GR50 Series Airline Respirator User Manual

General Information

Bullard's GR50 Series airline respirators, when properly used, provide a 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. GR50 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.

GR50 Series airline respirators (not including GRHT) are approved by NIOSH (TC-19C-329, Type C) to provide respiratory protection in grinding operations and other such general purpose applications. The GR50 is NOT intended for use in any abrasive blasting operation.

GR50 Series respirators are compatible with 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 GR50 Series respirator to these breathing air sources.

The GRH hood of the GR50 Series respirators is approved by NIOSH for use with optional Bullard climate control devices.

The GRH and GRHT Hoods of the GR50 Series can also be configured for use with the Bullard EVA PAPR (TC-21C-0836, TC-23C-2510). See page 4 of this manual and refer to the EVA Manual for details.

Type C Continuous-Flow Class

- NIOSH Approval No. TC-19C-329 - GRH with Supplied Air

Powered Air-Purifying Respirator

- NIOSH Approval No. TC-21C-0836 - GRH and GRHT with EVA PAPR
- NIOSH Approval NO. TC-23C-2510 - GRH and GRHT with EVA PAPR

Not approved for abrasive blasting.

Read all instructions and warnings before using this respirator. Save this manual for future reference.

⚠ WARNING

GRHT (threaded connector) is only approved for use with a PAPR. GRHT is not approved for use in a Supplied Air Configuration.

Table of Contents

GRH Series Approval Label

MODEL GRH SERIES
TYPE C CONTINUOUS FLOW SUPPLIED-AIR RESPIRATOR

RESPIRATOR

TC-	PROTECTION[1]	MODEL	HOOD	ALTERNATE SUSPENSION/ HARD HAT						BREATHING TUBE
		GRH SERIES RESPIRATOR	GRH	20TG	20RT	30XXP	30XXR	51XXP	51XXR	20BT
19C-329	SA/CF	GRH	X	X	X	X	X	X	X	X

TC-	ALTERNATE FLOW CONTROL DEVICE																		
	F30	F30B	F30S	F31	F32	F33	F34	F35	F35B	F35S	F37	F40	F40B	F40S	F41	F42	F43	F44	F47
19C-329	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TC-	ALTERNATE FLOW CONTROL DEVICE (continued)															
	AC100030	AC100030B	AC100030S	AC100031	AC100032	AC100033	AC100034	AC100037	HC240030	HC240030B	HC240030S	HC240031	HC240032	HC240033	HC240034	HC240037
19C-329	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TC-	ALTERNATE FLOW CONTROL DEVICE (continued)																	
	DC5040	DC5040B	DC5040S	DC5041	DC5042	DC5043	DC5044	DC5047	FRIG2000	FRIG2000B	FRIG2000S	54513	54512	54511	54510	5454	5458	5457	5454GOV
19C-329	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1. PROTECTION

CF=CONTINUOUS FLOW SA=SUPPLIED - AIR

2. CAUTIONS AND LIMITATIONS

A. Not for use in atmosphere containing less than 19.5 percent oxygen.
B. Not for use in atmospheres immediately dangerous to life or health.
C. Do not exceed maximum use concentrations established by regulatory standards.
D. Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher quality.
E. Use only the pressure ranges and hose lengths specified in the User's Instructions.
J. Failure to properly use and maintain this product could result in injury or death.
M. All approved respirators shall be selected, fitted, used and maintained in accordance with MSHA, OSHA and other applicable regulations.
N. Never substitute, modify, add or omit parts. Use only exact replacement parts in the configuration specified by the manufacturer.
O. Refer to User's Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
S. Special or critical User's Instruction and / or specific use limitations apply. Refer to User's Instructions before donning.

Bullard
Cynthiana, KY 41031 USA
1-800-827-0423

COMPONENTS

AIR HOSE																									
46919	46918	4696FM	46928FF	46917FM	46917FF	46917	46916FF	46916FS	46915	46913	4696	4695	V2050STSHUTOFF	V2025STSHUTOFF	V2025ST	V2010ST	V2050ST	V20100STSHUTOFF	V20100ST	V52532FFRED	V52535BLACK	V55035BLACK	V55033FS	V55033GRN	V52533FF
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

AIR HOSE																									
V52533FS	V52533	V55030GRN	V55031	V55030	V55033	V55032	V52531	V52530	V52530GREEN	V52532	V55033FF	V5KF2530XXX	V5KF2531XXX	V5KF2532XXX	V5KF2533XXX	V5KF2535XXX	V5KF5030XXX	V5KF5031XXX	V5KF5032XXX	V5KF5033XXX	V5KF5035XXX	V5KF2533XXXFF	V5KF2533XXXFS	V5KF5033XXXFF	V5KF5033XXXFS
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ACCESSORIES												CAUTIONS AND LIMITATIONS
S18051	GRHOL1	MB1	20LC	7714	36501	4612	DC70ML	DC70XXL	DC705X	20NC	ES42	
X	X	X	X	X	X	X	X	X	X	X	X	ABCDEJMNOS

