OWNER'S MANUAL

ASTRO SANDBLAST HELMET

IMPORTANT WARNING FOR SAFER BLAST CLEANING

1. Use protective equipment: Abrasive-resistant clothing, safety shoes, leather gloves, ear protection, CE-approved air-fed helmet. Air for helmet must be supplied by a breathing air compressor or through a helmet air filter.
2. Check for possible silicosis hazards. Avoid dust.
3. Do not blast with damaged or worn equipment.
4. Point nozzle only at area being cleaned.
5. Use only proper dry and well-screened abrasives specifically intended for blasting.
6. Keep unprotected workers out of the blast area.
7. Before blasting:
   - Check fittings and hose for wear.
   - Safety-wire couplings together.
   - Check helmet filters and air supply.
   - Check pop-up valve for alignment.
   - Test remote controls.
   - Make sure blast machine is adequately grounded.
8. Do not weld on blast machine, this voids approval.
9. Do not substitute Airblast parts or modified equipment in any way.

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CE

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INTRODUCTION

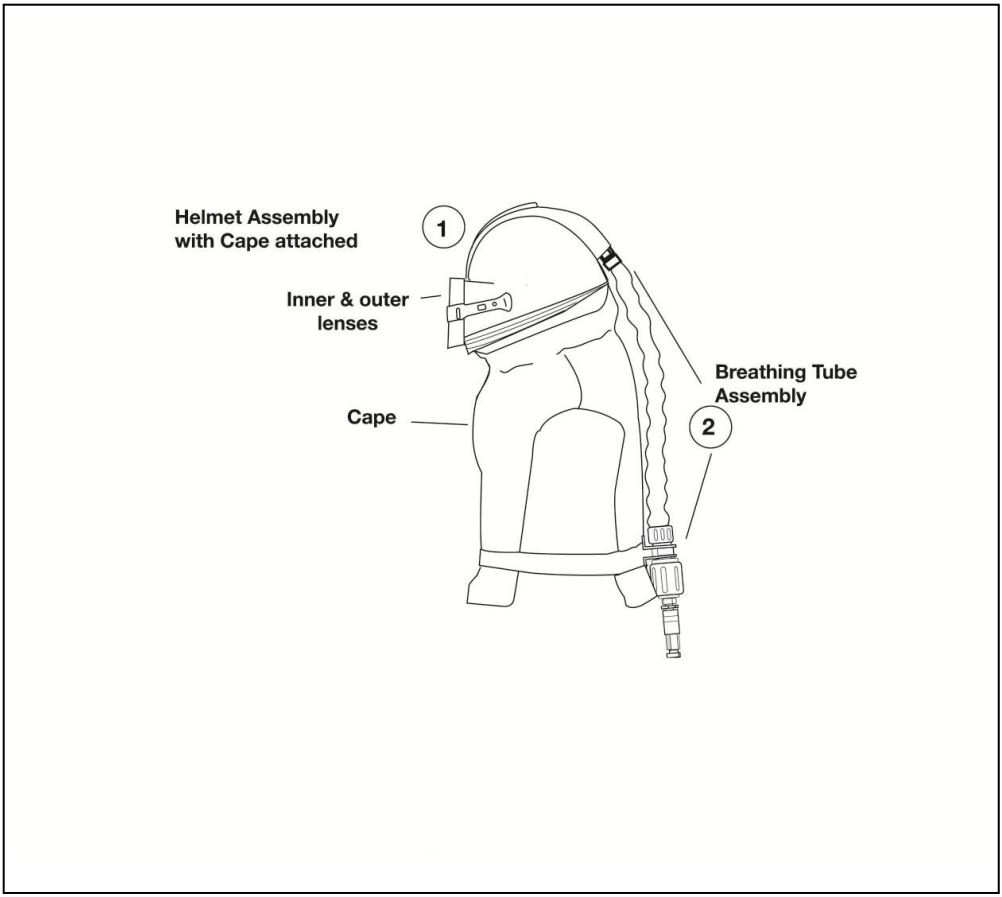
The ASTRO COMPRESSED AIRLINE BREATHING HELMET EN271 is specifically designed for use during Abrasive Blasting.
The ASTRO has been designed for use in atmospheres NOT IMMEDIATELY DANGEROUS TO LIFE OR HEALTH, and from which a user can escape without the aid of the breathing helmet, or that do not exceed concentrations allowed by Government regulations and recommendations.

