



Free-Air® Pump Instruction Manual



This manual provides detailed instructions, warnings and other information for individuals using Bullard Free-Air Pump models EDP30 and EDP50

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GENERAL INFORMATION

Bullard Free-Air Pumps transfer ambient air from a clean air location, where breathable air can be assured at all times, to workers wearing Type C or CE continuous-flow supplied-air respirator hoods or tight fitting half or full face masks.

The ambient air is filtered through a medium efficiency inlet filter and a CARBOFINE Outlet Filter before entering the respirator's air supply hose.

Bullard Free-Air Pumps are oil-less and have rotary carbon vanes. They produce no carbon monoxide, oil vapors, oil mist or moisture. They do not require expensive carbon monoxide monitors, high temperature alarms or airline filters. No calibration is required.

READ ALL INSTRUCTIONS BEFORE USING YOUR FREE-AIR PUMP

WARNINGS

READ ALL INSTRUCTIONS IN THIS MANUAL BEFORE USING FREE-AIR PUMP MODELS EDP30 OR EDP50.

FAILURE TO OPERATE THESE PUMPS IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL MAY RESULT IN DEATH OR SERIOUS INJURY TO THE RESPIRATOR WEARER.

1. Place the pump's inlet filters in a clean breathable air location at all times. The pump **WILL NOT** remove carbon monoxide, toxic gases or other contaminants from the incoming air it transfers to the respirator wearer.

See the **BREATHING AIR REQUIREMENTS** section on page 6 for specific details on breathing air quality.

2. This pump will supply the required volume of air (6-15 cfm for hoods or 4-15 cfm for tight fitting mask) to low pressure supplied-air respirators. The respirators must be approved by MSHA/NIOSH to operate at 30 psig or less if using an EDP30 pump, or 15 psig or less if using an EDP50 pump.

Be sure the pump's outlet pressure, measured by the pressure gauge on the air supply hose's quick-disconnect coupler pod, is maintained above the minimum pressure setting required by the respirator manufacturer.

To verify your respirator can be used with this pump refer to:

- a) The Pump Performance Table on pages 4 and 5 for the maximum output air pressure (psig) of the pump model you are using.
- b) The section in the respirator's instruction manual for the MSHA/NIOSH approved pressure range and permissible air supply hose lengths.

If you have any questions about whether or not your respirator is compatible with this pump, contact the respirator manufacturer or Bullard's Customer Service Department at 1-800-827-0423 or 1-800-227-0423

3. Supplied-air respirators used with this pump **MUST NOT** be worn in any atmosphere immediately dangerous to life or health or from which the wearer cannot escape without the use of the respirator.

Supplied-air respirators used with this pump **MUST NOT** be worn in oxygen deficient or unknown atmospheres.

4. When connecting respirators to the Free-Air pump, use only the air supply hose and couplers required by the respirator manufacturer and approved by MSHA/NIOSH.

Use of non-approved hoses or couplers will VOID the respirator's MSHA/NIOSH approval and could reduce the air flow to the respirator, resulting in possible death or serious injury to the respirator wearer.

- 5. DO NOT modify or alter the pump in any manner. Use only approved Bullard Free-Air pump components and replacement parts on this pump.**

Failure to use approved Bullard components and replacement parts invalidates all Bullard warranties, and may result in death or serious injury to the respirator wearer.

- 6. If you have any questions concerning the use of the pump or your respirator, or you are not sure the inlet filters are in a breathable air location, ask your supervisor.**

All instructions for the use and care of this product must be supplied to you by your employer as recommended by the manufacturer and as required by Federal Law (29 CFR 1910.134).

For technical assistance or additional copies of this manual, call or write:

**E.D. BULLARD COMPANY
1898 Safety Way
Cynthiana, KY 41031-9303
Call Toll-Free: 1-800-827-0423
or 1-800-227-0423
Facsimile: 1-606-234-8987**

NUMBER OF RESPIRATORS THAT CAN BE USED WITH PUMPS

Depending on the pump model and style of respirator(s) being used, Bullard EDP30 and EDP50 Free-Air Pumps will supply air for up to ten (10) workers.

Refer to the respirator's MSHA/NIOSH approved pressure range and permissible air supply hose length.

The Respirator's Minimum Approved Pressure must be 30 psig or less if using Model EDP30 or 15 psig or less if using Model EDP50.

Maximum number of respirators at different air pressure readings that can be used with EDP30 and EDP50 pumps

On the chart below, find the relevant Output Air Pressure (psig) corresponding to the respirator's approved pressure range to determine the pump's total air volume (cfm), and maximum number of respirators that can be used at that air volume. For additional information, the ampere loading on the pump's motor is shown in the right hand column.

PUMP PERFORMANCE TABLES

EDP30 PUMP

Pump's Output Air Pressure (psig)	Pump's Output Air Volume (cfm)*	Maximum Recommended Mask Respirators**	Maximum Recommended Hood Respirators**	Motor Amp Load***
5	32	Six	Four	16
10	30	Six	Four	18
15	28	Five	Four	19
20	26	Five	Three	22
25	24	Four	Three	24
30	22	Four	Three	26

EDP30 PUMP WITH FRIGITRON 2000 AIR CONDITIONER

18-25	24-25	None	Two	17
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* Assumes that no air is being dumped from Pressure Relief Valves.

