Honeywell

USER MANUAL

EN T8000

SELF CONTAINED OPEN CIRCUIT COMPRESSED AIR BREATHING APPARATUS

INSTRUCTIONS **EN**

P/N 47501358 – A0

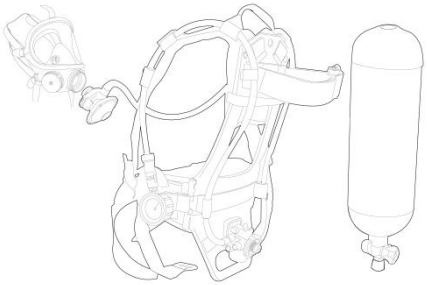


Figure 1

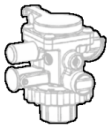


Figure 2

Figure 3

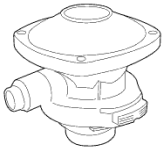


Figure 4

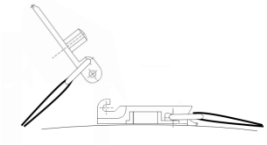


Figure 5

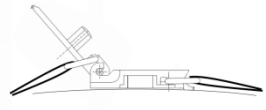


Figure 6

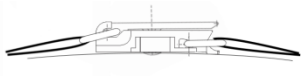


Figure 7

Figure 8a

Figure 8b

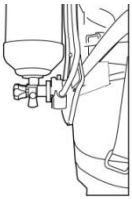


Figure 8c

Figure 8d

Figure 8e

EN

IMPORTANT

THESE INSTRUCTIONS ARE FOR EXPERIENCED PERSONNEL, TRAINED AND FAMILIAR WITH WEARING BREATHING APPARATUS
CE regulations are applied to complete apparatus matching the CE certified configurations by notified bodies that have carried out CE type examinations.
Failure to comply with this procedure immediately invalidates the CE marking.
To find out all the approved configurations, refer to the configuration tables, available on request.
HONEYWELL is continuously endeavouring to improve all its products and the equipment supplied is subject to change without notice. Consequently, the information, illustrations and descriptions provided in this document may not be used as a reason to demand the replacement of equipment.
Being in possession of these instructions does not automatically authorise the holder to use breathing apparatus; only appropriate training will enable safety procedures to be followed.
HONEYWELL accepts no liability if the recommendations contained in this document are not followed.

- in conformity with the council Directive 89/686/EEC the ordinance of the Minister of Economy of 21st, December 2005 (Article 8: Personal Protective Equipments)

- complying with the standard requirements of EN 137: 2006

- complying with the national standards of GB/T 16556-2007, and the fire-control industrial standards of GA124-2013

- **identical to the personal protective equipments which have EC examination types certificate issued by:APAVE SUDEUROPE SAS (Notified Body No 0082) CS60193 13322 MARSEILLE CEDEX 16 – France**

- manufactured under a Quality Control System which has been satisfactorily assessed as meeting the requirements of Article 11 Section B of the same directive, issued by: INSPEC International Limited(Notified Body No 0194) 56 Leslie Hough Way, Salford, Greater Manchester, M6 6AJ, United Kingdom

PROTECTION AND USAGE CATEGORIES

This equipment is designed to protect the user's respiratory tract from toxic gas, dust or aerosols or when the atmosphere is poor in oxygen (less than 17%).
The T8000 is a type2 apparatus as per EN137.

The recommendations in boxes have the following meanings:

IMPORTANT

Failure to follow the instructions in boxes could seriously damage the equipment used and put the user in danger.

NOTE

Failure to follow the instructions in boxes could lead to incorrect use of the equipment and result in damage to the equipment.