The ASTRO is tested and approved to EN 271: 1995 to provide respiratory protection in abrasive blasting applications and is CE approved.
The cape is designed to protect the wearer's upper body from rebounding abrasive.
The ASTRO provides an assigned Protection Factor at APF *1000.*
Due to the high noise levels during abrasive blasting hearing protection must always be worn.

COMPRESSED AIRLINE BREATHING HELMET COMPONENT CONCEPT

The ASTRO COMPRESSED AIRLINE BREATHING HELMET consists of two main components: HELMET ASSEMBLY and BREATHING TUBE ASSEMBLY illustrated in Fig. 1.1. All two components must be present and properly assembled to constitute a complete EN271 approved Compressed Airline Breathing Helmet.

Fig. 1.1



! WARNING !

FAILURE TO USE APPROVED ASTRO PARTS and components voids the approval of the entire helmet assembly

! WARNING !

Do not use this helmet until you have been trained in the helmet use, maintenance and limitations by a qualified individual (appointed by your employer) who has extensive knowledge of the ASTRO.

Before using this helmet ensure your employer has determined that airborne contaminant concentrations do not exceed those allowed by Government regulations and recommendations for a compressed air line breathing helmet. It is required that the employer measures and monitors airborne contaminant levels in the work area. The ASTRO is not designed for use in flammable atmospheres.

DO NOT WEAR this helmet if any of the following conditions exist:

- Atmosphere is immediately dangerous to your life or health
- You CAN NOT escape without the aid of the helmet
- Atmosphere contains less than 19.5% oxygen
- Work area is poorly ventilated
- Contaminants are in excess of regulations or recommendations
- Radiation exists in the work area, or materials are Radioactive

Do not modify or alter this helmet. Usa only approved ASTRO components and replacement parts. The use of non approved parts voids the EN 271 approval of the entire helmet assembly.

Inspect all components of the helmet daily for signs of damage or wear and tear that may reduce the level of protection originally provided.

Do not use abrasives containing silica, lead, arsenic or sharp glass particles - use of abrasives containing these elements could result in serious injury or death.

DO NOT wear this helmet until you have passed a complete physical examination including a lung X-ray conducted by qualified medical personnel.

Improper use of this helmet may cause injury or death. Improper use may also cause life threatening delayed lung diseases such as silicosis, pneumoconiosis or asbestosis.

This helmet, when properly fitted and used, significantly reduces but does not completely eliminate the breathing of contaminates by the helmet wearer.

BE CERTAIN your employer has determined that the breathing air source provides at least EN 12021 breathable air. The helmet must be supplied with clean filtered breathing air at all times.

DO NOT connect the helmet's air supply hoge to nitrogen, toxic gases, inert gases, oxygen, oxygen enriched or ether unbreathable non EN 12021 air sources. Check the air source before using the helmet. This helmet is not designed for use with mobile air supply systems i.e. cylinders. Failure to connect the supply hoge to the proper air source could result in serieus injury or death.

DO NOT use this helmet in poorly ventilated areas or confined spaces.
Ensure the area is weil ventilated and that the contaminant concentrations are below these recommended tor this helmet. Follow all procedures for confined space entry, operation and exit as defined in applicable regulations and standards.

LEAVE WORK AREA IMMEDIATELY IF:

- Any helmet components become damaged
- Airflow stops or slows down (as shown in Figs 2.1 and 2.2) breathing becomes difficult
- You become dizzy, nauseous, too hot, too cold or ill
- Vision is impaired

DO NOT wear this helmet if the ambient usage temperature is below -10°C or above +60°C. Moisture content of breathable air should be controlled when the helmet is to be used in temperatures below 4°C to avoid freezing the helmet.

OPERATION

AIR QUALITY

This helmet must be supplied with clean breathable air, to EN 12021 or better, at all times. The ASTRO does not purify air or filter contaminants. Breathable air must be supplied to the point of attachment of the approved Airblast air supply hose.
Supplied breathing air must **at *least*** meet the requirements for EN 12021.

AIR SOURCE

Locate the air source in a clean air environment, always use a filter on the inlet of your air source. Do not park vehicles beside your air inlet as this will cause carbon monoxide to be drawn into your air supply.
Use suitable aftercoolers / dryers with filters and **carbon monoxide alarms** to assure clean breathable air is supplied at all times.