** It should be noted that the Minimum Air Flow required for each tight-fitting mask style respirator is four (4) cfm and for each hood style respirator is six (6) cfm.

The ratings which appear here, therefore, are conservative, but reflect E.D. Bullard Company's position that worker respiratory protection is enhanced when air flow available to the respirator wearer is above the NIOSH-required minimums.

*** Motor Starter Overload Heater should not be exposed to more than 30 Amps of continuous electrical draw.

PUMP PERFORMANCE TABLE Continued.

EDP50 PUMP

Pump's Output Air Pressure (psig)	Pump's Output Air Volume (cfm)*	Maximum Recommended Mask Respirators**	Maximum Recommended Hood Respirators**	Motor Amp Load***
5	54	Ten	Seven	22
10	50	Ten	Seven	25
15	46	Nine	Six	28

* Assumes that no air is being dumped from Pressure Relief Valves.

** It should be noted that the Minimum Air Flow required for each tight-fitting mask style respirator is four (4) cfm and for each hood style respirator is six (6) cfm.

The ratings which appear here, therefore, are conservative, but reflect E.D. Bullard Company's position that worker respiratory protection is enhanced when air flow available to the respirator wearer is above the NIOSH required minimums.

***Motor Starter Overload Heater should not be exposed to more than 30 Amps of continuous electrical draw.

BREATHING AIR REQUIREMENTS

AIR QUALITY

The Free-Air pump's inlet filters MUST be located in a clean breathable air location at all times. Breathable air drawn into the inlet filters MUST meet at least the requirements for Type 1 Gaseous Air described in the Compressed Gas Association Commodity Specification G-7.1 (Grade D or higher), as specified by Federal Law 30 CFR, Part 11, Subpart J, 11.12(b).

The requirements of Grade D breathable air include:

- * Oxygen.....19.5 - 23.5%
- * Hydrocarbons (condensed)
in mg/m³ of gas.....5 mg/m³ maximum
- * Carbon Monoxide.....10 ppm maximum
- * Carbon Dioxide.....1,000 ppm maximum
- * No toxic contaminants at levels which would make the air unsafe to breath.

Refer to the C.G.A. Commodity Specification G-7.1 for complete details. It is available from:

Compressed Gas Association
500 Fifth Avenue
New York, NY 10036

ASSEMBLING THE FREE-AIR PUMP

The only assembly required on an EDP30 or EDP50 Pump is to attach the air supply hose quick-disconnect pod(s) to the pump's manifold.

1. Remove the pump from its shipping pallet and the air supply hose quick-disconnect pod(s) from their shipping carton.
2. The air supply hose quick-disconnect pods can be located in the work area, up to 300 feet from the pump. Use Bullard's Cat. No. V60, 100 foot extension hose to extend the pod(s): (If V60 extension hose IS NOT required, go to instruction 3).

- a) Attach the V60 extension hose to the pump's manifold. If extending only one pod, connect the V60 hose to the manifold Kamlok coupler that is not plugged. Lock the Kamlok male fitting on the hose to the Kamlok female coupler on the manifold (Figure 1).

If you are not using the other manifold coupler, leave the Kamlok plug installed to prevent air from freely flowing.

NOTE: Due to the relatively high volume of air pumped through the V60 hose, the first 100 feet of hose may tend to vibrate. The vibration dissipates as additional lengths of hose are added.

- b) If additional lengths of V60 extension hose are required, connect them together using the Kamlok couplers (Figure 2).

DO NOT EXTEND THE POD(S) MORE THAN 300 FEET (3 LENGTHS OF V60 HOSE) FROM THE PUMP'S MANIFOLD.

- c) Attach the pod(s) to the end of the V60 hose. They should be connected so that the handle and pressure relief valve are on top of the pod (See next page Figure 3).

Lock the Kamlok Male Fitting on the Pod to the Female Coupling on the Hose.

3. If the V60 extension hose is not required, assemble the pod(s) directly to the pump's manifold. The pods should be connected so that the handle and pressure relief valve are on top of the pod (See next page Figure 4).

If using only one pod, connect it to the manifold Kamlok coupler that is not plugged. Lock the Kamlok male fitting on the pod to the female coupler on the pump's manifold.

Leave the plug in the other coupler to prevent air from freely flowing.

