



***Gas Powered Positive Pressure Ventilator
Owners/Operators Manual***



***3924 E. Trent Ave.
Spokane, WA 99202
(509)535-7746 (509)535-9064
1-800-745-3282***

Contents

OWNERS MANUAL FOR UNIFIRE GAS POWERED PPV'S

©1994 Unifire Power Blowers, Inc. This manual covers PPV's produced from July 1993. Information in this manual may be applicable to PPV's built prior to this date. Contact your dealer or the factory if you have any questions regarding compatibility.
Frame Patent # 5,205,711

Water Misting System Patent # 5,062,487

Table of Contents

IMPORTANT INFORMATION.....Page 1-2
SPECIFICATIONS.....Page 1
CAUTIONS & WARNINGS.....Page 3
SAFETY PRECAUTIONS.....Page 3
INTRODUCTION.....Page 4
PREPARATION.....Page 5
OPERATION.....Page 6
 Filling the crank case with oil.....Page 6
 Filling the gasoline tank.....Page 6
 Starting the PPV.....Page 6
 Initial Startup.....Page 7
MAINTENANCE.....Page 7
 Frame.....Page 7
 Shroud.....Page 8
 Propeller.....Page 8
 Hub.....Page 8
 Engine.....Page 8
MAINTENANCE SCHEDULE.....Page 8
STORAGE.....Page 9
ORDERING INFORMATION.....Page 9
LITERATURE.....Page 9
PARTS BREAKDOWN.....Page 10

Important Information

Unifire Model # _____
Serial Number _____
Purchase Date _____
Dealer _____
Notes: _____

WARNING!

DO NOT OPERATE THE PPV UNTIL EACH OPERATOR COMPLETELY READS AND COMPREHENDS THE CONTENTS OF THIS MANUAL

A letter from the president

Congratulations on your purchase of the best Positive Pressure Ventilation fan in the industry, the Unifire Electric PPV. We use only the highest quality materials and workmanship so that we can back our product with the most extensive warranty in the industry.

Unifire's commitment to produce the best products available to the fire fighting industry has resulted in two patented frames and a patented water misting system. As part of our continued research and development, Unifire has also developed a ventilation saw and patented depth gauge.

Because technology constantly changes, Unifire continues to lead the industry with innovative and quality ventilation products.

As president of Unifire Power Blowers, Inc. I guarantee your satisfaction. If you have any questions or comments please give us a call at 1-800-745-3282.

Sincerely,

Dan Raczykowski
President

Specifications

Specifications and design are subject to change without notice or obligation. All specifications are general in nature and are not intended for specific application purposes. Unifire Power Blowers, Inc. reserves the right to make changes in design, engineering or specifications and to add improvements or discontinue manufacture at any time without notice or obligation. Unifire Power Blowers and its dealers accept no responsibility for variations which may be evident in actual products, specifications, pictures and descriptions contained in this manual.



WARRANTY

Unifire, Inc. makes the following limited warranty to the original purchaser of each new and unused Positive Pressure Ventilation Blower (PPV).

Unifire warrants that each new and unused PPV sold, be free from defects in material and workmanship under normal use and service for a period of five (5) years on the stainless steel frame, limited lifetime on the propeller and Unifire will pass on the engine warranty from the original engine manufacturer. (Unifire will warrant the labor expenses associated with the defects in material and workmanship for a period of one (1) year from date of purchase). The obligation under this warranty being limited to current labor rates and the replacement and/or repair at its Spokane, Washington factory, or at an authorized dealer of such part(s), as shall appear upon inspection to have been defective in material or workmanship at the time sold, provided that all part(s) claimed defective are returned to the Spokane, Washington, factory shipping charges prepaid. At the time of requested warranty service, the purchaser must present evidence of the purchase date of the part(s) submitted for warranty inspection.

In no event will Unifire be held liable for any incidental or consequential damages or injuries.

This warranty does not cover depreciation or damage caused by: normal wear, accident, improper protection in storage, improper use, alterations, tampering, the environment, lack of or improper maintenance or incidental costs incurred by the original purchaser while the PPV is being inspected and/or repaired under warranty. In addition, parts and/or components subject to wear with normal usage are not covered by warranty.

