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PC90 Series Airline Respirator with CS90 Containment Suit

Instruction Manual



**Type C Continuous-Flow Class
NIOSH Approval No. TC-19C-280**

**READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS
RESPIRATOR. SAVE THIS MANUAL FOR FUTURE REFERENCE.**

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APPROVAL LABEL

PC90 Respirator System



APPROVAL NO. TC-19C-280

ISSUED TO:

Bullard

Cynthiana, Kentucky, USA

LIMITATIONS:

Approved for respiratory protection in any atmosphere not immediately dangerous to life or health (IDLH) and from which the wearer can escape without the aid of the respirator. This approval applies only when the respirator is used in conjunction with Bullard's CS90 containment suit and when the respirator is supplied with respirable air through approved hose(s), in allowable length(s), through belt-mounted air-control systems, including accessories, at pressure ranges shown in the table.

If using Bullard's Dual-Cool™ Climate Control System, then this approval applies only when used with Bullard's DC60 Series cooling vest, PC90 Series respirator, and CS90 containment suit. The respirator must be supplied with respirable air through approved hose(s) at pressure ranges and hose lengths shown in the table.

Breathing Tube Assembly (Part No.)	Air Supply Hose (Part No.)	Air Supply Hose Length (Feet)	Maximum Number of Hose Sections	Required Pressure Range (psig air)
C40, C41 C42, C43 and C40F, C41F C42F, C43F	V10	50	2	25-26
		100	3	31-32
		150	3	33-34
		200	3	37-38
		250	3	42-43
		300	5	49-50
	V5	25	1	27-28
		50	2	30-31
DC6040, DC6040B, DC6040S, DC6041, DC6042, DC6043, DC6044, DC6047, and DC6040F, DC6040BF, DC6040SF, DC6041F, DC6042F, DC6043F, DC6044F, DC6047F	V10	50	2	48-52
		100	3	59-63
		150	3	68-72
		200	3	80-84
		250	3	85-92
		300	5	90-98
	V5	25	1	53-57
		50	2	67-71

CAUTION:

Do not wear this respirator in any atmosphere immediately dangerous to life or health (IDLH). Follow manufacturer's instructions for providing a supply of respirable air. In making renewals or repairs, parts used must be identical to those furnished by the manufacturer under the pertinent approval. This respirator shall be selected, fitted, used and maintained in accordance with Occupational Safety and Health Administration and other applicable regulations.

Bullard PC90 Series airline respirators consist of the following components: parka-style respirator hood, headband, containment suit, breathing tube assembly, and air supply hose. All components must be present and properly assembled to constitute a complete NIOSH-approved respirator. See page 3 of the instruction manual for the approved assembly parts.

NIOSH Approval No. TC-19C-280. Issued to Bullard - May 15, 1993.

GENERAL INFORMATION

Bullard's PC90 Series airline respirators, when properly used, provide continuous flow of air from a remote air source, through a patented air delivery system (U.S. Patent 4,484,575), to the respirator wearer. PC90 Series respirators offer protection from airborne contaminants that are not immediately dangerous to life or health (IDLH), or that do not exceed concentrations allowed by applicable OSHA, MSHA, EPA, NIOSH or ACGIH regulations and recommendations, or any other applicable regulations for continuous flow airline respirators.

PC90 Series airline respirators are approved by NIOSH (TC-19C-280 Type C) to provide respiratory protection in general purpose applications, including pharmaceutical and advanced composites manufacturing, chemical and pesticide handling, biomedical research and other industrial agricultural applications in which hazardous compounds are present.

PC90 Series respirators are designed only for use with Bullard's CS90 full-body containment suit. The PC90 parka and CS90 suit are made of Tychem®SL, a coated material that offers protection against a broader range of chemicals than Tyvek QC. The seams are taped and sealed. When used together, the suit and parka provide a physical barrier to help prevent contaminants from reaching the wearer's skin. To increase worker comfort, a patented process (U.S. Patent 5,088,115) exhausts excess air from the hood into the suit. NIOSH approval of the PC90 respirator is valid only when used with the CS90 containment suit.

PC90 Series respirators are compatible with breathing air sources such as breathing air compressors. Bullard offers the appropriate approved breathing tube assembly and air supply hose to connect the PC90 Series respirator to the breathing air source. In addition, Bullard offers a range of air sources, filtration, monitoring and point-of-attachment devices to complete your supplied air system.

PC90 Series respirators are approved by NIOSH for use with an optional Bullard climate control device. Contact Bullard or its local authorized distributor for more information about other accessories for PC90 respirators.

For technical assistance, call or write:

Bullard

1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 800-827-0423
Phone: 606-234-6611
Fax: 606-234-8987
www.bullard.com

COMPONENT CONCEPT

Bullard PC90 Series airline respirators consist of five components (see Figure 1); all must be present and properly assembled to constitute a complete NIOSH-approved respirator.

1. Respirator hood (parka style).
2. Headband.
3. Containment suit – provides full-body protection from contaminants by acting as a physical barrier and by maintaining positive pressure with air discharged from respirator hood.
4. Breathing tube assembly – connects respirator hood to air supply hose. Available with an adjustable airflow control valve and optional in-line filter.
5. Air supply hose – connects breathing tube to air source that supplies clean breathable air.

