

# MANUAL

## NOVABLAST PANORAMIC HELMET



# PANORAMIC HELMET

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# PANORAMIC HELMET

## HELMET AIR SUPPLY SYSTEM

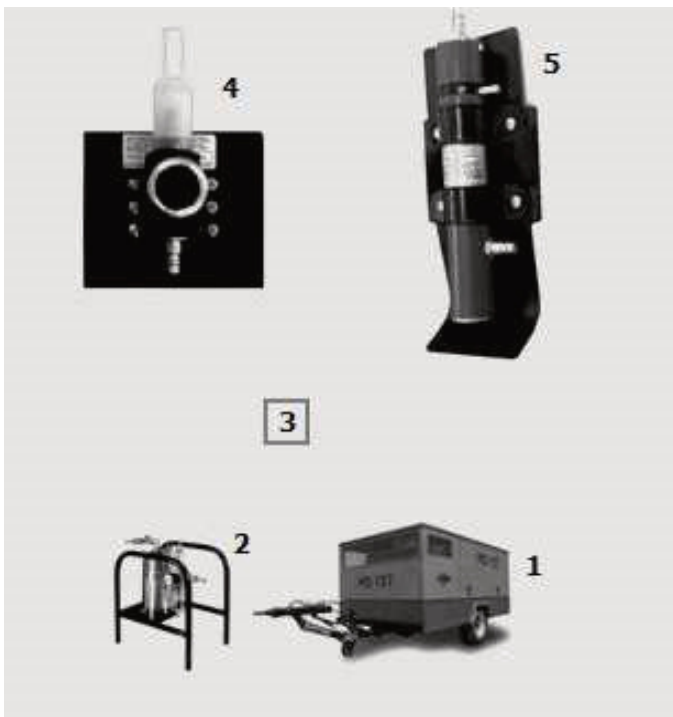
### HELMET AIR SUPPLY SYSTEM

The helmet (hood) supplies air with a working pressure of up to 7 bar. For the full range of adjustments of breathing air and temperature, it is necessary to supply air with a pressure of minimum 6.5 bar and a minimum flow rate of 350 dm<sup>3</sup>/min.

In each case we advise using the breathing air treatment system i.e. Filter Set.

1. Compressed air with a pressure up to 7 bar obtained from a compressed air source or the compressor.
2. System of air treatment for breathing: Filter Set to treat air for breathing.
3. One can additionally use other filters as a final step for purification.
4. Regulation System NOVA RS. The appliance worn at the waist enables the worker to self-regulate the amount and temperature of breathing air supplied to the helmet, or
5. Air conditioner NOVA AIRCO used to regulate the amount and temperature of breathing air supplied to the helmet. The set enables the warming and cooling of air.

The Novablast supply system increases comfort and security at work. It is an invaluable piece of equipment for sandblasting, particularly in difficult conditions.



# PANORAMIC HELMET

## HELMET AIR SUPPLY SYSTEM

### IMPORTANT

- The helmet does not provide respiratory protection in the absence of incoming air.
- Always check the cleanliness and regularity of air for breathing.
- Before use, check the air source pressure and the flow rate of the air supplied to the user for compliance with the requirements set out in the rest of the manual and the instructions for the Filter Set which treats the air in the hose for breathing.
- Before use, read the instructions for use of the NOVA RS regulating system, check the condition of the air pollution silencers located in the NOVA RS respiratory system and the air inflow hose to the helmet. The occurrence of contaminants can cause the "clogging" of silencers and thus restrict the flow of air below the required level.
- Silencers should be changed at least once after every two months of use.
- Before use, connect the apparatus/helmet to the source of compressed air, place the helmet on your head and check the working of the respiratory air flow indicator installed inside the helmet (on the visor).
- In case of very intensive work, significant underpressure may appear in the facial part during inhalation.
- In case of excessive humidity when breathing while working in temperatures below 4 °C, the air humidity should be controlled to avoid various parts of the helmet freezing.
- Do not use oxygen-enriched air.
- Use in temperatures between -10 °C /+35 °C.
- The air supply hose should be replaced two years after the date of production. Ensure that the breathing air temperature does not exceed 55 °C.
- Before using the NOVA AIRCO, the user should familiarize themselves with the manual.
- Before use, the user should have specialist training dealing with the risks of blasting, which should be confirmed by proper documents.
- The manufacturer recommends that each helmet is used individually for each worker, as a piece of equipment for personal health protection.
- The level of noise reaching the ears of the user associated with the respiratory air flow through NOVA RS (at 165 dm<sup>3</sup>/min) does not exceed the value stipulated in EN 14594 ie. 80 dBA the standard i.e. 80 decibels.
- The level of noise reaching the ears of the user connected with the air flow of the air conditioning system NOVA AIRCO at the level of 150-165 dm<sup>3</sup>/min, may exceed the value of 80 dBA. Always put noise reduction stoppers into ears. We recommend the use of helmets with in-built earmuffs.
- Due to the limitation of the field of view a user working in the helmet should be under constant surveillance by another person, who may, if necessary, provide assistance (according to recommendation by the Central Institute of Work Protection CIOP-PIB).
- Do not connect the hoses supplying air with hoses carrying abrasives.

# PANORAMIC HELMET

## HEAD GEAR

### THE APPARATUS

The helmet has a shell-shaped design and features a panoramic window in the front, which contains a curved, 2 mm-thick polycarbonate glass. The glass is held in place by a sealer that is attached to the edge of the helmet viewfinder. On the outer side of the glass, there is a single protective foil to prevent damage.

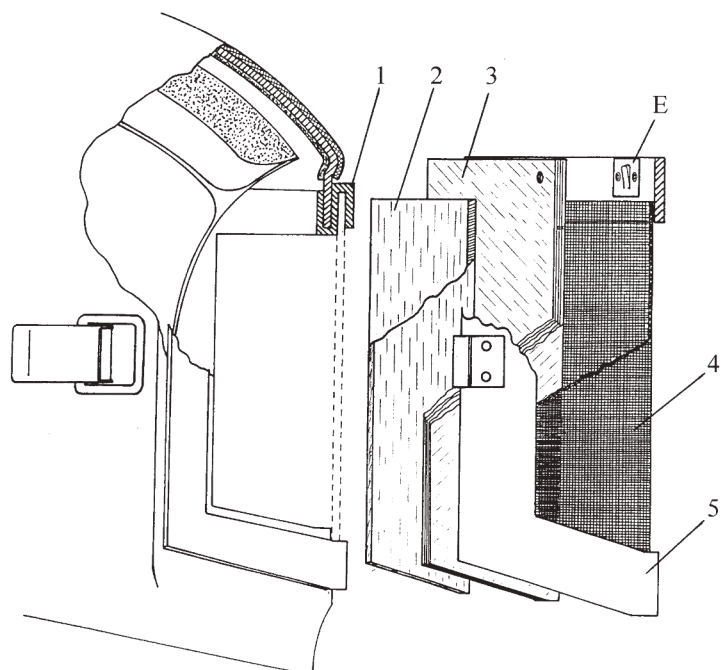
The viewfinder is covered by a hinged frame, and the glass, foils, frame, sealer, and protective apron are all replaceable. The window protection foil is mounted onto the clamps located on the inner side of the upper part of the frame. Avoid to wear it through, as this could result in accidental damage to the window.



### HELMET VISOR ASSEMBLY

- Polycarbonate panoramic glass [2] inserted in the profiled rubber sealer [1] attached to the edge of the viewfinder – protects worker's eyes and face.
- Viewfinder glass protective foil [3] mounted on the inner side of the frame. In case of scratching or matting the protective foil should be replaced. Matting of the foil results in deterioration of visibility.
- Metal net [4]
- Hinged viewfinder frame [5], closed and locked by a snap clamp.
- Clamps for mounting: Foil package, single foil, net.

In case of damage, wear and tear of glass, foil, frame, hinges and clamp or sealer these elements should be replaced with new ones.



# PANORAMIC HELMET

## HEAD GEAR

### PRODUCT CHARACTERISTICS

The helmet (apparatus) is designed to protect the face and torso of the worker from deflected particles of abrasive and corrosion products during vapour blasting (shot-blasting). It also protects the breathing system from dust and other substances created during vapour blasting, thereby safeguarding the worker's health from one of the most dangerous diseases - silicosis.

To ensure the worker can breathe freely inside the helmet and to prevent dust particles from entering, clear compressed air must be fed into the helmet using a set of filters for cleaning. The regulator of the amount of given air must also be used. The amount of given air must ensure that there is an overpressure inside the helmet in relation to the environment, and that the worker can breathe freely.