Information about use in explosive atmosphere：

The electronic parts used on T8000 comply with below standards,
GB3836.1-2010 Explosive atmospheres-Part 1: Equipment-General requirements;
GB3836.4-2010 Explosive atmospheres-Part 4:Equipment protection by intrinsic safety "i";
GB12476.1-2013 Electrical apparatus for use in presence of combustible dust-Part1: General requirements;
GB12476.1-2010 Electrical apparatus for use in presence of combustible dust-Part4: Equipment protection by intrinsic safety "iD"

Please pay attention to this enclosure opening warning information on the part label before use:

WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

LIMITATIONS OF USE

- Limits for the use of all protective respiratory equipment also depend on the facepiece attached to the equipment.
- Refer to the instructions for using the facepiece and the applicable official safety requirements relating to the exact circumstances of use.
- Please consult the supplier, if you have any doubt as to whether the respirator is suitable for the work at hand.

This apparatus is not suitable for use by immersion in an enclosed space filled with foam.

- The configuration of this apparatus may be different, depending on the usage conditions.

These instructions:

- **Are exclusively for experienced personnel, trained and familiar with wearing breathing apparatus.**
- **Inform the user of the breathing apparatus of only the standard instructions for wearing the apparatus correctly and not for maintaining the apparatus.**
- **Inform the user of the breathing apparatus about the routine cleaning frequency that the user is authorised to perform on the breathing apparatus.**
- **Inform the user of the breathing apparatus about the frequency of routine maintenance that must be carried out by a specialised maintenance workshop.**
- **These instructions for use are not suitable for carrying out maintenance operations.**
- **For maintenance operations and/or for replacing spare parts, it is essential to contact a specialised maintenance workshop, the manufacturer or distributor of the breathing apparatus.**
- **The pictures are non contractual, only for illustration of some operations or components.**

INSTRUCTIONS FOR USE

Storage

- Store the apparatus away from sunlight and dust as recommended in these instructions.

Pre-use checks

- Read all the instructions for using the breathing apparatus and those for the facepiece, and keep both documents.
- Make sure that the apparatus is not damaged.

Instructions for the user

- Read all appropriate instructions in full.
- Be certified capable of wearing breathing apparatus.
- Be experienced, trained and familiar with wearing breathing apparatus.
- Undergo regular training appropriate for the actual conditions of use.
- Refer to current official safety requirements specific to this particular usage.

Instructions about the apparatus

- Verified according to the recommendations specified by HONEYWELL.
- Be accompanied by an inspection form with the date of the previous inspection.

DESCRIPTION OF THE T8000 (Figure 1)

The T8000 is a breathing apparatus able to meet a wide variety of needs for respiratory protection.
The T8000 is composed of:

- The carbon compressed air cylinder
- The backplate with it's harness, two pressure regulators (high pressure reducer and lung demand valve) and pressure gauge with warning device
- The fullface piece

The T8000 is shipped with its storage and carrying box.

Operating principle

Open-circuit self-contained respiratory protection apparatuses work with a compressed-air reserve under high pressure. This apparatus allows users to be supplied with breathing air on demand from the cylinder(s) carried on the back.
The pressure of the compressed air in the cylinder(s) is first reduced to medium pressure by the first stage (high pressure reducer). It then enters the second stage, the demand valve, to arrive in the respiratory mask after pressure has been reduced to a breathable pressure.
The demand valve maintains a slight overpressure in the mask, whatever the breathing rate, avoiding any ingress of outside air.

Backplate and straps

The backplate ensures comfort and stability when carrying the cylinder. Its anatomical shape is open in the centre to reduce perspiration. It has three carrying handles.
Its variable-length locking collar allows it to be used with all cylinder types.
Quick-tightening straps support the pressure gauge.
The backplate and its straps are rot-resistant and self-extinguishing.

Pressure reducer (Figure 2)

- The reducer keeps the medium pressure stable regardless of the residual pressure in the cylinder or cylinders and the respiratory rate.
- It is attached to the backplate and can be used with all cylinder valves, approved by Honeywell.
- The reducer operates from 10 to 300 bar.
- A safety valve opens if the medium pressure exceeds the permitted limit in the event of an operating anomaly.
- This pressure reducer is connected to:
  - A medium pressure hose to the demand valve.
  - A double hose, high pressure to the pressure gauge and medium pressure to the whistle.
- The pressure reducer is set to generate a medium pressure of 7±0.5 bar.