Hose for High Pressure Compressed Air Source

V5 3/8" Coiled I.D. Hose

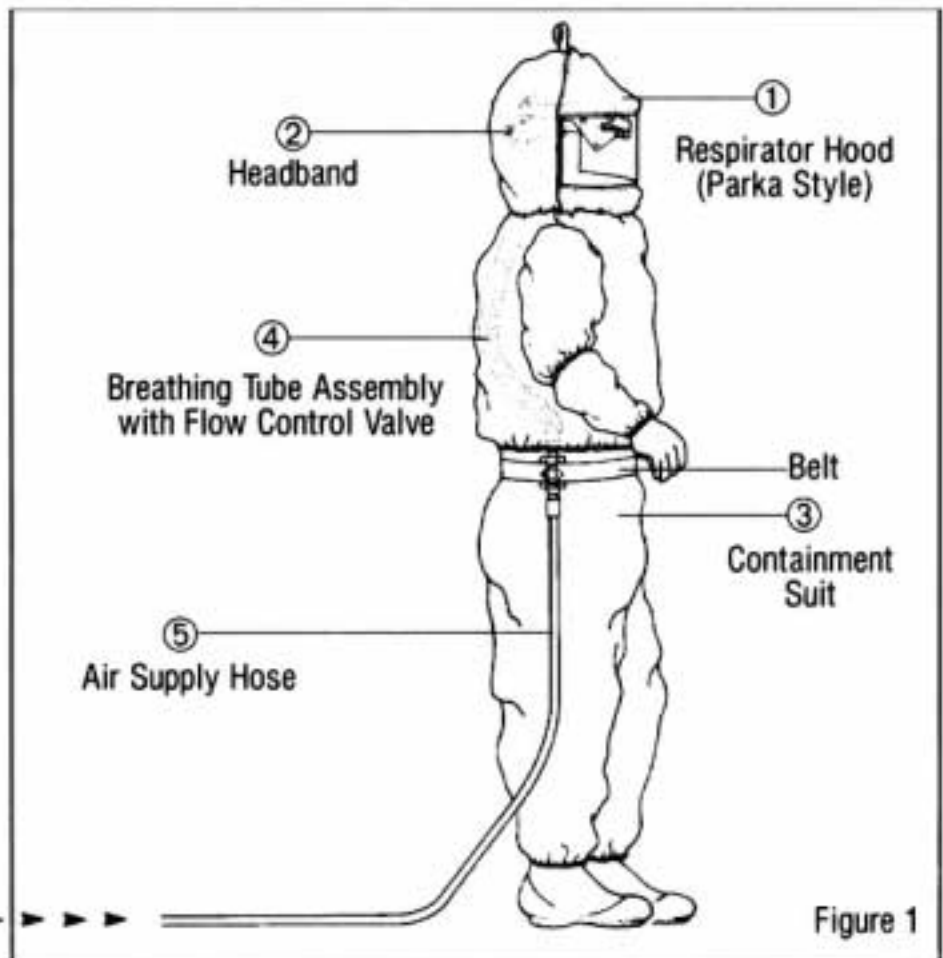
V5 Starter/
Extension Hose

Available in 25 and 50 foot lengths with a variety of quick-disconnect fitting styles and materials. See parts list for details.

V10 3/8" I.D. Hose

469 Starter Hose
545 Extension Hose

Available in 50 and 100 foot lengths with a variety of quick-disconnect fitting styles and materials. See parts list for details.



▲ WARNINGS ▲

1. This respirator, when properly fitted and used, significantly reduces, but does not completely eliminate, the breathing of contaminants by the respirator wearer. You may obtain better respiratory protection from other types of respiratory protection equipment, such as a valve-operated pressure-demand airline respirator or a pressure-demand self-contained breathing apparatus respirator.
2. Before using this respirator, be sure your employer has determined that airborne contaminant concentrations do not exceed those allowed by applicable OSHA, EPA, NIOSH or ACGIH regulations and recommendations, or any other applicable regulations for continuous flow airline respirators. Federal law requires that your employer measure and monitor airborne contaminant levels in the work area.
3. 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.
4. **DO NOT** wear this respirator if any of the following conditions exist:
 - Atmosphere is immediately dangerous to your life or health (IDLH).
 - You **CANNOT** escape without the aid of the respirator.
 - Atmosphere contains less than 19.5% oxygen.
 - Work area is poorly ventilated.
 - Unknown contaminants are present.
 - Contaminants are in excess of regulations or recommendations (as described in item 2 above).
5. **DO NOT** wear this respirator until you have passed a complete physical exam (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 the Bullard PC90 Series Respirator.
6. **DO NOT** modify or alter this respirator in any manner. Use only NIOSH-approved Bullard PC90 components and replacement parts manufactured by Bullard for use with this respirator.

Failure to use NIOSH-approved Bullard components and replacement parts such as airline hoses, flow control devices and climate control devices, voids NIOSH approval of the entire respirator, invalidates all Bullard warranties, and may cause death, lung disease or exposure to other hazardous or life-threatening conditions.
7. 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 PC90 components or remove respirator from service. (See **INSPECTION, CLEANING AND STORAGE** section on pages 15-17 for proper maintenance of the PC90 Series respirator.)

▲ WARNINGS ▲ (continued)

8. Be certain your employer has determined that the breathing air source provides at least Grade D breathable air. This respirator must be supplied with clean breathable air at all times.
9. **DO NOT** connect the respirator's air supply hose to nitrogen, toxic gases, inert gases or other unbreathable, non-Grade D air sources. Check the air source before using the respirator. Failure to connect to the proper air source may result in serious injury or your death.
10. **DO NOT** use this respirator in poorly ventilated areas where oxygen content is less than 19.5% 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.
11. If you have any questions concerning the use of this respirator, or if you are not sure whether the atmosphere in which you are working is immediately dangerous to your 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).
12. **DO NOT** use this respirator for underwater diving or abrasive blasting operations.

For technical assistance, call or write:

Bullard
1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 800-827-0423
Phone: 606-234-6611
Fax: 606-234-8987
www.bullard.com

OPERATIONS

Protection

RESPIRATORY

This respirator is NIOSH-approved (TC-19C-280) for Type C operations. It can be worn for general purpose applications, including pharmaceutical and advanced composites manufacturing, chemical and pesticide handling, biomedical research and other industrial or agricultural applications in which hazardous compounds are present.

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

PC90 Series respirator hoods with a 20RT headband DO NOT provide head protection.

FACE

PC90 Series respirators DO NOT provide face protection.

EYES

PC90 Series respirators DO NOT provide eye protection. Wear approved safety glasses or goggles at all times.

EARS

PC90 Series respirators DO NOT provide hearing protection. Use properly fitted earmuffs, earplugs or other protection when exposed to high noise levels.

Breathing Air Requirements

AIR QUALITY

▲ 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.

Respirable, breathable 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 and Figure 3).

Supplied breathing air must AT LEAST meet the requirements for Type 1 gaseous air described in the Compressed Gas Association Commodity Specifications 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 toxic contaminants at levels that make air unsafe to breathe.

Contact the Compressed Gas Association (1235 Jefferson Davis Highway, Arlington, VA 22202) for complete details on Commodity Specifications G7.1.

*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.

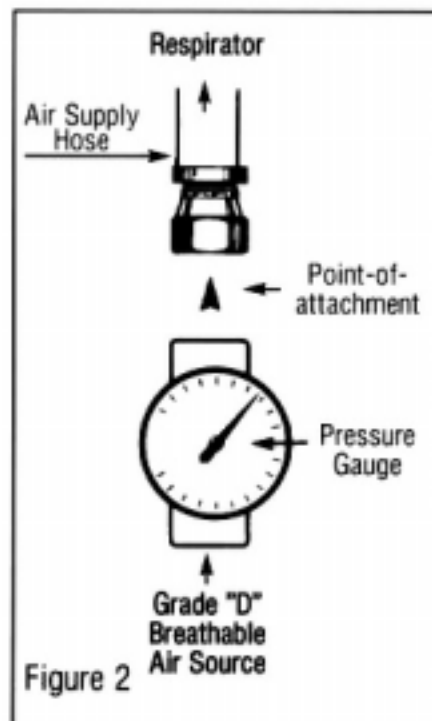


Figure 2

AIR SOURCE

Locate the source of supplied air 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 with filters and carbon monoxide monitors and alarms 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.