The amount of air delivered inside the helmet is regulated by the regulation system NOVA-RS, which ensures the delivery of 165 dm<sup>3</sup>/min while maintaining specific parameters of the compressed air net. The regulation system is worn at the hip belt. An indicator of air flow is installed inside the helmet (over the window), which also serves as a warning device. The indicator helps the user to check the equipment before use and during work to ensure the minimum value of intensity of air flow is achieved. The indicator has a movable element that appears in the seeing field of the window if the required intensity of flow is not achieved (or in case of a lack of flow). After ensuring the required intensity of flow, the movable element disappears from the user's seeing field.



#### WARNING

The indicator only works properly when the helmet is in the work position (on the user's head). See Figures 2 and 3.



FIGURE 2

Air flow < 165 dm<sup>3</sup>/min - indicator protruding



FIGURE 3

Air flow > 165 dm<sup>3</sup>/min - indicator tucked in

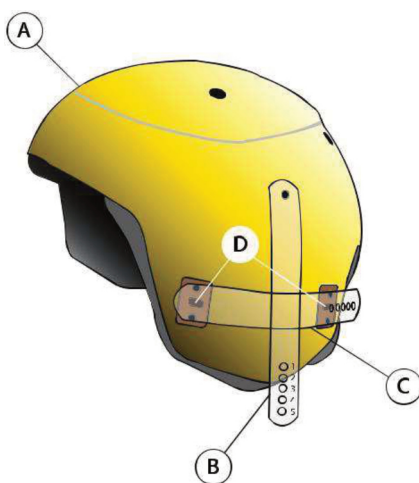
# PANORAMIC HELMET

## INSIDE OF THE HELMET

### INNER LINING

The helmet has a new type of inner liner built into it, with removable cushioned pads attached with velcro tabs. This allows the user to comfortably adjust the inner lining to the shape of the head and eliminates troublesome chinstraps. The installation of the inner lining allows the cushioned pads to be easily disassembled for replacement or washing as well as for providing access to clean the inside of the helmet.

Figure 4 shows the inner lining of the helmet with cushioned pads, mountings and regulators.



- A. Inner lining inserts
- B. Suspension strap
- C. Strap to regulate the fit of the inner lining to the head
- D. Strap fastener clip

\* Openings 1 - 5 on strap B enable the inner lining in the shell of the helmet to be suspended to the height required by the user.

\* Openings 1 - 5 on strap C depending on the hole allows the user to regulate (increase or decrease) the clamping force of the inner lining to the head (to ensure a snug fit).

FIGURE 4



#### KEY CONSIDERATIONS

To maintain hygiene the user should wear a cotton cap on the head before starting work. The cap should be washed periodically in water with a mild detergent.

# PANORAMIC HELMET

## HEARING PROTECTION

### NOVABLAST STANDARD HELMET WITH HEARING PROTECTION

This helmet has a built-in insert with fixed hearing protection. The construction of the insert enables the user to easily put the helmet on and off the head. The system of insert pressure and way of fixing the hearing protection allows the user to easily fit the helmet to the head. The design of the insert allows it to be easily fitted and swiftly taken off (e.g. to clean the helmet inside).

Figure 5 depicts the inner lining of the insert with its components for fixing and regulation.

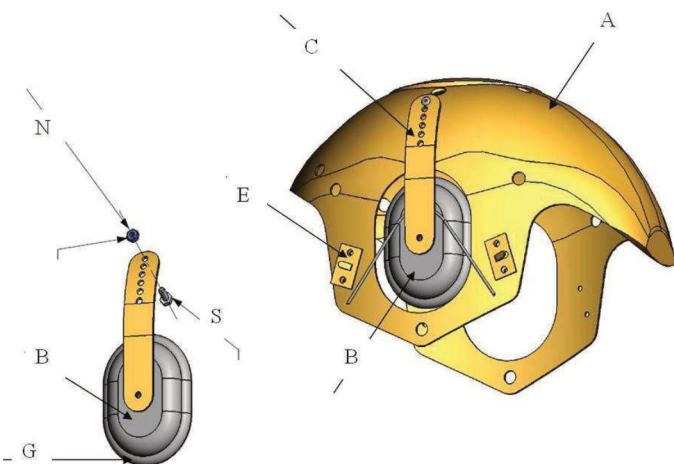


FIGURE 5

- A. shell of insert with hearing protection
- B. hearing protection [Protective ear shell]
- C. strap to hold in the insert
- D. adjustment strap for insert
- E. strap fastening clamps
- S. screw fixing inside shell to mounting strap
- N. nut
- G. ear muff oval pad

Holes 1-5 in strap C holds the insert in the helmet shell at the height required by the user.

Holes 1-5 in belt D allow the user to increase or decrease the strength of pressure of insert to head.

Ear muffs for hearing protection are fixed in the insert on independent rubber elements. This allows for the uniform distribution of pressure strength of earcup cushions around the ears and does not require the user to make further adjustments when putting on or taking off of the helmet/lack of headband/.

The insert in the helmet shell is fixed with screws in the back part and screws through straps C to the sides of the helmet shell.



# PANORAMIC HELMET

## HELMET APRON

The helmet's edges are fixed with velcro tape/clasp of tapes that are tacked mutually with each other. The changeable apron is made of two materials. It is dustproof and coated with PCV and is additionally protected from friction at the part connecting it with the helmet by 6 cm wide rubber tape.

### **In order to change (when worn out) the apron or to take it off to wash one should:**

- take off the rubber tape protecting the edges of the removable apron.
- from the back of the helmet (under the inlet delivering the air supply) untie the pulling off strap.
- beginning from the back of helmet take off the apron.

### **In order to put on the apron once again one should:**

- in case of damage to the woven line pull in the tunnel the new one with the use of a safety-pin.
- put the apron from the front part of helmet putting uniformly, pull the line in the tunnel of the apron and tie in a knot.
- put rubber tape at the back of helmet (under the inlet with hose) and pull it with hands in the direction of the front part of the helmet. It is advised that two persons undertake this action.
- precisely placing tape at the edge of the helmet (3-5 mm beneath the edge) protects the place connecting the apron to the helmet from being worn out and damaged.



### **KEY CONSIDERATIONS**

Failure to pull together the tapes of the helmet apron causes its parts to loosely hang down, does not guarantee safety and may swiftly cause damage.

The replaceable apron protects the worker's neck and chest. The helmet shell is made of composite glass laminate. In the helmet with hearing protection, a 3 - 4 mm thick foam layer is glued to the inside of the shell. The foam is sound and heat insulating, which is very important when using the air-conditioning set (the air-conditioning set heats or cools the supplied breathing air). Around the head of the worker there is an inner insert with polyurethane foam pads. This makes the work more comfortable. The pads are attached to the insert with hooks. The pads should be washed from time to time in water with light detergent, then dried and put back in place. The air is supplied through a flexible hose; the hose ensures an uninterrupted supply of air even during any necessary movement of the user's head.

# PANORAMIC HELMET

## SILENCER DISASSEMBLY

\* The helmet is equipped with a noise silencer of the delivered breathing air. The silencer is at the back of the helmet. It is a component of the air inlet.

### SILENCER DISASSEMBLY

To disassemble the silencer from the socket of the inlet of breathing air (at the back part of the helmet) follow the instructions below:

1. By means of pliers or a pressure key take the inlet between the Norma tape and the protection of the socket (point #6) and unscrew from the socket.
2. Take the silencer out of the socket.
3. Place the seal (that is added to spare parts) precisely inside the socket.
4. Screw the inlet tightly into the socket.



#### ATTENTION

In case of using the air conditioning set NOVA AIRCO (because of the occurring drags of air flow on the silencer and at the same time the lowering of the air temperature delivered to helmet) it might be necessary to get rid of the silencer. To do this, the user must use the ear inserts together with the helmet or use other ones on the market with the **CE** certificate.

