

The Bullard SparxLift Series airline respirators, when properly used, provide a continuous flow of air from a remote air source to the respirator wearer. SparxLift Series respirators offer protection from airborne contaminants that are not immediately dangerous to life or health (IDLH), or that do not exceed maximum use concentrations allowed by applicable OSHA, EPA, NIOSH, ACGIH, or other regulatory standards and recommendations.



NIOSH approved SparxLift Series airline respirators are designed by Bullard to provide respiratory protection in general purpose applications including welding, grinding, and Type C painting applications:

- TC-19C-0511 SLS1 Shroud - F30 Series Flow Control Devices
- TC-19C-0512 SLS2 Shroud - F30 Series Flow Control Devices
- TC-19C-0513 SLS1 Shroud - F40 Series Flow Control Devices
- TC-19C-0514 SLS2 Shroud - F40 Series Flow Control Devices
- TC-19C-0515 SLS1 Shroud - DC50 Series Flow Control Devices
- TC-19C-0516 SLS2 Shroud - DC50 Series Flow Control Devices
- TC-19C-0517 SLS1 Shroud - Frigitrion 2000 Series Flow Control Devices
- TC-19C-0518 SLS2 Shroud - Frigitrion 2000 Series Flow Control Devices
- TC-19C-0519 SLS1 Shroud - AC1000 Series Flow Control Devices
- TC-19C-0520 SLS2 Shroud - AC1000 Series Flow Control Devices
- TC-19C-0521 SLS1 Shroud - HC2400 Series Flow Control Devices
- TC-19C-0522 SLS2 Shroud - HC2400 Series Flow Control Devices

The SparxLift Helmet is also NIOSH approved for use with the EVA PAPR (TC-21C-0940 and TC-21C-0941)

The protective helmet meets ANSI/ISEA Standard Z87.1-2010, Z87+ Eye & Face Protection. Anti-fog wipes/coatings are not required for use with SparxLift.

SparxLift Series respirators are compatible with Grade D breathing air sources such as breathing air compressors or Bullard Free-Air® Pumps. Bullard offers the appropriate approved breathing tube assembly and air supply hose to connect the SparxLift Series respirator to these breathing air sources.

▲ WARNING

Read all instructions and warnings before using this respirator. Save this manual for future reference. Failure to follow these instructions could result in death or serious injury.

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Component Concept

The Bullard SparxLift Series airline respirators consist of four components (Figure 1): respirator helmet assembly, breathing tube assembly, flow control device, and air supply hose.

All components must be present and properly assembled to constitute a complete NIOSH approved respirator.

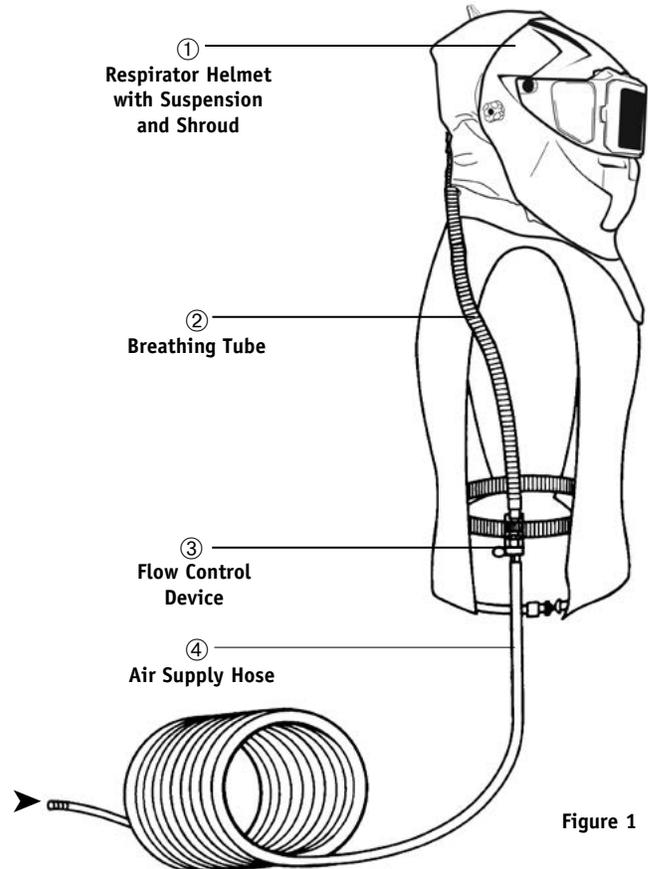


Figure 1

Supplying Grade "D" or Higher Air Quality
(See Breathing Air Requirements on page 6)

▲ WARNING

Failure to use complete NIOSH approved Bullard components and replacement parts voids approval of entire assembly. Basic parts are listed on the NIOSH Approval Label on page 2. Failure to follow these instructions could result in death or serious injury.

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▲ WARNING

1. NEVER use this respirator, or any supplied air respirator, in concentrations which exceed the maximum use concentrations for the respirator you have chosen.
2. It is imperative to know the level of concentration of contaminants for which this respirator, or any respirator, is being used. Otherwise, it is impossible to choose an appropriate respirator.
3. It is also imperative that you measure the concentration of contaminants after the welding or grinding before you send your employee(s) back into the area to perform other tasks such as clean-up or painting. Concentrations may still be high enough to exceed the maximum use concentrations of many respirators, including supplied air respirators.
4. Do not assume that the concentrations you measured at an earlier time must be or probably are the same now for a different task or operation. Concentrations may vary significantly depending on a host of factors including, but not limited to, the number of welders/grinders engaged in the operation, whether the operation is in an enclosed or partially-enclosed structure, whether ventilation is used, and the type of ventilation.
5. This respirator, when properly fitted and used, in conjunction with adherence to OSHA regulations and industry standards, will provide a reasonable degree of protection to the wearer. The respirator significantly reduces, but may not totally eliminate, the breathing of contaminants depending on the work practices involved. Where concentrations of contaminants are excessive, respirator wearers may obtain a higher level of protection from a self contained breathing apparatus (SCBA) respirator. At this time there are no side-by-side field studies for comparison. However, OSHA does assign higher protection factors to SCBAs. Ideally, the employer should measure concentrations inside the breathing zone on a periodic basis to ensure that the wearer is receiving adequate protection.
6. Before using this respirator, Federal Law requires that the employer shall identify and evaluate the respiratory hazard(s) in the workplace, and that this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Do not exceed maximum use concentrations established by OSHA, EPA, NIOSH, ACGIH, or other regulatory standards. All approved respirators shall be selected, fitted, used and maintained in accordance with MSHA, OSHA, NIOSH and other applicable regulations.
7. Improper respirator use may damage your health and/or cause your death. Improper use may also cause certain life threatening delayed lung diseases such as silicosis, pneumoconiosis, or asbestosis.
8. Do not wear this respirator if any of the following conditions exist:
 - a. The atmosphere is immediately dangerous to your life or health (IDLH)
 - b. You cannot escape without the aid of the respirator
 - c. The atmosphere contains less than 19.5% oxygen
 - d. The work area is poorly ventilated
 - e. Unknown contaminants are present, or
 - f. Contaminant concentrations are in excess of regulations or recommendations (as described in item 2 above).
9. Do not wear this respirator until you have passed a complete medical evaluation (perhaps including a lung x-ray) conducted by qualified medical personnel, and have been trained in the respirator's use, maintenance, and limitations by a qualified individual (appointed by your employer) who has extensive knowledge of Bullard SparxLift Series respirators.
10. Do not modify or alter this respirator in any manner. Use only NIOSH approved SparxLift Series components and replacement parts manufactured by Bullard for use with this respirator. Failure to use NIOSH-approved Bullard components and replacement parts such as lenses, hoses, flow control devices, and climate control devices, voids NIOSH approval of the entire respirator, invalidates all Bullard warranties, and could cause death, serious injury, lung disease, or exposure to other hazardous or life threatening conditions. In the past, Bullard has tested after-market or "pirate" air control valves. In these tests, only four (4) CFM of air was allowed into the breathing zone. Incoming air flow is very important to the respirator user and is instrumental in keeping contaminants out of the breathing zone of the respirator user. This respirator was designed and certified by NIOSH to provide a minimum of six (6) CFM to the wearer. Buying replacement parts that are not manufactured by Bullard and intended for this respirator not only voids NIOSH approval and Bullard warranties, but also exposes the respirator user to an unreasonable health risk and may result in fines from OSHA.
11. Inspect all components of this respirator system daily for signs of wear, tear, or damage that might reduce the degree of protection originally provided. Immediately replace worn or damaged components with NIOSH approved Bullard SparxLift Series components or remove the respirator from service. (See INSPECTION, CLEANING, AND STORAGE section on page 17 for proper maintenance of SparxLift Series respirators).
12. This respirator must be supplied with clean breathable air at all times. Be certain your employer has determined that the breathing air source at the point-of-attachment provides at least Grade D breathable air—air meeting the requirements as described in the Compressed Gas Association Commodity Specification CGA G-7.1 and as specified by Federal Law at 42 CFR, Par 84, Subpart J, 84.141(b) and 29 CFR 1910.134(i). The point-of-attachment is the point at which the air supply hose connects to the air source. This respirator does not purify air or filter out contaminants.
13. Use only the hose lengths and pressure ranges specified in the instruction manual. A pressure gauge attached to the air source is used to monitor the amount and adequacy of air provided to the respirator wearer (see page 7).
14. Do not connect the respirator's air supply hose to nitrogen, oxygen, toxic gases, inert gases, or other non-Grade D air sources. To prevent this, the employer must use airline couplings that are incompatible with outlets for other gas systems, as required by OSHA regulation 29 CFR 1910.134 (i) (8). Check the air source before using the respirator. Failure to connect to the proper air source could result in death or serious injury.

SparxLift Series Welding Helmet Airline Respirator User Manual

▲ WARNING

15. Do not use this respirator in poorly ventilated areas or confined spaces such as tanks, small rooms, tunnels, or vessels unless the confined space is well ventilated and the contaminant concentrations are below the upper limit recommended for this respirator. In addition, follow all procedures for confined space entry, operation and exit as defined in applicable regulations and standards, including 29 CFR 1910.146.
16. If you have any questions concerning the use of this respirator, or if you are not sure whether the atmosphere you are working in is immediately dangerous to life or health (IDLH), ask your employer. All instructions for the use and care of this product must be supplied to you by your employer as recommended by the manufacturer and as required by Federal Law (29 CFR 1910.134).
17. Do not use this respirator for underwater diving.
18. Leave work area immediately if
 - Any respirator component becomes damaged
 - Airflow into respirator stops or slows down
 - The air pressure, as indicated on the gauge, drops below the minimum specified in the Breathing Air Pressure Table in the SparxLift Series User Manual
 - Breathing becomes difficult
 - You become dizzy, nauseous, too hot, too cold, or ill
 - You taste, smell, or see contaminants inside the respirator hood
 - Your vision becomes impaired
19. Eye & Face Protection: The SparxLift Helmet provides ANSI/ISEA Z87.1-2010 High Impact Face Protection but the lenses are not shatterproof.
20. Hearing Protection: SparxLift Series respirators DO NOT provide hearing protection. Use properly fitted earmuffs, earplugs and/or other hearing protection when exposed to high noise levels.
21. Historically, the incidence of disease from overexposure to toxic substances almost always occurs because the OSHA regulations and industry standards applicable to the work practices involved are not followed. It is, therefore, imperative that the employer understand and follow all of these standards and regulations.

REMEMBER:

- Respiratory protection is but one component of safe work practices. To minimize the chances of overexposure, all safety regulations and standards must be followed; and,
- Respiratory protection is the last line of defense to be employed. The employer must first eliminate or minimize the levels of toxic substances in the work place by accepted engineering control measures. Assuming the employer and the wearer do their part, this respirator should provide the wearer with an adequate degree of protection.

Technical Assistance

For technical assistance call or write:

Bullard

1898 Safety Way

Cynthiana, KY 41031-9303

Toll free: 877-BULLARD (285-5273)

Phone: 859-234-6616

Fax: 859-234-6858

info@bullard.com

www.bullard.com

Operations

Protection

Respiratory

NIOSH approved SparxLift Series airline respirators are designed by Bullard to provide respiratory protection in general purpose applications including welding, grinding, and Type C painting applications:

- TC-19C-0511 SLS1 Shroud - F30 Series Flow Control Devices
- TC-19C-0512 SLS2 Shroud - F30 Series Flow Control Devices
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- TC-19C-0514 SLS2 Shroud - F40 Series Flow Control Devices
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- TC-19C-0517 SLS1 Shroud - Frigitrion 2000 Series Flow Control Devices
- TC-19C-0518 SLS2 Shroud - Frigitrion 2000 Series Flow Control Devices
- TC-19C-0519 SLS1 Shroud - AC1000 Series Flow Control Devices
- TC-19C-0520 SLS2 Shroud - AC1000 Series Flow Control Devices
- TC-19C-0521 SLS1 Shroud - HC2400 Series Flow Control Devices
- TC-19C-0522 SLS2 Shroud - HC2400 Series Flow Control Devices

This respirator is not approved for use in any atmosphere immediately dangerous to life or health (IDLH), or from which the wearer cannot escape without the aid of the respirator.

Head

SparxLift Series respirators do not meet ANSI/ISEA Standard Z89.1-2009 head protection requirements.

Eye & Face

The SparxLift helmet meets ANSI/ISEA Standard Z87.1-2010, Z87+ Eye & Face Protection but the lenses are not shatterproof.

Hearing

SparxLift Series respirators DO NOT provide hearing protection. Use properly fitted earmuffs, earplugs and/or other protection when exposed to high noise levels.

Breathing Air Requirements

Air Quality

Respirable, breathing air must be supplied to the point-of-attachment of the approved Bullard air supply hose. The point-of-attachment is the point at which the air supply hose connects to the air source. A pressure gauge attached to the air source is used to monitor the pressure of air provided to the respirator wearer (see Figure 2).

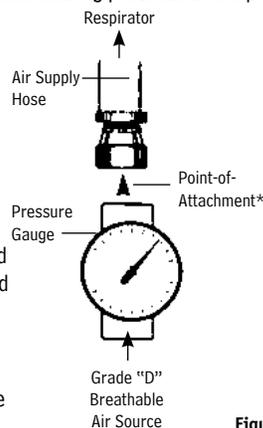


Figure 2

*Use either a V13 hose-to-hose pipe adapter or a quick-disconnect coupler to attach the air supply hose.

▲ WARNING

This respirator MUST be supplied with clean, breathable air, Grade D or better, at all times. This respirator does NOT purify air or filter out contaminants. Failure to follow these instructions could result in death or serious injury.