▲ DANGER ▲: FAILURE TO SUPPLY THE MINIMUM REQUIRED PRESSURE AT THE POINT-OF-ATTACHMENT FOR YOUR HOSE LENGTH AND TYPE WILL REDUCE AIRFLOW AND MAY EXPOSE YOU TO LIFE-THREATENING CONDITIONS, DISEASES OR DEATH.

The Breathing Air Pressure Table (see page 8) defines the air pressure ranges necessary to provide PC90 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, 84.150).

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

1. Determine the type of air source you are using (Column 1), then find your breathing tube assembly (Column 2).

2. Be sure your Bullard air supply hose(s) (Column 3) is approved for use with your breathing tube assembly.
3. Determine that your air supply hose is within the approved length (Column 4).
4. Make sure you have not exceeded the maximum number of hose sections (Column 5).
5. Set the air pressure at the point-of-attachment within the required pressure range (Column 6) for your breathing tube and air supply hose type and length.

Breathing Air Pressure Table

This table defines the air pressure ranges necessary to provide one PC90 Series respirator 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, Part 84, Subpart J, 84.150, Table 8).

(1) Air Source	(2) Breathing Tube Assembly	(3) Air Supply Hose	(4) Air Supply Hose Length (Feet)	(5) Maximum Number of Hose Sections	(6) Required Pressure Range (psig air)
Stationary Air Compressor Only	C40, C41, C42, C43 and C40F, C41F, C42F, C43F Adjustable Airflow	V10	50	2	25-26
			100	3	31-32
			150	3	33-34
			200	3	37-38
			250	3	42-43
			300	5	49-50
		V5	25	1	27-28
			50	2	30-31
Stationary Air Compressor Only	DC6040, DC6040B, DC6040S, DC6041, DC6042, DC6043, DC6044, DC6047, and DC6040F, DC6040BF, DC6040SF, DC6041F, DC6042F, DC6043F, DC6044F, DC6047F	V10	50	2	48-52
			100	3	59-63
			150	3	68-72
			200	3	80-84
			250	3	85-92
			300	5	90-98
		V5	25	1	53-57
			50	2	67-71

Breathing Air Supply Hoses and Hose Fittings

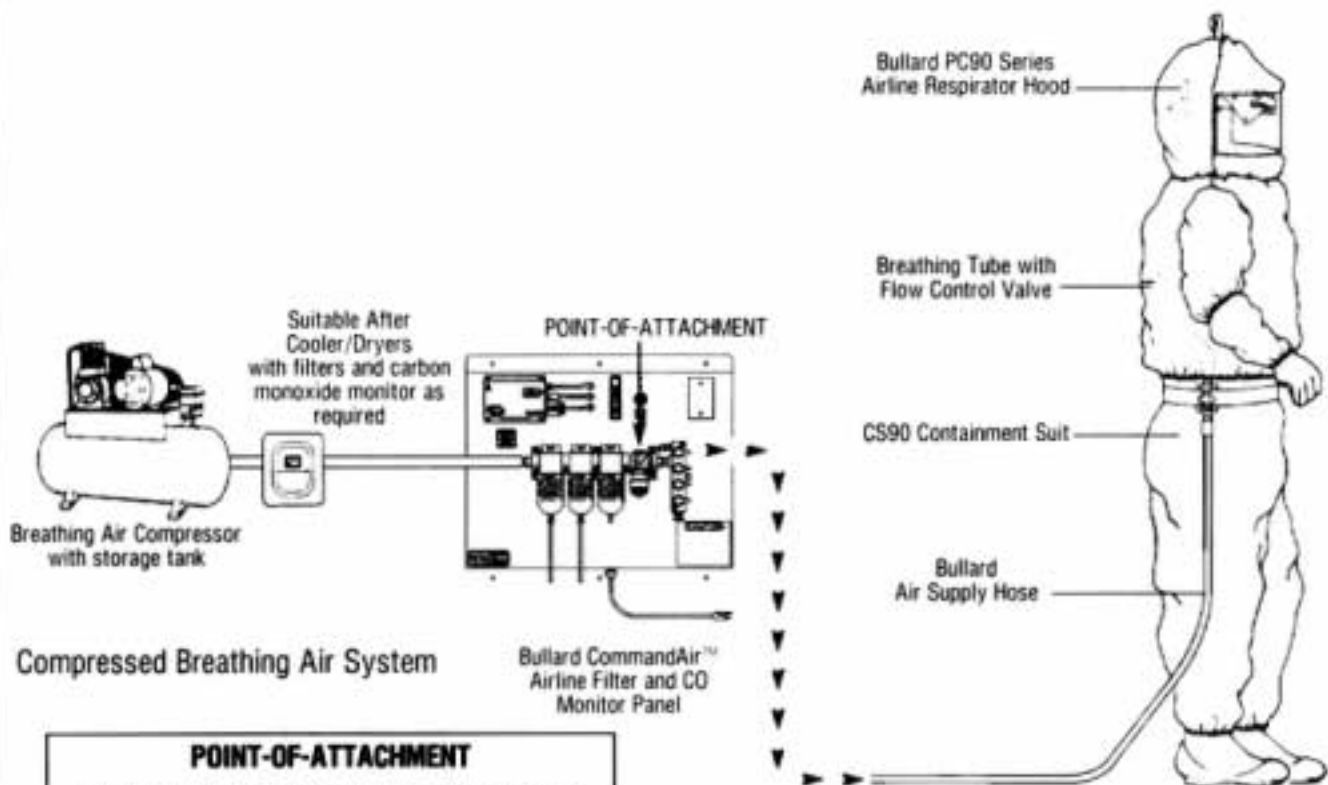
NIOSH approved Bullard air supply hose(s) MUST be used between the breathing tube connection fitting on the wearer's belt and the point-of-attachment to the air supply (see figure 3).

NIOSH approved Bullard quick-disconnect fittings MUST be used to connect V5 lengths together. When connecting lengths of V10 hose, use only Bullard V11 hose-to-hose adaptors. Secure connections 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 (see page 8) and the respirator's NIOSH approval label (see page 1).

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 hood off your head.

Typical Air Source and Respirator Configuration



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.

Figure 3

PC90 RESPIRATOR ASSEMBLY

Installing and Adjusting 20RT Headband in PC90 Respirator Hood

1. Place ratchet headband on your head and adjust ratchet knob to a comfortable fit. Headband should feel comfortable and snug.
2. With clear lens facing you, insert headband into hood with ratchet knob at back of hood.
3. Engage four headband snaps into corresponding snap studs mounted in plastic lens (see Figure 4).