EVA Approval Label

MODEL EVA SERIES POWERED AIR PURIFYING RESPIRATOR

Bullard
Cynthiana, KY 41031 USA
1-800-827-0423

RESPIRATOR COMPONENTS

TC-	PROTECTION1	ALTERNATE HOOD ASSEMBLIES																																		
		20LFL	20LFM	20LF2L	20LF2M	20LF2S	20TJN	20TJNT	20TPN	20TPNT	20TICN	20TICNT	20SICVN	20SICVNT	20TPCN	20TPCNT	20SICN	20SICNT	20TICSN	20TICSNT	GRH	GRHT	20TICH	20TICHT	20SICH	20SICHT	20SICVH	20SICVHT	RT1	RT1T	RT2	RT2T	RT3	RT3T	RT4	RT4T
21C-0836	HE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23C-2510	OV/CD/CL/HC/HF/SD/HE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TC-	ALTERNATE SUSPENSION / HARD HAT ASSEMBLIES						ALTERNATE BREATH-ING TUBES									BLOWER UNIT ASSEMBLY	FILTER ASSEMBLY	CARTRIDGE ASSEMBLY	BATTERY	BELT ASSEMBLY
	20TG	20RT	30XXR	30XXP	51XXR	51XXP	PA1BT	PA1BTXS	PA1BTXL	PAHBT	PAHBTXS	PAHBTXL	PA20LFBT	PA20LFBTXS	PA20LFBTXL	EVA1	PAPRFC3	PAPRFC4	EVABAT1	EVABELT1
21C-0836	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
23C-2510	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X

TC-	ACCESSORIES																							CAUTIONS AND LIMITATIONS2
	EVASMC	EVAEXT1	PA1AFI	20NC	ES42	20LCL	GRHOL1	RTLC	20SLBTC	PAPRSC2	20QCBTC	MB1	POLYBTC	EVAGC	PAPRSUSP1	PAPRPFCOVER2	PAPRSC3	PAPRPF2	20LFLEF	20LF2LEF	20LF2MEF	20LF2SEF	EVABELT2	
21C-0836	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	ABCFHIJLMNOP
23C-2510	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	ABCFHIJLMNOP

1. PROTECTION

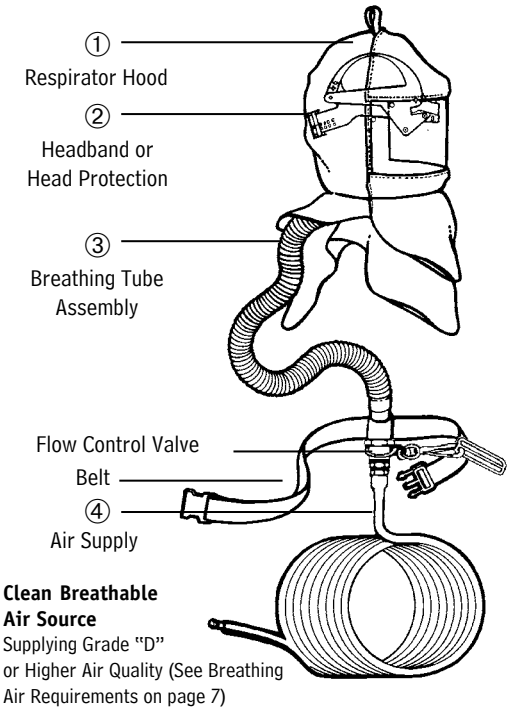
HE - High Efficiency Particulate Air Filter for Powered Air Purifying Respirators
OV - Organic Vapor
CD - Chlorine dioxide
CL - Chlorine
HC - Hydrogen chloride
HF - Hydrogen fluoride
SD - Sulfur Dioxide

2. CAUTIONS AND LIMITATIONS

A. Not for use in atmospheres containing less than 19.5% oxygen.
B. Not for use in atmospheres immediately dangerous to life or health.
C. Do not exceed maximum use concentrations established by regulatory standards.
F. Do not use this respirator if airflow is less than four cfm (115 lpm) for tight-fitting facepieces or six cfm (170 lpm) for hoods and / or helmets.
H. Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.
I. Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA / NIOSH.
J. Failure to properly use and maintain this product could result in injury or death.
L. Follow the manufacturer's instructions for changing cartridges and / or filters.
M. All approved respirators shall be selected, fitted, used and maintained in accordance with MSHA, OSHA and other applicable regulations.
N. Never substitute, modify, add or omit parts. Use only exact replacement parts in the configuration specified by the manufacturer.
O. Refer to User's Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
P. NIOSH does not evaluate respirators for use as surgical masks.
*See EVA User Manual for more details.