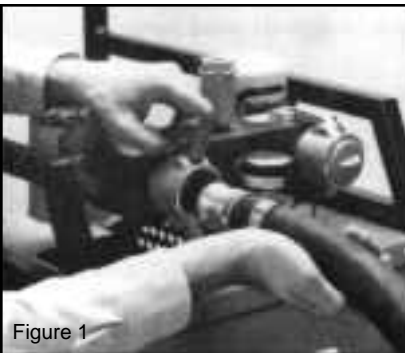


Figure 1

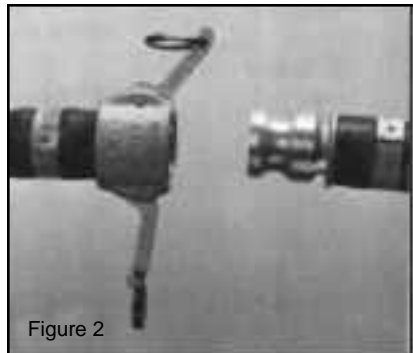


Figure 2

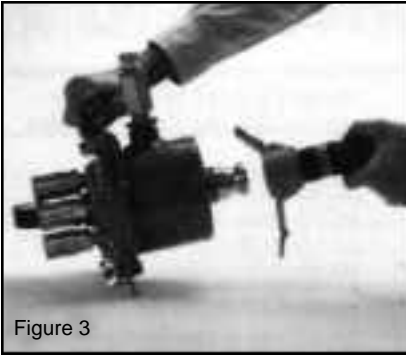


Figure 3

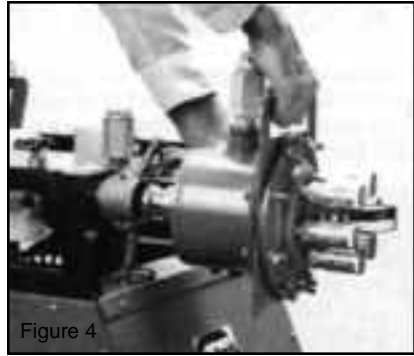


Figure 4

The Free-Air Pump is now assembled. Review the Electric Motor Specifications below and the Pump Performance Specifications on the next page before proceeding to the Operations Instructions on page 10.

ELECTRIC MOTOR SPECIFICATIONS

EDP30 AND EDP50

Enclosure:	Open, Drip-Proof
Class:	National Electric Code: Class B Design L Code K
H. P.:	Five
Phase:	Single
Cycles:	60
Wiring:	208-230 volts as shipped, with 8 foot cord and three wire, 30 amp plug (NEMA L6-30) and manual starter
F.L. Current Draw:	24.0 Amps at 230 Volts, 25.5 Amps at 208 Volts
Service Factor:	1.15
Protector:	Internal Thermal Overload in Motor Starter

▲ WARNING ▲: PROPER WIRING IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRIC CODES IS THE RESPONSIBILITY OF THE USER.

PUMP PERFORMANCE SPECIFICATIONS

	EDP30	EDP50
PUMP DESIGN:	Rotary Carbon Vane (4 vanes)	Rotary Carbon Vane (4 vanes)
MAXIMUM AIR PRESSURE:	30 psig	15 psig
AIR FLOW:	30 cfm at 10 psig	50 cfm at 10 psig
PRESSURE RELIEF VALVES:	Adjustable, Pre-Set to open at 34 psig when adjusted fully closed	Adjustable, Pre-Set to open at 15-17 psig when adjusted fully closed
PRESSURE GAUGES:	Dry, 0-30 psig on Pod, 0-30 on Pump Manifold	Dry, 0-15 psig on Pods, 0-30 on Pump Manifold
INLET FILTERS:	Medium Efficiency, Paper-Type	Medium Efficiency, Paper-Type
OUTLET FILTERS:	CARBOFINE	CARBOFINE
TIRE PRESSURE:	50 psig Maximum	50 psig Maximum
DIMENSIONS:		
Width	26 Inches	26 Inches
Length	38 Inches	38 Inches
Height	32 Inches	32 Inches
WEIGHT:	292 Lbs.	317 Lbs.

OPERATING THE FREE-AIR PUMP

▲ WARNING ▲ : THE RESPIRATOR WEARER MUST NOT ENTER THE CONTAMINATED WORK AREA UNTIL ALL OF THE FOLLOWING STEPS HAVE BEEN COMPLETED.

1. Analyze the atmosphere at the location of the worksite, the air inlet and the pump, to be sure the pump will not be operating in a contaminated or an explosive atmosphere.
2. Make sure the pump's inlet filters are located in a clean, uncontaminated location where breathable air is assured at all times (Figure 5).

The pump WILL NOT remove carbon monoxide, toxic gases or other contaminants from the incoming air it transfers to the respirator wearer.

3. Plug the pump into a single phase 230 or 208 volt electrical outlet. The pump's motor is equipped with an 8 foot cord with three wire, 30 amp plug (NEMA L6-30) and a manual starter.

You may use up to 50 feet of 30 amp, 3-wire grounded extension cord to reach your electrical outlet. We recommend using 8 gauge wire. Avoid excessive lengths of extension cord, especially if running the pump continuously.

▲ WARNING ▲: PROPER WIRING (IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRIC CODES) IS THE RESPONSIBILITY OF THE USER.

4. Assemble your respirator by following the manufacturer's directions as described in the respirator's instruction manual.

Be sure the pump's outlet pressure, measured by the pressure gauge on the air supply hose attachment pod(s), will be greater than the minimum MSHA/NIOSH approved pressure required to operate the respirator. The respirator's minimum approved pressure will be found in the respirator's Instruction manual and/or on labels attached to the respirator.