ADJUSTING CROWN STRAPS FOR VERTICAL FIT

To improve headband comfort, you can adjust crown straps vertically by repositioning the headband keys in the crown straps. Vertical adjustment makes headband ride higher or lower on wearer's head.

1. Remove 20RT headband from respirator hood.
2. Rotate crown strap 90° until key dislodges from keyhole (see Figure 5).
3. Move key to desired vertical position.
4. Rotate crown strap 90° to secure key in keyhole (see Figure 6).
5. Repeat steps 2-4 for other crown strap key.
6. Reinstall ratchet headband into PC90 respirator hood following directions given above.

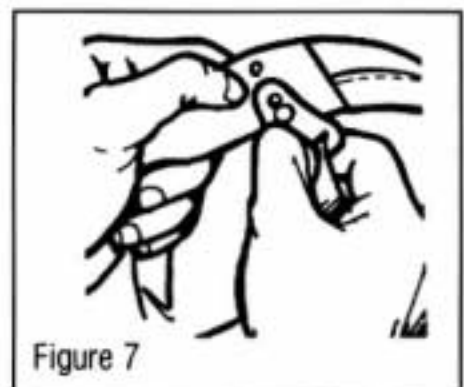
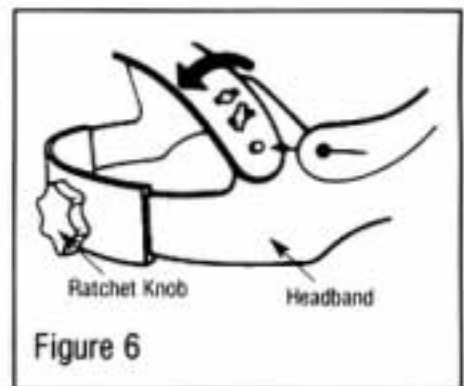
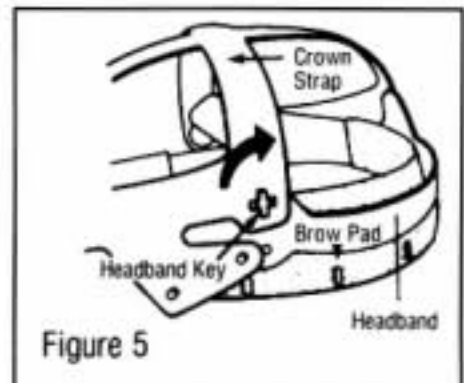
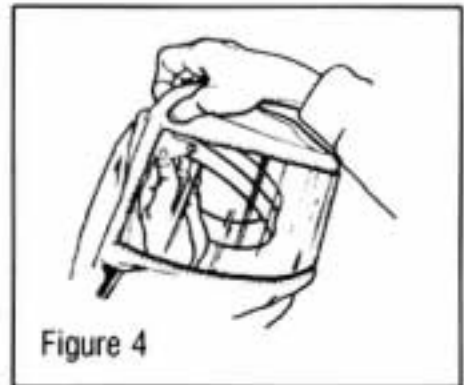
IF USING OPTIONAL 20NC CHIN STRAP:

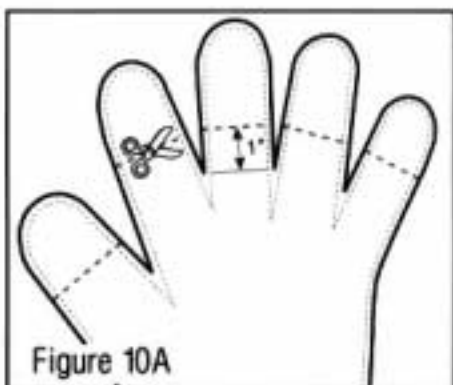
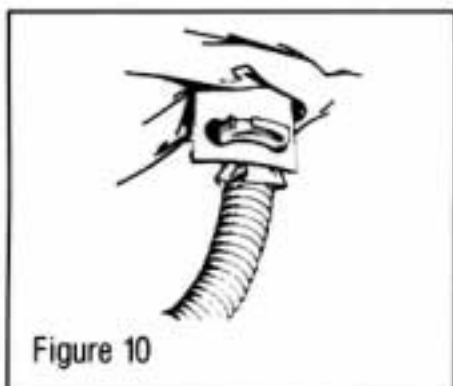
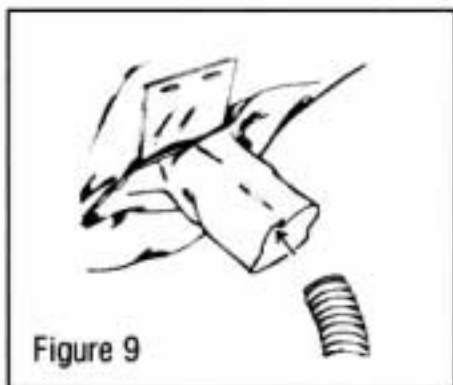
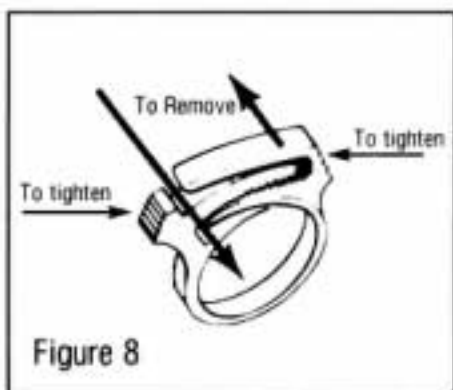
For most wearers, the ratchet headband holds the PC90 hood in place without a chin strap. If an optional chin strap is desired, refer to the list of replacement parts and accessories.

1. Remove headband from hood.
2. Snap chin strap stud buttons into the holes on each side of the headband, inserting from the inside.
3. Align holes on chin strap to stud buttons and pull downward to lock in place (see Figure 7).
4. Place headband on your head. Adjust chin strap length with the plastic slide.
5. Remove headband from your head and reinstall in respirator hood.

IF USING OPTIONAL 20LC LENS COVERS:

1. If desired, apply adhesive-backed lens covers designed to protect the respirator's plastic lens. Apply 2-3 lenses at a time.
2. When lens becomes soiled, remove by pulling tab at edge of lens cover to clear your vision.





