

# **TEMPEST™**

## **OWNER'S MANUAL**

Power Blowers™

Laminar Air Flow (LAF) - Electric Driven  
VS-1.2-D DeWalt Battery Powered Blower



# INTRODUCTION

Thank you for choosing Tempest Technology Corporation for your ventilation needs. With this manual we hope to help you operate your Tempest product safely and to its full potential. Maintained according to the specifications set in this manual, it is not uncommon to receive many years of use and operation out of your Tempest equipment.

This manual is produced solely for the use of purchasers and operators of Tempest Technology Corporation equipment. Any reproduction, retransmission, or other use of the contents of this manual without written consent of Tempest Technology Corporation is strictly prohibited.

It is the intent of this manual to provide the owner/operator of Tempest Technology Corporation products with both general and specific information regarding the safe and proper operation and maintenance of the equipment described within.

## CONTACT

If after careful review, any questions arise concerning any portion of this manual, please contact Tempest Technology Corporation for assistance:

TEMPEST TECHNOLOGY CORP.  
4708 N. BLYTHE AVENUE  
FRESNO, CA 93722

Toll Free: 800.346.2143  
t: 559.277.7577  
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response@tempest.us.com  
www.tempest.us.com

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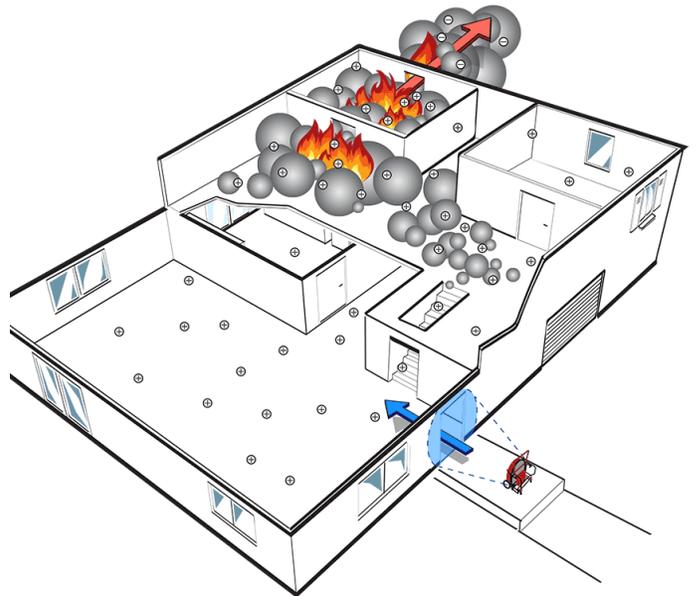
# ABOUT TEMPEST

Tempest Technology Corporation is the leading manufacturer of products and accessories for environmental management in firefighting and industrial applications.

Tempest began as a manufacturer of gasoline and electric powered blowers for the fire service. Fire departments use the Tempest Power Blower™ to provide “Positive Pressure Ventilation / Attack” (PPV/PPA) to remove heat, gases and smoke from the interior of a burning structure.

Tempest has expanded into other industries and found new applications for its products. The Tempest Power Blower™ and PPV/PPA are used by industrial applications to control dust, fumes and unhealthy gases like carbon monoxide, greatly improving safety in confined spaces.

Tempest Technology Corporation has earned a reputation as a leader and innovator in the air movement industry and continues in that role today.

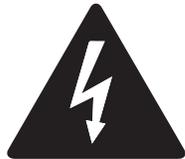


## SAFETY GUIDE

Failure to follow the operating, maintenance and lubrication requirements set forth in this manual may result in serious personal injury or death and/or damage to equipment or property.

The following WARNING statements indicate potentially hazardous conditions for operators and equipment. Make certain that anyone who works on or around the blower has read and fully understands the safety precautions listed.

