INTERSPIRO

Keeps You Breathing

ENGLISH

Spiroline breathing systems

User manual

97255C01

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SPIROLINE BREATHING SYSTEMS

OPERATING INSTRUCTIONS

WARNING

Before use of the Spiroline confined space entry equipment in an emergency/ rescue situation, the user must have been given proper training in its use, have read and understood these Operating Instructions and demonstrated proficiency to a responsible teacher or supervisor. Failure to do so can result in injury or death for the user and can have serious consequences for people to be rescued and/or items of value to be saved.

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INTERSPIRO WARRANTS THIS PRODUCT AGAINST FAILURE TO COMPLY WITH INTERSPIRO'S PUBLISHED SPECIFICATIONS FOR THE PRODUCT AND AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWELVE (12) MONTHS AFTER DATE OF PURCHASE. WITHIN THAT PERIOD, INTERSPIRO WILL, AT ITS OPTION, REPAIR OR REPLACE THE PRODUCT OR REFUND YOUR PURCHASE PRICE IF INTERSPIRO DETERMINES THE PRODUCT DOES NOT CONFORM TO INTERSPIRO´S SPECIFICATIONS OR IS DEFECTIVE IN MATERIAL OR WORKMANSHIP.

TO MAKE A WARRANTY CLAIM, CONTACT YOUR AUTHORIZED INTERSPIRO DISTRIBUTOR OR INTERSPIRO DIRECTLY. FOR TELEPHONE INQUIRIES PLEASE HAVE YOUR PRODUCT INVOICE OR OTHER PROOF OF PURCHASE AVAILABLE. IF YOU WRITE, INCLUDE PROOF OF PURCHASE AND A WRITTEN EXPLANATION OF THE PROBLEM. WARRANTY SERVICING WILL BE PROVIDED ON-SITE OR AT ONE OF INTERSPIRO'S AUTHORIZED SERVICE FACILITIES, AT INTERSPIRO'S DISCRETION. IF SHIPMENT TO AN AUTHORIZED SERVICE FACILITY IS REQUIRED, SHIPPING INSTRUCTIONS WILL BE PROVIDED BY INTERSPIRO OR YOUR AUTHORIZED INTERSPIRO DISTRIBUTOR. DO NOT SHIP ANY PRODUCT OR COMPONENT WITHOUT SHIPPING AUTHORIZATION. ALL SHIPPING CHARGES TO INTERSPIRO'S SERVICE FACILITY MUST BE PREPAID BY THE CUSTOMER.

THIS LIMITED WARRANTY DOES NOT APPLY IF THE PRODUCT HAS BEEN (I) INVOLVED IN AN ACCIDENT OR SUBJECTED TO MISUSE, IMPROPER MAINTENANCE OR NEGLIGENCE; (II) ALTERED OR REPAIRED IN ANY WAY THAT HAS, IN INTERSPIRO'S JUDGEMENT, ADVERSELY AFFECTED ITS PERFORMANCE OR RELIABILITY; (III) USED IN AN APPLICATION OR FOR A PURPOSE FOR WHICH THE PRODUCT WAS NOT DESIGNED OR UNDER STRESSES OR CONDITIONS EXCEEDING THOSE SPECIFIED FOR THE PRODUCT; OR (IV) DAMAGED AFTER LEAVING INTERSPIRO'S FACILITY.

THIS LIMITED WARRANTY IS VALID ONLY FOR THE ORIGINAL PURCHASER, AND IS NOT TRANSFERABLE.

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THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

CAUTIONS AND LIMITATIONS

D. Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher quality.

E. Use only the pressure ranges and hose lengths specified in the user's instructions.

I. Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmosphere by MSHA/NIOSH.

J. Failure to properly use and maintain this product could result in injury or death.

M. All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.

N. Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.

O. Refer to users instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

S. Special or critical users instructions and/or specific use limitations apply. Refer to instruction manual before donning.

S. SPECIAL USERS INSTRUCTIONS

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases, and vapors, when using air-line air supply.

Approved for escape only, when using self-contained air supply.

Approved for use at temperatures above -25 degrees F (-32 degrees C).

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7-1 for Type 1, Grade D air or higher quality, as well as meeting a dew point level of -65°F (-54°C) or dryer (24 ppm v/v or less), and a maximum particulate level of 5 mg/m3 air. The container shall meet applicable DOT specifications.

Approved for respiratory protection during emergency entry into hazardous atmosphere when supplied with respirable air at a pressure between 60 and 125 pounds per square inch and when using hoses with a total length between 25 and 300 feet, with a maximum of 12 hose lengths. Cylinder valve must remain closed during supplied air use. If supplied air is terminated, open cylinder valve and proceed to fresh air immediately.