Installing Breathing Tube Assembly in PC90 Respirator Hood

1. Remove nylon clamp from open end of the breathing tube (see Figure 8). Do not remove foam from inside the breathing tube. The foam helps reduce the noise level of incoming air.
2. Insert breathing tube approximately five inches into hood's air entry sleeve (see Figure 9).
3. Install nylon clamp over air entry sleeve and breathing tube, inserting clamp locks through two holes in plastic anchorplate that is sewn into hood. Locks should face away from user's neck (see Figure 10).
4. Engage clamp locks and squeeze together until tight.

Altering Glove Liners

If the wearer would prefer to remove the fingers of the glove liners for additional dexterity, and the work environment permits:

Remove hand from glove. With scissors cut the tips of the fingers off just above the point at which the finger begins (approximately 1" up). (See Figure 10A.)

⚠ WARNING ⚠

BE SURE THAT OUTER PROTECTIVE GLOVES ARE PROPERLY WORN. SEWN-IN GLOVE LINERS ARE NOT DESIGNED TO PROVIDE HAND PROTECTION. YOU MUST ALWAYS WEAR OUTER GLOVES THAT ARE APPROPRIATE FOR YOUR WORK ENVIRONMENT.

PC90 Series respirators are approved by NIOSH for use with one optional Bullard climate control system: DUAL-COOL® DC60 Series. Engineered especially for use with the PC90, this system includes a dual vortex tube and cooling vest. Incoming air is cooled by as much as 30° F, and separate air entries provide cooling to both the head and upper body. Follow the instructions supplied with your DUAL-COOL climate control system.

PC90 RESPIRATOR USE

▲WARNING ▲: DO NOT DON THIS RESPIRATOR IN A HAZARDOUS ATMOSPHERE. DO NOT REMOVE THIS RESPIRATOR IN A HAZARDOUS ATMOSPHERE, EXCEPT FOR EMERGENCY ESCAPE PURPOSES.

▲WARNING ▲: TO ASSURE PROPER USE AND TO OBTAIN MAXIMUM PROTECTION, ALL PC90 DONNING AND DOFFING PROCEDURES SHOULD BE CONDUCTED IN TWO PERSON TEAMS. HAVING THE ASSISTANCE OF A CO-WORKER WHEN DONNING AND DOFFING THE RESPIRATOR HELPS ASSURE PROPER AND SAFE USE.

Donning

CONTAINMENT SUIT

Before using your PC90 Series respirator, complete the assembly instructions given on pages 10 and 11.

1. Remove all accessories, jewelry and articles of clothing that have sharp edges or protrusions that could puncture fabric and expose you to contaminants.
2. While seated, insert one leg at a time into containment suit. With feet inserted into stirrups or booties, lift boot flap on outside of each leg of the suit. Then, don and secure outer boots provided by your employer. Pull boot flap down over outside of outer boot (see Figure 11).
3. Stand and pull suit to chest level. Insert arms into sleeves of suit. Insert fingers into sewn-in glove liners.
4. Pull suit up to neck area, but do not tighten barrel cinch at this time.
5. Pull back outer glove flap on each sleeve and don protective gloves following your employer's procedure. Pull glove flap down over cuffs of gloves (see Figure 12).

▲WARNING ▲

SEWN-IN GLOVE LINERS ARE NOT DESIGNED TO PROVIDE HAND PROTECTION. YOU MUST WEAR OUTER GLOVES THAT ARE APPROPRIATE FOR YOUR WORK ENVIRONMENT.

RESPIRATOR HOOD

6. Connect NIOSH-approved Bullard air supply hose to air source supplying Grade D breathable air. Turn on breathing air source.
7. With air flowing, connect breathing tube assembly to air supply hose. Connect quick-disconnect fitting on breathing tube assembly to quick-disconnect coupler on air supply hose (see Figure 13). Once fitting is secured, release coupling sleeve to lock fittings together. Pull on both hoses to make sure they are attached securely.
8. Adjust air pressure at point-of-attachment to within approved pressure range. See the Breathing Air Pressure Table (see page 8) for approved pressure ranges.
9. With air still flowing, turn parka inside out over top of hood, leaving inner bib in place.
10. Turn parka sleeves inside out. With assistance from your co-worker, insert chin first into respirator hood (see Figure 14).
11. Position headband for a comfortable fit. See instructions on page 10 for proper sizing.
12. If using an optional chin strap, pull elastic strap under chin and adjust for a secure and comfortable fit.