If you have any question as to whether or not your respirator is compatible with the pump, call the respirator manufacturer or Bullard's Customer Service Department at 1-800-827-0423 or 1-800-227-0423.

5. While outside of the contaminated work area, connect the respirator's MSHA/NIOSH approved air supply hose(s) to the quick-disconnect coupler(s) on the pod(s) (Figure 6).

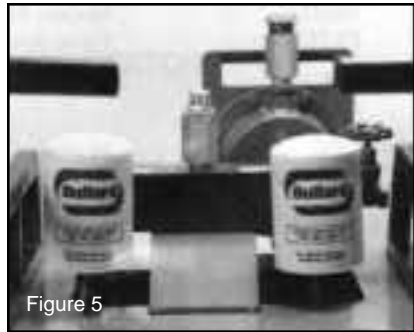


Figure 5

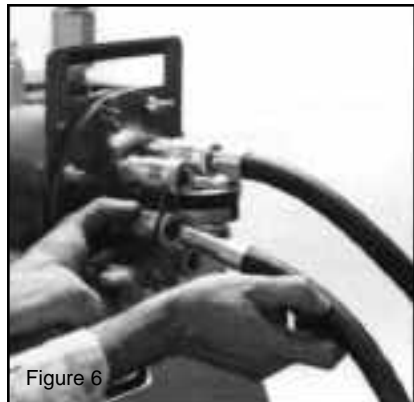


Figure 6

NOTE: If your respirator's MSHA/NIOSH approved air supply hose will not connect to the pod's standard 1/2" Industrial Interchange couplers, you can convert the couplers to 3/8" female NPT with installation of the following adaptors.

Cat. No. V23 - Converts one 1/2" Industrial Interchange coupler to 3/8" female NPT. One V23 adaptor is required for each coupler (Figure 7).

A variety of quick-disconnect couplers or fittings may be used to connect your air supply hose to the 3/8" outlet adaptor. Contact your respirator manufacturer for the proper fitting (Hansen, Parker, Snap-Tite, Schrader, Foster, etc.) (Figure 8).

6. Before connecting your respirator to the air supply hose, turn the pump on. Allow the air to flow through the pump and hose for a few minutes to purge or expel any hose odors or moisture that may have accumulated inside the hose.
7. While outside of the contaminated work area, connect the respirator(s) to the air supply hose(s) using the quick-disconnect fittings.
8. With the air flowing, put on the respirator by following the directions in your respirator manufacturer's instruction manual.
9. Set the pump's outlet pressure, measured by the pressure gauge on the pod, to within the respirator's approved pressure range. See the respirator's instruction manual for the approved pressure range.

The pump has three pressure adjustment locations:

- Pressure relief valve on the pod(s)
- Pressure relief valve on the manifold
- Dump valve on manifold

- a) Close the dump valve by turning the red knob clockwise until no air can escape (Figure 9).

NOTE: The dump valve provides a course pressure adjustment and may have to be used if the respirator's approved pressure is below 10 psig. If so, you will also have to simultaneously use the pressure relief valve on the pod(s) to obtain the exact pressure required.

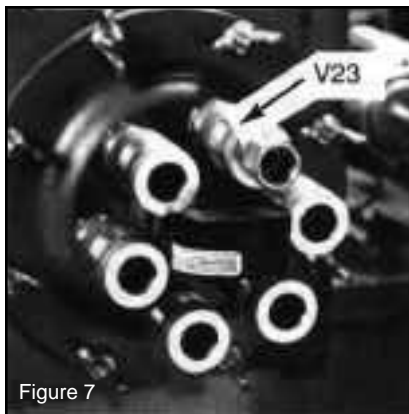


Figure 7

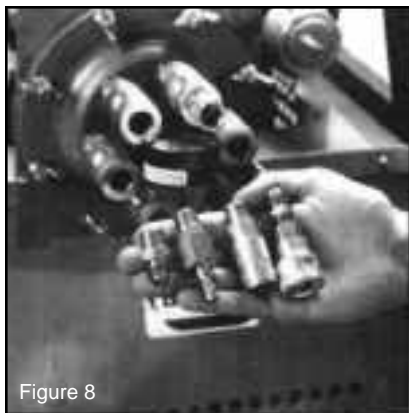


Figure 8

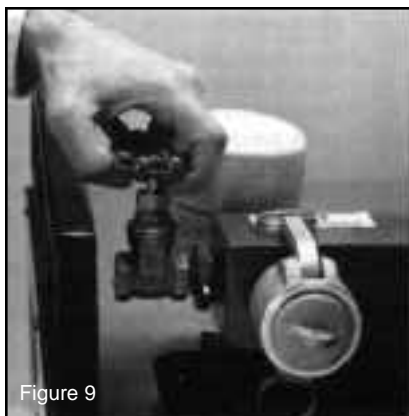


Figure 9

b) Close the pressure relief valve on the pump's manifold. Loosen the lock nut on the relief valve and adjust the flow control knob downward (clock wise) until no air can bleed off at the manifold (Figure 10).

c) Use the pressure relief valve located on the pod(s) to set the pump's outlet pressure. The relief valve can be adjusted by loosening the lock nut and adjusting the flow control knob until the desired outlet pressure has been obtained. Re-tighten the lock nut firmly to maintain a consistent flow (Figure 11).