1. Carefully read this owner's manual before attempting to operate, service or disassemble any part of your Tempest Power Blower™.
2. DO NOT operate the unit when mentally or physically fatigued or impaired.
3. Stay away from rotating parts; avoid wearing loose jackets, shirts, and ties. Keep hands and feet away from moving parts.
4. Keep all unauthorized personnel at a safe distance from the blower.
5. Keep all guards in place. DO NOT make repairs while the unit is running. DO NOT operate if any guard or grille is not in place.
6. Always wear eye protection. Loose debris can be picked up in the air stream and flown in the air.
7. Hearing protection is required. Fan blade and air noise may exceed safe dB levels.
8. Always ensure proper voltage and amperage is delivered to your Tempest Power Blower™.
9. Only a qualified technician should perform repairs or maintenance on electric components.
10. Never operate your Tempest Power Blower™ with electric components exposed.
11. Never operate your Tempest Power Blower™ with damaged, exposed or frayed wiring.
12. It is the sole responsibility of the owner/operator to develop procedures for proper use of the Tempest Power Blower™ in accordance with generally accepted ventilation techniques as well as the organization's own operating procedures, before placing the unit into service.



## GENERAL INFORMATION

### BLOWER IDENTIFICATION

Each Tempest Power Blower™ has a part number as well as a serial number. The part number identifies the type of unit (size, drive, etc.) while the serial number relates to information referencing the date of manufacture. This information is useful should it become necessary to contact the factory regarding your Power Blower™.

### SERIAL NUMBER LOCATIONS

The serial number is typically located on the left side of the electrical box.

Please write the Serial Number of your Tempest Power Blower™ in the spaces below. This will aid us in identifying which model you have when assisting you.

Model (Part No.) \_\_\_\_\_

Date \_\_\_\_\_

Serial No. \_\_\_\_\_

### WARRANTY

Warranty information on your unit can be found on the back page of this manual. For further information, please contact Tempest Technology Corp.