Before occupational use of this respirator, a written respiratory protection program must be implemented meeting all the local government requirements. In the United States, employers must comply with OSHA 29 CFR 1910.134 which includes medical evaluation, training, and fit testing.

IMPORTANT INFORMATION TO USER

The Spiroline confined space entry equipment should only be used by adults in good physical and physiological condition.

The Spiroline confined space entry equipment must be used in a manner consistent with NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

The facepiece may not seal properly with your face if you have a beard, heavy sideburns or other physical characteristics interfering with the mask's contour (see 29 CFR Part 1910.134).

An improper facial seal may allow non-respirable air to leak into the facepiece, reducing or eliminating respiratory protection. The face-to-facepiece seal must be tested before each use.

Do not use the Spiroline confined space entry equipment in an emergency/ rescue situation unless you have received proper training in its use, have read and understood these Operating Instructions and demonstrated proficiency to a responsible teacher or supervisor. Special attention must be given to:

- face seal
- test before use
- awareness of different durations at different conditions
- emergency situation (loss of air and free air flow)

Only holders of a valid INTERSPIRO Service Certificate may service and test the Spiroline confined space entry equipment.

FAILURE TO COMPLY WITH THIS WARNING CAN RESULT IN RESPIRATORY INJURY OR DEATH FOR THE USER AND MAY HAVE SERIOUS CONSEQUENCES FOR PEOPLE TO BE RESCUED AND/OR ITEMS OF VALUE TO BE SAVED.

TECHNICAL DESCRIPTION

The Spiroline confined-space entry equipment is a combination 5, 10, or 15 minute self-contained breathing apparatus for escape and a pressure demand airline breathing apparatus for use in a contaminated or oxygen deficient environment(s). The apparatus consists of:

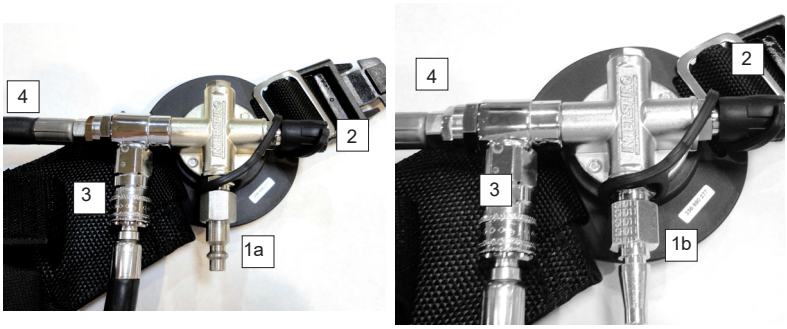
- A face mask with breathing valve
- Mask supply hose and belt mounted manifold assembly
- Harness assembly
- Compressed air escape cylinder and regulator

AIR SUPPLY

The unit must be supplied with breathing quality air through supply hoses approved for breathing air. Approved supply hose(s) must not exceed 300 feet in total length, from a regulated air source. The inlet pressure to the supply hose must be between 60 - 125 psi.

MANIFOLD ASSEMBLY

The manifold assembly is conveniently mounted on the waist belt. The male quick coupling, available in either a Foster sleeve lock (1a) or Foster twist lock (1b) version, allows fast connection of the air supply hose for working in the supplied air mode. An extra air coupling (2) is provided for accessories such as the Revitox rescue mask, suit ventilation capability, or a rescue hose which can interconnect the Spiroline units or connect to an Interspiro Spiromatic SCBA. Note the accessories which connect to outlet (2) have a pin that mechanically opens the one-way check valve to allow air to be supplied to the accessory. The escape cylinder is connected to the manifold by quick-coupling (3). Air is supplied to the face mask through supply hose (4). Escape cylinder air is only supplied to the face mask supply hose (4).



FACE MASK

The outer and inner masks are made from a specially compounded rubber material to ensure a high degree of resistance to ozone ageing and acceptability to the wearer.

The mask is equipped with a large, easily replaceable visor which is held in place by two half frames and two screws. The mask is available with either a fabric head harness or a rubber head harness. The face piece also has provisions for fitting spectacles.

A speech diaphragm is mounted within the inner mask with a direct outlet to outside the mask to ensure the best possible communication. In addition, an inner cone over the speech diaphragm enhances the speech diaphragm performance. As a further enhancement to speech reproduction an external speech cone is fitted which also acts as a positive security lock for the breathing valve.

The mask is available in four sizes: SMALL, MEDIUM, LARGE, and EXTRA LARGE. The standard size facemask is the LARGE size.

Size markings:

- The SMALL mask is marked “S” on the outer mask and “M” on the inner mask.
- The MEDIUM mask is marked “M/L” on the outer mask and “M” on the inner mask.
- The LARGE mask is marked “M/L” on the outer mask and “L” on the inner mask.
- The EXTRA LARGE mask is marked “XL” on the outer mask and “L” on the inner mask.

