



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

Table of Contents

General Information	1
Component Concept	1
Operations.....	1
Breathing Air Pressure Table	1
Typical Breathing Air Source and Respirator Configurations	2
Respirator Assembly.....	2, 3
Respirator Use	3
Inspection, Cleaning and Storage	4
Parts and Accessories for 88E Series Airline Respirators.....	4
Manual de Instrucciones	6
Manuel d'instructions	12
Bedienungsanleitung	18

CE 0194

EN 271

GENERAL INFORMATION

Bullard's 88E Series airline respirators, when properly used, provide a continuous flow of air from a remote air source to the respirator wearer. 88E Series respirators offer protection from airborne contaminants that are not immediately dangerous to life or health or that do not exceed concentrations allowed by applicable regulations and recommendations. 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, ask your employer. All instructions for the use and care of this product should be supplied to you by your employer as recommended by the manufacturer.

88E Series airline respirators are approved to provide respiratory protection in general purpose applications including heavy and light-duty abrasive blasting. The cape is designed to protect the worker's body from abrasive rebound.

This respirator, when properly fitted and used, significantly reduces, but does not completely eliminate, the breathing of contaminants by the respirator wearer. When properly fitted, used and maintained, it will provide protection up to 1000x occupational exposure limit. (Check regulatory requirements to determine exposure limits.)

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 or pneumoconiosis.

This respirator is not suitable for use in flammable atmospheres and is not designed for use in exceptionally low or high temperatures where moisture in the air could freeze or the worker could be at risk for heat exhaustion. The air supply moisture content should be controlled to avoid freezing the apparatus when used at temperatures below 4° C.

FACE AND EYES

The respirator's inner lens provides protection to EN 166 (low energy impact). Wear appropriate safety glasses or goggles if higher protection levels are required.

HEAD

This respirator is designed to provide limited head protection by reducing the force of falling objects striking the top of the helmet.

Breathing Air Pressure Table

This table defines the air pressure ranges necessary to provide 88E Series respirators with a volume of air that falls within the required range. The respirator provides an air flow of 210-345 lpm to the user. The minimum length of air supply hose is 10 meters, and the maximum length is 20 meters.

1	2	3	4	
AIR SOURCE	FLOW CONTROL DEVICE	HOSE LENGTH	POINT OF ATTACHMENT PRESSURE	
Stationary or portable	F100E F100E	10 meter 20 meter	Bar	(PSIG)
			4.8-5.0	(69-72)
			5.0-5.2	(72-75)

COMPONENT CONCEPT

⚠ WARNING

Do not modify or alter this respirator in any manner. Failure to use complete CE approved Bullard components and replacement parts voids approval of entire assembly.

Bullard's 88E Series airline respirators consist of three components (Figure 1): respirator helmet assembly, breathing tube assembly and air supply hose. All components must be present and properly assembled to constitute a complete CE approved respirator.

1. RESPIRATOR HELMET ASSEMBLY: Includes inner shell, headband suspension, chin strap and cape.

Respirator Helmet*	Cape
88E	4644E

* NOTE: Optional accessories: 88VXLC Lens Cover.

2. BREATHING TUBE ASSEMBLY: Connects respirator helmet to air supply hose by an adjustable airflow control device (F100E) and belt.

3. AIR SUPPLY HOSE: Connects breathing tube to air source supplying clean breathable air.

Hose for High Pressure Compressed Air Source

E10
3/8" I.D. Hose
E1010
E1020
Available in 10 and 20 meter lengths.

OPERATIONS

Low Flow Indicator

The low flow indicator is located on the F100E flow control device. The indicator must be checked periodically when the respirator is in use. During use, the needle on the low flow indicator should point into the green section of the gauge indicating proper flow levels. If the needle dips into the red section, leave the work area immediately as you are receiving less than the required air flow for safe operation.

⚠ WARNING

The Low Flow indicator must be checked periodically while the respirator is in use.

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.

Breathing Air Pressure

CE 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 (Figure 3).

When connecting lengths of E10 hose together, 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.

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

Before you can size the headband suspension, the cape and headband must be removed from the helmet using the following steps:

⚠ WARNING

At very high work rates, the pressure in the hood may become negative at peak inhalation flow. To minimize this potential, utilize the maximum air pressure specified in the Breathing Air Pressure Table and adjust flow control valve to maximum flow.

