of the main filter is completely covered by the pre filter



6.2.6. Attaching the Hose to the Blower Unit:

Align the pins of the Hose Bayonet connector with the slots in the air outlet of the blower. Push the Bayonet connector into the blower until it reaches the bottom of the hole and then twist in a clockwise direction until the locating pins clips into place.

Fitting the hose to the hoods is the same procedure.

6.2.7. Donning the Welding Helmet:

First set the Welding helmets rake and adjust the welding filter to suit (See the helmet's user instructions)

Lift the helmet to its upper position.

Place over the head and adjust the headgear ratchet wheel by pushing it in and twisting until a satisfactory tightness is achieved.

Pull the elasticated chin guard downwards and at the same time pull the helmet down. Ensure the elasticated chin guard fits comfortably under the chin.



The Welding helmet is now ready for use

6.3. Usage:

Switch on the unit by pressing the ON/OFF button on the control panel. The airflow can be adjusted by pressing the + /- buttons from 180 l/min up to 220 l/min in six speeds.. The Green LED diodes shows the actual airflow level. Please note that for every press of the buttons, it is necessary to hold the press for 2 seconds for the action to occur. This is to avoid accidental changes.



The unit ensures a constant supply of air. The microprocessor inside the unit automatically regulates the motor speed to compensate the filter clogging and the battery state. If the microprocessor cannot keep the adjusted airflow, the unit will sound a 'beeping' alarm (an acoustic signal can be heard). At which point the user must check the blower unit. If possible, the microprocessor automatically reduces the airflow to the next lower level, if it fails to meet the lower level, the alarm will still sound. When the airflow falls below the minimum safe operating level, a second audible alarm joins the first. At this point, the user must stop working at once, leave the working environment and reach an area nominated to be safe and change the filter or recharge/change the battery.

To check the alarms it is necessary to block off the air outlet with the palm of a hand or by another suitable means. Then with the unit switched on, the motor will try to compensate by increasing the speed until the microprocessor sounds the alarm as described above.

To check the battery: When first starting the unit, the battery LED's will flash red on the control panel then go out if light stays on this indicates low battery and should be charged. It is recommended that only a fully charged battery should be used when starting a work shift.

With a fully charged battery in place, the unit should function normally, but if the audible alarm still sounds, the user must change the filter. If the problem still persists, see chapter 9 for additional suggestions.

7. Before use

7.1 Inspection before use:

Each and every time before starting work check that:

- All components are in good condition with no visible damage (like holes, tears etc) Replace any damaged or worn parts. Carefully examine the air hose, seals and the face piece.
- There is a good connection between the air hose and the headpiece as well as the blower unit.
- There is sufficient air flow. (See 7.2.)
- The air is supplied through the whole respiratory system from the blower to the hood.

Charge the battery before the first use and check that the battery has sufficient charge prior to every subsequent use. (See 7.3.)

Ensure the alarms are working correctly (see 6.3)

7.2. Air FlowTest:

1. Disconnect the air hose from the Blower unit.



2. Insert the Airflow indicator into the air hose connector and keep the hose in vertical position at about the eye level.
3. Switch the power unit on. The airflow is sufficient only if the ball indicator reaches the minimum flow rate level. If the indicator sinks below the minimum flow rate level, it is necessary to charge the battery or change the filter. If the problem still persists, see chapter 9 for additional suggestions.

7.3. Batteries:

NOTE! Batteries are delivered only partially charged. All batteries must be charged before they are used for the first time. The battery can be charged separately or on the blower unit.



It is imperative that the battery charger used to charge the product(s) is the one that was delivered to you at the time of receipt of the product(s) and is a manufacturer approved battery charger. Using any other battery charger will cause invalidation of any warranty protection and / or a serious risk to the health of the user operating the product(s) from fire or explosion.

The charger must not be used for any other purpose than that for which it was manufactured. Do not charge the battery in a potentially explosive atmosphere. The battery charger is intended for indoor use. It must be protected against damp. The charger controls the charging automatically. After the battery has been charged, the charger switches to the trickle charging regime and keeps the battery fully charged. The charging time is 4 to 6 hours.