Size marking on outer mask

Size marking on inner mask

AMBIENT AIR HATCH MASK

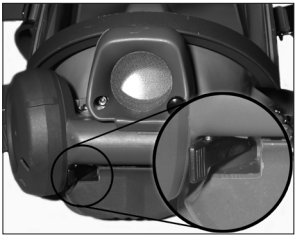
Positive pressure is activated by closing the ambient air hatch by pushing the exhalation valve cover against the face mask. To shut off positive pressure and breathe ambient air, simultaneously press down the indicator arm and push the exhalation valve cover away from the face mask.

Activated positive pressure

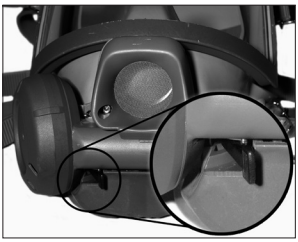
Ambient air mode

FIRST BREATH MASK

Positive pressure is automatically activated by the first breath and can be switched off manually by pushing the lifting arm on the breathing valve away from the diaphragm cover.



Activated positive pressure

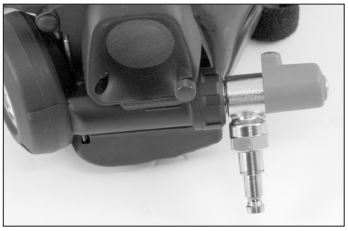


Positive pressure switched off

BREATHING VALVE AND BY-PASS VALVE

The SPIROMATIC S breathing valve has a “plug-in” connection to connect it to the face mask. The outer speech cone locks the breathing valve into position. This feature provides a safe positive connection between the face mask and breathing valve and prevents accidental disconnection.

The by-pass valve overrides the normal automatic function of the pressure demand valve. When the by-pass valve is opened the air will free flow into the mask. To open the valve turn the red knob counter clockwise. To close the valve turn the red knob fully clockwise.



NOTE! WHEN THE BY-PASS VALVE IS OPEN THE DURATION TIME WILL BE SHORTER. WHEN THE BY-PASS VALVE IS OPERATED THE WEARER SHOULD ABORT ANY OPERATION AND RETURN TO AN AREA OF RESPIRABLE AIR.

CYLINDER ASSEMBLY

5 Minute

The 5-minute compressed air escape cylinder is a lightweight, aluminum 8 cubic foot, 2216 psi cylinder with a shut off valve and pressure gauge. The cylinder will supply a minimum of 5 minutes when tested to NIOSH standards.

10 Minute

The 10-minute compressed air escape cylinder is a lightweight composite, 17 cubic foot, 4500 psi cylinder with a shut off valve and pressure gauge. The cylinder will supply a minimum of 10 minutes when tested to NIOSH standards.

15 Minute

The 15-minute compressed air escape cylinder is a lightweight composite, 23.4 cubic foot, 4500 psi cylinder with a shut off valve and pressure gauge. The cylinder will supply a minimum of 15 minutes when tested to NIOSH standards.

CAUTION

DURATION IS DEPENDENT ON THE USER'S EXERTION, PHYSICAL AND EMOTIONAL CONDITION, AS WELL AS ON ENVIRONMENTAL PRESSURE AND WHETHER THE CYLINDER WAS FULLY CHARGED AND WHETHER THE FACEPIECE FITS. DURATION CAN VARY 50% OR MORE.

CAUTION

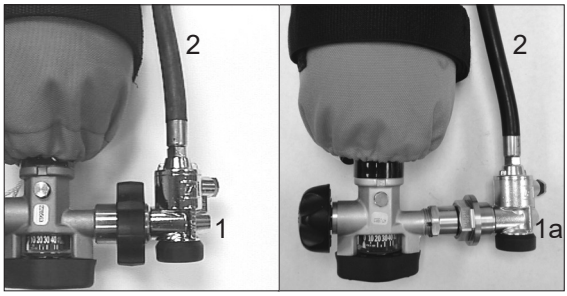
SHOULD THE CYLINDER BE EXPOSED TO A PRESSURE THAT CAUSES THE BURST DISC TO RUPTURE, IT MUST BE RETURNED TO AN AUTHORIZED SPIROMATIC SERVICE CENTER FOR INSPECTION AND REPAIR.

REGULATOR

The escape regulator unit consists of a high performance pressure regulator (1) and supply hose with quick-disconnect. The regulator unit is connected to the cylinder valve by hand. To disconnect the regulator unit, it is important that the cylinder valve be closed and the air be evacuated from the system.