What is not covered

Shipping to and from Unifire, Inc., Spokane, WA

Normal wear and tear, including chips, scratches, abrasion, discoloration from use or exposure to sunlight, improper maintenance.

Damage caused by misuse, abuse, neglect, alteration, repairs by unauthorized persons, use of non-Unifire accessories or parts, or failure to follow recommended maintenance instructions.

Consequential damages, incidental damages, or expenses, including damage to property.

**NOTICE TO OPERATORS
IF YOU CAN NOT READ OR DO
NOT FULLY UNDERSTAND THE
CONTENTS OF THIS MANUAL,
PLEASE CONTACT YOU DEALER
OR THE FACTORY FOR PROPER
ASSISTANCE BEFORE
ATTEMPTING TO OPERATE
THIS PRODUCT.**

If for any reason, the PPV should become damaged, call toll free in the USA and Canada at 1-800-745-3282. All warranty work must be authorized by Unifire prior to its performance. Any non-factory part utilized on the PPV voids all warranties.

CAUTION

Do not allow anyone to operate the PPV without first reading this manual and/or becoming familiar with and trained in its operation. Unifire has gone to great extremes to provide the owner(s) and/or operator(s) with the finest equipment available for the intended job of providing Positive Pressure Ventilation. Yet, the possibility exists that the PPV can be utilized in and/or subjected to job applications not perceived by the manufacturer. Such misuse and/or misapplication of the PPV can lead to the possibility of serious damage, injury or even death. It is the responsibility of the owner(s) and/or operators to determine that the PPV is being utilized and/or operated within the scope of its intended job function. It is the responsibility of the owner(s) and/or operator(s) to establish, monitor and constantly upgrade all safety programs and/or practices utilized in and for the operation of the PPV. The purpose of such programs is to provide for the owner's and/or operator's safety.

It is the responsibility of the owner(s) and/or operator(s) to determine that no modifications and/or alterations have been made to the PPV. Modifications and/or alterations can lead to the possibility of serious damage, injury or even death. It is the responsibility of the owner(s) and/or operator(s) to make this manual available for consultation during operation.

The concept of Positive Pressure Ventilation has been successfully utilized for many years as a practical solution to many types of ventilation requirements. The basic concept is proven and accepted within the fire industry. Use of the PPV requires strenuous work activity. This type of work activity should only be attempted by operators of adequate physical size and stature, mental awareness and physical strength and condition.

The body parts most noticeably affected during the operation/setup process are the arms, hands, wrists, shoulders, back and legs. An operator with chronic back related problems or a history of back and/or other medically related problems should not attempt to operate/setup the PPV.

Operation/setup of the blower may only aggravate this and any other medically related problems. Because of the diverse type of application, conditions, an operator's experience and operator's physical condition, no warranty, guarantee, representation and/or liability is made by Unifire Power Blowers as to the absolute correctness or sufficiency of any operational procedure, operational position and/or technique. There is absolutely no guarantee that an operator of any given experience, physical size and/or condition will be immune to the possibility of and/or probable physical side effects of the normal use of the PPV. Each potential operator of the PPV must be made aware of and assume the operational and physical liability described and/or associated with the use of the PPV. Each potential operator not willing to assume the operational and physical liability described and/or associated with the use of the PPV should not operate the PPV. Proper levels of operator experience, skill and common sense are essential for maximizing the safe and efficient operation of the PPV.

Safety Precautions

The following safety precautions provide some common sense guides to promote safety and efficiency with the PPV. These safety precautions are intended to deal principally with common practices and conditions encountered in the use of the PPV and are not intended to be all inclusive. Proper levels of operator experience, skill and common sense are essential for safe and efficient operation.

Introduction

The PPV is designed for positive pressure ventilation purposes. The PPV is not designed for operation in an explosive or flammable atmosphere. Operation in an explosive or flammable atmosphere will result in property damage, personal injury or even death. Incorrect use of the blower can result in carbon monoxide fumes causing serious injury or even death.

