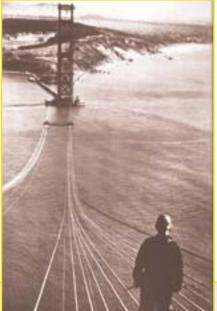


# INDUSTRIAL HEALTH & SAFETY PRODUCT CATALOG



# Commitment to Safety



For more than a hundred years, we've focused our efforts on saving lives with quality safety products. From the introduction of the world's first hard hat in 1919, to our latest innovations in respiratory products, you'll find every Bullard product is the best in its class. Thorough research and development, followed with world-class engineering, provide you with the high-quality protection you deserve.

### In Head Protection...

We invented the hard hat – and our commitment to manufacturing the very best hard hat shows. From our Standard Series, to the advanced protection offered by our Advent® rescue helmet, all Bullard hard hats and helmets have been carefully engineered to deliver superior performance, comfort, quality and durability.

### In Respiratory Protection...

We provided airline respirators during the construction of the Golden Gate Bridge. Since then, our line of respiratory protection equipment has expanded to include powered-air purifying respirators, airline respirators, pressure demand systems, supplied air filters and monitors, and a full range of breathing air pumps. Bullard is dedicated to providing only the best in breathing air quality and respiratory protection equipment.



Founded in 1898 in San Francisco by Edward Dickinson Bullard, our company is a leading manufacturer of high quality personal protective equipment and systems. The Company originally supplied carbide lamps and other mining equipment to gold and copper miners. The introduction of the first hard hat in 1919, represented the first of many innovative designs by Bullard.

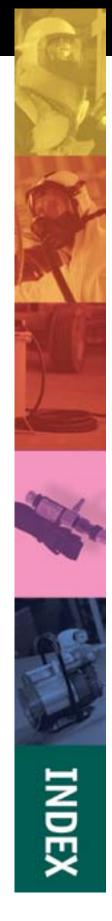
During the 1930s, Golden Gate Bridge engineer Joseph B. Strauss asked Bullard to adapt its hats to protect bridge workers. Bullard not only supplied hard hats for this famous project, but also designed an original supplied air respirator for workers blasting the steelwork.

In 1972, the Company moved its production facilities, and later its headquarters from Sausalito, California, to Cynthiana, Kentucky. Since 1994, Bullard has maintained ISO9001 certification, signifying the Company's ongoing commitment to a rigorous quality system in its manufacturing operations. Now with offices in Europe and Asia-Pacific, Bullard carries its commitment to safety internationally.

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### Terms and Conditions

Customer Service Policy: This statement does not supersede the terms or conditions of sale that are printed on Bullard sales orders, acknowledgements and packing slips. Instead, it is a guide to our customer service policies. Bullard reserves the right to change product specifications without notice.

Pricing: Orders must specify one destination and one shipping date. Prices are subject to change without notice. We attempt to advise our customers of price changes in advance, but cannot guarantee to do so. Orders specifying future shipment are subject to prices effective at the time of shipment. Possession of a price list does not grant the right to distributor discounts.

Minimum Order: Minimum purchase order is \$100.00. Products from other Bullard price lists may be combined to meet minimum.

Terms: Standard terms net 30 days, F.O.B. shipping point.

Freight: Title to goods passes to the buyer upon delivery to the carrier at the Bullard dock. Orders of \$2,500 or more are shipped freight prepaid by Bullard within the continental U.S. via the carrier(s) of our choice. Products from other Bullard price lists may be combined to receive free freight. Orders specifying other means of shipment are shipped collect regardless of order value. To qualify for prepaid freight, orders must specify a single destination and shipping date.

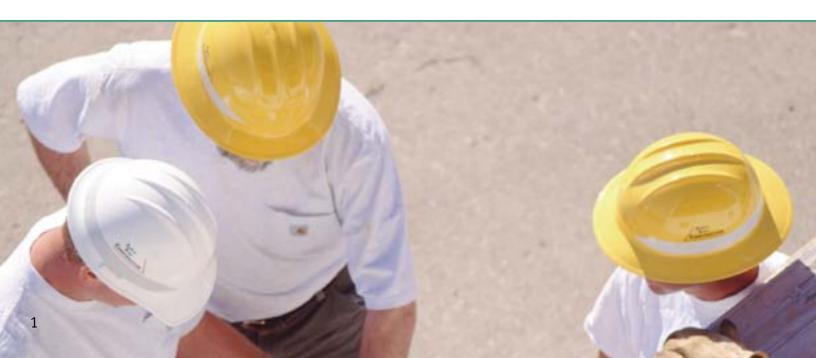
Credit Policy: We reserve the right to assess a 1½ percent service charge per month on overdue balances. Our credit department is authorized to hold shipments if past due balances are not paid.

Returned Goods: Refer to your Bullard distributor program for details.

Non-standard Orders: We welcome the opportunity to meet special requirements. However, special orders are accepted with the understanding that we may over-ship and bill accordingly by as much as 10% of the order, due to the special nature of the product.

Drop Shipments: In certain situations, drop shipments may be made to authorized distributor locations or other locations within a distributor's recognized territory. Please contact Bullard Customer Service for details.

Information Support Policy: Bullard provides distributors with catalogs, price lists, promotional literature and other printed material. Generally, this information is provided to the distributor at no cost. However, Bullard reserves the right to charge a distributor when literature requests exceed reasonable levels based on the distributor's annual sales volume. All Bullard literature can also be downloaded from our website at no additional cost at www.bullard.com.



### How To Place An Order

Now there are more ways than ever to place an order with Bullard!

### by Fax

You can fax us any time – 24 hours a day. Faxed orders are processed promptly and you will receive a Sales Order confirmation back after the order has been entered into our system.

Fax: 1-800-877-6858 Fax: 1-859-234-6858

### by E-mail

E-mail your orders to orders@bullard.com.

### by EDI

Transaction sets are received as soon as they are sent, so the response turnaround is almost immediate. You can even use your own part numbers! Contact edi@bullard.com if you wish to become an EDI partner. NOTE: There is a \$100 purchase order minimum.

### by Mail

Send orders via mail to Bullard Customer Service if you have an account set up with us. Note the mailing address for Bullard below.

### in Person

Your Bullard Regional Sales Manager will visit your facility and listen to your needs. They can help you decide on the combination of safety products that will best serve you and provide a quotation, technical information, product availability and ordering information.

Call us anytime between 8:00 a.m. and 6:00 p.m. E.S.T, Monday through Friday, and one of our experienced Customer Service Representatives will assist you with placing your order. Special order requirements? Just contact a Bullard Customer Service Representative to discuss the options. We do not take orders over the phone; you must e-mail or fax a copy of the purchase order.

# Americas: E.D. Bullard Company

1898 Safety Way Cynthiana, KY 41031-9303 Toll free: 877-BULLARD (285-5273)

Tel: 859-234-6616 Fax: 859-234-8987 www.bullard.com

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### Asia-Pacific: Bullard Asia Pacific Pte. Ltd.

LHK Building 701, Sims Drive, #04-03 Singapore 387383 Tel: +65-6745-0556

Fax: +65-6745-5176 www.bullard.com



# Industrial Head and Face Protection Products



Construction • Utilities • Emergency Response
• Transportation • Mining • Manufacturing
Petrochemical • Railroad • Food Processing • Forestry



# Regulations and Standards for Industrial Head Protection

### Types of Hard Hats

**Type I/1** – Conventional hard hats that are designed to reduce the force of impact to the top of the head, neck and spine.

**Type II/2** – New designs that offer additional impact protection to the front, sides, and back, as well as the top of the head.

**Class E** (electrical) are tested to withstand 20,000 volts.

### **Classes of Hard Hats**

**Class G** (general) helmets are tested at 2200 volts. **Class C** (conductive) provides no electrical protection.

### OSHA 29 CFR 1910.135 - www.osha.gov

This standard requires head protection if any aspect of the work environment presents a risk of head injury.

# ANSI/ISEA Z89.1-2009 - www.ansi.org or www.safetyequipment.org

National Standard for U.S.

This standard provides performance and testing requirements for industrial helmets (commonly known as hard hats). It establishes the types and classes of protective helmets, depending on the type of hazard encountered. It includes specifications for helmets designed to offer protection from lateral impact (Type II), or top-only impact (Type I), giving employers and users the flexibility to specify the helmet that best meets the needs of their specific workplace.

This standard outlines requirements for industrial head protection relating to:

- 1. Impact Protection
- 2. Penetration Protection
- 3. Electrical Insulation Protection

Three non-mandatory tests were added to this newest revision of the standard (ANSI/ISEA Z89.1-2009 is the revision of the previous ANSI Z89.1-2003). Manufacturers who want to claim any of these features can (1) test their helmets according to the new procedures, and (2) label their products appropriately:

### 1. Reverse Donning, [ ]

All of Bullard's Type I hard hats are marked with SYMBOL to indicate that they meet the new non-mandatory test. In order to wear your Bullard Hard Hat backwards, the user must first reverse his/her suspension, so that the nape strap is in the rear and brow pad in the front.

### 2. Lower Temperature, [LT]

All Bullard Hard Hats are tested to the requirements for the non-mandatory lower temperature (-30° C or -22° F) and marked with "LT." The traditional low temperature test for a helmet is -18° C or 0°F; the LT testing is even more rigorous.

### 3. High-Visibility, [HV]

Bullard's Hi-Viz Yellow meets the non-mandatory requirements for highvisibility, including special tests for Chromaticity and Luminescence for added visibility.

### **▲** WARNING

Hard hats are designed to provide limited protection to the head by reducing the force of falling objects striking the top of the hard hat shell. While limited protection is provided in other parts of the shell, this hard hat was not designed to provide front, side or rear impact protection. Avoid contact with electrical wires. NEVER ALTER OR MODIFY THE SHELL OR SUSPENSION SYSTEM. ALWAYS USE BULLARD REPLACEMENT PARTS.

Inspect your hard hat shell and suspension regularly. Check for cracks, frayed straps and any signs of damage before each use. Replace the hard hat immediately if you notice any signs of wear, damage, abuse or environmental degradation. If the hard hat has sustained a forcible blow (impact), dispose of it immediately, even if damage is not visible. Failure to follow these warnings could result in death or serious injury.

Bullar	d Model	Standard	Type and Class		
	C30	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I, Class E & G, 🧢, LT, HV		
	C33	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I, Class E & G, 🖘, LT, HV Type 1, Class E & G		
	C34	ANSI/ISEA Z89.1-2009	Type I, Class E & G, <つ, LT, HV		
	911C	ANSI/ISEA Z89.1-2009	Type I, Class E & G, <⊃, LT, HV		
	911H	ANSI/ISEA Z89.1-2009	Type I, Class E & G, <⊃, LT, HV		
	S51	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type I, Class E & G, 🖘, LT, HV Type 1, Class E & G		
	S61	ANSI/ISEA Z89.1-2009	Type I, Class E & G, 🦘, LT, HV		
-	S62	ANSI/ISEA Z89.1-2009	Type I, Class C, 🤝, LT, HV		
	S71	ANSI/ISEA Z89.1-2009	Type I, Class E & G, <⊃, LT, HV		
7	Advent®	ANSI/ISEA Z89.1-2009	Type II, Class E & G, LT		
	Vector™	ANSI/ISEA Z89.1-2009 CSA Z94.1-2005	Type II, Class E & G, LT, HV Type 2, Class E & G		

### CAN/CSA Z94.1-2005 - www.csa.ca

National Standard for Canada

This is the fifth edition of CSA Z94.1, Industrial Protective Headwear - Performance, selection, care and use. It supersedes the previous editions published in 1992, 1977 and 1966 under the title Industrial Protective Headwear. It also supersedes the Preliminary Standard, published in 1965, and replaces the protective headwear requirements specified in CSA Z94-1948, Code for Head and Eye Protection. Bullard's S51, C30, and C33 all meet CSA Z94.1-2005, Type 1, Class E & G; Bullard's Vector meets CSA Z94.1-2005, Type 2, Class E & G.

### Classes of Hard Hats

Type I / Type 1 - Conventional hard hats that are designed to reduce the force of impact to the top of the head, neck and spine.

Type II / Type 2 - Newer designs that offer additional impact protection to the front, sides and back, as well as the top of the head.

### Classes of Hard Hats

Class E (Electrical) - Tested to withstand 20,000 volts. Class G (General) - Tested to withstand 2200 volts

**Class C (Conductive)** - Provides no electrical protection.

# Regulations and Standards for Face Protection

### ANSI/ISEA Z87.1-2010 - Standard for Occupational and Educational Personal Eye and Face Protection

Bullard's industrial faceshields are all tested to ANSI/ISEA Z87.1-2010, the standard that sets forth criteria for the general requirements, testing, permanent marking, selection, care and use of protectors to minimize the occurrence and severity or prevention of injuries from such hazards as impact, non-ionizing radiation and chemical exposures in occupational and educations environments including, but not limited to, machinery operations, material welding and cutting, chemical handling, and assembly operations. The standard provides the minimum requirements for protectors including selection, use, and maintenance of these protectors as devices to minimize or prevent eye and face injuries. The standard has tests for Optical Requirements, Physical Requirements, Lens Thickness (for non-impact rated faceshields), and Marking Requirements.

In April of 2010, the American National Standards Institute (ANSI) along with the Industrial Safety Equipment Association (ISEA) approved the 2010 version of Z87.1 Standard for Occupational and Educational Personal Eye and Face Protection Devices, ANSI/ISEA Z87.1-2010. The updated standard is organized by hazard type in order to help end users to select their eye and face protection for the specific hazard they encounter. As such, the standard is organized by hazard type (such as impact, splash/droplet, optical radiation, dust, fine dust, and mist).

In Z87.1-2003, protective products are marked as providing "Basic" or "High Impact" protection. In the 2010 standard, the products are either non-impact or impact protectors. Products marked as impact protectors must pass all high-impact testing requirements and will be marked as "Z87+". Non-impact protectors are those which do not pass all high-impact testing requirements and are therefore marked only with "Z87" (no "+" sign). All Bullard brackets will be marked as Z87+ as well, to show that they can accommodate Impact Protectors. Although the new standard eliminates the distinction between Primary and Secondary Eye protection (faceshields were previously considered secondary protection and needed safety glasses under the visors), to ensure maximum protection, Bullard continues to recommend that Z87+ impact eye protection always be worn under faceshields.

Bullard visors conform to ANSI/ISEA Z87.1-2010 standard when used in combination with Bullard approved headgear or faceshield brackets under the following classification by model number:

Bullard Model	Material	Classification	
640	Acetate	Z87 (formerly Basic Impact Requirements)	
640G	Acetate	Z87 (formerly Dark Basic Impact Requirements)	
840M	Acetate	Z87 (formerly Basic Impact Requirements)	
840MH	Acetate	Z87 (formerly Basic Impact Requirements)	
840MX2	Acetate	Z87 (formerly Basic Impact Requirements)	
840MG	Acetate	Z87 (formerly Dark Basic Impact Requirements)	
860H	Acetate	Z87 (formerly Basic Impact Requirements)	
CS40	Acetate	Z87 (formerly Basic Impact Requirements)	
1040	Acetate	Z87 (formerly Basic Impact Requirements)	
840ME	Polyester	Z87 (formerly Basic Impact Requirements)	
E840ME	Polyester	Z87 (formerly Basic Impact Requirements)	
680P	Polycarbonate	Z87+ (formerly High Impact Requirements)	
840P	Polycarbonate	Z87+ (formerly High Impact Requirements)	
840PX2	Polycarbonate	Z87+ (formerly High Impact Requirements)	
860P	Polycarbonate	Z87+ (formerly High Impact Requirements)	
880P	Polycarbonate	Z87+ (formerly High Impact Requirements)	
WS60PM	Polycarbonate	Z87+ (formerly High Impact Requirements)	
6S24	Mesh Screen	Z87 S (formerly Special Purpose Basic Impact Requirements)	
8S24	Mesh Screen	Z87 S (formerly Special Purpose Basic Impact Requirements)	
680T	Tritan	Z87+ (formerly High Impact Requirements)	
840T	Tritan	Z87+ (formerly High Impact Requirements)	
840TX2	Tritan	Z87+ (formerly High Impact Requirements)	
860T	Tritan	Z87+ (formerly High Impact Requirements)	
880T	Tritan	Z87+ (formerly High Impact Requirements)	
WS60TM	Tritan	Z87+ (formerly High Impact Requirements)	

# Advanced Head Protection Advent® Helmet

# The Advent helmet. Designed specifically for emergency response services.

The Advent helmet offers paramedics, emergency medical technicians, industrial hazard response teams, and search and rescue personnel a revolutionary new concept in head protection. Available in two models, Advent offers a variety of special benefits.

### **Highly Protective**

Advent offers top, front, side and rear impact and penetration protection. This level of head protection is essential for emergency response professionals who are involved in everything from vehicle extrication to rope rescue. Advent meets or exceeds all requirements of ANSI/ISEA Z89.1-2009, Type II, Class E & G.

### Comfortable

At just over 25 ounces (709g), Advent is half the weight of conventional firefighter helmets and is the same weight as many climbing helmets. Its compact design with no rear brim improves freedom of movement both in and out of emergency vehicles and confined spaces. A crown pad and a soft replaceable, foam-backed vinyl brow pad provide extra comfort.

### **Easy Adjustment**

The Advent adjustable Sure-Lock® ratchet suspension (ADRTSL) makes it easy to size instantly.

### **Economical**

Advent is affordable. In fact, it's less than half the price of conventional fire helmets.

### Adaptable

Advent can be equipped with a variety of accessories, including faceshields, ear/neck protectors and hearing protectors.

### Easy to Customize

Advent is designed as part of the professional's standard uniform. Both models are available in five colors and may be customized with pad printed logos, decals and reflective stripes. Logos may be printed using up to six colors in as many as eight different locations.













### **Advanced Head Protection - ADVENT® Helmet**

### Revolutionary Construction, Advanced Levels of Protection.

#### 1. Inner Shell of ABS

Helps protect by distributing forces of impact over a wide area.

### 2. Eight-point Suspension System

Adds stability and comfort.

### 3. Expanded Polystyrene Foam Core

Reduces the possibility of serious head injury by helping absorb forces of impact.

### 4. Sure-Lock® Ratchet Headband

Makes sizing quick, comfortable and easy.

### 5. Expanded Polyethylene Crown Cushion

Helps prevent head contact with the shell in the event of top impact.

### 6. Ventilation Channels

Help keep wearers cooler and more comfortable.

### 7. Outer Shell of Thermoplastic

Provides superior impact and penetration protection over a wide range of temperatures.

### 8. Permanently Attached Chinstrap

Increases stability and security, with quick-release buckle. (ADVENT A2 is available with a 3-point cradle chinstrap.) pictured

### 9. Vinyl Crown and Brow Pad

Provides enhanced comfort.



Α1 ADVENT Helmet with 2-point Chinstrap

- Polycarbonate alloy shell
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type II, Class E & G requirements
- EPS foam impact liner
- EPS foam crown cushion
- ABS inner shell
- 8-point Flex-Gear ratchet suspension (ADRTSL)
- 2-point chinstrap with dielectric quick-release buckle (A110)
- Case quantity: 10; minimum order: 1



A2

ADVENT Helmet with 3-point Cradle Chinstrap Same as Model A1 above with

- 3-point cradle chinstrap
- Dielectric quick-release buckle
- Case quantity: 10; minimum order: 1



**Additional Accessories** Customization Options p. 11-13

p. 28-32

# Advanced Head Protection Vector Helmet

# The Vector Helmet. Designed to meet CSA and ANSI/ISEA Type II Standards.

The Bullard Vector helmet provides impact protection for the top, front, back and side of the head. Vector helmets are lightweight, comfortable, affordably priced and designed to accommodate numerous accessories. In addition to the advanced features, the helmet is easy to customize with company logos, slogans and reflective markings.

### **Protective**

Vector helmets use a full inner shock liner to absorb impacts from the top, front, back and side. The shock liner is carefully engineered to provide advanced protection with minimal weight. Combined with its heavy-duty polyethylene shell and optional self-sizing pinlock suspension or Sure-Lock® ratchet suspension, Vector offers advanced protection at a competitive price. A two-point chinstrap and heavy-duty polycarbonate faceshield are available as options.

### **Comfortable**

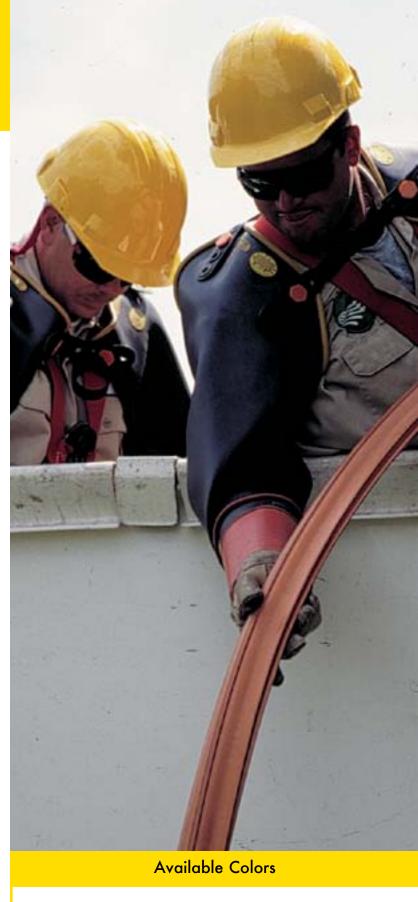
Vector helmets offer lateral and top impact protection with only slight weight addition over conventional hard hats. Either the self-sizing pinlock VT600 suspension or optional VTRT600 Sure-Lock™ ratchet suspension ensures a secure and comfortable fit for virtually all head sizes and shapes. The standard Sportek™ brow pad is the most absorbent and comfortable brow pad available.

### **Economical**

Vector helmets offer advanced head protection and comfort at an affordable price. The lightweight Vector helmets are compliant with ANSI/ISEA Z89.1-2009, Type II, Class E & G and CSA Z94.1-2005, Type 2, Class E & G requirements. The Sportek brow pad, comfortable suspension, built-in goggle strap retaining slots and Bullard unsurpassed reputation for quality make Vector helmets a superior value in industrial head protection.

### **Easy to Customize**

Vector helmets can be decorated with your company's logo using up to six colors in as many as eight different locations. Available colors include: white, yellow, orange, red, Kentucky blue, navy blue, forest green, hi-viz orange and hi-viz yellow.





### **Advanced Head Protection - VECTOR Helmet**

### **Advanced Levels of Protection**

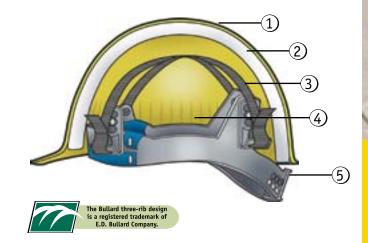
**1. Outer Shell of Polyethylene**Lightweight design for maximum comfort.

# 2. Expanded Polystyrene Foam Core Reduces the possibility of serious head injury by helping to absorb the forces of impact.

# **3. Four-point Suspension System**Straps are angled to fit the head for superior balance and comfort.

# **4. Ventilation Channels**Help keep wearer cooler.

### 5. Sizing Mechanism Choose from either the Flex-Gear® ratchet or selfsizing pinlock suspension.



### **VECTOR-C**

### Helmet with Self-sizing pinlock suspension

- High-density polyethylene shell
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type II, Class E & G requirements and CSA Z94.1-2005, Type 2, Class E & G
- EPS foam impact liner
- 4-point self-sizing pinlock suspension (VT600)
- Case quantity: 10; minimum order: 10



### **VECTOR-CRT**

### Helmet with Flex-Gear® Ratchet Suspension

Same as Model VECTOR-C above with

• 4-point Flex-Gear ratchet suspension (VTRT600)

• Case quantity: 10; minimum order: 10



Additional Accessories
Customization Options

p. 11-13

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### **Advanced Head Protection**

### ADVENT® Replacement Parts and Accessories

### **ADRTSL**

Suspension for ADVENT

- 8-point Sure-Lock® ratchet suspension
- Foam-backed vinyl brow and crown pad (A101)



### A101

Brow Pad

- Foam-backed ventilated vinyl
- For ADRTSL-Advent suspension



### **VECTOR Replacement Parts and Accessories**

### VT600

Suspension for VECTOR

- 4-point self-sizing pinlock suspension
- Sportek<sup>™</sup> brow pad (TT3)
- Three vertical adjustments in front and rear
- Includes built-in goggle strap retaining slots



### VTRT600

Suspension for VECTOR

- 4-point Flex-Gear ratchet suspension
- Sportek brow pad (TT3)
- Three vertical adjustments in front and rear
- Includes built-in goggle strap retaining slots



### VTS

Foam Liner for VECTOR

• Expanded polystyrene (EPS) foam liner replacement



### TT3

Brow Pad

- Sportek replacement brow pad
- For 4-point VT600, VTRT600 suspensions



# Industrial Head Protection

### **Advanced Head Protection**

### ADVENT® and VECTOR Replacement Parts

### A110

Chinstrap for ADVENT or VECTOR

- 2-point nylon chinstrap
- Quick-release buckle



### **ADFB**

### **Accessory Blades**

- For mounting 4" or 6" faceshield on ADVENT or VECTOR
- Includes blades and hardware
- Faceshield must be purchased separately (R325 or R330)



### R325

### Faceshield

- 6" faceshield
- Hard-coated polycarbonate
- ADFB blades are required for assembly sold separately



### R330

### Faceshield

- 4" faceshield
- Hard-coated polyphthalatecarbonate
- Enhanced optics
- ADFB blades are required for assembly sold separately



### R160

### Ratchet Cover

- Leather ratchet cover
- For all Bullard ratchet suspensions





### **Advanced Head Protection**

### Customization for ADVENT® and VECTOR

OR145

3" (7.6 cm) Star of Life decal



**OR308** 

Approx. 7" x 3" (1" wide) Crescent, Emergency Medical Technician



OR309

Approx. 7" x 3" (1" wide) Crescent, Safety Officer

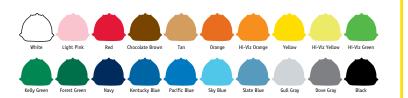


OR310

Approx. 7" x 3" (1" wide) Crescent, Paramedic



### **Available Colors**



# Classic Series Hard Hats and Caps

# Bullard Classic Series hard hats and caps continue to be the most comfortable hard hats in the industry.

### Comfortable

Featuring a wider profile than most hard hats, Classic caps and hats offer increased protection from rain, snow, dust and harmful ultraviolet (UV) rays. With the Classic, you'll find a balanced fit with a comfortable six-point suspension.

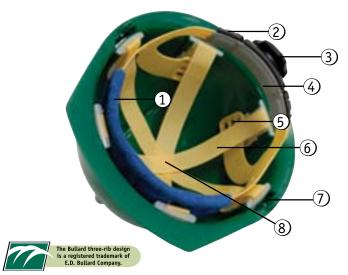
### Meets OSHA and ANSI Requirements

Models C30, C33, C34, 911C and 911H conform to all OSHA and ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements, including impact, penetration and electrical. Models C30 and C33 also conform to CSA Z94.1-2005, Type 1, Class E & G requirements.

### Decoration

No other manufacturer offers more decorating flexibility and capability than Bullard. Bullard Logo Shop uses state-of-the-art technology to imprint your company logo or safety slogan in up to six colors in virtually any lateral position on the shell. No other manufacturer offers a decoration program that is as easy, fast and reliable.

Worker visibility can be increased with Scotchlite® reflective stripes or small reflective strips in a multitude of colors. Bullard offers a variety of shell colors and can match other colors for companies requiring specific shades.



- 1. Pillowed Brow Pad in Vinyl, Cotton or Polartec
- 2. Flex-Gear Ratchet System
- 3. Ratchet Sizing Knob
- 4. Nape Cushion with Flex Points
- 5. Easy to Adjust Vertical Height Settings
- 6. Seamless Nylon Crown Straps
- 7. Accessory Slots for Attachments
- 8. Six-point Balanced Suspension

# **Classic Series Hard Hats and Caps**

### C30P Classic Series Cap

- High-density polyethylene shell
- Full profile, wide brim
- Accessory slots for attachments
- 6-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS6PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1, Class E & G requirements
- Case quantity: 20; minimum order: 20



### C30R Classic Series Cap

Same as Model C30P above with

- 6-point Flex-Gear® ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Case quantity: 20; minimum order: 20

### C33P Classic Series Hat

- High-density polyethylene shell
- Full profile, full-brim
- 6-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS6PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1, Class E & G requirements
- Case quantity: 10; minimum order: 20



### C33R

### Classic Series Hat

Same as Model C33P above with

- 6-point Flex-Gear ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Case quantity: 10; minimum order: 20

### C34P Classic Series Hat

- High-density polyethylene shell
- Extra-large full-brim
- 12% more interior space than the C33 model
- 6-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS6PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements
- Case quantity: 10; minimum order: 20



### C34R Classic Series Hat

Same as Model C34P above with

- 6-point Flex-Gear ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Case quantity: 10; minimum order: 20

Replacen	nent Parts • Accessories	p. 19-24
Customiz	ation • Shell color chart	p. 28-32
Faceshiel	d brackets • Visors	p. 33-40

# Classic Series High Heat Hard Hats and Caps

To meet the demands of high heat environments, Bullard produces hats and caps in technologically advanced thermoplastic materials. Constructed from the same materials as our rugged firefighter helmets, Bullard Models 911C and 911H are ideal for utilities, welding, foundries and steel mills. Select either the RS6PC self-sizing pinlock suspension or the FRS6RC Sure-Lock® non-slip ratchet suspension. Both suspensions feature 1" (2.54 cm) wide nylon straps and a cotton removable brow pad for superior absorbency and comfort. Vertical adjustment hanger keys on the front and rear positions of the headband form the basis for a truly customized fit. Hard hats and caps can be printed with company logos or safety slogans in up to six colors in virtually any lateral position on the shell. Worker visibility can be increased with Scotchlite® reflective stripes or small reflective strips in a variety of colors and a broad range of reflectivity.

Models 911C and 911H Helmets meet or exceed ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements.

### 911CP

### High Heat Cap

- High-heat resistant thermoplastic outer shell
- 6-point self-sizing pinlock suspension (RS6PC)
- Cotton brow pad (RBPCOTTON)
- Meets or exceeds ANSI/ISEA Z89.1-2009 Type I, Class E & G requirements
- Case quantity: 20; minimum order: 10



### High Heat Cap

Same as Model 911CP above with

- 6-point Sure-Lock® ratchet suspension (FRS6RC)
- Cotton brow pad (RBPCOTTON)
- Case quantity: 20; minimum order: 10



### 911HP

911HR

### High Heat Hat

- High-heat resistant thermoplastic outer shell
- Full-brim model
- 6-point self-sizing pinlock suspension (RS6PC)
- Cotton brow pad (RBPCOTTON)
- Meets or exceeds ANSI/ISEA Z89.1-2009 Type I, Class E & G requirements
- Case quantity: 10; minimum order: 10



### High Heat Hat

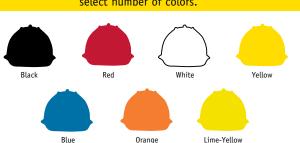
Same as Model 911HP above with

- 6-point Sure-Lock ratchet suspension (FRS6RC)
- Cotton brow pad (RBPCOTTON)
- Case quantity: 10; minimum order: 10



### Available Colors

The High Heat Hard Hats and Caps are available in a select number of colors.



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Customization • Shell color chart	p. 28-32
Faceshield brackets • Visors	p. 33-40

# Standard Series Hard Hats and Caps

### Style and versatility.

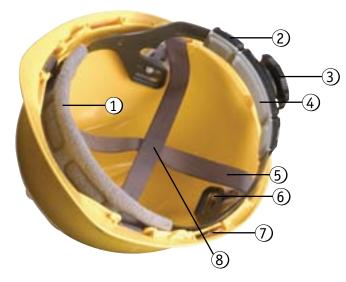
The Standard by Bullard takes style and versatility to a new level. A low-profile shell, along with the Bullard three-rib design and patented suspension system, provide maximum comfort with a look workers prefer.

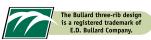
### Meets OSHA and ANSI Requirements

Bullard Models S51, S61 and S71 conform to all OSHA and ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements, including impact, penetration and electrical insulation. Bullard Model S62 (vented) conforms to all OSHA and ANSI/ISEA Z89.1-2009, Type I, Class C requirements, including impact and penetration. Model S51 also conforms to CSA Z94.1-2005, Type 1, Class E & G requirements.

### **Decoration**

Bullard Logo Shop uses state-of-the-art technology to imprint your company's logo or safety slogan. Whether the design is one color or six, it can be reproduced accurately, quickly and inexpensively. No other manufacturer offers a decoration program that is as easy, fast or reliable.