Supplied breathing air must AT LEAST meet the requirements for Type 1 gaseous air as described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher quality), and as specified by Federal Law 42 CFR, Part 84, Subpart J, 84.141(b) and 29 CFR 1910.134(i).

The requirements for Grade D breathable air include:

Oxygen	19.5-23.5%
Hydrocarbons (condensed) in mg/m3	5 mg/m3 max.
Carbon monoxide.....	10 ppm max.
Carbon dioxide.....	1,000 ppm max.
Odor.....	Lack of noticeable odor

No toxic contaminants at levels that make air unsafe to breathe.

Contact the Compressed Gas Association (1725 Jefferson Davis Hwy, Arlington, VA 22202) for complete details on Commodity Specification G-7.1.

Air Source

Locate the source of supplied air whether it is an air compressor or an ambient air pump, such as a Bullard Free-Air pump, in a clean air environment. Locate the air source far enough from your work site to ensure the air remains contaminant-free. Always use an inlet filter on your air source. Use suitable after-cooler/dryers, filters, carbon monoxide monitors and alarms, like the Bullard Clean Air Box (CAB) Series, as necessary to assure clean, breathable air at all times. The air should be regularly sampled to be sure that it meets Grade D requirements.

Breathing Air Pressure

Air pressure must be continually monitored at the point-of-attachment while operating this respirator. A reliable air pressure gauge must be present to permit you to continually monitor the pressure during actual respirator operation.

▲ WARNING

Failure to supply the minimum required pressure at the point-of-attachment for your hose length and type will reduce airflow and could result in death or serious injury.

The Breathing Air Pressure Tables (page 7-8) defines the air pressure ranges necessary to provide SparxLift Series respirators with a volume of air that falls within the required range of 6-15 cfm or 170-425 lpm (Ref. 42 CFR, Part 84, Subpart J, Table 8).

Make sure you understand the information in the Breathing Air Pressure Table before using this respirator.

1. Find your flow control valve/climate control device in the box heading and column 1.
2. Be sure your Bullard air supply hose(s) (column 3) is approved for use with your flow control valve/climate control device.
3. Determine that your Bullard air supply hose is within the approved length (column 3).
4. Make sure you have not exceeded the maximum number of hose sections (column 3).
5. Set the air pressure at the point-of-attachment within the required pressure range for your flow control valve/climate control device, and air supply hose type and length. Accurate pressure readings can only be attained when air is flowing into the respirator.

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Bullard air supply hose(s), as part of a NIOSH approved system, MUST be used between the breathing tube connection fitting on the wearer's belt and the point-of-attachment to the air supply (page 9).

Bullard quick-disconnect fittings, as part of a NIOSH approved system, MUST be used to connect V20 hose lengths together. When connecting lengths of V10 hose, only use Bullard V11 hose-to-hose adapters. Secure connection(s) until wrench tight and leak free. Total connected hose length and number of hoses MUST be within the ranges specified on the Breathing Air Pressure Table (pages 7-8) and the respirator's NIOSH approval label (pages 2-3).

The breathing tube connection fitting MUST be secured to the belt that is supplied with this respirator. Securing the air entry connection fitting helps prevent the air supply hose from snagging, disconnecting or pulling the respirator helmet off your head.

S - Special or Critical Users Instructions

Breathing Air Pressure Tables

These tables define the air pressure ranges necessary to provide the SparxLift with a volume of air that falls within the required range of 6-15 CFM or 170-425 lpm according to U.S. Government Regulations (42 CFR, Subpart J, 84.150, Table 8). First, find the table with the correct flow control device, then find the air supply hose length, the value within the corresponding box represents the proper operating air pressure.

The maximum number of hose sections allowed is listed in parentheses after the hose length.

V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses)									
1	2	3							
Flow Control Device	Nipple Type	V10 Series Air Supply Hose Lengths							
		25' (1)	50" (2)	75' (2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
F30, F30B, F30S	Industrial Interchange	15-27	18-31	21-35	23-36	27-43	30-47	34-52	37-56
F31	Schrader	14-28	17-31	20-35	22-36	27-43	30-47	34-52	37-56
F32	Snap-Tite	13-25	16-29	19-33	21-34	26-41	29-45	33-51	36-54
F33	Snap-Tite Brass	13-25	16-29	19-33	21-34	26-41	29-45	33-51	36-54
F34	Snap-Tite Stainless	13-25	16-29	19-33	21-34	26-41	29-45	33-51	36-54
F37	CEJN	8-15	12-21	15-26	18-27	23-36	26-40	31-46	34-50
F38	Bayonet	19-33	22-37	24-40	26-41	30-48	33-51	37-56	39-60

F35 Series Pressure Table (pressures in psi)									
1	2	3							
Flow Control Device	Nipple Type	V20 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (1)		100' (1)		200' (2)		300' (3)
F35, F35B, F35S	Industrial Interchange	4-8	6-11		8-15		11-20		15-26

FRIGITRON 2000 Series Pressure Table (pressures in psi)									
1	2	3							
Flow Control Device	Nipple Type	V20 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (1)		100' (1)		200' (2)		300' (3)
FRIGITRON 2000	Industrial Interchange	19-24	21-26		23-28		27-33		31-37

F40 Series Pressure Table (pressures in psi)									
1	2	3							
Flow Control Device	Nipple Type	V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (2)	75' (2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
F40, F40B, F40S	Industrial Interchange	24-31	26-35	28-38	30-39	34-46	37-50	40-55	43-58
F41	Schrader	22-31	25-35	27-38	29-39	33-46	36-50	39-55	42-58
F42	Snap-Tite	22-30	25-34	27-37	29-38	33-45	36-49	39-54	41-57
F43	Snap-Tite Brass	22-30	25-34	27-37	29-38	33-45	36-49	39-54	41-57
F44	Snap-Tite Stainless	22-30	25-34	27-37	29-38	33-45	36-49	39-54	41-57
F47	CEJN	19-23	22-28	24-32	26-33	30-41	33-45	37-50	40-54
F48	Bayonet	26-37	28-41	30-44	32-44	36-51	38-54	41-59	44-62



AC1000 Series Pressure Table (pressures in psi)									
1 Flow Control Device	2 Nipple Type	3							
		V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses) Regular or Cold Operation							
		25' (1)	50" (2)	75'(2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
AC100030, AC100030B, AC100030S	Industrial Interchange	65-84	66-85	67-87	69-89	72-91	75-94	77-96	80-98
AC100031	Schrader	62-82	64-84	66-85	68-86	71-90	73-92	76-94	79-96
AC100032	Snap-Tite	63-82	65-84	66-85	68-86	71-90	73-92	76-95	79-96
AC100033	Snap-Tite Brass	63-82	65-84	66-85	68-86	71-90	73-92	76-95	79-96
AC100034	Snap-Tite Stainless	63-82	65-84	66-85	68-86	71-90	73-91	76-95	79-96
AC100037	CEJN	60-79	62-81	64-83	66-84	69-88	71-90	74-92	78-94
AC100038	Bayonet	64-81	66-83	68-85	69-86	72-89	75-91	78-94	80-96

AC100035 Series Cool Tube Pressure Table (pressures in psi)									
1 Flow Control Device	2 Nipple Type	3							
		V20 Series Air Supply Hose Lengths (maximum hose sections in parentheses) Regular or Cold Operation							
		25' (1)	50" (2)	75'(2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
AC100035, AC100035B, AC100035S	Industrial Interchange				50-54		50-54		50-54

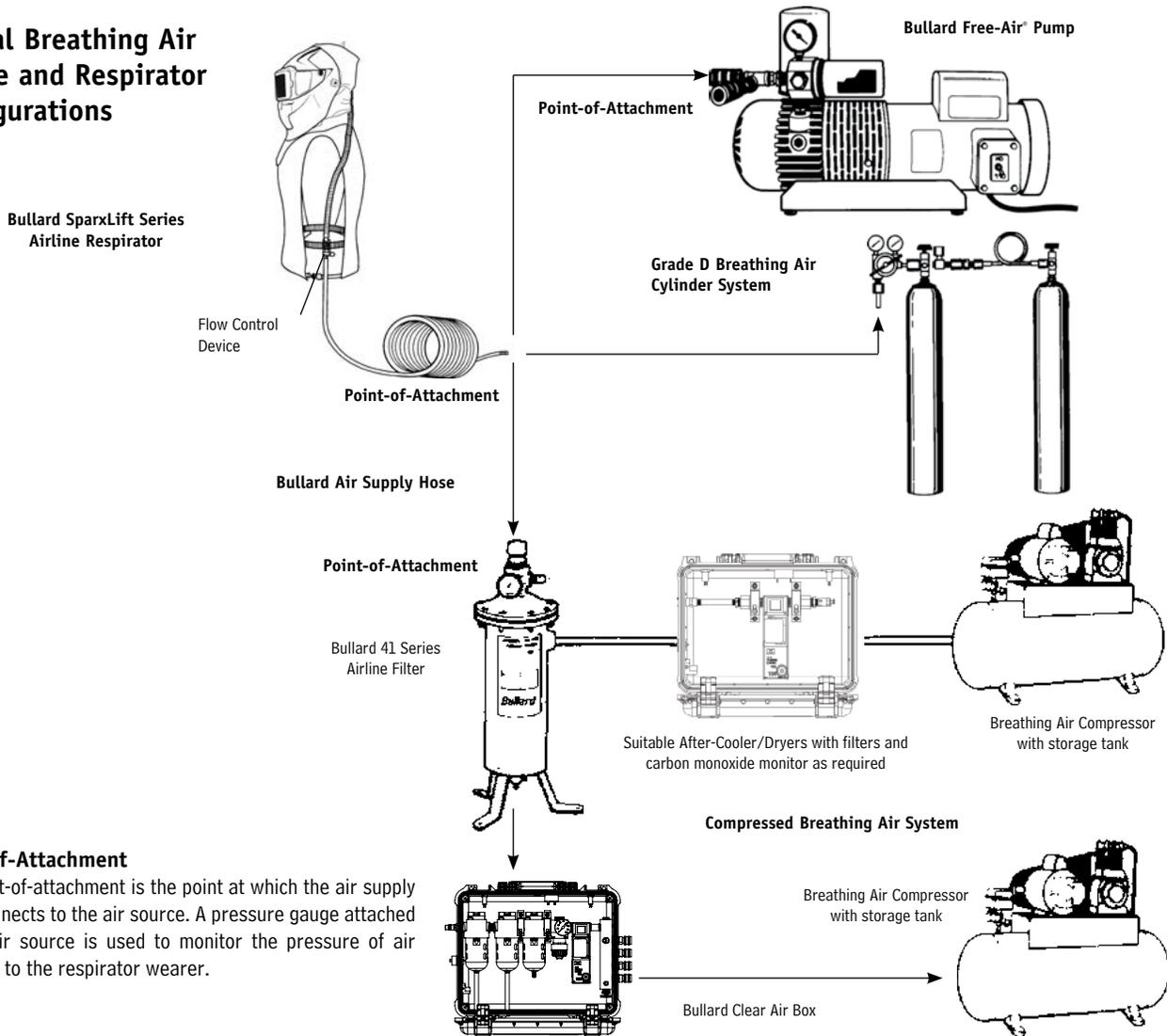
HC2400 Series Pressure Table (pressures in psi) - Cold Operation									
1 Flow Control Device	2 Nipple Type	3							
		V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (2)	75'(2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
HC240030, HC240030B, HC240030S	Industrial Interchange	65-75	67-87	71-80	73-82	79-87	82-91	87-95	90-98
HC240031	Schrader	66-74	68-78	71-80	73-81	78-87	82-91	86-95	90-99
HC240032	Snap-Tite	66-74	69-77	72-80	74-81	79-87	83-90	88-95	91-98
HC240033	Snap-Tite Brass	66-74	69-77	72-80	74-81	79-87	83-90	88-95	91-98
HC240034	Snap-Tite Stainless	66-74	69-77	72-80	74-81	79-87	83-90	88-95	91-98
HC240037	CEJN	63-71	66-75	69-77	72-78	78-84	81-89	85-92	91-96
HC240038	Bayonet	68-77	71-80	74-83	76-83	82-89	85-91	88-97	93-100

HC2400 Series Pressure Table (pressures in psi) - Hot Operation									
1 Flow Control Device	2 Nipple Type	3							
		V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (2)	75'(2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
HC240030, HC240030B, HC240030S	Industrial Interchange	75-84	75-87	81-90	82-90	87-97	92-100	97-104	101-107
HC240031	Schrader	70-82	72-85	76-88	78-90	84-96	87-98	93-104	97-107
HC240032	Snap-Tite	71-82	74-85	77-88	79-89	85-95	89-98	96-102	98-106
HC240033	Snap-Tite Brass	71-82	74-85	77-88	79-89	85-95	89-98	96-102	98-106
HC240034	Snap-Tite Stainless	71-82	74-85	77-88	79-89	85-95	89-98	96-102	98-106
HC240037	CEJN	67-79	70-83	74-85	76-85	82-93	87-96	92-100	97-104
HC240038	Bayonet	77-87	80-90	83-93	85-94	92-100	96-102	101-107	106-110

DC5040 Series Pressure Table (pressures in psi)									
1 Flow Control Device	2 Nipple Type	3							
		V10 Series Air Supply Hose Lengths (maximum hose sections in parentheses)							
		25' (1)	50" (2)	75'(2)	100' (3)	150' (3)	200' (4)	250' (4)	300' (5)
DC5040, DC5040B, DC5040S	Industrial Interchange	58-73	63-79	69-85	74-86	83-97	89-103	97-112	103-118
DC5041	Schrader	59-72	64-78	69-84	74-85	83-95	89-102	97-111	103-117
DC5042	Snap-Tite	56-70	61-77	68-82	72-84	82-96	89-102	97-111	103-117
DC5043	Snap-Tite Brass	56-70	61-77	68-82	72-84	82-96	89-102	97-111	103-117
DC5044	Snap-Tite Stainless	56-70	61-77	68-82	72-84	82-96	89-102	97-111	103-117
DC5047	CEJN	46-58	52-65	58-70	63-72	74-85	80-92	88-101	96-107
DC5048	Bayonet	67-83	72-89	77-94	81-95	90-106	95-111	102-118	108-123
DC5040SW, DC5040BSW, DC5040SSW	Industrial Interchange	75 - 90	77 - 94	82 - 101	84 - 102	91 - 112	98 - 117	104 - 125	111 - 125

SparxLift Series Welding Helmet Airline Respirator User Manual

Typical Breathing Air Source and Respirator Configurations



Point-of-Attachment

The point-of-attachment is the point at which the air supply hose connects to the air source. A pressure gauge attached to the air source is used to monitor the pressure of air provided to the respirator wearer.