DANGER

Incorrect use of the PPV can result in property damage, personal injury or even death. To reduce this possibility, give complete attention to the job at hand and follow these safety precautions

INTRODUCTION

Open the shipping carton immediately upon receipt. Visually inspect the contents for damage and/or missing parts. If damage is evident, contact the carrier to arrange for an inspection of the damage. Compare your packing list to the actual contents. If missing parts are detected, notify your dealer to assist you in obtaining them.

The PPV should come with this manual, an engine manual and a warranty return card. Complete the warranty return card before continuing. The serial number is found on the side of the engine block. The warranty return card should be sent back to Unifire, this information is used to update you on any changes or new product information that we can pass on to you.

If the fan was not damaged read through the engine manual to familiarize yourself with the operating instructions for the engine that your PPV was ordered with. Because of the different models of PPV's that Unifire produces, this manual will not cover engine operating instructions.

Included in the shipment should be the following:

- PPV unit
- Engine Manufacturer Owners Manual
- Unifire Operator Manual

Before starting the PPV familiarize yourself with the unit. Locate the ON/OFF switch, on some models this is on the side of the engine. Familiarize yourself with the carburetor controls.

Release the tilt handle by pushing the handle forward (toward the shroud). Tilt the frame back and forth, notice that the tilt can be tightened at any point from -10 degrees to +20 degrees. Tighten the handle by pulling back. Note that the handle friction can be adjusted by pushing the handle towards the engine and repositioning the handle into the desired position. This feature is available only to Unifire.

Before attempting to utilize the PPV, read this Manual and the operating manual supplied by the engine manufacturer to familiarize each operator with the correct operating procedures.

Preparation

- 1) This PPV is a specialized type of power equipment, designed for a specific job function. Each operator must receive adequate instruction regarding the proper operation of this PPV **BEFORE** being allowed to operate it.
- 2) Develop a comprehensive training program for safe operation of the PPV by its operators. The program should include: instructional requirements for safe operation, fire ground safety and PPV maintenance. Constantly examine and upgrade this program to guarantee operator safety.
- 3) Determine that the PPV is in its original, factory configuration and has not been modified in any unacceptable manner. Many modifications can result in potentially dangerous configurations that can lead to property damage and/or personal injury. If there is any question regarding PPV modifications, contact Unifire or your dealer before operation.
- 4) Bystanders, children and animals should not be allowed in the area of PPV use.
- 5) Operators must be in adequate physical condition, mental health and not under the influence of any substance which might impair vision, dexterity or judgment. Always lift the PPV with your leg muscles and not with the back.
- 6) Never wear loose clothing while operating or maintaining the PPV. Wear appropriate protective clothing, eye protection and hearing protection while operating the PPV.
- 7) Visually inspect the PPV for damaged, missing or worn parts. Check for loose and/or broken parts. **DO NOT** operate the fan in an unsafe condition.
- 8) In selecting a suitable operational site, determine that there is no obstruction that will come in contact with the operator when starting the engine.
- 9) Become familiar with the engine controls. Every operator must know how to stop the PPV quickly in an emergency.
- 10) Give complete and undivided attention to the job at hand.
- 11) Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline. Always use an approved container for storage or transportation of fuel. Always shut off the engine before refueling. Never remove the gasoline filler cap while the engine is running. Never operate the engine without the gasoline filler cap. Wipe off any spilled fuel before restarting and check for leakage. If a fuel leak is found, do not start or run the engine until the leak is fixed. Take care not to get fuel or oil on your clothing.
- 12) Place the PPV on secure footing to prevent it from shifting while in use. Such movement can cause injury to the operator(s) or damage to the PPV.
- 13) Do not operate the PPV without the shrouds properly secured and in place. Never replace the shrouds with other than factory supplied, replacement parts. Determine that the shroud is structurally sound and will serve their protective function. Keep the shrouds free from obstructions and debris to maximize air flow.
- 14) Do not stand directly in front of and/or face the PPV. Personal injury can result from being struck by debris thrown from the PPV blade at a relatively high velocity.
- 15) Contact with the engine muffler can cause damage or personal injury.