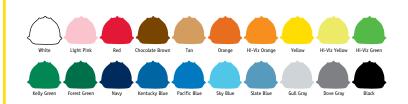




- 1. Pillowed Brow Pad in Vinyl, Cotton or Polartec
- 2. Flex-Gear® Ratchet System
- 3. Ratchet Sizing Knob
- 4. Nape Cushion with Flex Points
- 5. Seamless Nylon Crown Straps
- 6. Easy to Adjust Vertical Height Settings
- 7. Accessory Slots for Attachments
- 8. Four-point Balanced Suspension



**Available Colors** 



# Standard Series Hard Hats and Caps

### **S51P** Standard Series Cap

- High-density, polyethylene shell with flat front, low-profile design
- Accessory slots for attachments
- Rain trough brim
- 4-point self-sizing pinlock suspension with poly brow pad (RS4PP)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G and CSA Z94.1-2005, Type 1, Class E & G requirements
- Case quantity: 20; minimum order: 20

### **S51R** Standard Series Cap

Same as Model S51P above with

• 4-point Flex-Gear® ratchet suspension with poly brow pad (RS4RP)

### **S61P** Standard Series Cap

- High-density, polyethylene shell with rounded front, low-profile design
- Accessory slots for attachments
- 4-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS4PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements
- Case quantity: 20; minimum order: 20

### S61R Standard Series Cap

Same as Model S61P above with

• 4-point Flex-Gear ratchet suspension with large, absorbent cotton brow pad (RS4RC)

### **S62P** Standard Series Cap

- Vented shell
- High-density, polyethylene shell with rounded front, low-profile design
- Accessory slots for attachments
- 4-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS4PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class C requirements
- Case quantity: 20; minimum order: 20

### S62R Standard Series Cap

Same as Model S62P above with

• 4-point Flex-Gear ratchet suspension with large, absorbent cotton brow pad (RS4RC)

### **S71P** Standard Series Hat

- $\bullet$  High-density, polyethylene shell with a full, brim, low-profile design
- 4-point self-sizing pinlock suspension with large, absorbent cotton brow pad (RS4PC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI/ISEA Z89.1-2009, Type I, Class E & G requirements
- Case quantity: 10; minimum order: 20

### **S71R** Standard Series Hat

Same as Model S71P above with

 4-point Flex-Gear ratchet suspension with large, absorbent cotton brow pad (RS4RC)









S62R





### Classic Series Replacement Parts and Accessories

Replacement Suspensions for Models C30, C33 and C34

RS6PC

- 6-pt. Suspension
  - 6-point self-sizing pinlock suspension
  - Large, absorbent cotton brow pad
  - Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
  - Vertical height adjustments (two front, three rear)
  - For Models C30, C33 and C34



### RS6RC

### 6-pt. Suspension

- 6-point Flex-Gear ratchet suspension
- Large, absorbent cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- Vertical height adjustments (two front, three rear)
- For Models C30, C33 and C34



Replacement Suspensions for Models 911C and 911H  $\,$ 

FRS6RC

- 6-pt. Suspension
  - Same as above, but with Sure-Lock® Ratchet
  - For Models 911C and 911H manufactured after 2007



<sup>\*</sup>No self-sizing pinlock suspension available

### Standard Series Replacement Parts and Accessories

Replacement Suspensions for Models S51, S61, S62 and S71

### RS4PC

- 4-pt. Suspension
  - 4-point self-sizing pinlock suspension
  - Large cotton brow pad
  - Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
  - Vertical height adjustments (two front, two rear)
  - For Models S51, S61, S62 and S71



### RS4RC

### 4-pt. Suspension

- 4-point Flex-Gear® ratchet suspension
- Large cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- For Models S51, S61, S62 and S71



### RS4PP

### 4-pt. Suspension

- 4-point self-sizing pinlock suspension
- Large poly brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Vertical height adjustments (two front, two rear)
- For Models S51, S61, S62 and S71



### RS4RP

### 4-pt. Suspension

- 4-point Flex-Gear ratchet suspension
- Large poly brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- For Models S51, S61, S62 and S71



### Q: How do I determine the model number of my hard hat?

A: It's easy. Look under the brim of the hat or cap; the model number is molded right into the brim.



### Classic and Standard Series Replacement Parts and Accessories

### **RBPCOTTON**

### **Brow Pad**

- Large, absorbent cotton replacement brow pad
- Fits all Bullard suspensions
- Easy, velcro design



#### **RBPVINYL**

### **Brow Pad**

- Vinyl replacement brow pad
- Fits all Bullard suspensions
- Easy, velcro design



### **RBPCOOL**

### **Brow Pad**

- Polartec® replacement brow pad
- Wicking material moves sweat away from the worker's brow
- Fits all Bullard suspensions
- Easy, velcro design



### R160

### Ratchet Cover

- Leather ratchet cover
- Fits all Bullard ratchet suspensions



### ES42

### Chinstrap

- Elastic chinstrap
- For Models S51, S61, S62, S71, C30, C33, C34, 911C, 911H, and Bump Cap



### R50

### Chinstrap

- Nomex® chinstrap with postman's slide fastener
- For Models S51, S61, S62, S71, C30, C33, C34, 911C, 911H, and Bump Cap



### GC100

### Goggle Clips

- Self-adhesive
- Set of three





### 30013

### Slot Plugs

- Flexible plugs for hard hat accessory slots
- Set of two
- For Models S51, S61, S62, and C30

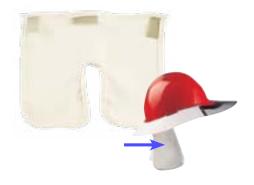


### Classic and Standard Series Hot Weather and UV Accessories

Bullard offers hard hat wearers a variety of inexpensive accessories that help block the sun's dangerous ultraviolet rays, keep workers cool and enhance their productivity on the job. While Bullard hard hats and caps shade the worker's head from direct sunlight, these accessories provide added protection from the discomforts associated with overexposure to the sun.

#### CSS Sunshade

- 100% cotton sunshade
- For all helmets, hard hats and caps
- Protects neck from sun exposure and UV radiation
- Attaches with three Velcro® strips that are provided
- Hard hat not included



#### SS5 Sun Shield

- "See through" front for overhead visibility
- Extends hat brim 360 degrees to protect face, neck and ears from sun exposure
- Fits Models S51, S61, S62, C30 and 911C
- Hard hat not included



#### SS<sub>6</sub> Sun Shield

Same as Model SS5 above

- Fits Models S71, C33, C34, and 911H
- Hard hat not included

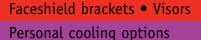


### **UBG**

Underbrim Anti-Glare Decal

- Reduces glare
- For all helmets, hard hats and caps
- Hard hat not included





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# Reflective Striping

Reflective Stripes for Classic and Standard Series Hats and Caps

Single color reflective Scotchlite® brand stripes are available for improved visibility and work group identification. Bullard offers striping in two locations - around the brim and between the ribs (two stripes) of the hat.

To receive stripe pricing and delivery for multi-colored stripes or special requirements, please contact Bullard Customer Service. An application fee will apply (per hat) if Bullard applies the striping.



### **Striping Options for Classic Series**

**ST1R** Reflective Stripe (available colors listed below)

- Reflective single-color stripe for application around brim of cap/hat
- 1 1/16" wide x 23" long



- 500 CPL silver stripe for application around brim of cap/hat
- 1 1/16" wide x 23" long

**ST1RORG175** Fluorescent Reflective Stripe

- 175 CPL orange stripe for application around brim of cap/hat
- 1 1/16" wide x 23" long

ST2R Single-color Stripes (available colors listed below)

- Reflective single-color stripe for application between ribs of cap/hat
- 3/4" wide x 20" long

# $\|$

### **Striping Options for Standard Series**

STRSS Reflective Stripe (available colors listed below)

- Reflective single-color stripe for application around brim of cap/hat
- 1" wide x 21 1/2" long

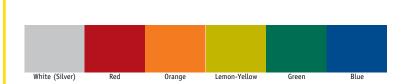
STRSS500 Highly Reflective Stripe

- 500 CPL silver stripe for application around brim of cap/hat
- 1" wide x 21 1/2" long

STRSSORG175 Fluorescent Reflective Stripe

- 175 CPL orange stripe for application around brim of cap/hat
- 1" wide x 21 1/2" long

### Standard Stripe Colors for ST1R, ST2R and STRSS



# **Reflective Striping**

Reflective Stripes for Classic and Standard Series Hats and Caps



### **Candle Power of Reflective Stripes**

Bullard Model Number	Stripe Daytime Color	Stripe Reflected Color	Typical Brightness (Candle Power)
STRSS/ST1R/ST2RWHT	White	White	100
STRSS/ST1R/ST2RRED	Red	Red	20
STRSS/ST1R/ST2RORG	Orange	Orange	25
STRSS/ST1R/ST2RYLW	Yellow	Yellow	60
STRSS/ST1R/ST2RGRN	Green	Green	15
STRSS/ST1R/ST2RBLU	Blue	Blue	10
ST1R500	Silver	White	500
STRSS500	Silver	White	500
ST1RORG175	Fluorescent Red-Orange	White	175
STRSSORG175	Fluorescent Red-Orange	White	175
R538	Silver	White	500
R540	Fluorescent Lime-Yellow	White	175
R541	Fluorescent Red-Orange	White	175

Custom striping available upon request.



# **Bump Caps**

Designed for industries such as meat and food processing, utility meter reading, pest control, fruit harvesting and auto repair, models Bump Cap (BC) and First Base® offer a variety of user options. Bullard bump caps provide limited protection against minor bumps and abrasions, but are not designed for applications requiring ANSI approved head protection.

### **Bullard Bump Cap**

The Bullard Bump Cap offers wearers a sleek style combined with user comfort and maximum versatility to provide the ultimate protection against minor bumps, bruises and lacerations. Equipped with a technologically advanced double hoop design for greater reinforcement and druability along with an easy-to-assemble user replaceable suspension, the Bullard Bump Cap offers unmatched comfort with a secure fit.

### First Base®

The First Base bump cap combines comfort and protection for the wearer in the style of a baseball cap. It has a lightweight design and benefits in strength and protection from a molded ABS inner liner. An inner foam pad is also included to provide all-day user comfort. The simple one-size-fits-all adjustment ensures a superior fit for all workers.

Model FB2000 comes standard with eight large eyelet holes for superior ventilation. A non-vented model (FB2001) is also available. Monogramming is available for a fully customized look.



**Available Colors** 



# **Bump Caps**

### **Bullard Bump Cap**

BC

Bullard Bump Cap

- Double-hoop design for greater durability
- 4-point adjustable suspension system (BCHBV)
- Accommodates the widest array of head sizes of any bump cap on the market ranging from 6 3/8" to 8 1/4"
- Compatible with Bullard Brackets 100G, 300B, and 300BW
- Compatible with all Bullard visors
- Case quantity: 25; minimum order: 25





### **Bullard Bump Cap Replacement Parts**

**Replacement Suspensions** 

**BCHBV** Replacement Suspension w/ Vinyl Brow Pad (shown)

**BCHBP** Replacement Suspension w/ Poly Brow Pad

**Replacement Brow Pads** 

BCRBPV Replacement Vinyl Brow Pad BCRBPP Replacement Poly Brow Pad



**ES42** 2-Point Elastic Chinstrap



# **Bump Caps**

### First Base®

FB2000

Ventilated Cap

- Eight large, sewn eyelet holes
- ABS liner
- Foam pad



FB2001

Non-ventilated cap

- ABS liner
- Foam pad



Available in 10 colors: Navy Blue, Royal Blue, Dark Green, Red, Yellow, White, Fluorescent Orange, Khaki,

Grey and Black.



### First Base Replacement Parts

**FBFOAM** 

Foam Pad for First Base Bump Cap



### **Custom Embroidery Available**

- 24 piece minimum on custom embroidered caps
- Logos can be embroidered on front of cap
- Embroidered sample provided for approval
- One time digitization fee on initial order contact Customer Service for details



### Customizing your hard hats has never been easier on **Build Your Bullard!**

The hard hat is one of the most recognized pieces of safety equipment on any work site. Take advantage of this opportunity to advertise company products or services, improve worker visibility and identify worker differentiation. Whether you supply camera-ready artwork or your logo on a business card or letterhead, Bullard will create a hard hat that comes alive to promote your organization's unique identity.

- No artwork charges
- · No set-up charges
- Free proofs
- 20-piece minimum
- · Quickest delivery in the industry

Pad printed logos are permanent and will not peel, crack or fade like a decal or sticker. Bullard uses the latest technology available to print clear, crisp logos in up to six different colors per logo up to eight different locations around the cap - on any Bullard helmet, hat or cap. We also offer a variety of Scotchlite® striping options in various colors and reflectivity. Stripes can be applied around the brim or between the ribs of the hat. Decorative stripe colors are available to accent your custom logo, or use fluorescent and highly reflective stripes to improve worker visibility.

Build Your Bullard lets you customize your hard hat quickly and easily. Just log on to www.buildyourbullard.com to configure your hat.

Hard Hat Shell Color Selection Chart

STANDARD COLORS	Abbreviation	PMS Color	ADVENT	VECTOR	S51, S61, S62, S71	911C, 911H	C30, C33, C34, BC
White	WH	n/a	•	•	•	•	•
Light Pink	LP	1895C			•		•
Red	RD	186C	•	•	•	•	•
Chocalate Brown	СВ	469			•		•
Tan	TN	729C			•		•
Orange	OR	173C	•	•	•	•	•
Hi-Viz Orange	НО	021C		•	•		•
Yellow	YL	109C	•	•	•	•	•
Hi-Viz Yellow	HY	387C		•	•		•
Hi-Viz Green	HG	361C			•		•
Kelly Green	KG	7725C			•		•
Forest Green	FG	3425C		•	•		•
Navy	NB	289C		•	*		*
Kentucky Blue	KB	301C	•	•	•	•	•
Pacific Blue	PB	300C			•		•
Sky Blue	SK	2985C			*		*
Slate Blue	SL	549C			*		*
Gull Gray	GG	428C			*		*
Dove Gray	DG	424C			•		•
Black	ВК	n/a			•		•

- - Cap/hat available in this color at a standard four business day lead time.
- ★ Cap/hat available in this color at an extended 10 business day lead time.

Special colors available: 500 piece minimum. Call the Bullard Customer Service Department for pricing and lead time. Must furnish PMS number or color match sample.

### **Brilliant Headgear!**

### **High-Visibility Colors:**

colors make workers more visible than ever. In choosing a color it is important to consider the work surroundings. Available in hi-viz orange, green and yellow, you can select the most appropriate contrasting color for the job site to ensure that workers get noticed. These true fluorescent colors are visible under a black light and provide the greatest visible color impact. The Hi-Viz Yellow also meets the non-mandatory ANSI/ISEA Z89.1-2009 hi-visibility standard.



Logo Size Chart (by hat model)

Hat/Cap Model	Dimensions	Ma	Maximum Size		
		Front	Side	Back	
S51	Width (length) Height	2 <sup>1</sup> /8" 2 <sup>3</sup> /4"		2 <sup>3</sup> / <sub>4</sub> " 2 <sup>1</sup> / <sub>2</sub> "	
S61, S62	Width (length) Height	2 ¹/₄" 2"	3 <sup>1</sup> / <sub>4</sub> " 1 <sup>1</sup> / <sub>2</sub> "	2" 2"	
	Width (length) Height	2" 2"	3 <sup>3</sup> / <sub>4</sub> " 1 <sup>3</sup> / <sub>4</sub> "	2 <sup>3</sup> / <sub>4</sub> " 1 <sup>3</sup> / <sub>4</sub> "	
C30, C33, C34 911C, 911H	Width (length) Height	2 <sup>3</sup> / <sub>4</sub> " 2 <sup>1</sup> / <sub>2</sub> "	4" 1 <sup>3</sup> / <sub>4</sub> "	2 <sup>3</sup> / <sub>4</sub> " 2 <sup>1</sup> / <sub>2</sub> "	
Advent® A1, A2, Vector	Width (length) Height	3" 3"	4" 1 <sup>3</sup> / <sub>4</sub> "	3" 3"	
ВС	Width (length) Height	3" 1 ¹/₂"	2 <sup>1</sup> / <sub>2</sub> " 2"	1 <sup>1</sup> / <sub>2</sub> " 1 <sup>1</sup> / <sub>4</sub> "	

Models S61, S62 and S71 have a low profile with more curvature, which may require that some logos be printed smaller than listed above. Bullard will print all logos to maximum size allowed based on the logo design and shape. Bullard must receive artwork before exact logo size can be determined.

Note: The size may vary on square or rectangular logos.

The location of the logo must be specified on the Bullard decoration order form. Artwork is reduced or enlarged proportionately to the maximum width or height to achieve the optimal logo size, unless a specific, smaller size is requested. Lines under 1/32" should be avoided.



### How do I get a hard hat logo order started?

Simple. If your customers have 20 pieces or more (that's the minimum), go to **www.buildyourbullard.com** to configure your hat. This includes hat style and color, position of the logo on the hat and the colors used in the logo. This will not only clarify exactly what the customer wants, but will also compile all the information needed.

# How should I submit a logo to the Bullard Logo Shop?

Ask the customer for "vector" or "line art." This is usually a file with an extension of .eps, .fh, .ai and sometimes .pdf. (Don't worry if this is a file type you can't open, just send it to us and we'll check it out for you.) If a .jpeg, .tiff or .pdf file is all that is available, Bullard will need to re-create the logo, but there's no charge for this. It does, however, increase the time it takes to produce a proof for your customer.

If absolutely no digital file is available, we can also scan highquality printed versions of the logo.

Digital files can be e-mailed to bullardart@bullard.com.

# Does printing a logo on a hard hat cause a big delay in delivery?

Our turnaround time is the best in the industry.

### Where can I find the information I need?

Contact the person who created the logo at your customer's company. The customer may want to check with a printer who has printed anything with the logo on it for the appropriate artwork. You will also need Pantone color numbers for the logo, which can most likely also be found from this person.

Because color is highly subjective, and different computer monitors and printers show colors differently, the Pantone Matching System (PMS) is the universally accepted system to identify colors.

Can't find a Pantone number? Your customers can select a Bullard hard hat color for use in their logos.

### Where can logos be printed?

Your customer can choose among eight locations on the hat: front center, back center, front and back temples, and the sides.

### I still have questions.

Still have questions? Feel free to call Customer Service at (877) BULLARD or e-mail us at **decospecialist@bullard. com**. We're always happy to help you in any way we can... you're our partner in providing the best possible product to our customers.

### Mixing Cap Colors or Models on an Order

- Colors: A minimum order of 20 pieces is required per cap/hat color. Colors can be mixed (with minimums of 20 per color) to meet a larger logo price break, providing that the logo and configuration remain the same.
- Models: Cap and hat models cannot be mixed to meet a logo price break.

### Logo Archiving

Bullard will archive logos for up to 24 months. If a logo has not been used within two years, we request that new artwork be submitted.

### Tips for getting camera-ready artwork:

- 1. Ask your customer for vector or line art or the original art used to print business cards, signs, letterhead, etc.
- 2. Ask for art that can been converted to points and paths, and includes any embedded files.
- 3. Remember, in most cases, neither you nor your customer may be able to open the file. That's usually the file we need.



### Stock Logos

If you don't have your own artwork to use on your decorated Bullard hard hat, you might find something in our selection of stock logos. Just indicate the number on your deco order form and tell us where to imprint the art.

# Stock Logos Available:















www.bullard.com www.buildyourbullard.com



# **Face Protection**

### Headgear, Brackets and Visors Sentinel Series Headgear

For the ultimate value in lightweight, comfortable face protection, Bullard Sentinel Series headgear is the obvious choice.

All Sentinel Series headgear include two sizing features for enhanced comfort. The ratchet adjusts the headband to sizes  $6^{1/2}$ " to 8", and it will not slip from the selected size. The crown strap conforms to the shape of the head. The brow pad, made of Sportek<sup>TM</sup> and offered exclusively by Bullard, pulls moisture away from the skin, creating a drier, more comfortable fit. Brow pads are hand washable and replaceable. Sentinel easily accommodates both primary eye protection and half-facepiece style respirators.

### Hard Hat Mounted Face Protection

When the job calls for both head and face protection, choose from our complete line of nylon or gold anodized aluminum brackets. Brackets are available in several mounting styles that attach securely to Bullard hard hats and caps.

Dielectric brackets are formed from lightweight, durable nylon and are ideal for general duty applications. Bullard Gold Line brackets are constructed from rugged, gold anodized aluminum. They are highly resistant to corrosion and heat, and are ideal for chemical handling and high-heat industrial applications.

### **Visors**

Bullard visors conform to ANSI/ISEA Z87.1-2010 standard for eye and face protection when used in combination with Bullard headgear or faceshield.

### **Bullard Visor Applications**

		ALCOHOL: NAME OF TAXABLE PARTY.		ES A SEC	
Activity	Hazards	Impact Protection Needed	Suggested Visor Material	Appropriate Bullard Visor Models	
Chemical handling	Chemical splash or spill, acid burns, fumes, glass breakage	Z87	Acetate, Tritan	640M, 840M, 1040, CS40, 680T, 840MX2, 840TX2, 840T, 860T, 880T, WS60TM	
Laboratory operations	Chemical splash or spill, acid burns, fumes, glass breakage	Z87	Acetate, Tritan	640M, 840M, 1040, CS40, 680T, 840MX2, 840TX2, 840T, 860T, 880T, WS60TM	
Grinding	Flying particles, dust	Z87+	Polycarbonate, Tritan	640P, 840P, 860P, 880P, WS60PM, 680T, 840PX2, 840TX2, 840T, 860T, 880T, WS60TM	
Sawing	Flying particles, dust	Z87+	Polycarbonate, Tritan	640P, 840P, 860P, 880P, WS60PM, 680T, 840T, 860T, 880T, WS60TM	
Machining	Flying particles, mists, vapors	Z87+	Polycarbonate, Tritan	640P, 840P, 860P, 880P, WS60PM, 680T, 840PX2, 840TX2, 840T, 860T, 880T, WS60TM	
Medical examinations, first aid	Contact with body fluids/bloodborne pathogens	Z87	Acetate, Tritan	640M, 840M, 1040, CS40, 680T, 840PX2, 840TX2, 840T, 860T, 880T, WS60TM	
Pesticide/fertilizer application	Chemical splash or spill, airborne chemicals	Z87	Acetate, Tritan	640M, 840M, 1040, CS40, 680T, 840T, 860T, 880T, WS60TM	
Spray cleaning, (dirt, grime, etc.)	Flying particles, mists, splash	Z87	Polyester	840ME, E840ME	
Molten metal handling	Molten splash	Z87	Polycarbonate	680P, 840P, 840PX2, 840TX2, 860P, 880P, WS60PM	
Tree trimming	Flying particles	Z87	Mesh Screen	6S24, 8S24	



### Sentinel Headgear

The Bullard Sentinel Series headgear offers the ultimate value in lightweight, comfortable face protection. This lightweight molded ABS plastic headgear is non-conductive when used with a non-conductive visor. It includes a Flex-Gear® ratchet suspension and a Sportek™ brow pad to pull moisture away from the skin. Availible with or without a chin protector.

#### SENTINEL1

Faceshield Headgear

- Faceshield sold separately
- Standard headgear with black ABS crown protector
- Sure-Lock® ratchet sizing with Sportek™ brow pad (TT3)
- For use with Bullard faceshields
- Meets or exceeds ANSI/ISEA Z87.1-2010



#### SENTINEL2

Faceshield Headgear

- Faceshield sold separately (840TX2, 840MX2 or 840PX2 only)
- Standard headgear with black ABS crown and chin protector combination
- Sure-Lock ratchet sizing with Sportek brow pad (TT3)
- Meets or exceeds ANSI/ISEA Z87.1-2010



#### CP1

Chin Protector

- Black ABS replacement chin protector
- For use with 840MX2, 840PX2, and 840TX2



Chin Protector

- Clear polycarbonate replacement chin protector
- For use with 840MX2, 840PX2, and 840TX2



#### 840MX2

Visor

- 8" x 15" x .040"
- Clear flat acetate visor for use with Sentinel 2 headgear
- For use with Sentinel 2 headgear
- Holes at bottom of visor to accommodate chin protector Should be used with Sentinel 2, CP1/CP2 only
- Meets ANSI/ISEA Z87.1-2010, Z87, Basic Impact Testing Requirements



#### 840PX2

Visor

- 8" x 15" x .040"
- Clear heat-formed polycarbonate visor
- For use with Sentinel 2 headgear
- Holes at bottom of visor to accommodate chin protector Should be used with Sentinel 2, CP1/CP2 only
- Meets ANSI/ISEA Z87.1-2010, Z87+, High Impact Testing Requirements



#### 840TX2

- 8" x 15" x .040"
- Clear heat-formed Tritan™ visor
- For use with Sentinel 2 headgear
- Holes at bottom of visor to accommodate chin protector Should be used with Sentinel 2, CP1/CP2 only
- Meets ANSI/ISEA Z87.1-2010, Z87+, High Impact Testing Requirements







# Nylon Brackets

Dielectric brackets are formed from lightweight, durable nylon and are ideal for general-duty applications.

#### 300B

#### Dielectric Bracket

- Front mounting nylon bracket
- For cap style Models S51, S61, S62, C30, Advent, and Bump Cap



#### 300BW

#### Dielectric Bracket

- Front mounting nylon bracket with neoprene gasket
- For cap style Models S51, S61, S62, C30, Advent, and Bump Cap



#### 312B

#### Dielectric Bracket

- Front mounting nylon bracket
- For full-brim hat Model S71, C33, and C34



#### 400

#### Dielectric Bracket

- Front mounting nylon bracket with blades for accessory slot attachment
- For slotted cap style Models S51, S61, S61, and C30



#### 400W

#### Dielectric Bracket

- Front mounting nylon bracket with neoprene gasket and blades for accessory slot attachment
- For slotted cap style Models S51, S61, S61, and C30



**Visor Options** 

p. 37-40

#### **Aluminum Brackets**

Gold Line brackets are constructed from rugged, gold anodized aluminum. They are ideal for chemical handling and high-heat applications.

#### 100G

#### Gold Line Bracket

- Front mounting aluminum bracket
- For cap style Models S51, S61, S62, C30, 911C, and Bump Cap



#### 110G

#### Gold Line Bracket

- Back mounting aluminum bracket
- For cap style Models S51, S61, S62, C30, and 911C



#### 112G

#### Gold Line Bracket

- Front mounting aluminum bracket
- For full-brim hat Models S71, C33, C34, and 911H



#### 500M

#### Gold Line Bracket

- Front mounting aluminum bracket with blades for accessory slot attachment
- For cap style Model C30





Visor Options p. 37-40

#### Multi-Fit Faceshield Visors

Bullard visors are designed to provide limited protection to the face from many hazards. When used with Bullard brackets, all visors conform to ANSI/ISEA Z87.1-2010 for faceshields. For maximum versatility, all Bullard visors fit all Bullard brackets and most competitive models. These visors are available in a variety of materials and sizes for specific applications, environments and performance needs.

#### Flat Multi-Fit Acetate Visors

#### 1040

#### Visor

- 10" x 15" x .040"
- Clear flat acetate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 640\*

#### Visor

- 6" x 15" x .040"
- Clear flat acetate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 640G\*

#### Visor

- 6" x 15" x .040"
- Dark green flat acetate visor for all Bullard brackets and several competitive models
- 14± 4 percent visible light transmittance
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 840M

#### Visor

- 8" x 15" x .040"
- Clear flat acetate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 840MG

#### Visor

- 8" x 15" x .040"
- Dark green flat acetate visor for all Bullard brackets and several competitive models
- 14± 4 percent visible light transmittance
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### **CS40**

- 9" x 19 3/4" x .040"
- Clear flat acetate visor for all Bullard brackets and several competitive models
- Specially designed for chemical splash applications
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



<sup>\*</sup>Not a multi-fit visor

#### Multi-Fit Faceshield Visors

#### Heat-Formed Multi-Fit Acetate Visors

#### 840MH

#### Visor

- 8" x 15" x .040"
- Clear heat-formed acetate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 860H

#### Visor

- 8" x 15" x .060"
- Clear heat-formed acetate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### Heat-Formed Multi-Fit Polycarbonate Visors

#### 680P\*

#### Visor

- 6" x 15" x .080"
- Clear heat-formed polycarbonate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### 840P

#### Visor

- 8" x 15" x .040"
- Clear heat-formed polycarbonate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### 860P

- 8" x 15" x .060"
- Clear heat-formed polycarbonate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements





<sup>\*</sup>Not a multi-fit visor

#### Multi-Fit Faceshield Visors

#### Heat-Formed Multi-Fit Polycarbonate Visors

#### 880P

#### Visor

- 8" x 15" x .080"
- Clear heat-formed polycarbonate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### WS60PM

#### Visor

- 9" x 19 3/4" x .060"
- Clear polycarbonate visor NOT heat-formed for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### Multi-Fit Tritan™ Visors

#### 680T

#### Visor

- 6" x 15" x .080"
- Clear heat-formed Tritan visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### 840T

#### Visor

- 8" x 15" x .040"
- Clear heat-formed Tritan visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### 860T

- 8" x 15" x .060"
- Clear heat-formed Tritan visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### Multi-Fit Faceshield Visors

#### Multi-Fit Tritan Visors

#### 880T

#### Visor

- 8" x 15" x .080"
- Clear heat-formed polycarbonate visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### WS60TM

#### Visor

- 9" x 19 3/4" x .060"
- Clear Tritan visor NOT heat-formed for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 High Impact Testing Requirements



#### Multi-Fit Polyester Visors

#### 840ME

#### Visor

- 8" x 15" x .040"
- Clear flat polyester visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### **E840ME**

#### Visor

- 8" x 15" x .040"
- Clear flat disposable economical visor for all Bullard brackets and several competitive models
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### Mesh Screen Visor

#### 8524\*

#### Visor

- 8" x 15" x 24 mesh
- Mesh black steel screen with aluminum band visor fits all Bullard brackets
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### 6S24\*

#### Visor

- 6" x 15" x 24 mesh
- Mesh black steel screen with plastic band visor fits all Bullard brackets
- Meets ANSI/ISEA Z87.1-2010 Basic Impact Testing Requirements



#### **Visor Material Performance**

	Acetate	Tritan	Polycarbonate	Polyester	Mesh Screen
Clarity	Best	Better	Better	Good	N/A
Chemical splash	Best	Better	Fair	Low	N/A
Alkalines	Best	Better	Fair	Better	N/A
Acids	Best	Better	Fair	Better	N/A
Solvents	Good	Good	Good	Good	N/A
Temperature resistance	Good	Better	Best	Low	8S24 (Metal) Best 6S24 (Plastic) Low
Impact & penetration	Good	Better	Best	Low	Good
Fog resistance	Better	Good	Good	Good	Best
Scratch resistance	Best	Better	Best	Better	Best
UV radiation	Fair	Better	Best	Fair	N/A

<sup>\*</sup>Not a multi-fit visor

# ISOTHERM® Cool Vest

# The future of body temperature management.

#### **Isotherm Cool Vest**

Bullard revolutionary Isotherm technology offers unparalleled cooling power. Unlike ice or gel packs that steadily lose their effectiveness, Bullard Isotherm Cool Vests will remain at a CONSTANT 55° F for hours of cooling. Isotherm can help reduce the chance of heat-related illnesses that sometimes occur in today's difficult work environments. Isotherm is lightweight, quickly recharged and does not leave condensation. It uses a simple, interchangeable, front/back cool pack system that provides continuous cooling to the worker's upper body. The vests are easily adjustable for maximum comfort and flexibility.

The Isotherm 2 provides cooling for approximately  $2^1/2$  hours. The period of cooling depends solely on work activity and environmental conditions. Dark blue vest material is flame retardant. Fits medium to extra-large sizes. Weight: 6.5 lbs. (2.9kg)

#### **Isotherm Replacement Packs**

No waiting. No down time. Keep extra cool packs ready for instant on-site changes. Made of specially engineered plastic, Isotherm packs are designed to expand up to 400% without damage. The cooling agent within the pack is a safe, non-toxic and non-carcinogenic formulation. Cool packs may be re-energized thousands of times providing hours of safe, controlled body temperature management. Placed in a cooler of ice water, the cool packs will fully recharge in approximately 20 minutes. However, ice water is not necessary as the phase change technology actually begins recharging the packs whenever they are placed in an environment that is cooler than 55° F.



# **ISOTHERM Cool Vest**

#### ISO2HY

Isotherm 2 Fluorescent Yellow

- Cooling vest, fits medium to large sizes (32"-42")
- Includes vest and one set of packs
- Fluorescent yellow fabric

#### ISO2HYXL

Isotherm 2 Fluorescent Yellow Extra-Large

- Cooling vest, fits XL and 2XL sizes (42"-52")
- Includes vest and one set of packs
- Fluorescent yellow fabric

#### **IS02**

#### Isotherm 2

- Cooling vest, fits medium to large sizes (32"-42")
- Includes vest and one set of packs
- Dark blue, flame retardant fabric



#### Isotherm 2 Extra-Large

- Cooling vest, fits XL and 2XL sizes (42"-52")
- Includes vest and one set of packs
- Dark blue flame retardant fabric

#### ISO2P

#### Replacement Packs

- For ISO2, large vest
- One set of two packs (front and back)



#### ISO2V

#### Replacement Vest

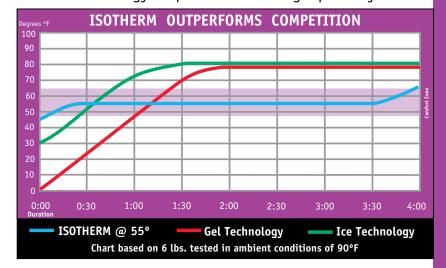
- ISO2, medium to large sizes (32"-42")
- Includes vest only
- Dark blue, flame retardant fabric

#### IS02XLV

#### Replacement Vest

- ISO2, XL and 2XL sizes (42"-52")
- Includes vest only
- Dark blue, flame retardant fabric

Constant temperature phase-change technology outperforms ice and gel packs by hours





# The Turtle Club

# The Turtle Club: For People Who Do Things Right!

#### Founded 1946

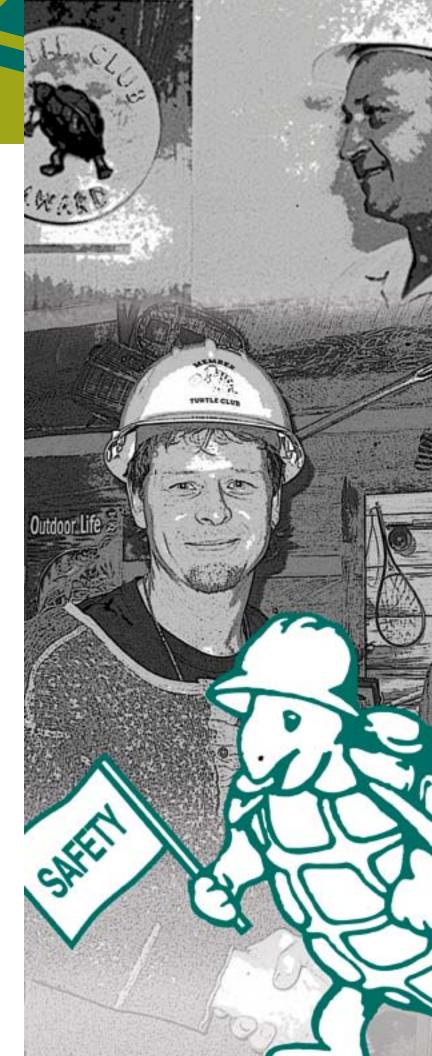
Most news is made when things go wrong, but shouldn't employees get recognition for doing things right? That's the reason the Turtle Club was founded. This organization is dedicated to saving lives and preventing injuries by promoting the acceptance and use of hard hats. Industrial accidents can happen anytime and anywhere, so wearing required head protection can reduce the risk of serious injury. The Turtle Club honors men and women who escaped injury because they were wearing hard hats at the time of industrial accidents.