The pressure regulator used in the Spiroline is of the piston type with an extremely high flow capacity. In order to keep it small and light, the regulator has been pressure balanced. This also ensures a stable secondary pressure, which maintains an effective positive pressure in the mask even at low cylinder pressure.

From the pressure regulator (1) or (1a), the air is fed via the supply hose (2) into the manifold assembly.



The 4500 psi escape regulator can be equipped with a cylinder quick coupling as an option (1a).

The regulator unit is then connected to the cylinder valve by simply pushing them together. When the escape cylinder is pressurised the quick coupling is locked and not possible to disconnect. With the escape SCBA evacuated of air the quick coupling can be disconnected by pushing the locking ring and then removing the regulator unit from the cylinder valve.

The quick coupling fits 4500 psi 10 or 15 minute cylinders with the use of an adapter on the cylinder valve. The adapter is installed on the cylinder valve with a torque of 40 Nm (29.5 lb ft).

Cylinders with the adapter can be re-filled without removing the adapter. Interspiro offers a quick connect cylinder charging adapter, p/n 31602-01, for existing fill hoses.

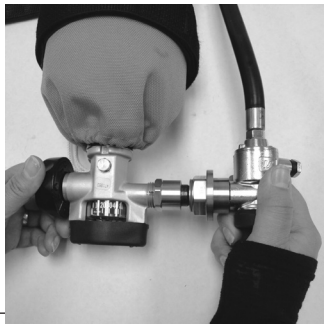
If the adapter is removed the cylinder can be filled with a standard fill hose.

HARNESS ASSEMBLY

The harness assembly for the unit consists of a wide waist band with waist belt, shoulder strap, and cylinder bag. The shoulder strap also holds the mask supply hose. It is to be worn on your left shoulder and is adjustable. The waist belt holds the manifold assembly and the cylinder bag on your right hip. It is adjustable and has a quick release positive lock. The cylinder can be removed for filling. See section Cylinder Charging.

PREPARATION FOR USE

1. Ensure that the primary air supply to be used has a supply pressure between 60 - 125 psi, and is approved for breathing. Ensure airline hoses have a total length between 25 and 300 ft.
2. Ensure that the emergency escape cylinder is fully charged with air. To remove the cylinder from the bag, be sure the valve is closed and the air is vented from the system. Unscrew the regulator from the cylinder valve. Loosen the two securing straps. Loosen the cord-lock and remove the cylinder (see Cylinder Charging (Spiroline Escape Cylinders). Reverse the steps to return cylinder back to the bag. Connect regulator to valve.



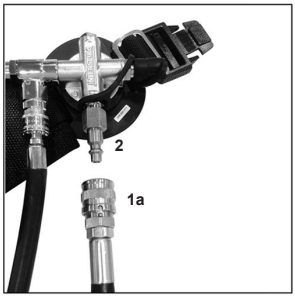
FOR VERSION WITH CYLINDER QUICK COUPLING:

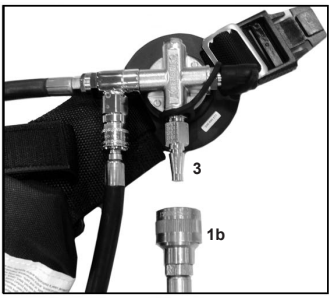
3. Align the quick coupling in the regulator unit with the quick coupling adapter on the cylinder valve. Push the regulator unit together with the cylinder valve until it “clicks” into position.

LIMITATION
THE CYLINDER VALVE MUST REMAIN CLOSED DURING SUPPLIED AIR USE. APPROVED FOR EMERGENCY ESCAPE ONLY WHEN USING SELF-CONTAINED AIR SUPPLY.

4. Airline Supply Hoses are equipped with either a Foster Sleeve Lock (Stainless steel) female quick coupling (1a) or with a Foster Twist Lock (Stainless Steel) female quick coupling (1b) to prevent accidental uncoupling.

4a. To connect the air supply hose with Sleeve lock female coupling 1a. Line up the ball in the socket body with the semi-circular cutout in the spring loaded sleeve lock. Slide the spring loaded sleeve lock back. While holding the sleeve lock back, push the hose coupling onto the male (2), and release the sleeve lock. Rotate the sleeve lock so the recess and the ball in the socket body do not line up. Gently pull the hose to ensure that the coupling is secure. To disconnect the coupling (1a), realign the ball in the socket body with the semi-circular cutout in the spring loaded sleeve lock. Pull the sleeve lock back to release the male coupling from the female quick disconnect.





4b. Airline hoses with Foster Twist Lock (1b) couplings:

To connect the air supply, insert the female quick coupling (1b) into the male plug (3), pushing it until it is engaged as evidenced by a "click".