Component Concept

Bullard GR50 Series airline respirators consist of four components (Figure 1). All must be present and properly assembled to constitute a complete NIOSH-approved respirator.



> **⚠ 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 Labels on pages 2-4.

1. **GRH Nomex® Hood with cotton inner bib**
2. **Headband or head protection**
3. **Breathing tube assembly:** Connects respirator hood to air supply hose. Available with a choice of quick-disconnect fittings, constant or adjustable airflow control and optional climate control devices.

	Flow Control Device*					
	Without Climate Control Devices		With Climate Control Devices			
			Cold Only			Hot/Cold
	Constant	Adjustable				
PART NO.	F30	F40	AC100030	FRIGITRON2000	DC5040	HC240030
	F30B	F40B	AC100030B	FRIGITRON2000B	DC5040B	HC240030B
	F30S	F40S	AC100030S	FRIGITRON2000S	DC5040S	HC240030S
	F31	F41	AC100031		DC5041	HC240031
	F32	F42	AC100032		DC5042	HC240032
	F33	F43	AC100033		DC4043	HC240033
	F34	F44	AC100034		DC5044	HC240034
	F35	F47	AC100035B		DC5047	HC240035B
	F35B		AC100037			HC240037
	F35S					HCT30
	F37					HCT30B

*These climate control devices require the use of the 20BT breathing tube to constitute complete breathing tube assemblies. Breathing tube must be purchased separately.

4. **AIR SUPPLY:** Connects breathing tube to air source supplying clean, breathable air.

Hose for High Pressure Compressed Air Source		Hose for Low Pressure Ambient Air Pump
V5 **3/8" Coiled I.D. Hose**	**V10** **3/8" I.D. Hose**	**V20** **1/2" I.D. hose**
V5 Starter / Extension Hose	V10 Starter Hose / Extension Hose	V20 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.	Available in 25, 50 and 100 foot lengths with a variety of quick-disconnect fitting styles and materials. See parts list for details.	Available in 50 and 100 foot lengths with a variety of quick-disconnect fitting styles and materials. See parts list for details.

⚠ WARNING

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, MSHA, 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. Bullard recommends that you 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 GR50 Series respirator.
6. DO NOT modify or alter this respirator in any manner. Use only NIOSH- approved Bullard GR50 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 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 GR50 Series components or remove respirator from service. (See INSPECTION, CLEANING AND STORAGE section on pages 11 and 12 for proper maintenance of the GR50 Series respirator.)

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, oxygen, 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, 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 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 you are working in 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 abrasive blasting or underwater diving.

For technical assistance, call or write:

E.D. Bullard
1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 800-877-BULLARD
Phone: 859-234-6616
Fax: 1-800-877-6858
www.bullard.com
email: info@bullard.com

Protection

Respiratory
This respirator is NIOSH approved (TC-19C-329) for Type C operations. It can be worn for general purpose applications, including grinding. 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
The GR50 Series respirator hood with the 20TG or 20RT headband DOES NOT provide head protection. If head protection is required, order a Bullard hard hat model C30 or S51. Respirator hoods used in conjunction with Bullard C30 or S51 hard hats meet ANSI/ISEA Standard Z89.1-2009, Type I, Class E requirements for protective headwear for industrial workers. These hard hats are designed to provide limited head protection by reducing the force of falling objects striking the top of the hard hat shell.

Face
The GR50 Series respirator hood meets ANSI/ISEA Z87.1-2010 impact and penetration requirements for face protection. The .040" polycarbonate lens provides limited face protection from flying particles or spray of hazardous liquids, but is not shatterproof.

Eyes
GR50 Series respirators DO NOT provide eye protection. Wear approved safety glasses or goggles at all times.

Ears
GR50 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 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).

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.

* 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 Davis Highway, Arlington, VA 22202) for complete details on Commodity Specifications G7.1.

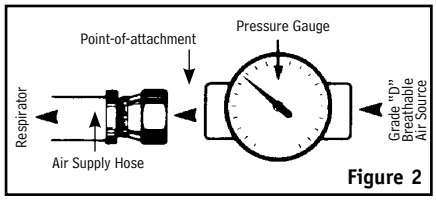


Figure 2

Air Source

Locate the source of supplied air, whether it is a breathing air compressor or an ambient 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 with filters, 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.