7.3.1. Battery charging:



1. Check that the voltage of the electrical power supply is correct.
2. **Check that the battery charger being used to charge the product(s) is the one that was delivered to you at the time of receipt of the product(s) and is a manufacturer approved battery charger. It is essential that only the supplied charger is used. Failure to do so may cause a serious risk of fire or explosion.**
3. Plug the charger into the socket. Either direct into the blower when the battery is fitted or into the battery directly.
4. Connect the battery to the charger. The socket of the battery is positioned on the back side.
The charging state is indicated by a red LED diode light.
5. After charging has been completed, the trickle charging regime is activated: - red LED Diode goes out, the green LED diode comes on at the moment of trickle charging.
6. Disconnect the charger from the power supply.
Do not leave the battery charger in the power supply if not in use!

7.3.2. Battery changing:

Removing the battery:

Locate the battery catch. Pull back the battery catch and at the same time the Battery can be removed by lifting upwards.



Fitting the battery: Make sure the battery is the correct way up (as per 6.2) and then slide into the bower until the battery catch engages. It is essential that the battery catch is fully locked

8. Maintenance / Cleaning

The Blower unit, filter housing and head units must all be regularly cleaned to keep them in good working order.

For single users, the units can all be cleaned with a cloth moistened with luke warm water and soap.

For multiple users, the units should be disinfected when passed from one user to another.

Liquids must not be allowed to enter the workings of the blower unit or get on to the element of the filter.

Parts should be allowed to air dry. Under no circumstances should any solvents or abrasive cleaning agents be used. The unit must not be dried using hot air or radiant heat.

The unit should continue to provide protection to the designed specification for 2 to 3 years, when maintained in accordance with these instructions. Prior to each use the user should check that the unit is free from defects, such as cracks, split filters and hoses, cracked visors and helmet components as appropriate

9. Fault finding

If there is a sudden change in air supply while using the Momentum system, it is necessary to check the following:

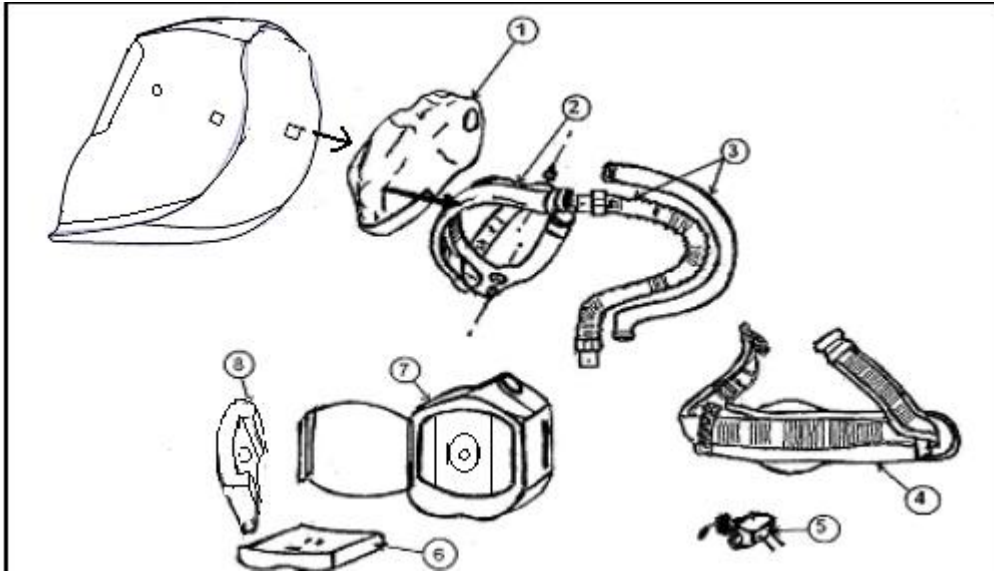
- That all parts of the air-supply system are assembled properly.
- The battery and its connector.
- Whether the charger is not faulty or malfunctioning (if so, diodes do not work).
- Filters and their clogging.
- That there is not a hole in the air hose.
- Whether the hood seal is not damaged.
- Whether the working time after a full recharging of the battery has not decreased (if so, it is necessary to replace the battery).