The pressure on the gauge at the air supply hose pod must be monitored regularly to assure it is maintained within the respirator's approved pressure range.

10. If the flow of air dumped from the relief valve on the pod(s) creates a problem in the work area, use the relief valve on the manifold as the pressure adjustment valve.

- a) Close the relief valve on the pod(s) by adjusting flow control knobs and re-tightening the lock nut(s) to prevent air from bleeding at the pod(s).
- b) Adjust the flow control knob on the manifold until the desired outlet pressure has been obtained and re-tighten the lock nut firmly to maintain a consistent flow.
- c) Even if you use the manifold relief valve to adjust the outlet pressure, the pressure must still be monitored at the pressure gauge on the pod(s) to assure it is maintained within the respirator's approved pressure range.

PRESSURE GAUGES

The pump has two pressure gauge locations (depending on pump model):

- One on the pump's manifold
- One on each pod



Figure 10

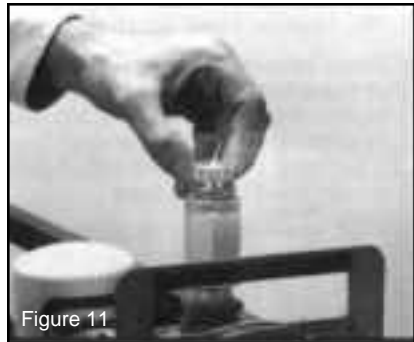


Figure 11

The pressure gauge located on the pod(s) must be used as the gauge to monitor the outlet pressure supplied to the respirators.

NOTE: If the pod(s) are attached directly to the pump manifold, the pressure gauges should always read within +/- 5% of each other. If the gauge on the manifold reads substantially higher than the gauge on the pod, the outlet filter cartridges may be clogged resulting in restricted air flow to the respirators.

If this occurs, we recommend the outlet filter cartridges be replaced. See the maintenance section on page 14 for information on replacing the outlet filter cartridges.

If the pod(s) are attached to the end of the V60 extension hose, the pressure difference between the manifold and pod(s) will be approximately 1 psig per 100 feet of V60 hose.

11. YOU ARE NOW READY TO ENTER THE WORK AREA.

If you are locating the pod(s) in a remote location from the pump see instruction 2 in Assembling The Free-Air Pump section on page 7. Make sure they are placed in an area away from other equipment or machinery.

The pod(s) must be protected from any equipment that could run over, bump or damage it and cause a cut off of air flow to the respirators.

12. When finished working, leave the work area wearing the respirator and with the air still flowing. Once outside the contaminated area, remove the respirator, then disconnect the air supply hose from the respirator's quick-disconnect coupler.

See your respirator manufacturer's instruction manual for proper Inspection, maintenance and storage procedures.

FRIGITRON 2000 AIR CONDITIONER

Bullard's FRIGITRON 2000 Air Conditioner can be used in conjunction with certain MSHA/NIOSH approved Bullard hood style respirators when using the EDP30 Free-Air Pump.

The FRIGITRON 2000 and EDP-30 pump will supply two (2) people working in hot or humid areas with a continuous flow of cool air. The Air Conditioner will cool the incoming air into the respirator hood approximately 20-22 degrees below the ambient air temperature.

Pump Model EDP50 cannot be used to supply air to a respirator with the Frigritron 2000 because it does not produce enough outlet pressure to drive the air conditioner.

For complete information on specifications and performance of the FRIGITRON 2000 refer to the Bullard respirator product literature and instructions.

MAINTAINING THE FREE-AIR PUMP

Bullard Free-Air Pumps consist of an electrically-driven air pump with four carbon vanes. The vanes self-adjust as they wear and should last the following length of time if properly maintained:

EDP30 - 3,000 to 10,000 Hours
EDP50 - 1,500 to 5,000 Hours

For the pump to operate at its optimum performance level, the following simple maintenance procedures must be performed routinely:

REPLACE THE INLET AND OUTLET FILTERS REGULARLY

Dirty or clogged filters will restrict air flow to the respirators by causing a decrease in the pump's outlet pressure. They may also decrease vane life and cause eventual pump overheating.

– Replace the inlet filter (Cat. No. 23611) at least once every 500 running hours or once per month, whichever is sooner.

The Inlet Filter keeps particulates larger than 25 microns out of the air supply and helps protect the pump's carbon vanes.

– Replace the CARBOFINE outlet filter cartridges (Cat. No. S17101) at least once every 200 running hours or once per month, whichever is sooner.

The following are directions for replacing the outlet filter cartridge. These steps must be performed outside the contaminated work area:

- a) Turn the pump off and disconnect it from the power source.
- b) Disconnect the air supply hose attachment pod from the pump or the V60 extension hose by releasing the Kamlok clamps.
- c) Remove the eight (8) wing nuts (with a wrench or pliers) and bolts holding the quick-disconnect coupler manifold to the pod (Figure 12).
- d) Remove the filter cartridge plate from the pod.
- e) Unscrew the wing nuts and remove the caps holding the outlet filter cartridges in their seats. Remove and discard the used filter cartridges (Figure 13).