#### A Different Kind of Safety Incentive

Safety professionals are always looking for new ways to promote safety both on and off the job. While incentives and awards programs are excellent, most focus on accident prevention. The Turtle Club is a participatory program for workers that have proven to be a valuable adjunct to traditional industry head protection safety efforts.

#### Over 50 Years and Still Going Strong

The Turtle Club was founded in 1946 by C. R. "Rusty" Rustemeyer, Safety Director at Canadian Forest Products, Ltd. In 1950, Mr. Edward W. Bullard, Sr., was then appointed the Turtle Club sponsor. This appointment was particularly appropriate since, in 1919, Mr. Bullard developed the industry's first universally accepted hard hat, the original "Hard Boiled" hat. Today the club's international sponsor is Mr. E. D. "Jed" Bullard, grandson of E. W. Bullard. Because of Jed Bullard's commitment and efforts, interest in the club remains active, and membership continues to grow.



# The Turtle Club

#### A Tradition Continues

Membership requirements for The Turtle Club are the same today as they were in 1946. Men and women who have escaped serious injury by wearing hard hats can be nominated for membership by their supervisor or company safety director. Each new member receives a new hard hat, membership certificate, membership card, Turtle Club pin and Turtle Club decal. There are no dues or membership fees.

#### A Dedication to Safety

Members of the club pledge to "Practice safety, wear head protection when necessary and to conscientiously encourage others to do so." This pledge, though more than 60 years old, is just as important today as it was six decades ago.

#### Joe Navarrete, Bullard Turtle Club Member:

"While rigging combustion turbine air and fuel line piping on the bed of a pitman boom truck, Joe Navarrete's foot slipped. As he stood up to regain his balance, he stepped off the edge of the truck bed, landing on his right knee, left elbow, and his head. He stood up after the fall, actually returned to work the next day, sore and bruised but definitely happy that his Bullard hard hat saved his life."

-Chris Bornhauser





# Respiratory Protection and Air Quality Products

Blasting and Grinding • Painting and Powder Coating • Welding Clean Room Applications • Pharmaceutical Manufacturing • Infection Control • Hospital Preparedness • Chemical Handling

# Warnings, Regulations, Standards and Protection Factors Research for Respirators

#### Q: What do these abbreviations mean?

#### A: Key Respiratory Terms

**APF** - Assigned Protection Factor (APF) is the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program.

**IDLH** – Immediately Dangerous to Life and Health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere.

<u>MUC</u> - Maximum use concentration (MUC) means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class or respirators and the exposure limit of the hazardous substance. MUC = APF x PEL or IDLH concentration (whichever is lower).

NIOSH - National Institute for Occupational Safety & Health (www.cdc.gov/niosh) is a research organization that approves respirators.

<u>OSHA</u> – Occupational Safety & Health Administration (www.osha.gov) is an enforcement agency that ensures workplaces are following the standards detailed in 29CFR1910.134 and other standards.

PEL - The Permissible Exposure Limit (PEL) is the contaminant concentration enforced by OSHA.

#### Q: How do I select a respirator?

#### A: Respirator Selection

According to OSHA, it is the responsibility of the employer to evaluate workplace hazards (if any) and implement appropriate controls to protect the worker. When engineering and/or administrative controls aren't technically or financially feasible, PPE may be used to protect the worker. When respiratory PPE is needed, the following steps may be helpful as you select a respirator:

- 1. Analyze the hazard
- 2. Assess physical characteristics of work area
- 3. Assess the demands of the work
- 4. Evaluate respirator capabilities and limitations
- 5. Select an air source
- 6. Select a head top

	Bullard Work Systems						
						5	7
Industry	Spectrum Series	FAMB Series	88VX Series	CC20 Series	GR50 Series	EVA Series	PA30IS Series
Painting	•	•	•	•	•	•	•
Chemical Handling	•	•		•		•	•
Abrasive Blasting			•				
Grinding					•	•	
Healthcare				•		•	
Pharmaceutical Manufacturing				•		•	•
General Industry	•	•	•	•	•	•	•
Welding		•				•	

# Respiratory Protection: Questions and Answers

#### Q: What agencies regulate respiratory protection?

A: There are numerous agencies that are involved in one or more of the following: testing and approving respirators, establishing standards and enforcing standards. These agencies include: American National Standards Institute (ANSI), Compressed Gas Association (CGA), National Institute of Occupational Health (NIOSH), Mine Safety Health Administration (MSHA) and Occupational Safety & Health Administration (OSHA). NIOSH, under the jurisdiction of the U.S. Department of Public Health and the Center for Disease Control (CDC), is the primary agency for testing and approving respirators. OSHA, under the U.S. Department of Labor, is the primary agency for enforcing respiratory protection standards.

# 



# Respiratory Protection: Questions and Answers

#### Q: What is a protection factor?

A: Assigned Protection Factors (APFs) provide employers with key information about a respirator's expected ability to reduce the level of hazardous particles, gases and vapors present in the work environment that reach the worker's breathing zone. Proper respirator selection is based on the respirator's APF number, the concentration of the hazard and fit testing. These are components of an OSHA-compliant respiratory protection program. The OSHA recognized APFs for different types of respirators are found in the table below:

#### TABLE 1.—ASSIGNED PROTECTION FACTORS 5

Type of respirator *-2	Quarter mask	Half mask	Full face- piece	Helmet/ hood	Loose-fitting facepiece
Air-Purifying Respirator	5	310	50		
Powered Air-Purifying Respirator (PAPR)     Supplied-Air Respirator (SAR) or Airline Respirator		50	1,000	425/1,000	25
Demand mode		10	50		
Continuous flow mode		50	1,000	425/1,000	25
Pressure-demand or other positive-pressure mode		50	1,000		
Demand mode     Pressure-demand or other positive-pressure mode (e.g., open/		10	50	50	
closed circuit)			10,000	10,000	

Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

<sup>2</sup>The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as re-

quired by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

3 This APF category includes filtering facepieces, and half masks with elastomeric facepieces.

4 The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

Employers select respirators by comparing the exposure level found in the workplace and the maximum concentration of the contaminant in which a particular type of respirator can be used (the Maximum Use Concentration or MUC). Employers generally determine the MUC by multiplying the respirator's Assigned Protection Factor (APF) by the contaminant's exposure limit (PEL). If the workplace level of the contaminant is expected to exceed the respirator's MUC, the employer must choose a respirator with a higher APF. This can be determined with the following equation: PEL X APF = MUC. The numbers listed on this chart are the numbers that OSHA enforces to the best of our knowledge. For this reason, be sure to consult regulatory standards and/or your local OSHA representative. The Assigned Protection Factors herein do not constitute a recommendation by Bullard for the use of any respirator herein for any hazard.

Footnote 4 in essence states that in order to use an APF of 1000, the respirator manufacturer shall provide evidence to the employer that the respirator demonstrates performance at a level of protection equal to or greater than 1000. Bullard has long been a leader in protection factor research. See pages 51 and 92 for the hood and helmet type respirators that have proven APFs of 1000 and the study that validates it.

#### ▲ WARNING

Consult product literature and instruction manuals for information on the proper function, use and maintenance of these respirators. Before using a Bullard respirator, Federal Law requires the employer to identify and evaluate the respiratory hazard(s) in the workplace including a reasonable estimate of employee exposure to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Do not exceed maximum use concentrations established by OSHA, EPA, NIOSH, ACGIH or other regulatory standards.

In accordance with Title 42 Code of Federal Regulations Part 84 and 29 CFR 1910.134, respirator repairs or adjustments shall be made using only Bullard NIOSH approved parts designed for the respirator. Use of any other parts on these respirators VOIDS NIOSH APPROVAL. Failure to follow these instructions could result in death or serious injury.

# Powered Air Purifying Respirators (PAPRs)



# What is a Powered Air-Purifying Respirator?

Powered Air Purifying Respirators (PAPRs) use a battery-powered fan to draw in ambient air through filter cartridges. The purified air is then delivered to the user's hood, helmet or facepiece via a breathing tube. A flow indicator is provided to check that there is an adequate volume of air available to the wearer prior to use. There are many different PAPR configurations available to best meet the needs of your working environment.

#### Configuring a Powered-Air Purifying Respirator System

There are many choices to make when piecing together various components of a Powered Air-Purifying Respirator System. The following steps may help simplify this intimidating task:

- Choose Blower
- Choose Belt
- Choose Head Top
- Choose Suspension or Hard Hat
- Choose Breathing Tube
- Choose Filter Cartridge
- Choose Charger

# **OSHA Assigned Protection Factors for PAPRs**

For loose fitting hoods or helmet style respirators, the employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study of equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

#### **Bullard Product Assigned Protection Factors**

Bullard Product	Respirator Type	NIOSH TC #	APF	3rd Party Validation	
EVA with CC20 Series* and RT Series*	PAPR with Loose-Fitting Hood	21C-0836	1,000	RDECOM Study 2009	
EVA with PASPEC	PAPR with Full Face Mask	APR with Full Face Mask 21C-0844		OSHA Standard	
EVA with FAMB2	PAPR with Half Mask	21C-0846	50	OSHA Standard	
PA30IS with CC20 Series*	PAPR with Loose-Fitting Hood	21C-0796, 23C-2306, 23C-2307	1,000	RDECOM Study 2006	
PA30IS with RT Series	PAPR with Loose-Fitting Hood	21C-0796, 23C-2306, 23C-2307	1,000	RDECOM Study 2006	

<sup>\*</sup> inner bib models

# Powered Air Purifying Respirators (PAPRs)

#### **PAPR Selection Chart**

#### 1. Choose Blower



• EVA



• PA3IS - Intrinsically Safe

#### 2. Choose Belt



• PA1SB - Nylon Standard, Comfort Pad • PA1EB - Nylon extension



• PA1DB - Vinyl Decon PA1DEB - Vinyl extension
 EVAEB - Vinyl extension
 EVAEB - Vinyl extension



• EVABELT1-Comfort Decon • EVABELT2 - Vinyl Decon



#### 3. Choose Head Top



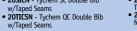
• 20TJN - Tychem QC Single Bib • 20TPN - With Solvent-Resistant Lens



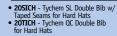
• 20TICN - Tychem QC Double Bib • 20TPCN - With Solvent-Resistant



• 20SICN - Tychem SL Double Bib









20LFM - Loose-Fitting Facepice, Medium
 20LFL - Loose-Fitting Facepiece, Large
 20LF2S, 20LF2M, 20LF2L - Narrow



RT3 - Tychem QC Double Bib with Extra-Large Lens\*
 RT4 - Tychem SL Saranex Coated Double Bib with Extra-Large Lens and Taped Seams\*
 GRH Nomex Grinding Hood for EVA

Output

Outpu





PASPECML, PASPECS - Full Facepiece, for FVA



• FAMB2L, FAMB2M, FAMB2S -

#### 4. Choose Supsension or Hard Hat



• 20RT - Adjustable Flex-Gear Ratchet Headband Suspension



• C30R - With 6-point Flex-Gear Ratchet Suspension



• S51R - With 4-point Flex-Gear Ratchet Suspension



• 20NC - Chinstrap, for Hoods



• ES42 - Chinstrap, for Hard Hats

#### **Choose Breathing Tube**



- PA1BT 26" for Hoods
- PA1BTXS 22" for Hoods PA1BTXL 32" for Hoods



For EVA

• PA20LFBT - 32" for 20LF • PA20LFBXS - 26" for 20LF • PA20LFBTXL - 38" for 20LF



PA4BT - 33' for PASPEC



for FAMB2

#### 6. Choose Filter Cartridge and Accessories



PAPRFC3 - HE



PAPRPFCOVER2 -Pre-Filter Cover/



PAPRFC4 - OV/AG/HE



PAPRPF2 -Pre-Filter for EVA



PAPRSC2 - Decon Shower Cap for EVA HE



PAPRSC3 - Shower Cap for EVA OVAGHE



PAPRFC1 - High Efficiency Particulate (HEPA) Filter

For PA30IS

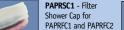


PAPRFC2 - Organic Vapor (OV), Acid Gas (AG), HEPA (HE)



PAPRPF1 - Paint sprav

PAPRPFCOVER1 - Pre-filter cover, both for PAPRFC1 and PAPRFC2





PA3NBC -AG/AM/MA/FM/HE

#### 7. Choose Charger



• PA3ISC - Quick Charger for PA3IS



• PA3ISGC - Gang Charger for PA3IS



• EVASMC - Smart Charger, Single Port



• EVAGC - Gang Charger, 6 Port

# EVA Powered Air-Purifying Respirator

#### Reliable, Easy-To-Use Technology

EVA was uniquely designed for all-day worker comfort. Engineers studied the motions, actions and requests from experts in the field to design the most comfortable and user-friendly PAPR on the market.

#### Visual Fuel Gauge

The easy to read fuel gauge displays remaining battery capacity at a glance. Wearers can check battery status at any time while using EVA.

#### **Active Flow Technology™**

Another innovation from Bullard, Active Flow Technology automatically responds to a worker's need for more or less air flow. This intelligent system is continuously working to maintain constant air flow, regardless of filter type, hood type, filter loading, or battery capacity.

#### **Integrated Alarms**

Two distinct audible alarms notify wearers of low battery and low air flow. These alarms are designed so the sound of the alarm travels through the breathing tube directly to the wearer's ear.

#### Durability

EVA is powered by a long-lasting 10,000-hour brushless motor. Unlike other motors that can quickly wear out, this durable brushless motor is designed for long-term reliable use.

#### **Single Combination Filter**

EVA offers a single combination filter for easy use. While other manufacturers' PAPRs may require up to three combination filters, EVA makes it simple, with an easy-to-install combination filter.

#### Filter Locking Tab

EVA helps ensure positive filter installation with a single click. The filter locking tab notifies the user that the filter is in place with both a visual indication and audible click.

#### **Distinctive Ergonomic Design**

The streamlined form factor of EVA makes it lightweight, eliminates bulky corners that can dig into the wearer's back and balances the unit's weight for maximum comfort.



### **EVA Systems**

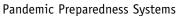
A complete EVA Series Respirator consists of the following four components:

- 1. Respirator hood, full facepiece, half mask or loose-fitting facepiece
- 2. Breathing tube assembly
- 3. EVA1 blower assembly with belt
- 4. Purifying Filter Cartridges

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

Approval No. TC-21C-0836, 21C-0844 21C-0846

#### **EVA Series Assemblies**



- Assemblies include blower, belt, battery, air flow indicator, breathing tube, head top

**EVAPAN1** PAPR System with 20LF2L loose fitting facepiece,

HE Filter, Single Charger

**EVAPAN2** PAPR System with 20LF2L loose fitting facepiece,

HE Filter, No Charger



#### PAPRs with Loose Fitting Facepieces

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube, head top with sewn-in suspension. (filter not included)

**EVA20LFL** PAPR System with 20LFL loose fitting facepiece **EVA20LFM** PAPR System with 20LFM loose fitting facepiece

EVA20LF2L PAPR System with 20LF2L loose fitting facepiece
EVA20LF2M PAPR System with 20LF2M loose fitting facepiece
EVA20LF2S PAPR System with 20LF2S loose fitting facepiece







<sup>\*</sup>Add DB suffix for decon belt

# **EVA Series Powered Air-Purifying Respirator**

# **EVA Systems**

#### PAPRs with Single Bib Hoods

- Assemblies include blower with internal battery, breathing tube, charger and air flow indicator (filter not included)

**EVA20TJ** PAPR System with 20TJ hood (acetate lens) **EVA20TP** PAPR System with 20TP hoods (polyester lens)

\*Add DB suffix for decon belt



#### PAPRs with Double Bib Tychem QC Hoods

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube, head top and ratchet suspension (filter not included)

EVA20TIC PAPR System with 20TICR hood (acetate lens)

EVA20TPC PAPR System with 20TPCR hood (polyester lens)

EVA20TICS PAPR System with 20TICSR hood (acetate lens long)

outer bib, taped seams)

**EVART3** PAPR System with RT3 hood (oversized acetate lens

and no headband)

\*Add DB suffix for decon belt



#### PAPRs with Double Bib Hoods and Head Protecion

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube, head top and S51R hard hat (filter not included)

**EVA20TICH** PAPR System with 20TICH hood (Tychem QC and

acetate lens)

**EVA20SICH** PAPR System with 20TPC hood (Tychem SL and

acetate lens)

\*Add DB suffix for decon belt



#### **EVA Series Assemblies**

PAPRs with Double Bib Tycem SL Hoods

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube, head top and ratchet suspension (filter not included)

**EVA20SIC** PAPR System with 20SICR hood (acetate lens and taped seams)

**EVART4** PAPR System with RT4 hood (oversized acetate lens and no

headband)

\*Add DB suffix for decon belt



#### PAPRs with Double Bib Nomex Grinding Hoods

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube, head top and ratchet suspension (filter not included)

**EVAGRH** PAPR System with GRHRT hood (acetate inner lens,

detachable outer lens)

\*Add DB suffix for decon belt



#### PAPRs with Full Face Masks

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube and mask (filter not included)

**EVASPECL** PAPR System with Med/Large Spectrum Full Face Mask **EVASPECS** PAPR System with Small Spectrum Full Face Mask

\*Add DB suffix for decon belt



#### PAPRs with Half Face Masks

- Assemblies include blower, belt, battery, charger, air flow indicator, breathing tube and mask (filter not included)

EVAFAML PAPR System with Large FAM2L Half Face Mask
EVAFAMM PAPR System with Medium FAM2M Half Face Mask
EVAFAMS PAPR System with Small FAM2S Half Face Mask

\*Add DB suffix for decon belt



Replacement Headpieces

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# **EVA Series Powered Air-Purifying Respirator**

### **EVA Series Replacement Blowers**

EVA1 Blower Unit only

EVA2 Blower, Belt, EVABAT1 Battery, Charger

EVA3 Blower, Belt, EVABAT1 Battery

EVA4 Blower, Belt, EVABAT1 Battery, HE Filter EVA5 Same as EVA2 w/ EVABAT2 Battery EVA6 Same as EVA3 w/ EVABAT2 Battery Same as EVA4 w/ EVABAT2 Battery EVA7



### **EVA Series Replacement Filters and Cartridges**

PAPRFC3 HE Filter (6 per package)

PAPRFC4 OVAGHE Filter - Organic vapors, Chlorine, Chlorine Dioxide, Sulfur

Dioxide, Hydrogen Chloride, Hydrogen Fluoride and High

Efficiency Particulate (6 per package)

PAPRFC41CP Filter storage cap (3 pack), PAPRFC4 Inlet PAPRFC40CP Filter storage cap (3 pack), PAPRFC3 Outlet







PAPRFC4

**EVA Series Batteries** 

**EVABAT1** Battery (black) for use with hoods **EVABAT2** Battery (green) for use with masks





# **EVA Series Chargers**

**EVASMC** Charger, Single Port **EVASMC2** Charger, Single Port Analyzer

**EVAGC** Charger, Six Port Gang





# **EVA Series Replacement Parts and Accessories**

**EVABELT1** Belt, closed cell, chemically resistant, combination

comfort and decon

**EVABELT2** Belt, closed cell, chemically resistant, vinyl decon EVABELT1

**EVAEXT1** Extender belt





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# **EVA Series Powered Air-Purifying Respirator**

# **EVA Series Replacement Parts and Accessories**

PAPRSUSP1 Suspenders, vinyl

**EVALLKIT** Lever Lock Kit for EVA Back Plate

PAPRSC2 Decon Shower Cap for EVA HE (see p. 50)

PAPRSC3 Decon Shower Cap for EVA OVAGHE (see p. 50)

PAPRPF2 Pre-Filter Shower Cap for EVA OVAGHE (see p. 50)

PAPRPFCOVER2 Pre-Filter Cover for EVA OVAGHE (see p. 50)

**EVABP1** Back Plate for EVABELT1

**EVABP2** Back plate for EVABELT2

**EVABUCKLE** Buckle for EVA

**EVACAPBLK** Vinyl Storage Cap Black

**EVACAPRED** Vinyl Storage Cap Red





EVABUCKLE

**EVALLKIT** 











PAPRSC2

PAPRSC3

PAPRPFCOVER2

PAPRPF2









EVABP1

EVABP2

EVACAPBLK

**EVACAPRED** 

Replacement Headpieces

p. 68-71

# PA301S Powered Air-Purifying Respirator

#### **Charger Technology**

Due to the combined characteristics of the NiMH batteries and the unique design of the Bullard chargers, the NiMH batteries will be kept at peak performance even if left on charge for long periods of time. The Bullard PA3ISC and PA3ISGC chargers offer a trickle charge feature, as well as voltage and temperature monitoring, which help assure that the batteries will be ready next week, next month, even next year!

#### Low Voltage Alarms

In addition to the standard safeguards of a rotometer-style indicator that is used to check airflow prior to donning, Bullard has incorporated advanced technology low voltage alarms into the PA3IS blower systems. The PA3IS uses a mechanical alarm set below the 80 dBA NIOSH maximum, yet loud enough for the wearer to hear. With these patented designs, the alarm is positioned inside the breathing tube and the signal travels into the hood alerting the worker that he needs to exit the contamination area and replace or recharge the battery.

#### **Sealed Power Switch**

The power switch is conveniently located for the worker to reach but is not easy to accidentally switch off or on. The sealed design provides yet another assurance to workers that they are receiving the best protection a PAPR can offer.

#### **Headtop Options**

The Bullard PA30IS Series of PAPRs is approved for use with a wide range of headtops, including the Bullard industry-leading high performance Tychem® hoods and Tychem loose-fitting facepieces. All headtops are also available in supplied air configurations, allowing you to use one headpiece for both supplied air or powered air.

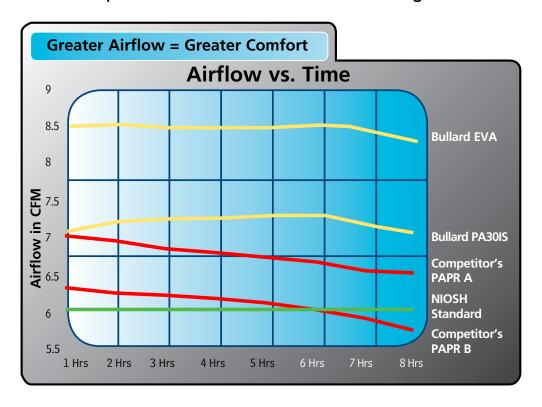
#### **Proven Protection**

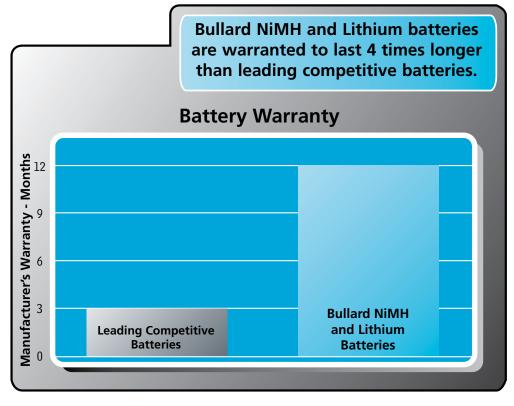
As early as 1994, Bullard has sponsored or been involved with third party independent Protection Factor studies proving the reliability of its Supplied Air Respiratory (SAR) and PAPR products. In the well-documented ORC Study (Industrial Hygiene Association Journal, Vo. 62, pages 595-604, Sept.-Oct. 2001) Bullard SAR hoods performed at the highest level of all manufacturer's SAR hoods tested. Studies conducted in 2004 at RDECOM U.S. Army Research and Development Command) facilities showed that the PA30 PAPR respirator systems performed at the same high levels as the Bullard SAR hoods in the ORC Study. For more detailed information on this Protection Factor Research, please contact Bullard, or visit our website at www.bullard.com.



# Powered Air Purifying Respirators (PAPRs)

Bullard PAPRs provide maximum airflow throughout the entire shift.



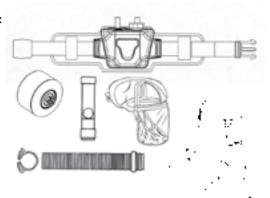


### **PA30IS Systems**

A complete PA30IS Series Respirator consists of the following four components:

- 1. Respirator Hood or Loose-Fitting Facepiece with Suspension
- 2. Breathing Tube Assembly
- 3. Blower Assembly
- 4. Purifying Filter Cartridges

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



Approval No. TC-21C-0773 for High Efficiency (HE) Particulate Protection Approval No. TC-23C-2237 OVAGHE Organic Vapor, Acid Gas, High Efficiency Approval No. TC-23C-2236 NBC Acid Gas, AM, MA, FM, High Efficiency

#### PA30IS Series Assemblies (HEPA, Organic Vapor, Acid Gas Protection)

- assemblies include PA3 blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

PAPRs with 20TJ Single Bib Hoods

PA30ISTJDB 20TJ Single Bib Hood System with Decon Belt

- PA30ISTJSB 20TJ Single Bib Hood System with Standard Comfort Belt
  - Intrinsically safe blower
  - Includes one battery
  - 6-7 hour run time



#### PAPRs with 20TIC Tychem QC Double Bib Hood System

- assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

#### PA30ISTICDB **PA30ISTICSB**

20TIC Double Bib Hood System with Decon Belt 20TIC Double Bib Hood System with Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



PA30IS Series Assemblies (HEPA, Organic Vapor, Acid Gas Protection)

#### PAPRs with 20TICH Tychem QC Double Bib Hood for Hard Hat System

- assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

**PA30ISTICHDBC30R** Double Bib Hood System, Decon Belt, C30R Hard Hat Included **PA30ISTICHDBS51R** Double Bib Hood System, Decon Belt, S51R Hard Hat Included

PA30ISTICHSBC30R Double Bib Hood System, Standard Comfort Belt,

C30R Hard Hat Included

PA30ISTICHSBS51R Double Bib Hood System, Standard Comfort Belt,

S51R Hard Hat Included

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



#### PAPRs with 20SIC Saranex Coated Tychem SL Double Bib Hood Systems

- assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

PA30ISSICDB 20SIC Double Bib Saranex Coated Hood System with Decon Belt

PA30ISSICSB 20SIC Double Bib Saranex Coated Hood System with

Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



#### PAPRs with 20SICH Saranex Coated Tychem SL Double Bib Hood for use with Hard Hat Systems

- assemblies include PA3 blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator

- filter cartridges not included

PA30ISSICHDBC30R Double Bib Saranex Coated Hood, Decon Belt,

C30R Hard Hat Included

PA30ISSICHDBS51R Double Bib Saranex Coated Hood, Decon Belt,

S51R Hard Hat Included

PA30ISSICHSBC30R Double Bib Saranex Coated Hood, Standard Comfort Belt,

with C30R Hard Hat Included

PA30ISSICHSBS51R Double Bib Saranex Coated Hood, Standard Comfort Belt,

S51R Hard Hat Included

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



Replacement Headpieces

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PA30IS Series Assemblies (HEPA, Organic Vapor, Acid Gas Protection)

#### PAPRs with 20TP Tychem QC Single Bib Hood for Painting, Solvent Resistant Lens

- assemblies include blower, breathing tube, 1 hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

#### PA30ISTPDB PA30ISTPSB

20TP Single Bib Hood for Painting System with Decon Belt 20TP Single Bib Hood for Painting System with Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



#### PAPRs with 20TPC Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens

- assemblies include blower, breathing tube, 1 hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

#### PA30ISTPCDB PA30ISTPCSB

20TPC Double Bib Hood for Painting System with Decon Belt 20TPC Double Bib Hood for Painting System with

- Standard Comfort Belt
   Intrinsically safe blower
  - Includes one battery
  - 6-7 hour run time



PA30ISTPCDB shown

#### PAPRs with 20TICS Tychem® QC Double Bib Hood with Taped Seams

- assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

#### PA30ISTICSDB PA30ISTICSSB

20TICS Extra-Long Double Bib Hood System with Decon Belt 20TICS Extra-Long Double Bib Hood System with Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



PA30IS Series Assemblies (HEPA, Organic Vapor, Acid Gas Protection)

#### PAPRs with RT3 Tychem QC Double Bib Hood with Extra-Large Lens, No Suspension Required

 assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator

- filter cartridges not included

#### PA30ISRT3DB PA30ISRT3SB

RT3 Extra-Large Lens Double Bib Hood System with Decon Belt RT3 Extra-Large Lens Double Bib Hood System with Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



#### PAPRs with RT4 Saranex Coated Tychem SL Double Bib Hood with Extra-Large Lens, No Suspension Required

 - assemblies include blower, breathing tube, one hood, quick charger, low voltage alarm and air flow indicator

- filter cartridges not included

#### PA30ISRT4DB PA30ISRT4SB

RT4 Extra-Large Lens Double Bib Hood System with Decon Belt RT4 Extra-Large Lens Double Bib Hood System with Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



PA30ISRT4DB shown

#### PAPRs with 20LFL Loose-Fitting Facepiece

- assemblies include blower, breathing tube, one loose-fitting facepiece, quick charger, low voltage alarm and air flow indicator
- filter cartridges not included

PA30ISLFLDB 20LFL Loose-Fitting Facepiece System with

Decon Belt

PA30ISLFLSB 20LFL Loose-Fitting Facepiece System with

Standard Comfort Belt

- Intrinsically safe blower
- Includes one battery
- 6-7 hour run time



Replacement Headpieces

p. 68-71

# **PA30IS Series Replacement Blowers**

PA3IS Intrinsically Safe Blower Assembly with Standard Belt,

One NiMH battery, Air Flow Indicator and Port Plugs

PA3ISDB Same as PA3IS with Decon Belt
PA3ISBU Intrinsically Safe Blower Unit Only



# **PA30IS Series Replacement Filters**

#### PAPRFC1 HEPA Filters

- Six per package
- PA3PG plug required for use with PAPRFC1 filters (sold separately)
- High efficiency particulate
- Purple label
- 99.97% efficient for .3 microns
- 40 mm thread



#### PAPRFC2

#### OV/AG/HE Filters

- Six per package
- Organic vapors, Chlorine, Chlorine Dioxide, Sulfur Dioxide, Hydrogen Chloride, Hydrogen Fluoride and High Efficiency Particulate
- Yellow/purple label
- 40 mm thread



#### **PA3NBC**

#### AG/AM/MA/FM/HE Filters

- Six per package
- Chlorine, Chlorine Dioxide, Sulfur Dioxide, Hydrogen Chloride, Hydrogen Fluoride, Ammonia, Methylamine, Formaldehyde and High Efficiency Particulate
- Tan/purple label
- 40 mm thread



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# **PA30IS Series Powered Air Purifying Respirator**

PA30IS Series Replacement Filters

PAPRFC1CP

Vinyl Storage Cap



PAPRSC1

Decon Shower Cap

• For use with PAPRFC1 and PAPRFC2



**PAPRPFCOVER1** Paint Spray Pre-Filter Cover

- For use with PAPRFC1 and PAPRFC2
- 3 per package



PAPRPF1

Paint Spray Pre-Filter

- For use with PAPRFC1 and PAPRFC2
- 120 per package





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# **PA30IS Series Chargers**

PA3ISC Quick Charger for PA3IS

- Charges in six hours
- Single port
- Trickle charge feature
- 110 or 220V; 50 or 60 HZ
- Shipped with U.S. power cord
- Optional cords available for UK, Australia, Japan or Europe

PA3ISCPS Replacement Power Supply and Cord

• Power supply for PA3ISC



PA3ISGC Gang Charger for PA3IS

• Charges in six hours

• Six port

• Trickle charge feature

PA3ISGCPS Replacement Power Supply with Cord

• Power supply for PA3ISGC



**International Power Cords for PA30IS PAPR Systems** 

PA1UCUKCORDPower Cord for Universal Charger, United KingdomPA1UCAUCORDPower Cord for Universal Charger, AustraliaPA1UCJACORDPower Cord for Universal Charger, JapanPA1UCEUCORDPower Cord for Universal Charger, Europe



### **PA30IS Series Batteries**

#### **PA3ISBP**

#### **NiMH Battery Pack for PA3IS**

- Intrinsically safe
- Nickel Metal Hydride (NiMH) Technology
- 6-7 hour run time per battery
- Rechargeable



# **PA30IS Series Belts**

PA1SB

Nylon Standard Belt/Comfort Pad

- Nylon construction
- Adjustable for waist sizes between 28" and 60"
- 7" wide in lumbar region for comfort
- Extra pad in lumbar region for increased comfort

PA1EB

Nylon Extension Belt for PA1SB

• Allows PA1SB to adjust for waist sizes up to 69"



PA1DB

Vinyl Decon Belt

- Smooth vinyl construction wipes down easily
- Adjustable for waist sizes between 28" and 60"
- 7" wide in lumbar region for support

PA1DEB

Vinyl Extension Belt for PA1DB

• Allows PA1DB to adjust for waist sizes up to 69"



PA30IS Series Replacement Components and Accessories

PA3ISAT Low-Voltage Alarm Test Kit for PA30IS Blower

• Simulates low-voltage condition to test alarm functionality

**PA3ISATUNIV** 

Low-Voltage Alarm Test Kit for PA30IS Blower, with Universal Adaptors

• Includes adaptors for United Kingdom, Australia, United States and Europe



PA1LSK

Blower Latch and Screw Kit

• Contains four latches and 16 screws





PA3PG

Plug for Blower Port

- Plug one port when using two HEPA filters
- Plug four ports to decon blower units