DO NOT OPERATE THE PPV UNTIL EACH OPERATOR COMPLETELY READS AND COMPREHENDS THE CONTENTS OF THIS MANUAL

Operation

Filling the Crank Case with Oil

Tools required: small funnel

- 1) Position the PPV on a suitable work area that is level.
- 2) Wipe dust or dirt from the engine filler plug area.
- 3) Remove the filler plug.
- 4) Using the funnel, fill the engine with the recommended oil grade and quantity required by the manufacturer.

CAUTION: If improperly overfilled, the engine may emit excessive smoke when operated or appear to be seized when attempting to start. Drain excess oil and remove spark plug to clear oil trapped above the piston

- 5) Replace the filler plug.
- 6) Wipe off any excess oil spilled on the crank case.

CAUTION This PPV utilizes a 4 cycle gasoline engine with the lubricating oil contained in its crank case. Do not operate the engine unless proper oil level is maintained

Filling the Gasoline Tank

Tools required: small funnel

- 1) Carefully clean the filler cap area to insure that no dirt or debris falls into the gas tank.
- 2) Fill the fuel tank with a quality grade of gasoline. Unifire recommends fresh premium unleaded fuel for clean, quiet operation.

CAUTION Do not fill the tank up to the top. When tilting the unit fuel may leak out of the fuel cap vent. **Fill to approx. 3/4 capacity.**

Remember to turn off the fuel valve while the fan is in transport. This will prevent fuel draining from the carburetor into the oil.

This PPV uses a 4 cycle gasoline engine. **DO NOT MIX GASOLINE WITH THE OIL.**

Starting the PPV

- 1) Place the PPV at the desired operation location. The location should be relatively flat to prevent tipping.
- 2) Turn the ignition switch into the ON position.
- 3) When starting a cold engine, move the choke lever as far as possible in the ON direction indicated by the arrow. A warm engine may not require choking. Move the throttle lever off the idle position. Pull the recoil starter handle until engine compression is felt. Then, give a fast, steady pull. Pull the starter handle until the engine fires. Allow the starter rope to retract slowly. When the engine starts, open the choke control gradually.
- 4) Operate the PPV at full engine RPM.
- 5) Stopping the PPV is accomplished by moving the throttle control lever to the idle position and turning the switch OFF.

DANGER: This PPV is designed for **Positive Pressure Ventilation Only**. The gasoline engine is not designed for operation in an explosive or flammable atmosphere. Operation of the PPV in an explosive or flammable atmosphere will result in property damage, personal injury or even death

Maintenance

Initial Startup

Allow the engine to idle for a minute and observe the unit. Observe safety precautions mentioned in the beginning of this manual. After the engine has reached operating temperature slowly move the throttle speed from idle to maximum speed. Run the PPV for a few minutes then return the throttle to idle. Turn off the ignition. If there were any problems or if you have any questions regarding the initial running of the PPV please contact your dealer or Unifire at 1-800-745-3282.

After the initial run, inspect the unit for any loose bolts or nuts. Refer to the Parts section for proper torque specifications. The PPV is now ready to be placed into service. Remember that proper training is the key to effective ventilation. PPV is a tool that must be used properly to be safe and effective. If you do not have a training program contact Unifire for a copy of our ventilation manual "Current Concepts in Ventilation".

Maintenance

- 1) Use only genuine, approved replacement parts for maintenance and repair. Use of unapproved parts will void warranty and may result in damage or injury.
- 2) ALWAYS stop the engine and disconnect the spark plug wire BEFORE working on the PPV.
- 3) Always properly maintain the PPV. Frequently check all fasteners and individual parts. Keep the PPV clean and properly serviced. Replace any questionable part or assembly with approved part(s). Do not attempt any maintenance or repair work not described in the Operators Manual. All work must be performed by an authorized service center.

- 4) Consult the manual supplied with the engine for specific information relative to the oil and gasoline recommendations.

Proper and scheduled maintenance is the key to long life and minimal down time of your PPV. The Unifire PPV has been designed for minimal maintenance and easy cleaning. By following the recommendations in this section your PPV should be able to last beyond the warranty period.