⚠ WARNING

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 7) defines the air pressure ranges necessary to provide GR50 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 assembly, and air supply hose type and length.

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.

NIOSH-approved Bullard quick-disconnect fittings MUST be used to connect V5 or V20 hose lengths together. When connecting lengths of V10 hose, only use Bullard V11 hose-to-hose adaptors. 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 (see page 7) and the respirator's NIOSH approval label (see 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 hood off your head.

Special or Critical User's Instructions

GR50 Breathing Air Pressure Table

This table defines the air pressure ranges necessary to provide GR50 Series respirators 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	2	3	4	5	6
Air Source	Breathing Tube Assembly	Air Supply Hose	Air Supply Hose Length (feet)	Maximum Number of Hose Sections	Required Pressure Range (psig air)
Stationary/ Portable Air Compressor or Breathing Air Cylinder	V30, V30B, V30S, V31, V32, V33, V34, 37	V10	25 50 100 150 200 250-300	1 2 3 4 5 5	14-15 15-18 19-24 23-29 25-34 31-39
		V5	25 50	1 2	12-18 19-23
	V40, V40B, V40S, V41, V42, V43, V44, V47	V10	25 50 100 150 200 250-300	1 2 3 4 5 5	22-25 24-27 27-32 30-37 33-40 38-45
		V5	25 50	1 2	22-26 25-30
	AC100030, AC100030B, AC100030S, AC100031, AC100032, AC100033, AC100034, AC100037	V10	25-50 75-150 175-300	2 3 3 3 3 5	55-65 60-70 65-75
		V5	25 50	1 2	55-65 56-69
	DCC5040, DC041, DC5042, DC5047	V10	50 100 150 200 250 300	2 3 3 3 3 5	48-52 59-63 68-72 80-84 85-92 90-98
		V5	25 50	1 2	53-57 67-71
	HC240030, HC240030B, HC240030S, HC240031, HC240032, HC240033, HC240034, HC240037	V10	25 50 100 150 200 250 300	1 2 3 4 4 5 5	59-61 63-65 68-70 73-75 77-79 80-82 84-86
		V5	25 50	1 1	65-66 68-69
Bullard Free-Air® Pump	V35, V35B, V35S	V20	50 100 200 300	1 2 2 3	4-6 6-8 10-15 13-18
	Frigitron® 2000, Frigitron 2000B, Frigitron 2000S	V20	50 100 200 300	1 2 2 3	16-22 18-25 22-30 25-34

Adjusting Headband

(If using respirator with Bullard hard hat, see page 9)

To change the headband size, unlock the four pins from the sizing holes. Place the headband on your head. Pull down, allowing headband to expand until it feels comfortable. The headband will automatically adjust to your size. Lock into place by pushing the four pins into the sizing holes (Figure 3).

NOTE
If using the optional 20RT ratchet headband suspension, refer to the instruction sheet provided with the 20RT.

Installing Headband in Respirator Hood

Remove protective film from lens. With clear lens facing you, insert headband into hood with sizing mechanism at the back of hood. Engage four headband snaps into corresponding snap studs mounted in plastic lens (Figure 4)

Adjust Crown Straps for Vertical Fit

To improve suspension comfort, adjust crown straps vertically by repositioning the crown strap posts in the crown straps. Vertical adjustment makes the headband ride higher or lower on the wearer's head. To adjust, push crown strap post from slot, move to new slot, and snap in to secure. Move key to desired vertical position. Repeat for other crown strap post (Figure 7).

NOTE
If the hood rises off your head during use, first verify proper air pressure, or use the optional chin strap. If discomfort persists then you may select a different hood depending on your application.

If Using Optional 20NC Chin Strap:

For most wearers, the headband holds the GR50 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 MB1 or GRHOL1 Optional Outer Lens:

1. Remove protective plastic film from the lens that is sewn into the GR50 respirator.
2. Remove protective plastic film from both sides of the protective outer lens.
3. Engage the 4 male snaps of the outer lens to the corresponding 4 female snaps of the inner lens (see Figure 8).
4. When outer lens becomes scratched, replace with another lens. Refer to replacement parts and accessories.