# TECHNICAL SPECIFICATIONS

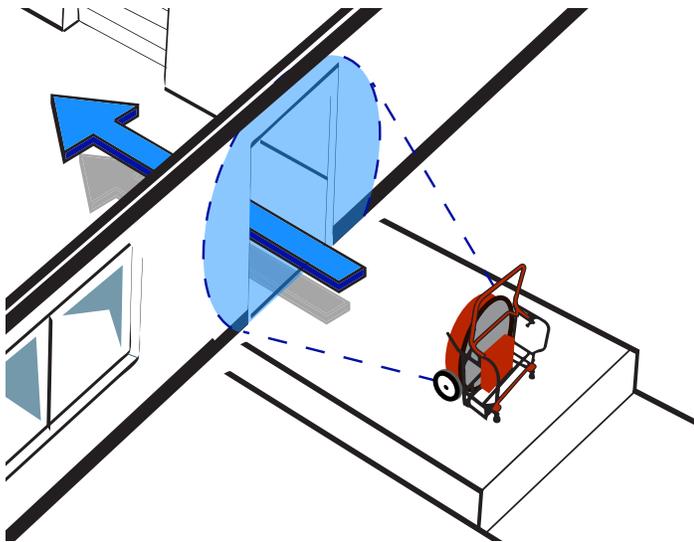
		PRODUCT FAMILY	POWER BLOWER™
		PRODUCT LINE & TYPE	LAMINAR AIR FLOW ELECTRIC (LE) - VS1 BLDC
		MODEL	VS1.2-D-18-FOLDING HANDLE BLDC
		PART NO.	910-1862 (110 vac) 3 DeWalt Flex Volt 60 Batteries
OUTPUT	AIR VOLUME	[cfm/m³h]	10,887 / 18,497
	AIR VELOCITY	[mph/kph]	41 / 66
	NOISE LEVEL @ 10 ft	[dB(A)]	83.7
FAN BLADE	TYPE		IMPELLER
	MATERIAL		NYLON 6 W/ 30% GLASS-FIBER FILL
	DIAMETER	[in/mm]	18 / 457
	NO. OF BLADES		3 @ 25°
DIMENSIONS	WEIGHT (With 3 Batteries)	[lb/kg]	51 / 23.2
	WEIGHT (With Out Batteries)	[lb/kg]	41 / 18.6
	WIDTH	[in/mm]	22.88 / 581
	DEPTH	[in/mm]	12.25 / 318
	HEIGHT	[in/mm]	HANDLE UP 29.3 / 745 HANDLE DOWN 24.4 / 620
MOTOR	MANUFACTURER		Private Label
	MODEL		360-052
	TYPE		BLDC TOTALLY ENCLOSED, AIR OVER
	VOLTAGE		48 VDC
	POWER OUTPUT	[HP/W]	.87 / 650
	MAX AMPERAGE		20
	WATTS @ FULL RPM		744
DRIVE	MANUFACTURER		Private Label
	MODEL		581-190
	TYPE		30 AMP BRUSH-LESS
	INPUT OPERATING VOLTS		50 VOLTS DC
	OUTPUT VOLTS		0 TO 50 DC
AC POWER	AC VOLTAGE OPERATION	YES	AVAILABLE IN 110-115V AND 220-230V
	AMP DRAW		7.7 @ 115V / 3.9 @230V
	WATTS @ FULL RPM		896
BATTERY	OPERATING TEMPERATURE	°C / °F	-15° C / 5° F TO 45° C / 113 F
	AMP HOUR / WATT HOUR		DeWalt Flex Volt 12 Ah / 240 Wh
	RECHARGE TIME		< 2 HOURS WITH QUICK CHARGER
FRAME	TYPE		ERGONOMIC WELDED ROLL CAGE
	MATERIAL	[in]	0.75 ROUND ALUMINUM TUBE
	COATING		POWDER COAT
	DEFAULT COLOR		ANODIZED ALUMINUM
	FOLDING HANDLE		YES
	TILT RANGE		-12.5° to +25°
	NO. OF TILT POINTS		4
	WHEEL TYPE		100 mm HIGH IMPACT
WHEEL SIZE	[in/mm]	3.9 / 100	
SHROUD	TYPE		TURBO 2000
	MATERIAL		STEEL W/ ROLLED EDGE
	COATING		POWDER COAT
	DEFAULT COLOR		RED

## POWER BLOWER™ INFORMATION

The Tempest Power Blower™ is a high powered, portable fan used for Positive Pressure Ventilation and Attack (PPV/PPA), ventilation techniques that quickly and efficiently replace hazardous interior environments with clean, cool air.

PPV and PPA were pioneered in the firefighting industry where firefighters use the Tempest Power Blower™ to ventilate smoke, heat, and harmful gases from buildings. This creates a safer environment for them to work in and makes it easier for them to find victims and extinguish the fire.

PPV and PPA rely on two principles, (1) an air pattern capable of creating an effective door seal, and (2) pressure. To accomplish Positive Pressure Ventilation or Attack, the blower is placed on the outside of the structure. It is positioned so that the air pattern created by the blower completely seals the entrance opening, or at least 2/3 of it. When this seal is achieved, the air pressure is increased equally at all points inside the structure. When an exhaust opening is created, all of the interior air moves in one mass towards it. The result is fast, efficient ventilation of the entire structure.



NOTE: The Tempest Power Blower™ is the most efficient tool for PPV and PPA for two reasons. First, the exclusive Tempest Turbo 2000 aluminum shroud design creates a broad, cone shaped air pattern. Second, the airflex impeller used on all Tempest blowers is designed to create high pressure. These two features working together make the Tempest Power Blower™ a highly effective and efficient ventilation tool.

As with any new technique, Positive Pressure Ventilation requires training and education in order to be implemented properly and safely. Tempest offers access to a complete line of training materials, which cover many applications for this powerful ventilation technique. For more information visit [www.tempest.us.com](http://www.tempest.us.com), [www.positivepressuretraining.com](http://www.positivepressuretraining.com) or contact us at 800.346.2143 or [response@tempest.us.com](mailto:response@tempest.us.com).

