

## For use with Airline Respirators



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

### Air Quality Requirements

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

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

The requirements for Grade D breathable air include:

- Oxygen ..... 19.5-23.5%
  - Hydrocarbons in mg/m<sup>3</sup> of gas ..... 5 mg/m<sup>3</sup> max.
  - Carbon monoxide ..... 10 ppm max.
  - Carbon dioxide ..... 1,000 ppm max.
  - Odor ..... No pronounced odor\*
- No toxic contaminants at levels that make air unsafe to breathe.

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

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

**⚠ WARNING**

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

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

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

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

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

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

## Air Pressure

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

### ▲ WARNING

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

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

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

## Air Supply Hose

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

### ▲ WARNING

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

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

### ▲ WARNING

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

## Ordering Information

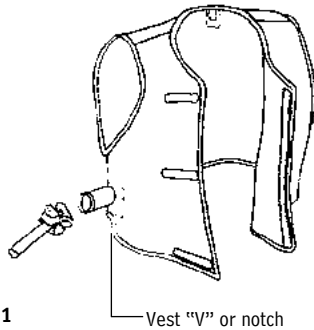
CATALOG NUMBER	DESCRIPTION
DC5040	1/4" Industrial Interchange (Hansen compatible) quick-disconnect nipple, adjustable temperature control, CH60 connector hose, heat shield and belt
DC70ML	Medium/Large Cooling Vest
DC70XLXXL	X-Large/XX-Large Cooling Vest
DC705X	5X-Large Cooling Vest
CH60	Connector Hose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

## Assembly and Use

Assembly must be conducted in an uncontaminated atmosphere.

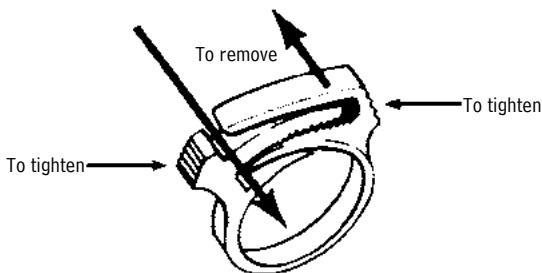
### Assembling the Cooling Vest

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



**Figure 1**

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



**Figure 2**

### Head Shield Assembly Instructions

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

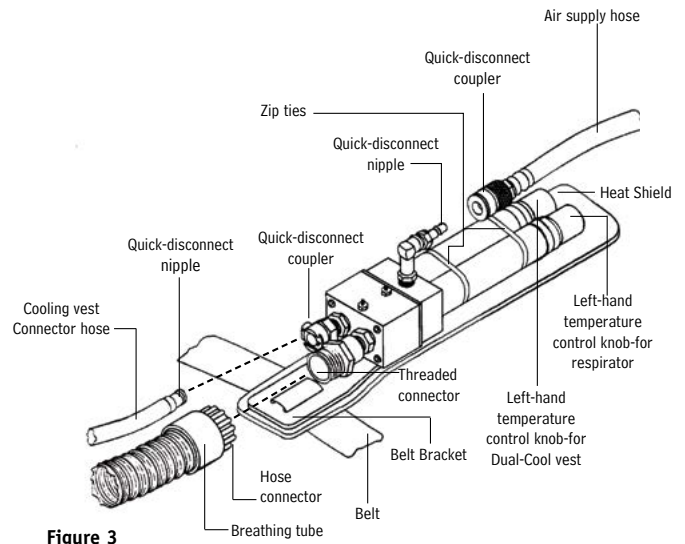
#### Assembly

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

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

### Donning the Dual-Cool Tube and Cooling Vest

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



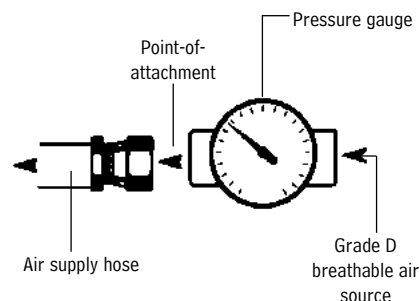
**Figure 3**

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

#### NOTE

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

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



## Operating the Dual-Cool Tube

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

### NOTE

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

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

## Cleaning

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

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