

Self-Contained Breathing Apparatus SCA680WN SCA790WN

INSTRUCTION MANUAL

This SCBA(Self-Contained Breathing Apparatus) is certified by
the KFI(Korea Fire Institute)

HANCOM LIFECARE

Thank you for purchasing Hancom Lifecare' s positive pressure air respirator.

This instruction manual must be carefully read and followed by all persons who have or will have the responsibility for using or servicing this SCBA.

This SCBA will perform as designed only if used and serviced according to the instructions ; Otherwise it could fail to perform as designed , and improper use of this SCBA may result in serious personal injury or death.



CONTENTS

1. Warnings and cautions	4
2. General specifications	6
3. Configuration and features	8
4. Before-use inspections	12
Mounting cylinder on harness	
Leakage test	
Alarm	
Facepiece	
Regulator	
Flashing locator lights	
Air switch knob	
5. How to use air respirator	16
6. Cleaning and inspection after use	21
7. Storage	24
8. Storing of cylinders	24
9. Caution during the use of cylinders	24
10. Warranty coverage and customer services ...	26

1 Warnings and cautions

■ The warning and caution marks mean the following;



Warning

Serious body injuries or death may result when instructions are violated.



Caution

Material loss or body injuries are expected when instructions are violated.



Warning

1. For the sake of safety, read the instruction carefully and get sufficient training prior to use the air respirator.
2. If an accident occurs due to unauthorized modification or alternation, Hancom Lifecare shall not take any responsibilities.
3. Never use the Ambient air mode in a place short of oxygen by its concentration 18% or less, or in a place contaminated by toxic gas. Using the breathing apparatus in such place may lead to serious injuries or death.
4. Never use the positive pressure air respirator underwater or as a scuba dive.
5. If, during a leak test or during the process of cleaning, any soap water or other solution gets into the inside the positive pressure regulator and/or alarms, it may incur equipment malfunction. Take caution as it may lead to serious danger.
6. Removing the facepiece in a dangerous place contaminated by toxic gas may lead to suffocation leading to death. Always move to a safe place before removing the facepiece.
7. Using strong detergents or corrosive agent to clean the cylinder may cause destruction of the cylinder due to the stress-corrosion cracking phenomenon. This may lead to serious injuries or death.
8. Using an air respirator with cracked or damaged positive pressure regulator may cause serious injury or death. Never use such defective respirator. Contact your local distributor or manufacturer for inspection and repair.
9. Using the positive pressure regulator water contained in it may incur equipment malfunction. Get rid of moisture or water in the positive pressure regulator before use.
10. If any trouble occurs on the air respirator, do not attempt to repair it. Contact your local distributor or manufacturer for inspection and repair. Hancom Lifecare shall not take any responsibility if any accident occurs from equipment that has not been repaired by manufacturer or if parts not designated by manufacturer have been used.



Caution

1. The air respirator is designed for persons who work at the site of fire, toxic gas handling sites, or at a place where oxygen is short. Never use the product for other than the intended purposes.
2. If you feel difficulty of breathing, headache or dizziness, or smell something, stop using immediately and check the condition of your health and the safety of the air respirator.
3. The facepiece is made of synthetic rubber and may cause side effects to the skin of the person allergic to such material. If you are allergic to such materials, do not wear the facepiece.
4. The air respirator is heavy and larger compared with other ordinary personal safety equipment. If you use the equipment in a narrow place where your activity is limited, you may suffer critical injuries.
5. Check the hose for damage or air leak from connectors. If any defects are discovered, contact your local distributor or manufacturer for inspection and repair.
6. If air leak is discovered on the valve or hose connecting parts, stop using the product immediately, and contact your local distributor or manufacturer for inspection and repair.
7. Serious scratches on the face shield may reduce visibility which creating a danger. Replace the face shield immediately if scratched on the shield.
8. In order to prevent obstruction of view by breathing, spread anti-fog solution on inner part of the face shield.
9. Due to user's body features such as beard, hair and mustache, and the glasses worn by the user, the facepiece may not perfectly fit the face. If there is any gap between the facepiece and the face, air may leak out rapidly reducing the time of use. Take extra cautions.
10. When filling the high-pressure cylinder (hereinafter referred to as "cylinder"), check and replace the air compressor filter periodically to prevent foreign substances from getting into the cylinder.
11. Always wear the air respirator in a clean air place.
12. If, during the process of using the air respirator, the positive pressure regulator fails, immediately open the By-pass valve (emergency valve) to continue breathing. Escape to a safe place, and contact your local distributor or manufacturer for inspection and repair.