Fault	Probable reason	Recommendation
The blower unit does not work at all	Entirely discharged battery. (verify if the blower unit works with another charged battery) Faulty motor, circuit board or connector	Charge the battery. (if problem persists, check the battery) Contact your supplier.
Low airflow	Blocked air hose or airduct. Leakage Battery is not charged enough. Blocked Filter or Pre Filter	Check and remove blockage. Check all seals, connectors and the air hose. Make sure that air cannot leak through holes or tears. Charge the battery (if problem persists, check the battery) Change the Pre – Filter. Then if the problem persists change the main filter.
Short operating time.	Clogged Filter. Battery is not charged properly.	Change the filters Charge the battery. (If problem persists, check the battery)
Battery cannot be charged.	Battery contact is damaged. Charger is faulty.	Check the battery contact. Contact your supplier.
Battery cannot be charged sufficiently.	Battery is worn out..	Install a new battery.

10. Storage & Transportation

When not in use or during transportation the blower and head units should be stored in the container in which they were provided, or other similar container, such that it is out of direct sunlight, not in contact with solvents and cannot be damaged by physical contact with hard surfaces/items. Do not store outside the temperature range of +0°C to +40°C or with humidity above 75%RH.

11. List of Parts & Assembly Drawings



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Face Seal	AC391-000-005-000
2	Head Gear and Air Duct Assembly	AC392-000-005-000
3	Hose	AC386-000-005-000
4	FR Hose Cover	AC385-000-005-000
4	Belt	AC387-000-245-000
5	Universal Charger	AC388-000-005-000
6	Standard Battery	AC389-000-005-000
6	HB Battery	AC390-000-005-000
7	Blower Unit	RP135-000-005-000
8	Filter	RP136-000-033-000
9	Pre Filter	RP137-000-003-000

12. Technical Data

This powered respirator is light-weight and easy to handle. It is equipped with a replaceable particulate filter. The system affords reliable protection against particulates and aerosols.

Air flow: 180 to 220 Litres/ min. Minimum flow rate 170 Litres/ min for the alarm to sound.

Weight with filter: 870 grams

Operating temperature between 0°C and +40°C

Type of filter: P R SL

Type of Battery: Replaceable and rechargeable Li-Ion 7.4V/5200mAh

Charging Cycles >350

Visual alarm for low battery voltage.

Visual, audible alarms and Vibration alarms for insufficient flow rate (below 170L/min)

Actual Protection Factor (APF) 20 / 50

Noise level: 65dBA

Operating time greater than 8 hours on minimum flow rate with a new filter and fully charged battery in a clean environment. (6 hours on maximum flow rate.). In actual use, operating times can be significantly reduced depending on the level of contaminants in the environment

Note! Operating time can be shortened in case of clogged filter under charged battery

Certification EN 12941:1998+A1:2003+A2:2008

Certified by: APAVE SUDEUROPE SAS Notified Body 0082

13322 MARSEILLE

CEDEX 16

France

This PPE device complies with the following applicable EU standards: EN166B:2001 EN379:2003 + A1:2009 EN175B

Notified body: ECS GmbH as Notified Body

1883, Obere Bahnstrasse 74, 73431 Aalen, Germany



Symbols:

Refer to the manufacturers instruction manual



Store between 0 – 40 Degrees C



Best before 2014 / 05



Maximum storage Humidity <75%



Filter Symbols:

R = this means the filter is reusable for more than one shift.

S = means the filter protects against solid particles.

L = means the filter protect against liquid particles.

13. Warranty

The Momentum Blower unit is guaranteed for a period of 12 months from date of purchase against mechanical or electrical defects.

The Momentum battery is guaranteed for a period of 12 months from the date of manufacture.

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 Momentum unit has been used solely for the purpose for which it is intended.

The Momentum unit has not been subject to misuse, accident, modification or repair.

N.B. In the event of a claim, contact the retailer from which the Momentum unit was purchased.

This guarantee does not cover normal wear and tear.

This guarantee does not affect your legal rights.

UNIVERSAL PPE & WELDING SUPPLIES LTD

Aqua House, Buttress Way,

Smethwick,

West Midlands,

B66 2DL

England

T: 01234 567890

E: info@universalppewelding.com

W: universalppewelding.com