Frame

All of our frames on the DS and DST series PPV's are stainless steel. The only maintenance required is to wipe the frame with a mild soap and water solution or damp cloth after each use. The pivot point between the upper and lower frame is an oil impregnated bushing this does not require any special lubrication. The friction lock handle may need a shot of spray lube from time to time for easy adjustment.

Anytime that mild steel (steel wool) is used to clean the frame a surface rust may develop on the frame. This will not weaken the frame and is only cosmetic, by using a stainless steel cleaner or abrasive pad this rust can be removed.

Any repairs to the frame must be authorized by Unifire or the 5 year warranty will be voided.

The rubber feet may be replaced. If they are broken, contact your dealer or Unifire to purchase replacement feet. Because of the abuse that the rubber feet are exposed to, they are not covered under the warranty.

Maintenance

Shroud

Shrouds produced after July 1993 are 3/16" wire - the strongest shroud available to the fire service. A retrofit kit is available for older fans with thinner wire, contact your dealer or Unifire for information regarding this kit.

The front shroud is attached to the back shroud by 4 nuts. Use a 7/16" wrench to tighten these nuts. Care must be taken not to over tighten the nuts. Always use a flat washer between the shroud and the nut. Always use a lock nut or thread lock on these bolts. If one of the bolts becomes broken, order a new front shroud. See ordering information in the back of the manual.

Caution: Never operate the PPV with a loose, damaged or broken shroud. Always repair or replace the shroud if it becomes damaged.

The back shroud is held in by 8 bolts and 4 straps. The bolts are threaded into "nutserts", threaded inserts that allow for a clean, strong installation. If these bolts are removed they **MUST** be reinstalled with thread lock.

The straps should be examined for damage when the bolts are checked. There is also a rubber strap between the shroud and the frame. Examine this strap for damage or wear.

Propeller

The Unifire blade is made of synthetic nylon, reinforced with carbon fibers, and is a 100% shatter-proof, high-heat, thermal plastic. The prop carries a limited lifetime warranty when used under normal conditions. Refer to the warranty in the front of this manual.

The prop should be cleaned and inspected after every use under normal conditions. To clean the prop, remove the front shroud. Wipe the prop with a non-abrasive solution of mild soap and water. **DO NOT** use a cleaner that contains alcohol or any harsh solvent. After cleaning the blade, inspect the blade for damage.

If the prop is damaged contact your dealer or Unifire for instructions. **ANY** unauthorized repair of the prop will void the warranty. Do not paint or alter the blade. The result may be an unbalanced blade which may result in excessive vibration and possible damage or injury.

Hub

While inspecting the blade it is a good time to inspect the hub assembly. The Unifire hub is a one piece aluminum assembly. Check the two set screws for tightness. These **MUST** be tight. If they are removed they must be replaced using thread lock compound. Check the hub for damage.

Engine

Refer to the engine manual for maintenance and repair to the engine.

Maintenance Schedule

Recommended schedule for normal use PPV.

Engine	Refer to Engine Owners Manual
Frame	Clean after each use Visually inspect for damage or loose fasteners after each use
Front Shroud	Visually inspect for damage and debris after each use. Check nuts after each use
Back Shroud	Visually inspect for damage and debris after each use. Visually inspect bolts/straps after each use
Prop/Hub	Visual inspection after each use Clean whenever necessary to prevent smoke build up.

Important Information

Storage

Proper procedures for long term storage of the PPV will protect it against contamination and damage. If the PPV is not to be operated for 30 days or more, store as follows:

- 1) Clean all accumulated dirt and grease from the PPV using a safe solvent. DO NOT use an alcohol/solvent based cleaner on the propeller blades.
- 2) Follow the engine manufacturers procedure for gasoline engine storage.
- 3) Check all visible parts for wear, breakage or damage. Make necessary repairs before storage to avoid needless delays at next use.
- 4) Store the PPV inside. For added protection order the optional PPV cover and cover the fan during storage.

Order Information

When ordering replacement parts it is best to first contact the dealer that you purchased the PPV from. In many cases they may have the part in stock. If the dealer cannot be reached you may contact Unifire directly at 1-800-745-3282.