Before Use

The auto darkening welding filter in the SparxLift has been designed for arc welding and gas cutting. It is suitable for all normal arc welding processes such as MIG, MAG, TIG, SMAW, Plasma Arc and Air Carbon welding.

Before use the shade control should be adjusted to the appropriate level based upon ANSI/ISEA Z87.1-2010, ANSI Z49.1:2012, EN169 (European Standard specifications or equivalent) or other appropriate safety guidelines. When in doubt please consult your safety representative or your authorized Bullard distributor.

The SparxLift provides continuous protection from ultraviolet and infrared radiation to the maximum level indicated on the product and as described in the relevant Standards. This protection is fail-safe and is not compromised by loss of battery power or other electronic failure.

The SparxLift welding filter cartridge is fitted with two independently operated sensors that detect the welding arc and respond accordingly resulting in the appropriate darkened filter state as set by the user and as indicated on the scaled adjustment. Please note that professional judgement may be required to achieve the best results. When in doubt consult an authorized safety representative or your Bullard distributor and always maintain a conservative attitude towards operation.

Two replaceable lithium batteries type CR2032 (3V) are used as major power sources. An additional solar cell panel extends battery life and ensures

efficient operation. When operating normally the welding helmet will switch on automatically and switch off automatically to save power a few minutes after the last welding arc has been detected.

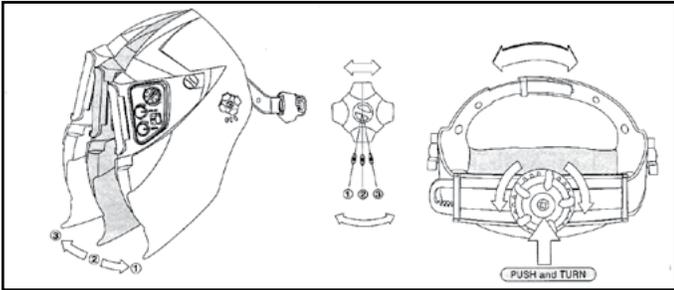
To provide a general check of system status you may wish to set the shade control to 11 and hold the helmet towards a bright incandescent light source. Under normal circumstances the filter will change from light to dark state and back to light state again as you move the helmet away. Please note that if you have any questions or there is any doubt about the performance of your Bullard product you should refer to your authorized safety representative or Bullard distributor.

NOTE

- Always use genuine SparxLift front and inside cover plates. Failure to do so may result in injury and will void the warranty.
- The SparxLift is not designed for overhead welding without the use of additional protection.
- Check your helmet for physical damage and test it regularly. If your helmet is damaged or is not working normally have it tested and repaired before use.
- Always select the appropriate shade before use according to the type of welding and current/amperes used. When in doubt refer to your authorized safety representative.

Helmet and Head Harness Adjustment

Please make the appropriate adjustment(s) to the head harness to ensure a comfortable and secure fit. It only takes a few moments and helps ensure you are properly protected. The SparxLift harness allows you to adjust the distance and angle between your eyes and the filter window. You can also adjust the circumference of the headband to ensure a comfortable but firm fit. Please make these adjustments before use based on the illustrations in figures shown below.



Markings

The appropriate available shade number markings and range are indicated on the product. Please ensure that the appropriate shade number is selected before welding. Used properly the SparxLift provides eye and face protection to meet or exceed ANSI/ISEA Z87.1-2010, EN379 and EN175 and other relevant Standards where indicated. The following example illustrates these requirements. Please note this example is provided for illustration purposes only.

Light Shade	CE 4
Dark Shade	9-13
Manufacture Identification	SERVORE*
Optical Class	1
Diffusion of Light Class	1
Variations in Luminous Transmittance Class	1
Certification Mark of Number of Standard	379

*SEVORE manufactures the helmet for Bullard

Technical Specifications

Switching time (light-dark)	1/25,000(0.04msec)	
Shade Level	Inactivated	Shade #4
	Activated	Shade #9 ~ #13
Sensitivity Adjustment	Dual sensors plus pre-shading (Low-High)	
Switching Delay (dark to light)	Adjustable 0.05s – 0.8s	
Tig rating	RF(H) >1Amp / RF(L) >10Amp	
Power supply	3V Lithium battery (CR2032) 2ea (replaceable)	
Battery life	3000 hours (Approximately)	
Supplementary power	Solar cells (Auto On/Off)	
Battery replacement	Replaceable (Low battery indicator)	
Cartridge size	110×90mm (4.3×3.5 in)	
Filter window	97×46mm (3.8×1.8 in)	
Total weight	Autolift : 610g (21.5 oz)	
Operating temp.	-5°C ~ +55°C	
Storage temp.	-20°C ~ +70°C	

Solar Cell Power Saver

The SparxLift solar cell array minimizes battery use by supplying continuous power during welding. The optimized auto on/off power management circuits ensure stable performance and maximum battery life under all conditions.

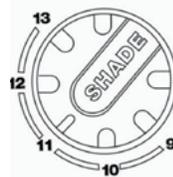
Dual Sensors Plus Pre-Shading

Z-Slide cartridges incorporate the latest advances in sensor and pre-shading technology. By sensing FR and using specially programmed circuits the Z-Slide responds reliably under the most demanding conditions. From Low amp TIG work to simple stick welding, the Z-Slide can be depended upon to respond reliably every time and with the Brilliant Clear X-View screen, welding is now even easier and more enjoyable.

Brilliant Clear X-View Technology

By incorporating the best optically correct UV and IR filters with special ultra-fast low-distortion LCD panels the SparxLift has made a quantum leap in filter clarity and performance. When combined with the proprietary electronic control technology the results are simply amazing. Blazingly fast, beautifully clear and extremely stable the SparxLift series cartridge sets new industry standards in performance, protection and control.

Shade Control



The required filter dark state can be selected by using the shade control. The SparxLift can be adjusted between shades 9 to 13 with the embossed arrow on the dial indicating the current adjustment. Always use the appropriate shade for the welding operation you are undertaking. When in doubt please consult the relevant Standards or your authorized safety representative.

Recommended shade numbers according to BS 679, DIN 4647-1 and EN169

Welding Process	Current in amperes																														
	0.5	2.5	10	20	40	80	125	175	225	275	350	450	1	5	15	30	60	100	150	200	250	300	400	500							
Covered Electrodes				9	10	11		12			13		14																		
MIG on heavy metals						10	11		12			13		14																	
MIG light alloys						10	11		12			13		14	15																
TIG on all metals and alloys				9	10	11		12			13		14																		
MAG						10	11		12			13		14		15															
Arc-air gouging									10	11		12			13		14	15													
Plasma jet cutting									11		12			13																	
Microplasma arc welding	4	5	6	7	8	9	10	11	12	13	14		15																		

According to the conditions of use, the next greater or the next smaller scale number can be used.

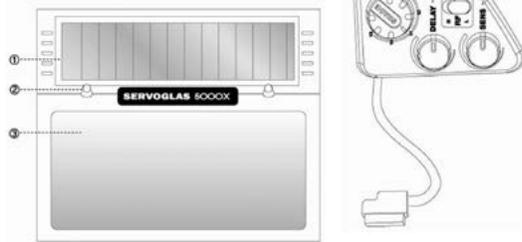
SparxLift Series Welding Helmet Airline Respirator User Manual

Delay Control



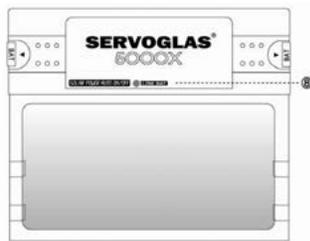
The delay functions should be used to set the recovery delay from dark to light of the welding filter according to welding method and current.

Control Function

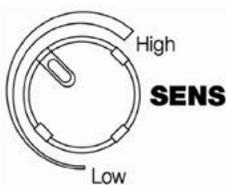


Parts

1. Solar Cell Panel
2. Sensor
3. LCD Filter Plate
4. Shade Control
5. Delay Control
6. Sensitivity Control
7. RF Sensor Switch
8. Low Battery Indicator



Light Sensitivity Control



Where problems are encountered during welding at low amps (e.g. TIG) or there is a high level of ambient light please follow these steps. First try adjusting the sensitivity control switch. Start with the sensitivity LOW (gently turn anticlockwise until the knob stops) and adjust upwards as required. If this does not solve the problem, set the sensitivity control

in the middle position and hold the helmet close to the target object and adjust the shade control completely clockwise. If the welding filter stays in the light state, leave the control set at this point. If the filter switches to the dark state, turn the shade adjustment back until the filter just switches into the light state. The filter should now be adjusted correctly. If the welding filter still does not respond appropriately, please adjust the sensitivity control again (having previously adjusted the shade control as explained above). [To achieve optimum results in very unusual circumstances you may need to perform this process again having first reset the sensitivity control to low.]

RF Sensor



New RF High/Low switch for even better RF sensitivity control. Switch to high for extremely low amp TIG (down to 1 amp) or when using shielded cables and welders. Switch to low when working near other welders or in areas of high RF interference to avoid false triggers and for general welding.

Tig Rating	RF HIGH	>1 Amp
	RF LOW	>10 Amp

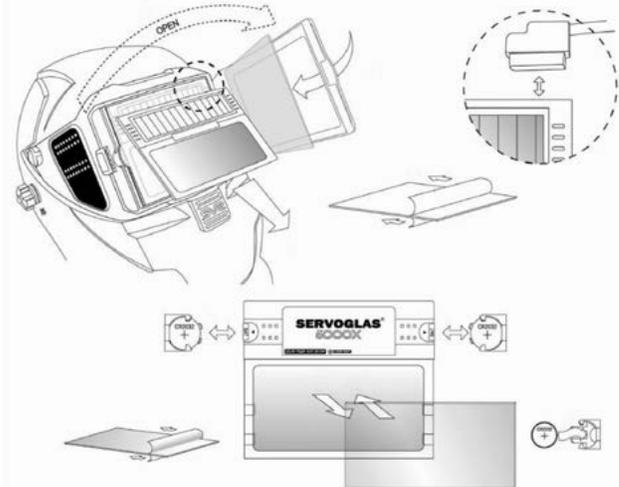
Maintenance

NOTE

Always ensure that all maintenance procedures are conducted in a clean dry place. Use clean dry hands and avoid direct contact with any glass surfaces. Handle cover plates and welding filter by the edges and carefully clean off any dirt or debris before re-use.

Changing the Front and Rear Cover Plates

- Unclip and open the front cover as shown in the diagram. You will then be able to remove and replace the front cover lens as required.
- Before installing the new cover lens remove the protective film from both sides.
- To change the rear cover lens gently remove the cartridge from the helmet you will then be able to unclip the inner cover lens and replace it. Again, you must remove the protective film from both sides of the cover lens before installing it.



NOTE

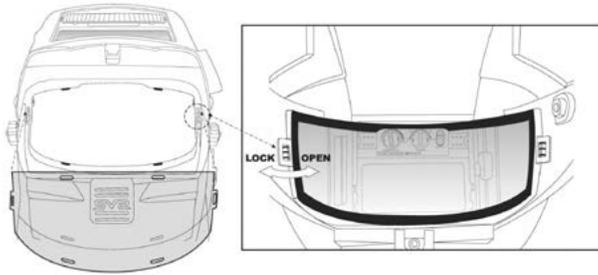
Always use genuine SparxLift parts. Never use a welding helmet without both front and rear cover lenses installed.

Changing the battery

- The SparxLift uses two 3V lithium Ion batteries (CR2032) as a main power source. These batteries are user replaceable and should be replaced immediately when the battery warning light comes on and/or at least every three years. Always replace both batteries at the same time with brand new batteries. Never install previously used batteries in your helmet.
- To replace the batteries slide out the battery holders from either side of the cartridge and discard the old batteries. Install the new batteries in the battery holders and slide the battery holders back into the cartridge.

NOTE

Always note the polarity of the batteries and install them as shown in the diagram and as marked. Batteries rely on good electrical contact to function properly and so always use clean dry hands and avoid getting dirt inside the cartridge when exchanging batteries.



Changing the Inner Cover Plate on the SparxLift

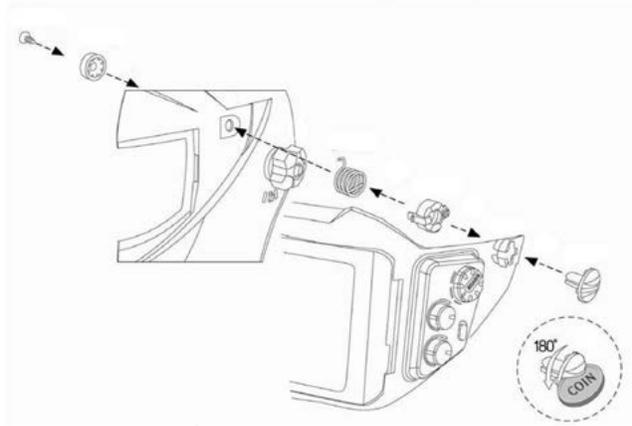
- From inside the helmet unclip the installed cover plate from the shell noting the locking tags on either side of the helmet (see diagram).
- Remove the film from both sides of the new cover plate and then insert first one side and then the other into the relevant slots on each side of the helmet.

NOTE

Always check to ensure that the locking tags on each side of the helmet are properly mated with the slots in the cover plate and that the four raised guides on the helmet shell are located in the matching slots in the cover plate.

Maintaining the Auto Lift assembly on the SparxLift

- Assembling and disassembling the Auto Lift assembly on the SparxLift is a simple process but should be done according to the following instructions to ensure problem free operation of the helmet.
- Locate the spring (10-3L) in the recess on the outside of the helmet shell ensuring that the end of the spring is hooked into the hole provided and pointing upwards. Springs are handed (R/L) and if reversed the Auto Lift mechanism will not work.
- Place the spring retainer (10-2L) over the spring and ensure that the tongue of the retainer is located in the slot provided on the side of the helmet shell.
- Mount the cartridge holder assembly over the spring retainer ensuring that the notches in the top of the spring retainer are nested into the matching slots on the cartridge holder assembly.
- Insert the slotted bolt into the hole and over the end of the spring.
- While holding the slotted bolt in place with your thumb, look inside the shell and locate the black washer over the end of the bolt which should now be visible on the inside of the shell. Note that the black washer has internal fins that mate with the end of the slotted bolt.
- Insert the self tapping screw into the washer and screw it in. Avoid over-tightening.
- Use a coin to tension the springs on each side by turning the head of the slotted bolts with a coin. Avoid over tensioning. Test the Auto Lift mechanism after each adjustment. Usually turning the screw a few 'clicks' or about 180 degrees gives perfect results.