Pressure gauge and whistle (Figure 3)

A dial pressure gauge makes it possible to read the internal pressure of the cylinder.
A powerful whistle, supplied by the medium pressure, warns the wearer when the high pressure falls to 55±5 bar, corresponding to residual operating time of about 10 minutes at an average breathing rate.
The whistle is set automatically regardless of the pressure and sounds continuously till the cylinder(s) is shut or runs out of air.

Demand valve (Figure 4)

The T8000 apparatus is fitted with Zenith demand valve.
The valve is equipped with an Air Klic and easily connected to the mask with the snap-on coupling.
The valve can only be snapped off deliberately with the hand by pressing the Air Klic buttons at the same time.
With Zenith demand valve, a coupling sensor located in the valve automatically stops or starts positive pressure in the mask when the demand valve is snapped off or on.

When the apparatus is worn, the bypass also provides an additional air supply in the respiratory mask. It is also used to flush the circuit of the apparatus after use.
The valve is adjusted to supply static positive pressure of about 3±1 mbar.

Respiratory mask
The mask complies with standard EN136.
Refer to the specific instructions for use for the respiratory mask.

Cylinders
The cylinders used with breathing apparatuses must be made of metal or composite material and contain breathing air in accordance with EN12021.

The compressed-air cylinders used must comply with European Directive 97/23/EC applicable to Pressurised Equipment.

The volume of air carried is calculated on the basis of the capacity and filling pressure of the cylinders, for example:
- one 6.8-litre cylinder at 300 bar contains: 6.8 x 300 = 2,040 L of air

The supply time will depend on the quantity of air carried and the air consumed by the user.
The consumption varies greatly depending on the user and the work done.
The consumption by the wearer is considered to be low, medium or high with a respiratory rate that is:
- Low: 20 L/min.
- Medium: 40 L/min.
- High: 100 L/min.

Theoretical supply time table depending on the cylinder and the work done:

Cylinders	Filling pressure	Volume of air	Supply time depending on work		
			low 20 L/min	medium 40 L/min	high 100 L/min
6.8 litres	**300 bar**	2,040 litres	100 min	50 min	20 min
9 litres	**300 bar**	2,700 litres	135 min	68 min	27 min

NOTE:
In practice, the actual supply time will be slightly less, particularly at 300 bar, because account must be taken of the air compressibility coefficient (0.9 at 300 bar).

Warning: Use only HONEYWELL cylinders included in the CE configuration certification

USE
Only apparatuses that have been regularly maintained in keeping with requirements may be used.
For safety reasons, during regular inspections, it is recommended to check visually if the cylinders for the apparatus contain enough air.

Operating conditions for the apparatus
-30°C to +60°C

Initial checks
Adjusting the collar for cylinder
- Place the back plate with the inside facing you and the HP/MP reducer facing downwards. The cylinder strap buckle must be at the right of the back plate
- The cylinder strap has one or two colour marks which indicate a pre-adjustment according to different cylinders.

Closing the cylinder locking collar
- Approach the both parts of buckle one to another (Figure 5).
- Place upper part of the buckle into bottom part: metal rod of upper part is placed in the bottom (Figure 6).
- Lock the collar by pivoting upper side to right till click of locking mechanism (Figure 7).

Positioning the hoses
The medium pressure hose must pass over the wearer's right shoulder and the demand valve must be fixed to the valve holder.
The pressure gauge hose must pass over the wearer's left shoulder.
The pressure allows the charge status in the cylinder(s) to be read easily.

Rapid checks before use
Pressure in the compressed air cylinder
Fully open the cylinder valve(s). The pressure gauge must show a pressure of:
- 270 bar minimum with a 300-bar cylinder.

If used with lower air pressures, supply time of the apparatus is reduced.

Circuit leak .

- Disconnect the demand valve from the Air Klic connector of the respiratory mask.
- Close the compressed air cylinder valve(s) and monitor the pressure gauge. The pressure must not fall more than 20 bar in one minute.