**Caution**

13. In case the exhaust valve malfunctions due to the presence of foreign substances, it causes difficulty of breathing or air to leak. Contact your local distributor or manufacturer for inspection and repair.
14. Never connect it to the high pressure regulator carrying other than the designated capacity.

2 General specifications

- **Product name:** Self-Contained Breathing Apparatus
- **Model:** SCA680WN, SCA790WN
- **Applications:** The Positive pressure air respirator can protect the life of the firefighters, workers and the rescued from the sites of fire and industries. (However, the life of those who use the SCBA can be protected only within the range of the approved model of the firefighters' air respirators and the inspection technology level approved by the Korea Fire Institute)

**Caution**

Even if the air respirator is appropriately used, persons cannot be protected in a situation deviating from the firefighting air respirator's model approval and the approved inspection technology levels.

- **Standard performance:** The air respirator is a product which has acquired model approval of the firefighting equipment by the Korea Fire Institute pursuant to related laws. The cylinder has passed inspection conducted by the KGS(Korea Gas Safety Corporation) and the D.O.T. (Department of Transportation) of the U.S.A.



Item		SCA680WN	SCA790WN
Service time		Approx. 45 min	Approx. 60 min
Weight		9kg(w/o Air)	11kg(w/o Air)
Type of filling gas		Air	
Cylinder	Material	Carbon Composite	
	Water Vol.	Approx. 6.8liter	Approx. 9.0liter
	Max. Air Capacity	2,040liter	2,790liter
	Weight	3.6Kg(w/o valve and air)	5.0Kg(w/o valve and air)
	Maximum filling pressure(FP)	300bar	310bar
	Internal pressure test pressure(TP)	500bar	517bar
	Standard	D.O.T and KGS	



Caution

Service time is measured when a person breathes 40ℓ per minute. (The operation hour can vary significantly depending on the user's physical condition and the working environment.)



Warning

Fill air into the cylinder only up to the maximum filling pressure(FP).
(Based on environment with a temperature of 35°C)

3 Configuration and features



Low-pressure warning gauge

Harness(8Way moving system)

Waist belt buckle

By-pass valve

Positive pressure regulator







■ **Facepiece** : The facepiece is consist of face shield, regulator release button, speech diaphragm, air switch knob, exhalation valve, head harness and facepiece rubber. The head harness is designed in the form of a net allowing comfortable feeling of wear and preventing harness from being twisted.

The facepiece is made of synthetic rubber and large single-lens provides wide view. The air switch knob is an equipment enabling wearer to breathe with ambient air while wearing the facepiece. (Never put the air switch knob to “Ambient air” in an area contaminated with toxic gas.)



■ **Regulator**: FBO (First Breathing Operation) system allows the SCBA to activate without free flow. This device reduces the pressure, which has been reduced first by the regulator, for the second time to a level which is suitable for breathing. It maintains the pressure inside the facepiece to a level which is higher by approximately 20mmH₂O than the pressure outside the facepiece, to prevent the polluted external air getting into the inside the facepiece.

In case an error occurs on the regular, the red By-pass valve (emergency valve) enables the user to receive the compressed air inside cylinder without breathing.



■ **Regulator side button**: To stop using the respirator, push the side button as shown in the picture.



■ **Regulator release buttons**: Facepiece and regulator has disconnecting structure which allows user to release regulator from the facepiece by pushing the two red buttons as shown in the picture



■ **Low-pressure warning gauge**: The LED lights turns to red when the remaining pressure is lower than approximately 55bar. User easily can recognize the remaining pressure in the dark with Luminous treated gauge.



■ **Alarm**: This device alerts the user by generating an alarm when the remaining pressure of the cylinder is approximately 55bar, and the user can recognize in the noisy place such as the scene of a fire.