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# **PAPR Replacement Head Pieces**

# Loose-Fitting Facepieces

NIOSH Approved with: PA20, PA30, PA30IS, EVA

20LFL Loose-Fitting Facepiece, Large
20LFM Loose-Fitting Facepiece, Medium

• Sewn in suspension

Latex-free

• Quick-attach twist lock connection

Ten per package

20LF2L Loose-Fitting Facepiece with Narrow Profile, Large - 7 1/2" - 8 1/2"

• Sewn in suspension

• Latex-free

• Quick-attach twist lock connection (Black)

• Ten per package

**20LF2M** Same as 20LF2L, Medium - 7" - 7 1/2" **20LF2S** Same as 20LF2L, Small - 6 3/8" - 6 7/8"



## Single Bib Tychem QC Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

**Acetate Lens** 

**20TJ** Tychem QC Single Bib Hood, Pinlock Suspension **20TJN** Tychem QC Single Bib Hood, No Suspension

10 per package9" long bib

**PETG Lens** 

**20TP** Tychem QC Single Bib Hood for Painting, Solvent Resistant Lens,

**Ratchet Suspension** 

**20TPN** Tychem QC Single Bib Hood for Painting, Solvent Resistant Lens,

No Suspension

10 per package9" long bib



# Double Bib Tychem QC Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

**Acetate Lens** 

**20TIC** Tychem QC Double Bib Hood With Inner Bib,

Ratchet Suspension, No Lens Tissue

 $\bullet$  For use with Bullard hard hat

• 9" long outer bib

• 10 per package

**20TICN** Tychem QC Double Bib Hood with Inner Bib,

No Suspension

**20TICNX** Tychem QC Double Bib Hood With Inner Bib,

No Suspension, No Lens Tissue

RT3 Tychem QC Double Bib Hoods

• Inner Bib,

• 20" long outer bib

• Extra-large lens

• No suspension required

• 10 per package

Sport Neck Cuff





20TIC

RT3

# **PAPR Replacement Head Pieces**

# Double Bib Tychem QC Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

**PETG Lens** 

**20TPC** Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens,

**Ratchet Suspension** 

**20TPCN** Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens,

No Suspension

9" long outer bib10 per package



#### **Taped and Sealed Seams**

**20TICS** Tychem QC Double Bib Hood with Taped Seams, Ratchet Suspension

**20TICSN** Tychem QC Single Bib Hood, No Suspension

ullet19" long outer bib with taped seams

•10 per package



#### For use with Hard Hats

**20TICH** Tychem QC Double Bib Hood, for use with Bullard Hard Hat (Not Included)

**20TICHC30R** Tychem QC Double Bib Hood, with C30R Hard Hat **20TICHS51R** Tychem QC Double Bib Hood, with S51R Hard Hat

9" long outer bib10 per package



# **PAPR Replacement Head Pieces**

### Double Bib Tychem SL Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

### **Acetate Lens**

20SIC 20SICN 20SICNX Tychem® SL Double Bib Hood with Taped Seams, Ratchet Suspension Tychem SL Double Bib Hood with Taped Seams, No Suspension Tychem SL Double Bib Hood with Taped Seams, No Suspension, No Lens Tissue

- 19" long outer bib
- Five per package



### Vinyl Lens

20SICV 20SICVN Tychem® SL Double Bib Hood with Taped Seams, Ratchet Suspension Tychem® SL Double Bib Hood with Taped Seams, No Suspension

- 19" long outer bib
- Five per package



### For use with Hard Hats - Vinyl Lens

20SICVH 20SICVHC30R 20SICVHS51R

Tychem SL Double Bib Hood with Taped Seams, for use with Bullard Hard Hats Tychem SL Double Bib Hood with Taped Seams, includes C30R Hard Hat Tychem SL Double Bib Hood with Taped Seams, includes S51R Hard Hat

- 19" long outer bib
- Five per package



### For use with Hard Hats - Acetate Lens

20SICH 20SICHC30R 20SICHS51R Tychem SL Double Bib Hood with Taped Seams, for use with Bullard Hard Hats Tychem SL Double Bib Hood with Taped Seams, includes C30R Hard Hat Tychem SL Double Bib Hood with Taped Seams, includes S51R Hard Hat

- 9" long outer bib
- Five per package





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# **PAPR Replacement Head Pieces**

# Double Bib Nomex Grinding Hood

### **Acetate Lens**

**GRH** Nomex Grinding Hood

GRHRT Nomex Grinding Hood with Ratchet Suspension
GRH30R Nomex Grinding Hood with C30R Hard Hat
GRHS51R Nomex Grinding Hood with S51R Hard Hat



NIOSH Approved with: EVA

### Full Face Masks NIOSH Approved with: PA40, EVA

PASPECML Spectrum Full Facepiece - Medium/Large for use with PA40
PASPECS Spectrum Full Facepiece - Small for use with PA40



# Half Face Masks NIOSH Approved with: EVA

FAM2L Large Half Mask
FAM2M Medium Half Mask
FAM2S Small Half Mask

• Silicone

• Includes head straps



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# **PAPR Replacement Parts and Accessories**

### PAPR Headpiece Replacement Parts

### **20RT**

Adjustable Ratchet Headband Suspension

- Poly brow pad
- Fits sizes 6½ to 8 (52-64 mm)



### **RBPCOTTON**

**Brow Pad** 

- Large, absorbent cotton replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



### **RBPVINYL**

**Brow Pad** 

- Vinyl replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



### **RBPCOOL**

Brow Pad

- Polartec® replacement brow pad
- $\bullet$  Wicking material moves sweat away from the worker's brow
- Fits all Bullard suspensions
- Velcro closure



### **20NC**

Elastic Chinstrap

- For 20TG and 20RT suspensions
- 10 per package



20LCL

Adhesive-Edged Mylar® Lens Covers for use with

CC20 Series Hoods

• 25 per package

20LCLBP

Same as 20LCL

• Eight packs of 25

RTLC

Adhesive-Edged Mylar® Lens Covers for use with

RT Series Hoods

• 25 per package







### PAPR Head Protection Replacement Parts

### C30R

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density polyethylene shell
- Full profile, wide brim
- Accessory slots for attachments
- 6-point Flex-Gear® ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white



### **S51R**

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density, polyethylene shell
- Flat front, low-profile design
- Accessory slots for cap attachments
- Rain trough brim
- 4-point Flex-Gear ratchet suspension with poly brow pad (RS4RP)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white



# PAPR Head Protection Replacement Parts

### RS6RC

### 6-pt. Suspension

- 6-point Flex-Gear® ratchet suspension
- Large, absorbent cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- Vertical height adjustments (two front, three rear)
- For Models C30R and C33R
- Hard hat not included



### RS4RC

### 4-pt. Suspension

- 4-point Flex-Gear ratchet suspension
- Large Cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- For Model S51R
- Hard hat not included



### **ES42**

### Chinstrap

- Elastic chinstrap
- For Models C30R and S51R



# Breathing Tubes for CC20 Loose Fitting Facepieces

PA20, PA30, PA30IS, EVA

PA20LFBTXL Extra Large Length - 38" Long
PA20LFBT Regular Length - 32" Long
PA20LFBTXS Extra Small Length - 26" Long



# Breathing Tubes for CC20 and RT Hoods

PA20, PA30, PA30IS, EVA

PA1BTXL Extra Large Length - 32" Long
PA1BT Regular Length - 26" Long
PA1BTXS Extra Small Length - 22" Long



## Breathing Tubes for Spectrum Full Face Masks

PA40, EVA

PA4BT Regular Length - 33" Long



# Breathing Tubes for FAMB Half Face Masks

EVA

PAFAMBT Regular Length - 33" Long



### **Breathing Tubes Clamps**

PA20, PA30, PA30IS, EVA

S18051 Breathing Tube Clamp

• 10 per package

S18051BLACK Breathing Tube Clamp, Black

• 10 per package

PA1BTS4 Breathing Tube Seal



S18051 S18051BLACK



PA1BTS4

### **Breathing Tubes Covers**

20QCBTC

PAC2QC

Tychem® QC Breathing Tube Cover

20SLBTC Tychem SL Breathing Tube Cover

• Length 24.5"

**POLYBTC** Clear Poly Breathing Tube Cover Sleeve

• 100 per package

• Length 38"



20QCBTC



PA20, PA30, PA30IS, PA40, EVA

**POLYBTC** 

**PA30, PA30IS, PA40** 

### **PAPR Blower Covers**

Tychem® QC Dust Cover for PAPR and Sleeve for Breathing Tube

(Two holes only, third must be added)



PA20, PA30, PA30IS, PA40, EVA

# **PAPR Storage Bags**

**PAPRBAG** PAPR Storage Bag

• Green vinyl construction

• 22" long

• Includes shoulder strap

• PAPR not included

**PPEBAG** Storage Bag

· Large black rolling duffel

• 11" wide x 13" tall x 25" long

• Includes shoulder strap



### PAPR Air Flow Indications

PA1AFI For Hoods **PA4AFI** For Masks



PA20, PA30, PA30IS, PA40, EVA

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# Respiratory Protection: Questions and Answers

### Q: What standards apply to respiratory protection?

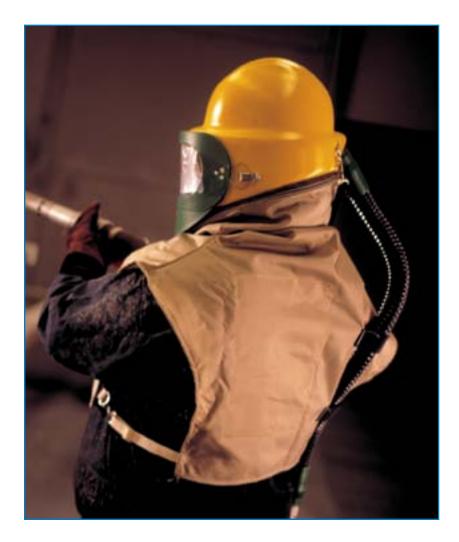
### A: Standards

<u>Breathing Air</u> – The primary standard for breathing air in the US is Grade D, as set by the Compressed Gas Association (www.cganet.com):

- •0xygen 19.5% 23.5%
- •Carbon Monoxide (CO) 10 ppm max\*
- •No noticeable tastes or smells
  - \*in Canada the limit is 5 ppm
- Hydrocarbons or condensed oil 5 mg/m3 max
- •Carbon Dioxide (CO<sub>2</sub>) 1,000 ppm max
- •No toxic contaminants at levels that make the air unsafe to breathe

<u>Respirator System Approval</u> - All Bullard respirators are approved by NIOSH (www.cdc.gov/niosh) in accordance with **Title 42 Code of Federal Regulations Part 84**. These approvals are assigned only to complete systems; components may not be altered or mixed between manufacturers without voiding NIOSH approval.

<u>Respirator Protection Programs</u> - In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, the employer shall establish and implement a written respiratory protection program. These requirements are detailed in the OSHA (www.osha.gov) respiratory protection standard **Title 29 Code of Federal Regulations Part 1910.134** and includes procedures for: selecting respirators; medical evaluations; fit testing; proper use; cleaning, storing and maintaining; ensuring proper air quality; training and evaluating effectiveness.



# Supplied Air Respirators (SARs)



# What is a Supplied Air Respirator?

Supplied Air Respirators deliver breathable air to the worker from a clean air source. The air can come from a variety of sources including high pressure compressors, low-pressure pumps or bottled air cylinders. In addition, Supplied Air Respirators can be configured with a variety of head tops including loose-fitting hoods, helmets, tight-fitting masks (full and half) or loose-fitting facepieces.

### **Supplied Air Respirator Advantages**

There are many advantages to utilizing a Bullard Supplied Air Respirator System, including the ability to protect against a wide array of contaminants without any filter cartridges to purchase or replace. In addition, Bullard Supplied Air Respirators can be configured with heating/cooling tubes to increase worker comfort by as much as 40 degrees Fahrenheit. Finally, Bullard offers the largest selection of available head tops including loose-fitting hoods that do not require fit testing.

### Configuring a Supplied Air Respirator System

There are many choices to make when piecing together various components of a Supplied Air Respirator System. The following steps may help simplify this intimidating task:

- Choose Air Source (Free-Air® Pump or Compressor)
- Choose Head Top
- Choose Suspension and/or Hard Hat
- Choose Breathing Tube
- Choose Flow Control
- Choose Cooling Vest (optional)

### **Bullard Product Assigned Protection Factors**

Bullard Product	Respirator Type	NIOSH TC #	APF	3rd Party Validation
88 Series	Supplied Air Respirator with Loose-Fitting Helmet	19C-293	1,000	LLNL Study 1995
CC20 Series*	Supplied Air Respirator with Loose-Fitting Hood	19C-154	1,000	ORC Study 1997
RT Series	Supplied Air Respirator with Loose-Fitting Hood	21C-0796, 23C-2306	1,000	RDECOM Study 2006, 2009
PC90 Series	Supplied Air Respirator with Loose-Fitting Hood and Containment Suit	19C-280	1,000	Caldwell Study 1994
Spectrum	Supplied Air Respirator with Full Face Mask	19C-321 19C-322	1,000	OSHA Standard
FAMB	Supplied Air Respirator with Half Face Mask	19C-1555	50	OSHA Standard

<sup>\*</sup> inner bib models such as 20TIC, 20TPC, 20TICS, 20TICH, 20SIC, 20SICH, and 20SICV

### Simple, Effective, Ultra-Light

The CC20 Series Tychem® hoods provide a wide variety of simple, effective and economical options for on-the-job respiratory protection. The result is better protection, improved productivity and greater comfort that combines to produce the best value on the market. These hoods are available for use in a CC20 Series Airline Respirator configuration or Powered Air Purifying Respirator configuration. These hoods are approved by NIOSH and recommended by Bullard for use in Type C applications.

### **Proven Performance**

In a 1996 study of hood-style respirators coordinated by the Organization Resources Counselors (ORC), the Bullard Model 20TIC hood was surveyed to be the number one hood used in the pharmaceutical industry.

The most commonly used hoods were then used in a simulated workplace protection factor study (SWPF). The Bullard Model 20TIC hood was also the top-performing loose-fitting hood among a variety of competitors. All measurements in the SWPF study were above 150,000. This research has resulted in OSHA recognizing a 1,000 APF for the Bullard 20TIC hood.

For a summary of this research, call Bullard Customer Service at 1-800-827-0423.

### **Unique Air Delivery System**

A patented neck cuff design helps maintain positive pressure inside the hood to aid in keeping contaminants out. As air enters the hood, the inner collar inflates, providing a snug, comfortable fit around the neck and continuous flow of air to the worker's breathing zone.

### Lightweight, Comfortable and Economical

CC20 Series hoods are lighter and more comfortable than tight-fitting full facepiece respirators. Covering the entire head, face and neck, the hood provides splash and overspray protection and makes clean-up quick and easy.

A wide angle lens offers the largest field of vision among Tychem hood style respirators on the market, optimizing worker productivity and safety.

Available in a variety of styles, the hood is constructed of either DuPont™ Tychem® QC or Tychem SL depending on the job application. Taped and sealed seams are also available to provided additional protection for liquid penetration encountered on-the-job or during decontamination.

### No Fit Testing

The hood does not require fit testing nor extensive recordkeeping. It easily accommodates beards, prescription eyewear or safety glasses.

### Powered Air or Supplied Air

The hood is available for use as a supplied air respirator (CC20 Series) or powered air respirator (PA30IS and EVA Series). The CC20 is a versatile hood suitable for almost any application.



### **CC20 Series Airline Respirator Selection Chart**

### 1. Choose Head Top



•20TPN - With Solvent-Resistant Lens



•20TPCN - With Solvent-

Resistant Lens



•20SICN - Tychem SL Double Bib Hood w/Taped Seams •20TICSN - Tychem QC Double Bib Hood w/Taped Seams



Hood w/Taped Seams, for Hard

•20TICH - Tychem QC Double Bib, Hood for Hard Hats



• 20LFM - Loose-Fitting Facepice,

- 20LFL Loose-Fitting Facepiece,
- 20LF2S, 20LF2M, 20LF2L -

### 2. Choose Head Top



•20RT - Adjustable Ratchet **Headband Suspension** 



•C30R - 6-point Flex-Gear **Ratchet Suspension** 



•S51R - 4-point Flex-Gear Ratchet Suspension

### 3. Choose Breathing Tube



•20BT - Breathing Tube for Hoods



•20LFLBT - Breathing Tube for Loose-Fitting Facepieces

### 4. Choose Flow Control Device



1/4" Continuous Flow •F30, F30B, F30S -Industrial Interchange

- •F31 Schrader
- •F32 Snap-Tite Steel
- •F33 Snap-Tite Brass
- •F34 Snap-Tite Stainless
- •F37 CEJN



1/4" Adjustable Flow •F40, F40B, F40S -Industrial Interchange

- •F41 Schrader
- •F42 Snap-Tite Steel
- •F43 Snap-Tite Brass
- •F44 Snap-Tite Stainless
- •F47 CEJN



1/2" Continuous Flow for Free-Air Pumps •F35, F35B, - Industrial

Interchange



- AC100030S 1/4"
- Stainless
- •AC100037 CEJN



Cool Tubes for Free-Air® Pumps •FRIGITRON2000 -1/2" Industrial Interchange

•FRIGITRON200B - Brass



Hot/Cold Tubes •HC240030, HC240030B, HC240030S - 1/4" Industrial Interchange

- •HC240031 Schrader
- •HC240032 -Snap-Tite Steel
- •HC240033 -Snap-Tite Brass
- •HC240034 -Snap-Tite Stainless
- •HC240037 CEJN

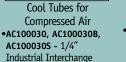
### 5. Choose Cooling Vest System



•DC70ML - Med/Lg Cool Vest •DC70XLXXL - XL/XXL Cool Vest •DC705XL - 5XL Cool Vest



- •DC5040, DC5040B, DC5040S -DUAL-COOL® Industrial Interchange
- •DC5041 DUAL-COOL Schrader
- •DC5042 DUAL-COOL Snap-Tite Steel
- •DC5043 DUAL-COOL Snap-Tite Brass
- •DC5044 DUAL-COOL Snap-Tite Stainless Steel
- •DC5047- DUAL-COOL CEJN





- Brass •AC100034 - Snap-Tite

# 6. Choose Belt and/or Accessories



•4612 - Nylon Belt





•ES42 - Chinstrap for Hard Hats



•20LCL - Lens Covers



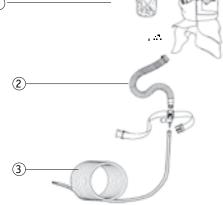
### CC20 Systems

A complete CC20 Series Airline Respirator consists of the following three components:

- 1. Respirator Hood or Loose-Fitting Facepiece with suspension  ${\mathfrak O}$
- 2. Breathing Tube with Flow Control Device
- 3. Breathing Air Supply Hose

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

Approval No. TC-19C-154



### CC20 Series Constant Flow Respirator Systems for Use with Compressed Air

CC20TJ30 Tychem® QC Single Bib Hood System

- 20TJN hood
- 20RT ratchet suspension
- V30 breathing tube assembly with F30 1/4" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt

CC20TP30 Tychem QC Single Bib Hood System

- 20TPN hood
- 20RT ratchet suspension
- V30 breathing tube assembly with F30 1/4" industrial interchange (Hansen compatible) nipple
- 4612 Nylon Belt





Tychem QC Double Bib Hood System

- 20TICN hood
- 20RT ratchet suspension
- $\bullet$  V30 breathing tube assembly with F30  $^{\mbox{\tiny 1}}\!/\!\!/^{\!\prime\prime}$  industrial interchange
- (Hansen compatible) nipple
- 4612 nylon belt

CC20TPC30 Tychem QC Double Bib Hood System

- 20TPCN hood
- 20RT ratchet suspension
- $\bullet$  V30 breathing tube assembly with F30  $^{\mbox{\tiny 1}}\mbox{\sl /4}"$  industrial interchange
- (Hansen compatible) nipple
- 4612 nylon belt
- Solvent-resistant lens



### CC20 Series Constant Flow Respirator Systems for use with Compressed Air

### CC20TICH30

Tychem® QC Double Bib Hood System with Bullard Hard Hat

- 20TICH hood
- Model C30R hard hat with ratchet suspension
- V30 breathing tube assembly with F30 1/4" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt

### CC20TICH30S51

Tychem QC Double Bib Hood System - for Use with Bullard Hard Hat

• Same as above with S51R hard hat with ratchet suspension



### CC20SIC30

Tychem SL Double Bib Hood System with Taped Seams

- 20SICN hood
- 20RT ratchet suspension
- V30 breathing tube assembly with F30 1/4" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt



### CC20LF30

Tychem QC Loose-Fitting Facepiece System

- 20LFL loose-fitting facepiece with sewn in suspension
- X30 breathing tube assembly with <sup>1</sup>/<sub>4</sub>" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt





### CC20 Series Constant Flow Respirator Systems for use with Free-Air® Pumps

CC20SYS One-Worker Respirator System

- CC20TIC35 respirator assembly
- EDP10 Free-Air® pump
- V20100ST air supply hose
- 20LCL lens covers (One pack of 25)

CC20SYS50 Same as above with V2050ST hose



### CC20CABSYS

One-Worker Respirator System

- CC20TIC30 respirator assembly
- CAB15HA
- 4696100 air supply hose
- 20LCL lens covers (One pack of 25)
- AC1000

CC20CABSYS2M Two-Worker Respirator System

- CC20TIC30 (2)
- CAB30IRHA
- 469100 air supply hose (2)
- 20LCL lens covers (One pack of 25)
- AC1000 (2)



### CC20TIC35

Tychem QC Double Bib Hood System

- 20TICN hood
- 20RT ratchet suspension
- V35 breathing tube assembly with F35 1/2" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt

### CC20TICH35

Tychem QC Double Bib Hood System with hard hat

- 20TICH hood
- Bullard Model C30R Hard Hat with ratchet suspension
- V35 breathing tube assembly with F35 1/2" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt

### CC20LF35

Tychem QC Loose-Fitting Facepiece System

- 20LFL loose-fitting facepiece with sewn in suspension
- X35 breathing tube assembly with 1/2" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt

### Loose-Fitting Facepieces

NIOSH Approved with: PA20, PA30, PA30IS, EVA

20LFL Loose-Fitting Facepiece, Large 20LFM Same as 20LFL, Medium

• Sewn in suspension

• Latex-free

• Quick-attach twist lock connection

• Ten per package

20LFL50 Same as 20LFL, 50 per package

20LF2L Loose-Fitting Facepiece with Narrow Profile, Large

20LF2M Same as 20LF2L, Medium **20LF2S** Same as 20LF2L, Small

• Sewn in suspension

Latex-free

• Quick-attach twist lock connection

• Ten per package

20LF2L50 Same as 20LF2L, 50 per package 20LF2M50 Same as 20LF2M, 50 per package 20LF2S50 Same as 20LF2S, 50 per package



### Single Bib Tychem QC Hoods

Double Bib Tychem QC Hoods

**Acetate Lens** 

20TJ Tychem QC Single Bib Hood, Ratchet Suspension 20TJN Tychem QC Single Bib Hood, No Suspension

> • 10 per package • 9" long bib

**PETG Lens** 

**20TP** Tychem QC Single Bib Hood, Ratchet Suspension **20TPN** Tychem QC Single Bib Hood, No Suspension

• 10 per package • 9" long bib



NIOSH Approved with: PA20, PA30, PA30IS, EVA

### NIOSH Approved with: PA20, PA30, PA30IS, EVA

### **Acetate Lens**

**20TIC** 20TICN **20TICNX**  Tychem QC® Double Bib Hood with Inner Bib, Ratchet Suspension Tychem QC Double Bib Hood with Inner Bib, No Suspension Tychem QC Double Bib Hood With Inner Bib, No Suspension, No Lens Tissue

• 9" long outer bib

• 10 per package







### Double Bib Tychem QC Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

**PETG Lens** 

**20TPC** Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens,

**Ratchet Suspension** 

**20TPCN** Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens,

No Suspension

**20TPCNX** Tychem QC Double Bib Hood for Painting, Solvent Resistant Lens,

No Suspension, No Lens Tissue
• 9" long outer bib
• 10 per package



### Taped and Sealed Seams

20TICS
Tychem QC Double Bib Hood with Taped Seams, Ratchet Suspension
Tychem QC Double Bib Hood with Taped Seams, No Suspension

• 19" long outer bib





### For use with Hard Hats

**20TICH** Tychem QC Double Bib Hood for use with Bullard Hard Hat (Not Included)

9" long outer bib5 per package

**20TICH30R** Tychem QC Double Bib Hood, Includes C30R Hard Hat **20TICHS51R** Tychem QC Double Bib Hood, Includes S51R Hard Hat

9" long outer bib1 per package



### Double Bib Tychem SL Hoods

NIOSH Approved with: PA20, PA30, PA30IS, EVA

### **Acetate Lens**

20SIC Tychem® SL Double Bib Hood with Taped Seams, Ratchet Suspension
 20SICN Tychem SL Double Bib Hood with Taped Seams, No Suspension
 20SICNX 20SICN, No Lens Tissue

- 19" long outer bib
- Five per package



### Vinyl Lens

20SICV Tychem® SL Double Bib Hood with Taped Seams, Ratchet Suspension Tychem® SL Double Bib Hood with Taped Seams, No Suspension

- 19" long outer bib
- 5 per package



### For use with Hard Hats - Vinyl Lens

20SICVH
20SICVH30R
Tychem® SL Double Bib Hood with Taped Seams, Hard Hat not included
Tychem® SL Double Bib Hood with Taped Seams, with C30R Hard Hat
20SICVHS51R
Tychem® SL Double Bib Hood with Taped Seams, with S51R Hard Hat

- 9" long outer bib
- 5 per package



### For use with Hard Hats - Acetate Lens

20SICH
20SICHC30R
Tychem® SL Double Bib Hood with Taped Seams, Hard Hat not included
Tychem® SL Double Bib Hood with Taped Seams, with C30R Hard Hat
20SICHS51R
Tychem® SL Double Bib Hood with Taped Seams, with S51R Hard Hat

- 9" long outer bib
- 5 per package



# CC20 Series Headpiece Replacement Parts

### **20RT**

Adjustable Ratchet Headband Suspension

- Poly brow pad
- Fits sizes 6½ to 8 (52-64 mm)



### **RBPCOTTON**

**Brow Pad** 

- Large, absorbent cotton replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



### **RBPVINYL**

Brow Pad

- Vinyl replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



### **RBPCOOL**

**Brow Pad** 

- Polartec® replacement brow pad
- Wicking material moves sweat away from the worker's brow
- Fits all Bullard suspensions
- Velcro closure



### **20NC**

Elastic Chinstrap

- For 20TG and 20RT suspensions
- 10 per package



20LCL

Adhesive-Edged Mylar® Lens Covers

• 25 per package

20LCLBP

Same as 20LCL

• Eight packs of 25



### CC20 Head Protection

C30R

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density polyethylene shell
- Full profile, wide brim
- Accessory slots for attachments
- 6-point Flex-Gear® ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white



**S51R** 

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density, polyethylene shell
- Flat front, low-profile design
- Accessory slots for cap attachments
- Rain trough brim
- 4-point Flex-Gear ratchet suspension with poly brow pad (RS4RP)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white

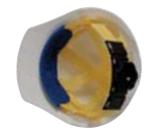


# CC20 Head Protection Replacement Parts

### RS6RC

### 6-pt. Suspension

- 6-point Flex-Gear® ratchet suspension
- Large, absorbent cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- Vertical height adjustments (two front, three rear)
- For Models C30R and C33R
- Hard hat not included



### RS4RC

### 4-pt. Suspension

- 4-point Flex-Gear ratchet suspension
- Large Cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- For Model S51R
- Hard hat not included



### **ES42**

### Chinstrap

- Elastic chinstrap
- For Models C30R and S51R



### CC20 Series Breathing Tube Assemblies for Hoods

- assemblies include 20BT breathing tube, 4612 nylon belt and S18051 clamp

### Constant Flow Assemblies

### Adjustable Flow Assemblies



- With F30 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- For use with compressed air



- With F40 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- For use with compressed air



V31

- With F31 1/4" Schrader quick-disconnect nipple
- For use with compressed air



V41

- With F41 1/4" Schrader quick-disconnect nipple
- For use with compressed air



V32

- With F32 1/4" Snap-Tite steel quick-disconnect nipple
- For use with compressed air



**V42** 

- With F42 1/4" Snap-Tite steel quick-disconnect nipple
- For use with compressed air



**V33** 

- With F33 1/4" Snap-Tite brass quick-disconnect nipple
- For use with compressed air



**V43** 

- With F43 1/4" Snap-Tite brass quick-disconnect nipple
- For use with compressed air



**V35** 

- With F35 1/2" industrial interchange (Hansen compatible) quick-disconnect nipple
- For use with Bullard Free-Air® pumps



### CC20 Series Breathing Tube Assemblies for Loose Fitting Facepieces

- assemblies include 20LFBT breathing tube and 4612 nylon belt

### Constant Flow Assemblies

### Adjustable Flow Assemblies

X30

- With F30 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- For use with compressed air



- With F40 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
  - For use with compressed air



X31

- With F31 1/4" Schrader quick-disconnect nipple
- For use with compressed air



X32

- With F32 1/4" Snap-Tite steel quick-disconnect nipple
- For use with compressed air



X33

- With F33 1/4" Snap-Tite brass quick-disconnect nipple
- For use with compressed air



X35

- With F35 ½" industrial interchange (Hansen compatible) quick-disconnect nipple
- For use with Bullard Free-Air® pumps



### CC20 Series Breathing Tube Replacement Parts

F30 Constant Flow Control Valve

F30VDB

F30B Constant Flow Control Valve, Brass with Nylon Belt

F30S Constant Flow Control Valve, Stainless Steel with Nylon Belt F30SD Constant Flow Control Valve, Stainless Steel with Decon Belt

Constant Flow Control Valve with Vinyl Belt

• 1/4" industrial interchange (Hansen compatible) quickdisconnect nipple

- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- For use with compressed air



F31 Constant Flow Control Valve

• Same as above with 1/4" Schrader quick-disconnect nipple



F32 Constant Flow Control Valve

• Same as F30 above with 1/4" Snap-Tite steel quick-disconnect nipple



F33 Constant Flow Control Valve

• Same as F30 above with 1/4" Snap-Tite brass quick-disconnect nipple



F34 Constant Flow Control Valve

• Same as F30 above with 1/4" Snap-Tite stainless steel quick-disconnect nipple



### CC20 Series Breathing Tube Replacement Parts

F35 Constant Flow Control Valve, Steel F35B Constant Flow Control Valve, Brass

- 1/2" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Nylon belt
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- For use with Bullard Free-Air® pumps





F37 Constant Flow Control Valve

- Same as F35 above with 1/4" CEJN quick-disconnect nipple
- For use with compressed air



F40 Adjustable Flow Control Valve, Steel, Nylon Belt
F40B Adjustable Flow Control Valve, Brass, Nylon Belt
F40S Adjustable Flow Control Valve, Stainless Steel, Nylon Belt
F40VDB Adjustable Flow Control Valve, Vinyl Decon Belt

- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- For use with compressed air



F41 Adjustable Flow Control Valve

- Same as F40 above with 1/4" Schrader quick-disconnect nipple
- Nylon belt



# Supplied Air Respirators

# **CC20 Series Airline Respirator**

# CC20 Series Breathing Tube Replacement Parts

### F42 Adjustable Flow Control Valve

- 1/4" Snap-Tite steel quick-disconnect nipple
- Threaded hose connector
- Nylon belt
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- For use with compressed air



### F43 Adjustable Flow Control Valve

• Same as F42 above with 1/4" Snap-Tite brass quick-disconnect nipple



### F44 Adjustable Flow Control Valve

• Same as F42 above with 1/4" Snap-Tite stainless steel quick-disconnect nipple



### F47 Flow Control Valve

• Same as F42 above with 1/4" CEJN quick-disconnect nipple





# CC20 Series Breathing Tube Replacement Parts

# **20BT** Breathing Tube for Hoods • Nipple not included • S18051 clamp 20LFBT Breathing Tube for Loose-Fitting Facepieces • Nipple not included S18051 Breathing Tube Clamp • 10 per package **S18051BLACK** Breathing Tube Clamp, Black • 10 per package 4612 Nylon Belt 36501 Vinyl Decon Belt 20QCBTC Tychem® QC Breathing Tube Cover 20SLBTC Tychem SL Breathing Tube Cover • Length 24.5" **POLYBTC** Clear Poly Breathing Tube Cover Sleeve • 100 per package • Length 38"



# RT Series <u>Airline</u> Respirator

### **Innovative and Proven**

Similar to the proven design of the Bullard CC20, the top performing hood in the OSHA-acknowledged ORC Study, the RT Series hood family represents a significant improvement in the realm of Tychem® hood protection. In addition to the recognized benefits of hoodstyle respirators (no fit testing, no facial hair issues and eyewear accommodation), the RT Series offers several unique, customer-driven features that make it stand out from other Tychem hoods.

### Patent-pending Air Delivery System

Air flows into the neck cuff and is then directed through a threechannel air delivery system that delivers the air over the user's head, down the front of the lens and into the breathing zone. This unique air delivery method provides for a positive seal, minimizes fogging of the lens, minimizes dry eyes and nasal passages, and provides a reservoir of breathing air to help maintain positive pressure.

### **Panoramic View**

The domed feature of the RT Series hood lens, provides added visibility and allows more light in minimizing the "closed-in," claustrophobic feeling sometimes experienced in other respirator hoods. A latex-free elastic band located in the neck cuff promotes curvature of the lens while aiding in the neck cuff's inflation.