If Using Optional 20LC or 7714 Lens Covers:

1. If desired, apply optional 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.

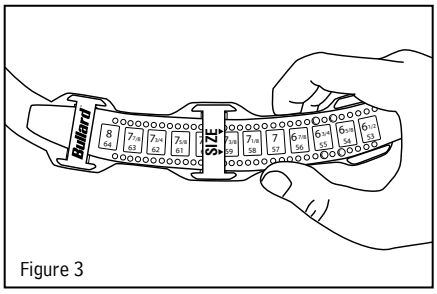


Figure 3


Figure 4

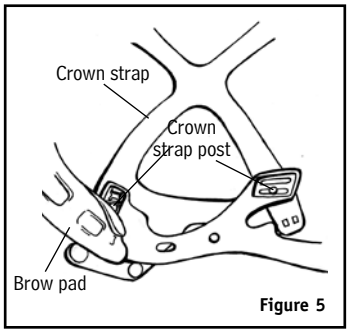


Figure 5

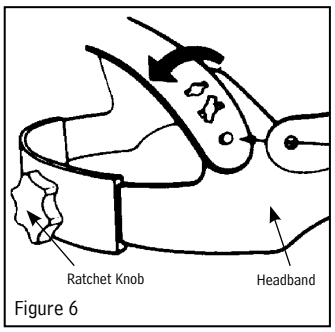


Figure 6

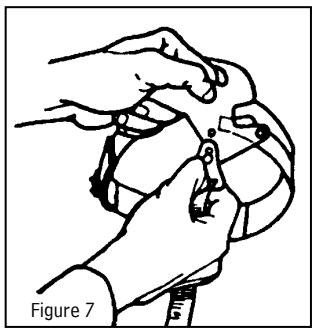


Figure 7


Figure 8

Adjusting and Installing Hard Hat in Respirator Hood

1. Assemble and adjust the standard Bullard hard hat suspension or optional ratchet suspension by following directions on instruction sheet attached to headband on hard hat. Read all hard hat warning labels and instructions. The following Bullard hard hat models are NIOSH approved for use with GR50 Series respirator hoods: C30, C30R, S51 and S51R.
2. If desired, install and adjust optional ES42 hard hat chin strap.
3. Before inserting hard hat into hood, remove the adhesive-backed Velcro® strip attached to the Velcro piece that is sewn into the hood.
4. Peel the backing off the Velcro tab and apply it to the inside center rear of the hard hat, about 1/4" up from the edge.
5. Insert hard hat into respirator hood with cap visor facing front of hood (see Figure 9).
6. Tuck cap visor above front elastic band sewn into hood (see Figure 10).
7. Loop the Velcro strip sewn inside the hood around the back of the cap and affix it to the corresponding Velcro tab previously installed inside the hard hat in step 3. (see Figure 11).
8. Remove protective film from plastic lens of respirator hood. If desired, apply optional 20LC or 7714 adhesive-backed lens covers designed to protect the respirator's plastic lens. Apply 2-3 lenses at a time. When lens becomes soiled, remove by pulling tab at edge of lens cover to clear your vision.


Figure 9


Figure 10

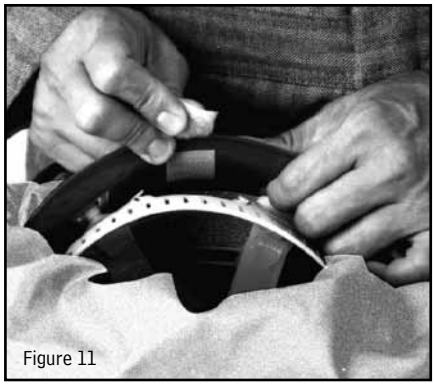


Figure 11

Installing Breathing Tube Assembly (GRH only)

For hoods without a threaded port at the rear, the Breathing Tube (20BT) will attach to the hood with a clamp as follows:

1. Remove nylon clamp from open end of breathing tube (see Figure 12). Do not remove foam from inside the breathing tube. The foam helps reduce the noise level of incoming air.

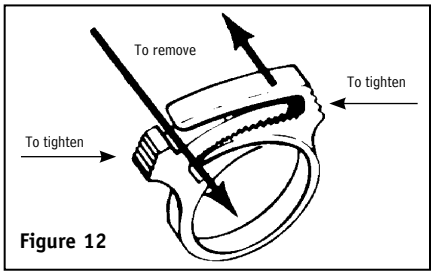


Figure 12

2. Insert breathing tube approximately five inches into hood's air entry sleeve (see Figure 13).


Figure 13

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 (see Figure 14). Locks should face away from user's neck.
4. Engage clamp locks and squeeze together until tight.


Figure 14

Using Climate Control Devices

The GRH hood is approved by NIOSH for use with four optional Bullard climate control devices: AC1000 Series, CT Series, HCT Series, DC50 Series, HC2400 Series and Frigitron 2000 Series.

1. Follow the instructions supplied with your climate control device.
2. Be sure to use only the Bullard breathing tube approved for your climate control device (see page 13).
3. Screw nylon hose connector on end of breathing tube to hose thread on air conditioner.
4. Firmly tighten hose connector by hand (see Figure 16).
5. Lace belt supplied with respirator through belt loop bracket on air conditioner.