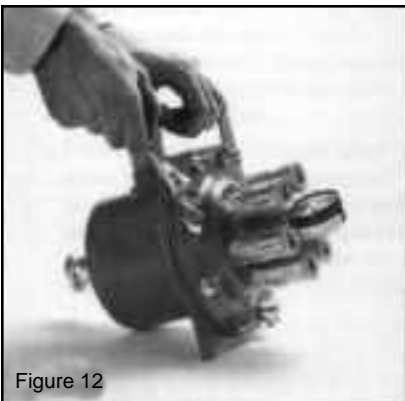


Figure 12

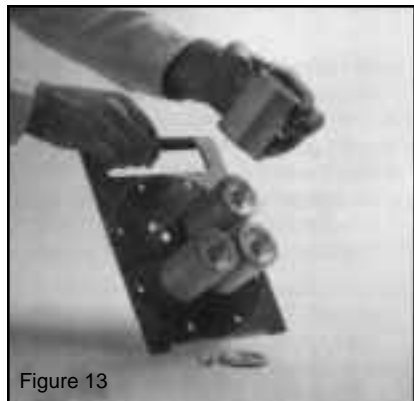


Figure 13

- f) Visually inspect the rubber gaskets on the filter cartridge plate for wear, cracks or tears (Figure 14).

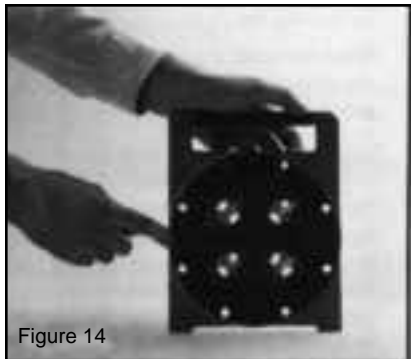


Figure 14

If any sign of damage is detected, replace with a new gasket (Bullard Cat. Nos. 26701, filter side or 27161, cover side).

The old gasket will have to be scraped off the plate. Glue a new gasket onto the pod making sure the bolt holes are lined up with the gasket.

- g) Insert four (4) new filter cartridges in the seats and re-assemble the caps and wing nuts to hold the cartridges in place.
- h) Re-assemble the pod. Tighten the wing nuts and bolts together firmly with a wrench or pliers, so that no air can escape between the three parts.
- i) Mount the pod back onto the pump or V60 extension hose, locking the Kamlok clamps so that no air can escape.
- j) Plug the pump back into its power source.

FLUSH THE PUMP IF NECESSARY

Should excessive dirt, sand, foreign particles, moisture or oil be permitted to enter the pump, the carbon vanes may become sluggish and the pump's performance will deteriorate. This will result in decreased outlet pressure or failure of the pump to operate.

If the pump remains idle in a humid environment for a long period of time, rust film may build up in the pump's chamber and/or rotor slots. This will result in decreased outlet pressure or a failure to operate at all. If the above occurs, the pump should be flushed with one of the following recommended safety solvents:

- Loctite Safety Solvent (Cat. No. S1791)
- Inhibisol Safety Solvent
- Dow Chemical Chlorothane

⚠ WARNING ⚠: NEVER USE KEROSENE OR OTHER COMBUSTIBLE LIQUIDS OR VAPORS WITH THIS PUMP. THEIR USE MAY RESULT IN AN EXPLOSION WHICH MAY CAUSE INJURY OR DEATH.

Directions for Flushing Pump:

1. Before flushing, disassemble and remove the following parts from the pump:
 - Disconnect the respirator(s) air supply hose from the pod(s).
 - Remove the pod or the V60 extension hose from the pump's manifold.
 - Remove the pump's inlet filters.
2. With the pump running, pour several ounces of approved safety solvent into each of the pump's air inlet ports. Repeat the flushing if necessary.

⚠ WARNING ⚠: RUN THE PUMP FOR A SUFFICIENT TIME TO PURGE ALL TRACES OF THE SAFETY SOLVENT BEFORE RECONNECTING THE PODS, INLET FILTERS AND AIR SUPPLY HOSES AND USING THE RESPIRATORS.

AVOID RUNNING THE PUMP AT EXCESSIVE PRESSURE

Avoid running the pump model EDP30 above 30 psig or the EDP50 above 15 psig for any length of time. Running the pumps above the maximum recommended psig rating could cause motor damage and premature wear of the carbon vanes.

NEVER LUBRICATE THIS OIL-LESS AIR PUMP. THE MOTOR BEARINGS ARE GREASE PACKED AND SEALED. THEY REQUIRE NO FURTHER LUBRICATION.