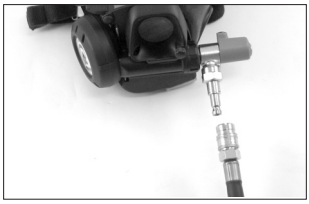
Gently pull on the hose to ensure the coupling is secure. Disconnect the coupling (1b) by rotating the sleeve of the female quick coupling 1/8 turn in the clockwise direction as viewed from the female end of the coupling.

CONNECTING THE FACE MASK

1. Insert the breathing valve into the face mask with the diaphragm housing on the right hand side of the mask as worn. Make sure not to push on the internal speech diaphragm when inserting the breathing valve.

2. Lock it into position by sliding down the outer speech cone and tighten the screw by hand. In the correct position the serial number on the breathing valve is covered by the lip of the speech cone.

3. Connect the breathing valve to the medium pressure supply hose and the by-pass unit. The locking sleeve of the female quick coupling will automatically move forward and snap into place, locking the breathing hose in place.



4. Pull lightly on the breathing hose to check that the quick connection is securely locked.

LEAKAGE AND FUNCTION TEST

1. Ensure that the by-pass is turned off.
2. Turn off the positive pressure. (see section Face Mask for instructions)
3. Connect a pressurized air supply hose to the male coupling on the manifold assembly. With the positive pressure turned off, no air flow should be heard. If air flow is heard it indicates leakage.
4. Check operation of the by pass by opening the valve and ensure a good flow of air into the face mask. Close the by-pass.
5. To check air supply from the escape cylinder, disconnect the air supply hose from the male coupling. Be sure the face mask positive pressure is turned off. Open the cylinder valve fully. Turn on the positive pressure. A strong flow of air should be heard. Turn off the positive pressure.
6. To check air supply to the extra air outlet, connect an approved accessory, check proper function.

NOTE:
NO AIR IS PROVIDED TO THE EXTRA-AIR OUTLET FROM THE ESCAPE CYLINDER. AIR FROM THE ESCAPE CYLINDER GOES ONLY TO THE WEARER'S FACE MASK.

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7. Close the cylinder valve. Turn on the positive pressure to vent the system.
8. Recharge cylinder if necessary.

DONNING THE SPIROLINE CONFINED SPACE UNIT

CAUTION
TRAINING IN THE DONNING AND BEFORE USE TEST PROCEDURE SHOULD BE GIVEN BEFORE USE IN AN EMERGENCY SITUATION. THE USER MUST DEMONSTRATE KNOWLEDGE TO A RESPONSIBLE TEACHER OR SUPERVISOR.

1. (If in carrying case) With case handle towards the user, lift the locking tabs and open case top away from you. Unfold the waist band and strap as shown. If the unit is not in case, lay it out as shown for Donning.

2. Check that the emergency escape cylinder reads "full" on the pressure gauge. Grab the shoulder strap and mask supply hose with left hand and lift.

3. Reach through the shoulder strap loop with right hand and grab the male waist buckle near manifold.

4. Put the shoulder strap over your head onto the left shoulder. The cylinder and manifold is now on right hip.

Strap over the shoulder

5. With left hand, grab the female waist buckle and connect waist band together.

6. Support the cylinder with your right hand and tighten waist strap with your left hand. This will take the weight off your shoulder. Adjust the shoulder strap with slide if necessary.

Latching waist buckle

7. Check that the positive pressure of the facemask is turned off, and connect the air supply to the manifold.

Connecting airline

LIMITATION
APPROVED FOR EMERGENCY ESCAPE ONLY WHEN USING SELF-CONTAINED AIR SUPPLY. THE CYLINDER VALVE MUST REMAIN CLOSED DURING SUPPLIED AIR USE. IF SUPPLIED AIR IS TERMINATED, OPEN CYLINDER VALVE AND PROCEED TO FRESH AIR IMMEDIATELY.

8. Fully extend the straps of the head harness by grasping the head harness buckles and extending the head harness straps. Don the SPIROMATIC S mask by grasping the lower two head harness straps and pulling the head harness over your head. Ensure the mask is properly fitted on your face with the chin positioned in the chin cup. Pull down the back tail of the head harness to position the head harness properly and check that no straps are twisted. Moderately tighten the head harness straps by pulling straight back, not out, beginning with the lower two straps first, the upper two straps next, and then the top center strap. Readjust if necessary.

IMPORTANT! THE SPIROMATIC S8 FACEMASK IS AVAILABLE IN FOUR SIZES: SMALL, MEDIUM, LARGE, AND X-LARGE. THE STANDARD SIZE FACEMASK IS THE LARGE SIZE. THE S8 FACEMASK IS AVAILABLE WITH EITHER A FABRIC HEAD HARNESS OR A RUBBER HEAD HARNESS. CONTACT INTERSPIRO AT (800)-468-7788 FOR MORE INFORMATION.