#### DESCRIPTION OF FIGURE 6:

1. Noise silencer
2. Inlet socket
3. Inlet
4. Rubber protection of inlet
5. Norm's pressure tape
6. At this place take the inlet during screwing out

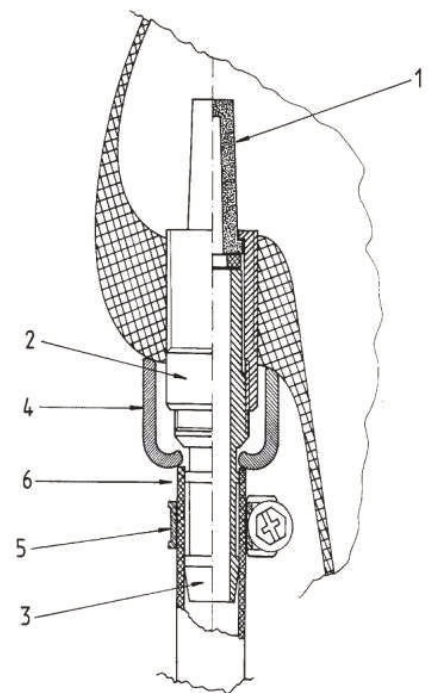


FIGURE 6

# PANORAMIC HELMET

## HELMET SPECIFICATIONS

### TECHNICAL AND OPERATING PARAMETERS

The helmet protects the user's head from deflected abrasive particles, the face and respiratory system from dust and other harmful substances that are created during cleaning using the vapour blasting method. The protective action of the helmet consists of clean air that is supplied under the helmet and sealed visor which produces overpressure, making it impossible for impure air to enter under the helmet. Maintaining the volume of air flow to the helmet ensures the breathing system is properly protected. The user, by means of the NOVA RS Regulation System, regulates the amount of air delivered. The breathing airflow indicator, which is placed in the user's field of vision, informs the user about delivering the proper amount of air. This flow should be increased depending on effort and need.

#### 1. Technical and operating parameters of the helmet.

HELMET(PART)	WEIGHT
Weight of the complete helmet	2.55 KG
Weight of the replaceable apron	0.75 KG
Weight of the blasting helmets with polyurethane covering	2.70 KG
Weight of helmets with hearing protection	2.60 KG
Weight of air inlet	0.17 KG
Weight of the regulation system	0.35 KG

2. Minimum requirements of the air flow intensity to the helmet (with the regulation above): 165 dm<sup>3</sup>/min.
3. The source of the supply of compressed air treatment for breathing aims with the pressure of 7 bar with the possibility of pressure regulation/ pressure reducer/ to value 6.5 bar.
  - the scope of the regulation of air supply by the NOVA RS regulation system: from 165 (±10) dm<sup>3</sup>/min to 280 (±10) dm<sup>3</sup>/min.
  - by pressure of delivery: min. 6.5 bar (for a 10-meter-long airhose) / min. 7 bar (for a 50-meter-long airhose).



#### ATTENTION

The value of pressure on the reducers is set after the fixing of the hose to the NOVA RS (opening of air flow) regulation system.

# PANORAMIC HELMET

## WORKING WITH THE HELMET

### LACK OF LUSTRE

Open the viewfinder frame, remove the protective foil from the clamps on the inner part of the frame, mount the new protective foil. After attaching the foil close the frame. In order to replace the panoramic glass you need to open the frame, remove the glass from the profiled sealer and insert the new glass. Then lock the viewfinder with the snap clamp.

### HEARING PROTECTION



#### ATTENTION

If there is excessive noise at a workplace it is advisable to use the helmet equipped with hearing protection.

When the level of noise at a workplace generally exceeds the norm, in order to further increase the protection parameters, each helmet is equipped with protective inserts to the ears that are used with the additional hearing protection whose use is allowed at work carried out in helmets according to the CE certificate. This creates a double protective barrier from noise coming to the ears of the user, i.e. the helmet shell, together with the padded insert enclosing the user's head (as a first barrier) + the above-mentioned ear inserts. Using the mentioned inserts and others with similar parameters, the user gets the required level of protection. The acoustic effectiveness of the noise silencing of the protective inserts  $S_f$  is 24 dB is best with low frequency noises, whilst the noise silencing of high frequencies is most effective with  $S_f$  is 31 dB. In the whole scope of sound (noise) frequencies the silencing  $Z_r$  is 31 dB. That means that using the above-mentioned ear inserts we lower the level of noise coming to the inside of ear below 85 dB(A). In brief, from the level of noise occurring inside the helmet one should subtract the value of the silencing  $Z_r$  dB(A) given in the instructions for using the ear inserts.

### METHOD OF USE

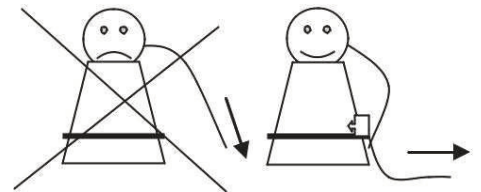
Before use, one should fit the helmet and straps of the removable apron. Fix the hose delivering the air for breathing to the end of the instant connection regulation system by means of pressure tape. Place the breathing hose of the helmet on the end part going out of the system and screw the pressure tape. Fix the instant connection to the regulation system. At the moment of fixing the instant connection, the opening takes place. Set on the reducer of the set of filters - from which the air for breathing is treated - the pressure should be at the level described above.

Put the helmet on the head, and the changeable apron and clasp the apron belt by means of the plastic clasp. Regulate by the hand wheel the amount of air delivered to the helmet.

# PANORAMIC HELMET

## WORKING WITH THE HELMET

The pressure of the compressed air described above, by the regulation system, requires the following amount of air:  $165 \text{ dm}^3/\text{min} \pm 10 \text{ dm}^3/\text{min}$ ). After achieving the required flow, the movable element goes into the frame of the airflow indicator, vanishing from the visor's field of view. The absence of this element in the field of vision informs the user about delivering the required amount of air for breathing inside the helmet. Every time the movable element of the indicator appears in the field of vision it means there is a shortage of air being delivered to the helmet. Then, the user should increase the flow by unscrewing the hand wheel of the NOVA RS regulation system. If this does not increase the flow of air, one should stop work (!!!) and check the source of compressed air, filters, hoses and silencers. In case of damage, after stopping the source of compressed air, filters, hoses or silencers one should remove the damage and eventually replace with new parts. The increase in need and the effort of work increases the amount of inflowing air. In case of a break in the breathing airflow the user should leave the working post immediately.



### CHECK BEFORE USE

- Before use, connect the head gear to the source of compressed air, put the helmet on the head and check the working of the air flow indicator installed inside the helmet (on the visor).
  1. To reduce the air flow below the required value: Place the movable element of the air flow indicator into the visor's field of view.
  2. To achieve the required air flow: Place the non-moving part of the air flow indicator into the visor's field of view.
  3. In the absence of a breathing air supply - The movable element of the air flow indicator is in the visor's field of view.
- The condition of the respiratory air silencers located in the regulating system and the incoming air hose. Contaminants can "clog" the silencer and thus restrict the flow of air below the required level. Silencers must be replaced each time the level of air flow inside the helmet is reduced, after at least once every two months of use.
- The state of the visor's glass, seals, mesh and film.
- The visibility of the glass and polycarbonate panes; in case of tarnishes and scratches the panels should be replaced with new ones.
- The fitting of the inner lining to the head - when necessary change the position of the pressure pads.
- Check the damping pressure of the ear protection (regulated as above).

# PANORAMIC HELMET

## WORKING WITH THE HELMET

- The degree of contamination of the cushioned pads covering the head: in case of contamination: wash, dry and put back again in the same place.
- The condition of the hose carrying the incoming air supply.
- The condition of the NOVA RS lap belt and the adjustable regulating system.
- The state of the frames and the seals of the frames - in the case of too much use i.e. thinning edges, cracks on the surface – such worn parts should be changed.
- State of the removable apron, especially where it connects with the edge of the helmet and at the front part where it is reinforced with coated fabric.
- State of the helmet shell, especially the front part and at the edges of the visor.
- State of filters - the certainty of connection and reliability of the power supply of the compressed air system.
- The pressure set at the regulator placed at the installation of compressed treated air.

### PRESERVATION

After finishing work, the interior of the helmet should be cleaned with a cloth moistened with water and "Nano Silver" disinfectant liquid and dried. The air supply hose should be checked. Check the connections and presence of dirt in the transparent casing of the compressed air regulating system. In case of contamination, check the condition of the source of compressed air. Only fully functional equipment - the helmet, the air flow indicator and regulation system- can be used.

When installing a new set of filters, remove oil-water condensation using the purification kits. To do this, after finishing work every day remove drain plug lying at the bottom of casing of given cleaning step, and disconnect the power supply of the compressed air. Then the automatic valve will automatically release the condensation. More information concerning the use of the set of filters can be found in the set of operating instructions.

The visor panes can be cleaned with water and a mild detergent. **NEVER** use organic solvents for this purpose as this tarnishes the glass. In case of excessive wear of particular sets the user should change them by ordering new parts from the manufacturer.

Store the helmet in a temperature range of +5°C to +30°C with a maximum relative air humidity of 85%. One should ensure that the conditions of transport will not cause damage to the helmet and especially the visor. Do not throw products. Protect them from rain.