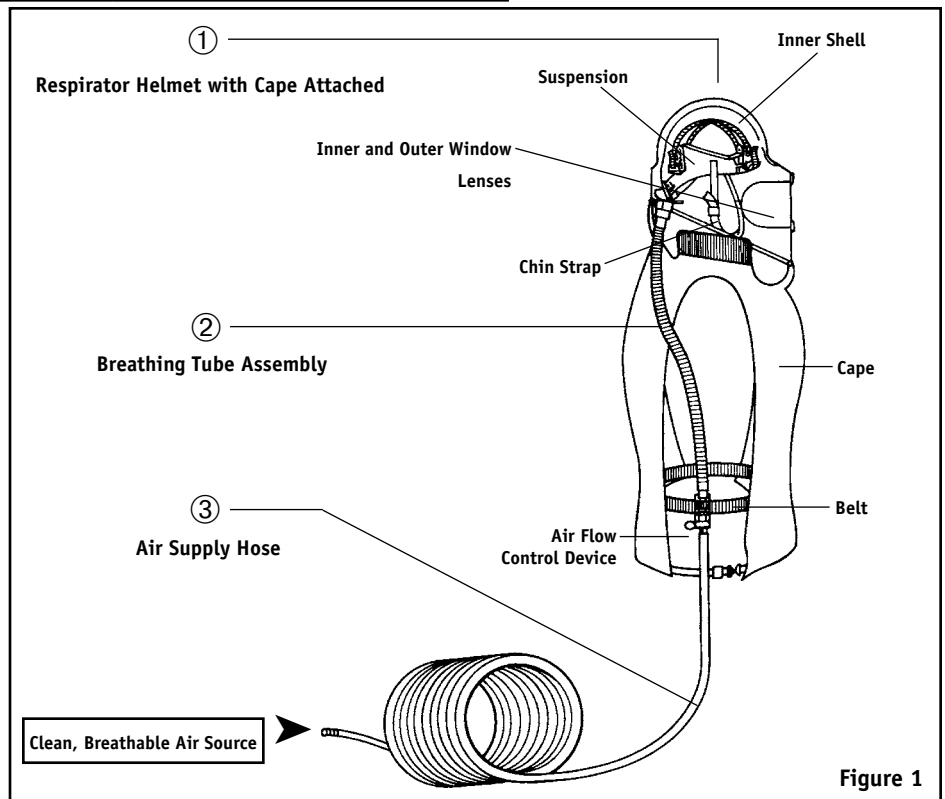
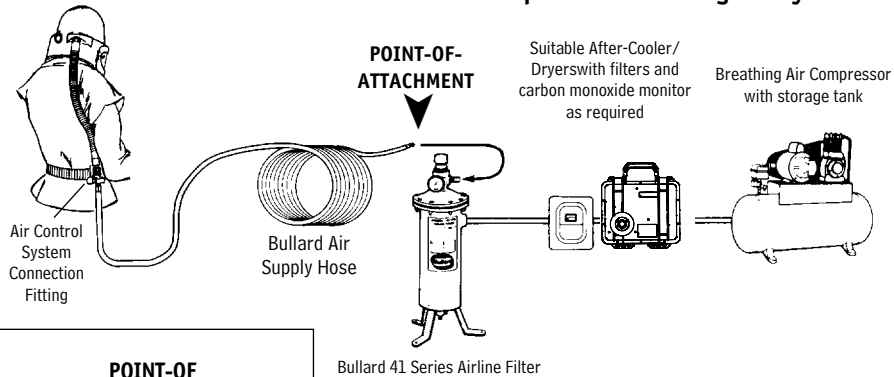


Figure 1

Typical Breathing Air Source and Respirator Configurations

Bullard 88E Series Airline Respirator

Compressed Breathing Air System



POINT-OF-ATTACHMENT (POA)

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

▲ WARNING

Be certain your employer has determined that the breathing air source provides clean breathable air. This respirator must be supplied with clean breathable air at all times.

Do not connect the respirator's air supply hose to nitrogen, oxygen, toxic gases, inert gases or other unbreathable air sources. Check the air source before using the respirator. Failure to connect to the proper air source may result in serious injury or death.