The air should be regularly sampled to ensure that it meets EN 12021 requirements.

AIR SUPPLY HOSE AND FITTINGS

Approved air supply hoses must be used between the point of attachment and the helmet breathing air connection at the wearer's belt. Quick disconnect fittings must be used to connect the hose lengths together. The hose sections must be within the approved length and the amount of sections must be within the number specified in the Breathing Air Pressure Table (see below). The Breathing Air Supply Hose has a working pressure of 7 bar.

BREATHING AIR PRESSURE

The air pressure must be continually monitored at the point of attachment while the air is flowing to the helmet. Air pressure must be read from a reliable pressure gauge whilst the helmet has air flowing through it.

! WARNING ! Failure to supply the helmet with the minimum required pressure at the point of attachment for the length of air supply hose used could result in contaminants, being inhaled as the pressure in the helmet may become negative due to peak inhalation flow when working at very high work rates.

BREATHING AIR PRESSURE TABLE

This table lists air pressure ranges needed to provide the ASTRO with the volume of air that falls within the required range of 170-250 ltr/min according to the EN 271 approval.

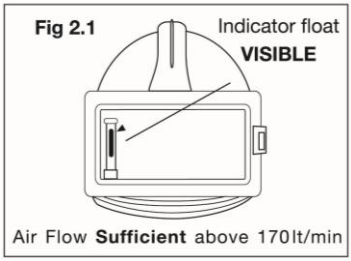
Make sure you understand the table below, before using the helmet.

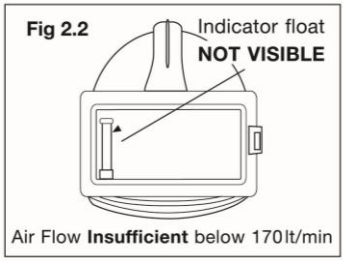
1. Air Source	2. Breathing Tube Assembly	3. Air Supply Hose	4. Supply Hose Length (mtr.)	5. Max Number of Sections	6. Pressure Range (bar)
Portable or Stationary Compressor	Flow Control Valve	2527000	10 20 30 40 50 60	1 1 2 2 3 3	1.30 1.45 1.50 1.65 1.75 1.90

Set the air pressure at the point of attachment to the pressure setting specified in column 6 for your breathing tube assembly, hose length and amount of hose sections. Make sure the air is flowing through your helmet and the flow control valve is in the MIN (closed) position as in Fig. 3.2 Page 7 when setting the pressure.

! WARNING ! DO NOT SET THE AIR PRESSURE WITH THE FLOW CONTROL VALVE IN THE **MAX.** POSITION **(OPEN)**, AS THIS INCREASES NOISE LEVELS.
! WARNING ! ALWAYS WEAR EARPLUGS WHEN WEARING THIS HELMET.

LOW FLOW INDICATOR





! WARNING ! Do not wear the helmet if the indicator float is not visible as airflow is below 170 ltrs./min. (Fig. 2.2).

AIR FLOW CONTROL VALVE

Air flowing into the helmet is controlled by using the Flow Control Valve as shown below.

Fig 3.1

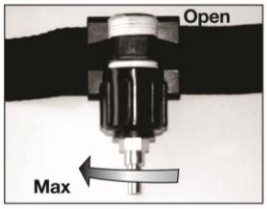
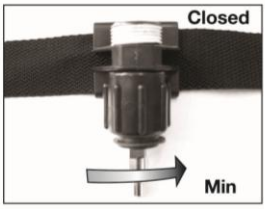


Fig. 3.2

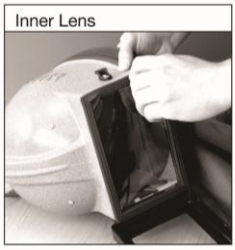


Note: The low flow indicator should be in position of Fig 2.1 when the Flow Control Valve is closed as in Fig 3.2 and pressures are set in accordance with the table on page 6.

LENSES

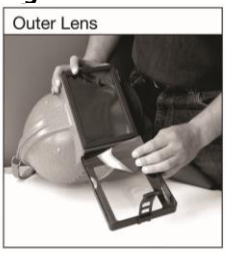
Always make sure that an approved ASTRO inner lens is securely fitted into the window frame gasket. Proceed fitting lenses as Fig 4.1, Fig 4.2 and Fig. 4.3.