Storage and Temperature Range

Your SparxLift welding helmet is strong and durable. It is designed to work in temperatures between -5C and +55C. Do not use your helmet in very hot conditions where temperatures exceed +65C. Always store your helmet in a clean dry place out of the direct sun and protect it from exposure to moisture or extreme heat (min/max storage temperature is -20C ~ +70C).

Avoid unnecessary impact or compression of your helmet and never use a helmet that is damaged. Your Bullard welding helmet is a quality professional tool and careful storage will extend the life of your investment.

Inspection

Check your helmet shell and filter on a regular basis when in normal use and after extended periods of storage. Never use a cracked or damaged helmet as this may result in personal injury and will void your warranty. Please replace any worn or damaged parts as necessary. Genuine SparxLift replacement parts are available from your authorized Bullard distributor.

Cleaning

NOTE

Never expose the filter cartridge to direct contact with water or solvents.

After removing the welding filter from the shell the shell can be cleaned using a mild detergent and water solution. Sweat bands can be washed. A silicone based lubricant may be used on moving parts if necessary but is not normally required. The filter may be carefully wiped with a cloth dampened with household window cleaning solution. Please be careful not to scratch or otherwise damage the filter cartridge with fragments of welding spatter or other abrasive dirt. Refer to the relevant parts diagram for illustrations regarding assembly and disassembly.

SparxLift Series Welding Helmet Airline Respirator User Manual

▲ CAUTIONS

- The SparxLift is designed for personal eye and face protection from harmful radiation, sparks and welding spatter produced under normal welding conditions. Please follow good industry and safety practices and use additional protection where necessary.
- Cover plates are strong and of industry standard quality but they are breakable. The SparxLift is a quality welding helmet but is not designed to provide protection from severe impact such as broken grinding wheels or debris from other broken tools, corrosive liquids, explosions, or other extreme incidents. We recommend you always adopt a conservative attitude towards safety and take additional precautions as required and recommended in the relevant safety standards relating to the operation you are undertaking.
- The welding filter is not designed to be waterproof. Please do not use your helmet in the rain or other inclement weather. To do so may reduce the life of your helmet and result in damage or injury.
- In the event that your helmet or welding filter is exposed to direct contact with, or is submerged in water or other liquid immediately stop using the helmet, remove the filter cartridge from the shell, remove the batteries from the filter, inspect carefully for damage and if necessary mop-up excess moisture with a paper towel and then leave to dry in a warm (not hot) place out of direct sunlight. Never place your helmet in an oven or microwave to dry. Before use perform all normal system checks and if in any doubt contact your Bullard distributor. Your SparxLift helmet is a precision engineered professional protection product and must be maintained in good condition to ensure your personal protection.
- When working in the vicinity of other welders it is necessary to adopt good industry standard practice and ensure a minimum distance of 1M between workers. Failure to do so may result in injury or malfunction of the auto darkening mechanism.
- Please do not wear the helmet when you are not welding. In some circumstances the auto darkening mechanism may be unexpectedly triggered resulting in reduced vision and subsequent injury to yourself or others.
- Bullard does not support the use of SparxLift range of products in combination with any other manufacturers' products. To use parts that are not provided by Bullard may void your warranty and result in personal injury. Please use only genuine SparxLift parts and spares as provided by your authorized Bullard distributor.
- Bullard reserves the right to make improvements, change or otherwise modify the specifications, materials and design of any and all Bullard products at their sole discretion with a view to ensuring continuous improvement. Never attempt any unauthorized modifications or alterations to your Bullard product. To do so may result in personal injury and void your warranty.

Thank you for purchasing a Bullard product. If you have any questions regarding this or any other Bullard product please contact your authorized Bullard distributor.

SparxLift Respirator Use

▲ WARNING

Do not put on or remove this respirator in a hazardous atmosphere except for emergency escape purposes. Failure to follow this warning could result in death or serious injury.

Assembling the Respirator

Before using your SparxLift Series respirator, complete the helmet adjustments (including welding settings) as outlined in pages 10-11.

1. Install the shroud, starting at the top of the helmet and matching the loop sections of Velcro on the shroud to the corresponding hook sections of Velcro on the helmet and secure with pressure.
2. Connect the breathing tube to the helmet by threading the threaded end of the breathing tube into the threaded port on the back of the shroud until finger tight.
3. Connect the Bullard air supply hose, that is part of the NIOSH approved assembly, to the Grade D air source.
4. With air flowing, connect breathing tube assembly to the air supply hose with the quick-disconnect fittings. Pull to make sure the connection is secure.

Connecting, Donning, & Using the Flow Control Device

Find specific instructions related to the flow control device you are using and then follow the instructions entitled Donning the SparxLift Respirator on page 16.

F30 Series Flow Control Devices

This series of flow control device is a straight, non-adjustable nipple.

Lace the belt through the slide buckle.

Thread the breathing tube onto the device.

The air supply hose will attach to the quick disconnect nipple on the device.



Figure 3

F40 Series Flow Control Devices

This series of flow control device allows the user to make small adjustments to the airflow by turning the black knob shown in Figure 4.

Lace the belt through the slot in the metal bracket.

Thread the breathing tube onto the device.

The air supply hose will attach to the quick disconnect nipple on the device.



Figure 4

AC1000/AC100035 Series Flow Control Devices

This device is designed to provide a continuous supply of cool air to the respirator wearer.

Lace the belt through the device bracket and heat shield slots, either horizontally or vertically as preferred. See Figures 9 and 10.



Figure 5

Secure the AC1000 to the heat shield with plastic tie as provided.

The air supply hose will attach to the quick disconnect nipple on the device.

If the device is to be worn in the horizontal position, align the tube on the heat shield as shown in Figure 9.

If the device is to be worn in the vertical position, align the tube on the shield as shown in Figure 10.

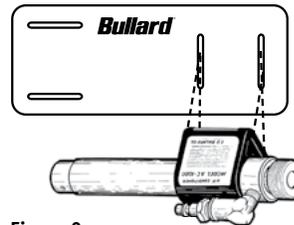


Figure 9

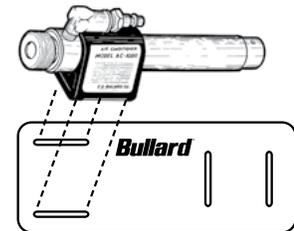


Figure 10

Thread the breathing tube firmly onto the device as shown in Figure 6.

The air supply hose will attach to the quick disconnect nipple on the device.

When in operation, turning the air temperature control knob counterclockwise will increase cooling and decrease overall air flow.

When in operation, turning the air temperature control knob clockwise will increase airflow and decrease cooling.

When the knob is fully open there is maximum airflow (very warm) out of the exhaust port and maximum cooling to the respirator.

When the knob is fully closed the temperature to the respirator will be very close to ambient temperatures.

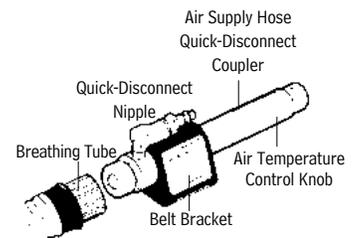


Figure 6

HC2400/HC240035 Series Flow Control Devices

This device is designed to provide a continuous supply of warm or cool air to the respirator wearer.

Lace the belt through the device bracket and heat shield slots, either horizontally or vertically as preferred. See Figures 9 and 10.

Secure the HC2400 to the heat shield with plastic tie as provided.



Figure 7

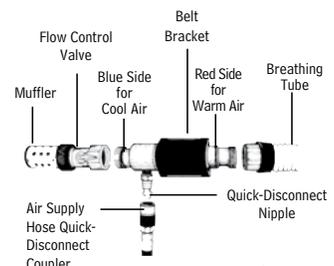


Figure 8

SparxLift Series Welding Helmet Airline Respirator User Manual

If the device is to be worn in the horizontal position, align the tube on the heat shield as shown in Figure 9.

If the device is to be worn in the vertical position, align the tube on the shield as shown in Figure 10.

The air supply hose will attach to the quick disconnect nipple on the device.

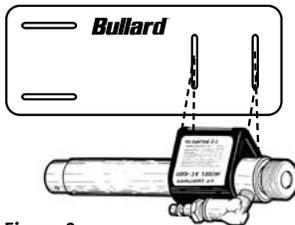


Figure 9

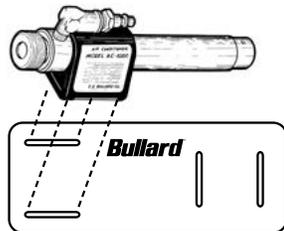


Figure 10

For Warm Air during operation:

Screw the flow control valve and muffler onto the blue side of the HC2400.

Thread the breathing tube firmly onto the red side of the HC2400.

Turning the flow control valve will adjust temperature and flow.

When the valve knob is parallel to the HC2400 tube, the valve is fully open and the warming is at maximum.

When the valve knob is perpendicular to the HC2400 tube, the valve is fully closed and the airflow is maximum and the temperature will be approximately equal to the ambient temperature.

For Cool Air during operation:

Screw the flow control valve and muffler onto the red side of the HC2400.

Thread the breathing tube firmly onto the blue side of the HC2400.

Turning the flow control valve will adjust temperature and flow.

When the valve knob is parallel to the HC2400 tube, the valve is fully open and the cooling is at maximum.

When the valve knob is perpendicular to the HC2400 tube, the valve is fully closed and the airflow is maximum and the temperature will be approximately equal to the ambient temperature.

Frigitron 2000 Series Flow Control Device

This device is designed to provide a continuous supply of cool air to the respirator wearer.

Lace the belt through the device bracket.

Thread the breathing tube firmly onto the device as shown in Figure 12.

The air supply hose will attach to the quick disconnect nipple on the device.

When in operation, turning either or both air temperature control knobs counterclockwise will increase cooling and decrease overall air flow.

When in operation, turning either or both air temperature control knob clockwise will increase airflow and decrease cooling.

When the knobs are fully open there is maximum



Figure 11

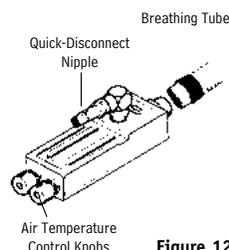


Figure 12

airflow (very warm) out of the exhaust ports and maximum cooling to the respirator.

When the knobs are fully closed the temperature to the respirator will be very close to ambient temperatures.

DC50 Series Dual Cool with DC70 Series Vests

This device is designed to provide a continuous supply of cool air to the respirator wearer's head top and torso by means of dual cooling tubes and a vest.

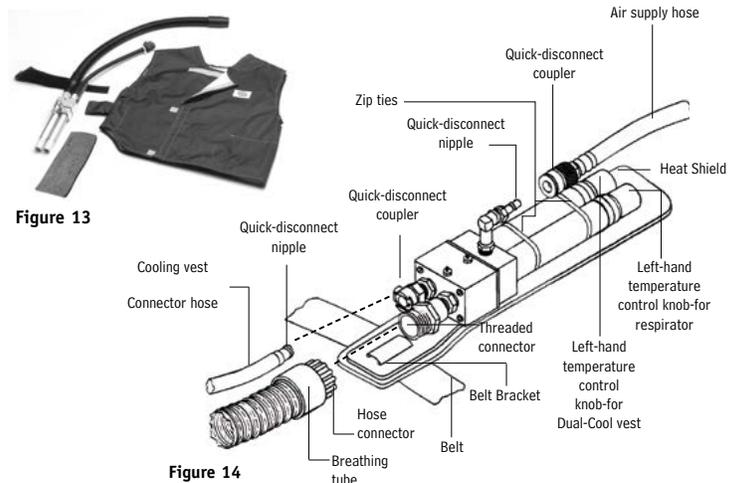


Figure 13

Figure 14

Assembly must be conducted in an uncontaminated atmosphere.

Assembling the Cooling Vest

1. Insert the muffler end of the cooling vest connector hose well into the air entry sleeve of the vest (Figure 14).
2. Install the small nylon clamp over the air entry sleeve and cooling vest connector hose. Engage the clamp locks and squeeze until tight (Figure 15).

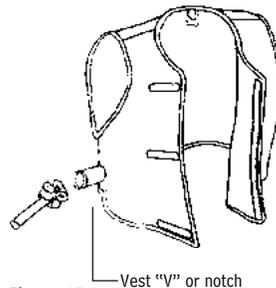


Figure 15

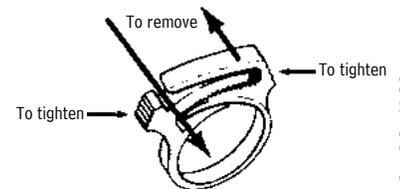


Figure 16

3. Lace the belt supplied with your climate control device through both the heat shield slots and the climate control belt bracket slots.
4. Use plastic zip ties (2 included) to secure the climate control to the heat shield. (Figure 14)

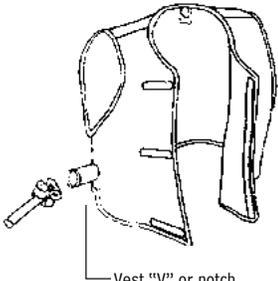


Figure 15 Vest "V" or notch

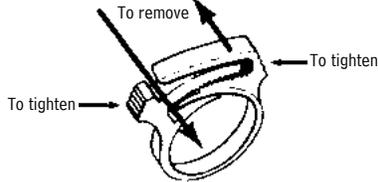


Figure 16

Assembling the Dual-Cool Tube Assembly and Donning

1. Screw the hose connector that is on the end of the breathing tube to threaded connector on Dual-Cool.
2. Lace the belt through the slots in the belt bracket (Figure 14, Page 15).
3. Don the belt, belt bracket, and Dual-Cool. Adjust belt comfortably, but loosely, around your waist, insuring that the Dual-Cool assembly is on your right-hand side.
4. Don the vest. Use the Velcro® closure strips to adjust loosely for size.

NOTE

The vest should mount over the belt with the Dual-Cool unit positioned in the "V" of the vest found on the right-hand side (Figure 15).

5. Snap the quick-disconnect nipple found on the end of the cooling vest connector hose into the quick-disconnect coupler on the Dual-Cool (Figure 14, Page 15).
6. To obtain cooler air, turn the air temperature control knobs counterclockwise (Figure 14, Page 15).
7. Maximum cooling is obtained when knobs are open completely and when there is maximum airflow out of the Dual-Cool tube's exhaust ports.
8. To obtain air that is closer to ambient temperature, turn air temperature control knobs clockwise. If knobs are closed completely, your respirator will receive air that is essentially at ambient temperature.