RESPIRATOR ASSEMBLY

Sizing the Headband

1. Open hinged window frame by lifting up on window latch.
2. Remove cape from helmet by lifting up on clamp and disengaging cape from helmet groove (Figure 4).
3. Turn helmet upside down. To remove inner shell from helmet, hook index finger into loop on back of inner shell. Press thumb against helmet rim and pull loop toward front of helmet, then pull up and away from helmet (Figure 5). This releases inner shell.
4. 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 6).
5. Remove headband from your head.

! NOTE

If using the optional 88VXRT ratchet headband, refer to the instruction sheet provided with the 88VXRT.

ADJUSTING 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).

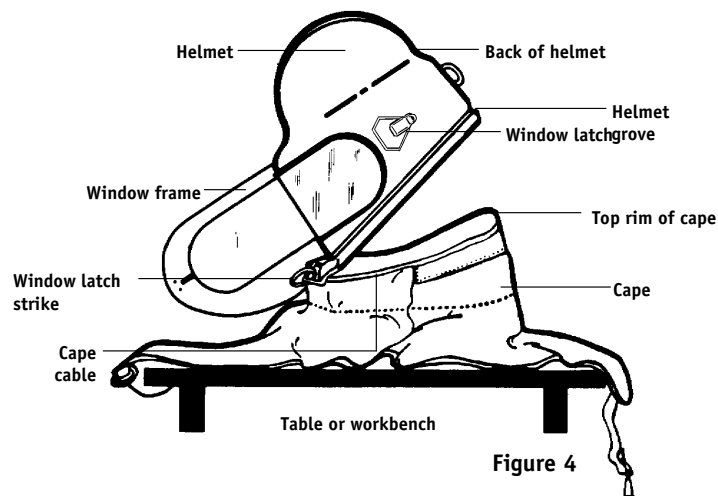


Figure 4

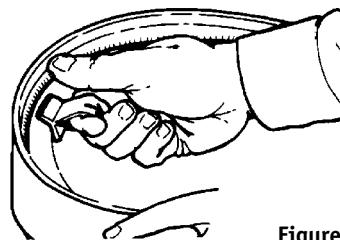


Figure 5

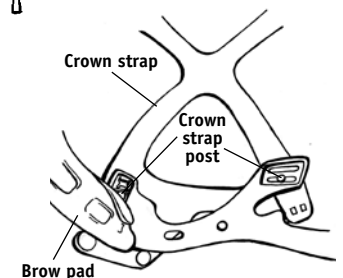


Figure 7

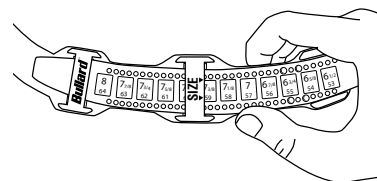


Figure 6

Installing Headband into Inner Shell

1. Turn inner shell and headband suspension upside down.
2. Place headband inside shell with brow pad facing front of shell.
3. Insert keys into respective key slots. Push firmly until keys snap into place. (Figure 8)
4. Insert inner shell into helmet with front of shell tilted down. Align round hole located at front of shell with washer at inside front of helmet. Press back of shell into helmet until it snaps in place.

USING THE 88CS CHIN STRAP

1. Attach chin strap to inner shell by sliding chin strap loop over hook. (Figure 9)
2. Put helmet on your head. Adjust chin strap length with the plastic slide.

OPTIONAL LENS COVERS

1. If desired, apply optional lens covers (88VXLC), designed to protect the respirator's plastic lens. Apply 2-3 lens covers at a time.
2. When lens becomes soiled, remove by pulling tab at edge of lens cover to clear your vision.

Attaching Cape to Helmet

1. Place cape on table or workbench. (Figure 4)
2. With window frame open, place helmet on top of cape.
3. Line up the hook-shaped catch on the cape with the front center of the helmet. (Figure 4) Catch should firmly engage under bottom front edge of helmet.
NOTE: Installation is easiest when started at the front of cape and helmet.
4. Ease cape rim completely into the groove along helmet edge, working your way to the back. Be certain cape is completely in place at every point along helmet's bottom edge.
5. Snap the over-center clamp to tighten cable and hold cape snugly on helmet.
6. Close and latch window frame.