NOTE! OSHA 1910.134 MANDATES ANNUAL FIT TESTING AND ALLOWS THE USE OF EITHER QUANTITATIVE OR QUALITATIVE FIT TEST METHODS. NFPA 1500, STANDARD ON FIRE DEPARTMENT OCCUPATIONAL SAFETY AND HEALTH PROGRAM, 2013 EDITION REQUIRES FIT TESTING OF SCBA FACE MASKS AND ONLY ALLOWS QUANTITATIVE FIT TESTING. INTERSPIRO RECOMMENDS THAT QUANTITATIVE FIT TESTING BE USED AS THE BEST AND MOST RELIABLE TEST METHOD. FIT TESTING MUST BE ACCOMPLISHED PRIOR TO USING THE SPIROMATIC S SCBA AND ANNUALLY THEREAFTER. THE OSHA FIT TESTING REQUIRES TESTING IN THE NEGATIVE PRESSURE MODE AND THE SPIROMATIC S8 MASK REQUIRES THE USE OF AN INTERSPIRO FIT TEST ADAPTER P/N 95991-01. CONTACT INTERSPIRO AT (800)-468-7788 FOR ADDITIONAL INFORMATION.

9. Turn on the positive pressure (see section 1.3) and breathe normally from the apparatus. Stop breathing and listen for any leakage. If you hear any leakage, check that your hair is not interfering with the face seal. Readjust the head harness if necessary.
10. Check operation of the by-pass by opening the valve and ensure a good flow of air into the face mask. Close the by-pass.
11. Check the positive pressure by holding your breath and inserting two fingers between the sealing edge and your face. A strong sound of escaping air should be heard. Take out your fingers again. No sound of escaping air should be heard thus indicating that the facepiece is properly sealed against the face.

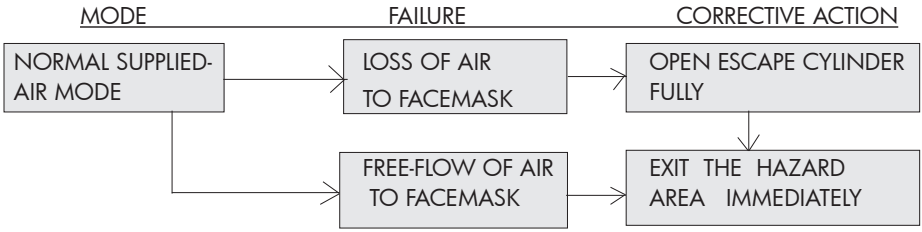
LIMITATION
APPROVED FOR RESPIRATORY ENTRY INTO OR ESCAPE FROM OXYGEN DEFICIENT ATMOSPHERES, GASES, AND VAPORS, WHEN USING AIRLINE SUPPLY.
APPROVED FOR EMERGENCY ESCAPE ONLY WHEN USING SELF-CONTAINED AIR SUPPLY. THE CYLINDER VALVE MUST REMAIN CLOSED DURING SUPPLIED AIR USE. IF SUPPLIED AIR IS TERMINATED, OPEN CYLINDER VALVE AND PROCEED TO FRESH AIR IMMEDIATELY.

EMERGENCY OPERATION

It is imperative that the user understand potential failure modes and the proper actions to take for these conditions.

1. Loss of air to the face mask in the supplied air mode indicates that the supplied air has been disrupted. This requires immediate corrective action. Open the cylinder valve on the emergency escape/egress cylinder fully and EXIT THE HAZARD AREA IMMEDIATELY.
2. A free flow condition at the face mask can indicate an increased supply pressure which has caused the safety to open, or a malfunction of the breathing valve. In both cases EXIT THE HAZARD AREA IMMEDIATELY.

EMERGENCY ACTIONS IN BRIEF



DOFFING THE UNIT

1. Turn off the positive pressure. Remove the mask by loosening the lowest head harness strap first.
2. Disconnect the waist strap by pressing the center of the male buckle.
3. Remove shoulder strap over your head.
4. Disconnect supply hose from manifold.
5. Store the Spiroline Confined Space Unit with a fully charged cylinder. The mask assembly should be stored in a mask bag. Store the SPIROMATIC S mask and breathing valve with the positive pressure turned on.

CLEANING AND MAINTENANCE

CAUTION
SERVICE BEYOND THE FOLLOWING PROCEDURES MUST BE HANDLED BY A HOLDER OF AN INTERSPIRO SERVICE CERTIFICATE

AIR SUPPLY

1. Check that the positive pressure is turned off. Open the cyinder valve.

IMPORTANT
CHECK THE PRESSURE ON THE CYLINDER PRESSURE GAUGE AND OPEN THE CYLINDER VALVE BEFORE CLEANING THE APPARATUS. THE AIR PRESSURE IN THE CYLINDER PREVENTS WATER FROM ENTERING THE REGULATOR.