NOTE

There are separate controls to adjust the temperature of the air that is distributed to the vest and the breathing zone. The right-hand knob controls the air temperature to the respirator; the left-hand knob controls the air temperature to the cooling vest (Figure 14, Page 15).

WARNING

Do not put on or remove these respirators in a hazardous atmosphere except for emergency escape purposes. Failure to heed these warnings could result in death or serious injury.

Connecting the Air Supply Hose

Before using your SparxLift Series respirator, assemble the respirator using the instructions given on page 9.

1. Connect Bullard air supply hose to an air source supplying Grade D breathable air as defined on page 8. Turn on breathing air source.

2. With air flowing, and the connected breathing tube assembly to the flow control device (see Figure 17). Connect quick-disconnect fitting on flow control device to quick-disconnect coupler on air supply hose. Once fitting is secured, release coupling sleeve to lock fittings together. Pull on both hoses to make sure they are attached securely.

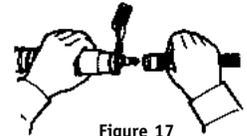


Figure 17

Adjusting the Air Pressure and Final Donning

1. Adjust the air pressure at the point of attachment to within the approved pressure range on the Breathing Air Pressure Table.
2. For helmets with the SLS1 shroud: insert your chin into the shroud and pull the helmet upward toward the face. Adjust the drawstring for a snug, but comfortable fit.
3. For helmets with the SLS2 shroud: Widen the turtleneck with your hands and insert your head, chin first. Then pull onto your yead. Adjust the drawstring for a snug, but comfortable fit.
4. Make any final adjustments to the helmet headgear.
5. Fasten the flow control device belt around the waist or hips and adjust for comfort.
6. Re-check air pressure and adjust if necessary.
7. With the air still flowing into your respirator, you are now ready to enter the work area.

NOTE

OSHA regulation 29CFR 1910.134 does not require fit testing of loose fitting hoods and helmets.



Figure 18

Doffing

When finished working, leave the work area wearing the respirator with the air still flowing.

Once outside the contaminated area:

Remove the Helmet

Disconnect the air supply hose using the quick-disconnect fittings.

Unbuckle and remove the waist belt

Clean and inspect components as necessary

Place components in storage

WARNING

Failure to heed these instructions could result in death or serious injury.

LEAVE WORK AREA IMMEDIATELY IF:

- Any respirator component becomes damaged
- Airflow into respirator hood stops or slows down
- Air pressure gauge drops below the minimum specified in the Breathing Air Pressure Table
- Breathing becomes difficult
- You become dizzy, nauseous, too hot, too cold, or ill
- You taste, smell, or see contaminants inside respirator hood
- Your vision becomes impaired

SparxLift Series Welding Helmet Airline Respirator User Manual

▲ WARNING

Do not store respirator in your work area or leave it unattended in a contaminated environment. Respirable contaminants can remain suspended in the air for several hours after work actively ceases, even though you may not see them. Proper work practice requires you to hear the respirator until you are outside the contaminated area. If you place or store the respirator in a contaminated environment, contaminants, dirt, and dust could get into the respirator. When you put the respirator back on, you could breathe in contaminants upon reuse. Failure to heed these instructions could result in death or serious injury.

Inspection, Cleaning, and Storage

*Do not use volatile solvents to clean this respirator or any parts and assemblies. Strong cleaning and disinfecting agents, and many solvents, can damage the plastic parts. Components need to be completely clean and completely dry when stored.

Helmet

Check your helmet shell and filter on a regular basis when in normal use and after extended periods of storage. Never use a cracked or damaged helmet as this may result in personal injury and will void your warranty. Please replace any worn or damaged parts as necessary. Genuine SparxLift replacement parts are available from your authorized Bullard distributor.

Never expose the filter cartridge to direct contact with water or solvents. After removing the welding filter from the shell the shell can be cleaned using a mild detergent and water solution. Sweat bands can be washed. A silicone based lubricant may be used on moving parts if necessary but is not normally required. The filter may be carefully wiped with a cloth dampened with household window cleaning solution. Please be careful not to scratch or otherwise damage the filter cartridge with fragments of welding spatter or other abrasive dirt. Refer to the relevant parts diagram for illustrations regarding assembly and disassembly.

Store in a clean, dry, place out of the direct sun and protected from moisture and extreme heat (storage temperature range is -20C to +55C).

Breathing Tube

Inspect the breathing tube for tears, cracks, holes, or excessive wear that might reduce the degree of protection originally provided. If any signs of excessive wear are present, replace the breathing tube immediately or remove the respirator from service.

To clean the breathing tube, hand-sponge with warm water and mild detergent, being careful not to get water inside. Rinse and air-dry. After cleaning, once again carefully inspect breathing tube for signs of damage.

Store in a clean, dry, place out of the direct sun and protected from moisture and extreme heat (storage temperature range is -20C to +50C)

Flow Control Device

Inspect the flow control device for tears, cracks, holes, or excessive wear that might reduce the degree of protection originally provided. If any signs of excessive wear are present, replace the device immediately or remove the respirator from service.

To clean the breathing tube, hand-sponge with warm water and mild detergent, being careful not to get water inside. Rinse and air-dry. After cleaning, once again carefully inspect for signs of damage.

Store in a clean, dry, place out of the direct sun and protected from moisture and extreme heat (storage temperature range is -20C to +50C)

Air Supply Hose

Air supply hose(s) should be inspected closely for abrasions, corrosion, cuts, cracks and blistering. Be sure the hose fittings are crimped tightly to the hose so that no air can escape. Make sure the hose has not been kinked or crushed by any equipment that may have rolled over it. If any of the above signs are present or any other signs of excessive wear are detected, replace the hose(s) immediately or remove the respirator from service.

The air supply hose(s) should be hand-sponged with warm water and mild detergent, rinsed and air dried. Do not get water inside the air supply hose. After cleaning, once again carefully inspect air supply hose(s) for signs of damage.

Store in a clean, dry, place out of the direct sun and protected from moisture and extreme heat (storage temperature range is -20C to +50C)



Ordering Information

Respirator Assemblies

Respirator Assemblies For Use With Compressed Air - includes welding helmet, shroud, breathing tube with cover, flow control device with 1/4" nipple, and belt.

*Air Supply Hose must be purchased Separately

SLS1 LF Shroud	SLS2 Hood Shroud	Description
SLS13X	SLS23X	Continuous Flow Assembly
SLS14X	SLS24X	Adjustable Flow Assembly
SLS1AC10003X	SLS2AC20003X	AC1000 Series Cool Tube Assembly
SLS1HC24003X	SLS2HC24003X	HC2400 Series Hot/Cool Tube Assembly

* Replace X with digit corresponding to desired nipple type when ordering (0-Industrial Interchange, 1-Schrader, 2-Snap-Tite, 3-Snap-Tite Brass, 4-Snap-Tite Stainless, 7-CEJN, 8-Bayonet)

Replacement Shrouds

Part Number	Description
SLS1	Sparx Lift Loose-Fitting Shroud
SLS2	Sparx Lift Hood Style Shroud

Replacement Breathing Tubes

Part Number	Description
SARHBT	Spectrum Breathing Tube

Breathing Air Supply Hose (3/8" I.D.) For Use with Compressed Air

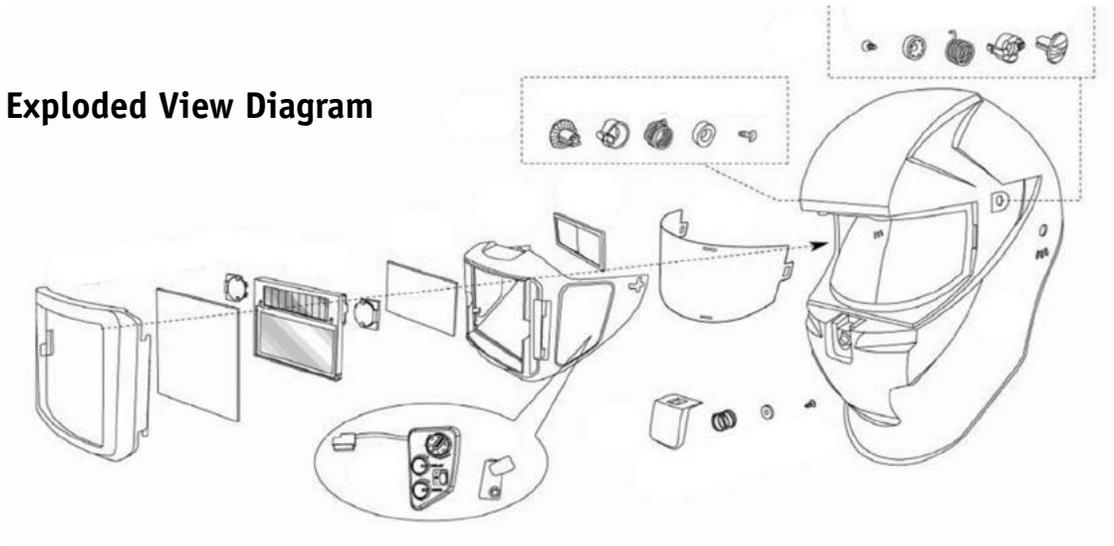
V10	Description
4696	25' Starter Hose (includes coupler, V13 hose to pipe adapter, and V17 1/4" industrial interchange nipple)
469650	50' Starter Hose (includes coupler, V13 hose to pipe adapter, and V17 1/4" industrial interchange nipple)
4696100	100' Starter Hose (includes coupler, V13 hose to pipe adapter, and V17 1/4" industrial interchange nipple)
5454	25' Extension Hose (includes V11 hose to hose adapter and V13 hose to pipe adaptor)
5457	50' Extension Hose (includes V11 hose to hose adapter and V13 hose to pipe adaptor)
5458	100' Extension Hose (includes V11 hose to hose adapter and V13 hose to pipe adaptor)

SparxLift Series Welding Helmet Airline Respirator User Manual

Breathing Air Supply Hose (1/4" I.D.) For Use with Bullard Free Air Pumps

V20	Description
V2050ST	50' Flow Thru Starter Hose (includes 1/2" coupler on end and 1/2" Industrial Interchange nippler on other end)
V20100ST	100' Flow Starter Hose (includes 1/2" coupler on end and 1/2" Industrial Interchange nippler on other end)
V2025STSHUTOFF	25' Shutoff Starter Hose (includes 1/2" coupler on end and 1/2" Industrial Interchange nippler on other end)

Exploded View Diagram



Replacment Helmet

Part Number	Description	Includes
SLH	Sparx Lift Helmet	Complete Helmet Assembly (Shroud not included)

Replacment Helmet Parts

Part Number	Description
LSHELLBLU	Helmet Shell, does not include harness or knob set
SLGL	Inner Protective Lens (Grinding), 3 pack
SLRCL	Inside Cover Plate, 5 pack
SLADF	Auto Darkening Filter
SLPBA	Push Button Assembly
SLHCA	Hinge Cap Assembly
SLHG	Head Gear (including harness and knob set)
SLBAT1	Battery
SLCLP	Lens Cover Pack (five front lenses, two inner lenses)
SLFCL	Front Cover Lens, 10 pack



One Year Limited Warranty

Bullard warrants to the original purchaser that the SparxLift Respirator will be free of defects in material and workmanship under normal use and service for a period of one (1) year from the date of purchase. Bullard's obligation under this warranty is limited to repairing or replacing, at its option, articles that are returned within the warranty period and that are, after examination, shown to Bullard's satisfaction to be defective, subject to the following limitations;

- a) Respirator and all components must be returned to the Bullard factory with shipping charges prepaid.
- b) Respirator and all components must not be altered from its original factory configuration.
- c) Respirator and all components must not have been misused, subjected to negligent use, or damaged in transport.
- d) The date of purchase is within the one year warranty period.

(A copy of the purchaser's original invoice showing the date of purchase is required to validate warranty coverage.)

In no event shall Bullard be responsible for damages for loss of use or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that Bullard has been advised of the possibility of such damages.

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF PURCHASE OF THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state

Return Authorization

The following steps must be completed before Bullard will accept any returned goods. Please read carefully.

Follow the steps outlined below to return goods to Bullard for repair or replacement under warranty or for paid repairs:

1. Contact Bullard Sales Support by telephone or in writing at:

Bullard

1898 Safety Way

Cynthiana, KY 41031-9303

Toll-free: 877-BULLARD (285-5273)

Phone: 859-234-6616

In your correspondence or conversation with Sales Support, describe the problem as completely as possible. For your convenience, your sales support specialist will try to help you correct the problem over the phone.

2. Verify with your sales support specialist that the product should be returned to Bullard. Sales Support will provide you with written permission and a return authorization number as well as the labels you will need to return the product.
3. Before returning the product, decontaminate and clean it to remove any hazardous materials which may have settled on the product during use. Laws and/or regulations prohibit the shipment of hazardous or contaminated materials. Products suspected to be contaminated will be professionally discarded at the customer's expense.
4. Ship products to be returned, including those under warranty, with all transportation charges pre-paid. Bullard cannot accept returned goods on a freight collect basis.
5. Returned products will be inspected upon return to the Bullard facility. Bullard Sales Support will telephone you with a quote for required repair work which is not covered by warranty. If the cost of repairs exceeds stated quote by more than 20%, your sales support specialist will call you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, Bullard will invoice you for actual work performed.

Americas:

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SparxLift Series Welding Helmet Airline Respirator User Manual

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Notice:

The pages remaining in this User Manual are User Instruction Sheets to provide necessary information to end users regarding the use and care of each flow control device and air supply hose type approved for use with the SparxLift Series welding helmet airline respirator. When purchasing a replacement flow control device or replacement air supply hose, the Instruction Sheet pertaining to the specific flow control device or air supply hose will be packed and shipped with the part being ordered and will be an exact copy of the document for that flow control device or air supply hose that is found in this User Manual.

For use with Bullard Airline Respirators

Includes: AC1000 Cool Tube, belt bracket, nylon belt and heat shield.

Function: The AC1000 is designed to supply a continuous flow of cool air to certain Bullard supplied air respirators. Please consult the NIOSH approval matrix in your respirator user manual to verify that the AC1000 is NIOSH approved for your specific configuration. All Bullard parts must be present and properly assembled to constitute a NIOSH-approved respirator.

NOTE
The AC100035 is designed to operate at low pressures.

⚠ WARNING

Before using this product, read and follow all directions and warnings, including those in the respirator instruction manual. Failure to follow these instructions could result in death or serious injury.