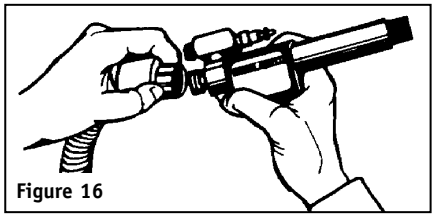


Figure 16

⚠ WARNING

Do not put on or remove this respirator in a hazardous atmosphere. Do not remove this respirator in a hazardous atmosphere except for emergency escape purposes.

Donning

Before using your GR50 Series respirator, complete the assembly instructions provided on pages 8-9.

1. Connect NIOSH-approved Bullard air supply hose to air source supplying Grade D breathable air. Turn on breathing air source.
2. With air flowing, connect breathing tube assembly to air supply hose (see Figure 17). Connect quick-disconnect fitting on breathing tube assembly 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

3. Adjust air pressure at point-of-attachment to within the approved pressure range (see Figure 18). See the Breathing Air Pressure Table (page 8) for approved pressure ranges.

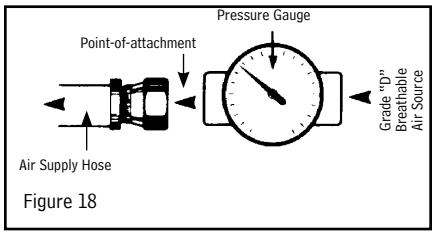


Figure 18

4. With air still flowing, put on GR50 Series respirator hood, inserting chin first.
5. Position headband or hard hat for a comfortable fit. See instructions on page 10 for proper sizing.
6. If using an optional chin strap, pull elastic strap under your chin and adjust for a secure and comfortable fit.
7. Tuck inner bib of hood into shirt or protective clothing for additional splash and overspray protection (see Figure 19).

Figure 19

8. Pull respirator outer bib over collar of shirt or protective clothing.
9. With breathing tube assembly attached to the hood, fasten belt at waist or hip level and adjust for comfort.
10. Recheck air pressure and adjust if necessary.
11. With air still flowing into your respirator, you are now ready to enter work area.
12. These instructions only apply when using Supplied Air. Please refer to your EVA PAPR manual for proper operation in Powered Air Purifying Configuration.

Final Donning		
	Front	**Back**
GRH		

Doffing

When finished working, leave work area wearing respirator and with air still flowing. Once outside contaminated area, remove respirator and then disconnect the air supply hose using the quick-disconnect fittings.

NOTE

If using V20 Series (1/2" I.D.) air supply hose, the hose quick-disconnect coupler does not have a shut-off valve. Therefore, air will continue to flow freely after hose is disconnected from respirator.

⚠ WARNING

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 Breathing Air Pressure Table (page 7).
- 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 CONTAMINANTS CAN REMAIN SUSPENDED IN 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, CONTAMINANTS, DIRT AND DUST COULD GET INTO THE RESPIRATOR. WHEN YOU PUT THE RESPIRATOR BACK ON, YOU COULD BREATHE IN CONTAMINANTS UPON REUSE.

Inspection, Cleaning and Storage

Bullard GR50 Series respirators have a limited service life. Therefore, a regular inspection and replacement program must be conducted.

The Bullard GR50 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 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 GR50 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. 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 damage is detected, replace immediately with Bullard replacement part(s) or remove the respirator from service.

CLEANING: To clean the GR50 Series respirator hood, remove suspension and optional chin strap. With MB1 or GRHOL1 lens attached, hand-wash the GR50 hood in warm water using a mild liquid detergent. Rinse hood with cold water and allow to air-dry. After cleaning and before reassembling, inspect the hood for signs of excessive wear, following the inspection instructions on this page. If damage is detected, remove the respirator from service.

The inner lens, headband suspension and optional chin strap should be hand-sponged with warm water and mild detergent, then rinsed and air-dried. Before reassembling, carefully inspect parts for signs of damage.

Do not use volatile solvents for cleaning this respirator or any parts and assemblies. Strong cleaning and disinfecting agents and many solvents can damage the plastic parts.

Hard Hat

Inspection: Inspect the hard hat shell for nicks, gouges, cracks and any damage due to impact, rough treatment or wear.

Remove the headband suspension and optional chin strap from the hard hat. Inspect the headband for cracks, frayed or cut crown straps, torn headband and 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 damage is detected, replace part(s) immediately with Bullard replacement parts or remove the respirator from service.

Cleaning: The hard hat shell, headband suspension and optional chin strap 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.

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 airflow control device is screwed tightly into the breathing tube so air cannot 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 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.

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 Bullard 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.