TROUBLE SHOOTING GUIDE

If your Bullard Free-Air pump is not working satisfactorily, follow the Trouble Shooting steps below:

SYMPTOM: Pump Fails to Start or Hums

1. Turn pump switch off and disconnect from the power source.
2. Check for the correct electrical current as shown in the Electric Motor Specifications on page 8 of this Manual.
3. Check to be sure that the circuit is not overloaded by the pump and other electrical equipment. The pump is equipped with a thermal overload protector that turns the current off when subjected to electrical overloads.
4. Wait 15 minutes and restart.

SYMPTOM: Outlet Air Pressure Too Low

1. Be sure you know the proper pressure range for the respirator see the respirator's instruction manual.
2. Be sure the respirator and air supply hose are connected to the pump when the gauge reading is taken.
3. Check to see that the pressure gauges are functioning properly. Replace the gauge(s) if broken or malfunctioning.
4. Check that both the inlet filters (Cat. No. 23611) and outlet filter cartridges (Cat. No. S17101) are clean. Replace if necessary. Dirty filters will restrict air flow.
5. Check to see that no air is escaping from the pressure relief valves on the manifold and air supply hose pod(s). Reset the relief valves if necessary.
6. Check to see that the air supply hose pod Kamlök couplers are closed tightly so that no air can escape.
7. Flush the pump with Loctite Safety Solvent (Cat. No. S17931) to remove excessive dirt, sand, particles, moisture or oil in the rotor assembly. See the Maintenance

section on page 15 for proper directions on flushing the pump.

When the parts are reassembled, attach the respirator(s) and turn the pump on, monitoring the outlet pressure.

SYMPTOM: Outlet Pressure Too High

1. The pressure relief valve(s) are set too high reset to a lower pressure. Be sure the outlet pressure remains in the approved range for the respirator as specified by the respirator manufacturer see your respirator manufacturer's instruction manual.
2. Check the respirator's air supply hose for kinks.

SYMPTOM: Pump Overheating

1. 160-200 degrees is the normal output air temperature when the pump is running continuously. The heat is dissipated as it travels through the respirator's air supply hose until it reaches ambient air temperature.
2. The pressure relief valves are set too high, reset to a lower pressure. Be sure the outlet pressure remains in the approved range for the respirator as specified by the respirator manufacturer see your respirator manufacturer's instruction manual.
3. Check to see that the inlet filters (Cat. No. 23611) and the outlet filters (Cat. No. S17101) are clean and replace if necessary. Dirty filters will restrict air flow and cause overheating.
4. Flush the pump with Loctite Safety Solvent (Cat. No. S17931) to remove excessive dirt, sand, particles, moisture or oil in the rotor assembly.

See the maintenance section on page 14 for proper directions on flushing the pump. When the parts are reassembled, attach the respirators and turn the pump on, monitoring its performance for overheating.

5. The electrical circuit to which the pump is connected is overloaded. Check the amperage load of the circuit and disconnect other electrical equipment, if necessary, from the circuit.

SYMPTOM: Outlet Air Temperature Too Warm

1. Be sure that at least the first 50 feet of air supply hose closest to the pump is laid out (not coiled) to permit excess heat to dissipate from the hose.
2. If using an EDP30 and Bullard supplied-air respirator hoods, order the FRIGITRON 2000 Air Conditioner. Two hoods with FRIGITRON Air Conditioners can be used with model EDP30. Frigatron 2000 cannot be used with model EDP50.
3. Put a coiled section of the air supply hose in the bottom of a large container. Fill the container with water and ice and cover with a lid. For best results, locate the container as close to the worker as possible.

SYMPTOM: Outlet Air Temperature Too Cold

1. Let the pump warm up for approximately 15 minutes before using.
2. Coil the first 25-50 feet of air supply hose closest to the pump.
3. Keep the air supply hose off cold surfaces.

SYMPTOM: Moisture In Air Supply Hose Line

1. Locate the air inlet filter in a dry, clean air location, where breathable air can be assured at all times.
2. With the air supply hose connected to the pump, but not the respirator, turn the pump on and let it run for approximately 15 minutes to purge the hose of excessive moisture.

IF THESE STEPS FAIL TO RESOLVE THE PROBLEM, CONTACT YOUR BULLARD DISTRIBUTOR OR BULLARD'S CUSTOMER SERVICE DEPARTMENT AT 1-800-827-0423 OR 1-800-227-0423.

REPLACEMENT PARTS AND ACCESSORY ITEMS

FOR BOTH EDP30 AND EDP50 FREE-AIR PUMPS

Cat. No. Description

Replacement Parts

23611	Inlet Filter
26701	Gasket, Pod, Filter Side
27161	Gasket, Pod, Cover Side
28151	Pressure Relief Valve EDP30
28152	Pressure Relief Valve EDP50
S16481	Quick-Disconnect Coupler, 1/2" Industrial Interchange
S17101	Outlet Filter Cartridge
S19681	Pressure Gauge, 0-15 psig
S19683	Pressure Gauge, 0-30 psig
S19688	Pressure Gauge, 0-60 psig
S2084	Drive Belt, Matched Pair, EDP30
S2085	Drive Belt, Matched Pair, EDP50
S2089	Kamlok Adapter, Male, Pod
S2090	Kamlok Coupler, Female, Manifold