⚠ WARNING

This climate control system is not recommended for cooling the air supply when the air temperature is less than 70°F. Since the system may cool the incoming air by more than 30°F, it is possible for ice to form in the breathing tube and reduce the airflow. Failure to observe this warning could result in death or serious injury.

Air Quality Requirements

Respirable air must be supplied to the point-of-attachment of the BULLARD air supply hose that is part of the NIOSH approved system. The point-of-attachment is where the air supply hose connects to the fitting that contains a pressure gauge used to monitor the pressure of the air provided to you.

Locate the source of supplied air in a clean environment far enough from your work site to ensure the air remains contaminant-free. Always use an inlet filter on your air source and any monitors and alarms as necessary to assure clean, breathable air at all times.

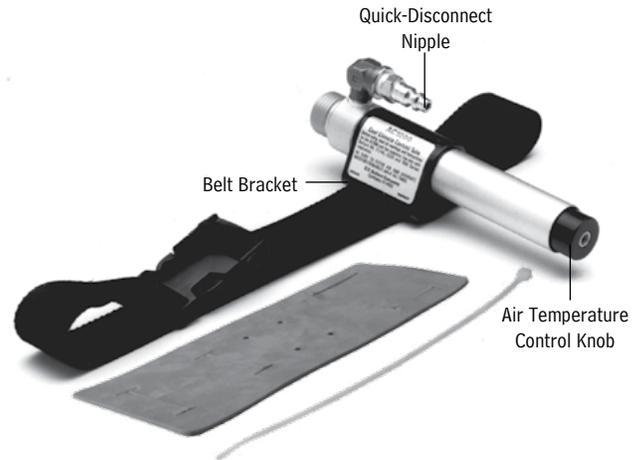
Supplied breathing air **MUST** meet or exceed the requirements for Type 1 gaseous air described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher quality) as specified by Federal Law 42 CFR, Part 84, Subpart J, 84.141(b) and 29 CFR 1910.134(i)(1)(ii). The requirements for Grade D breathable air include:

Oxygen.....	19.5-23.5%
Hydrocarbons in mg/m ³ of gas.....	5 mg/m ³ max.
Carbon monoxide.....	10 ppm max.
Carbon dioxide.....	1,000 ppm max.
Odor.....	No pronounced odor*

No toxic contaminants at levels that make air unsafe to breathe.

* Specific measurement of odor in gases is impractical. Air normally may have a slight odor. The presence of a prolonged odor should render the air unsatisfactory.

Refer to C.G.A. Commodity Specification G-7.1 for complete details, or contact the Compressed Gas Association (1235 Jefferson Davis Highway, Arlington, VA 22202 or www.cganet.com).



⚠ WARNING

The respirator's air source must supply clean, breathable air, Grade D or better, at all times. The respirator does not purify air or filter out contaminants. Connecting the respirator to a line supplying nitrogen or other harmful gases could cause death or serious injury. Failure to follow these instructions could result in death or serious injury.

Air Pressure

Continually monitor the air pressure at the point-of-attachment while operating the respirator. A reliable air pressure gauge must be present to monitor the pressure.

⚠ WARNING

Failure to supply the minimum required pressure at the point-of-attachment for your hose length will reduce airflow and could result in death or serious injury.

It is important to operate the Bullard climate control device in the prescribed pressure range for the particular Bullard respirator you are using. Operating the correct pressure range will insure that the correct air flow is delivered to the respirator and will maintain the NIOSH approval. Refer to your respirator user manuals' Breathing Air Pressure Table to determine the correct pressure that should be used with the climate control device. This table defines the pressure ranges necessary to provide the respirator with a volume of Grade D air that falls within the U.S. Government required range of 6-15 cfm (or 170-425 lpm). (See 42 CFR, Part 84, Subpart J, 84.150)

The **Breathing Air Pressure Table** defines the air pressure ranges necessary to provide the respirator with a volume of air that falls within the required range of 6-15 cubic feet per minute (cfm) or 170-425 liters per minute (lpm). Be sure you understand the information in the BREATHING AIR PRESSURE TABLE before using the respirator.

Air Supply Hose

To maintain your Bullard respirator's NIOSH approval, use only approved Bullard V10 Series hose(s) in lengths of 25 to 300 feet, or Bullard V5 Series hose in lengths of 25 or 50 feet, between the AC1000's quick-disconnect fitting and the point-of-attachment to the hose. Bullard V11 hose-to-hose adaptors **MUST** be used to connect V10 hose lengths together. Secure connection(s) until wrench tight and leak free. The AC100035 is compatible only with Bullard V20 Series Air Supply Hose.

⚠ WARNING

Use of any other air supply hose voids NIOSH approval on the entire respirator assembly and could reduce the airflow to the respirator. Failure to observe this warning could result in death or serious injury.

Preparation and Use of the AC1000

- In an uncontaminated atmosphere screw the hose connector fitting on the end of the breathing tube to the fitting on the AC1000. Tighten hose connectors firmly (**Figure 1**).
- Lace the belt supplied with the Cool Tube through the belt bracket. Slots are provided for wearing the tube either vertically or horizontally on the waist. See Heat Shield instructions.
- With the approved Bullard air supply hose connected to the air source and with air flowing into the hose, connect the quick-disconnect coupler on the air supply hose to the quick-disconnect nipple on the AC1000 Cool Tube.
- Adjust the air pressure at the point-of-attachment to within the approved pressure range (**Figure 2**). See the Air Pressure section on the front page.
- Don the respirator by following the directions in your respirator instruction manual. If you do not have instructions, contact Bullard Customer Service at the address or phone numbers given below.
- To obtain cooler air, turn the air temperature control knob counterclockwise (**Figure 1**). Maximum cooling is attained when knob is fully open and when there is maximum airflow out of the AC1000 exhaust port.
To obtain air that is closer to ambient temperature, turn air temperature control knob clockwise. If knob is fully closed, your respirator will receive air at ambient temperature.
- When finished working, leave the work area wearing the respirator. With the air still flowing into the hood, remove the hood and then disconnect the air supply hose using the quick-disconnect coupler attached to the AC1000 Cool Tube.

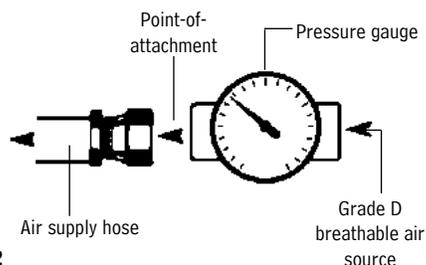


Figure 2

Heat Shield Instructions

The climate control heat shield is designed to work with the Bullard AC1000, HC2400, CT, HCT, or ACL99 climate control devices.

Assembly

The heat shield is designed to work with the standard nylon belt (part # 4612) supplied with the climate control devices.

- Determine whether the climate control device will be worn vertically or horizontally on the waist.
- If the device will be worn in the horizontal position, align the tube on the heat shield as shown in **Figure 3**. If the tube will be worn in the vertical position, align the tube on the heat shield as shown in **Figure 4**.
- Lace the belt supplied with your climate control device through both the heat shield slots and the climate control belt bracket slots.
- Use plastic zip tie to secure the climate control unit to the heat shield.

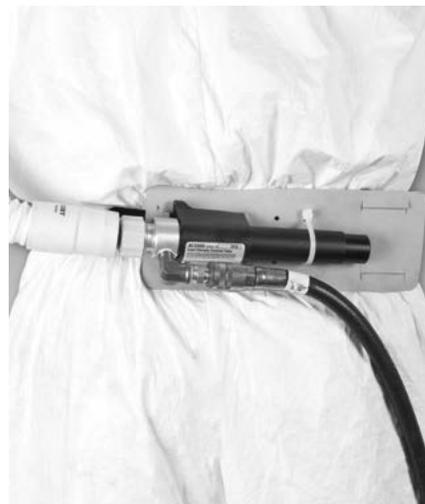


Figure 3



Figure 4

Americas:

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1898 Safety Way
Cynthiana, KY 41031-9303 • USA
Toll-free within USA: 877-BULLARD (285-5273)
Tel: +1-859-234-6616
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Fax: +49-2642 9999829

Asia-Pacific:

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Singapore 387383
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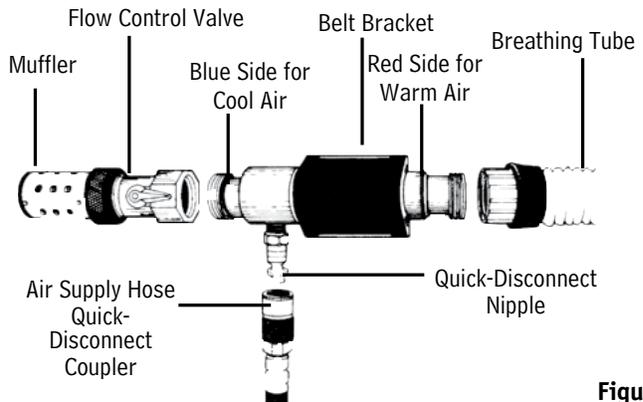


Figure 1

Includes: Hot/Cold Tube, Flow Control Valve, Belt Bracket, Belt and Heat Shield

Function

The HC2400 is NIOSH approved, as part of certain Bullard supplied air respirator systems, to supply a continuous flow of warm or cool air. Please consult the NIOSH approval matrix in your respirator user manual to verify that the HC2400 is NIOSH approved for your specific configuration. All Bullard parts must be present and properly assembled to constitute a NIOSH-approved respirator.

NOTE

HC2400 cannot be used with a low pressure air source such as an ambient air pump.

WARNING

Before using this product read and follow all directions and warnings including those in the respirator instruction manual.

Connecting the respirator to a line supplying Nitrogen or other harmful gases could cause death or serious injury.

This climate control system is not recommended for cooling the air supply when the air temperature is less than 70°F (21°C). Since the system may cool the incoming air by more than 30°F (17°C), it is possible for ice to form in the breathing tube and reduce the airflow.

Failure to follow these instructions could result in death or serious injury.

Air Quality, Air Pressure and Air Supply Hose Length Requirements

Air Quality

WARNING

The respirator's air source must supply clean, breathable air Grade D, or better, at all times. The respirator DOES NOT purify air or filter out contaminants.

Failure to observe this warning could result in death or serious injury.

Respirable air must be supplied to the point-of-attachment of the Bullard air supply hose. The point-of-attachment is where the air supply hose connects to the fitting that contains a pressure gauge used to monitor the pressure of the air provided to you.

Locate the source of supplied air in a clean environment far enough from your work site to ensure the air remains contaminant-free. Always use an inlet filter on your air source and any monitors and alarms as necessary to assure clean, breathable air at all times.

Supplied breathing air MUST meet or exceed the requirements for Type 1 gaseous air described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D

or higher quality) as specified by Federal Law 42 CFR, Part 84, Subpart J, 84.141(b).

The requirements for Grade D breathable air include:

- Oxygen 19.5-23.5%
- Hydrocarbons (condensed) in mg/m³ of gas 5 mg/m³ max.
- Carbon monoxide 10 ppm max.
- Carbon dioxide 1,000 ppm max.
- Odor No detectable odor
- No toxic contaminants at levels that make air unsafe to breathe.

Refer to C.G.A. Commodity Specification G-7.1 for complete details, or contact the Compressed Gas Association (1235 Jefferson Davis Highway, Arlington, VA 22202).

Air Pressure

Continually monitor the air pressure at the point-of-attachment while operating the respirator. A reliable air pressure gauge must be present to monitor the pressure.

WARNING

Failure to supply the minimum required pressure at the point-of-attachment for your hose length will reduce airflow and could result in death or serious injury.

It is important to operate the Bullard climate control device in the prescribed pressure range for the particular Bullard respirator you are using. Operating the correct pressure range will insure that the correct air flow is delivered to the respirator and will maintain the NIOSH approval. Refer to your respirator user manuals' Breathing Air Pressure Table to determine the correct pressure that should be used with the climate control device. This table defines the pressure ranges necessary to provide the respirator with a volume of Grade D air that falls within the U.S. Government required range of 6-15 cfm (or 170-425 lpm). (See 42 CFR, Part 84, Subpart J, 84.150)

The **Breathing Air Pressure Table** defines the air pressure ranges necessary to provide the respirator with a volume of air that falls within the required range of 6-15 cubic feet per minute (cfm) or 170-425 liters per minute (lpm).

Be sure you understand the information in the **Breathing Air Pressure Table** before using the respirator. To use the table, follow the steps identified below:

1. Confirm the air source and climate control device .
2. Confirm your choice of Bullard air supply hose(s) to use with your Cool Tube.
3. Determine that your air supply hose does not exceed the maximum approved hose length or number of hose sections.
4. Set the air pressure at the point-of-attachment within the required pressure range for your air supply hose length.

Air Supply Hose

To maintain your Bullard respirator's NIOSH approval, use only approved Bullard V10 Series hose(s) in lengths of 25 to 300 feet (7.62m-91.4m), or Bullard V5 Series hose in lengths of 25 feet (7.6m) or 50 feet (15.2m), between the Hot/Cold Tube's quick-disconnect fitting and the point-of-attachment to the hose. Bullard V11 hose-to-hose adaptors **MUST** be used to connect V10 hose lengths together. Secure connection(s) until wrench tight and leak free.

Use of any other air supply hose voids NIOSH approval of the entire respirator assembly and could reduce the airflow to the respirator, possibly resulting in serious injury or death to the respirator wearer.

▲ WARNING

Before connecting the Hot/Cold Tube to the respirator, be sure the breathing air at least meets the minimum Grade D requirements. (See **Air Quality** section on front page.)

Compressed air must be dry enough to prevent ice buildup in the cold airstream. Ice could reduce airflow into the respirator hood.

Failure to observe these warnings could result in death or serious injury.

Preparation and Use of the HC2400

1. For Warm Air:

- In an uncontaminated atmosphere screw the nylon hose connector on the end of the breathing tube onto the RED side of the HC2400 Tube.
- Screw the flow control valve and muffler onto the blue side of the HC2400 Tube (**Figure 1**). Tighten both connections firmly.

For Cool Air:

- In an uncontaminated atmosphere unscrew the nylon hose connector on the end of the breathing tube from the hose threads on the RED side of the HC2400 Tube.
- Unscrew the muffler and flow control valve from the blue side of the Hot/Cold Tube. Then screw the flow control valve and muffler to the RED side. Tighten firmly.
- Screw the nylon hose connector on the end of the breathing tube onto the BLUE side of the HC2400 Tube (**Figure 1**). Tighten firmly.