# PANORAMIC HELMET

## AIR CONDITIONER

### SAFETY PARAMETERS OF THE HELMET WITH NOVA AIRCO AIR CONDITIONER



#### DESCRIPTION OF THE AIR CONDITIONER

The NOVA AIRCO air conditioner is designed to adjust the temperature of breathing air supplied to helmets and hoods. The NOVA AIRCO air conditioner heats up or cools down the breathing air supplied to the equipment protecting the respiratory system supplied from the compressed air system, ensuring the supply of the proper amount of breathing air necessary for working safely when wearing the helmet. The user is kept informed by the breathing airflow indicator. After reaching the required minimum flow, a moveable element is inserted into the indicator casing and disappears from the visor's field of view. If this element ["the wing"] is not seen in the field of view, it confirms to the user that the right amount of breathing air was supplied inside the helmet. Each time the indicator's "wing" appears in the field of view, it indicates that the right amount of breathing air was not supplied inside the helmet. In such a case one should leave the workstation and check the source of compressed air, filters and hoses.

Operating principle: Compressed air flows through the inlet stub into the working chamber, where the temperature of the inlet air is changed. Part of the air is heated up, and some portion cooled down. Both air streams – hot and cold – are properly directed with the use of "the steering gear". If we take only hot air, all the cold air is exhausted from the air conditioner. Hot air is directed to the outlet stub in the air conditioner. If we take only cold air, all the hot air is exhausted from the air conditioner. Cold air is directed to the outlet stub in the air conditioner. The steering gear allows the air streams (hot and cold) to be mixed. The user is therefore able to independently adjust the breathing air temperature. It should be remembered that compressed air supplied to the NOVA AIRCO air conditioner should be free from water (condensing when compressed). Otherwise - in low ambient temperature - water present in the air may freeze on the elements of the equipment and hinder its proper operation.

# PANORAMIC HELMET

## AIR CONDITIONER

### SAFETY PARAMETERS

The helmet protects the user's head from particles of deflected abrasive materials, and the face and breathing system from dust and other harmful substances that are created during cleaning using the vapour blasting method.

The leak-proof visor and clean air supplied inside the helmet, which produces high pressure, ensuring protection by preventing polluted air from getting inside the helmet. The helmet isolates the user from atmospheres containing air unsuitable for breathing. Maintaining the appropriate intensity of airflow volume ensures the proper operation of the helmet as protection for the respiratory system. The user adjusts the breathing air temperature himself using the air conditioner. The minimum required amount of air flows through the air conditioner at the pressure specified below.

An airflow indicator placed in the employee's field of view informs him about the supply of the proper amount of air. The flow should be increased according to the intensity of effort and requirements.

DESCRIPTION	VALUE
Total weight of the helmet (not exceeding)	2.55 KG
Weight of the helmet with hearing protection	2.60 KG
Weight of detachable apron and hose	0.92 KG
Air hose diameter	10 MM



# PANORAMIC HELMET

## AIR CONDITIONER

### HEATING AIR

#### SEQUENCE OF ACTIONS WHEN HEATING THE AIR WITH THE USE OF THE AIR CONDITIONER

Supply treated breathing air through the 10 mm diameter hose to the quick joint (1). Connect the joint to the inlet end (2) of the air conditioner.



1. Connect the air treated for breathing purposes at a pressure of 4.5 - 5.7 [ $\pm 0.1$ ] bar and delivery rate min. 400 dm<sup>3</sup>/min to the air conditioner.
2. Move the "steering gear" lever (3) counterclockwise adjusting the air temperature until resistance is felt [as in the directions on the casing]. Then maximum efficiency for heating up the air flowing out of the NOVA AIRCO air conditioner is achieved.
3. Place a thermometer on the outlet stub (4) of the air conditioner and adjust the required air temperature using the "steering gear" lever (3). Check the temperature reached at various positions of the steering gear lever.
4. The proper amount of breathing air [150-165 dm<sup>3</sup>/min] required to ensure safe working conditions is supplied to the helmet at a pressure of 4.5 - 5.7 [ $\pm 0.1$ ] bar of the compressed air supplied to the air conditioner, when the maximum air heating up level (the steering gear lever moved max. counterclockwise) is applied.



#### CAUTION

When supplying air to the air conditioner at a lower pressure, the proper amount of breathing air inflowing to the helmet (as required by the producer) will not be ensured, despite the required air temperature being reached.

5. After temperature and flow are adjusted, the helmet hose should be connected to the outlet in the air conditioner. The hose connected to the helmet should be as short as possible, in order to eliminate temperature changes during airflow. However, the hose should not restrain head movements.
6. The range of temperature adjustment at the outlet of the air conditioner at the temperature of supplied air from +10 °C to +20 °C is: from +5 °C [ $\pm 3$  °C] to +50 °C [ $\pm 4$  °C].

# PANORAMIC HELMET

## AIR CONDITIONER



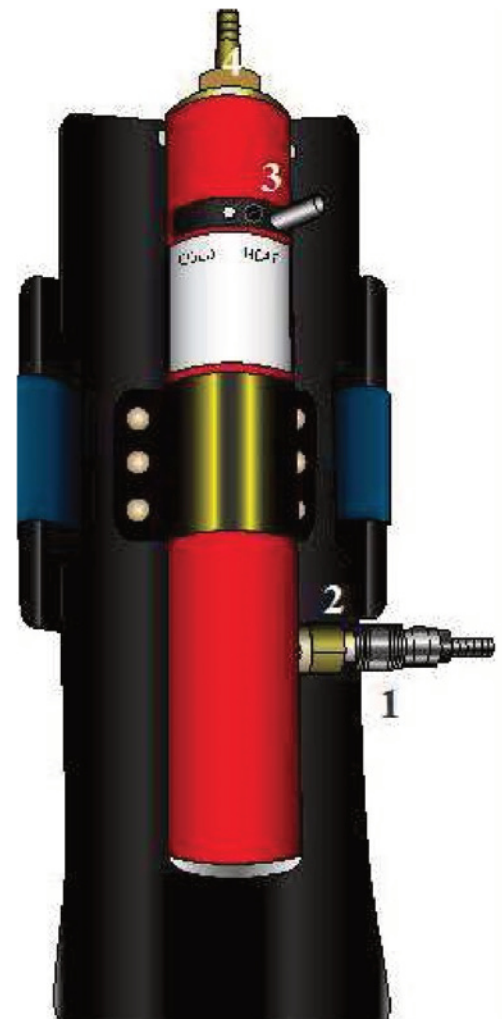
### CAUTION

The air conditioner casing may reach a temperature below zero. A layer of hoarfrost on the casing is a normal condition.



### CAUTION

Air at a low temperature [approx. -10 °C] is exhausted from the opening on the steering gear. Be careful!



# PANORAMIC HELMET

## AIR CONDITIONER

### COOLING AIR

#### SEQUENCE OF ACTIONS WHEN COOLING THE AIR WITH THE USE OF THE AIR CONDITIONER

Supply the treated breathing air through the 10 mm diameter hose to the quick joint (1). Connect the joint to the inlet end (2) the air conditioner.



1. Connect the air treated for breathing purposes at a pressure of 4.5 - 5.7 [ $\pm 0.1$ ] bar and delivery rate min. 400 dm<sup>3</sup>/min to the air conditioner.
2. Move the "steering gear" lever (3) clockwise adjusting the air temperature until resistance is felt [as in the directions on the casing]. Then the maximum efficiency for cooling the air flowing out of the NOVA AIRCO air conditioner is achieved.
3. Place a thermometer on the outlet stub (4) of the air conditioner and adjust the required air temperature using the "steering gear" lever (3). Check the temperature reached at various positions of the steering gear lever.
4. The proper amount of breathing air [170-190 dm<sup>3</sup>/min] required to ensure safe working conditions is supplied to the helmet at a pressure of 4.5 - 5.7 [ $\pm 0.1$ ] bar of the compressed air supplied to the air conditioner, when the maximum air cooling down level (the steering gear lever moved max. counterclockwise) is applied.



#### CAUTION

When supplying air to the air conditioner at a lower pressure, the proper amount of breathing air inflowing to the helmet (as required by the producer) will not be ensured, despite the required air temperature being reached.

5. After temperature and flow are adjusted, the helmet hose should be connected to the outlet in the air conditioner. The hose connected to the helmet should be as short as possible, in order to eliminate temperature changes during airflow. However, the hose should not restrain head movements.
6. The range of temperature adjustment at the outlet of the air conditioner at the temperature of supplied air from +10 °C to +20 °C is: from +5 °C [ $\pm 3$  °C] to +50 °C [ $\pm 4$  °C].