Cat. No. Description

Optional Accessory Items

26781	Remote pod, EDP30 (Includes six quick-disconnect couplers, pressure gauge, pressure relief valve and outlet filter cartridges)
26782	Remote pod, EDP50, same as above
V23	Outlet Coupler Adaptor, converts 1/2" Industrial Interchange Coupler to 3/8" Female NPT
V60	100 Foot 1 1/4" I.D. Pod Extension Hose

PUMP WARRANTY

FREE-AIR PUMP ONE YEAR LIMITED WARRANTY

The E.D. Bullard Company warrants to the original purchaser that the Free-Air Pump will be free of defects in material and workmanship under normal use and service for a period of one (1) year from the date of purchase. E.D. Bullard Company's obligation under this warranty is limited to repairing or replacing, at its option, articles that are returned within the warranty period and that are, after examination, shown to E.D. Bullard Company's satisfaction to be defective, subject to the following limitations.

- a) Free-Air Pump must be returned to the Bullard factory with shipping charges prepaid.
- b) Free-Air Pump must not be altered from its original factory configuration.
- c) Free-Air Pump must not have been misused, subjected to negligent use, or damaged in transport
- d) The date of purchase is within the one year warranty period. (A copy of the purchaser's original invoice showing the date of purchase is required to validate warranty coverage)

In no event shall E.D. Bullard Company be responsible for damages for loss of use or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that E.D. Bullard Company has been advised of the possibility of such damages.

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF PURCHASE OF THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

TO RETURN GOODS: Written permission must be obtained before returning any material for any reason whatsoever. Material returned for credit will be subjected to factory inspection. In-warranty product of current design will be subjected to a rehandling charge less freight originally allowed. All material must be shipped with transportation charges prepaid. Bullard will issue a Return Material Authorization number and shipping label which must be affixed to all returns to facilitate handling and reduce risk of loss. Products which are obsolete or made to special order are not returnable. Warranty information can be obtained from, and defective articles should be sent, shipping charges prepaid to:

E.D. BULLARD COMPANY
1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 1-800-827-0423
or 1-800-227-0423
Facsimile: 1-606-234-8987

RETURN AUTHORIZATIONS

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

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

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

E.D. Bullard Company
1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 1-800-827-0423
Facsimile: 1-606-234-8987

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

2. Verify with your Coordinator that the product should be returned to Bullard. Customer Service will provide you with written permission and a return authorization number as well as the labels you will need to return the product.
3. Before returning the product, decontaminate and clean it to remove any hazardous materials which may have settled on the product during use. Laws and/or regulations prohibit the shipment of hazardous or contaminated materials. Products suspected to be contaminated will be professionally discarded at the customer's expense.
4. Ship returned products, including those under warranty, with all transportation charges pre-paid. Bullard cannot accept returned goods on a freight collect basis.
5. Returned products will be inspected upon return to the Bullard facility. Your Customer Service Coordinator will telephone you with a quote for required repair work which is not covered by warranty. If the cost of repairs exceeds stated quote by more than 20%, your Coordinator will call you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, Bullard will invoice you for actual work performed.

FILTER REPLACEMENT SCHEDULE

Regular inspection and replacement of the air filters will prevent extensive and costly pump repair. Dirty or clogged filters can be responsible for failure of the pump to build up outlet pressure and eventual overheating.

- Replace the CARBOFINE outlet filter (Cat. No. S17101) at least once every 200 running hours or once per month, whichever is sooner.

The outlet filter cartridge is multi-layered with 40-micron size particles of activated carbon, a sorbent bed with an exposed carbon surface of more than 15,000 square feet.

- Vapor removal efficiency: 90-95%
- D.O.P. efficiency: (0.3 to 0.6 micron particles) 99.97%
- Solid particle filtering: 0.3 micron and larger.
- Liquid particle filtering: 0.75 micron and larger

- Replace the medium efficiency inlet filter (Cat. No. 23611) at least once every 500 running hours or once per month, whichever is sooner.

The inlet filter keeps moisture as well as particulates out of the air supply and helps protect the pump's carbon vanes.

We recommend the following chart be used to monitor and maintain a routine air filter replacement schedule.

CARBOFINE OUTLET FILTER (Cat. No. S17101)			MEDIUM EFFICIENCY INLET FILTER (Cat. No. 23611)		
Cumulative Pump Operating Hours	Last Filter Replacement Date	Employee Responsible (Initial)	Cumulative Pump Operating Hours	Last Filter Replacement Date	Employee Responsible (Initial)
200			500		
400			1,000		
600			1,500		
800			2,000		
1,000			2,500		
1,200			3,000		
1,400			3,500		
1,600			4,000		
1,800			4,500		
2,000			5,000		



E.D. Bullard Company

The Human Side of Safety.® Since 1898.

1898 Safety Way
Cynthiana, KY 41031-9303
Toll-Free: 800-827-0423
Phone: 606-234-6611
Facsimile: 606-234-8987



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ISO 9001-certified company.

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609-500-0710 (0196)