▲ WARNING

For adequate air flow, attach the muffler and flow control valve to the end of the hot/cold tube that is opposite the breathing tube end.

Failure to observe this warning could result in death or serious injury.

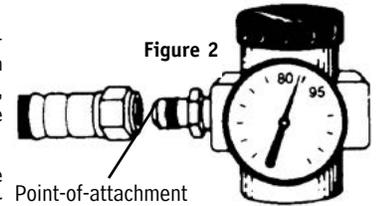
DO NOT USE THE HC2400 WITHOUT THE MUFFLER AND FLOW CONTROL VALVE.

- Lace the belt supplied with the HC2400 through the belt bracket. Slots are provided for wearing the tube either vertically or horizontally on the waist. See Heat Shield instructions below.
- With the approved Bullard air supply hose connected to the air source and with air flowing into the hose, connect the quick-disconnect coupler on the air supply hose to the quick-disconnect nipple on the Hot/Cold Tube.

- Adjust the air pressure at the point-of-attachment (**Figure 2**) to within the approved pressure range. See the Respirator Breathing Air Pressure table in the respirator user manual.

- Put the hood on by following the directions in your respirator instruction manual. If you do not have instructions, contact Bullard Customer Service at the address or phone numbers below.

- Turn flow control valve to adjust the flow and temperature of incoming air (**Figure 1**).



Maximum cooling or warming is attained when knob is fully open and when there is maximum airflow out of the HC2400 exhaust port. To obtain air that is closer to ambient temperature, turn air temperature control knob counterclockwise. If knob is fully closed, your respirator will receive air at ambient temperature.

- When finished working, leave the work area wearing the respirator. With the air still flowing into the hood, remove the hood and then disconnect the air supply hose using the quick-disconnect coupler attached to the Hot/Cold Tube.

Heat Shield Instructions

The climate control heat shield is designed to work with the Bullard AC1000, HC2400, CT, HCT, or ACL99 climate control devices.

Assembly

The heat shield is designed to work with the standard nylon belt (part #4612) supplied with the climate control devices or the vinyl belt (part #36501).

- Determine whether the climate control device will be worn vertically or horizontally on the waist.
- If the device will be worn in the horizontal position, align the tube on the heat shield as shown in **Figure 3**. If the tube will be worn in the vertical position, align the tube on the heat shield as shown in **Figure 4**.
- Lace the belt supplied with your climate control device through both the heat shield slots and the climate control belt bracket slots.

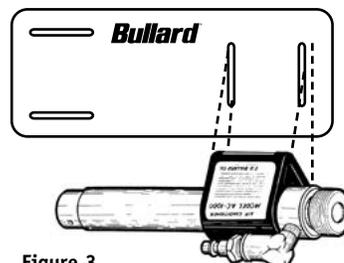


Figure 3

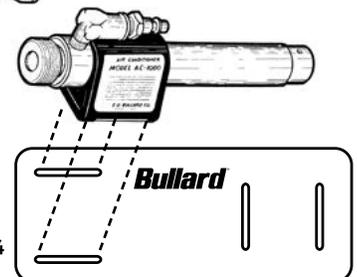


Figure 4



Americas:
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ISO 9001
certified

6082800120F (0414)

For use with Airline Respirators



The DC50 Dual-Cool tube is approved by NIOSH to supply a continuous flow of cool air to certain Bullard supplied air respirators. Please consult the NIOSH approval matrix in your respirator user manual to verify that the DC50 is NIOSH approved for your specific configuration. All Bullard parts must be present and properly assembled to constitute a NIOSH-approved respirator.

Air Quality Requirements

Grade D breathing air must be supplied to the point-of-attachment of the Bullard air supply hose, where the air supply hose connects to the fitting. Always use an inlet filter on your air source and monitors and alarms as necessary to assure clean, breathable, Grade D air.

Supplied breathing air must at least meet or exceed the requirements for Type 1 gaseous air as described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher quality) and specified by Federal Law 42CFR, Part 84, Subpart J, 84.141(b) and 29 CFR 1910.134(i)(1)(ii).

The requirements for Grade D breathable air include:

- Oxygen 19.5-23.5%
- Hydrocarbons in mg/m³ of gas 5 mg/m³ max.
- Carbon monoxide 10 ppm max.
- Carbon dioxide 1,000 ppm max.
- Odor No pronounced odor*

No toxic contaminants at levels that make air unsafe to breathe.

*Specific measurement of odor in gaseous air is impractical. Air normally may have a slight odor. The presence of a pronounced odor should render the air unsatisfactory.

Contact the Compressed Gas Association (1235 Jefferson David Highway, Arlington, VA 22202 or www.cganet.com) for complete details on Commodity Specification G-7.1.

▲ WARNING

Before using this product, read and follow all directions and warnings, including those in the respirator instruction manual.

The respirator's air source must supply clean, breathable air, Grade D or better, at all times. The respirator does not purify air or filter out contaminants.

Connecting the respirator to a line supplying Nitrogen or other harmful gases could cause death or serious injury.

The DC50 Dual-Cool tube cannot be used with a low pressure air source such as an ambient air pump.

Failure to follow these instructions could result in death or serious injury.

For technical assistance, contact Bullard Customer Service at 877-BULLARD (285-5273).

Air Pressure

Breathing air pressure must be continually monitored at the point-of-attachment while operating the respirator. A reliable air pressure gauge must be present to monitor the pressure during respirator operation.

⚠ WARNING

Failure to supply the minimum required pressure at the point-of-attachment for your hose length and type will reduce airflow and could result in death or serious injury.

Make certain that your breathing air compressor has sufficient capacity to deliver a minimum of 30 cfm per respirator wearer at all times. Because Dual-Cool has two cool tubes, it requires a higher than normal volume of air.

The Breathing Air Pressure Table in your respirator user manual defines the air pressure ranges necessary to provide the respirator with a volume of air that falls within the required range of 6-15 cubic feet per minute (cfm) or 170-425 liters per minute (lpm). (See 42 CFR, Part 84, Subpart J, 84.150)

Air Supply Hose

To maintain your Bullard respirator's NIOSH approval, use only approved Bullard V10 Series hose(s) in lengths of 50 to 300 feet, or Bullard V5 Series hose in lengths of 25 to 50 feet. Bullard V11 hose-to-hose adapters **MUST** be used to connect V10 hose lengths together. Secure connection(s) until wrench tight and leak free.

⚠ WARNING

Use of any other air supply hose voids NIOSH approval of the entire respirator assembly and could reduce the airflow to the respirator, possibly resulting in death or serious injury to the respirator wearer. Failure to observe these warnings could result in death or serious injury.

Compressed air must be dry enough to prevent ice buildup in the cold airstream. Ice could reduce airflow into the respirator hood.

⚠ WARNING

The DC50 Dual-Cool climate control system is not recommended for cooling the air supply when the air temperature is less than 70° F. Because the DC50 Dual-Cool may cool the incoming air by more than 30° F, it is possible for ice to form in the breathing tube and reduce the airflow. Failure to observe these warnings could result in death or serious injury.

Ordering Information

CATALOG NUMBER	DESCRIPTION
DC5040	1/4" Industrial Interchange (Hansen compatible) quick-disconnect nipple, adjustable temperature control, CH60 connector hose, heat shield and belt
DC70ML	Medium/Large Cooling Vest
DC70XLXXL	X-Large/XX-Large Cooling Vest
DC705X	5X-Large Cooling Vest
CH60	Connector Hose
4612	Nylon Belt
HSDC	Heat Shield

Assembly and Use

Assembly must be conducted in an uncontaminated atmosphere.

Assembling the Cooling Vest

1. Insert the muffler end of the cooling vest connector hose well into the air entry sleeve of the vest (**Figure 1**).

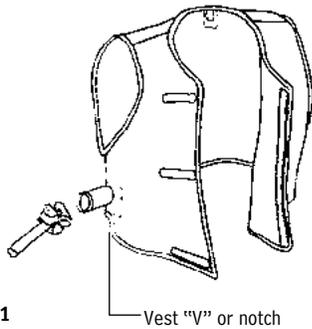


Figure 1

2. Install the small nylon clamp over the air entry sleeve and cooling vest connector hose. Engage the clamp locks and squeeze until tight (**Figure 2**).

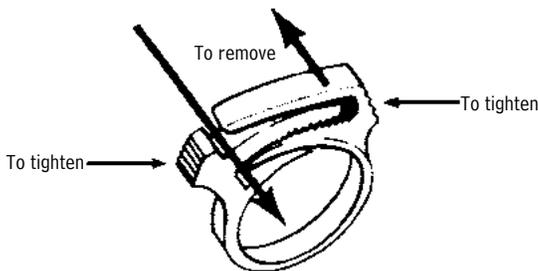


Figure 2

Head Shield Assembly Instructions

The HSDC climate control heat shield is designed to work with the Bullard DC50 Dual-Cool climate control device.

Assembly

The heat shield is designed to work with the standard nylon belt (part #4612) supplied with the climate control device.

1. Lace the belt supplied with your climate control device through both the heat shield slots and the climate control belt bracket slots.
2. Use plastic zip ties (2 included) to secure the climate control to the heat shield. (**Figure 3**)

Donning the Dual-Cool Tube and Cooling Vest

1. Screw the hose connector that is on the end of the breathing tube to threaded connector on Dual-Cool. Lace the belt through the slots in the belt bracket (**Figure 3**).

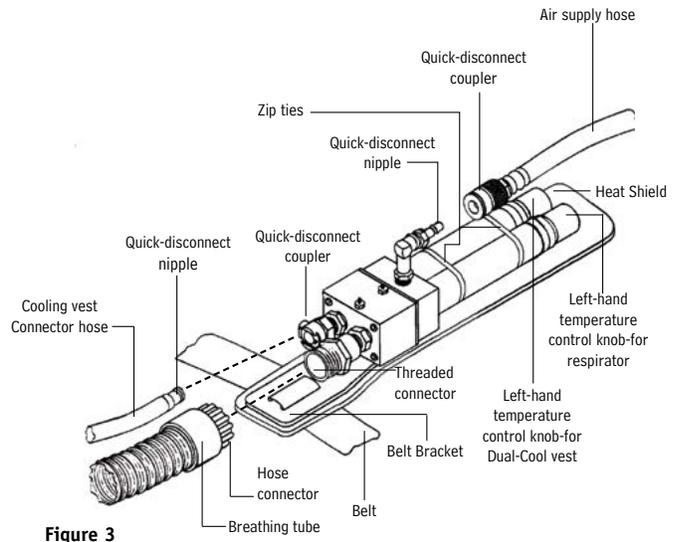


Figure 3

2. Don the belt, belt bracket, and Dual-Cool. Adjust belt comfortably, but loosely, around your waist, insuring that the Dual-Cool assembly is on your right-hand side.
3. Don the vest. Use the Velcro® closure strips to adjust loosely for size.

NOTE

The vest should mount over the belt with the Dual-Cool unit positioned in the "V" of the vest found on the right-hand side (**Figure 1**).

4. Snap the quick-disconnect nipple found on the end of the cooling vest connector hose into the quick-disconnect coupler on the Dual-Cool (**Figure 3**).
5. Don the respirator by following the directions in your respirator instruction manual. If you do not have instructions, contact Bullard Customer Service at the address or phone number given below.
6. With the approved Bullard air supply hose connected to the breathing air source, and with air flowing into the hose, connect the quick-disconnect coupler on the air supply hose to the quick-disconnect nipple on the Dual-Cool (**Figure 3**).
7. Adjust the air pressure at the point-of-attachment to within the approved pressure range found in the respirator user manual (**Figure 4**).

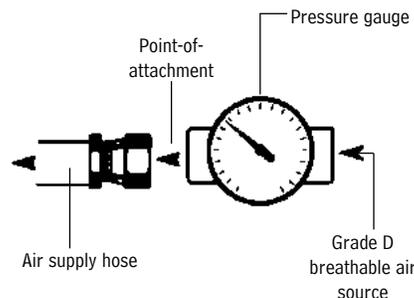


Figure 4

Operating the Dual-Cool Tube

1. To obtain cooler air, turn the air temperature control knobs counterclockwise (**Figure 3**). Maximum cooling is obtained when knobs are open completely and when there is maximum airflow out of the Dual-Cool tube's exhaust ports. To obtain air that is closer to ambient temperature, turn air temperature control knobs clockwise. If knobs are closed completely, your respirator will receive air that is essentially at ambient temperature.



NOTE

There are separate controls to adjust the temperature of the air that is distributed to the vest and the breathing zone. The right-hand knob controls the air temperature to the respirator; the left-hand knob controls the air temperature to the cooling vest (**Figure 3**).

2. When finished working, leave the work area wearing the respirator. With the air still flowing, remove the hood, and then disconnect the air supply hose using the quick-disconnect coupler attached to the Dual-Cool.

Cleaning

Machine wash the vest in warm water using a gentle cycle. Use a mild laundry detergent. Air-dry only. After cleaning, carefully inspect the vest for any signs of damage. If any damage is detected, remove the vest from service.



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INCLUDES: Frigitron 2000 and Belt.

FUNCTION: The Frigitron 2000 is NIOSH approved to supply a continuous flow of cool air as part of certain Bullard supplied air respirator systems. Please consult the NIOSH approval matrix in your respirator user manual to verify that the Frigitron 2000 is NIOSH approved for your specific configuration. All Bullard parts must be present and properly assembled to constitute a NIOSH-approved respirator.

NOTE:
Frigitron 2000 CAN be used with a low pressure air source such as Bullard ambient air pump Models ADP20, EDP30, and ICEPUMP11.

CAUTION: BEFORE USING THIS PRODUCT, READ AND FOLLOW ALL DIRECTIONS AND WARNINGS, INCLUDING THOSE IN THE RESPIRATOR INSTRUCTION MANUAL.