# PANORAMIC HELMET

## AIR CONDITIONER



### CAUTION

The air conditioner casing may reach a temperature below zero. A layer of hoarfrost on the casing is a normal condition.



### CAUTION

Air at a high temperature [approx. 30 °C] is exhausted from the opening on the steering gear. Be careful!



### CAUTION

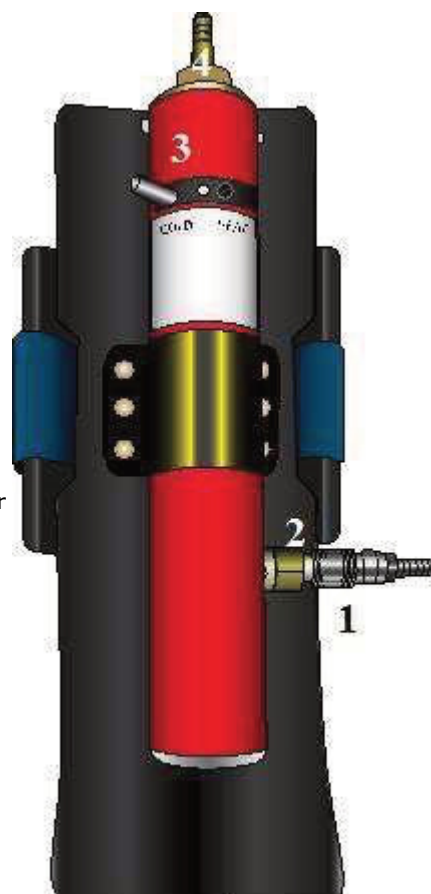
When using the filterset (which treat the air for breathing purposes), due to resistance in the airflow on the filtering elements, the air pressure should be adjusted at the reducer of this set in order to ensure a minimum rate of air delivery at the air conditioner outlet ("hot" or "cold"), according to the specification below [for one work station]:

- For the length of the hose from the set of filters to NOVA AIRCO = 10÷25 m - not less than 4.5 - 5.7 bar.
- For the length of the hose from the set of filters to NOVA AIRCO = 26÷50 m - not less than 4.8 - 6.0 bar.



### CAUTION

Adjust the pressure value at the reducer after connecting the hoses and the air conditioner (opening the airflow).



## TECHNICAL PARAMETERS

DESCRIPTION	VALUE
Supply pressure	4.5 - 5.7 [+/-0.1] Bar
Maximum supply pressure	7 Bar
Amount of air at the outlet at maximum heating up rate (for supply pressure 4.5 - 5.7 [+/-0.1] bar)	150-165 dm <sup>3</sup> /min
Amount of air at the outlet at maximum cooling down rate (for supply pressure 4.5 - 5.7 [+/-0.1] bar)	170-190 dm <sup>3</sup> /min
Weight of the NOVA AIRCO air conditioner	0.75 KG
Range of temperature adjustment at the outlet from the air conditioner [at the pressure 4.5 - 5.7 [+/-0.1] bar and ambient temperature 18 °C]	+5 °C [+/-3 °C] to +50 °C [+/-4 °C]
Demand for air supplied to the air conditioner (for supply pressure 4.5 - 5.7 [+/-0.1] bar)	400 dm <sup>3</sup> /min [+/-25 dm <sup>3</sup> /min]

# PANORAMIC HELMET

## REGULATION SYSTEM



**The manufacturer recommends using the regulation system NOVA RS individually for each employee.**

**The level of noise reaching the ears of the employee associated with the respiratory air flow of 150-165 dm<sup>3</sup>/min, does not exceed the value of 80 dBA.**

**Due to the limitation of the field of view, person who works in the helmet should be under constant supervision of another employee, which can, if necessary, help him (according to the recommendation CIOP).**

**Do not connect cables of breathing air hoses leading abrasives.**

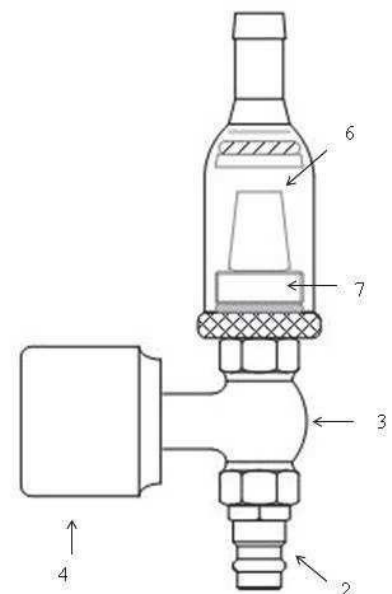
The helmet should be supplied with compressed air treated for the breathing purposes at a pressure up to 7 bar. To provide a full range of air breathing control, it is necessary to have air supply with a capacity of at least 400 dm<sup>3</sup>/min and pressure 6.5 bar. In the absence of the conditioned air networks for the purpose of breathing, apply the appropriate filter sets.

### APPLICATION

Regulation system NOVA RS is designed to control the amount of breathing air in respiratory protection, powered by compressed air. It is recommended to use it as an equipment for sandblasters helmets as well as other personal protection measures such as the hood.

### FEATURES

Regulation system consists of a valve [3] with the connector [2] equipped with the knob [4] to adjust the amount of flowing air, rapid connector used to connect power [treated air], filter - muffler [6] made of sintered porous placed in a transparent case [7], and the belt holder which regulating system is mounted on.



# PANORAMIC HELMET

## REGULATION SYSTEM

### GENERAL INFORMATION

- Regulation system NOVA RS does not provide respiratory protection in case of air flow absence.
- Ensure cleanliness and identity (repeatability) of breathing air. Air quality should be monitored.
- Before use, check the air supply pressure and flow rate of air supplied to the operator with the requirements set out in the further part of the manual as well as air treatment filters manual. Before starting work, refer to the instructions for use of air helmet used with the NOVA RS.
- Before starting work, connect regulation system NOVA RS, together with a helmet to the source of compressed air, put the helmet on your head and check the operation of the respiratory air flow indicator installed inside the helmet (above visor).
- If you are working very intensively, there can occur underpressure in inspiratory phase.
- In case of excessive humidity of breathing air, while working at a temperature below 4 °C, the moisture content should be controlled to avoid freezing of the various parts of the regulatory system and the helmet.
- Under any circumstances do not use oxygen-enriched air.
- Use in temperatures between -10 °C to +35 °C.
- Breathing air supply hose must be replaced after 2 years from date of manufacture. Provide the breathing air temperature below 55 °C.
- An employee starting the work should have specific training in the hazards of abrasive blasting, confirmed by relevant documents.

Breathing air should be brought with 10 mm inner diameter hose to the connection. Hose end put on the connector and tighten hose clamp. The air flows through the valve to determine the quantity of air - depending on the conditions and the intensity of the work. Then flows through the damper is made of porous sintered bronze muffler which reduce the noise of flowing air. Muffler is placed in the transparent housing. This allows the visual control of breathing air purity. The adjustment is obtained by changing the settings of the knob [4] of the valve [3]. Helmet breathing air hose put on the tip of the muffler housing and tighten with clamp. The system is constructed in such way, that it is not possible to completely shut off the flow of breathing air. At the pressure specified below, and closed valve, the NOVA RS passes the minimum required amount of air.