Fig 4.1



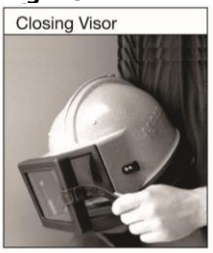
Place one end into the gasket first, then slowly roll the gasket over the sides of the lens, working towards the other end

Fig 4.2



Place the lens into the visor and push past the locating ribs.

Fig 4.3



Fold the visor across the front of the helmet and lock the strap tightly over the side cleat.

! WARNING ! Do not use this helmet without the inner lens in place**.**

SETTING UP

Fig. 5.1

First screw the breating hose onto the helmet.

Fig. 5.2

Screw the loose running nut onto the Flow Control Valve.

Fig 5.3

Take the quick disconnect fitting on the Air Supply Hose and push onto the tail of the Flow Control Valve.

Fig 5.4

Connect the Air Supply Hose Tail to the Airblast helmet air filter supplying EN 12021 grade air.

HEAD HARNESS

To adjust the head harness first unclip the locating pegs, then slide the band in or out to the desired size. Note: slide inwards to reduce the size (more suitable for smaller heads) as shown in Fig 6.1. Once the desired size is obtained, clip the locating pegs back together.

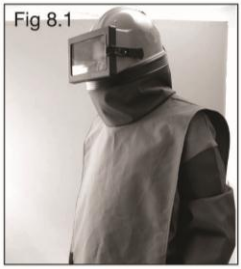
Fig 6.1

PUTTING THE HELMET ON

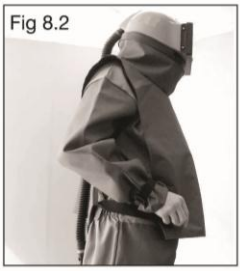
Hold the helmet in front of you, holding the inner bib collar open. Lift the helmet and place it on your head making sure the head harness fits securely.

Fig 7.1

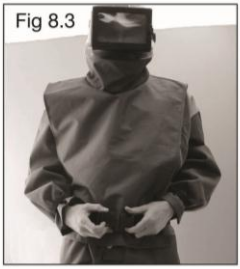
FITTING THE CAPE AND BELT



Once the helmet is fitted comfortably on your head, straighten the cape down at the front and the back.



Screw the loose running nut onto the Flow Control Valve.



Now bring both buckles together at the front and push them until you hear a click. Pull the tab to tension the belt to your requirements.

ADJUSTING THE AIRFLOW

Now the helmet is fully fitted and the belt tightened, adjust the airflow into the helmet with the Flow Control Valve adjustement barrel (see Fig 3.1 on page 7). Again check the air pressure at the source to make sure it is still in accordance with Table 1.1 on page 6.

Fig 9.1

! WARNING ! Do not adjust the air pressure at the point of attachment after you open the flow control valve to the MAX. position.

DOFFING YOUR HELMET

To remove the helmet, first exit the working area and reverse the above procedures.

! WARNING ! NEVER remove your helmet when working in the working area.

INSPECTION, CLEANING AND STORAGE

The ASTRO Compressed Air line Breathing Helmet has a limited service life, therefore a regular inspection and replacement programme must be conducted. Certain parts such as ranges must be replaced frequently.
Al! components of this helmet assembly should be inspected tor damage or waar and tear betere usa. Replace worn or damaged parts immediately. USE ONLY **APPROVED ASTRO PARTS.** Refer to the parts list tor the correct part numbers.

!WARNING! DO NOT CLEAN RESPIRATOR WITH VOLATILE CHEMICALS.

REMOVING THE CAPE

First remove the cape cover band to reveal the tour press studs. The cape can then easily be removed by undoing the tour press studs.

Fig 10.1

INSPECTING THE HELMET

Having removed the cape, wipe out the inside ot the helmet with a soft cloth and mild detergent.
Check the inside tor cracks in the shell.

Fig 10.2

INNER LENS AND GASKET

Make sure the window frame gasket is securely fitted into the helmet with no cracks or tears in the seal. Check that the inner lens is correctly fitted into the gasket. When necessary replace lenses as in Fig 4.1 and 4.2.