### Long Inner and Outer Bibs

The 20" long outer bibs of the RT Series provide splash protection and feature Velcro® straps that connect the front and rear outer bibs providing a custom fit, eliminating the possibility of the bib "flipping up" during bending or scooping operations and provide added stability to the hood. Inner bibs add an additional barrier between the worker and the contaminants. With the bibs tucked in, the excess air flowing out of the respirator will travel across the user's body, creating a cooling effect.

### Tychem SL (Saranex®) Visual

The RT Series Hood, made from DuPont™ Tychem®, is available in either Tychem QC (RT3) or Tychem SL (RT4). The RT4, constructed of Tychem SL, features taped and sealed seams to minimize the potential for any inward leakage at the sewn seams. Tychem SL is Saranex coated and provides excellent permeation characteristics against more caustic chemicals.

### **Ultimate Disposability**

The RT Series Hood is available as a stand-alone replacement hood for those applications that allow for decontamination and reuse of the breathing tube. For those applications or processes that do not allow for decontamination, the RT Series is available fully assembled with a disposable lightweight breathing tube. After exiting from the area, the user may dispose of the complete assembly.

### RT Series Hoods Perform in SWPF Study

At Bullard's request, the US Army's RDECOM (Research Development and Engineering Command) Center performed a simulated workplace protection factor (SWPF) study using the well-respected ORC Study protocol. Exercises were chosen to simulate activities that may be seen in a pharmaceutical manufacturing application. The RT Series Hood was shown to have 5th percentile SWPFs in excess of 100,000!

### **RT Series Airline Respirator Selection Chart**

### 1. Choose Head Top



•RT3 - Tychem® QC Double Bib Hood



•RT4 - Tychem SL (Saranex coated) Double Bib Hood with Taped Seams

### 2. Choose Breathing Tube



•20BT - Breathing Tube for Hoods



•RTBT - Disposable Breathing Tube

### 3. Choose Flow Control Device

# Dr. Colon

1/4" Continuous Flow •F30, F30B, F30S -Industrial Interchange

- •F31 Schrader
- •F32 Snap-Tite Steel
- •F33 Snap-Tite Brass
- •F34 Snap-Tite Stainless



Cool Tubes for Compressed Air •AC100030, AC100030B, AC100030S - Industrial Interchange

- •AC100031 Schrader
- •AC100032 Snap-Tite Steel

Hot/Cold Tubes
•HC240030, HC240030B,
HC240030S - Industrial
Interchange

- •**HC240031** Schrader
- •HC240032 Snap-Tite Steel

### 4. Choose Belt and/or Accessories



•4612 - Nylon Belt



•36501 - Decon Belt



•RTLC - Lens Covers

### 5. Choose Cooling Vest System



•DC70ML - Med/Lg Cool Vest •DC70XLXXL - XL/XXL Cool Vest

•DC705XL - 5XL Cool Vest



- •DC5040, DC5040B, DC5040S -DUAL-COOL® Industrial Interchange
- •DC5041 DUAL-COOL Schrader
- •DC5042 DUAL-COOL Snap-Tite Steel
- •DC5043 DUAL-COOL Snap-Tite Brass
- •DC5044 DUAL-COOL Snap-Tite Stainless Steel
- •DC5047- DUAL-COOL CEJN

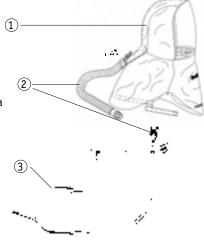
### **RT Systems**

A complete RT Series Airline Respirator consists of the following three components:

- 1. Respirator Hood
- 2. Breathing Tube with Fitting or Optional Climate Control Assembly
- 3. Breathing Air Supply Hose

All three Bullard components must be present and properly assembled to constitute a

Approval No. TC-19C-412, Type C, Continuous Flow Class



### RT Series Constant Flow Respirator Systems for Compressed Air



Constant Flow Respirator Assembly

- RT3 Tychem® QC double bib hood system extra-large lens
- No suspension required
- $\bullet$  V30 breathing tube assembly with F30  $^1\!/\!_4{}''$ Industrial Interchange (Hansen compatible) nipple and 4612 nylon belt
- For use with compressed air
- · Sport neck cuff

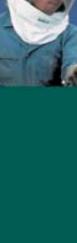


### RT430

Constant Flow Respirator Assembly

- RT4 Tychem SL (Saranex coated) double bib hood system - extra-large lens
- Taped seams
- No suspension required
- V30 breathing tube assembly with F30 1/4" Industrial Interchange (Hansen compatible) nipple and 4612 nylon belt
- For use with compressed air





### RT Series Disposable Respirator Systems

### RT3DA

Constant Flow Disposable Assembly

- RT3 Tychem® QC double bib hood system extra-large lens
- No suspension required
- RTBT lightweight disposable breathing tube assembly
- Preassembled and individually bagged
- Flow control device sold separately
- 10 per package



### RT4DA

Constant Flow Disposable Assembly

- RT4 Tychem SL (Saranex coated) double bib hood system - extra-large lens
- No suspension required
- RTBT lightweight disposable breathing tube assembly
- Preassembled and individually bagged
- Flow control device sold separately
- 5 per package



# RT Series Replacement Hoods



Tychem QC Double Bib Hoods

- Inner bib, 20" long outer bib
- Bib retention straps
- Extra-large lens
- No suspension required
- 10 per package



### RT4

Tychem SL (Saranex coated) Double Bib Hoods

- Inner bib, 20" long outer bib, taped seams
- Bib retention straps
- Extra-large lens
- No suspension required
- 10 per package



# Supplied Air Respirators

# **RT Series Airline Respirator**

# RT Series Breathing Tube Assemblies

V30 Constant Flow Breathing Tube Assembly for Hoods

- 20BT breathing tube
- F30 '/'" industrial interchange (Hansen compatible) quick-disconnect nipple
- 4612 nylon belt
- S18051 Clamp
- For use with compressed air



V31 Constant Flow Breathing Tube Assembly for Hoods

- 20BT breathing tube
- F31 1/4" Schrader quick-disconnect nipple
- S18051 Clamp
- For use with compressed air



V32 Constant Flow Breathing Tube Assembly for Hoods

Same as V31 above with:

• F32 1/4" Snap-Tite steel quick-disconnect nipple



V33 Constant Flow Breathing Tube Assembly for Hoods Same as V32 above with:

• F33 1/4" Snap-Tite brass quick-disconnect nipple



V34 Constant Flow Breathing Tube Assembly for Hoods Same as V32 above with:

• F34 1/4" Snap-Tite stainless steel quick-disconnect nipple



Heating and cooling options

p. 154-158

### RT Series Breathing Tube Replacement Parts

### F30

### Constant Flow Control Valve

- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- 4612 nylon belt
- Connects to 88VXBT, L99BT, 20BT, RTBT or 20LFBT
- For use with compressed air



### F31

### Constant Flow Control Valve

- 1/4" Schrader guick-disconnect nipple
- Threaded hose connector
- 4612 nylon belt
- Connects to 88VXBT, L99BT, 20BT, RTBT or 20LFBT
- For use with compressed air



### F32

### Constant Flow Control Valve

- 1/4" Snap-Tite steel quick-disconnect nipple
- Threaded hose connector
- 4612 nylon belt
- Connects to 88VXBT, L99BT, 20BT, RTBT or 20LFBT
- For use with compressed air



### F33

### Constant Flow Control Valve

- 1/4" Snap-Tite brass quick-disconnect nipple
- Threaded hose connector
- 4612 nylon belt
- Connects to 88VXBT, L99BT, 20BT, RTBT or 20LFBT
- For use with compressed air



### F34

### Constant Flow Control Valve

- 1/4" Snap-Tite stainless steel quick-disconnect nipple
- Threaded hose connector
- 4612 nylon belt
- Connects to 88VXBT, L99BT, 20BT, RTBT or 20LFBT
- For use with compressed air



# RT Series Breathing Tube Replacement Parts

20BT	Breathing Tube for Hoods • Nipple not included • S18051 clamp	
RTBT	Disposable Breathing Tube  • Nipple not included  • S18051 clamp	
S18051	Breathing Tube Clamp • 10 per package	
S18051BLACK	Breathing Tube Clamp, Black • 10 per package	
4612	Nylon Belt	
36501	Vinyl Decon Belt	
20QCBTC 20SLBTC	Tychem® QC Breathing Tube Cover Tychem SL Breathing Tube Cover • Length 24.5"	
POLYBTC	Clear Poly Breathing Tube Cover Sleeve • 100 per package • Length 38"	
RTLC	Adhesive-Edged Mylar Lens Covers • 25 per package	



# PC90 Series Airline Containment Respirator

### Respiratory and Full Body Dermal Protection.

The Bullard PC90 Series Airline Respirator stands apart from other Type C, continuous flow respirators as a NIOSH approved airline respirator that includes a full body containment suit. Designed especially for potent-compound applications, the PC90 respirator provides the wearer with respiratory protection from airborne contaminants and full-body dermal protection to help prevent contaminants from being absorbed by the skin. This exclusive system also helps protect products against contamination during the manufacturing process – an important safeguard in many industries.

### **Complete coverage**

The lightweight, parka-style hood and full-body suit create a strong and tear-resistant physical barrier to airborne contaminants. As a positive pressure device, air pushes outward from the worker, helping protect the worker's respiratory tract and entire body from exposure to airborne contaminants.

### **Durable Material**

The parka-style hood and suit are constructed of high strength, dustfree Tychem® SL, a Tyvek® based material that is laminated with Saranex 23-P. Seams are serged, then taped and sealed to further prevent the entry of airborne contaminants.

### **Enhanced Worker Comfort and Productivity**

The PC90 is made of a lightweight, supple material for easy bending and stretching. For cooling on the job, the respirator is approved for use with the Bullard DC60 DUAL-COOL®, a climate control system that features separate air entries to deliver air to a cooling vest and to the hood, dropping air temperature by as much as 30°F (17°C).

### Reusable or Disposable

The PC90 parka and containment suit are durable enough for limited reuse, yet inexpensive enough to discard after each use, depending on the work application. They are easily decontaminated in air or water decontamination showers.

# **Unique Air Delivery System**

As air enters the hood, the inner air trough inflates, providing a snug, comfortable fit around the neck and a continuous flow of air directly to the worker's breathing zone. Excess air exits from the hood and funnels into the containment suit. The air moves over the body to provide some cooling and exits through one-way exhaust valves.

## No Fit Testing

Hood-style respirators do not require fit testing and elaborate record keeping. The parka-style hood easily accommodates beards, prescription eyewear or safety glasses.



### **PC90 Series Airline Respirator Selection Chart**

### 1. Choose Parka Size



- •PC90ML Medium/Large Respirator Parka
- •PC90XL Extra-Large/XX-Large Respirator Parka
- •PC90XXXL XXX-Large Respirator Parka

### 3. Choose Supsension



•20RT - Adjustable Ratchet Headband Suspension

### 5. Choose Cooling Vest System



- •DC65ML Med/Lg Cool Vest •DC65XLXXL - XL/XXL Cool Vest
- •DC6040, DC6040B, DC6040S -DUAL-COOL® Industrial Interchange
- •DC6041 DUAL-COOL Schrader
- •DC6042 DUAL-COOL Snap-Tite Steel
- •DC6043 DUAL-COOL Snap-Tite Brass
- •DC6044 DUAL-COOL Snap-Tite
- Stainless Steel
- •DC6047 DUAL-COOL CEJN

### 2. Choose Containment Suit



- •CS90S Small Containment Suit
- •CS90M Medium Containment Suit
- •CS90L Large Containment Suit
- •CS90XL Extra-Large Containment Suit
- •CS90XXL XX-Large Containment Suit
- •CS90XXXL XXX-Large Containment Suit

### 4. Choose Breathing Tube with Flow Control



- •C40 Adjustable Flow, 1/4" Industrial Interchange
- •C41 Adjustable Flow Breathing Tube Assembly, 1/4" Schrader
- •C42 Adjustable Flow Breathing Tube Assembly, 1/4" Snap-Tite Steel
- •C43 Adjustable Flow Breathing Tube Assembly, 1/4" Snap-Tite Brass

### 6. Choose Belt and/or Accessories



•4612 - Nylon Belt



•36501 - Decon Belt



•20NC - Chinstrap



20LC - Adhesive-Backed Mylar® Lens Cover

- •25 per package

# **PC90 Series Airline Containment Respirator**

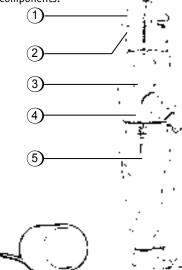
### **PC90 Series Systems**

A complete PC90 Series Airline Containment Respirator consists of the following five components:

- 1. Parka-style Respirator Hood
- 2. Suspension
- 3. Containment Suit
- 4. Breathing Tube Assembly with Optional Climate Control Device
- 5. Breathing Air Supply Hose

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

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



### PC90 Series Parkas

PC90ML Medium/Large Respirator Parka
PC90XL Extra-Large Respirator Parka
PC90XXXL XXX-Large Respirator Parka

- Tychem® SL material
- Seams are taped and thermally sealed
- Includes sewn-in lens
- Suspension, containment suit and breathing tube assembly must be ordered separately



# PC90 Series Headband Suspensions

**20RT** 

Adjustable Ratchet Headband Suspension

- Poly brow pad
- Fits sizes 6½ to 8 (52-64 mm)



20NC

Elastic Chinstrap

- For 20TG and 20RT suspensions
- 10 per package



# **PC90 Series Airline Containment Respirator**

#### PC90 Series Containment Suits

CS90M Medium Containment Suit
CS90L Large Containment Suit
CS90XL Extra-Large Containment Suit
CS90XXL XX-Large Containment Suit
CS90XXXL XXX-Large Containment Suit

- Tychem® SL material
- Seams are taped and thermally sealed
- Four air exhaust valves
- Includes sewn-in glove liners, elastic stirrups and elastic neck closure with barrel cinch



#### PC90 Series Breathing Tube Assemblies

C40 Adjustable Flow Breathing Tube Assembly, Industrial Interchange

- 90BT breathing tube
- 1/4" industrial interchange (Hansen compatible) nipple with adjustable flow control valve
- Vinyl decon belt
- S18051 clamp
- For use with compressed air



• Same as above with 1/4" Schrader nipple with adjustable flow control valve

C42 Adjustable Flow Breathing Tube Assembly, Snap-Tite Steel

• Same as above with 1/4" Snap-Tite nipple, steel with adjustable flow control valve

C43 Adjustable Flow Breathing Tube Assembly, Snap-Tite Brass

• Same as above with 1/4" Snap-Tite nipple, brass with adjustable flow control valve



# **PC90 Series Airline Containment Respirator**

## PC90 Series Replacement Parts and Accessories

90BT **Breathing Tube** • Nipple not included • For use with adjustable flow control valve • S18051 clamp S18051 Breathing Tube Clamp • 10 per package **S18051BLACK** Breathing Tube Clamp, Black • 10 per package 36501 Vinyl Decon Belt 4612 Nylon Belt





**20LC** Adhesive-Backed Mylar® Lens Cover

- Clear
- 25 per package



# **Blasting and Grinding Respirators**



# What are Blasting and Grinding Respirators?

Bullard has been a leader in the abrasive blasting and grinding industry since the 1930s when it developed the supplied air abrasive blasting respirator for the construction of the Golden Gate Bridge. Since then, Bullard has continued to develop respiratory protection products for not only abrasive blasters, but also for industrial grinding.

#### **Abrasive Blasting**

Abrasive blasting respirators are defined as Type CE by NIOSH according to 42CFR84 as follows:

84.130 Supplied-air respirators; description.

(f) "Type "CE" supplied-air respirators. A type "C" supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning."

The 88VX is rated as a continuous flow Type CE abrasive blasting respirator, complete with a durable cape to protect the wearer's head and neck against abrasive rebound, as well as a durable helmet which meets the ANSI head protection standard requirements. The helmet has both an inner lens and an outer lens to meet the requirements of 42CFR.130 explained above. The 88VX has been recognized by OSHA to meet a 1,000 APF for use in Lead in Construction.

#### Grinding

Bullard was one of the first to offer a hood-style respirator designed specifically with grinding operations in mind. The GR50 is lightweight and fully protective with a Nomex outer hood, flame retardant inner bib and the ability to integrate a hard hat.

#### **Solutions**

Whether blasting or grinding, Bullard can provide the appropriate respiratory protection.



# The most popular blasting respirator in the industry.

The Bullard 88VX Series airline respirators offer advancements in comfort and reliable respiratory protection for abrasive blasters and painters.

The 88VX Respirator is NIOSH approved as a Type C and CE Continuous Flow Class Respirator (Approval No. TC-19C-293).

#### **Advanced Protection**

88VX Series airline respirators provide advanced protection in the harsh exposures of blasting and painting. The snug, yet comfortable, sewn in neck cuff provides a physical barrier to airborne contaminants and helps maintain positive pressure within the helmet. A new double lining in the neck area now enhances durability and protection.

#### **Comfortable Fit**

A lightweight inner shell with an adjustable headband suspension holds the respirator firmly and comfortably on the wearer's head. Airflow is channeled directly to the user's breathing zone for easy breathing. The helmet easily accommodates beards, prescription eye wear or safety glasses. No fit testing is required.

#### **Head Protection**

The helmet provides top impact and penetration protection. The helmet and cape help protect the worker's entire head, face and upper body from abrasive rebound, airborne contaminants and messy overspray.

#### **Optimum Visibility**

The wide-angle faceshield lens and headband suspension system are positioned for optimum visibility. With the translucent yellow helmet, workers don't experience a closed-in feeling.

#### **Overall Convenience**

88VX respirator components are easily replaceable, saving you lost time on the job as well as the inconvenience of having to replace the entire respirator assembly.

#### **Climate Control**

Optional climate control assemblies permit workers to warm or cool incoming air to maximize comfort and improve productivity.



#### **Features and Benefits**

#### Injection-molded inner shell

Key slots for suspension are molded in the shell to provide a better fit. The shell is also lightweight, compact and portable.

#### Latch design on window frame and helmet

Stronger, lower profile provides more tension on window and protection for the interior cape hook.

#### Forest green window frame gasket material

More durable, enhanced resistance to temperature variations, better conformity to window frame. Easier to install into hood and replace inner lens.

#### Forest green window frame material

More flexible and durable with a better gasket seal. Easier to install outer lens.

#### Breathing tube with more flexible coating and forest green cuffs

More flexible and durable, reducing the amount of strain on the helmet and thus the user's neck.

#### Cape design with double lining above neck

Double lining enhances durability, comfort and protection.

#### Latch position behind window frame

Reduces difficulty of attaching cape to helmet and prevents accidental opening.

#### Breathing tube positioning loops on back of cape to retain the breathing tube

Reduced snagging hazard on breathing tube.

#### Mylar® cover lens with new pull-tab design



#### **88VX Series Airline Respirator Selection Chart**

#### 1. Choose Window Style (Helmet included)



•Oval Window (Standard)

•Box Front (Optional)



•88VXRTP - Adjustable Ratchet Headband Suspension - Inner Shell/Air Plenum included

#### 2. Choose Suspension 3. Choose Breathing Tube



•88VXBT - Nipple not included

#### 4. Choose Flow Control



•F30, F30B, F30S -Constant Flow Control Valve, 1/4" Industrial Interchange

- •F31 Schrader
- •F32 Snap-Tite Steel
- •F33 Snap-Tite Brass
- •F34 Snap-Tite Stainless
- •F37 CEJN
- •F38 Bayonet Steel



•F35, F35B, for Free-Air Pumps - Constant Flow Control Valve, 1/2" Industrial Interchange



1/4" Adjustable Flow •F40, F40B, F40S -Industrial Interchange

- •F41 Schrader
- •F42 Snap-Tite Steel
- •F43 Snap-Tite Brass
- •F44 Snap-Tite Stainless
- •F47 CEJN
- •F48 Bayonet Steel



**Cool Tubes for** Compressed Air

- •AC100030, AC100030B, AC100030S - 1/4" Industrial Interchange
- •AC100031 Schrader
- •AC100032 Snap-Tite Steel
- •AC100033 Snap-Tite Brass
- •AC100034 Snap-Tite Stainless
- •AC100037 CEJN
- •AC100038 Bayonet Steel



**Cool Tubes for** Free-Air® Pumps (ADP20 and EDP30)

- •FRIGITRON2000 1/2" Industrial Interchange
- •FRIGITRON2000B -Brass

#### 5. Choose Cape



•46VX - 28" Nylon Cape •13VX - 38" Nylon Cape



•21821 - 38" "Golden Gate" Nylon Cape



•36VX - 38" Length Parka •36XLVX - 38" Length Parka

#### 6. Choose Cooling Vest



•DC70ML - Med/Lg Cool Vest •DC70XLXXL - XL/XXL Cool Vest •DC705XL - 5XL Cool Vest



- •DC5040 DUAL-COOL® Industrial Interchange •DC5041 - DUAL-COOL Schrader
- •DC5042 DUAL-COOL Snap-Tite Steel •DC5044 - DUAL-COOL Snap-Tite
- Stainless •DC5047 - DUAL-COOL CEJN

#### 7. Choose Belt and/or Accessories



•4612 - Nylon Belt



•20NC - Chinstrap



•7714 - Adhesive Backed Lens Cover



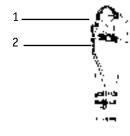
•88VXLC - Perforated Lens Covers

A complete 88VX Series Airline Respirator consists of the following three components:

- 1. Respirator Helmet and Cape
- 2. Breathing Tube with Fitting or Optional Climate Control Assembly
- 3. Breathing Air Supply Hose

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

Approval No. TC-19C-293, Type C and CE, Continuous Flow Class





#### 88VX™ Series Respirator Assemblies for use with Compressed Air

Respirators with 46VX Nylon Cape - 28" Length

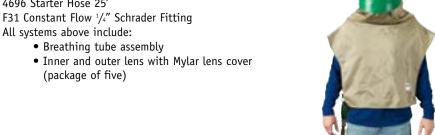
**88VX3230** F30 Constant Flow 1/4" Industrial Interchange Fitting 88VX3240 F40 Adjustable Flow 1/4" Industrial Interchange Fitting 88VX3230H

F30 Constant Flow 1/4" Industrial Interchange Fitting with 4696 Starter Hose 25'

88VX3231

All systems above include:

• Inner and outer lens with Mylar lens cover





Respirators with 13VX Nylon Cape - 38" Length

88VX1330 F30 Constant Flow 1/4" Industrial Interchange Fitting

System above includes:

- Breathing tube assembly
- Inner and outer lens with Mylar lens cover (package of five)



#### 88VX Series Respirator Assemblies for Use with Compressed Air

Respirators with 36VX Hibernia Parka (Tan) - 38" length

88VX3630 F30 Constant Flow 1/4" Industrial Interchange Fitting

88VX36XL30 88VX3630 with Extra-Large Parka

All systems above include:

- Breathing tube assembly
- Inner and outer lens with Mylar® lens cover (package of five)



#### 88VX Series Respirator Assemblies for use with Bullard Free-Air® Pumps

Complete Respirator Work System

88VX3235 Respirator with 46VX Nylon Cape - 28" length

ADP20 Free-Air Pump V2050ST Air Supply Hose

FRIGITRON2000 climate control device

**88VXSYS16TE** 88VX3235 Respirator with 46VX Nylon Cape - 28" length

EDP16TE Free-Air Pump V2050ST Air Supply Hose All systems above include: • Breathing tube assembly

• Inner and outer lens with Mylar lens cover (package of five)



88VXSYS

Respirators with 46VX Nylon Cape - 28" length

**88VX3235** F35 Constant Flow 1/2" Industrial Interchange Fitting **88VX3235H100** F35 Constant Flow 1/2" Industrial Interchange Fitting with

V20100ST Supply Hose, 100'

All systems above include:

• Breathing tube assembly

• Inner and outer lens with Mylar lens cover (package of five)

Respirators with 13VX Nylon Cape - 38" length

**88VX1335** F35 Constant Flow 1/2" Industrial Interchange Fitting

System above includes:

- Breathing tube assembly
- Inner and outer lens with Mylar lens cover (package of five)



#### 88VX Breathing Tube Assemblies

Constant Flow Breathing Tube Assemblies - for use with compressed air

EVX30 F30 1/4" Industrial Interchange (Hansen compatible) Quick-Disconnect Nipple

**EVX31** F31 1/4" Schrader Quick Disconnect Nipple

EVX32 F32 1/4" Snap-Tite Steel Quick Disconnect Nipple EVX33 F33 1/4" Snap-Tite Brass Quick Disconnect Nipple

EVX37 F37 1/4" CEJN Quick Disconnect Nipple
EVX38 F38 1/4" Bayonet Quick Disconnect Nipple

All above include:

• 88VXBT breathing tube

• 4612 nylon belt



Adjustable Flow Breathing Tube Assemblies - for use with compressed air

**EVX40** F40 1/4" Industrial Interchange (Hansen compatible) Quick-Disconnect Nipple

**EVX41** F41 1/4" Schrader Quick Disconnect Nipple

EVX42 F42 1/4" Snap-Tite Steel Quick Disconnect Nipple EVX43 F43 1/4" Snap-Tite Brass Quick Disconnect Nipple

**EVX47** F47 1/4" CEJN Quick Disconnect Nipple **EVX48** F48 1/4" Bayonet Quick Disconnect Nipple

All above include:

- 88VXBT breathing tube
- 4612 nylon belt

Constant Flow Breathing Tube Assembly - for use with Bullard Free Air Pump

**EVX35** F35 ½ Industrial Interchange (Hansen compatible) Quick-Disconnect Nipple

All above include:

- 88VXBT breathing tube
- 4612 nylon belt



#### Cool Tube Assembly for 88VX™ Series Respirators

**AC1000** 

Cool Tube Assembly

- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- Adjustable temperature control
- 4612 nylon belt
- Approved for use with 88VX, CC20 and GR50 Series respirators
- Heat Shield included
- For use with compressed air

**HS** Heat Shield Only





88VX Series Replacement Valves for Breathing Tube Assemblies for use with Compressed Air

#### F30 Constant Flow Control

- 1/4" Industrial Interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- Nylon belt



#### **F31** Constant Flow Control

- 1/4" Shrader quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- Nylon belt



#### F32 Constant Flow Control

- 1/4" Snap-Tite steel quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- Nylon belt



#### F33 Constant Flow Control

- 1/4" Snap-Tite brass quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- Nylon belt



#### F37 Constant Flow Control

- 1/4" CEJN steel quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, 20BT or 20LFBT
- Nylon belt



#### F38 Constant Flow Control Valve

- 1/4" Bayonet steel quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT
- Nylon belt
- No ball bearings to "jam up"



#### Heating and cooling options

p. 154-158

88VX Series Replacement Valves for Breathing Tube Assemblies for use with Compressed Air

#### F40 Adjustable Flow Control

- 1/4" Industrial Interchange (Hansen Compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, 20BT or 20LFBT
- Nylon belt



#### F41

#### Adjustable Flow Control

- 1/2" Schrader quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, 20BT or 20LFBT
- Nylon belt



#### F42

#### Adjustable Flow Control

- 1/4" Snap-tite steel quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, 20BT or 20LFBT
- Nylon belt



#### F47

#### Adjustable Flow Control Valve

- 1/4" CEJN stainless steel quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, 20BT or 20LFBT
- Nylon belt



88VX™ Series Replacement Valves for Breathing Tube Assemblies for use with Bullard Free-Air Pumps

#### F35

#### Constant Flow Control

- 1/2" Industrial Interchange (Hansen Compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88VXBT, L99BT, 20BT or 20LFBT
- Nylon belt





88VX Series Replacement Parts for Breathing Tube Assemblies

4612

Nylon Belt



88VXBT

**Breathing Tube** 

• Nipple not included



88CK

Breathing Tube Connector Kit

- Connector with sleeve
- Hardware
- Gasket
- "0" ring



#### 88VX Series Replacement Capes



28" Length Nylon Cape (Tan)

- Includes snap hooks
- Includes breathing tube straps
- Includes additional nylon liner in neck cuff area



**13VX** 

38" Length Nylon Cape (Tan)

- Includes snap hooks
- Includes breathing tube straps
- Includes additional nylon liner in neck cuff area



21821

38" Length "Golden Gate" Nylon Cape (Tan)

- Cut-off cap sleeves
- Includes cinch straps/fabric ties
- Includes breathing tube straps
- Includes additional nylon liner in neck cuff area



36VX 36XLVX 38" Length Hibernia Parka (Tan)

38" Length Hibernia Parka Extra-Large Size (Tan)

- Nylon cape with long sleeves
- Includes belt straps
- Includes breathing tube straps
- Includes additional nylon liner in neck cuff area





88VX Series Replacement Parts and Accessories

#### 88VXRTP

Adjustable Ratchet Headband Suspension - Inner Shell/Air Plenum Included

• Poly brow pad



#### **RBPCOTTON**

#### Brow Pad

- Large, absorbent cotton replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



#### RBPVINYL

#### **Brow Pad**

- Vinyl replacement brow pad
- Fits all Bullard suspensions
- Velcro closure



#### **RBPCOOL**

#### **Brow Pad**

- Polartec® replacement brow pad
- Wicking material moves sweat away from the worker's brow
- Fits all Bullard suspensions
- Velcro closure



#### **20NC**

#### Elastic Chinstrap

- For use with 88VX Series only
- 10 per package



# Blasting and Grinding

# **88VX™ Series Airline Respirator**

88VX Series Replacement Parts and Accessories

#### **88CS**

Elastic Chinstrap

- For use with 88VXTGP or 88VXRTP only
- 10 per package



#### 88CA

Replacement Carrying Strap



#### 88VXAK

Maintenance Kit - Door/Gasket/Latch Assembly

 Includes 88VX Series door with catch, gasket, inner lens, bail and hinge pin in a preassembled kit ready for mounting



#### 88VXBAIL

Replacement Bail for Latch Assembly

• 10 per package



#### 88VXHP

Replacement Hinge Pins for Latch Assembly

• 10 per package





88VX Series Replacement Parts and Accessories

BFW

**Box Front Window Frame** 

- Accommodates rectangular glass lens (77GLT)
- Catch, bail and hinge pin in a preassembled kit; ready for mounting



77GLT

Box Front Glass Lens

• For use with 77BFW and BFW



77LG

Box Front Lens Gasket

• For use with 77BFW and BFW



G7713

88VX Window Frame Gasket

• Oval gasket



88VX Series Mylar® Lens

7714

Adhesive-backed Mylar® Lens Cover

- Clear
- Rectangular
- 25 per package



88VXLC

Perforated Edge Mylar Lens Cover

- Clear
- 25 per package



# Blasting and Grinding

# **88VX™ Series Airline Respirator**

#### 88VX Series Replacement Lenses

#### **Inner Lens**

Tritan, For Use with 77/88 Series

P771B

- 25 per package
- B771B
- Eight packages of 25 lenses
- Oval
- .040" thick



#### **Outer Lens**

Acetate, For Use with 77/88 Series

B771040

- Eight packages of 25 lenses
- Oval
- .040" thick



PETG, For Use with 77/88 Series

P771020

- 50 per package
- B771020
- 8 packages of 50 lenses
- Oval
- .020" thick

B771R

- 50 packs of 10 each
- P771R50 per package10 packages of
  - 10 packages of 50 lensesRectangular
    - Rectangular.015" thick



- 10 packages of 50 lenses
- Rectangular
- .015" thick
- Protective film on both sides of lens



PETG, For Use with 88VX Series

B771R020

- Seven packages of 50 lenses
- Rectangular
- .020" thick





# GR50 Series Airline Respirator

# Enhanced Comfort and Protection for Grinding Operations

Offering both respiratory and dermal protection, the Bullard GR50 is the first hood-style airline respirator designed especially to meet the challenges that are encountered in grinding operations. The lightweight outer hood, made from Nomex®, protects the operator's entire head, face and neck from sparks and airborne particulates. The inner bib, made from flame-retardant cotton, is an added protective barrier. Applications in which the GR50 airline respirator can be used include grinding and metalworking.

For workers who use compressed breathing air, the Bullard GR50 is complete with Nomex respirator hood, breathing tube and a choice of belt-mounted airline quick-disconnect fittings. The GR50 can also be used with convenient and low-cost Bullard Free-Air® pumps. Bullard V10 and V20 air supply hoses, sold separately, are available with point-of-attachment fittings for breathing air compressor systems or ambient air pumps.

#### **Breathing Protection**

Continuous airflow is delivered through a unique neck cuff, maintaining positive pressure inside the hood to help keep contaminants out.

#### **Comfortable and Durable**

Weighing only 12 oz. (340 g), the GR50 from Bullard is a lightweight alternative for workers accustomed to wearing heavier helmet-type respirators during grinding.

#### **Head Protection and Climate Control Options**

When worn with a Bullard hard hat, the hood meets ANSI Z89.1-2009 requirements for protective headwear. A variety of climate control devices allow workers to cool incoming air to meet their comfort requirements, helping to boost productivity.

#### Flexible Hood and Window

In operations performed in tight spaces, the flexible hood and window enhance worker mobility. The inner window, made of .040" polycarbonate so it stands up to temperatures of up to 300° F.

#### No Fit-Testing

One size fits all, so fit testing is not required. The hood easily accommodates beards, hearing protection, prescription eyewear or safety glasses.

#### **Maximum Visibility**

Wide-angle faceshield and headband suspension system are positioned to create the maximum viewing area. Replacement outer lens helps protect inner lens from sparks and debris, extending the usable life of the product.