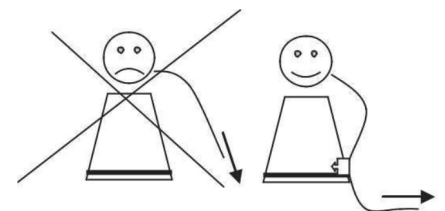
# PANORAMIC HELMET

## REGULATION SYSTEM

### TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE
Required min intake air flow	from 150 to 165 dm <sup>3</sup> /min
Power supply	Breathing compressed air network with pressure 7 bar with pressure control (pressure reducer) to the 6.5 bar
NOVA RS air volume range	150 - 165 dm <sup>3</sup> /min to 280 dm <sup>3</sup> / min (10 ± dm <sup>3</sup> /min)
Internal diameter of breathing air supply line	not less than 10 mm
NOVA RS weight	0.35 kg

- Supply pressure 6.5 bar [for 10 mb supply hose]
- Supply pressure 7.0 bar [for 50 mb air supply hose]



### WAY OF USING

Fix the hose delivering the breathing air to the end of instant connection NOVA RS. Put the breathing hose of helmet on the end part going out of the system, tighten hose clamp. Fix the instant connection to regulation system. At the moment of fixing the instant connection the opening takes place. Set on the reducer of filters set - from which we deliver the treated breathing air- the pressure should be at the level described above. Regulate by the knob the amount of air delivered to helmet. By pressure of compressed air described above, even with closed regulation system valve, we deliver required amount of air (165 dm<sup>3</sup>/min +/- 10 dm<sup>3</sup>/min). After achieving the required flow, movable element goes into the frame of indicator, vanishing from seeing field of the window. Lack of this element in the seeing filed informs the user about delivering inside the helmet the required amount of breath air. Every time the appearing of movable element of the indicator in the seeing field means lack of required amount of air delivered to helmet. Then one should increase the flow by screwing out the knob of the Regulation System NOVA RS. If this does not increase the flow of air, one should stop the work (!!!) and check the source of compressed air, filters, hoses and silencers. In case of damage, stopping the source of compressed air, filters, hoses or silencers one should before working again remove the damages, eventually give new ones. With need and increase of effort of work increase amount of flowing air. In case of break in breath air flow leave the working post. After finishing the work, blow the regulating system with compressed air, check the tightness of connections, and the presence of contaminants on the silencer and its housing. In the case of pollution on muffler, check the condition of the air supply. In the case of clogged muffler replace it with a new one. Besides to regulating the amount of air, a very important role of NOVA RS, is to move the burden of unintended effects of forces applied to the hose, to the body of operator via a lap belt (part of the NOVA RS), and not directly on the helmet located on the human head [for example as a result of engagement, dragging the hose].

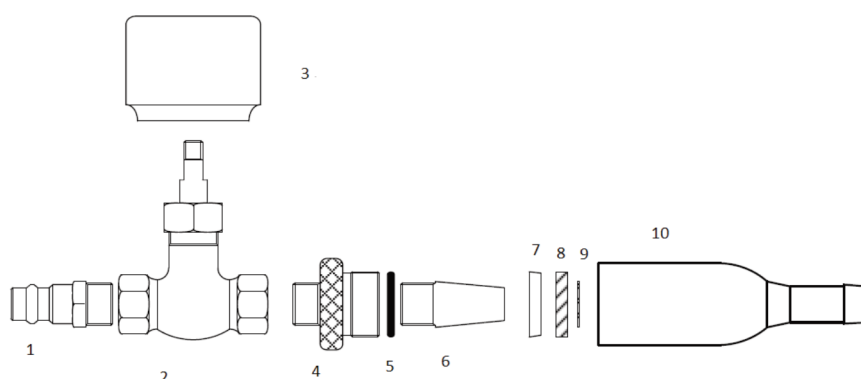
# PANORAMIC HELMET

## REGULATION SYSTEM



### CAUTION

Adjust the pressure value at the reducer after connecting the hoses and the air conditioner (opening the airflow).



### LIST OF THE NOVA RS COMPONENTS

L.P.	PART	ITEM NO.
x	Instant connection of the above system	52000002
1	Inlet Connector	52000003
2	Valve G 1/4	52000004
3	Knob	52000005
4	Threaded link	52000006
5	Insertion filtering fi 16x2	52000007
6	Silencer-sinter of the Regulation System	52000008
7	Wire mesh limiter fi 19 mm	52000009
8	Silencer fabric	52000010
9	Wire mesh limiter fi 14 mm	52000011
10	Silencer housing	52000012
11	Binding NOVA RS	52000013
12	Hip belt of system NOVA RS	52000014
13	NORMA tapa 8-16	52000015
14	NORMA tapa 12-16	52000016
15	Regulation System NOVA RS	52000001



# PANORAMIC HELMET

## REGULATION SYSTEM

### GUARANTEE TERMS

1. Guarantee for good functioning of Regulation system NOVA RS is given for the period of 12 months, counting since the purchase date.
2. Eventual defects or damages (not connected with the normal wear during helmet exploitation) revealed during guarantee period will be removed without fee by the producer during 30 days from the raising the complaint. For date of raising the complaint is taken moment of delivery of product with defect to producer.
3. Guarantee does not concern damages created as a result of improper or not consistent with the instruction of product use.
4. Guarantee does not concern changeable elements- that wear during normal exploitation:
  - A.** Seal
  - B.** Quick Connect
  - C.** Efficiency measures in the event supply air change
  - D.** Damping of the control system
5. The producer should be notified about eventual defect in writing giving date of production and date of purchase and manufacturing number of product.
6. The period of guarantee is lengthened by the period of duration of repair or waiting for repair.
7. Guarantee card is not valid without due - placed at the reverse page - seals and signatures.

# PANORAMIC HELMET

## RISK ANALYSIS

### RISK FOR EXPECTED USE CONDITIONS

Breathing apparatus equipped with a helmet designed for use in abrasive blasting EN 14594:2018

RISK	MEASURES	DESCRIPTION	VALUE
Allergies, skin irritation, carcinogenicity or other harmful effects of clothing materials.	Materials that come into direct contact with the user's skin or that may affect the quality of the breathing air do not cause skin irritation or any other adverse effects to health.	EN 14594 section 5.5	Small
Impact of materials on breathing air quality.	Materials that may affect the quality of the breathing air do not cause skin irritation or any other adverse effects to health.	EN 14594, section 5.5	Small
Sharp or rough edges of clothing cause irritation.	The apparatus (helmet) does not have any sharp or rough edges that cause irritation. If a rough, sharp patch is found on the helmet due to wear, the user should leave the workstation and replace the helmet with a new helmet that offers full protective performance for abrasive blasting (relevant requirements are included in the user manual for the product).	EN 14594 section 5.5	Negligible
Noise reaching the user's ears	Suitable measures have been used to ensure that the level of noise caused by the supply of breathing air that reaches the user's ear is lower than 80 dB(A). Ear plugs are provided with each apparatus (helmet) for additional hearing protection. The risk increases if the ear plugs are not used. The helmet with hearing protection has integrated internal noise protection earmuffs.	EN 14594 section 5.17	Medium
The shell of the apparatus (helmet) or apron is worn, cracked, torn or punctured.	The strength of the apparatus (helmet) has been tested in terms of wear resistance, seam strength and material breaking strength. The apparatus meets the requirements of the standard. If any of the above-mentioned types of damage are found on the helmet or on the protective apron, the apparatus should be discarded and replaced with a new apparatus that offers full protective performance for abrasive blasting (relevant requirements are included in the user manual for the product).	EN 14594 section 5.23 section 5.17 section 5.18	High
Flammability: Contact with flame and high temperature.	All components of the apparatus meet the flammability requirements of the standard. The apparatus is not designed for use in environments with fire hazards.	EN 14594 section 5.10	Negligible
Eye or face injury if the visor glass breaks.	The visor glass meets the impact resistance requirements in accordance with section 7.2.2 of PN-EN 166.	EN 14594 section 5.17	Medium
No supply of breathing air to the helmet.	Connections of components related to air supply meet the requirements of the standard. Load-bearing components (belt) meet the requirements of the standard. Inside the apparatus (helmet), there is a breathing air flow indicator to warn the user when there is no air supply. The lines that supply breathing air and the breathing hose meet the requirements of the standard. The valve supplying the breathing air and the air conditioning unit meet the requirements of the standard. Since the apparatus (as self-contained breathing apparatus) is designed for use in environments with air unsuitable for breathing and not in environments with toxic fumes and gases, the user can leave the workstation after finding that the air supply has stopped.	EN 14594  section 5.7 section 5.8 section 5.12 section 5.22 section 5.13 section 5.14 section 5.15 section 5.21	Medium

# PANORAMIC HELMET

## RISK ANALYSIS

RISK	MEASURES	DESCRIPTION	CATEGORY
Carbon dioxide content in breathing air.	At the rated breathing air flow rate into the helmet, the CO <sub>2</sub> content is lower than 1.0% (by volume). If there is no air supply, the user should leave the workstation.	EN 14594 section 5.20	High
Working in a damaged helmet - leaks	At the rated breathing air flow rate into the helmet, the helmet should provide protective performance despite the leaks. The product meets the requirements of the standard concerning internal leaks. If there is no air supply, the user should leave the workstation.	EN 14594 section 518	Medium
Work in low and high temperatures.	Provision in the manual indicating that the apparatus should be used in the ambient temperature range from minus 10°C to plus 35°C. An air conditioning unit can be used to improve user comfort.	User manual	Negligible
Supply of breathing air with incorrect supply pressure.	Information about breathing air supply pressure included in the user manual. The manufacturer does not have any control over the user's behaviour.	User manual	High
Supply of air unsuitable for breathing.	Information about breathing air supply parameters included in the user manual. The manufacturer does not have any control over the user's behaviour.	User manual	High
Using oxygenenriched air.	Information about oxygen-enriched air included in the user manual. Oxygen-enriched air should not be supplied for breathing under any circumstances. Health and safety hazard. The manufacturer does not have any control over the user's behaviour.	User manual	Very High
Accident at work due to the limited field of view of the helmet user.	Provision in the manual indicating that the employee working in the apparatus (helmet) should be constantly observed by another employee to provide assistance when necessary. The manufacturer does not have any control over the user's behaviour.	User manual	High
Work in a faulty apparatus (helmet).	Provision in the user manual requiring a periodic inspection of the apparatus by the manufacturer after 18 months from the date of production. The manufacturer does not have any control over the user's behaviour.	User manual	High