■ **1st stage regulator**: This device supplies air to the regulator after reducing the cylinder air to approximately 8bar (8kgf/cm²).



■ **Harness(8Way moving system):** This device is used to carry the cylinder on the back. It can be fixed to the waist by pulling the waist belt with both hands, and wide lumber pad shifting weight from the shoulders to the hips in 8 ways during movement.



■ **Cylinder valve:** Valve is equipped with a safety device which preventing burst off the cylinder from high temperature and overcharge. Cylinder valve has a built-in pressure gauge to check cylinder pressure without opening valve.



■ **Air cylinder:** Composite cylinder made with aluminum liner and wrapped with carbon fiber and fiber glass.



■ **Flashing locator lights:** Installed on both sides of the harness, is automatically operated when the cylinder valve is opened. The LED lights turns to red when the remaining pressure is lower than approximately 55bar.



■ **Shoulder strap:** "S" type structure providing comfortable feeling of wear. The "D" ring, installed on the strap, allows the stuff for rescue, such as lantern, rope and other personal rescue devices, to be equipped.



■ **Waist belt buckle:** One-touch type structure allowing quick and easy connection.



■ **Rescue mask:** This half negative pressure (regulator) mask, connected to the one-touch coupling socket attached to the harness, helps the victim breathe. The push button on the center of the mask to enable simple artificial respiration (*Optional)

4 Before-use inspections

■ Mounting cylinder on harness

- Loosen the cylinder fixing band of the harness to larger than the cylinder circumference.
- Aim the cylinder valve towards the lower part of the harness, and push it into the inside of the fixing band.
- Prior to connecting the 1st stage regulator with the cylinder valve, check the damage or defects of O-ring attached to the inside the 1st stage regulator connecting nuts.
- Connect the 1st stage regulator installed on the harness with the cylinder valve.
- Fix the cylinder firmly to the harness with the cylinder fixing band.

Caution

1. Firmly fix the cylinder to the harness when wearing the air respirator. Failure to do so will allow the cylinder to move or come off from the harness that causing serious injuries or may put the wearer into the dangers.
2. If the external thread of the cylinder valve and the internal thread of the regulator area incorrectly connected, the screw thread or the rubber may be damaged, allowing air to leak from the cylinder.
3. To ensure the cylinder is firmly installed on the harness, buckle up in the following manner.



Front side



Rear side

■ Leakage test

Cylinder

- Turn the cylinder valve on.
- As the pressure gauge indicator may change due to the pressure expanded near the hose, carefully turn the cylinder valve handle counterclockwise for 1 or more turns and remains for approximately 5~10 minutes.
- Check the pressure gauge reading and turn the cylinder valve handle clockwise to close the valve, and check the pressure change after approximately 5~10 minutes.



- When the cylinder valve is opened again, pressure gauge indicator shall not have any changes.
- If there is a change in the pressure gauge, apply soap water to the connecting parts of the cylinder valve safety device and air outlets, pressure gauge, hose, and alarms, and check for bubbles or drops.
- If air leaks, even the cylinder valve and 1st stage regulator are accurately connected, check the 1st stage regulator o-ring. Check O-ring whether damage or missing.



Warning

If any bubbles or drops continuously appear on the connecting parts, it indicates air leaks and do not use the equipment. Using the equipment under such condition may lead to drastic air leak which reduces the operating hours rapidly and incurring danger. Contact your local distributor or manufacturer for inspection and repair.

■ Pressure gauge and alarm

- After a leakage test, completely close the cylinder valve and slowly turn the By-pass(to counter-clockwise) to open. The pressure begins to drop by draining the air inside the hose.
- Verify that Red LED and alarm on harness is generated where the pressure gauge indicates at approximately 55bar (5.5Mpa).



Caution

If no alarm or Red LED flashes when the pressure gauge indicator reaches approximately 55bar, the air respirator wearer may in an extremely dangerous situation as the escape time not being able to identify. Contact your local distributor or manufacturer for inspection and repair.