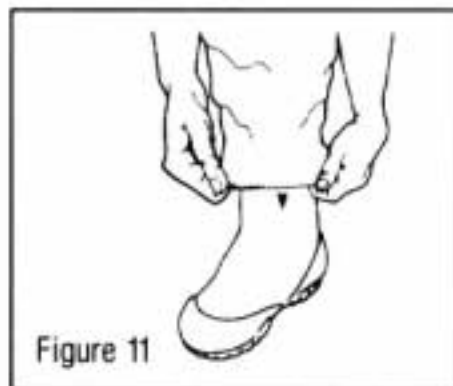


Figure 11

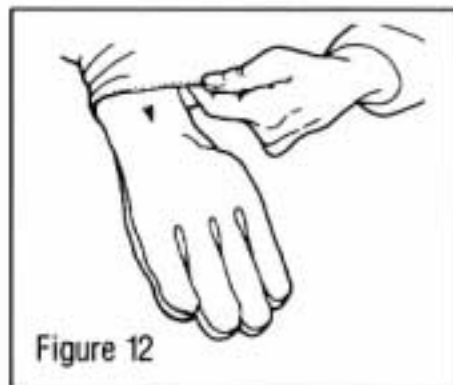


Figure 12

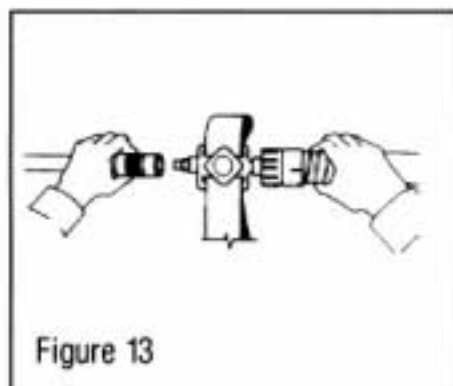


Figure 13

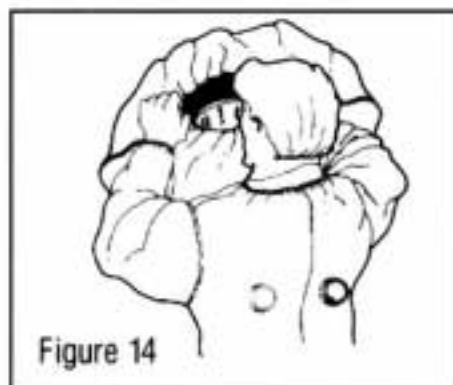


Figure 14

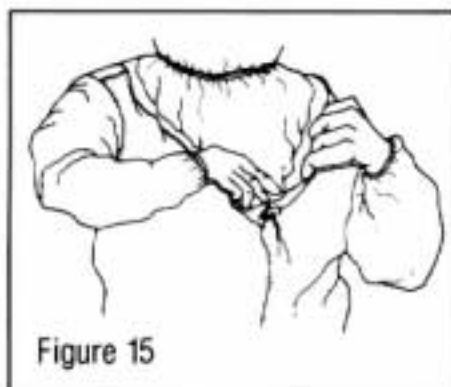


Figure 15

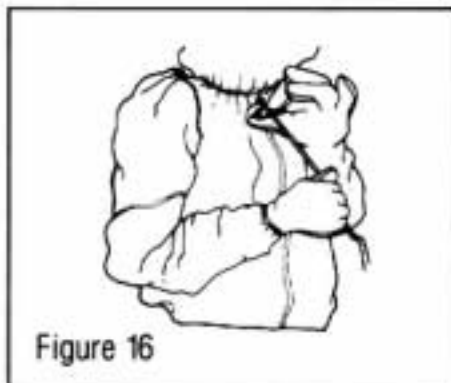


Figure 16

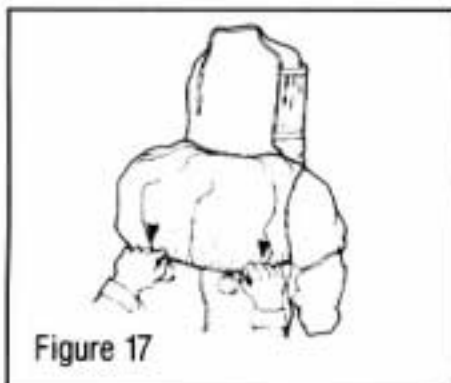


Figure 17

13. Tuck inner bib of hood into containment suit for additional splash and overspray protection (see Figure 15). Your co-worker should make sure inner bib is tucked into containment suit as far as possible on all sides.
14. Once inner bib is smoothly tucked down inside parka, cinch neck of containment suit snugly around your neck using barrel lock. Containment suit should fit snugly, but not too tightly, since you want air discharged from the hood to ventilate containment suit (see Figure 16).
15. Insert arms into parka's inverted sleeves until sleeve elastic is positioned around your elbow. (Positioning depends on your arm length and where you find it most comfortable.)
16. With your co-worker's aid, pull outer bib of parka down over outside of containment suit. Make sure that the respirator parka covers the exhaust valves on the upper back of containment suit (see Figure 17). Elastic band at bottom of respirator parka should rest between your waist and lower rib cage.
17. With breathing tube assembly attached to hood, fasten belt at waist or hip level and adjust for your comfort. Do not over-tighten belt, or you will restrict airflow into the lower portion of the containment suit.
18. Recheck air pressure and adjust if necessary.
19. With air flowing into respirator, you are now ready to enter work area.

▲ WARNING ▲

LEAVE WORK AREA IMMEDIATELY IF:

- Any of your respirator components become damaged.
- Airflow into the respirator hood stops or slows down.
- Air pressure gauge drops below the minimum specified in Breathing Air Pressure Table (page 8).
- 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.

▲ WARNING ▲

DO NOT LEAVE RESPIRATOR IN WORK AREA OR LEAVE IT UNATTENDED IN A CONTAMINATED ENVIRONMENT. RESPIRABLE DUST CONTAMINANTS CAN REMAIN SUSPENDED IN THE AIR FOR MORE THAN ONE HOUR AFTER WORK ACTIVITY CEASES, EVEN THOUGH YOU MAY NOT SEE THEM. PROPER WORK PRACTICE REQUIRES YOU TO WEAR THE RESPIRATOR UNTIL YOU ARE OUTSIDE THE CONTAMINATED AREA. IF YOU SET THE RESPIRATOR DOWN IN A CONTAMINATED ENVIRONMENT, THEN CONTAMINANTS, DIRT AND DUST COULD GET INTO THE RESPIRATOR. WHEN YOU PUT THE RESPIRATOR BACK ON, YOU COULD BREATHE IN CONTAMINANTS.

Decontamination

Decontamination procedures vary from one employer to another and often from one work site to another. Be sure that your employer trains you on the proper decontamination procedures for your particular work situation. If you have any questions about decontamination procedures, ask your employer.

The Bullard PC90 respirator and CS90 containment suit have been designed to permit water or air decontamination. Because a positive pressure air plenum is created between the respirator and containment suit as the air vents from the suit into the respirator parka, it is not necessary to spray between the outer bib of the respirator and the containment suit.

Doffing

When finished working, leave work area wearing respirator and containment suit with air still flowing. Once outside contaminated area, remove respirator and containment suit in reverse order in which you put them on.

NOTE: Your employer may designate a specific area for removing the respirator and containment suit. Be sure to follow your employer's procedures as directed.

The following are general doffing guidelines for the PC90 respirator and CS90 containment suit in a decontamination setting. These are rough guidelines and are not a substitute for your employer's specific procedures.

Once the decontamination process has been completed:

1. Remove outer gloves and place in appropriate receptacle as directed by your employer.

2. With your co-worker's help, pull outer bib of respirator up over top of hood. Pull arms out of sleeves, turning sleeves inside out.
3. Squeeze barrel cinch and loosen the elastic tie of the containment suit. With the aid of your co-worker, lift up on inner bib of respirator and remove respirator from your head.

NOTE: By removing respirator in this manner, residual contaminants will be contained within inverted respirator hood.

PRACTICE REMOVING THE RESPIRATOR PARKA BY YOURSELF. In the event the air supply to the respirator is lost, you should be able to remove the parka by yourself, comfortably and confidently, within 45-60 seconds.

4. Remove headband from respirator for cleaning and reuse as directed by your employer.
5. Remove breathing tube assembly from respirator for cleaning and reuse if so directed by your employer. If using an in-line filter, cover open ends of filter with caps provided. Place filter in storage area identified by your employer if it is to be reused, or place in appropriate disposal receptacle if it is to be discarded.
6. Remove containment suit by rolling garment downward so that the inside of the suit is exposed. Again, your co-worker can help you. Once containment suit has been rolled down to upper portion of your legs, sit down and complete doffing procedures by stepping out of your work boots. Once again, this roll-down method helps contain any residual contaminants not removed during your decontamination procedures.

INSPECTION, CLEANING AND STORAGE

Bullard PC90 Series respirators and CS90 containment suits are designed as single-use protective respirators/ suits. In cases where the work application, level of hazard, and/or decontamination procedures indicate that re-use of the respirator and suit is possible, it is the responsibility of the employer to assure that the components are contaminant-free before reuse. If your employer plans to reuse this respirator or any of its components, ask him or her to explain the steps taken to remove any residual contaminants prior to its reuse.