### RISK FOR THE USE OF THE FAULTY PRODUCT

RISK	MEASURES	DESCRIPTION	CATEGORY
Placement of a faulty product on the market by the manufacturer.	100% quality control of the apparatus, both at the intermediate and final stage. Minimal risk. Novablast Helmets have a certified Quality Management System conforming to ISO 9001:2015.	ISO 9001	Small
Recalling the faulty product from the market.	Every apparatus (helmets) manufactured by Novablast has a serial number to enable product identification and full traceability.	ISO 9001	Small

# PANORAMIC HELMET

## LED LAMP



### CAUTION

Before using or maintaining this device, make sure to read and understand all safety information in this user manual.

### TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE
Light source	1 x LED Cree XM-L2 emitter, 13° lens
Brightness	approx. 500 lm
LED life	approx. 20.000h
Power supply	3.7 V DC
Battery pack capacity	6000 mAh = approx. 6h of continuous operation
Material	Aluminium - Plastic - Rubber

### INTENDED USE

The LED lamp is designed for use during abrasive blasting in chambers and outdoors. It lights up the working area for better working comfort and service quality. It reduces abrasive, compressed air and utility consumption for better and faster service. It is integrated with the safety helmet. The light source is located above the visor, and the battery pack is placed in a pocket sewn into the safety apron so that the weight of the battery rests on the worker's body. The LED technology used in the lamp considerably extends the life of the light source and improves its resistance to shocks and impacts.



### CAUTION

- The lamp can only work with the dedicated battery pack.
- Do not look directly at the light source.
- Do not submerge the lamp in water.
- Do not use any optical components within the light cone to focus the light beams (e.g. magnifying glass, etc.).
- Do not expose the battery pack to direct sunlight.
- Always follow the manual.
- Due to the system used to cool the light source, the breathing air delivered to the supplied-air helmet must be CLEAN (filtered). Do not supply helmets with air directly from the compressor without suitable breathing air treatment filters. See user manual for the Supplied-Air Respirator System Helmet).

# PANORAMIC HELMET

## LED LAMP

### USE INSTRUCTIONS

1. Check if the rubber shield with the protective lens is correctly installed before each use.
2. Pull the power cord of the lamp through the hole in the pocket of the safety apron.
3. Connect the lamp to the battery pack using the connector.
4. Press the ON/OFF button on the pack to switch the lamp on.
5. When the pack is discharged, connect the assembly to the TS-1012C or APC 300 charger.

### CONNECTING BATTERY PACK TO CHARGERS

#### TS-1012C CHARGER

1. Connect the connector of the charger cable to the battery pack.
2. Press the ON/OFF button until the LED on the charger lights up (in green).
3. After making sure that the pack has been correctly connected to the charger, plug the charger into a 100–240 V AC network (the LED will turn red to indicate that charging has started).
4. Battery charging takes up to 3.5h. After it is charged, the LED will turn from red to green.
5. Unplug the charger from the network. Press the ON/OFF button on the battery pack and wait until the LED goes off. Disconnect the charger from the battery pack.
6. The pack is now ready to be used.

#### APC 300 CHARGER

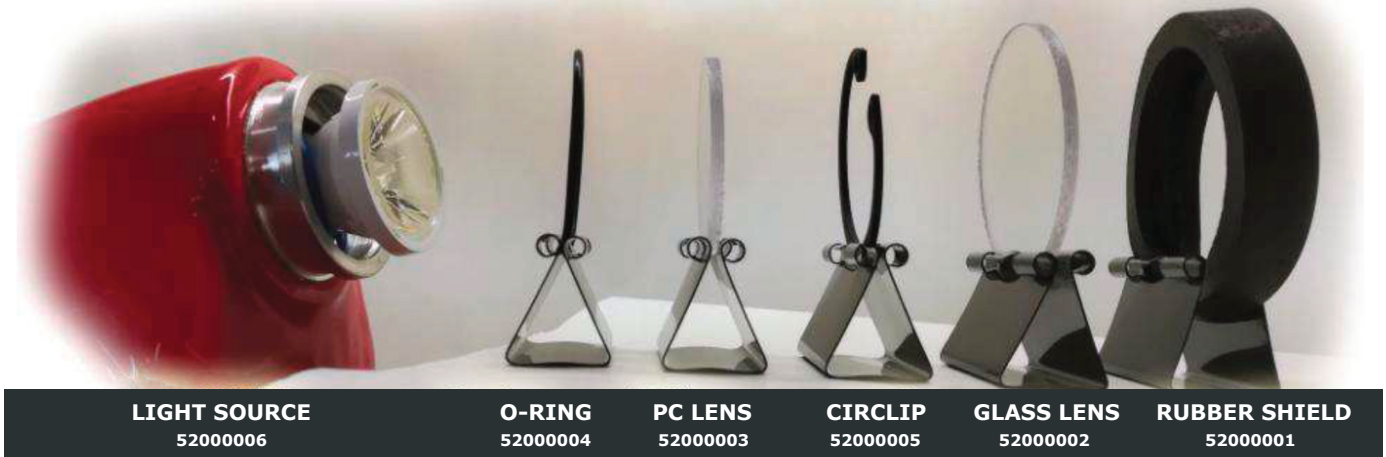
1. Connect the connector of the charger cable to the battery pack.
2. Press the ON/OFF button until the LED on the charger lights up (in red).
3. After making sure that the pack has been correctly connected to the charger, plug the charger into a 220–240 V AC network (charging will start).
4. Battery charging takes up to 6h.

After charging the pack, unplug the charger from the network (the red LED on the charger ONLY indicates that the battery pack has been correctly connected). Press the ON/OFF button on the battery pack. Disconnect the charger from the battery pack. The pack is now ready to be used.

1. Cloudiness of the lens does not significantly reduce brightness, but it should be replaced after up to 4 hours of operation.
2. After finishing work, switch the lamp off and disconnect it from the battery pack.

# PANORAMIC HELMET

## LED LAMP



### MAINTENANCE

Lamp enclosure components can become cloudy (lens) or damaged (rubber shield) during use, and they should be regularly replaced with new parts when their condition noticeably deteriorates so as to enable correct lamp operation.

### REPLACEABLE PARTS

ITEM NO.	DESCRIPTION
-	Aluminium housing
52000001	Rubber shield
52000002	Ø40 glass lens
52000003	2 mm Ø32 polycarbonate lens
52000004	30 x 1.5 O-ring
52000005	SB-32/CFH-32 ring (circlip)
52000006	Light source
-	2.5 terminal strip
-	SP1310/P2-6 WT connector



FIGURE 1



FIGURE 2

### Replacing the protective lens

1. Remove the rubber shield from the lamp including the lens.
2. Change the protective lens (*Figure 1*).
3. Fit the replaced lens and the rubber shield onto the lamp (*Figure 2*).

# PANORAMIC HELMET

## LED LAMP

### BATTERY PACK

The battery pack consists of high-quality 3.7-V 3000-mAh Li-ion cells. It has an integrated ON/OFF switch and a power IN/OUT socket. When the pack is discharged, connect the assembly to the charger. Leave the pack on to start charging. See manual: Use instructions. Depending on the remaining capacity of the battery, it should be charged for up to 3.5 h (TS-1012C charger); it should be charged for up to 6h (APC 300 charger).



#### CAUTION

Do not expose to direct sunlight and high temperature. This may cause explosion, impair the properties of the cells or damage the pack!

### AFTER SALES SERVICE

If you find that the product is faulty after purchasing it, contact the seller. Follow the instructions in the enclosed user manual when using the product. Complaints will not be admitted if you alter the product or if you fail to comply with the instructions in this user manual.