■ Facepiece

- Check the facepiece for accurate form and any damage.
- Check the facepiece rubber parts for any damage.
- Check the cleanliness and transparency of faceshield, and anti-fog solution is applied or not.
- Make sure facepiece and regulator are firmly connected.
- Check the condition of the head harness and its elasticity.
- After wearing the facepiece properly, connect the regulator on the facepiece and close air switch knob, then inhale sharply. Check the facepiece is slightly collapsed towards the face.

■ Regulator

- Turn the cylinder valve on and check for any air leakage.
- After turning the air switch knob to “positive pressure breathing”, wear the facepiece and inhale sharply to start airflow, the regulator will turn on automatically.
- Check the air leakage when the wearer inserts finger into the side of the facepiece during the normal breathing.
- Check the By-pass by turning the red knob counter-clockwise until increased air flow is felt. Close the By-pass.
- Turn the air switch knob to the direction of “Ambient air”; push the side button to stop the regulator.



Caution

1. If any air leak is discovered from the regulator, stop using the equipment immediately. Contact your local distributor or manufacturer for inspection and repair.
2. If the By-pass is not activated even after taking the above procedure, it cannot be used effectively in an emergency. Contact your local distributor or manufacturer for inspection and repair.

■ Flashing locator lights

- Lights

- Turn cylinder valve on and check the lights is activated
- If the lights are activated properly, close the cylinder valve and discharge air from the facepiece hose completely by using the By-pass.
- Verify that the lights automatically turn off when the remaining pressure is completely withdrawn from the hose.



- Battery

- The battery for flashing locator lights is located at the bottom of the harness.
 - The air cylinder should be disconnected from the harness in order to change the battery.
 - When the battery is exhausted, open the cover by unfastening the bolt with a cross (+) screwdriver, and replace the 9V battery.
 - After replacing the battery, fix the gasket and close the cover. Tighten the bolt.
- (If the gasket is not in the correct position, the battery housing may not be waterproof.)



Caution

If the light is not functioning properly even the battery has been replaced, contact your local distributor or manufacturer for inspection and repair.



■ Air switch knob

- Ensure proper engagement by pulling on the regulator to verify that regulator is securely attached to facepiece.
- Turn the air switch knob to the “Ambient air” position and put the facepiece on.
- Check ambient air (external air) comes into facepiece as inhale.
- Turn the air switch knob to “positive pressure breathing” for long period storage.



Warning

Using the “Ambient air” mode in a place with short oxygen (oxygen concentration 18% or less) or in a place contaminated with toxic gas may induce serious damage of health or death. Do not use the equipment in this kind of environment. If the air breathing apparatus malfunctions, contact your local distributor or manufacturer for inspection and repair.



Caution

Before detaching or dismantling the regulator or rescue mask, Close the cylinder valve, turn the red By-pass knob to counter-clockwise and completely discharge remaining air from the apparatus hose. If the regulator and the rescue mask are disconnected or dismantled while air is in the hose, the O-ring inside the coupling socket may damaged and air may leak out.

5 How to use air respirator

■ Before using the apparatus



1. Check pressure in the air cylinder through the cylinder valve gauge.
2. Ensure cylinder valve is closed
3. Ensure air cylinder is firmly connected to the harness(Refer to the section “Before-use inspections”).
4. Check cylinder valve and the 1st stage regulator are correctly connected.
5. Check pressure gauge on the right side of the harness indicates 0kgf/cm².



6. Insert the regulator into the facepiece and ensure proper engagement by pulling the regulator.
7. Ensure the By-pass works properly(turn the red By-pass knob to counterclockwise until increased the air flow then close the By-pass knob after check).



8. Put on the mounted air cylinder harness.
9. Using both hands, pull the adjusting strap until the harness is comfortably worn.



10. Connect the waist buckle, and then pull and adjust the waist belt to fit the waist comfortably.

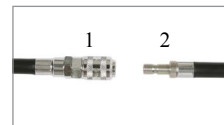


11. Connect the chest strap buckle, and tighten the strap.



12. Connect the facepiece hose plug to the coupling socket.

To disconnect coupling, hold and press No.2 in the direction of the coupling socket No.1. Pull the No.1 coupling socket in the same direction (to the direction marked with an arrow on the coupling socket).