Alarm device test

- Open the cylinder valve(s) to put the apparatus under pressure.
- Close the cylinder valve(s) again.
- Slowly vent the circuit by pressing the demand valve bypass button.
- Watch the pressure gauge; the whistle should sound at 55±5 bar.

Putting on the apparatus

- Loosen the backplate straps as much as possible.
- Put the apparatus on your back and pull the ends of the straps until you feel the apparatus hangs comfortably on the shoulders.
- Tighten the backplate belt then the chest strap linking the two straps (if this option is fitted).
- Put the breathing mask in place (see instructions for using the breathing mask). (Figure 8a)
- Check that the breathing mask is sealed (see instructions for using the breathing mask). (Figure 8b)
- Fully open the cylinder valve(s) (Figure 8c)
- Check the pressure in the cylinder(s) again by reading the pressure gauge. (Figure 8d)
- Snap the demand valve onto the Air Klic connector of the respiratory mask (see section on demand valve) (Figure 8e)
- The breathing apparatus is ready for use.

It is strongly recommended that another person is asked to check the demand valve connection by ensuring, and this is vital, that the locking devices (Air Klic) is correctly engaged in the groove on the mask connector.

Use

While working in the apparatus, look at the pressure gauge regularly. The whistle will sound when the breathing air reserve reaches the residual pressure of 55±5 bar. The whistle will sound till all the breathing air is used up.

Leave the place of work when the alarm starts to sound, at the latest. Assuming that breathable air consumption by the user is about 40 L/min, he has no more than about 10 minutes to return to a safe area. This estimate is given for information only; the capacity of the cylinders, place and type of work must be taken into account.

In a difficult or emergency situation (e.g. wounds or breathing difficulties), if the user needs additional breathable air, just press the bypass button on the demand valve cover to increase the flow rate of breathable air arriving in the mask.

After use

- Snap the demand valve off by pressing on both Air Klic buttons at the same time, tipping the head slightly backwards (see section on demand valve).
- Fix the demand valve on its holder.
- Remove the respiratory mask (see instructions for using the mask).
- Shut the cylinder valve.
- Purge the circuit by pressing the demand valve bypass button.
- Detach the backplate belt.
- Loosen the straps by pulling the end of each strap upwards.
- Remove the compressed air breathing apparatus.

Never throw a compressed-air respiratory device to the ground.

ROUTINE MAINTENANCE

Filling the cylinders

The cylinders must be refilled with air in accordance with current regulations.

You may only fill cylinders that:

- Comply with the legislation and also have a compliant cylinder valve. The test date and stamp of the approved organisation must be marked in the cylinder body, and must not have expired.
- Do not have any defect liable to give rise to an incident risk (e.g. defective cylinder valve).
- Do not show any visible signs of humidity (water drops) at the threaded connection.

The humidity content in breathing air is an important consideration for the proper working of respiratory apparatuses. As a result, make sure that:

- The cylinders contain breathing air complying with standard EN12021, which specifies some data under normal conditions of use, that is to say atmospheric pressure and ambient temperature.
- Compressed-air cylinders are never fully emptied.
- If they have been fully emptied by accident, make sure they are absolutely dry. Cylinder stoves are available for that purpose.
- The cylinder valves are shut immediately after use.

As regards the storage and transport of compressed-air cylinders that are no longer connected to a respiratory apparatus, other regulatory requirements are to be applied and followed:

- They must be protected from impacts during transport and storage.
- As far as possible, they must be transported upright (valve uppermost).
- During handling, the cylinders should be carried in both hands if possible.
- Never grasp a cylinder by the valve wheel, but by the body of the valve. This prevents the valve from opening accidentally.
- During transport and handling, the cylinders must not be thrown to the ground suddenly; they must not roll or hit each other.
- Once stored, protect the cylinders from the risk of sliding or being turned over or any change in the storage conditions.

Cylinder valves are exposed elements. A guard cap is not required. However, inspect the valve visually after each use.

Official inspections by approved bodies:
In accordance with the regulations applicable to pressure devices, compressed-air cylinders for respiratory apparatuses are required to undergo inspections by an approved body. The body marks the cylinder with the inspection date and its stamp using a durable marking process.