Fig 11.1

BREATHING TUBE ASSEMBLY:
Inspect the breathing tube for cracks, tears or excessive wear. Check that the fittings are secured into the cuffs tightly, not allowing any air leaks.
Replace the hose as soon as any signs of damage or excessive wear become evident. Do not remove the foam that is inside the breathing tube as this is a critical component. **! WARNING !** Air leaks will cause a drop in air flow through the helmet resulting in less protection from contaminants.

AIRBLAST AIR SUPPLY HOSE

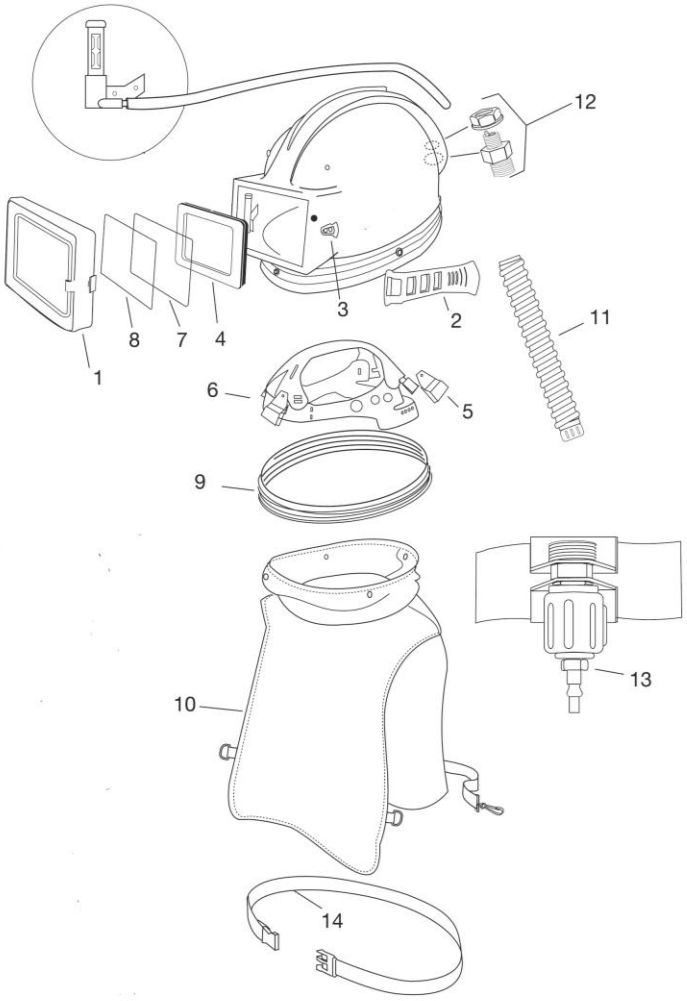
The air supply hoses should be inspected for:

1. Cuts or tears
2. Cracks or signs of perishing
3. Blisters or weak points
4. Abrasive wear
5. Ferrules firmly crimped in place
6. Quick disconnect coupiers do not move in the hose or are not worn, remove any dirt inside couplings with a duster gun.

USE ONLY HOSES APPROVED FOR USE WITH THIS HELMET.

STORAGE
After the helmet components have been cleaned and inspected, place them in a plastic bag or an airtight container. Store all parts away from excessive heat, dust, cold, moisture or harmful chemicals.
After use hang the helmet up by the hand strap, this will help keep the inside of the helmet free of contaminants.

ART.NR.	MODEL	DESCRIPTION
46000	ASTRO - I	**AIR SUPPLIED BLAST HELMET, COMPLETE** incl. helmet assembly and breathing tube assembly. CE-approved.
46001	ASTRO - II	**AIR SUPPLIED BLAST HELMET, COMPLETE** Execution as above, fitted with leather waist length cape.
		SPARE PARTS FOR ASTRO BLAST HELMET:
01) 46003		Visor
02) 46004		Visor strap
03) 46005		Cleat
04) 46006		Gasket seal
05) 46007		Suspension clips (set of 4)
06) 46008		Head suspension
07) 46009		Inner lens (set of 10)
08) 46010		Outer lens (set of 50)
09) 46011		Cape coverband
10) 46012		Cape - nylon
46013		Cape - leather
11) 46014		Breating tube
12) 46015		Air inlet assembly
13) 46016		Flow control valve
14) 46017		Belt and buckle



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