13. Set the air switch knob on the "Positive Pressure Breathing" position.



14. Loosen all the harness straps. Grip the bottom straps. Insert chin into the lower part of facepiece, then pull the harness back over the head. Pull the back of harness downward until centered at the back of the head.



15. Tighten the two lower straps first by pulling them straight back, not out. Tighten the facepiece until the mask is snug against the face. Tighten the two side temple straps in the same manner as before. Ensure that the facepiece tabs are not tucked under the face seal.



Caution

1. If you pull the head adjusting strap located in the upper center too strong to fix the facepiece to the face, a gap will be created on the front upper side of facepiece and losing the fit.
2. If the shape of the face is extraordinary, the face and the facepiece might not be attached to each other completely, it may cause air leak.



16. Turn on the air cylinder valve completely.

17. Ensure the pressure gauge indicates over 270bar.



Caution

Abrupt opening of the air cylinder valve may cause damage to the hose or to the rubber O-ring inside the connecting parts.



Caution

If the pressure gauge reads less than 270 bars, the air respirator operating time may be less than service time presented by manufacturer.



18. Put the Air Switch knob to the “positive pressure breathing” position. Inhale sharply to start the airflow.

19. Make sure the By-pass valve is working properly (Count-clockwise the By-pass valve to release the air, it means normal operation and, when you finish to test valve clockwise to lock)



20. To check the positive pressure inside the facepiece, insert the finger into the side of the facepiece, and see if air leaks outside the facepiece.

21. Check the functioning of the facepiece before use.



Warning

If the facepiece is not properly fit after worn, you cannot be protected from toxic gas, so do not enter a dangerous area contaminated with toxic gas. Contact your local distributor or manufacturer for inspection and repair.

■ After use

1. Upon completion of using the apparatus, keep away from the toxic gas area completely.
Turn the air switch knob to the “Ambient air” position and then push the regulator side button.
2. Pull and loosen the facepiece’s harness strap, and remove the facepiece starting from the chin.
3. Disconnect chest strap buckle and unfasten waist belt.
4. Pull the strap clamp upward to loosen the strap.
5. Put down the harness carefully, try not to apply impact to the cylinder.
6. Close the cylinder valve, and drain air out of the hose until the pressure gauge indicates 0kgf/cm² by using the By-pass. Then close the By-pass.
7. Disconnect the facepiece hose from the coupling socket.
8. Check the facepiece and the air respirator for any sign of malfunction.

■ For use the rescue mask



1. Connect the rescue mask to the harness socket.
2. As the rescue mask is operated in the negative pressure system, air is supplied from the air respirator only when the wearer inhales air.
3. If the wearer needs large amount of air, press the button located on the upper center of the rescue mask.



Caution

If, after connecting the rescue mask, 2 persons use the apparatus simultaneously, the actual air respirator operation time will be reduced significantly than the time presented by the manufacturer. Precautions during use.



6 Cleaning and inspection after use

■ Cleaning

1. Close the air cylinder valve completely, and drain all pressure remaining in the air respirator hose.
2. Using a piece of soft cloth, clean and remove foreign materials from the facepiece, cylinder, hose and harness.
3. Clean the facepiece only after removing the regulator.
4. For cleaning solution, use mild soap with warm water. Dip a piece of soft cloth into the diluted solution and clean the facepiece, cylinder, hose and harness.
5. Soak a soft cloth into warm water and clean the facepiece, cylinder, hose and harness.
6. Using a dried cloth, remove remaining water from the facepiece, cylinder, hose and harness.
7. Store apparatus in well-ventilated places. Keep away from heat and direct sunlight.
8. To clean the faceshield, use dried and soft cloth with extra care.
9. Remove and clean the foreign materials from the left and right waist belt adjusting frame of the harness. If the frame is not properly working, clean the frame with a sort of oilpaper.



Caution

1. Do not use acetone, benzene, chemical products or gasoline and other type of solvents to clean the product. Using such materials to clean the product may cause damage to the product.
2. Do not soak any of the valves, positive pressure regulator, high-pressure regulator and hose in the water. Any moisture or water existing inside any of such parts may induce fault while using the equipment, placing the user in danger.
3. Do not use strong detergents or corrosive agent (such as acid or basic solution and other chemical products) to clean the cylinder. Using such materials to clean the cylinder may cause destruction of the cylinder due to the stress-corrosion cracking phenomenon. This may lead to serious injuries or death.