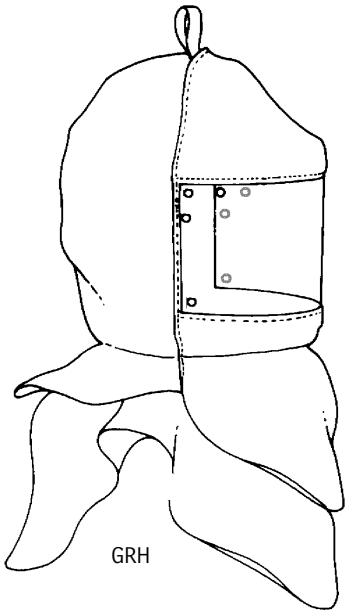
Storage

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.

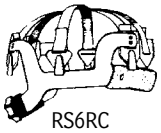
Parts and Accessories for GR50 Series Airline Respirators

Catalog Number	Description
Turn Key Respirator System with Free Air Pump	
GR50SYS	Includes GR5035 respirator, EDP10 Free Air Pump, and V20100ST Air Supply Hose
Respirator Assemblies	
Include GRH Hood, Suspension, breathing tube assembly with belt, and outer lens	
GR5030	For use with Compressed Air
GR5035	For use with Free Air Pumps
Replacement Hoods	
GRH	Nomex Hood - Attaches to breathing tube with clamp
Replacement Lenses	
MB1	Outer lens, 0.020" PETG (Box of 10)
GRH0L1	Outer lens, 0.040" Polycarbonate (Box of 10)
7714	Lens Covers, Adhesive (Pack of 25)
20LC	Lens Covers, Adhesive (Pack of 25)
Replacement Hard Hats and Suspensions	
20RT	Ratchet Suspension for hood
20TG	Pinlock Suspension for hood
C30	Hard Hat with six point pinlock suspension
C30R	Hard Hat with six point ratchet suspension
RS6PC	Six point pinlock suspension
RS6RC	Six point ratchet suspension
S51	Hard Hat with four point pinlock suspension
S51R	Hard Hat with four point ratchet suspension
RS4PC	Four point pinlock suspension
RS4RC	Four point ratchet suspension
Replacement Breathing Tubes	
20BT	Breathing tube with clamp
Flow Control Devices (constant flow/adjustable) - includes nipple and belt	
F30/F40	1/4" Industrial Interchange (Hansen compatible)
F31/F41	1/4" Schrader
F32/F42	1/4" Snap-Tite Steel
F33/F43	1/4" Snap-Tite Brass
F34/F44	1/4" Snap-Tite Stainless
F37/F47	1/4" CEJN
F38/F48	1/4" Bayonet
F35	1/2" Industrial Interchange (Hansen compatible) for use with Free Air Pumps
Cool Tubes (Metal/Plastic) - includes nipple and belt	
AC1000	1/4" Industrial Interchange (Hansen compatible)
AC1000XX	XX denotes fitting type: 31 Schrader, 32 Snap Tite, 33 Snap Tite Brass, 34 Snap Tite Stainless, 37 CEJN, 38 Bayonet)
FRIGITRON2000	1/2" Industrial Interchange (Hansen compatible) for use with Free Air Pumps
Hot/Cold Tubes (Metal/Plastic) - includes nipple and belt	
HC2400	1/4" Industrial Interchange (Hansen compatible)
HC2400XX	XX denotes fitting type: 31 Schrader, 32 Snap Tite, 33 Snap Tite Brass, 34 Snap Tite Stainless, 37 CEJN, 38 Bayonet)
Dual Cool Tubes (Vests purchased separately)	
DC5040	1/4" Industrial Interchange (Hansen compatible)
DC50XX	XX denotes fitting type: 41 Schrader, 42 Snap Tite, 43 Snap Tite Brass, 44 Snap Tite Stainless, 47 CEJN
Dual Cool Vests (for use with Dual Cool Tubes)	
DC70M/L	Medium to Large
DC70XL/XXL	XL to XXL
DC705X	5X Large
Air Supply Hose	
V5/V5KF	3/8" Coiled Hoses (XXX denotes color: RED, BLU, YLW, BLK)
V52530/V5KF2530XXX	25' with 1/4" Industrial Interchange (Hansen compatible)
V55030/V5KF5030XXX	50' with 1/4" Industrial Interchange (Hansen compatible)
V52531/V5KF2531XXX	25' with 1/4" Schrader
V55031/V5KF5031XXX	50' with 1/4" Schrader
V52532/V5KF2532XXX	25' with 1/4" Snap Tite
V55032/V5KF5032XXX	50' with 1/4" Snap Tite
V52533/V5KF2533XXX	25' with 1/4" Snap Tite Brass
V55033/V5KF5033XXX	50' with 1/4" Snap Tite Brass
V10	3/8 ID Black Hose (R denotes reinforced kink free)
4696	25' Starter Hose with 1/4" Industrial Interchange (Hansen Compatible) Fittings
469650	50' Starter Hose with 1/4" Industrial Interchange (Hansen Compatible) Fittings
4696100	100' Starter Hose with 1/4" Industrial Interchange (Hansen Compatible) Fittings
46913	25' Starter Hose with 1/4" Schrader Fittings
46915	25' Starter Hose with 1/4" Snap-Tite Fittings
5454	25' Extension Hose
5457	50' Extension Hose
5458	100' Extension Hose