Cleaning, disinfecting and drying

Cleaning
Any soiled and/or polluted elements of the breathing apparatus are to be cleaned after each use.
Clean them with a sponge and warm water adding a cleaning agent (soapy solution) and rinse with a clean damp sponge.

Check that the cleaning agent chosen does not contain any corrosive components (for example: organic solvents) likely to attack perishable components and that no liquid or dirt enters cavities in the apparatus.

Do not introduce a compressed air jet into the cavities containing fragile components such as diaphragms, springs, valves or seals, so as to not damage them.

Disinfecting
After cleaning, the respiratory mask must be disinfected by immersing it in a bath with a disinfecting agent. If you follow the concentration and application time for the disinfectant stated in the instructions for using masks, there is no reason to be concerned about any adverse effects on the different materials. After disinfecting, rinse immediately with clean water to remove any residues of the disinfectant product.
Drying
After cleaning and disinfecting are completed, dry all the parts of the apparatus at a temperature from +5°C to +50°C. Avoid any form of heat radiation (sunlight, oven or central heating). It is strongly advisable to clean pressure conducting parts (pressure reducer, air pressure reducing system and coupling sensor) with a low-pressure jet of compressed air in order to eliminate any trace of humidity.

When using it in cold conditions, any moisture present in the demand valve can result in the formation of frost inside the valve and consequently affect its operation.
It is essential to remove all traces of moisture inside the demand valve and the medium pressure hose.
The valve must also be dried after cleaning it.

Checks

The operation of the apparatus must be checked every time it is assembled/dismantled or if any spare parts are changed.

Checking or maintenance operations must be carried out by technicians authorised by HONEYWELL, having an inspection bench, special tools and original HONEYWELL parts, as well as the maintenance procedures.
Sealing test

- Refer to the equivalent paragraph in the section 'Quick checks before use'.

Static overpressure test of the demand valve

- Open the cylinder valve, refer to the equivalent paragraph in the section 'Quick checks before use'.
- Connect the demand valve to the inspection bench.
- An overpressure of about 3 mbar must appear in the connected integral mask.

Inspection of the cylinder pressure

- Refer to the equivalent paragraph in the section 'Quick checks before use'.

Alarm device test

- Refer to the equivalent paragraph in the section 'Quick checks before use'.

Storage
After they are cleaned and dried, compressed-air breathing apparatuses may be stored in a suitable cabinets or boxes.
Make sure that the apparatus is placed on the support plate and that the straps are not folded.
Compressed-air breathing apparatuses must be stored in a cool place. The storage area must be dry and free of any emission of gas or fumes. Avoid exposure to direct and significant light or sunlight and keep away from sources of thermal radiation.

The recommended apparatus storage temperature must range from +5°C to +45°C:
For special storage conditions (under outdoor shelters etc.), please contact our technical department.

ACCESSORIES

- POSICHEK3/TESTAIR III electronic inspection bench: On request

SPARE PARTS
The spare parts of the T8000 device are presented in the spare parts price list (price and part number), which is available on request.

SUPPORT AND TRAINING
All HONEYWELL apparatuses are designed to allow maintenance by the users, but that requires a minimum level of skills and the use of appropriate equipment.
Training courses may be organised on the customer's premises or in our own training establishments.
The full programme of training courses for apparatus maintenance is available on request.
HONEYWELL markets an electronic inspection bench to guarantee the quality of the work done.
For more information, please contact the HONEYWELL technical assistance department.

LIMIT OF MANUFACTURER'S GUARANTEE
In accordance with HONEYWELL specifications, checks and maintenance operations must be performed by personnel qualified and authorised by HONEYWELL. Only original inspection benches, special tools and spare parts may be used. The recommendations relating to the frequency of testing and maintenance described in these instructions must be followed.
Only apparatuses from HONEYWELL with their cylinders, valves and masks are covered by the CE configuration certification.
As a result, this guarantee does not cover apparatuses used with components other than those supplied or replaced by HONEYWELL.