■ After-use inspections

1. Store the cylinder after recharging if the pressure of the cylinder is less than 90% of the prescribed value.
2. Check the air tightness of the O-ring inside the socket of 1st stage regulator and the coupling of the medium pressure hose.
3. Check the regulator for signs of any cracks or damage.
4. Check the facepiece for cracks, tear or other damage.
5. Check the head harness strap for elasticity, cracks or other damage.
6. Check the faceshield fasteners for cracks, damage and/or air tightness.
7. Check all plastic parts for cracks and damage.
8. Ensure the inhalation valve inside the facepiece is in the right position and is operating properly.
9. Check the hose and rubber parts for any defects.
10. Check the pressure gauge and valve for proper operation.
11. Turn on the cylinder valve and check the pressure gauge. Apply soap water on each connecting parts and check for air leak.
12. Check the strap and belt attached to the harness for any defects.
13. Carry out visual and operating inspection according to the air respirator checklist periodically.



Warning

Contact your local distributor or manufacturer for inspection and repair if any damages or defects are found on the parts used for the air respirator.

Hancom Lifecare shall not take any responsibility under any circumstances if any accident occurs because parts which are not the genuine parts prescribed by the manufacturer are used, or if the product not repaired by the manufacturers authorized personnel.

■ Air respirator checklist

[illegible]

Caution: Use the above air respirator checklist along with the details contained in the description

7 Storage

1. After use the air respirator, inspect and clean and dry completely before the store.
2. Close the cylinder valve, regulator and By-pass completely, and drain all the pressure remaining in the air respirator prior to store.
3. Do not put anything on the product it may cause any damage to the product.
4. Store the product in a cool and ventilated place, and keep away from the heat or direct sunlight.
5. For next use, store the cylinder after charge completely (over 270bar). If the cylinder is stored with charged pressure less than approximately 270 bars, the operating hours of the product may be less than the time presented by the manufacturer.
6. Put mark on the respirator when any malfunction is discovered during the inspection. Contact your local distributor or manufacturer.

8 Storing of cylinders

1. Always close the cylinder valve prior to store.
2. Store the used cylinders and the fully charged cylinders separately after put mark on it.
3. For storing used cylinders, leave small amount of pressure in the cylinder to prevent foreign substance in the cylinder prior to store.
4. Do not store the cylinder in a place near fire or in an area with high temperature, it may result in an explosion. Avoid direct sunlight and store the product in a cool place with the temperature less than 40°C.
5. For disconnected 1st stage regulator and air cylinder, always cover the screws with the protective caps provided by manufacturer to prevent any damage.

9 Caution during the use of cylinder

1. Always use the cylinder and cylinder valve after inspection by relevant governing law or practice before the re-inspection deadline as prescribed.
2. Do not paint where the cylinder markings and cautions are indicated.
3. For recharging the cylinder, it shall be done by authorized recharging place.



4. Recharge clean air with no foreign material contained into the cylinder.
5. During the charging air into the cylinder, moisture or foreign material may inserted from the air compressor, it may result corrosion inside the cylinder. Air compressor must be checked before and after use. If any moisture or foreign material is in the cylinder, stop using the cylinder and dry completely after clean the inside of cylinder.
6. The maximum filling pressure (FP) of air at a temperature of 35°C. Do not overcharge the limits.
7. Make sure to drain air completely out of the cylinder prior to dismantling valve parts attached to the cylinder, or separating valve from the cylinder. (Dismantling or separating valves when the cylinder is filled with air is extremely dangerous, and may lead to bodily injuries or other serious results.)
8. Do not disconnect the 1st stage regulator while cylinder valve is on. This may cause damage to the thread of 1st stage regulator.
9. Applying severe impact to the cylinder may cause distortion or cracks. (If the cylinder is exposed to any impact, stop using it. Have the cylinder re-inspected by the manufacturer or a cylinder inspection agency.)
10. Do not roll or drag the cylinder to prevent damage.
11. Any leakage from the cylinder valve or the 1st stage regulator may cause the cylinder to explode. Do not use the product if any leak is found.
12. Air is colorless, odorless and tasteless gas. If there is any abnormal smell from the charged cylinder, stop using it immediately. Drain air out of the cylinder completely, clean inside the cylinder, and use it after solving the cause of smell.
13. Make sure to read and understand the instructions indicated or inserted on the cylinder before use.