# **GR50** Series Airline Respirator

#### **88VX Series Airline Respirator Selection Chart**

#### 1. Choose Head Top



•GRH - Nomex® Grinding Hood



•20RT - Adjustable Ratchet Headband Suspension

#### 2. Choose Suspension or Hard Hat



Suspension, Full Profile

•C30R - 6-point Flex-Gear®
Ratchet Suspension



•S51P - 4-point Self-Sizing Suspension, Low Profile •S51R - 4-point Flex-Gear Ratchet Suspension

#### 3. Choose Breathing Tube



•20BT - Breathing Tube for Hoods

#### 4. Choose Flow Control Device



1/4" Continuous Flow •F30, F30B, F30S -Industrial Interchange

- •F31 Schrader
- •F32 Snap-Tite Steel
- •F33 Snap-Tite Brass
- •F34 Snap-Tite Stainless
- •F35, F35B 1/2" Industrial Interchange for Free-Air Pumps
- •F37 CEJN



1/4" Adjustable Flow •F40, F40B, F40S -Industrial Interchange

- •F41 Schrader
- •F42 Snap-Tite Steel
- •F43 Snap-Tite Brass
- •F44 Snap-Tite Stainless
- •F47 CEJN



Cool Tubes for Compressed Air

- •AC100030, AC100030B, AC100030S - 1/4" Industrial
- AC100030S 1/4" Industria Interchange
- •AC100031 Schrader
- •AC100032 Snap-Tite Steel
- •AC100033 Snap-Tite Brass
- •AC100034 Snap-Tite Stainless
- •AC100037 CEJN



Cool Tubes for Free-Air® Pumps •FRIGITRON2000 - 1/2" Industrial Interchange

•FRIGITRON2000B - Brass



Hot/Cold Tubes
•HC240030, HC240030B,
HC240030S - 1/4" Industrial
Interchange

- •HC240031 Schrader
- •HC240032 Snap-Tite Steel
- •HC240033 Snap-Tite Brass
- •HC240034 Snap-Tite
- Stainless
- •HC240037 CEJN

#### 5. Choose Cooling Vest



•DC70ML - Med/Lg Cool Vest •DC70XLXXL - XL/XXL Cool Vest

•DC705XL - 5XL Cool Vest



•DC5040 - DUAL-COOL® Industrial Interchange

- •DC5041 DUAL-COOL Schrader
- •DC5042 DUAL-COOL Snap-Tite Steel
- •DC5047 DUAL-COOL CEJN

#### 6. Choose Belt and/or Accessories



•4612 - Nylon Belt



•MB1 - PETG Outer Lens



•20NC - Chinstrap

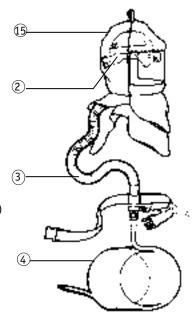


•GRHOL1 - Polycarbonate Outer Lens

#### **GR50 Airline Respirator Systems**

Bullard's GR50 Airline Respirator consists of four components; all must be present and properly assembled to constitute a complete NIOSH-approved respirator. Approval Number TC-19C-329, Type C.

- 1. Respirator Hood
- 2. Headband or Head Protection
- 3. Breathing Tube Assembly
- 4. Air Supply Hose
- Meets ANSI Z89.1-2009 Head Protection Requirements when used with Bullard Hard Hats
- Meets ANSI Z87.1-2003 Face Protection Requirements (High Impact Penetration)



#### GR5030

Constant Flow Respirator with V30 Breathing Tube Assembly

- GRH hood
- 20TG suspension
- F30 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple and nylon belt
- Outer lens
- For use with compressed air



#### **GR50SYS**

GR50 Series Airline Respirator System

- GR5035 respirator assembly
- EDP10 Free-Air® pump
- V20100ST air supply hose



#### GR5035

Constant Flow Respirator with V35 Breathing Tube Assembly

- GRH hood
- 20TG suspension
- F35 ½" industrial interchange (Hansen compatible) quick-disconnect nipple and nylon belt
- Outer lens
- For use with Bullard Free-Air® pumps



#### GR50 Airline Respirator Replacement Respirator Hood

#### **GRH**

Nomex Grinding Hood

- Includes outer lens
- 12" long outer bib



#### **GR50** Airline Respirator Replacement Parts

**20RT** 

Adjustable Ratchet Headband Suspension

- Poly brow pad
- Fits sizes 6½ to 8 (52-64 mm)



#### **20NC**

Elastic Chinstrap

- For 20TG and 20RT suspensions
- 10 per package



#### **RBPCOTTON**

Brow Pad

- Large, absorbent cotton replacement brow pad
- Fits all Bullard suspensions
- Easy snap-on design
- Velcro closure



#### **RBPVINYL**

**Brow Pad** 

- Vinyl replacement brow pad
- Fits all Bullard suspensions
- Easy snap-on design
- Velcro closure



#### **RBPCOOL**

Brow pad

- Polartec® replacement brow pad
- Wicking material moves sweat away from the worker's brow
- Fits all Bullard suspensions
- Easy snap-on design
- Velcro closure





#### **GR50** Head Protection

#### C30R

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density polyethylene shell
- Full profile, wide brim
- Accessory slots for attachments
- 6-point Flex-Gear® ratchet suspension with large, absorbent cotton brow pad (RS6RC)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white



#### S51R

Hard Hat for use with 20TICH, 20SICH, GRH

- High-density, polyethylene shell
- Flat front, low-profile design
- Accessory slots for cap attachments
- Rain trough brim
- 4-point Flex-Gear ratchet suspension with poly brow pad (RS4RP)
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Meets or exceeds ANSI Z89.1-2009, Type I, Class E & G requirements and CSA Z94.1-2005, Type 1 Class E & G requirements
- Color: white



# **Blasting and Grinding**

# **GR50 Airline Respirator**

#### **GR50 Head Protection Replacement Parts**

#### RS6RC

#### 6-pt. Suspension

- 6-point Flex-Gear® ratchet suspension
- Large, absorbent cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- Vertical height adjustments (two front, three rear)
- For Models C30R and C33R
- Hard hat not included



#### RS4RC

#### 4-pt. Suspension

- 4-point Flex-Gear ratchet suspension
- Large Cotton brow pad
- Replacement brow pads available (RBPCOTTON, RBPVINYL, RBPCOOL)
- Flex-points and nape cushion
- Large, easy-to-turn ratchet knob
- For Model S51R
- Hard hat not included



#### **ES42**

#### Chinstrap

- Elastic chinstrap
- For Models C30R and S51R



#### GR50 Airline Respirator Breathing Tubes & Parts

#### V30 Consta

Constant Flow Breathing Tube Assembly

- 20BT breathing tube
- F30 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- 4612 nylon belt
- S18051 clamp
- For use with compressed air



#### **V40**

Adjustable Flow Breathing Tube Assembly

- 20BT breathing tube
- F40 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple with adjustable flow control valve
- 4612 nylon belt
- S18051 clamp
- For use with compressed air



#### **V35**

Constant Flow Breathing Tube Assembly

- 20BT breathing tube
- F35 ½" industrial interchange (Hansen compatible) quick-disconnect nipple
- 4612 nylon belt
- S18051 clamp
- For use with Bullard Free-Air® pumps



#### F30

Constant Flow Control Valve

- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88BT, L99BT, 20BT or 20FLBT
- 4612 nylon belt
- For use with compressed air



#### F40

Adjustable Flow Control Valve

- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88BT, L99BT, 20BT or 20FLBT
- 4612 nylon belt
- For use with compressed air



#### F35

Constant Flow Control Valve

- 1/2" industrial interchange (Hansen compatible) quick-disconnect nipple
- Threaded hose connector
- Connects to 88BT, L99BT, 20BT or 20FLBT
- 4612 nylon belt
- For use with Bullard Free-Air® pumps



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## GR50 Airline Respirator Replacement Parts & Accessories

**20BT** Breathing Tube

- Nipple not included
- S18051 clamp



**\$18051** Breathing Tube Clamp

• 10 per package



**S18051BLACK** Breathing Tube Clamp, Black

• 10 per package



4612 Nylon Belt



MB1 PETG Outer Lens

- .020" thick
- 10 per package





**GRHOL1** Polycarbonate Outer Lens

- .040" thick
- 10 per package



**20LC** Adhesive-Backed Mylar® Lens Cover

- Clear
- 25 per package



7714 Adhesive-Backed Mylar® Lens Cover

- Clear
- Rectangular
- 25 per package





# Mask-Style Respirators Spectrum® Series

# Comfort, Low Profile, Outstanding Visibility, Simplicity

Finally, there's a respirator that fits — your face, your needs and your high expectations. Introducing Spectrum Series full-face mask airline respirators from Bullard. Integrating intelligent features with innovative design, Bullard is moving respiratory protection to a whole new level. The Spectrum Series offers outstanding comfort, low profile fit, unparalleled visibility and simplicity.

With the addition of the Spectrum Series, Bullard can meet all of a customer's airline respirator needs — from continuous flow hood and helmet airline respirators to tight-fitting facepiece airline/ESCBA respirators. The four full facepiece models in the Spectrum Series include:

- Continuous flow
- Pressure demand
- Pressure demand with 5-minute cylinder
- Pressure demand with 10-minute cylinder

#### **Spectrum Comfort**

Spectrum's lightweight silicone flange seals softly against the user's face without feeling slippery, while the double flange provides a secure and comfortable fit across a wide range of facial sizes and contours.

#### **Spectrum Low Profile**

The low profile full facepiece allows ease of movement of the user's head. The low profile design is lightweight, thus reducing fatigue. The facepiece allows ease of movement of the user's head. Spectrum's low profile headstraps reduce the time to put on the facepiece, are extremely easy to adjust and enhance overall comfort.

#### **Spectrum Visibility**

Spectrum is designed with an optically correct lens that provides unparalleled peripheral vision. The clear silicone nosecup allows more light into the mask, minimizing the closed-in feeling many respirator wearers' experience.

#### **Spectrum Simplicity**

With a minimal number of snap-together parts, no special tools are required making assembly and maintenance quick and efficient. All respirator models incorporate a single platform design, simplifying stocking requirements.



#### Spectrum Series Continuous Flow Airline Respirator

A complete Spectrum Series Continuous Flow Airline Respirator consists of the following three components:

- 1. Full Facepiece
- 2. Breathing Tube Assembly
- 3. Breathing Air Supply Hose

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

Approval No. TC-19C-322, Type C, Continuous Flow Class

Approval No. TC-19C-321, Type C, Pressure Demand Class



**SPECLSYS** 

Spectrum Series Airline Respirator System

- SPEC35L respirator assembly
- EDP10 Free-Air® pump
- V20100ST 100' air supply hose
- LC lens covers

SPECLSYS2M

2 Worker Spectrum Airline Respirator System

Same as above with additional SPEC35L and

V20100ST air supply hose

SPECLSYS50

Same as SPECLSYS, with V2050ST 50' air supply hose



#### **SPECLCABSYS**

Spectrum Series Airline Respirator System

- SPEC40L respirator assembly
- 15 CFM Clean Air Box
- 4696100 air supply hose
- LC lens covers
- · Anti-fog wipes

SPECLCABSYS2M 2 Worker Spectrum Airline Respirator System

- 2 SPEC40L Masks
- 30 CFM Clean Air Box
- 2 Breathing Tubes
- 2 4696100 Hoses
- LC lens covers
- Anti-fog wipes



#### Spectrum-CF Respirator Assembly

SPEC40L SPECCFML Medium/Large Facepiece

SPEC40S SPECCFS Small Facepiece

- BT100 breathing tube assembly with 1/4" industrial interchange (Hansen compatible) nipple, adjustable flow control valve and nylon belt
- For use with compressed air

#### Spectrum-CF Respirator Assembly for use with Bullard Free-Air® Pump

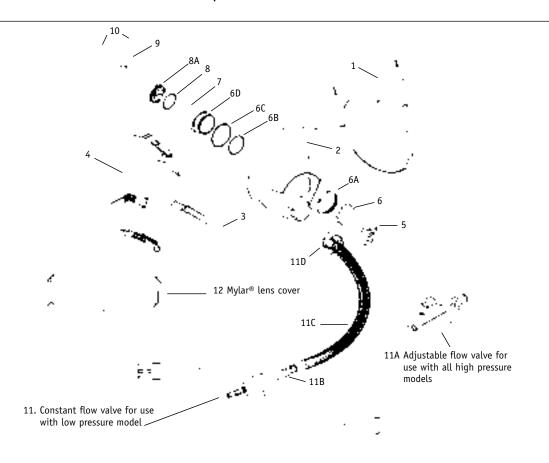
SPEC35L SPECCFML Medium/Large Facepiece

SPEC35S SPECCFS Small Facepiece

- BT135 breathing tube assembly with 1/2" industrial interchange (Hansen compatible) nipple and nylon belt
- For use with Bullard Free-Air pumps



# Spectrum Series Continuous Flow Replacement Parts



	Cat. No.	Description	Cat. No.	Description
1.	LCK	Lens Clamp Replacement	8. EVO	O-ring for Exhalation Valve Seat
2.	RLS	Replacement Lens	8A	Exhalation Valve Seat
3.	FKML & FKS	Facepiece Flange	9. LNK	Nose Cup
4.	HSK	Headstrap with Buckles and Slides	10. SPECIVK	Inhalation Valve Flaps
5.	MCK	Mask Cover	11. BTXXX	Breathing Tube Assembly
6.	SEK	Speaker Diaphragm	11A	Flow Control Valve
	6A	Outer Locking Ring	11B	Hose Clamp
	6B	O-ring Speaker Diaphragm	11C	Breathing Tube
	6C	O-ring Speaker/Exhalation	11D	Breathing Tube Adapter
	6D	Speaker/Exhalation Body	12. LC	Mylar® Lens Covers
7.	6059	Exhalation Valve		

#### Spectrum Series Continuous Flow Breathing Tubes

#### BT100

Adjustable Flow Breathing Tube Assembly - Industrial Interchange

- 1/4" industrial interchange with adjustable flow control valve (Hansen compatible) nipple
- 4612 nylon belt
- For use with compressed air



#### BT101

Adjustable Flow Breathing Tube Assembly - Schrader

- 1/4" Schrader nipple with adjustable flow control valve
- 4612 nylon belt
- For use with compressed air



#### BT102

Adjustable Flow Breathing Tube Assembly - Snap-Tite

- 1/4" Snap-Tite steel nipple with adjustable flow control valve
- 4612 nylon belt
- For use with compressed air



Adjustable Flow Breathing Tube Assembly - Snap-Tite

• Same as BT102 except with brass nipple



Adjustable Flow Breathing Tube Assembly

- 1/4" Bayonet steel nipple with adjustable flow control valve
- 4612 nylon belt
- For use with compressed air



#### BT135

Constant Flow Breathing Tube Assembly - Industrial Interchange

- 1/2" industrial interchange (Hansen compatible) nipple
- 4612 nylon belt
- For use with Bullard Free-Air® pumps





#### Spectrum Series Pressure Demand Airline Respirator

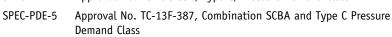
A complete Spectrum Series® Pressure Demand Airline Respirator consists of the following four components:

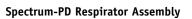
- 1. Full Facepiece
- 2a. Second Stage Regulator Assembly (PD Only)
- 2b. First and Second Stage Regulator Assembly (PDE Only)
- 3a. Harness Assembly
- 3b. Harness Assembly Including 5- or 10-minute Cylinder (PDE Only)
- 4. Air Supply Hose

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

SPEC-PD Approval No. TC-19C-354, Type C, Pressure Demand Class

SPEC-PDE-10 Approval No. TC-13F-388, Combination SCBA and Type C Pressure Demand Class





**SPECPDLA** SPECPDML Medium/Large Facepiece **SPECPDSA** SPECPDML Small Facepiece

- PDR45 pressure demand regulator
- BHA belt harness assembly
- CA30 coupler assembly



#### Spectrum-PDE5 Respirator Assembly

SPECPDE5L SPECPDML Medium/Large Facepiece

SPECPDE5S SPECPDS Small Facepiece

- RA45B regulator assembly (including 1st and 2nd stage regulators with bypass)
- Harness assembly (including 5-minute ESCBA cylinder)
- CA30 coupler assembly



Spectrum-PDE10 Respirator Assembly

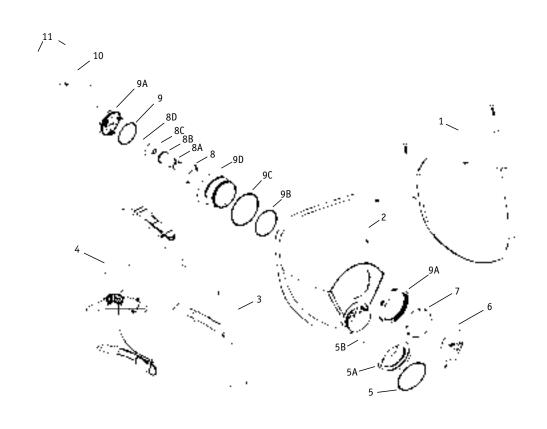
SPECPDE10L SPECPDML Medium/Large Facepiece

SPECPDE10S SPECPDS Small Facepiece

- RA45B regulator assembly (including 1st and 2nd stage regulators with bypass)
- Harness assembly (including 10-minute ESCBA cylinder)
- CA30 coupler assembly



# Spectrum Series Pressure Demand Facepiece Replacement Parts



	Cat. No.	Description	_	Cat. No.	Description
1.	LCK	Lens Clamp	8.	EVPDK	Spring Retainer
2.	RLS	Replacement Lens		8A	Spring, PD*
3.	FKML & FKS	Facepiece Flange		8B	Plate
4.	HSK	Headstrap with Buckles & Slides		8C	Exhalation Valve Flap
5.	RAK	O-ring, Regulator Adapter		8D	Stem
	5A	Regulator Adapter	9.	EVPDK	O-ring for Exhalation Valve Seat
	5B	Gasket, Lens Port		9A	Exhalation Valve Seat
6.	MCK	Mask Cover	10	. LNK	Nose Cup
7.	SEK	Speaker Diaphragm	11	. SPECIVK	Inhalation Valve Flap
	7A	Outer Locking Ring			
	7B	O-ring , Speaker Diaphragm			
	7C	O-ring , Speaker/Exhalation			
	7D	Speaker/Exhalation Body			



# Spectrum Series Pressure Demand Regulators and Cylinders

FSR45	First Stage Regulator • Includes CA30 coupler assembly • For use only with SPEC-PDE respirators	
RA45B	First Stage Regulator and Second Stage Regulator with Bypass • Includes CA30 coupler assembly • For use only with SPEC-PDE	
PDR45	Second Stage Regulator without Bypass  Includes CA30 coupler assembly For use only with SPEC-PD respirators	
PDR45B	Second Stage Regulator with Bypass  • Includes CA30 coupler assembly  • For use only with SPEC-PDE	
CYL455	5-Minute Escape Cylinder with Valve  • Additional shipping charges may apply	
CYL4510	10-Minute Escape Cylinder with Valve  • Additional shipping charges may apply	5
CYL5H	5-Minute Escape Cylinder with Valve and Holster • For use with SPECPDE5L • Additional shipping charges may apply	
CYL10H	<ul> <li>10-Minute Escape Cylinder with Valve and Holster</li> <li>For use with SPECPDE10L</li> <li>Additional shipping charges may apply</li> </ul>	

#### Spectrum Series Pressure Demand Coupler Assemblies

#### **CA30**

1/4" Industrial Interchange Quick-Disconnect Coupler Assembly

- Male threaded (Hansen compatible) nipple
- Female threaded coupler with ball lock and adapter which connects the respirator to the airline extension hose



#### **CA31**

1/4" Schrader Quick-Disconnect Coupler Assembly

- Male threaded nipple
- Female threaded coupler with adapter,
   which connects the respirator to the airline extension hose



#### **CA32**

1/4" Snap-Tite Steel Quick-Disconnect Coupler Assembly

- Male threaded nipple
- Female threaded coupler with adapter,
   which connects the respirator to the airline extension hose



#### CA33 CA34

1/4" Snap-Tite Brass Quick-Disconnect Coupler Assembly

1/4" Snap-Tite Stainless Steel Quick-Disconnect Coupler Assembly

- Male threaded nipple
- Female threaded coupler with adapter,
   which connects the respirator to the airline extension hose



#### **CA37**

1/4" CEJN Steel Quick-Disconnect Coupler Assembly

- Male threaded nipple
- Female threaded coupler with special orifice adapter, which connects the respirator to the airline extension hose
- Use only with orifice adapter





# Spectrum Series Pressure Demand Accessories

#### вна

Replacement Shoulder Harness

- 4611 Fire retardant nylon belt
- Buckle connector
- Shoulder strap



4611

Fire Retardant Nylon Belt



# Mask Style Respirators

# **Spectrum Series**

#### Spectrum Series Components

SPECCFML Media SPECCFS Small

Medium/Large Facepiece Assembly

Small Facepiece Assembly

- Complete with facepiece, lens, head straps, exhalation valve and facepiece components
- For use only with SPEC-CF respirators



SPECPDML SPECPDS

Medium/Large Facepiece Assembly

- Small Facepiece Assembly
  - Complete with facepiece, lens, head straps, exhalation valve and facepiece components
  - For use with SPEC-PD respirators



**RAK** 

**Facepiece Components** 

- 0-ring for regulator adapter
- Regulator adapter
- Lens port gasket
- For use with SPEC-PD



**EVPDK** 

Exhalation Valve Kit

- · Spring retainer
- Spring
- Plate
- Exhalation valve flap and stem



LNK

Replacement Nose Cup

• Includes two inhalation valve flaps



RLS

Replacement Lens





## Spectrum Series Pressure Demand Facepiece Components

LCK

Lens Clamp Replacement Kit

- Upper and lower clamps
- Screws and nuts



**SPECIVK** 

Inhalation Valve Kit

• Includes five inhalation valve flaps



FKML FKS Medium/Large Facepiece Flange Small Facepiece Flange



6059

Exhalation Valve Kit

- Continuous flow versions only
- Includes five exhalation valve flaps



# Mask Style Respirator

# **Spectrum Series**

# Spectrum Series Continuous Flow Facepiece Components

**HSK** Headstrap Kit

• Includes five buckles and five slides



MCK Mask Cover

• Includes five inhalation valve flaps



SEK Speaker/Exhalation Kit

- Speaker/exhalation body
- Speaker diaphragm
- Outer locking ring
- 0-ring for speaker diaphragm
- 0-ring for speaker/exhalation body



**EVO** Exhalation Valve Seat and O-Ring



PL Spectacle Frame Assembly



LC Mylar® Lens Covers

• 25 per package



AFW45 Anti-Fog Lens Wipes

• 10 per package





# **Spectrum Series**

# Spectrum Series Fit Testing Accessories: Pressure Demand and Continuous Flow

#### QNFT45

Quantitative Fit Test Kit

- Fit test adapter
- Facepiece sampling adapter
- 1/8" barbed mask probe
- One HEPA filter cartridge



#### FTR45

Fit Test Refill Kit

- 15 feet of Tygon tubing
- 25 suction cups and 25 clips



#### HFC45

Replacement HEPA Filter Cartridges

- For quantitative or qualitative fit testing (except for isoamyl acetate)
- Four per carton





# FAMB2 Half Mask Airline Respirator

A comfortable positive pressure airline respirator, Bullard FAMB2 presents a simple means of supplying clean air to workers. Available with both pressure demand and continuous flow approvals, FAMB2 provides a continuous airflow to workers operating in environments that are contaminated with dusts, mists, gases and vapors.

FAMB2 airline respirators are approved by NIOSH for use in Type C applications, including:

- Spray painting and coating operations
- · Chemical and pesticide handling
- Wood finishing

#### **FAMB2 Comfort**

The Bullard FAMB2 half mask, available in three sizes, features a soft, flexible silicone facepiece that conforms to the worker's face. The double exhalation valve system offers minimal breathing resistance and reduces worker fatigue, increasing productivity.

#### Low Air Pressure Requirement

Specifically designed for use with low pressure air sources such as Bullard Free-Air® pumps, the respirator operates efficiently at air pressures between 1.5-20 psig (103-138 kPa), depending on hose length. FAMB2 respirators are also approved for use with high pressure air sources, such as breathing air compressors.

#### **More Protection**

The FAMB2 respirator provides a higher degree of protection than negative pressure air purifying respirators. Because FAMB2 is an airline respirator, there is no need to maintain or buy expensive filter cartridges.

#### Wide Field of Vision

The low-profile facepiece allows a wide field of vision and easily accommodates workers wearing prescription or safety glasses. FAMB2 can be worn under faceshields, visors and welding helmets.

# FAMB2 Series Half Mask Airline Respirator

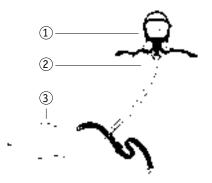
#### FAMB2 Half Mask Airline Respirator System

A complete FAMB2 Series Airline Respirator consists of the following three components:

- 1. Half Mask
- 2. Breathing Tube Assembly with Flow Control Device
- 3. Breathing Air Supply Hose

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

Approval No. TC-19C-469, Type C, Continuous Flow Class - F30 and F35



#### **FAMBSYS**

FAMB2 Series Airline Respirator System

- FAMB235M respirator
- EDP10 Free-Air® Pump
- V20100ST air supply hose



#### Half Mask Respirator

FAMB230S Small Silicone Facepiece
FAMB230M Medium Silicone Facepiece
Large Silicone Facepiece

- Cradle suspension and breathing tube
- 1/4" industrial interchange (Hansen compatible) nipple and belt
- For use with compressed air



Half Mask Respirator

FAMB235S Small Silicone Facepiece FAMB235M Medium Silicone Facepiece FAMB235L Large Silicone Facepiece

- Cradle suspension and breathing tube
- 1/2" industrial interchange (Hansen compatible) nipple and belt
- For use with Bullard Free-Air® Pumps



# Mask Style Respirator:

# FAMB2 Half Mask Airline Respirator

# FAMB2 Series Half Mask Respirator Components

FAM2S FAM2M FAM2L

Small Half Mask Medium Half Mask Large Half Mask

- Silicone
- Includes head straps



FAM2CB

Cradle Headband Strap



FAM2EVC2

Exhalation Valve CoversTwo per package



FAM2EVF10

Exhalation Valve
• 10 per package



# FAMB2 Half Mask Airline Respirator

# FAMB2 Series Half Mask Fit Testing Accessories

**FAMAK** 

Fit Test Kit

• Includes Porta Count connector, sampling tube and (1) P100 filter



PMFC2

P100 Filter Cartridges

• One per package



#### FAMB Series Half Mask Breathing Tube Assemblies

FAMB2T2C

**Breathing Tube Assembly** 

- For use with FAMB235
- Two nylon clamps (\$18052)
- 1/2" industrial interchange (Hansen compatible) quick-disconnect nipple
- 4612 nylon belt
- For use with Bullard Free-Air® Pumps



FAMB2T3C

Breathing Tube Assembly

- For use with FAMB230
- Two nylon clamps (S18052)
- 1/4" industrial interchange (Hansen compatible) quick-disconnect nipple
- 4612 nylon belt
- For use with compressed air



S18052

Replacement Breathing Tube Clamps

• 10 per package



4612

Nylon Belt



36501

Vinyl Decon Belt





Bullard offers a variety of hoses and fittings to deliver breathable air to the worker from a clean air source.

#### **V5 Series**

Bullard V5 Series hose offers the user a coiled option that assists in workplace cleanliness by keeping the hose off of the floor. Constructed of nylon with <sup>3</sup>/<sub>8°</sub> I.D. V5 Series hose is available in 25-or 50-foot lengths of red, blue, black or yellow.

#### **V10 Series**

Bullard V10 Series hose is intended for use with compressed air and has an inside diameter of 3/8". Constructed of strong yet flexible rubber reinforced to prevent crushing or kinking, V10 Series hose is available in 25-, 50- and 100-foot sections configurable up to 300 feet in total length.

#### **V20 Series**

Bullard V20 Series hose is intended for use with Bullard Free-Air® Pumps and has an inside diameter of  $^{1}/_{2}$ ". Constructed of strong yet flexible rubber reinforced to prevent crushing or kinking, V20 Series hose is available in 50- and 100 foot sections configurable up to 300 feet in total length.

#### **Fittings**

Bullard offers five different types of fittings to ensure breathing air supply fittings are incompatible with fittings for non-breathing air gases such as nitrogen, natural gas and argon. These fittings include:

Industrial Interchange (Hansen)

Schrader

Snap-Tite

CEJN

Bayonet

#### V5 Coiled Hose for Compressed Air

#### 25 Foot Lengths

V5KF2530XXX V5 Industrial Interchange Hose, Kink-Free

- 1/4" industrial interchange (Hansen compatible) quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW



V5KF2531XXX V5 Schrader Hose, Kink-Free

- 1/4" Schrader quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90 and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

V5KF2532XXX V5 Snap-Tite Hose, Kink-Free

- 1/4" Snap-Tite H-Series steel quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

V5KF2533XXX V5 Snap-Tite (Brass) Hose, Kink-Free

- 1/4" Snap-Tite H-Series brass quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

#### 50 Foot Lengths

V5KF5030XXX V5 Industrial Interchange Hose, Kink-Free

- 1/4" industrial interchange (Hansen compatible) quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps.
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

V5KF5031XXX V5 Schrader Hose, Kink-Free

- 1/4" Schrader quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

V5KF5032XXX V5 Snap-Tite Hose, Kink-Free

- 1/4" Snap-Tite H-Series steel quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

V5KF5033XXX V5 Snap-Tite Hose, Kink-Free

- 1/4" Snap-Tite H-Series brass quick-disconnect coupler and nipple
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT and 88VX Series respirators

Note: XXX denotes color. Red = RED; Blue = BLU; Black = BLK; Yellow = YLW

#### V10 3/8" ID Hose for Compressed Air

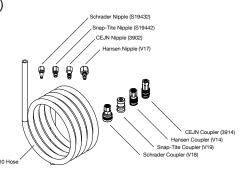
Starter Hoses (Includes nipple on one end and coupler on the other)

#### 25 Foot Lengths

4696

V1025ST Industrial Interchange Hose Kit (Black)

- 1/4" Industrial Interchange quick-disconnect coupler
- V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT, FAMB, Spectrum CF and 88VX series respirators
- V17 male nipple included





46913

V1025ST Schrader Hose Kit (Black)

- 1/4" Schrader quick-disconnect coupler
- V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT, FAMB, Spectrum CF and 88VX series respirators

 46915
 V1025ST Snap-Tite Hose Kit (Black)

 46916
 V1025ST Snap-Tite Hose Kit (Green)

 46918
 V1025ST Snap-Tite Hose Kit (Blue)

- 1/4" Snap-Tite quick-disconnect coupler
- V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, RT, FAMB, Spectrum CF and 88VX series respirators

#### 50 Foot Lengths

469650 V1050ST Industrial Interchange Hose Kit (Black) - includes V17 (not pictured)

46917 V1050ST Snap-Tite Hose Kit (Green) (Not Pictured)
46919 V1050ST Snap-Tite Hose Kit (Blue) (Not Pictured)

- 1/4" quick-disconnect coupler
- V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, FAMB, Spectrum CF and 88VX series respirators
- For 46917 and 46919

#### 100 Foot Lengths

4696100

V10100ST Industrial Interchange Hose Kit (Black) - includes V17 (not pictured)

- 1/4" Industrial Interchange quick-disconnect coupler and male nipple
- V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)
- For use with compressed air only. Not for use with Bullard Free-Air® pumps
- For use with Bullard CC20, GR50, PC90, FAMB, Spectrum CF and 88VX series respirators



#### **Extension Hoses**

#### 25 Foot Lengths

5454 V1025EXT Hose Kit (Black)
 54510 V1025EXT Hose Kit (Green)
 54514 V1025 extension hose kit (Blue)

• V11 hose-to-hose adapter fitting

• V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)

• For use with compressed air only. Not for use with Bullard Free-Air® pumps



#### 50 Foot Lengths

 5457
 V1050EXT Hose Kit (Black)

 54511
 V1050EXT Hose Kit (Green)

 54513
 V1050EXT Hose Kit (Blue)

• V11 hose-to-hose adapter fitting

• V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)

• For use with compressed air only. Not for use with Bullard Free-Air® pumps

#### 100 Foot Lengths

**5458** V10100EXT Hose Kit (Black) **54512** V10100EXT Hose Kit (Blue)

• V11 hose-to-hose adapter fitting

• V13 hose-to-pipe adapter fitting (3/8" hose to 3/8" pipe)

• For use with compressed air only. Not for use with Bullard Free-Air® pumps

#### V20 1/2" ID Hose for Free Air Pumps

#### V2050ST

V20 Industrial Interchange Hose (Black)

• 50 feet of hose

• 1/2" industrial interchange (Hansen compatible) quick-disconnect coupler and nipple

• For use with Bullard Free-Air® pumps



#### V20100ST

V20 Industrial Interchange Hose (Black)

• 100 feet of hose

• 1/2" industrial interchange (Hansen compatible) quick-disconnect coupler and nipple

• For use with Bullard Free-Air® pumps

#### Hose Adapters

V11 3/8" Hose to 3/8" Hose Adapter, Brass



V12

3/8" Hose to 1/4" Pipe Adapter, Brass



V13

3/8" Hose to 3/8" Pipe Adapter, Brass



#### Breathing Air Supply Hose - Quick-Disconnect Couplers

#### V14 Industrial Interchange Female Coupler

- 1/4" Industrial Interchange (Hansen compatible) quick-disconnect coupler
- Includes shut-off with 1/4" female pipe thread (NPT)
- V12 hose to pipe adapter required to connect to V10 extension hose



#### V15 Industrial Interchange Female Coupler

- 1/4" Industrial Interchange (Hansen compatible) quick-disconnect coupler
- Includes shut-off with 3/8" male pipe thread (NPT)



#### V18 Schrader Female Coupler

- 1/4" Schrader quick-disconnect coupler
- Includes shut-off with 1/4" female pipe thread (NPT)
- V12 hose to pipe adapter required to connect to V10 extension hose



#### V19 Snap-Tite Female Coupler, Steel V19B

Snap-Tite Female Coupler, Brass

- 1/4" Snap-Tite quick-disconnect coupler
- Includes shut-off with 1/4" female pipe thread (NPT)
- V12 hose to pipe adapter required to connect to V10 extension hose



#### **V27** Industrial Interchange Coupler

- 1/4" Industrial Interchange coupler assembly
- Includes V12 hose to pipe adapter



#### 3914 **CEJN Coupler**

- 1/4" CEJN quick-disconnect coupler
- Includes shut-off with 1/4" female pipe thread (NPT)
- Includes special orifice adapter which connects respirator to the airline extension hose. Use only with orifice adapter
- Includes V12 hose to pipe adaptor



#### 3421 **Bayonet Coupler**

- 1/4" Bayonet guick-disconnect coupler
- Includes shut-off with 1/4" female pipe thread (NPT)
- Includes V12 hose to pipe adaptor





# Breathing Air Supply Hose - Quick-Disconnect Nipples

#### V17 Industrial Interchange Nipple

- 1/4" Industrial Interchange (Hansen compatible) steel male quick-disconnect nipple with 3/8" female pipe thread (NPT)
- Requires V13 hose adapter to connect to Bullard V10 air supply hose



#### **S19432** Schrader Nipple

- 1/4" Schrader steel male quick-disconnect nipple with 1/4" female pipe thread (NPT)
- Requires V12 hose adapter to connect to Bullard V10 air supply hose



#### **S19433** Schrader Nipple

 1/4" Schrader steel male quick-disconnect nipple with 1/4" male pipe thread



#### \$19442 Snap-Tite Steel Nipple

- 1/4" Snap-Tite steel male quick-disconnect nipple with 1/4" female pipe thread (NPT)
- Requires V12 hose adapter to connect to Bullard V10 air supply hose



#### **S19443** Snap-Tite Brass Nipple

- 1/4" Snap-Tite brass male quick-disconnect nipple with 1/4" female pipe thread (NPT)
- Requires V12 hose adapter to connect to Bullard V10 air supply hose



#### 3902 CEJN Nipple

- 1/4" CEJN steel male quick-disconnect nipple with 1/4" female pipe thread (NPT)
- Requires V12 hose adapter to connect to Bullard V10 air supply hose



#### 3420 Bayonet Nipple

- 1/4" Bayonet steel male quick-disconnect nipple with 1/4" female pipe thread (NPT)
- Includes V12 hose to pipe adapter to connect to Bullard V10 air supply hose



#### 3422 Bayonet Nipple

- 1/4" Bayonet steel male quick-disconnect nipple with 1/4" male pipe thread (NPT)
- Includes V12 hose to pipe adapter to connect to Bullard V10 air supply hose

# Body Temperature Management

# Bullard climate control devices help increase worker comfort and productivity.

Bullard offers six belt-mounted, climate-control devices for use with Bullard airline respirators. Each system enables a worker to adjust and control the temperature of air delivered to the respirator. On extremely hot summer days, air exiting a typical breathing air compressor can exceed 300°F (150°C). Air exiting a Bullard Free-Air® pump can exceed 200°F (100°C). Even with properly installed aftercoolers and in-line filters, the air entering a respirator could exceed ambient temperatures. If workers breathe excessively warm air for prolonged periods of time, they may experience discomfort, fatigue and possibly dehydration. During winter months, excessively cold air can have similar effects. Eventually all of these conditions may reduce worker productivity. Bullard optional climate-control devices help correct these uncomfortable working conditions for wearers of Bullard airline respirators.