2. Wash the apparatus thoroughly using a brush if necessary to remove heavy dirt.

CAUTION
DO NOT USE BLEACH OR SOLUTIONS CONTAINING BLEACH AS IT CAN DEGRADE KEVLAR AND/OR RUBBER PARTS.

3. Look for bubbles indicating leaks. Any leakage should be repaired by INTERSPIRO or an authorized Service Agent.
4. After cleaning, rinse in clean water.
5. Close the cylinder valve. Turn on the positive pressure to vent the system.
6. Let the apparatus dry.
7. Change to a fully charged cylinder.

WASHING HARNESS SEPERATELY (IF REQUIRED)

1. Pull back the locking sleeve of the female quick coupling and push in to uncouple the supply hose quick disconnect from breathing valve. Remove the supply hose from shoulder strap.
2. Disconnect the regulator supply hose quick-coupling.
3. Remove cylinder from bag by loosening cord-lock and both cylinder straps. Re-attach hook and loop straps.
4. Slide the webbing buckle located on waist-band to allow slack in the waist strap.
5. Pull the waist strap through the slot in the manifold retaining plate to allow access to the (2) phillips head screws and remove the screws. (Take note of the hole locations.) Place the screws in a safe location or screw them back into the manifold during cleaning.
6. Entire harness assembly can be machine washed with mild detergent, cold water, gentle cycle. Drip dry after cleaning. (Note: be sure to attach hook and loop straps on cylinder bag before cleaning.)

FACE MASK

Regulations state that respirators must be regularly cleaned and disinfected. Furthermore, respirators that are used by more than one person must be cleaned and disinfected after each use.

1. Unscrew the handscrew on the speech cone. Pull out the screw and turn the speech cone away.

2. Remove the breathing valve from the facemask.

3. Prepare a solution of hospital grade cleaner/disinfectant, i.e.: Georgia Steel FG350 Fresh Gear cleaner/disinfectant or equivalent, using warm (approximately 100 degree F) water. If needed, Georgia Steel FK260 Heavy duty detergent may be used for pre-cleaning to remove common industrial debris from masks prior to disinfecting.
4. The mask should be submerged and scrubbed using a soft bristled brush. In addition to scrubbing the outside surface of the face mask, the inside sealing surfaces of the face mask that touch the face should also be scrubbed using a soft bristled brush. The inside of the visor should not be scrubbed as this could adversely affect the anti-fog coating. To ensure complete disinfection, refer to the respirator cleaner manufacturers instructions.
5. Rinse the face mask well in clean water. Detergent residue may cause rubber components to “gum” up.
6. Dry the mask using a soft towel. Ensure that excess water is removed from the air channels and sealing edges and perform a visual inspection of the face mask before reassembly.

CAUTION! ALCOHOL OR PRODUCTS CONTAINING ALCOHOL MUST NOT BE USED FOR CLEANING OF THE FACE MASK OR OTHER RUBBER BASED MATERIALS.

7. If it is deemed necessary to clean the demand valve and/or regulator, care must be taken to prevent water from entering either of these components. Do not submerge the breathing valve. The outside of the breathing valve can be cleaned with a damp cloth and warm water.

IMPORTANT! ALL PARTS MUST BE COMPLETELY DRY BEFORE RE-ASSEMBLY. THIS IS ESPECIALLY IMPORTANT UNDER EXTREME COLD CONDITIONS.

9. Examine the apparatus for any signs of wear or damage.

NOTE! ANY FURTHER REPAIRS SHOULD ONLY BE UNDERTAKEN BY A QUALIFIED INTERSPIRO SERVICE AGENT OR A HOLDER OF A SERVICE CERTIFICATE.

REASSEMBLE APPARATUS

1. Refit fully charged cylinder in accordance with the instructions given in this manual on page 10.
2. Fit breathing valve to clean facemask and lock securely into position with the speech cone.
3. Perform the leakage and function check as described in this manual on page 12.
4. Close the cylinder valve and evacuate any pressure remaining in the system.
5. Store the apparatus ready for use. The apparatus should normally be stored in dry conditions, well protected from direct sunlight and extremes of temperature. INTERSPIRO recommends the use of mask bags to protect mask lenses and breathing valves.

FUNCTION TEST AND VISUAL INSPECTION

1. Connect the confined space unit to the air supply and turn off the positive pressure of the facemask. No flow of air should be heard. If such a flow can be heard, it would indicate a leakage.
2. Turn on the positive pressure briefly. A strong flow of air must result. If not, the valve has been incorrectly assembled and should be adjusted and the test repeated.
3. Disconnect the air suppy hose.
4. Store the apparatus with the positive pressure of the mask on the on position.