## OPERATING PROCEDURES

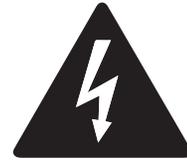
### PRE-OPERATION

After receiving and unpacking your blower, be sure to carefully inspect it for any damage that might have occurred during shipping. Should you find any damage: PLEASE NOTIFY TEMPEST TECHNOLOGY CORP. IMMEDIATELY AT 800.346.2143 OR [RESPONSE@TEMPEST.US.COM](mailto:RESPONSE@TEMPEST.US.COM).

### OPERATION

#### SET-UP, STARTING AND STOPPING

Assuming the previous Pre-Operation and safety instructions have been followed, the blower is now ready to run.



WHEN USING A GENERATOR, IT IS IMPERATIVE THAT THE GENERATOR BE RUNNING AT FULL CAPACITY BEFORE PLUGGING IN ANY ELECTRIC BLOWER. ALWAYS VERIFY SUFFICIENT GENERATOR OUTPUT BEFORE USE. IMPROPER VOLTAGE SUPPLY MAY DAMAGE UNIT AND VOID WARRANTY.

CAUTION: DO NOT MOVE THE BLOWER WHILE IT IS IN OPERATION. SEVERE PERSONAL INJURY IS POSSIBLE AS WELL AS DAMAGE TO THE BLOWER.

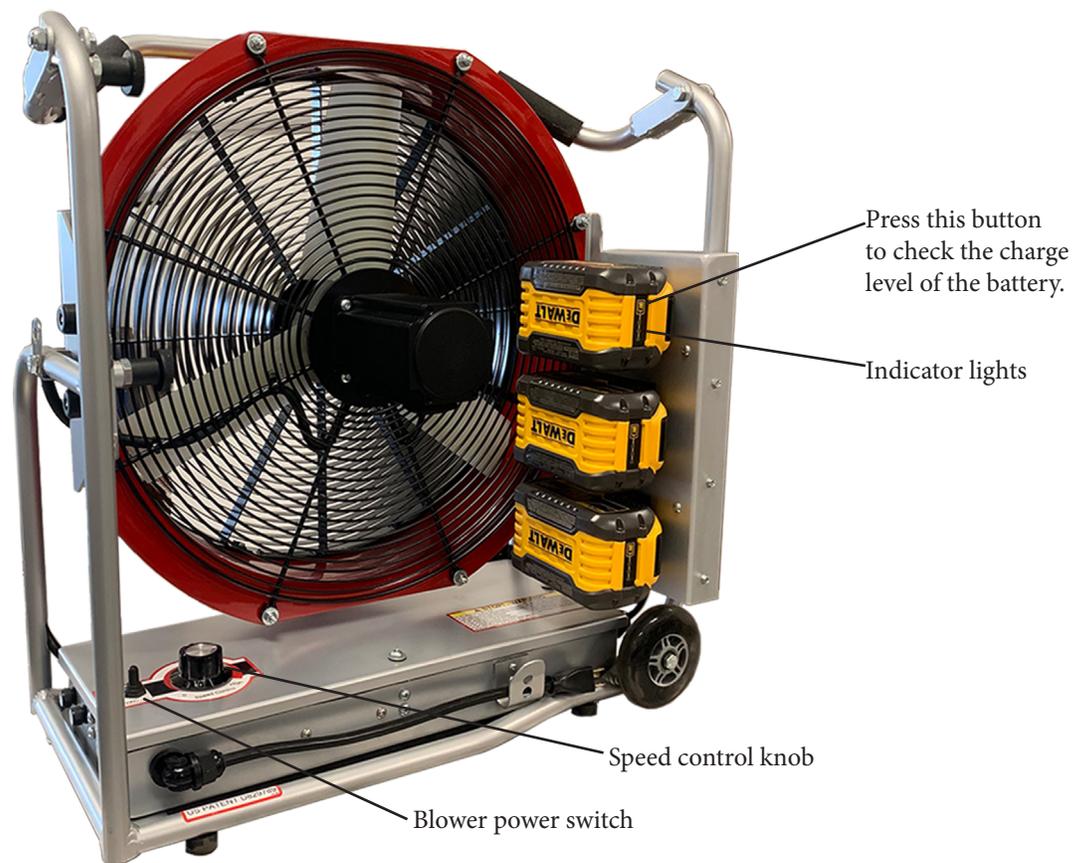
ALWAYS SHUT-DOWN THE BLOWER PRIOR TO MOVING.