10 Warranty and customer service

1. In case manufacturing defects during the warranty period, contact manufacturer for immediate repair or replacement.
2. In any of the following cases, however, service charge shall be applied even during the warranty period.
 - Errors or damages caused due to customer's careless handling.
 - Errors or damages caused by unauthorized modification or repairs, or by repairs carried out by the person not designated by the manufacturer.
 - Errors or damages caused by the force majeure such as natural disasters e.g. fires, earthquake, floods etc.
3. Products eligible for warranty are recognized only when the date of purchase can be verified through the Commercial Invoice. The warranty period for no charge is 1 year from the date of purchase.

Warranty Card			
Product		Self-Contained Breathing Apparatus	
Model		SCA680WN, SCA790WN	
Warranty period		For 1 year from the date of purchase	
Customer	Company Name		Inspected by Hancom Lifecare Inc.
	Address		
	Name		
	Tel.		
	Fax		
	e-mail		

Thank you for purchasing this product. In case manufacturing defects occur during the warranty period, contact manufacturer for repair free of charge.

■ Customer service

Hancom Lifecare operates a customer service to promptly solve or answer customer's complaints or questions.

Contact: Hancom Lifecare Inc.

Address: 53 Jungbudaero 1960Beon-gil, Yangji-Myun, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, 17160, Korea

Tel: +82-31-5183-9000 Fax: +82-31-321-4088

www.hancomlifecare.com



Metric Pressure Measurement Units

UNIT	bar	mbar	kbar	Pa	kPa	MPa
1bar	1	1000	0.001	10 ⁵	100	0.1
1mbar	0.001	1	10 ⁻⁶	100	0.1	10 ⁻⁴
1kbar	1000	106	1	10 ⁸	10 ⁵	100
1Pa	10 ⁻⁵	0.01	10 ⁻⁸	1	0.001	10 ⁻⁶
1kPa	0.01	10	10 ⁻⁵	1000	1	0.001
1MPa	10	104	0.01	10 ⁶	1000	1

1Pa=1N/m² 1kPa=1kN/m² 1MPa=1MN/m²

											Bar
											0.0689
psi	atms.	Inch H ₂ O	mm H ₂ O	Cm H ₂ O	oz/in ²	Kg/cm ²	Inch Hg	Mm Hg	Cm Hg	mbar	1.013
1	0.0681	27.71	703.8	70.38	16	0.0704	2.036	51.715	5.17	68.95	0.00249
14.7	1	407.2	10.343	1.034.3	235.1	1.033	29.92	760	76	101.3	0.000098
0.0361	0.00246	1	25.4	2.54	0.5775	0.00254	0.0735	1.866	0.187	2.488	0.00098
0.001421	0.000097	0.0394	1	0.1	0.0227	0.0001	0.00289	0.0735	0.00735	0.098	0.00431
0.01421	0.000967	0.3937	10	1	0.227	0.001	0.0289	0.735	0.0735	0.98	0.981
0.0625	0.00425	1.732	43.986	4.40	1	0.0044	0.1273	3.232	0.323	4.31	0.0339
14.22	0.968	394.1	100.010	1.001	227.6	1	28.96	735.6	73.56	980.7	0.001333
0.4912	0.03342	13.61	345.7	34.57	7.858	0.0345	1	25.4	2.54	33.86	0.01333
0.01934	0.001316	0.536	13.61	1.631	0.310	0.00136	0.0394	1	0.1	1.333	0.001
0.1934	0.01316	5.358	136.1	13.61	3.10	0.0136	0.394	10	1	13.33	1
0.0145	0.000987	0.4012	10.21	1.021	0.2321	0.00102	0.0295	0.75	0.075	1	
14.504	0.987	401.9	10.210	102.1	232.1	1.02	29.53	750	75	1,000	



Self-Contained Breathing Apparatus