Installing Breathing Tube Assembly into Respirator Helmet

1. Connect breathing tube assembly to helmet by screwing plastic hose connector to fitting located on the side of the helmet. Turn clockwise to tighten. (Figure 10) Ensure you are using a Bullard 88VXBT. The name and part number are stamped on the side of the breathing tube sleeve. The date of manufacture is stamped on the inside of the sleeve.

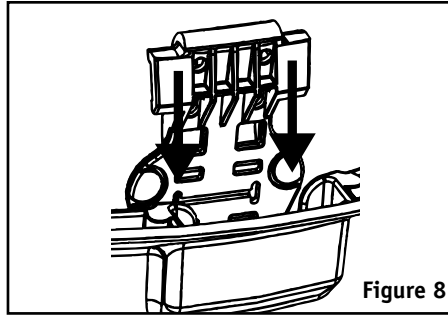


Figure 8

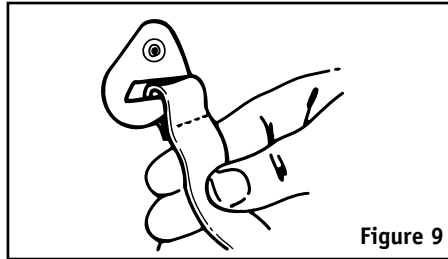


Figure 9

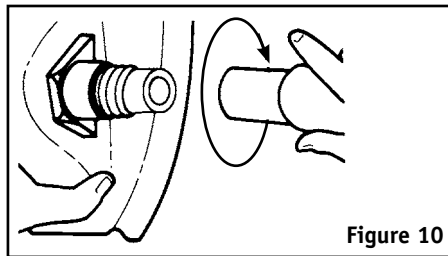


Figure 10

RESPIRATOR USE

⚠ WARNING

Do not use this respirator in poorly ventilated areas or confined spaces such as tanks, small rooms, tunnels or vessels unless the confined space is well ventilated, and contaminant concentrations are below the protection level of the respirator. In addition, follow all procedures for confined space entry, operation and exit as defined in applicable regulations and standards.

Donning

Before donning, make sure there is no dirt, dust or contamination inside the helmet.

1. Connect the Bullard air supply hose to the air source supplying clean breathable air. Turn on the breathing air source.
2. Connect breathing tube assembly to air supply hose. 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. Check to assure air is flowing properly into the hood.
3. Adjust air pressure at point-of-attachment to within the approved pressure range. See the Breathing Air Pressure Table (page 1) for approved pressure ranges. Check the air flow indicator/low flow alarm device attached to the air flow control device to assure that the indicator is reading within the green arc. Do not use respirator if indicator reads in the red zone.
4. With air still flowing, lower 88E Series respirator helmet onto your head for a comfortable fit.
5. Position headband for a comfortable fit. See instructions on page 2 for proper headband sizing.
6. Pull elastic chin strap under your chin and adjust for a secure and comfortable fit. The chin strap will help balance the helmet and should be worn at all times.
7. Be sure that the knitted inner neck cuff fits snugly around your neck to help provide a barrier to airborne contaminants.
8. With breathing tube assembly attached to the helmet, fasten belt around waist or hips and adjust for comfort.
9. Pull respirator cape around your body and secure sides by connecting the snap hooks.
10. Recheck air pressure at the point-of-attachment and the air flow indicator at the belt (mounted on the air flow control device). Adjust if necessary.
11. With air still flowing into the respirator, you are now ready to enter the work area.

Use

During use, periodically check the flow indicator at the belt to assure that adequate air flow is being supplied to helmet.

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.

⚠ WARNING

Do not wear this respirator if any of the following conditions exist:

- You CANNOT escape without the aid of the respirator.
- Atmosphere contains less than 19.5% oxygen or is oxygen enriched.
- Work area is poorly ventilated.
- Unknown contaminants are present.
- Contaminants are in excess of regulatory requirements.

LEAVE work area immediately if:

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

DO NOT leave respirator in work area. 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. Failure to don, doff and store the respirator outside of the contaminated area could result in exposure to contaminants.

INSPECTION, CLEANING AND STORAGE

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 approved Bullard 88E Series components or remove the respirator from service.

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.

Cape

INSPECTION: Remove the cape from the respirator helmet and inspect it for rips, tears or damage from excessive wear that might reduce the degree of protection originally provided. Inspect the inner neck cuff for elasticity.

If you detect any of these signs, replace your cape immediately or remove the respirator from service.