#### SET-UP

Position the blower in the desired location, making sure it is placed on a flat, hard and debris free surface.

Operating procedures continued on the next page.

## OPERATING PROCEDURES CONTINUED



### BATTERY OPERATION INSTRUCTIONS

Before installing the battery, make sure that the on / off switch on the blower is **in the off position** and the speed control knob is set to 0.

**Do not install or change batteries while the fan is running.**

Slide the batteries onto the battery mounts.

The blower is now ready for operation.

Set the on/ off power switch on the blower to battery. The LED lights on the front of the blower will come on.

Turn the speed control knob to the desired position, there will be a slight delay before the blower turns on and comes up to speed.

Set the on / off power switch to the off position to turn the blower off.

### AC VOLTAGE OPERATION INSTRUCTIONS

Before connecting the blower to a power source, make sure that the on / off switch on the blower is in the off position and the speed control knob is set to 0.

Plug the AC power cord plug into an AC power source.

Set the on/ off power switch on the blower to 110 VAC. The LED lights on the front of the blower will come on.

Turn the speed control knob to the desired position, there will be a slight delay before the blower turns on and comes up to speed.

Set the on / off power switch to the off position to turn the blower off.

## BATTERY CHARGING

Always follow the charger manufactures instructions for recharging the batteries.

Tempest offers two types of battery chargers for the DeWalt batteries. A single battery and a four battery charger that operate on 115 VAC. Please follow the instructions provided with each model of charger as these two chargers have diferent recharge times.

## MAINTENANCE PROCEDURES

Although Tempest electric Power Blowers™ are designed to eliminate most maintenance issues, it is imperative that the blowers be inspected before startup on each use. Please review the following list before using this product.

### MAINTENANCE SCHEDULE

#### EVERY USE

- INSPECT BLOWER FOR DAMAGE AND FIX IF ANY
- TIGHTEN/REPLACE ANY LOOSE OR MISSING PARTS

#### EVERY MONTH OR 10 HOURS

- INSPECT & CLEAN SHROUD & GRILLES

**IMPORTANT:** Always operate the blower in an area free of debris which may be pulled into the unit's blades. If you suspect the fan's blade may have contacted a hard object, thorough inspection of the blade assembly should be conducted immediately to ensure safety. You may contact Tempest Technology Corp. in order to find out how to properly inspect the blade assembly.

## POWER BLOWER™ TROUBLESHOOTING

Various factors can contribute to or be the sole cause of problems for electric power blowers. This section will identify some of these problems and provide solutions to correct them.

### BLOWER FAILS TO START

#### WHEN OPERATING ON THE BATTERY.

- Make sure that the battery is charged.
- Make sure that the batteries are fully seated into the battery mounts.
- Make sure that the fuses are not burnt out and are in good working order.
- There may be damage to the internal wiring. Have a qualified technician or electronics specialist examine the blower circuitry and wiring and make any necessary repairs.

#### WHEN OPERATING ON AC POWER

- Make sure the unit is connected to the power source.
- Make sure that the fuses are not burnt out and are in good working order.
- Thoroughly check the power cord. If the cord shows any signs of serious wear, it may need to be replaced before running properly.
- There may be damage to the internal wiring. Have a qualified technician or electronics specialist examine the blower circuitry and wiring and make any necessary repairs.
- If your Tempest Battery Powered blower is not running after pursuing the steps mentioned above, please contact us at 800.346.2143 or [response@tempest.us.com](mailto:response@tempest.us.com).