GRH


C30


S51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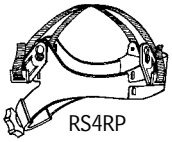
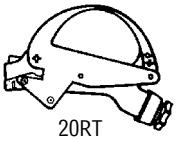
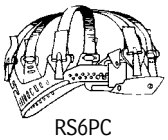

RS4RP


20RT


ES42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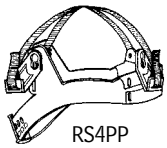
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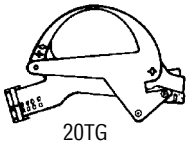
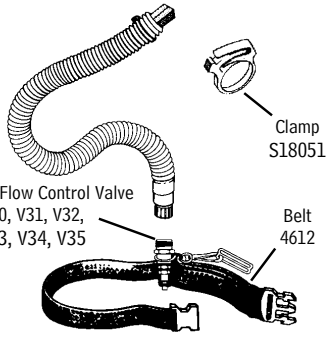

20TG

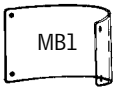

20NC

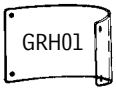
V30 Series Breathing Tube Assembly

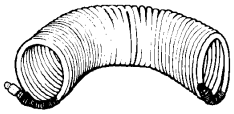


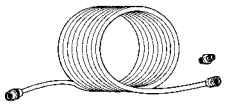

Lens Covers 20LC


Lens Covers 7714

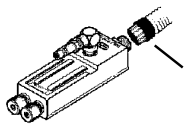




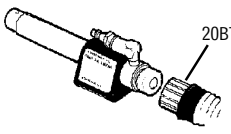

V5 Coiled Air Supply Hose
V52530, V55030,
V52531, V55031,
V52532, V55032


Air Supply Hose
4696, 5454, 5457, 5458,
V2050ST, V20100ST

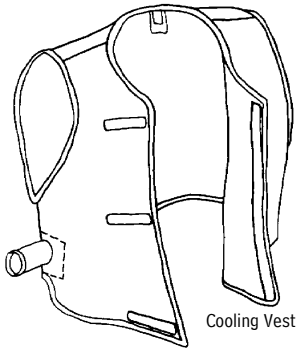
Frigitron 2000



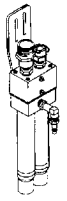
AC1000
AC100031
AC100032



HC2400
HC240031
HC240032


Cooling Vest DC70


Connector Hose
CH60


Dual-Cool
DC5040

RETURN AUTHORIZATIONS

IMPORTANT: THE FOLLOWING STEPS MUST BE COMPLETED BEFORE E.D. BULLARD COMPANY WILL ACCEPT ANY RETURNED GOODS. PLEASE READ CAREFULLY.

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

1. Contact your Bullard Customer Service Coordinator by telephone or in writing at:

   E.D. Bullard
   1898 Safety Way
   Cynthiana, KY 41031-9303
   Toll-Free: 800-877-BULLARD
   Phone: 859-234-6616

   In your correspondence or conversation with your Customer Service Coordinator, describe the problem as completely as possible. For your convenience, your coordinator will try to help you correct the problem over the phone.

2. Verify with your coordinator that the product should be returned to Bullard. Customer Service 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 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 Customer Service Coordinator 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 coordinator 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:
Bullard
1898 Safety Way
Cynthiana, KY 41031-9303 • USA
Toll-free within USA: 877-BULLARD (285-5273)
Tel: +1-859-234-6616
Fax: +1-859-234-8987

Europe:
Bullard GmbH
Lilienthalstrasse 12
53424 Remagen • Germany
Tel: +49-2642 999980
Fax: +49-2642 9999829

Asia-Pacific:
Bullard Asia Pacific Pte. Ltd.
LHK Building
701, Sims Drive, #04-03
Singapore 387383
Tel: +65-6745-0556
Fax: +65-6745-5176

ISO 9001 certified

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