### CHARGERS

TS-1012C	VALUE
Power supply	100-240 V AC 50-60 Hz
Output current	2000 mA
Output voltage	4.2 V DC
Operating conditions	Temperature -30 °C to 60 °C
Dimensions (LxWxH)	75 x 42 x 29 mm

APC 300	VALUE
Power supply	220-240 V AC 50-60 Hz
Output current	300 mA
Output voltage	4.8 V DC
Operating conditions	Temperature -30 °C to 60 °C
Dimensions (LxWxH)	48 x 62 x 31 mm

# PANORAMIC HELMET

## LED LAMP

### WARRANTY

The Warranty does not cover:

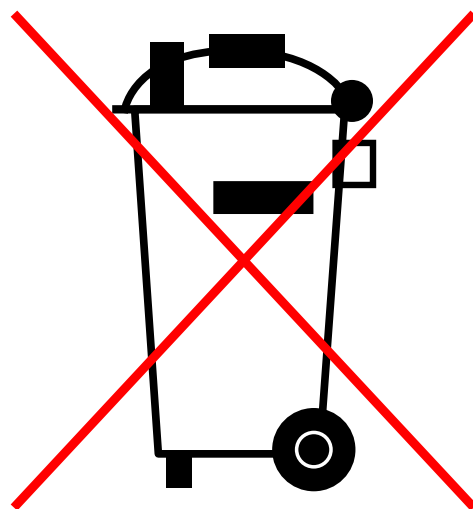
- Natural wear and tear of active product components during normal use.
- Routine maintenance of the product (e.g. cleaning, replacement of wear parts during normal use, etc.).
- Faults caused by external factors (e.g. weather conditions, unsuitable use, etc.).
- Mechanical damage caused by falls, impacts, etc.
- Damage caused by incorrect handling of the product, using unsuitable accessories or tools, etc.
- The warranty does not cover the light sources. The light source is only covered by a 30-day warranty.

The owner of the product is responsible for mechanical damage of the product caused by incorrect protection during transport.

The manufacturer reserves the right to make changes in the user manual, and it is not liable for printing errors.

### WASTE DISPOSAL

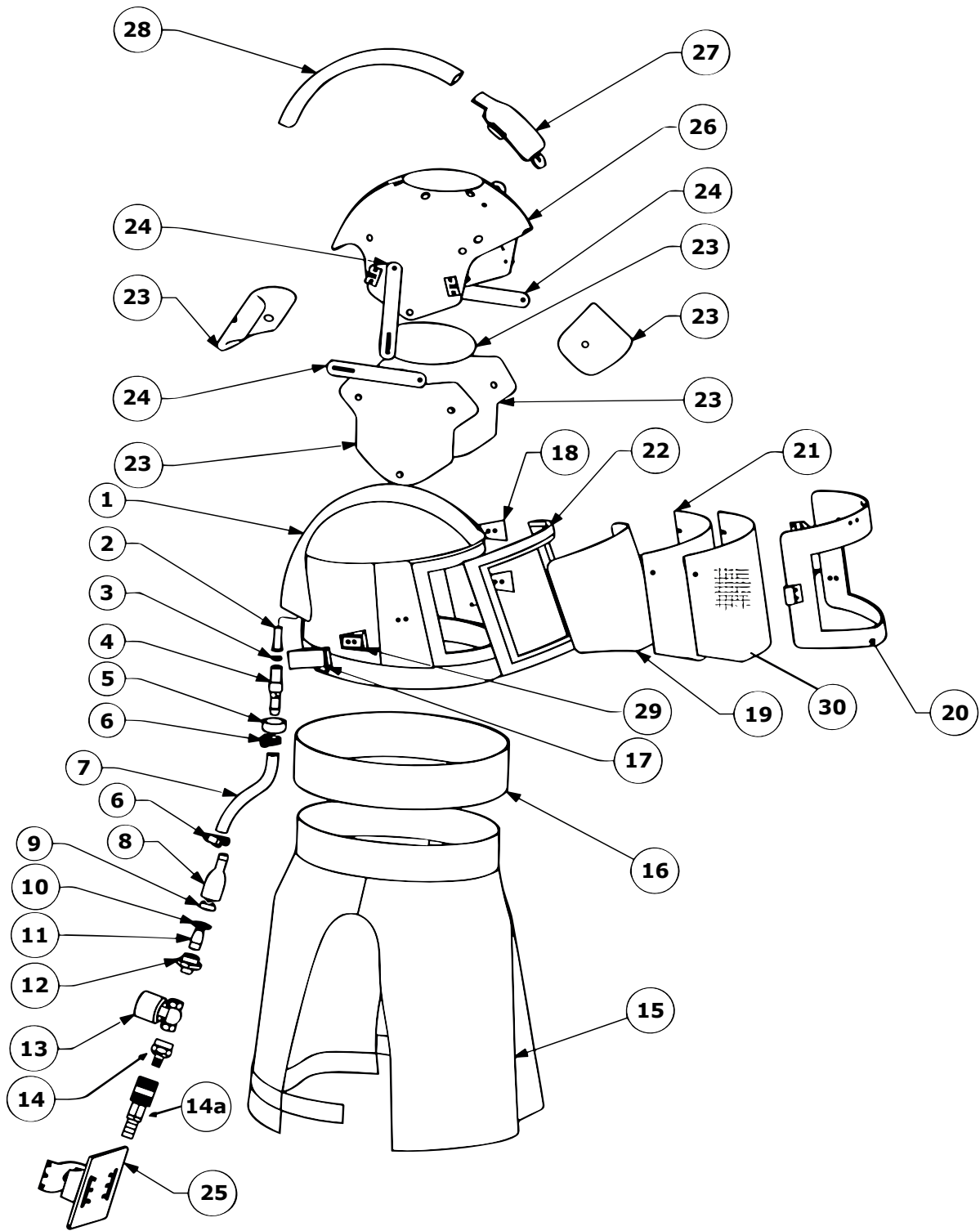
1. Do not put waste or unnecessary electrical and electronic equipment in a waste bin. When you purchase new electrical or electronic equipment at a store, you can leave e-scrap at the seller's if the type and quantity of the purchased equipment correspond to the type and quantity of discarded equipment.
2. The sign of the crossed-out wheellie bin indicates that the device must not be put in the trash but should be transferred to a collecting point for electrical and electronic equipment.
3. Segregate e-waste by putting it in designated containers.
4. By correctly disposing of the device, you contribute to the protection of the environment and health. Incorrect disposal poses a threat to the environment and health.
5. For more information on recycling, contact the city office or sanitation department.





# PANORAMIC HELMET

## EXPLODED VIEW DRAWING



# PANORAMIC HELMET

## PARTS LIST

#	ITEM NO.	PART
2	52000040	Helmet noise silencer for STND+PAN
4	52000029	Air inlet plug coupling for STND+PAN
5	52000042	Rubber protection for inlet for STND+PAN
6	52000043	Clamp for air hose 8-16mm for STND+PAN
7	52000044	Breath air hose (1MTR) for STND+PAN
8	52000045	Silencer casing for STND+PAN
10	52000047	O-RING for silencer housing 16x2mm for STND+PAN
11	52000041	Regulator noise silencer for STND+PAN
13	52000046	Regulator valve ¼ with knob for STND+PAN
14	52000048	Inlet coupling ¼ for STND+PAN
15	52000012	Changeable Apron for STND+PAN
16	52000013	Rubber tape for apron for STND+PAN
17	52000027	Visor frame snap fastener for STND+PAN
18	52000024	Rubber pad for frame hinge for PAN helmet
19	52000039	Panoramic Glass for PAN helmet
20	52000020	Window frame complete for PAN helmet
21	52000022	Viewfinder protective foil 50PCS for PAN helmet
22	52000023	Profiled window seal for PAN helmet
23	52000049	Inner padding KIT for STND+PAN
24	52000010	Suspension strap for STND+PAN
24	52000011	Pressure Belt for STND+PAN
25	52000051	Mounting for regulator for STND+PAN
26	52000014	Shell for inner liner for STND+PAN
27	52000052	AIRFLOW INDICATOR for STND+PAN
28	52000053	INDICATOR air hose for STND+PAN
<b>OTHER PARTS</b>		
29	52000050	Elastic element for clasp for STND+PAN
30	52000021	Window mesh for PAN helmet
32	52000055	Inner padding KIT for HP for STND+PAN
33	52000054	Protective cap for STND+PAN
34	52000031	Protective ear shell (1pcs) for STND+PAN
35	52000033	Regulation system Res-Urg for STND+PAN
36	52000032	Hip belt for Res-Urg system for STND+PAN
37	52000056	Control knob for regulator for STND+PAN