The Bullard PC90 Series respirator and all component parts and assemblies should be inspected for damage or excessive wear, before and after each use, to ensure proper functioning. Immediately remove the respirator and/or the suit from service and replace parts or assemblies that show any sign of failure or excessive wear that might reduce the degree of protection originally provided.

Use only complete NIOSH-approved Bullard PC90 Series components and replacement parts on this respirator. Refer to parts list for correct part numbers.

Since respirator use and the quality of maintenance performed vary with each job site, it is impossible to provide a specific time frame for respirator replacement.

This respirator should be cleaned and sanitized at least weekly, or more often if subjected to heavy use. Respirators used by more than one person must be cleaned, inspected and sanitized after each use. If not cleaned, contamination may cause illness or disease.

REMEMBER, THE AIR YOU BREATHE WILL NOT BE CLEAN UNLESS THE RESPIRATOR YOU WEAR IS CLEAN.

Hood and Headband

INSPECTION: Inspect the hood material for rips, tears or damage from excessive wear that might reduce the degree of protection originally provided. Inspect the inner neck cuff for elasticity. The respirator's plastic lens should be inspected for cracks, scratches or any other signs of damage.

Disassemble the breathing tube from the hood by removing the nylon hose clamp. To remove the hose clamp, slide the locks sideways in opposite directions.

Remove the headband suspension and optional chin strap from the hood. Inspect headband for cracks, frayed or cut crown straps, torn headband or size adjustment slots, loss of pliability or other signs of excessive wear. Check the chin strap for loss of elasticity, cuts and cracked hanger clips.

If any damage is detected, replace part(s) immediately with Bullard replacement parts or remove the respirator from service.

CLEANING: We do not recommend laundering the hood. When the hood becomes dirty, it should be disposed of and replaced. The respirator's headband, optional chin strap and plastic lens should be hand-sponged with warm water and mild detergent, rinsed and air-dried. After cleaning and before reassembling, once again carefully inspect parts for signs of damage.

Containment Suit

INSPECTION: Inspect the material for rips, tears or damage from excessive wear that might reduce the degree of protection originally provided. Inspect the containment suit's elastic neck cinch and barrel lock for any signs of fraying or damage. Inspect the suit's four plastic air exhaust valves for signs of cracking or breakage. Be sure the valves are tightly secured in place.

Be sure the rubber valve flappers are able to open once the suit is pressurized with air. If any valve components are broken or damaged, replace them immediately or remove the suit from service.

CLEANING: We do not recommend laundering the containment suit. When the suit becomes dirty, it should be discarded and replaced.

▲ WARNING ▲

DO NOT USE VOLATILE SOLVENTS FOR CLEANING THIS RESPIRATOR OR ANY PARTS OR ASSEMBLIES. STRONG CLEANING AND DISINFECTING AGENTS, AND MANY SOLVENTS CAN DAMAGE THE PLASTIC PARTS POSSIBLY AFFECTING RESPIRATORY PROTECTION.

Breathing Tube Assembly

INSPECTION: Inspect the vinyl breathing tube for tears, cracks, holes or excessive wear that might reduce the degree of protection originally provided. Be sure the quick-disconnect fitting is screwed tightly into the breathing tube so no air can escape.

Be sure the adjustment knob on the flow control device is not cracked or damaged. Be sure the airflow control device is screwed tightly into the breathing tube so no air can escape.

If any signs of excessive wear are present, replace the breathing tube assembly immediately or remove the respirator from service.

CLEANING: To clean the breathing tube assembly, hand-sponge with warm water and mild detergent, rinse and air-dry. Do not get water inside the flow control device or breathing tube. After cleaning, once again carefully inspect breathing tube for signs of damage.

▲ WARNING ▲

DO NOT CUT OR REMOVE FOAM THAT IS INSIDE THE BREATHING TUBE. THE FOAM HELPS REDUCE THE NOISE LEVEL OF THE INCOMING AIR SUPPLY. IT DOES NOT FILTER OR PURIFY YOUR BREATHING AIR. NIOSH HAS APPROVED THIS RESPIRATOR WITH THE FOAM IN PLACE.

Air Supply Hoses

INSPECTION: The starter and extension 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 air cannot 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.

CLEANING: 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.

▲ WARNING ▲

ONLY USE HOSES THAT ARE NIOSH APPROVED FOR USE WITH THIS RESPIRATOR. OTHER HOSES COULD REDUCE AIRFLOW AND PROTECTION, AND EXPOSE THE WEARER TO LIFE-THREATENING CONDITIONS.

Storage

After reusable respirator components have been cleaned and inspected, place them in a plastic bag or an airtight container.

Store the respirator and parts where they will be protected from contamination, distortion and damage from elements such as dust, direct sunlight, heat, extreme cold, excessive moisture and harmful chemicals. If properly stored and maintained, the Tychem[®] SL material has a projected shelf life of 5 years.

PARTS AND ACCESSORIES FOR PC90 AIRLINE RESPIRATOR WITH CS90 CONTAINMENT SUIT

PC90 Series airline containment respirators consist of five components: respirator hood, headband suspension, respirator suit, breathing tube assembly and air supply hose. There are options or sizes for some components to fit customer specifications. All five components must be present and properly assembled, including a Bullard air supply hose, to constitute a complete NIOSH-approved respirator (Approval No. TC-19C-280, Type C).

Cat. No. Description

1. RESPIRATOR HOOD

PC90 Parka-style hood.
Sizes: Medium/Large,
X-Large/XX-Large
XXX-Large

2. HEADBAND

20RT Sure-Lock[®] ratchet headband
for use with PC90 hood

3. RESPIRATOR SUIT

CS90 Full-body containment suit,
with stirrups.
Sizes: Small, Medium, Large,
X-Large, XX-Large, XXX-Large

4. BREATHING TUBE ASSEMBLY

With in-line filter:

C40F 1/4" Industrial Interchange, steel
fitting with flow control valve and
in-line filter

C43F 1/4" Snap-Tite, brass fitting with
flow control valve and in-line filter

Without in-line filter:

C40 1/4" Industrial Interchange, steel
fitting with flow control valve

C43 1/4" Snap-Tite, brass fitting with
flow control valve

Cat. No. Description

Climate Control Assembly

DUAL-COOL Assembly

DC6040 1/4" Industrial Interchange, steel
fitting with flow control valve

DC6043 1/4" Snap-Tite, brass fitting with
flow control valve

DUAL-COOL Cooling Vest

DC65ML Medium/Large Cooling Vest

DC65XLXXL X-Large/Extra, XX-Large
Cooling Vest

DUAL-COOL Accessories

CH60 Connector hose for DC65 vests

PARTS AND ACCESSORIES FOR PC90 AIRLINE RESPIRATOR WITH CS90 CONTAINMENT SUIT

5. AIR SUPPLY HOSE

V10 Series Starter Hose Kits. For use with Breathing, Air Compressors. Includes 25' (8 m) 3/8" I.D. rubber starter hose and V13 adaptor fitting (3/8" hose-to-3/8" pipe)