If the part is for a warranty replacement you will be responsible for the shipping. Unifire will, at its discretion, ship the replacement part to you. You must replace the part or have an authorized dealer replace the part. After the PPV is reassembled ship the broken part(s) back to Unifire. Unifire will examine the part and determine if it is covered under warranty. If the part(s) is covered under warranty you will be issued a credit for the price of the part(s) only, you must still pay for shipping. If the part(s) was not covered under warranty you will be expected to pay for the part(s) and any shipping.

If you order a replacement part(s) for repair you are responsible for shipping and handling. You may be asked to prepay for the part(s).

Remember that all non-maintenance repairs must be factory authorized.

If the entire PPV must be returned to Unifire, drain the oil and gas. If a unit is shipped with oil or gas the shipper may fine you \$10,000.

Be sure to package any parts/units so that there will be no damage incurred during shipping.

Literature

To order second copies of this manual or the Honda Manual call Unifire at 1-800-745-3282. Be sure to have the model number of the engine and the blower. Second copies of either manual are \$10.00 each.

Unifire also has available a training manual for positive pressure ventilation. The manual, "Current Concepts in Ventilation" covers the theory of: Negative Pressure and Positive Pressure Ventilation and Natural and Mechanical Ventilation. Differences in blower styles and designs are covered as well as techniques in proper usage of PPV. Included is a practice PPV setup. Call Unifire to order "Current Concepts in Ventilation", price is \$10.00 per copy.

Prices subject to change without notice.

Parts Break Down

Description	Part Number	Qty	Notes
1. Front Shroud	FS____	1	Specify model number or shroud size*
2. Back Shroud	BS____	1	Specify model number or shroud size*
3. Front Shroud Washer	FSW	4	
4. Shroud Nut	SN	4	
5. Sticker	STKR1	1	Reads: UNIFIRE
6. Nutsert	NS	8	
7. Rubber Isolator Strap	RIS	4	
8. Shroud Strap	SS	4	
9. Back Shroud Washer	BSW	8	
10. Back Shroud Bolt	BSB	8	
11. Sticker	STKR2	1	Reads: RELEASE/TIGHTEN/ADJUST
12. Frame Bolt	FB	2	
13. Frame Washer	FW	4	
14. Oil Impregnated Bushing	OIB	4	Specify 3/4" or 1" lower frame
15. Frame Nut	FN	2	
16. Friction Lock Washer	FLW	1	
17. Friction Lock Assembly	FLA	1	
18. Prop Bolt	PB	4	
19. Prop Face Plate	PFP	1	
20. Power Prop	PP____	1	Specify model number or prop size*
20. Standard Prop	STD____	1	Specify model number or prop size*
20. 4 Bladed Prop	P4____	1	Specify model number or prop size*
21. Crankshaft Bolt	CB	1	
22. Crankshaft Washer	CW	1	
23. Hub	H____	1	Specify model number*
24. Prop Nut	PN	4	
25. Set Screw	SS	2	
26. Shear Key	SK	1	
27. Engine	E____	1	Specify model number*
28. Protective Tape	PT	2/4	Specify 2 or 4 pieces (1 piece per blade)
29. Engine Mount Bolt	EMB	4	
30. Engine Mount Washer	EMW	8	
31. Engine Mount Nut	EMN	4	
32. Rubber Feet	RF____	4	Specify model number*
33. Lower Frame	LF____	1	Specify model number & 3/4" or 1" LF*
34. Upper Frame	UF____	1	Specify model number*
35. Sticker	STKR3	1	Reads: DESIGNED FOR FIRE SERVICE
36. Sticker	STKR4	1	Reads: CHOKE...
37. Sticker	STKR5	1	Reads: CAUTION...
38. Sticker	STKR6	1	Reads: UNIFIRE...
39. Front Shroud Hardware	FSHDW	1	Includes: (4) 3 & 4, (1) 5
40. Back Shroud Hardware	BSHDW	1	Includes (8) 10,9 & 6, (4) 8 & 7
41. Stickers Kit	STKR7	1	Includes all stickers