RECOMMENDATIONS

Inspect the rubber parts, the plastic parts, the non-return valves in the inner mask and the head harness at regular intervals.

Breathing equipment for work in contaminated atmospheres should undergo a complete function test at least once a year, even if it has not been used. These tests are carried out on Interspiro test equipment.

CYLINDER CHARGING

The cylinder must be fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7-1 for type 1, Grade D air, or equivalent specifications.

5-MINUTE

The 5-minute escape cylinder is an all aluminum, 2216 psi cylinder. DO NOT over charge the cylinder, fill to the full mark on pressure gauge. This cylinder requires a 5-year Hydro-static Test.

10-MINUTE

The 10-minute escape cylinder is a composite, 4500 psi cylinder. DO NOT over charge the cylinder, fill to the full mark on pressure gauge. This cylinder requires a 5-year Hydro-static Test.

15-MINUTE

The 15-minute escape cylinder is a composite, 4500 psi cylinder. DO NOT over charge the cylinder, fill to the full mark on pressure gauge. This cylinder requires a 5-year Hydro-static Test.

SERVICE AND TESTING

Spiroline breathing apparatus was designed for ease of use and maintenance.

To ensure that your Spiroline breathing apparatus is working properly a complete test at least once a year must be performed, even if it has not been used. These tests are carried out on test equipment which enables you to test all Spiroline functions and identify areas requiring repair.

WARNING!
EXCEPT FOR CLEANING, LUBRICATION, INSPECTION AND TEST PROCEDURES ACCORDING TO THIS OPERATING INSTRUCTION, ONLY THE HOLDER OF AN INTERSPIRO REPAIR CERTIFICATE SHOULD SERVICE THE SPIROLINE BREATHING APPARATUS. WORK BY UNAUTHORIZED OR UNTRAINED PERSONS AND/OR THE USE OF OTHER THAN INTERSPIRO PARTS MAY VOID THE APPROVAL AND SAFETY OF THE UNIT.

When	What
Every day (if used daily)	Check cylinder pressure
Every week (if stored)	Check the cylinder pressure
Before use	See this manual
After use	See this manual
Every year	Complete service and test
Every 5 years	Cylinder reinspection

Recommended minimum test and service.

WARNING!
THE MINIMUM TEST AND SERVICE PROCEDURES ARE INTENDED FOR NORMAL USE ONLY. IF THE SCBA HAS BEEN EXPOSED TO EXTREME CONDITIONS SUCH AS EXTREME HEAT OR COLD, HARSH LIQUIDS OR CHEMICALS, HEAVY DUTY DUST PARTICLES, OR EXTREME SHOCK OR VIBRATION, THE SCBA MUST UNDERGO A TEST AND INSPECTION BY A HOLDER OF AN INTERSPIRO SERVICE CERTIFICATE. IF THE SCBA DOES NOT MEET THE VALUES IN THE SPIROMATIC TEST INSTRUCTION OR IF IT SHOWS SIGNS OF WEAR, THE SCBA MUST BE TAKEN OUT OF SERVICE AND REPAIRED ACCORDING TO THE SPIROMATIC SERVICE MANUAL.

REPLACEMENT/RETIREMENT CONSIDERATIONS

When any SCBA component or part shows signs of wear and/or damage, these items must be replaced. The service life of the SCBA can be maintained indefinitely as long as the SCBA meets the values in the Test Instructions.

Composite cylinders have a 15 year lifetime according to DOT exemption, provided satisfactory hydrostatic testing is accomplished. If damaged, these cylinders may be repaired or condemned according to the Guidelines for the Visual Inspection of Compressed Gas Cylinders in CGA C-6.2.

STORING THE APPARATUS

Upon completion of all required service, the Spiroline confined space entry equipment should be stored in the carrying case if supplied with the unit.

Store the apparatus ready for use. The apparatus should normally be stored in dry conditions, well protected from direct sunlight and extremes of temperature.

The mask assembly should be stored in a mask bag.

Store the breathing valve with the positive pressure turned on.

The cylinder must be fully charged and ready for use.

Follow the minimum Test and Service Requirements identified in Table on page 23.

MARKING RECOMMENDATIONS AND RESTRICTIONS

Special user identification/marking on SCBA equipment must be accomplished in a manner that does not interfere with regulatory labels i.e. NIOSH, NFPA, DOT. Further, manufacturer traceability markings such as embossed serial numbers or part numbers can not be obscured.

Marking of SCBA cylinders and/or other SCBA components may be done with a non-flammable marking medium.


INTERSPIRO
Keeps You Breathing