#### **Cool Tubes**

The Bullard line of cool tubes are designed to cool incoming air from compressed breathing air sources by as much as 20°-40°F (11°-22°C) and feature adjustable airflow control valves that allow the user to adjust the incoming air temperature to a level best suited to individual comfort.

#### **Hot/Cold Tubes**

The Bullard Hot/Cold Tubes cool or warm incoming air from compressed breathing air sources. When used in the cool mode, the Hot/Cold Tube decreases the incoming air temperature by as much as 40°F (22°C). When warm air is desired, the incoming air temperature may be increased by up to 30°F (17°C).

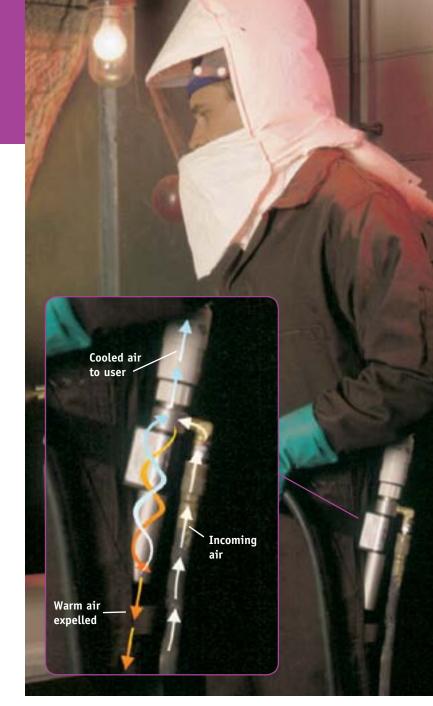
#### DC50 and DC60 Series DUAL-COOL®

The DUAL-COOL Series provides superior cooling to Bullard respirators, while also sending cool air to the vest for upper torso cooling. The DUAL-COOL will cool incoming air from compressed breathing sources by as much as 30°F (17°C). Separate control knobs allow the worker to adjust the temperature of air to each zone.

- Cooling
- Heating/Cooling
- DUAL-COOL
- Consumes approximately 15 CFM (including the hood).
- \*\* Consumes approximately 20 CFM (including the hood).

#### NOTE

Most compressors can deliver 4-5 CFM/horsepower (hp).



**Body Temperature Management - Complete Assemblies** 

			Climat	e Control	Devices	
		AC1000*	HC2400*	Frigitron**	DC6040**	DC5040**
tor	<u>CC20</u>	•	•	•		• •
pira	GR50	•	•	•		• •
Res	88VX	•	•	•		• •
Bullard Respirator	PC90				• •	
Bul	RT	•	•			• •
Air Flow	Adjustable	•	•	•	•	••
Air Source	Breathing Air Compressor	•	•		•	••
	Ambient Air Pump (ADP20/EDP30)			•		

#### AC1000 Assemblies and Accessories

#### **Cool Tube Assemblies**

AC1000 1/4" Industrial Interchange (Hansen Compatible)

Quick-Disconnect Nipple

AC100031 1/4" Schrader steel quick-disconnect nipple
AC100032 1/4" Snap-tite steel quick-disconnect nipple
AC100033 1/4" Snap-tite brass quick-disconnect nipple

AC100037 1/4" CEJN steel nipple

• Adjustable temperature control

• 4612 nylon belt

• Heat Shield (HS) included

 Approved for use with 88VX, CC20, RT (except AC100033 and AC100037) and GR50 Series respirators

• For use with compressed air

AC100038 1/4" Bayonet Steel Quick-Disconnect Nipple

• Adjustable temperature control

• 4612 nylon belt

• Heat Shield (HS) included

• Approved for use with 88VX Series respirators only

• For use with compressed air



# Frigitron2000 Assemblies and Accessories

#### FRIGITRON2000

Cool Tube Assembly for Bullard Free-Air® Pumps

- 1/2" Industrial Interchange (Hansen compatible) quick-disconnect nipple
- Adjustable temperature control
- 4612 nylon belt
- Heat Shield (HS) included
- For use with Bullard Free-Air® Pumps (ADP20 and EDP30 models only)



# Hot/Cold Tubes Assemblies and Accessories

#### **Hot/Cold Tube Assemblies**

HC2400 1/4" Industrial Interchange (Hansen compatible) Quick-Disconnect Nipple

HC240031 1/4" Schrader Steel Quick-Disconnect Nipple
 HC240032 1/4" Snap-Tite Steel Quick-Disconnect Nipple
 HC240033 1/4" Snap-Tite Brass Quick-Disconnect Nipple

HC240037 1/4" CEJN stainless steel nipple

Adjustable temperature control

• 4612 nylon belt

• Heat Shield (HS) included

• Approved for use with 88VX, CC20, RT (except AC100033 and

AC100037) and GR50 Series respirators

• For use with compressed air

H240020BT HC tube with 20BT



#### HC240038

Hot/Cold Tube Assembly for use with 88VX Respirator Only

1/4" Bayonet Steel Quick-Disconnect Nipple

• Heat Shield (HS) included



MV2400

HC2400 Muffler/Valve Assembly



Cooling Vests and Components: DC5040 Series

DUAL-COOL™ Assemblies

DC5040 1/4" Industrial Interchange (Hansen compatible) Quick-Disconnect Nipple

DC5041 1/4" Schrader Quick Disconnect Nipple
 DC5042 1/4" Snap-Tite Steel Quick Disconnect Nipple
 DC5043 1/4" Snap-Tite Brass Quick Disconnect Nipple

DC5044 1/4" Snap-Tite Stainless Steel Quick Disconnect Nipple

DC5047 1/4" CEJN Quick Disconnect Nipple

• Adjustable temperature control

• CH60 connector hose and 4612 nylon belt

• Must be used with DC70 vests

• Approved for use with 88VX, CC20 and GR50 Series respirators

For use with compressed air

**DC5048** DUAL-COOL™ Assembly for use with 88VX Respirator Only

1/4" Bayonet Steel Quick Disconnect Nipple

CH60 DC5040 DUAL-COOL™ Connector Hose



**\$18052** Clamp

#### DC70 Series

DC705X

DC70ML Medium/Large Cooling Vest
DC70XLXXL Extra-Large/XX-Large Cooling Vest

• For use with 88VX, CC20, RT and GR50 Series respirators

• Can be used without respirator when coupled with AC1000DC Cool Tube Assembly

5XL Cooling Vest



**AC1000DC** Cool Tube Assembly for Use with DC70 Vest

 $\bullet$   $^{1}\!/_{\!4}{}''$  Industrial Interchange (Hansen compatible) steel nipple

• Adjustable temperature control

• 4612 nylon belt

• Heat Shield (HS) included

• CH1000 connector hose and belt

• For use with compressed air

CH1000 Connector Hose



#### Cooling Vests and Components: DC65 Series

**DUAL-COOL™** Assemblies

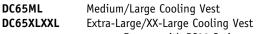
DC6040 1/4" Industrial Interchange (Hansen compatible)

Quick-Disconnect Nipple

DC6041 1/4" Schrader Quick-Disconnect Nipple
 DC6042 1/4" Snap-Tite Steel Quick-Disconnect Nipple
 DC6043 1/4" Snap-Tite Brass Quick-Disconnect Nipple

• Adjustable temperature control

- Must be used with DC65 vests
- CH60 connector hose
- Approved for use with PC90 Series respirator
- Pass through style connection
- For use with compressed air



• For use with PC90 Series respirator





# **Body Temperature Management Accessories**

**HS** Leather Heat Shield

• For use with AC1000, HC2400 and ACL99 assemblies

**HSDC** Leather Heat Shield

• For use with DC50 Dual Cool assemblies



**4611** Fire Retardant Belt

4612 Nylon Belt



**36501** Vinyl Decon Belt



V1000 Replacement fitting

• Replacement 1/4" Industrial Interchange (Hansen compatible) male fitting





# Air Quality and Filtration 41 Series Airline Filters

# 41 Series Airline Filters help deliver cleaner air for up to six workers.

#### **Versatile Application**

Bullard Airline Filters can be used in conjunction with other compressor safeguards such as carbon monoxide monitoring to supply Grade D breathing air to supplied-air respirators. They may also be used to supply drier, cleaner air to tools and pneumatic systems to reduce down-time and repair costs.

#### **Heavy Duty**

The 41 Series Airline Filters are constructed of heavy gauge steel to withstand rugged industrial environments.

#### **High Capacity**

41 Series Airline Filters contain large disposable filter cartridges allowing longer periods of filtration.

#### **Light Weight for Easy Portability**

Each model weighs approximately 23 pounds (10.5 kg).

#### Efficient

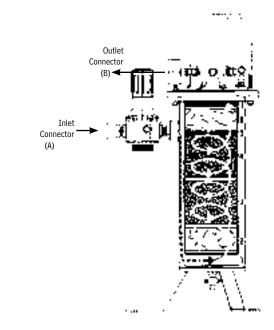
The 41 Series Filter cartridges are specifically designed to effectively trap and remove oil particulates, odor and organic vapors using a multi-layer filtering system. Compressor-supplied air enters the filter and travels through six layers of filter material before exiting through the outlet port. Carded cotton, felt material, activated charcoal and activated alumina work in sequence to supply cleaner air to workers or equipment.

#### Replaceable filter cartridge (7-stage operation)

Cartridges effectively trap and remove impurities with little pressure loss. The supplied-air enters the compressor at inlet connector (A), travels through six layers of filter material and exits outlet connector (B). Filter materials work in sequence to trap and hold water, oil, particulates, odors and organic vapors so that cleaner air is delivered to workers or equipment.

- 1. Water is removed by condensation against the cylinder wall
- 2. Carded cotton removes particulates
- 3. Activated alumina adsorbs oil and moisture
- 4. Activated charcoal removes odors and moisture
- 5. Felt material removes particulates
- 6. Carded cotton removes particulates
- 7. Respiratory felt at final stage acts as a final filter before air is transferred to worker or air driven tools





# **41 Series Airline Filters**

Specifications					
Airline Filter	Model 41A	Model 41P2	Model 41P6	Model 41P6WM	Model 41P2E
Max. Air Flow Rate	100 cfm* (2830 lpm)	75 cfm (2120 lpm)	75 cfm (2120 lpm)	75 cfm (2120 lpm)	75 cfm (2120 lpm)
Inlet Connection	1" NPT (Fem.)	1" NPT (Fem.)	1" NPT (Fem.)	1" NPT (Fem.)	3/4" (19 mm) NPT (Fem.)
Outlet Connection	1" NPT (Fem.)	2 outlets 3/8" NPT (Fem.)	6 outlets 3/8″ NPT (Fem.)	6 outlets 3/8" NPT (Fem.)	2 outlets 1/4" (6 mm) BPT (Fem.)
Relief Valve	-	125 psig (8.6 bar)			
Tank Diameter	51/2" (14 cm)	51/2" (14 cm)	51/2" (14 cm)	51/2" (14 cm)	51/2" (14 cm)
Height	19" (48 cm)	231/2" (60 cm)	251/4" (64 cm)	22" (56 cm)	231/2" (60 cm)
Weight	19 lb. (8.6 kg)	22 lb. (10 kg)	24 lb. (10.9 kg)	28 lb. (12.7 kg)	22 lb. (10 kg)
*At maximum recommended pressure of 100 psig (6.9 bar)					

### 41 Series Portable Filtration and CO Monitoring

Includes 88VX Respirator (88VX3230)

#### One or Two Worker Systems

- All assemblies include Heavy Duty 41 Series Filter with 7-stage filtration, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and 6-foot 110 VAC power cord.

10 PPM PART NUMBER	5 PPM PART NUMBER	
COHP41P2	C05HP41P2	75 CFM, Two Outlet Unit
Bundles		
COHP14P2CC20	Includes CC20	Respirator (CC20TTC30RT)



#### One to Six Worker Systems

COHP41P288VX

- All assemblies include Heavy Duty 41 Series Filter with 7-stage filtration, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and 6-foot 110 VAC power cord.

10 PPM	5 PPM	
PART NUMBER	PART NUMBER	
COHP41P6	C05HP41P6	75 CFM, Six Outlet Unit



#### 41 Series Filter Assemblies

#### 41A

#### Single Outlet

- 1" NPT inlet, 1" NPT outlet
- Includes 41AF filter cartridge
- Does not include regulator, pressure gauge, or relief valve
- Handle (41HK) must be ordered separately
- Shipping weight: 22 lbs. Cube: 2.9



#### 41P2

#### 2-Outlet

- 1" NPT inlet, 1/4" and 3/8" NPT (female) outlets
- Includes 41AF filter cartridge
- Regulator adjustable between 0-100 psig
- Relief valve set at 125 psig
- Pressure gauge
- Handle (41HK) must be ordered separately
- Shipping weight: 27 lbs. Cube: 2.9



#### 41P6

#### 6-Outlet

- 1" NPT inlet, 3/8" NPT (female) outlets
- Includes 41AF filter cartridge
- Regulator adjustable between 0-100 psig
- Relief valve set at 125 psig
- Pressure gauge
- Shipping weight: 27 lbs. Cube: 2
- Handle (41HK) must be ordered separately



#### 41P6WM

#### 6-Outlet, Wall Mount

Same as Model 41P6 above with:

- Galvanized steel wall mount bracket (no legs)
- Shipping weight: 31 lbs. Cube: 2.9



#### 41AF

#### Filter Cartridge

- Filter cartridge for 41A, 41P2, 41P6 and 41P6WM
- Shipping weight: 6 lbs. Cube: .6



# 41 Series Filter Replacement Parts

41P2M	41P2 Manifold Assembly for 41P2 Filter • Steel manifold plate • Regulator adjustable between 0-100 psig	
	<ul><li>Relief valve set at 125 psig</li><li>Pressure gauge</li><li>Shipping weight: 7.0 lbs.</li></ul>	
41P6UPK	41P6 Manifold Assembly for 41P6 Filter  • Steel manifold plate  • Regulator adjustable between 0-100 psig  • Relief valve set at 125 psig  • Pressure gauge  • Shipping weight: 10.0 lbs.	
41RG	Regulator Gauge • For 41P2 and 41P6 • 0-160 psi	
41PRV	Pressure Relief Valve • For 41P2 and 41P6 • 125 psig activation	
41P2R	41P2 Regulator and Gauge Assembly  ● For use with flat top design only	
41P6R	41P6 Regulator, no gauge or connection fittings	
V15	Industrial Interchange Female Coupler  • ¹/₄" Industrial Interchange (Hansen compatible) quick-disconnect coupler  • Includes shut-off with ³/₅" male pipe thread (NPT)	
41KB2	Replacement Knob for 41P2	
41HK	Handle Kit ● For use with all 41 Series Airline Filters	
41Drain	Petcock	

# Clean Air Box (CAB) Series Breathing Air Filtration

# Clean Air Boxes (CAB)

#### High Performance Air Filtering and Monitoring

Clean Air Boxes can help employers comply with Grade D breathing standards by providing high performance particulate filtration and continuous CO monitoring. Available as either portable case enclosed or fixed wall mount, these units feature high performance three-stage filtration, auto-drains, CO monitoring, filter change indicators and the capacity to support up to eight workers.

# Remote Air Manifold (RAM) Air Distribution and Regulation

Remote Air Manifolds are effective for air distribution and regulation to multiple workers from a common air source. Standard features include multiple respirator couplings, single or multiple pressure regulators and a rugged protective case.

# Carbon Monoxide Monitors Continuous Monitoring for Carbon Monoxide

This compact, durable unit connects easily to any compressed breathing air source (connection kit included). The monitor is factory set to sound a 93 dB alarm when CO level exceeds 10 ppm, the OSHA limit. Monitors are also available with a CO alarm set point of 5 ppm to meet CSA and certain international requirements. External operation lights show green for normal and red for alarm for easy visual monitoring. An alarm jack to allow connection to remote alarm devices is standard. Monitors operate on 9-volt battery or 110-volt AC power. Backup battery power supply capability is standard on all units.



# **CAB Series Sizing Chart**

- \* This chart is intended solely as a guide. The actual number of respirators that may be connected to these products is
- dependent on the inlet pressure to the panel and the airflow and pressure requirements of the respirator.

 .3	Ciiai	•	**	Single	Cool	Tu

Number of Workers	Mask Respirators	Hood Respirators	Hood Respirators with Cool Tubes**
1	CAB15	CAB15	CAB15
2	CAB15 or COHP41P2	CAB30 or COHP41P2	CAB30 or COHP41P2
3	CAB15 or COHP41P6	CAB30 or COHP41P6	CAB50 or COHP41P6
4	CAB30 or COHP41P6	CAB50 or COHP41P6	CAB50 or COHP41P6
5	CAB30 or COHP41P6	CAB50 or COHP41P6	CAB100 or COHP41P6
6	CAB30 or COHP41P6	CAB100 or COHP41P6	CAB100 or COHP41P6
7	CAB50 or COHP41P6	CAB100 or COHP41P6	CAB100
8	CAB50 or COHP41P6	CAB100 or COHP41P6	CAB100

# **RAM Series Sizing Chart**

Number of Workers	Mask Respirators	Hood Respirators	Hood Respirators with Cool Tubes**
1	RAM1	RAM1	RAM1
2	RAM2	RAM2	RAM2
3	RAM4	RAM4	RAM4
4	RAM4	RAM4	RAM4
5	RAM8	RAM8	RAM8
6	RAM8	RAM8	RAM8
7	RAM8	RAM8	RAM8
8	RAM8	RAM8	RAM8

### CO Monitoring Systems

10 PPM Part number	5 PPM PART NUMBER	
COHP	CO5HP	CO Monitor System for High Pressure
COHP41P2	CO5HP41P2	75 CFM, two outlet unit
COHP41P6	CO5HP41P6	75 CFM, six outlet unit



Model COHP41P2

# **CAB Series Portable Filtration and CO Monitoring**

One Worker Systems with Tychem Respirator

- All assemblies include a Clean Air Box, 3-stage filtration, visual filter change indicators, CO monitor with auto-calibration, audible and visual alarms for high CO and low battery. Respirator includes Tychem hood, cool tube, breathing tube and breathing hose assembly. (25')

10 PPM	5 PPM
PART NUMBER	PART NUMBER
CAB15HASYS*	CAB15HASYS5*

15CFM Clean Air Box System with Tychem® **Hood Respirator** 



Model CAB15HASYS

#### One Worker Systems with Blasting Respirator

- All assemblies include a Clean Air Box, 3-stage filtration, visual filter change indicators, CO monitor with auto-calibration, audible and visual alarms for high CO and low battery. Respirator includes 88VX3230 hood, cool tube, breathing tube and breathing hose assembly. (25')

10 PPM	5 PPM
PART NUMBER	PART NUMBER
CAB15HA88VXSYS*	CAB15HA88VXSYS5*

15CFM Clean Air Box System with 88VX3230 Blasting Respirator



Model CAB15HA88VXSYS

#### **One Worker Systems**

- All assemblies include Pelican® Case, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and 6-foot 110 VAC power cord.

10 PPM Part Number	5 PPM Part Number	
CAB15HA*	CAB15HA5*	15 CFM Clean Air Box with Hansen Outlet Coupling
CAB15SC*	CAB15SC5*	15 CFM Clean Air Box with Schrader Outlet Coupling
CAB15CE*	CAB15CE5*	15 CFM Clean Air Box with CEJN Outlet Coupling
CAB15SN*	CAB15SN5*	15 CFM Clean Air Box with SnapTite Outlet Coupling
CAB15SS*	CAB15SS5*	15 CFM Clean Air Box with Stainless Steel Hansen Outlet Coupling

Model CAB15HA

<sup>\*</sup> Requires upgrade kit for use with Remote Alarm

#### CAB Series Portable Filtration and CO Monitoring

- All assemblies include Pelican Case, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, 6-foot 110 VAC power cord and remote alarm jack.

#### One or Two Worker Systems **Manifold Systems**

PART NUMBER	PART NUMBER	
CAB30HA	CAB30HA5	30 CFM Clean Air Box with Hansen Outlet Couplings
CAB30SC	CAB30SC5	30 CFM Clean Air Box with Schrader Outlet Couplings
CAB30CE	CAB30CE5	30 CFM Clean Air Box with CEJN Outlet Couplings
CAB30SN	CAB30SN5	30 CFM Clean Air Box with SnapTite Outlet Couplings
CAB30SS	CAB30SS5	30 CFM Clean Air Box with Stainless Steel Hansen
		Outlet Couplings



#### **Independent Regulator Systems**

10 PPM PART NUMBER	5 PPM PART NUMBER	Model CAB30IR
CAB30IRHA	CAB30IRHA5	30 CFM Clean Air Box with Hansen Outlet Couplings and Independent Regulators
CAB30IRSC	CAB30IRSC5	30 CFM Clean Air Box with Schrader Outlet Couplings and Independent Regulators
CAB30IRCE	CAB30IRCE5	30 CFM Clean Air Box with CEJN Outlet Couplings and Independent Regulators
CAB30IRSN	CAB30IRSN5	30 CFM Clean Air Box with SnapTite Outlet Couplings and Independent Regulators
CAB30IRSS	CAB30IRSS5	30 CFM Clean Air Box with Stainless Steel Hansen Outlet Couplings and
		Independent Regulators

#### One to Four Worker Systems **Manifold Systems**

PART NUMBER	
CAB50HA5	50 CFM Clean Air Box with Hansen Outlet Couplings
CAB50SC5	50 CFM Clean Air Box with Schrader Outlet Couplings
CAB50CE5	50 CFM Clean Air Box with CEJN Outlet Couplings
CAB50SN5	50 CFM Clean Air Box with SnapTite Outlet Couplings
CAB50SS5	50 CFM Clean Air Box with Stainless Steel Hansen
	Outlet Couplings
egulator Systems	
	PART NUMBER CAB50HA5 CAB50SC5 CAB50CE5 CAB50SN5



10 PPM	5 PPM	· · · · · · · · · · · · · · · · · · ·
PART NUMBER	PART NUMBER	Model CAB50HA
CAB50IRHA	CAB50IRHA5	50 CFM Clean Air Box with Hansen Outlet Couplings and Independent Regulators
CAB50IRSC	CAB50IRSC5	50 CFM Clean Air Box with Schrader Outlet Couplings and Independent Regulators
CAB50IRCE	CAB50IRCE5	50 CFM Clean Air Box with CEJN Outlet Couplings and Independent Regulators
CAB50IRSN	CAB50IRSN5	50 CFM Clean Air Box with SnapTite Outlet Couplings and Independent Regulators
CAB50IRSS	CAB50IRSS5	50 CFM Clean Air Box with Stainless Steel Hansen Outlet Couplings and Independent Regulators

#### One to Eight Worker Systems **Manifold Systems**

10 PPM Part Number	5 PPM <u>PART NUMBER</u>	
CAB100HA	CAB100HA5	100 CFM Clean Air Box with Hansen Outlet Couplings
CAB100SC	CAB100SC5	100 CFM Clean Air Box with Schrader Outlet Couplings
CAB100CE	CAB100CE5	100 CFM Clean Air Box with CEJN Outlet Couplings
CAB100SN	CAB100SN5	100 CFM Clean Air Box with SnapTite Outlet Couplings
CAB100SS	CAB100SS5	100 CFM Clean Air Box with Stainless Steel Hansen
		Outlet Couplings



Model CAB100IRHA

-	-
10 PPM	5 PPM
PART NUMBER	PART NUMBER
CAB100IRHA	CAB100IRHA5
CAB100IRSC	CAB100IRSC5
CAB100IRCE	CAB100IRCE5
CAB100IRSN	CAB100IRSN5
CAB100IRSS	CAB100IRSS5

**Independent Regulator Systems** 

100 CFM Clean Air Box with Hansen Outlet Couplings and Independent Regulators 100 CFM Clean Air Box with Schrader Outlet Couplings and Independent Regulators 100 CFM Clean Air Box with CEJN Outlet Couplings and Independent Regulators 100 CFM Clean Air Box with SnapTite Outlet Couplings 1and Independent Regulators 100 CFM Clean Air Box with Stainless Steel Hansen Outlet Couplings and **Independent Regulators** 

# CAB Series Fixed Breathing Air Filtration and CO Monitoring

#### **One Worker Systems**

- All assemblies include heavy duty wall mount panel, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery.

10 PPM PART NUMBER	5 PPM PART NUMBER	
CAB15PMHA	CAB15PMHA5	15 CFM Clean Air Panel with Hansen Outlet Coupling
CAB15PMSC	CAB15PMSC5	15 CFM Clean Air Panel with Schrader Outlet Coupling
CAB15PMCE	CAB15PMCE5	15 CFM Clean Air Panel with CEJN Outlet Coupling
CAB15PMSN	CAB15PMSN5	15 CFM Clean Air Panel with SnapTite Outlet Coupling
CAB15PMSS	CAB15PMSS5	15 CFM Clean Air Panel with Stainless Steel Hansen Outlet Coupling

#### One Worker Systems with Tychem® Respirator

 All assemblies include heavy duty wall mount panel, 3-stage filtration, visual filter change indicators, CO monitor with auto-calibration, audible and visual alarms for high CO and low battery. Respirator includes Tychem® hood, cool tube, breathing tube and breathing hose assembly.

10 PPM	5 PPM	
PART NUMBER	PART NUMBER	
CAB15PMHASYS	CAB15PMHASYS5	15CFM Clean Air Panel System with Tychem Hood Respirator

#### One or Two Worker Systems

- All assemblies include heavy duty wall mount panel, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and remote alarm jack.

#### **Manifold Systems**

10 PPM PART NUMBER	5 PPM PART NUMBER	
CAB30PMHA	CAB30PMHA5	30 CFM Clean Air Panel with Hansen Outlet Couplings
CAB30PMSC	CAB30PMSC5	30 CFM Clean Air Panel with Schrader Outlet Couplings
CAB30PMCE	CAB30PMCE5	30 CFM Clean Air Panel with CEJN Outlet Couplings
CAB30PMSN	CAB30PMSN5	30 CFM Clean Air Panel with SnapTite Outlet Couplings
CAB30PMSS	CAB30PMSS5	30 CFM Clean Air Panel with Stainless Steel Hansen Outlet Couplings

#### **Independent Regulator Systems**

10 PPM	5 PPM	
PART NUMBER	PART NUMBER	
CAB30PMIRHA	CAB30PMIRHA5	30 CFM Clean Air Panel with Hansen Outlet Coupling and Independent Regulators
CAB30PMIRSC	CAB30PMIRSC5	30 CFM Clean Air Panel with Schrader Outlet Couplings and Independent Regulators
CAB30PMIRCE	CAB30PMIRCE5	30 CFM Clean Air Panel with CEJN Outlet Couplings and Independent Regulators
CAB30PMIRSN	CAB30PMIRSN5	30 CFM Clean Air Panel with SnapTite Outlet Couplings
CAB30PMIRSS	CAB30PMIRSS5	30 CFM Clean Air Panel with Stainless Steel Hansen Outlet Couplings and Independent Regulators



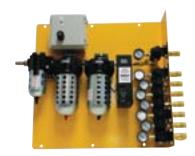
# CAB Series Fixed Breathing Air Filtration and CO Monitoring

#### Two to Four Worker Systems

- All assemblies include heavy duty wall mount panel, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and remote alarm jack.

#### **Manifold Systems**

10 PPM Part Number	5 PPM PART NUMBER	
CAB50PMHA	CAB50PMHA5	50 CFM Clean Air Panel with Hansen Outlet Couplings
CAB50PMSC	CAB50PMSC5	50 CFM Clean Air Panel with Schrader Outlet Couplings
CAB50PMCE	CAB50PMCE5	50 CFM Clean Air Panel with CEJN Outlet Couplings
CAB50PMSN	CAB50PMSN5	50 CFM Clean Air Panel with SnapTite Outlet Couplings
CAB50PMSS	CAB50PMSS5	50 CFM Clean Air Panel with Stainless Steel Hansen Outlet Couplings



#### IHA

#### **Independent Regulator Systems**

CAB50PMIRHA	CAB50PMIRHA5	50 CFM Clean Air Panel with Hansen Outlet Couplings and Independent Regulators	Model CAB50PMH
CAB50PMIRSC	CAB50PMIRSC5	50 CFM Clean Air Panel with Schrader Outlet Couplings and Independent	ndent Regulators
CAB50PMIRCE	CAB50PMIRCE5	50 CFM Clean Air Panel with CEJN Outlet Couplings and Independen	nt Regulators
CAB50PMIRSN	CAB50PMIRSN5	50 CFM Clean Air Panel with SnapTite Outlet Couplings and Independent	ndent Regulators
CAB50PMIRSS	CAB50PMIRSS5	50 CFM Clean Air Panel with Stainless Steel Hansen Outlet Coupling Independent Regulators	gs and

#### One to Eight Worker Systems

- All assemblies include heavy duty wall mount panel, 3-stage filtration, visual filter change indicators, CO monitor with auto calibration, audible and visual alarms for high CO and low battery, and remote alarm jack.

#### **Manifold Systems**

10 PPM	5 PPM	
PART NUMBER	PART NUMBER	
CAB100PMHA	CAB100PMHA5	100 CFM Clean Air Panel with Hansen Outlet Couplings
CAB100PMSC	CAB100PMSC5	100 CFM Clean Air Panel with Schrader Outlet Couplings
CAB100PMCE	CAB100PMCE5	100 CFM Clean Air Panel with CEJN Outlet Couplings
CAB100PMSN	CAB100PMSN5	100 CFM Clean Air Panel with SnapTite Outlet Couplings
CAB100PMSS	CAB100PMSS5	100 CFM Clean Air Panel with Stainless Steel Hansen Outlet Couplings



Model CAB100PMIRHA

#### **Independent Regulator Systems**

CAB100PMIRHA	CAB100PMIRHA5	100 CFM Clean Air Panel with Hansen Outlet Couplings and Independent Regulators
CAB100PMIRSC	CAB100PMIRSC5	100 CFM Clean Air Panel with Schrader Outlet Couplings and Independent Regulators
CAB100PMIRCE	CAB100PMIRCE5	100 CFM Clean Air Panel with CEJN Outlet Couplings and Independent Regulators
CAB100PMIRSN	CAB100PMIRSN5	100 CFM Clean Air Panel with SnapTite Outlet Couplings and Independent Regulators
CAB100PMIRSS	CAB100PMIRSS5	100 CFM Clean Air Panel with Stainless Steel Hansen Outlet Couplings and Independent Regulators

#### **RAM Series Remote Air Manifolds**

#### One Worker Systems - Wall Mount

RAM1WMHA One Outlet Remote Air Manifold with Hansen Outlet Coupling



Model RAM1WMHA

#### RAM Series Remote Air Manifolds

- All assemblies below include Pelican® case, male inlet fitting and female quick-disconnect outlet fitting(s).