- 4696 with 1/4" Industrial Interchange, steel quick-disconnect coupler
- 46913 with 1/4" Schrader, steel quick-disconnect coupler
- 46915 with 1/4" Snap-Tite, steel quick-disconnect coupler

V10 Series Extension Hose Kits. For use with Breathing, Air Compressors. Includes V11 hose-to-hose adaptor fitting and V13 hose-to-pipe fitting (3/8" hose-to-3/8" pipe)

- 5454 25' (8 m) Extension hose kit
- 5457 50' (15 m) Extension hose kit
- 5458 100' (31 m) Extension hose kit

V5 Series Coiled Starter Hoses

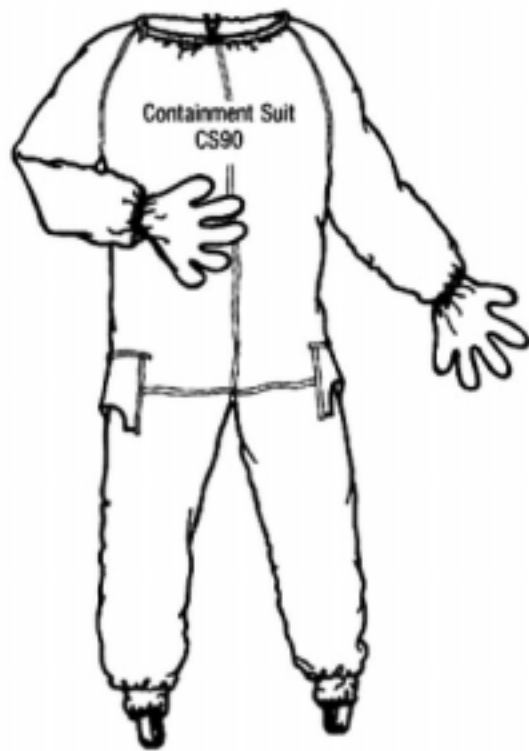
- V52530 25' (8 m) with 1/4" Industrial Interchange quick-disconnect coupler
- V52533 25' (8 m) with 1/4" Snap-Tite brass quick-disconnect coupler

Cat. No. Description

REPLACEMENT PARTS AND ACCESSORIES

- 20LC Mylar lens covers (25/pkg) for use with PC90 hood
- 20NC Chin strap for use with PC90 hood
- S18051 Breathing tube clamp for use with all breathing tubes
- 36501 Vinyl belt
- 32341 L-shaped breathing tube adaptor for use with in-line filter
- S22291 In-line dust filter for use with C40F and C43F breathing tube systems
- 90BTF Breathing tube only for use with in-line filter and adjustable flow control valve, includes hose clamp
- 90BT Breathing tube only for use with adjustable flow control valve, includes hose clamp

Parts and Accessories for PC90 Airline Respirator with CS90 Containment Suit



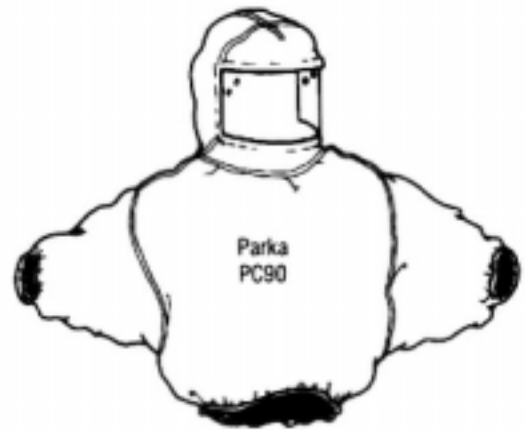
Suspension
20TG



Suspension
20RT



Chin
Strap
20NC



Lens Cover 20LC



Cooling Vest DC65



Connector Hose
CH60



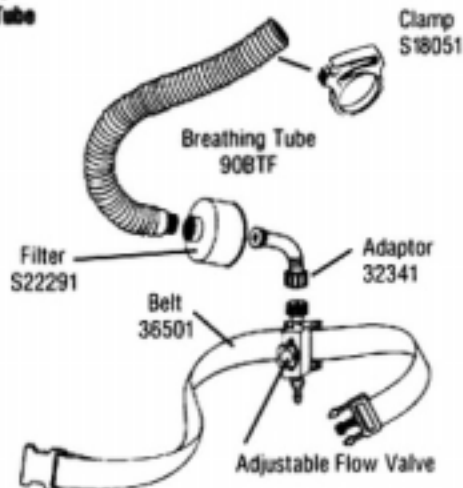
Dual-Cool
DC6040, DC6043



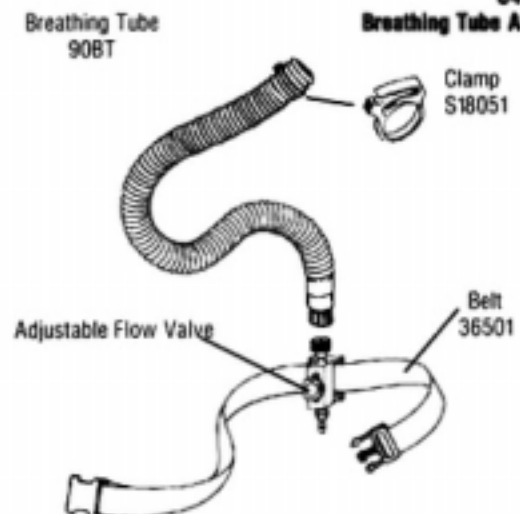
V5 Coated Air Supply Hose
V52530, V52530,
V52531, V52531,
V52532, V52532



C40F Series Breathing Tube Assembly



C40 Series Breathing Tube Assembly



RETURN AUTHORIZATIONS

IMPORTANT: 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 a Bullard Inside Sales Coordinator by telephone or in writing at:

Bullard
1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 800-827-0423
Phone: 606-234-6611
www.bullard.com

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

2. Verify with your Representative that the product should be returned to Bullard. Inside Sales 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 shipping regulations prohibit the shipment of hazardous or contaminated materials. Products suspected of contamination will be professionally discarded at the customer's expense.
4. Ship returned products, 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. Your Inside Sales Representative 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 Representative 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.



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Since 1898.

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