CLEANING: Machine wash the cape in cold or warm water using a gentle cycle. Use a mild laundry detergent. Air-dry only. After cleaning, carefully inspect the cape once again for signs of damage.

Headband and Chin Strap

INSPECTION: Remove the headband suspension and chin strap from the inner shell. Inspect the 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 parts immediately with Bullard replacement parts or remove the respirator from service.

CLEANING: The headband suspension and 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 the parts for signs of damage.

Helmet

INSPECTION: Inspect the helmet and inner shell for nicks, gouges, cracks, holes and any damage due to impact, rough treatment or wear.

If damage is detected, replace parts immediately with Bullard replacement parts or remove the respirator from service.

CLEANING: The helmet, inner shell, and window frame should be hand-sponged with warm water and mild detergent, rinsed and air-dried.

After cleaning and before reassembling, once again carefully inspect the helmet and parts for signs of damage.

Lenses and Window Frame Gasket

INSPECTION: Be sure the plastic inner lens fits securely in the black window frame gasket. Remove any grit or dust from the gasket. Be sure the plastic outer lens is installed underneath the clamps on the back of the outer window frame. Inspect the window frame gasket closely for cuts, wear or damage that will prevent a proper seal against the inner faceshield lens or the helmet window frame.

CLEANING: To clean the lenses, hand-sponge with warm water and mild detergent, rinse and air-dry.

Breathing Tube Assembly

INSPECTION: Inspect the 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 air cannot 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 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.

Air Supply Hose

INSPECTION: The 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 air supply 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.

Storage

After reusable respirator components have been cleaned, dried 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.



Store in a clean place away from contaminants.

PARTS AND ACCESSORIES FOR 88E SERIES AIRLINE RESPIRATORS

88E Series airline respirators consist of three components: respirator helmet assembly, breathing tube assembly and air supply hose. There are options for some components to fit customer specifications. All components must be present and properly assembled, including a Bullard air supply hose, to constitute a complete CE approved respirator.

Cat. No.	Description
PARTS FOR 88E SERIES RESPIRATORS	
88VXTG	4-point headband suspension
88CS	Elastic Chin Strap
88CK	Breathing tube connector kit
88VXAK	Maintenance kit
G7713	Window Frame Gasket for 88E Series
46VX	Medium weight Nylon cape, 28" length

LENSES AND MYLAR COVERS

Lenses for 88E Series

P771B	Inner Tritan Lens, .040" thick (25/pkg)
B771B	Inner Tritan Lens, .040" thick (200/bx)
88VXLC	Clear Oval Mylar Lens Cover, Perforated-Edges (25/pkg)

FLOW CONTROL VALVE

F100E	Adjustable 1/4" Industrial Interchange (steel) quick-disconnect fitting (6 mm)
F109E	Adjustable 1/4" Industrial Interchange (steel) quick-disconnect fitting (9 mm)

REPLACEMENT PARTS FOR BREATHING TUBE ASSEMBLIES

88VXBT	Breathing tube only, with threaded hose connectors
4612	Belt, nylon webbing

AIR SUPPLY HOSE KITS

E10 Series Hoses (3/8" I.D.) for use with breathing air compressors

E1010	10 - meter air supply hose with V11 hose adaptor fitting and V13 hose-to-pipe fitting (3/8" hose to 3/8" pipe).
E1020	20 - meter air supply hose with V11 hose adaptor fitting and V13 hose-to-pipe fitting (3/8" hose to 3/8" pipe).

BREATHING AIR SUPPLY HOSE FITTINGS

V17	1/4" Industrial Interchange male quick-disconnect nipple with 3/8" Female Pipe Thread (FPT)
V15	1/4" Industrial Interchange female quick-disconnect coupler, shutoff with 3/8" Male Pipe Thread (MPT).
V27	1/4" Industrial Interchange coupler assembly (includes V12 adaptor, 3/8" hose to 1/4" pipe).
V13	Hose-to-pipe adaptor, 3/8" hose to 3/8" pipe.
V11	Hose-to-hose adaptor, 3/8" hose to 3/8" hose.

To order replacement parts, contact your local Bullard distributor or Bullard Customer Service Department.

**EC Type Examination to PPE 89/686/ECC article 10 by SGS Yarsley ICS LTD,
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