#### One Worker Systems - Portable

RAM1SC One Outlet Remote Air Manifold with Hansen Outlet Coupling
RAM1SC One Outlet Remote Air Manifold with Schrader Outlet Coupling
RAM1CE One Outlet Remote Air Manifold with CEJN Outlet Coupling
RAM1SN One Outlet Remote Air Manifold with SnapTite Outlet Coupling
RAM1SS One Outlet Remote Air Manifold with Stainless Steel Hansen

**Outlet Coupling** 



#### Two Worker Systems - Portable

#### **Manifold Systems**

RAM2SC Two Outlet Remote Air Manifold with Hansen Outlet Couplings
RAM2SC Two Outlet Remote Air Manifold with Schrader Outlet Couplings
RAM2CE Two Outlet Remote Air Manifold with CEJN Outlet Couplings
RAM2SN Two Outlet Remote Air Manifold with SnapTite Outlet Couplings
RAM2SS Two Outlet Remote Air Manifold with Stainless Steel Hansen

**Outlet Couplings** 

#### **Independent Regulator Systems**

RAM2IRHA Two Outlet Remote Air Manifold with Hansen Outlet Couplings

and Independent Regulators

RAM2IRSC Two Outlet Remote Air Manifold with Schrader Outlet Couplings and

**Independent Regulators** 

RAM2IRCE Two Outlet Remote Air Manifold with CEJN Outlet Couplings and Independent Regulators

RAM2IRSN Two Outlet Remote Air Manifold with SnapTite Outlet Couplings and Independent Regulators

RAM2IRSS Two Outlet Remote Air Manifold with Stainless Steel Hansen Outlet Couplings and Independent Regulators



Model RAM2IRHA

#### Four Worker Systems - Portable

#### **Manifold Systems**

RAM4HA
Four Outlet Remote Air Manifold with Hansen Outlet Couplings
RAM4SC
Four Outlet Remote Air Manifold with Schrader Outlet Couplings
RAM4CE
Four Outlet Remote Air Manifold with CEJN Outlet Couplings
RAM4SN
Four Outlet Remote Air Manifold with SnapTite Outlet Couplings
RAM4SS
Four Outlet Remote Air Manifold with Stainless Steel Hansen Outlet

Couplings

#### **Independent Regulator Systems**

RAM4IRHA Four Outlet Remote Air Manifold with Hansen Outlet Couplings and

Independent Regulators

RAM4IRSC Four Outlet Remote Air Manifold with Schrader Outlet Couplings and

Independent Regulators

RAM4IRCE Four Outlet Remote Air Manifold with CEJN Outlet Couplings

and Independent Regulators

RAM4IRSN Four Outlet Remote Air Manifold with SnapTite Outlet Couplings and Independent Regulators

RAM4IRSS Four Outlet Remote Air Manifold with Stainless Steel Hansen Outlet Couplings and Independent Regulators



Model RAM4IRHA

#### RAM Series Remote Air Manifolds

#### **Eight Worker Systems - Portable**

- All assemblies below include Pelican® case, male inlet fitting and female quick-disconnect outlet fitting(s)

#### **Manifold Systems**

RAM8HA Eight Outlet Remote Air Manifold with Hansen Outlet Couplings
RAM8SC Eight Outlet Remote Air Manifold with Schrader Outlet Couplings
RAM8CE Eight Outlet Remote Air Manifold with CEJN Outlet Couplings
RAM8SN Eight Outlet Remote Air Manifold with SnapTite Outlet Couplings

RAM8SS Eight Outlet Remote Air Manifold with Stainless Steel Hansen Outlet Couplings

#### **Independent Regulator Systems**

RAM8IRHA Eight Outlet Remote Air Manifold with Hansen Outlet Couplings and

**Independent Regulators** 

RAM8IRSC Eight Outlet Remote Air Manifold with Schrader Outlet Couplings and

**Independent Regulators** 

RAM8IRCE Eight Outlet Remote Air Manifold with CEJN Outlet Couplings and Independent Regulators

RAM8IRSN Eight Outlet Remote Air Manifold with SnapTite Outlet Couplings and Independent Regulators

RAM8IRSS Eight Outlet Remote Air Manifold with Stainless Steel Hansen Outlet Couplings and Independent Regulators



RA Remote Alarm

COM5 Replacement CO Monitor 5ppm Alarm Set Point
COM10 Replacement CO Monitor 10ppm Alarm Set Point

CABRS Replacement Sensor for CO Monitor

CABRS2 Replacement Sensor

CABKS1530 Kickstand for 15 and 30 CFM Models CABKS50100 Kickstand for 50 and 100 CFM Models

RACABLE Replacement Cable 50'

COHPKIT Tygon Tubing and Connector Kit



Kickstand



Model RAM8IRHA

Model RA

#### **Calibration Kits and Gas**

**Full Kits** 

CABCK Calibration Kit (includes Zero Air 34L Cylinders, 10 ppm CO, Regulator, Tubing

and Connector)

CABCK17L Same as above, with 17L Cylinders - no carrying case

CABCK103L Same as above, with 103L Cylinders

#### **Replacement Cylinders**

CABCGO Zero Air, 34L Cylinder
CABCG017L Zero Air, 17L Cylinder
CABCG0103L Zero Air, 103L Cylinder
CABCG10 10 PPM CO, 34L Cylinder
CABCG1017L 10 PPM CO, 17L Cylinder
CABCG10103L 10 PPM CO, 103L Cylinder

CABCALREG Regulator, tubing and connector fitting for CABCK calibration kit
CABCALREG103 Regulator, tubing and connector fitting for CABCK103L calibration kit

CABREGTB Tygon tubing for regulator



**Model CABCK** 

#### Replacement Filters, Elements and Change Indicators for 15 & 30 CFM Models

CAB30FA Filter Stage 1 - 15 or 30 cfm
CAB30FB Filter Stage 2 - 15 or 30 cfm
CAB30FC Filter Stage 3 - 15 or 30 cfm

CAB30FK Filter Element Kit, Includes CAB30FEA, CAB30FEB and CAB30FEC

CAB30FEA Filter Element A - Particulate
CAB30FEB Filter Element B - Coalescing
CAB30FEC Filter Element C - Activated Charcoal



Model CAB30FK

#### CAB and RAM Series Accessories

#### Replacement Filters, Elements and Change Indicators For 50 CFM Models

CAB50FA Filter Stage 1 - 50 cfm Filter Stage 2 - 50 cfm CAB50FB CAB50FC Filter Stage 3 - 50 cfm CAB50FK Filter Element Kit

• Includes CAB50FEA, CAB50FEB AND CAB50FEC

CAB50FEA Filter Element A - Particulate Filter Element B - Coalescing CAB50FEB CAB50FEC Filter Element C - Activated Charcoal



Model CAB50FK

#### For 100 CFM Models

CAB100FA Filter Stage 1 - 100 cfm CAB100FB Filter Stage 2 - 100 cfm CAB100FC Filter Stage 3 - 100 cfm Filter Element Kit CAB100FK

Includes CAB100FEA, CAB100FEB AND CAB100FEC

CAB100FEA Filter Element A - Particulate CAB100FEB Filter Element B - Coalescing Filter Element C - Activated Charcoal CAB100FEC

CAB100MB Mounting Block



Model CAB100FK

#### Filter Change Indicator

CAB15FCI Filter Change Indicator 15 cfm Filter Change Indicator 30 cfm CAB30FCI CAB50FCIA Filter Change Indicator 50 cfm, Stage 1 Filter Change Indicator 50 cfm, Stage 2 CAB50FCIB CAB100FCIA Filter Change Indicator 100 cfm, Stage 1 CAB100FCIC Filter Change Indicator 100 cfm, Stages 2 and 3



#### **Replacement Regulators and Parts**

CABREG1 Replacement Regulator 15 and 30 CFM CABREG2 Replacement Regulator 50 CFM CABREG3 Replacement Regulator 100 CFM CABREG4 Replacement Independent Regulator Quick-Disconnect Outlet Fitting Hansen (v14) CABQDHA Quick-Disconnect Outlet Fitting Snap Tite **CABQDSN** Quick-Disconnect Outlet Fitting Schrader CABQDSC **CABQDCE** Quick-Disconnect Outlet Fitting CEJN **CABQDSS** Quick-Disconnect Outlet Fitting Hansen Stainless Steel CABQDNV Quick-Disconnect Outlet Fitting Nova

CABQDCAP Quick-Disconnect Dust Cap

41PRV Pressure Relief Valve, 125 psi - All CAB and RAM Units

S196810 Replacement Gauge (CAB30)



#### **Power Cords**

6-Foot Power Cord for Japan **PA3UCJACORD** 

**PA3UCUKCORD** 6-Foot Power Cord for United Kingdom **PA3UCAUCORD** 6-Foot Power Cord for Austrailia **PA3UCEUCORD** 6-Foot Power Cord for Europe

CABPC U.S. Powercord



**Model PA3UCEUCORD** 

# Reliable, Economical Air Sources for Airline Respirators.

Easy to operate and maintain, Bullard Free-Air® pumps offer a low cost way to supply clean, breathable air to workers in contaminated environments. They are an economical air source when compressed air is not available and an inexpensive way to add breathing capacity when a compressed air source is at its maximum utilization.

#### **Economical**

Bullard Free-Air pumps are efficient and economical. They are portable and can be moved quickly and easily from jobsite to jobsite. Plus, they require no expensive plumbing or installation. Bullard Free-Air pumps are oil-less so they do not produce carbon monoxide, oil vapor or oil mist. Since CO monitors, temperature alarms, airline filters and complicated calibration equipment aren't necessary, Free Air pumps are frequently a more cost effective alternative to compressed air.

#### Easy-To-Use

Bullard Free-Air pumps are reliable and easy to use. They are available in both electric and air driven models. Electric models have low power requirements; simply plug-in, set the proper air pressure and go to work. The air driven model is ideal for both general purpose and hazardous duty use. Used with optional extension hose kits, the breathable air inlet can be located up to 300 feet away from the pump.

#### **Pump and Number of Workers**

Model	CFM	Number of Workers Wearing Hoods	Number of Workers Wearing Masks	Cooling Options
ADP20	11-31	4	6	Frigitron 2000 (1 worker max)
EDP10	10	1	2	None
EDP16TE	16	2	4	None
EDP16HAZ	16	2	4	None
EDP30	30	4	6	Frigitron 2000 (2 worker max)
EDP50	50	7	10	None

#### Thermal Overload Tips

- Always use 1/2" Connections
- Always use 1/2" ID Hose
- Only use Cool Tubes when compatible
- Never exceed recommended operating pressures
- · Always use a heavy duty extension cord



# Air Driven Pumps - 30 CFM

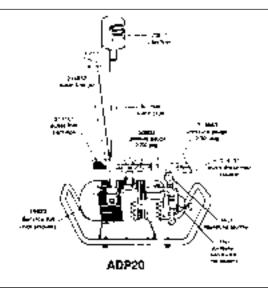
#### ADP20

Air-Driven, Oil-Less Air Pump

- Supplies air to four hood-style respirators or six half or full face mask respirators
- 30 CFM at 5 psi with minimum 85 cfm at 95 psi incoming drive air pressure
- Intrinsically safe
- Pressure gauge (0-30 psig)
- Two 1/2" Industrial Interchange (Hansen compatible) quick-disconnect couplers
- Shipping Weight: 100 lbs.



#### **ADP20 Replacement Parts**



#### 17761

Service Kit for Air Motor

- Four vanes
- Two motor bearings
- Four vane springs
- Seal
- Two body gaskets
- Two push pins
- End cap gasket
- 0-ring



**LUBREG** Lubricator Regulator

S09853 Pressure Gauge, 0-200 PSI



#### 15922

Service Kit for Pump

- Four carbon vanes
- 23611 inlet filter
- S17101 outlet filter cartridge





# ADP20 Replacement Parts

4621 ADP20 Manifold Muffler



21052

Conversion Kit

• Conversion components - ADP16 or ADP3CA to ADP20



S19683

Pressure Gauge, 0-30 PSI



S16191

Quick-Disconnect Coupler

- $^1/_2$ " Industrial Interchange (Hansen compatible), shut-off  $^3/_6$ " NPT Pipe Thread



# ADP20 Replacement Parts

23611	Inlet Filter	
	<ul> <li>Change every 500 hours or as required</li> <li>One required for EDP10, EDP16TE/HAZ, ADP20; two required for EDP30 &amp;</li> </ul>	EDP50
244852	Outlet Filter Jar	700
263552	Outlet Filter Assembly O-Ring	
S17101	Outlet Filter	
	<ul> <li>Carbofine (change every 200 hours or as required)</li> <li>One required for EDP10, EDP16TE/HAZ, ADP20; 4 required for EDP30; eight required for EDP50</li> </ul>	
S17931	Cleaning Solvent, 14 oz. Aerosol Can	
V22	Quick-Disconnect Coupler Adapter • Converts pump's quick-disconnect coupler to double 3/6" female NPT	
V23	Quick-Disconnect Adapter • Converts pump's quick-disconnect coupler to single 3/8" female NPT	The said of the
V24	Quick-Disconnect Coupler Splitter/Adapter • Converts pump's quick-disconnect coupler to double 1/2" Industrial Interchange female couplers (one flow through, one shut-off)	
V50EX	Remote Extension Hose Kit  • 50-ft. length  • Connects to V50IN to extend length  • Maximum five per pump  • 1 1/2" ID	
V50IN	Remote Inlet Air Hose Kit  • 50-ft. length  • Connects to pump for remote location of inlet filter  • Maximum one per pump  • 1 1/2" ID	

#### Electric Driven Pumps - 10 CFM

EDP10HM One to Two Person Pump (With Run Hour Meter)

**EDP10** One to Two Person Pump

- 3/4 HP electric-driven, oil-less air pump with open drip-proof motor drive
- Supplies air to one hood-style or two half or full face mask airline respirators
- Carrying handle
- Inlet and outlet filter cartridges
- Pressure gauge (0-15 psig)
- Electrical cord and On/Off switch
- One '/²" Industrial Interchange (Hansen compatible) quick-disconnect coupler
- Shipping Weight: 60 lbs.

EDP1050HZ220VHM One to Two Person Pump (With Run Hour Meter)

**EDP1050HZ220V** One to Two Person Pump

• 220V 50HZ version

# **EDP10 Replacement Parts**

#### **EDP10 Electrical Motor Specifications**

Enclosure: Open, Drip-proof

Meets UL Requirements,

CSA Approved

Class: Natl. Elec. Code:

Class B Design N Code K

H.P. 3/4
Phase: Single
Cycles: 60 Hz
Volts: 115

Amps: 10.2 @ 115 V

Service Factor: 1.25

Protector: Internal Thermal Overload

**15921** Service Kit for EDP10

Four carbon vanes23611 inlet filter

• S17101 outlet filter cartridge

15923 Service Kit for EDP1050HZ220V

S16983 Pressure Gauge, 0-30 PSI EDPPRV Pressure relief value



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EDP10





\$16483 Quick-Disconnect Coupler

 $\bullet$   $^{1}/_{2}$ " Industrial Interchange, flow-through

• 3/4" NPT pipe thread





244652 Outlief for de-

2457%

\$17191

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# EDP10 Replacement Parts

23611	Inlet Filter	
	• Change every 500 hours or as required	
00640	• One required for EDP10, EDP16TE/HAZ, ADP20; two required for EDP30 8	EDP50
23612	For EDP2A retrofit kit For EDP1A retrofit kit	Management of the Party of the
23613		
Hexadaptor	Bushing for EDP10 inlet filter	
244852	Outlet Filter Jar	
INLINE10	Inline Filter Assembly for remote re-locating of outlet	
263552	Outlet Filter Assembly O-Ring	0
S17101	Outlet Filter	
	<ul> <li>Carbofine (change every 200 hours or as required)</li> <li>One required for EDP10, EDP16TE/HAZ, ADP20; four required for EDP30 eight required for EDP50</li> </ul>	);
222752	Carrying Handle	
		1
		, )
S17931	Cleaning Solvent, 14 oz. Aerosol Can	<b>医</b> 对于
V22	Quick-Disconnect Coupler Adapter	
	<ul> <li>Converts pump's quick-disconnect coupler to double <sup>3</sup>/<sub>8</sub>" female NPT</li> </ul>	-
V23	Quick-Disconnect Adapter	
	<ul> <li>Converts pump's quick-disconnect coupler to single <sup>3</sup>/<sub>8</sub>" female NPT</li> </ul>	Translation .
V24	Quick-Disconnect Coupler Splitter/Adapter	A
	<ul> <li>Converts pump's quick-disconnect coupler to</li> </ul>	/8
	double 1/2" Industrial Interchange female couplers	ALC:
	(one flow-through, one shut-off)	
V50EX	Remote Extension Hose Kit	
	• 50-ft. length	1
	• Connects to V50IN to extend length	
	Maximum five per pump	
	• 1 ¹/²" ID	10
V50IN	Remote Inlet Air Hose Kit	
	• 50-ft. length	100
	<ul> <li>Connects to pump for remote location of inlet filter</li> </ul>	
	Maximum one per pump	
	• 1 ¹/₂″ ID	1011
V50INF	Remote Inlet Air Hose Fittings Kit	00000000
		00100000
НМ	Run Hour Meter-Field Conversion Kit	



#### Electric Driven Pumps - 16 CFM

#### EDP16TE

Two to Three Person Pump

- 1 ½ HP electric-driven, oil-less air pump with totally enclosed fan-cooled motor drive (TFEC)
- Supplies air to two hood-style or three half or full face mask airline respirators
- Inlet and outlet filter cartridges
- Pressure gauge (0-30 psig)
- Electrical cord and On/Off switch
- Two 1/2" Industrial Interchange (Hansen compatible) quick-disconnect couplers
- Shipping Weight: 100 lbs

EDP16TE60HZ220V Same as EDP16TE wired for 220V, 60Hz



#### EDP16HAZ

Two to Three Person Hazardous Duty Pump (Not Pictured)

- 1 ½ HP electric-driven, oil-less air pump with hazardous-duty motor (Explosion Proof)
- Supplies air to two hood-style or three half or full face mask airline respirators
- Inlet and outlet filter cartridges
- Pressure gauge (0-30 psig)
- Starter/contactor to be supplied by user
- Two 1/2" Industrial Interchange (Hansen compatible) quick-disconnect couplers
- Shipping Weight: 100 lbs.

#### **EDP16TE Electrical Motor Specifications**

Enclosure: Totally-Enclosed, Fan Cooled

Capacitor Start

Meets UL Requirements, CSA Approved

Class: Natl. Elec. Code: Class III

Division 1 and 2

H.P.:  $1^{1/2}$  Phase: Single

Cycles: 60 Hz Volts: 115/208/230

(Connected for 115 V.)

Amps: 16.0 @ 115 V 8.0 @ 208/230 V.

Service Factor: 1.15

Protector: Manual Reset Thermal Overload equipped for

115 volt operation.

Thermal Overload and Starter/Contactor to be provided by the user if rewired to

208/230 volts.

# **EDP16HAZ Electrical Motor Specifications**

Enclosure: Hazardous Duty

Meets UL Requirements, CSA Approved

Class: National Electric Code:

Class I, Group D, Div. 1 & 2 Class II, Group F, Div. 1 & 2 Class II, Group G, Div. 1 & 2 Class III, Division 1 & 2<

H.P.: 1 1/2
Phase: Three
Cycles: 60 Hz
Volts: 230-460
Amps: 5.0 @ 230 V

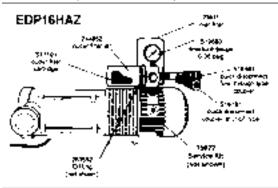
Service Factor: 1.0

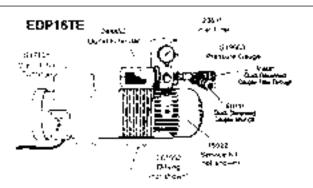
Protector: Thermal Overload and Starter/Contactor to be

provided by the user.

2.5 @ 460 V

# EDP16HAZ/EDP16TE Replacement Parts





15922

Service Kit

- Four carbon vanes
- 23611 inlet filter
- S17101 outlet filter cartridge



S19683

Pressure Gauge, 0-30 PSI



**INLINE16** 

Inline Filter Assembly for remote re-locating of outlet



S16191

### Quick-Disconnect Coupler

- 1/2" Industrial Interchange (Hansen compatible), shut-off
- 3/8" NPT Pipe Thread



S16481

### Quick-Disconnect Coupler

- 1/2" Industrial Interchange (Hansen compatible), flow-through
- 3/8" NPT Pipe Thread



23611

### Inlet Filter

- Change every 500 hours or as required
- One required for EDP10, EDP16TE/HAZ, ADP20; two required for EDP30 & EDP50



244852

Outlet Filter Jar



263552

Outlet Filter Assembly O-Ring



S17101

### Outlet Filter

- Carbofine (change every 200 hours or as required)
- One required for EDP10, EDP16TE/HAZ, ADP20; four required for EDP30; eight required for EDP50



S17931

Cleaning Solvent, 14 oz. Aerosol Can



# EDP16HAZ/EDP16TE Replacement Parts

### V22 Quick-Disconnect Coupler Adapter

• Converts pump's quick-disconnect coupler to double 3/8" Female NPT



### V23 Quick-Disconnect Adapter

 Converts pump's quick-disconnect coupler to single 3/8" Female NPT



### V24 Quick-Disconnect Coupler Splitter/Adapter

 Converts pump's quick-disconnect coupler to double <sup>1</sup>/<sub>2</sub>" Industrial Interchange female couplers (one flow through, one shut-off)



### V50EX Remote Extension Hose Kit

- 50-ft. length
- Connects to V50IN to extend length
- Maximum five per pump
- 1 1/2" ID



### **V50IN** Remote Inlet Air Hose Kit

- 50-ft. length
- Connects to pump for remote location of inlet filter
- Maximum one per pump
- 1 1/2" ID



### Electric Driven Pumps - 30 CFM

Electric Driven, Oil-less Air Pump

- All motors are open drip-proof.
- Supplies air to:
  - o Four hood-style; or
  - O Six half or full face mask airline respirators; or
  - Two hood-style respirators equipped with FRIGITRON® climate control devices.
- Respirators must be approved to operate on 30 psig or less.
- Shipped complete with inlet and outlet filter cartridges, pressure gauges, pressure relief valves and one air supply hose quick-disconnect pod with six 1/2" Industrial Interchange (Hansen compatible) quick-disconnect couplers.
- Three phase motors come standard with protective reversing starters to prevent running backwards.
- Shipping weight: 292 lbs.

**NOTE:** EDP30 pumps are custom built to your specifications. Contact Bullard Customer Service for lead time information.



EDP30A208	Single Phase 5 HP Motor, 208 Volt
EDP30A230	Single Phase 5 HP Motor, 230 Volt
EDP30B208	Three Phase 5 HP Motor, Reversing Starter, 208 Volt
EDP30B230	Three Phase 5 HP Motor, Reversing Starter, 230 Volt
EDP30B460	Three Phase 5 HP Motor, Reversing Starter, 460 Volt
EDP30C230	Three Phase 7.5 HP Motor, Reversing Starter, 230 Volt
EDP30C460	Three Phase 7.5 HP Motor, Reversing Starter, 460 Volt

## Electric Driven Pumps - 50 CFM

Electric Driven, Oil-less Air Pump

- All motors are open drip-proof.
- Supplies air to:
  - Seven hood-style; or
  - Ten half or full face mask airline respirators.
- Respirators must be approved to operate on 15 psig or less.
- Shipped complete with inlet and outlet filter cartridges, pressure gauges, pressure relief valves and two air supply hose quick-disconnect pods with six 1/2" industrial interchange (Hansen compatible) quick-disconnect couplers.
- Three phase motors come standard with protective reversing starters to prevent running backwards.
- Shipping weight: 317 lbs.

NOTE: EDP50 pumps are custom built to your specifications. Contact Bullard Customer Service for lead time information.



EDP50A208	Single Phase 5 HP Motor, 208 Volt
EDP50A230	Single Phase 5 HP Motor, 230 Volt
EDP50B208	Three Phase 5 HP Motor, Reversing Starter, 208 Volt
EDP50B230	Three Phase 5 HP Motor, Reversing Starter, 230 Volt
EDP50B460	Three Phase 5 HP Motor, Reversing Starter, 460 Volt
EDP50C208 EDP50C230 EDP50C460	Three Phase 7.5 HP Motor, Reversing Starter, 208 Volt Three Phase 7.5 HP Motor, Reversing Starter, 230 Volt Three Phase 7.5 HP Motor, Reversing Starter, 460 Volt

**Replacement Parts** 

p. 181-183

# EDP30 and EDP50 Replacement Parts

V60	Pod Extension Hose  • 100 Feet  • 1 ¹/₄" I.D.  • Three per pod maximum	
26701	Pod Gasket (Filter Side)	<b>3</b>
27161	Pod Gasket (Cover Side)	
27681	Pod Assembly	
28151	EDP30 Pressure Relief Valve	O C
28152	EDP50 Pressure Relief Valve	
S16191	Quick-Disconnect Coupler  • ¹/₂″ Industrial Interchange (Hansen compatible), shut-off • ³/₅″ NPT pipe thread	

# Air Quality and Filtration

# Free-Air® Pumps

# EDP30 and EDP50 Replacement Parts

S19683

Pressure Gauge, 0-30 PSI
• For EDP30 and EDP50 pod



S19688

Pressure Gauge, 0-60 PSI

• For EDP30 and EDP50 manifold



**S2084** 

EDP30 Drive Belt (Matched Pair)



S2089

Kamlok Adapter (Pod)
• 1 1/4" ID aluminum



**S2090** 

Kamlok Coupler (Manifold)

• 1 1/4" ID aluminum



15924

Service Kit

- Four carbon vanes
- Two bearings
- Two cover gaskets





# EDP30 and EDP50 Replacement Parts

23611	Inlet Filter	EDP50
244852	Outlet Filter Jar	
263552	Outlet Filter Assembly O-Ring	
S17101	Outlet Filter • Carbofine (change every 200 hours or as required) • One required for EDP10, EDP16TE/HAZ, ADP20; four required for EDP30; eight required for EDP50	
517931	Cleaning Solvent, 14 oz. Aerosol Can	Court I
V22	Quick-Disconnect Coupler Adapter • Converts pump's quick-disconnect coupler to double 3/8" Female NPT	
V23	Quick-Disconnect Adapter • Converts pump's quick-disconnect coupler to single 3/8" Female NPT	Transition of the last of the
V24	Quick-Disconnect Coupler Splitter/Adapter • Converts pump's quick-disconnect coupler to double ½" Industrial Interchange female couplers (one flow through, one shut-off)	
V50EX	Remote Extension Hose Kit  • 50-ft. length  • Connects to V50IN to extend length  • Maximum five per pump  • 1 1/2" ID	
V50IN	Remote Inlet Air Hose Kit  • 50-ft. length  • Connects to pump for remote location of inlet filter  • Maximum one per pump  • 1 ½" ID	

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\*If the product you are looking for does not appear in this index, please visit www.bullard.com/discontinued for more information

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PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       PPEBAG       76         QNFT45       143	72, 73, 74, 87, 88, 89, 119, 126, 127, 128 RLS	182  S19688	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95, 102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21	72, 73, 74, 87, 88, 89, 119, 126, 127, 128 RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC35S       132         SPEC40L       132         SPEC40S       132	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183       174, 176,         179, 183       179, 183
PC90XXXL     104, 105       PDR45     135, 137       PDR45B     137       PL     142       POLYBTC     76, 95, 102       PPEBAG     76       QNFT45     143       R50     21       R160     12, 21       R325     12	72, 73, 74, 87, 88, 89, 119, 126, 127, 128 RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40L       132         SPEC40S       132         SPECCFML       132, 140	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R330       12	72, 73, 74, 87, 88, 89, 119, 126, 127, 128 RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40L       132         SPEC40S       132         SPECCFML       132, 140         SPECCFS       132, 140	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95, 102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R330       12         R538       24	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40L       132         SPEC40S       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R330       12	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC40L       132         SPEC40S       132         SPEC4FML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95, 102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R330       12         R538       24	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40L       132         SPEC40S       132         SPECFML       132, 140         SPECFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         132	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95, 102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R330       12         R538       24         R540       24	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40L       132         SPEC40S       132         SPECFML       132, 140         SPECFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         132	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183       174, 176,         179, 183       176, 179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC40L       132         SPEC40S       132         SPEC4FML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS       132         SPECLSYS       132	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151         V20100ST       83, 113,
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       PPEBAG         PC       0NFT45         143       850         21       R160         12, 21       8325         12       R330         12       R538         24       R540         24       R541         24       RA         169       RA45B         135, 137	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40S       132         SPEC4OS       132, 140         SPECCFML       132, 140         SPECIVK       133, 136,         141       SPECLSYS         132       SPECLSYS50         132       SPECPDE5L         135, 137	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       176, 179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151       125, 132,
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PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102         PPEBAG       76         QMFT45       143         R50       21         R160       12, 21         R325       12         R330       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40S       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         125, 132,       145, 151         VECTOR-C       10
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95, 102         PPEBAG       76         ONFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1HA       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SENTINEL2       34         SPEC35L       132         SPEC40L       132         SPEC40S       132         SPEC40S       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS50       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135         SPECPDE10S       135	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       176, 179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151         V20100ST       83, 113,         125, 132,         145, 151         VECTOR-C       10         VECTOR-CRT       10
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102         PPEBAG       76         ONFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1HA       168         RAM1SC       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC4OL       132         SPEC4OS       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS50       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135         SPECPDE10S       135         SPECPDLA       135	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       176         V60       181         V1000       158         V2050ST       83, 113,         125, 132,       145, 151         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1HA       168         RAM1SC       168         RAM1SN       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC4OL       132         SPEC4OS       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS50       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135         SPECPDE10S       135         SPECPDLA       135         SPECPDML       135, 140	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         125, 132,         145, 151         VECTOR-C       10         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11         VTR1600       9, 10, 11
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102         PPEBAG       76         ONFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1HA       168         RAM1SC       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC4OL       132         SPEC4OS       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS50       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135         SPECPDE10S       135         SPECPDLA       135	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       176         V60       181         V1000       158         V2050ST       83, 113,         125, 132,       145, 151         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1HA       168         RAM1SC       168         RAM1SN       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC4OL       132         SPEC4OS       132         SPECCFML       132, 140         SPECCFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYS50       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE10L       135         SPECPDE10S       135         SPECPDLA       135         SPECPDML       135, 140	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       174, 176,         179, 183         V50INF       176         V60       181         V1000       158         V2050ST       83, 113,         125, 132,         145, 151         VECTOR-C       10         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11         VTR1600       9, 10, 11
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       102         PPEBAG       76         QNFT45       143         R50       21         R160       12, 21         R325       12         R538       24         R540       24         R541       24         RA       169         RA45B       135, 137         RAK       136, 140         RAM1CE       168         RAM1SC       168         RAM1SC       168         RAM1SN       168         RAM1SN       168         RAM1SN       168         RAM1SN       168         RAM1WMHA       167	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC40L       132         SPEC40S       132         SPEC4FML       132, 140         SPECIFS       132, 140         SPECIFS       133, 136,         141       SPECISYS         SPECLSYS       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE1OL       135         SPECPDLA       135         SPECPDLA       135         SPECPDML       135, 140         SPECPDS       135, 140         SPECPDSA       135	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V50EX       174, 176,         179, 183         V50IN       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151       125, 132,         145, 151       15         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11         VTR1600       9, 10, 11         VTS       11         WS60PM       39
PC90XXXL       104, 105         PDR45       135, 137         PDR45B       137         PL       142         POLYBTC       76, 95,         102       PPEBAG       76         QNFT45       143         R50       21       R160       12, 21         R325       12       R330       12         R538       24       R540       24         R541       24       RA       169         RA45B       135, 137       RAK       136, 140         RAM1CE       168       RAM1SC       168         RAM1SN       168       RAM1SN       168         RAM1SN       168       RAM1SN       168         RAM1SS       168       RAM1WMHA       167         RAM2CE       168	72, 73, 74, 87, 88, 89, 119, 126, 127, 128  RLS	182         S19688       182         SEK       133, 136,         142         SENTINEL1       34         SPEC35L       132         SPEC35S       132         SPEC40L       132         SPEC40S       132         SPECFML       132, 140         SPECFS       132, 140         SPECIVK       133, 136,         141       SPECLSYS         SPECLSYS       132         SPECLSYSSO       132         SPECPDE5L       135, 137         SPECPDE5S       135         SPECPDE1OL       135         SPECPDE1OS       135         SPECPDLA       135         SPECPDML       135, 140         SPECPDS       135, 140         SPECPDSA       135         SS5       22	V35       83, 90,         125, 129         V40       90, 129         V41       90         V42       90         V43       90         V50EX       174, 176,         179, 183         V50IN       176         V60       181         V1000       158         V2050ST       83, 113,         132, 151       125, 132,         145, 151       15         VECTOR-C       10         VECTOR-CRT       10         VT600       9, 10, 11         VTR500       9, 10, 11         VTS       11         WS60PM       39         WS60TM       6, 33, 40
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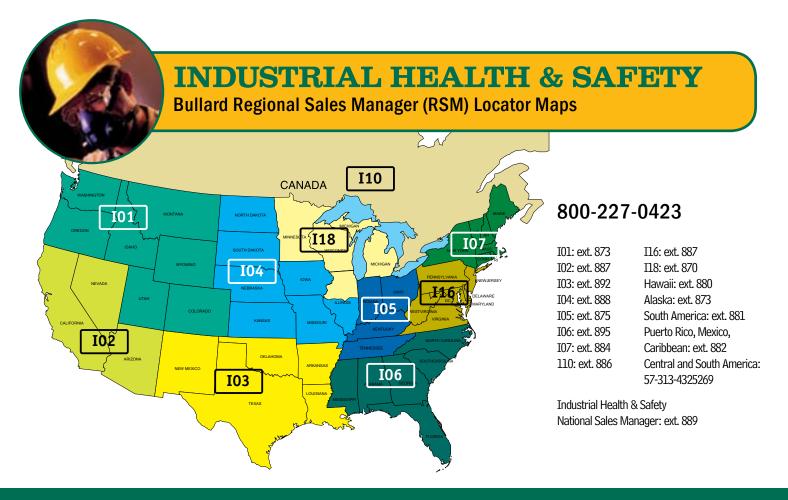


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