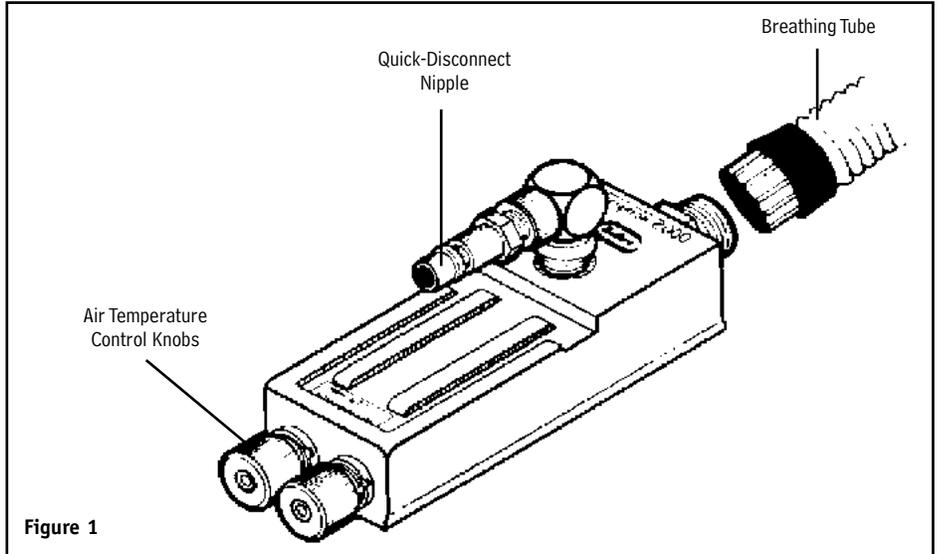


Figure 1

▲ WARNING

Connecting the respirator to a line supplying Nitrogen or other harmful gases could cause death or serious injury

Air Quality, Air Pressure and Air Supply Hose Length Requirements

Air Quality

▲ WARNING

The respirator's air source must supply clean, breathable air, Grade D or better, at all times. The respirator does NOT purify air or filter out contaminants.

Respirable air must be supplied to the point-of-attachment of the BULLARD air supply hose. The point-of-attachment is where the air supply hose connects to the fitting that contains a pressure gauge used to monitor the pressure of the air provided to you.

Locate the source of supplied air in a clean environment far enough from your work site to ensure the air remains contaminant-free. Always use an inlet filter on your air source and any monitors and alarms as necessary to assure clean, breathable air at all times.

Supplied breathing air **MUST** meet or exceed the requirements for Type 1 gaseous air described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher quality) as specified by Federal Law 30 CFR, Part II, Subpart J, 11.121(b).

The requirements for Grade D breathable air include:

- Oxygen 19.5-23.5%
- Hydrocarbons (condensed) in mg/m³ of gas 5 mg/m³ max.
- Carbon monoxide 10 ppm max.
- Carbon dioxide 1,000 ppm max.
- Odor No detectable odor
- No toxic contaminants at levels that make air unsafe to breathe.

Refer to C.G.A. Commodity Specification G-7.1 for complete details, or contact the Compressed Gas Association (1235 Jefferson Davis Highway, Arlington, VA 22202).

Air Pressure

Continually monitor the air pressure at the point-of-attachment while operating the respirator. A reliable air pressure gauge must be present to monitor the pressure.

▲ WARNING

Failure to supply the minimum required pressure at the point-of-attachment for your hose length will reduce airflow and may expose you to life threatening conditions, diseases or death.

The BREATHING AIR PRESSURE TABLE in your respirator user manual defines the air pressure ranges necessary to provide the respirator with a volume of air that falls within the required range of 6-15 cubic feet per minute (cfm) or 170-425 liters per minute (lpm). (See 30 CFR, Part II, Subpart J, 11.124.7). Be sure you understand the information in the BREATHING AIR PRESSURE TABLE before using the respirator.

Air Supply Hose

To maintain your Bullard respirator's NIOSH approval, use only approved Bullard V20 Series hose(s) in lengths of 25-300 feet between the Frigitron's quick-disconnect fitting and the point-of-attachment to the hose.

Bullard quick-disconnect fittings **MUST** be used to connect V20 hose lengths together.

Use of any other air supply hose voids the NIOSH approval on the entire respirator assembly and could reduce the airflow to the respirator, possibly resulting in serious injury or death to the respirator wearer.

▲ WARNING

Before connecting the Frigitron 2000 to the respirator, be sure the breathing air at least meets the minimum Grade D requirements. (See Air Quality section on front page.)

Preparation and Use of the Frigitron 2000

1. In an uncontaminated atmosphere, screw the end of the breathing tube to the fitting on the climate control device. Tighten hose connectors firmly.
2. Lace the belt supplied with the Cool Tube through the belt bracket.
3. With the approved Bullard V20 air supply hose connected to the air source and with air flowing into the hose, connect the quick-disconnect coupler on the air supply hose to the quick-disconnect nipple on the Frigitron 2000.
4. Adjust the air pressure at the point-of-attachment to within the approved pressure range (**Figure 2**).
5. Put the hood on by following the directions in your respirator instruction manual. If you do not have instructions, contact Bullard Customer Service at the address or phone numbers given below.
6. To obtain cooler air, turn either or both of the air temperature control knobs clockwise (**Figure 1**).

Maximum cooling is attained when either or both knobs are fully open and when there is maximum airflow out of the Frigitron exhaust ports.

To obtain air that is closer to ambient temperature, turn either or both air temperature control knob counterclockwise. If both knobs are fully closed, your respirator will receive air at ambient temperature.

7. When finished working, leave the work area wearing the respirator. With the air still flowing into the hood, remove the hood and then disconnect the air supply hose using the quick-disconnect coupler attached to the Frigitron 2000.

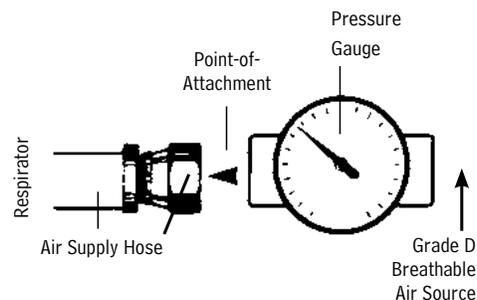


Figure 2



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V10 Starter Hose Kit

Includes:

- One V10 starter hose with female quick-disconnect coupler on one end and standard female hose thread on the other
- One V13 hose-to-pipe adaptor
- One V17 quick-disconnect nipple (4696, 469650 and 4696100 only)

NOTE: 46917FF includes female Snap-Tite couplers on each end. 46917FM includes male Snap-Tite nipple. 46919 includes male Snap-Tite nipple

V10 Extension Hose Kit

Includes:

- One V10 extension hose with female fittings on both ends
- One V11 3/8" hose-to-3/8" hose adaptor
- One V13 3/8" hose-to-3/8" pipe adaptor

V10 Starter Hose Instructions

1. Connect the respirator's breathing tube fitting to the female quick-disconnect coupler on the V10 starter hose.
2. Attach V12 hose-to-pipe adaptor to the standard 3/8" threaded female fitting on the the starter hose.
3. Connect V13 adaptor to the point-of-attachment on your breathing air source.
4. 4696, 469650 and 4696100 includes V17 male quick-disconnect (1/4" Industrial Interchange) for connection to coupler at air source.

NOTE: Teflon tape should be used on all NPT threads including the V13 adaptor fitting and the V17 quick-disconnect nipple.

V10 Extension Hose Instructions

Extension kits allow you to add Bullard breathing air supply hose to your Bullard respirator's starter hose or to another length of Bullard extension hose. For information on maximum permissible hose lengths and approved air pressure ranges, please refer to the instruction manual packaged with your Bullard respirator.

1. Remove V13 hose-to-pipe adaptor from starter hose and replace it with the V11 hose-to hose adaptor supplied with the extension kit.
2. Connect the V11 adaptor to the extension hose.
3. Now attach the V13 adaptor to the extension hose and connect the adaptor to the point-of-attachment on to your breathing air source.

NOTE: Teflon tape should be used on the NPT threads of the V13 adaptor fitting or the V17 quick-disconnect nipple.

Respirable Breathing Air

Respirable breathing air must be supplied to the point-of-attachment of the approved breathing air supply hose. Government regulations require that all breathing air meet the specifications for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1989 and specified by federal Law 30 CFR, Part II, Subpart J, 11.121(b).

⚠ WARNING

DO NOT connect your Bullard breathing air supply hose to nitrogen, toxic gases, inert gases, or other non-breathable, non-grade D air sources. Breathing air hose connection fittings must be incompatible with fittings for other industrial gases as described by the Compressed Gas Association.

Point-of-attachment

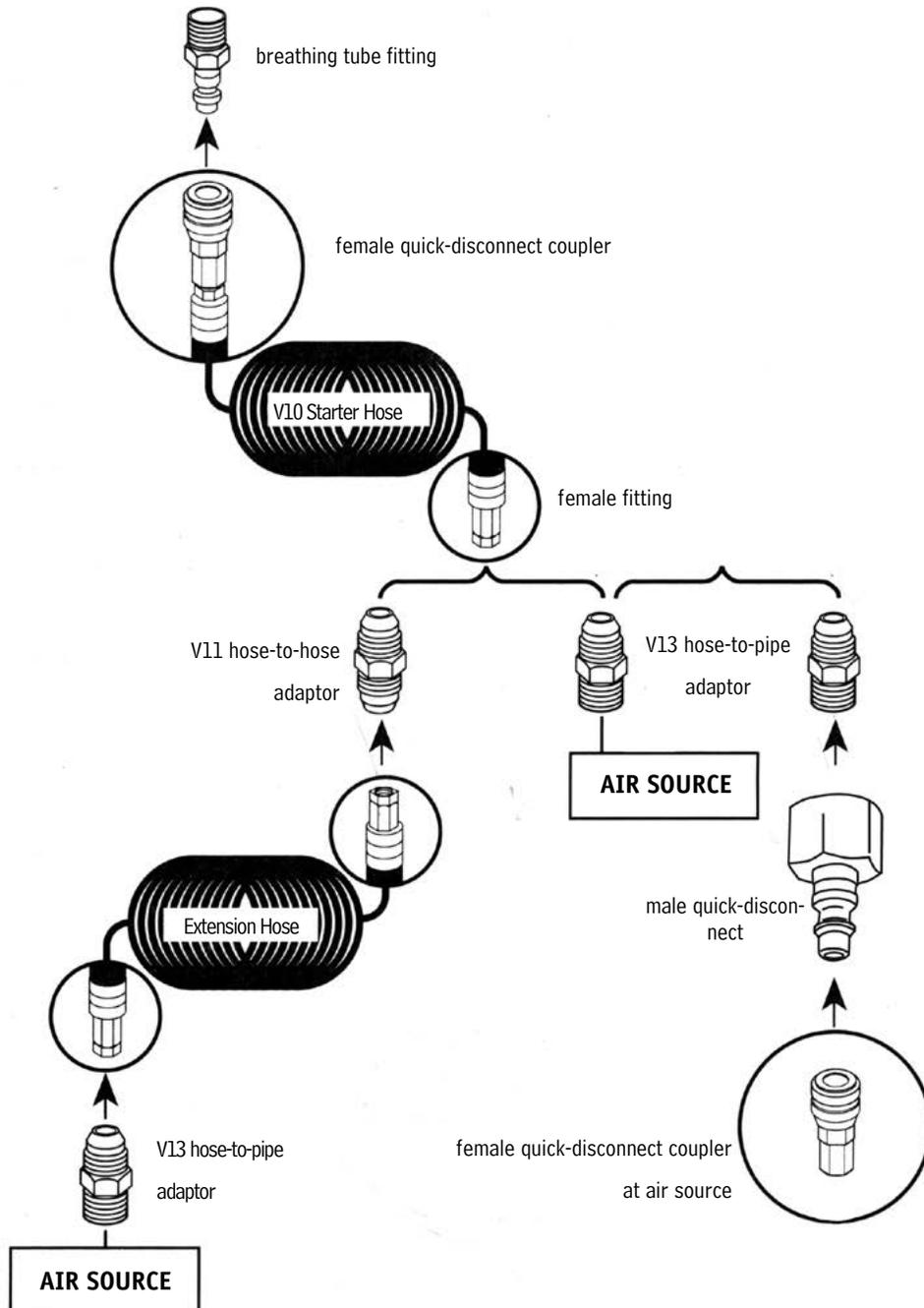
Air pressure at the point-of-attachment must be regulated with the ranges specified on your respirator's MSHA/NIOSH approval label.

NOTE: You can repeat the extension hose connection steps using Bullard V10 hoses. However, do not exceed the lengths specified on the approval label or in the instruction manual for your specific respirator.

V10 Starter Hose Model	Hose Length	Quick-Disconnect Coupler
4696	25 feet	Industrial Interchange
46915	25 feet	Snap-Tite
46913	25 feet	Schrader
46916	25 feet	Snap-Tite
46918	25 feet	Snap-Tite
46917	50 feet	Snap-Tite
46919	50 feet	Snap-Tite
469650	50 feet	Industrial Interchange
4696100	100 feet	Industrial Interchange

V10 Extension Hose Model	Hose Length
5454	25 feet
54510	25 feet
54514	25 feet
5457	50 feet
54511	50 feet
54513	50 feet
5458	100 feet
54512	100 feet

V10 Breathing Air Supply Hose and V10 Extension Hose Kit Assembly



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6088000900F (0414)

Bullard V20 Hose Kits include one V20 rubber starter hose with female quick-disconnect coupler on one end and quick-disconnect nipple on the other.

Installation Instructions

1. Connect the respirator's breathing tube fitting to the female quick-disconnect coupler on the V20 hose.
2. Connect the quick-disconnect nipple on the hose to the point-of-attachment on your breathing air source.

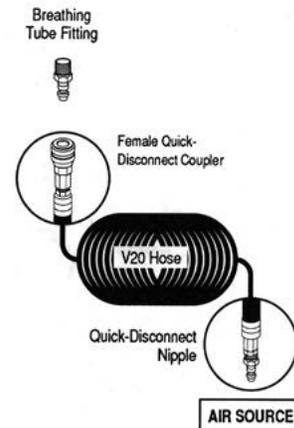
Respirable Breathing Air

Respirable breathing air must be supplied to the point-of-attachment of the approved breathing air supply hose. Government regulations require that all breathing air meet the specifications for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1989 and specified by Federal Law 30 CFR, Part II Subpart J, 11.121(b).

Point-of-Attachment

Air pressure at the point-of-attachment must be regulated within the ranges specified on your respirator's NIOSH approval label.

V20 Breathing Air Supply Hose Assembly



⚠ WARNING

Do not connect your Bullard breathing air supply hose to nitrogen, toxic gases, inert gases, or other non-breathable, non-grade D air sources. Breathing air hose connection fittings must be incompatible with fittings for other industrial gases as described by the Compressed Gas Association. Failure to observe this warning may result in death or serious injury.

Starter Hose Model	Starter Hose	Hose Length	Quick-Disconnect Coupler
V20 Series - For use with Free-Air® pumps			
V2025ST	V2025STSHUTOFF	25 feet	1/2" Industrial Interchange
V2050ST	V2050STSHUTOFF	50 feet	1/2" Industrial Interchange
V20100ST	V20100STSHUTOFF	100 feet	1/2" Industrial Interchange

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