FREQUENCY OF MAINTENANCE AND INSPECTION OPERATIONS

All the apparatuses must undergo the following inspections.

COMPONENTS	*Type of work required*	*Before use*	*After use*	*Every six months*	*Every year*
Mask	Clean and disinfect (See mask's instructions for use)		**X**		**X(3)**
Full SCBA	Cleaning		**X**		**X(4)**
	Test on bench		**X(2)**	**X(1)**	**X**
	User function check	**X**	**X**		

COMPONENTS	*Type of work to be done by a specialised maintenance workshop*	*Every year*	*Every 2 years*	*Every 6 years*
Mask	Replace: - inhalation/exhalation valves - seals		**X**	**X(3)**
Demand valve	Demand valve replacement			**X**
Pressure reducer	Pressure reducer replacement			**X**
	Replacement of the high pressure connector seal	**X**		
Compressed air cylinder	Regular inspection and requalification by an approved body	Refer to and follow the national regulations applicable to compressed air reserves		

Cylinder valve	Replace: - seal - closure member	Once every 5 years or more often
	Replace: - Break seal	At least once every 12 months

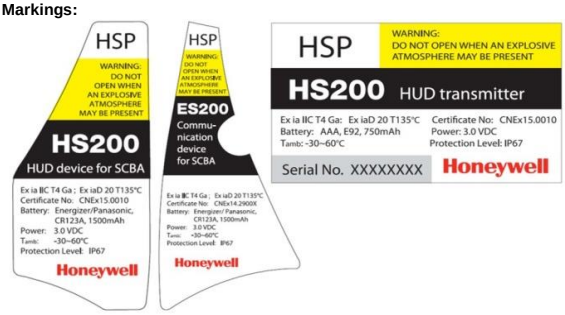
X) Required
1) For frequently-used apparatus
2) After use in aggressive environments or extreme conditions
3) For reserve stocks
4) Not if the apparatus is hermetically packaged

Note: For more information about the composition of kits, see the spare parts price list or contact HONEYWELL.

Inspect the apparatus fully (working and sealing) after each change of spare parts.

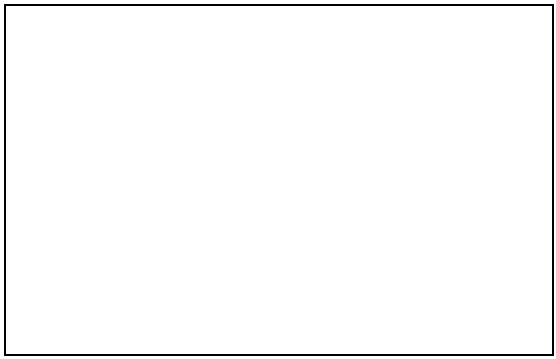
Some parts have screws sealed using red varnish to certify that the parts were fitted at HONEYWELL. The manufacturer is not liable for incorrect operation of any part that no longer bears this seal.

Notes for product labels & Markings:



Notes for PANO Mask with electrical parts:
HSP: Honeywell Safety Products
ES200: Model name of T8000 communication device
HS200: Model name of T8000 HUD device
HS200 HUD transmitter: T8000 HUD transmitter
Ex ia IIC T4 Ga; Ex iaD 20 T135°C: Ex Marking for the device

Notes for product markings:
飞轮: The manufacturer of the Cylinder ASSY
EN144-1: Meets EN144-1 standard
30MPa: Maximum working pressure of the cylinder valve
EN 136: 1998: Meets EN136: 1998 standard
CE 0194: This PPE conforms the PPE directive 89/686. Annual CHECKING OF PPE MANUFACTURED by Notified body INSPEC - No 0194
KHF-30B: Model name of the cylinder valve
TSF210024: Manufacture license of special equipment of the People's Republic of China
G5/8: Thread of the output port of the cylinder valve
Dxxxxx: Product serial number
SK: Hose manufacturer



CERTIFICATION EUROPEENNE: Directive 89/686/CE

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