### BLOWER SURGES WHEN RUNNING ON GENERATOR

- Check that the generator meets the proper voltage output to operate the blower.
- If blower is still surging, contact Tempest at 800.346.2143 or [response@tempest.us.com](mailto:response@tempest.us.com).



### LOCATION OF FUSE HOLDERS

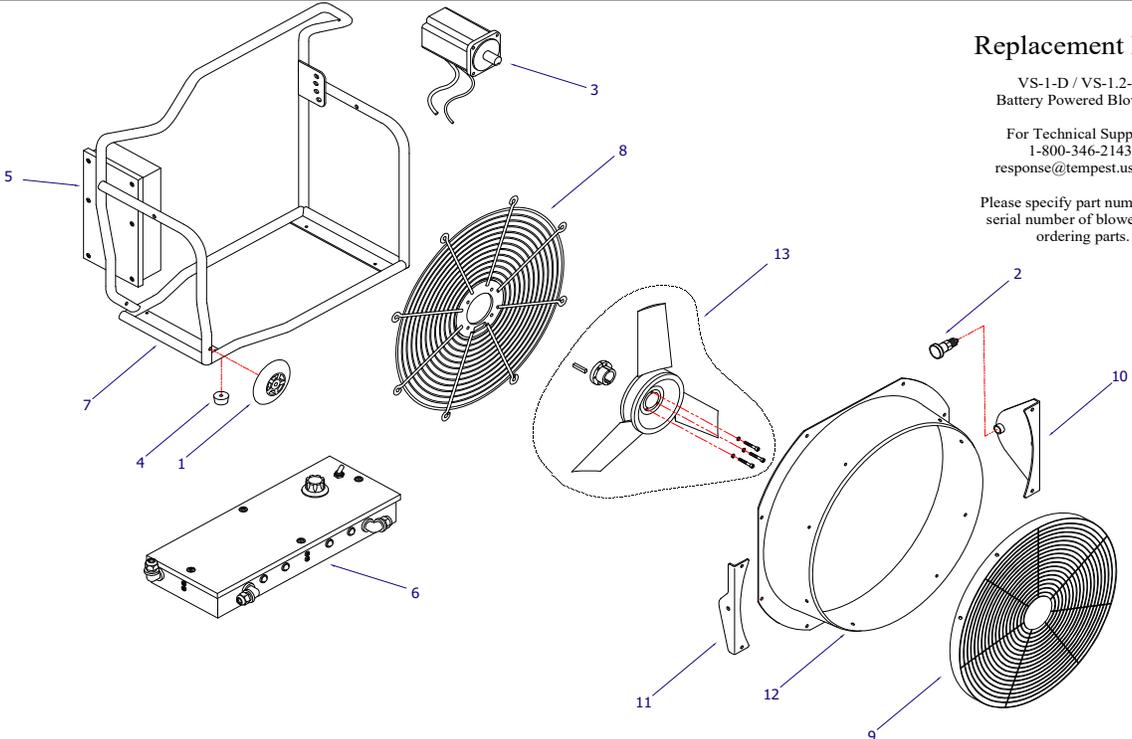
- There is a 15 amp fuse for the 115 VAC power on the left side of the electrical enclosure.
- There is a 20 amp blade type fuse for the 48 VDC power located inside the electrical enclosure.

## Replacement Parts

VS-1-D / VS-1.2-D  
Battery Powered Blowers

For Technical Support:  
1-800-346-2143  
response@tempest.us.com

Please specify part number and serial number of blower when ordering parts.



Item #	Part number	Description
1*	240-015K	WHEEL KIT
2	300-171	METERIC SPRING PLUNGER
3*	360-052K	MOTOR ELECTRIC BLDC
4	580-009	PAD FOOT EBS 16
5	600-860	DEWALT BATTERY SYSTEM
NI	585-015	48V 17.5AH BATTERY
NI	585-030	CHARGER FOR 48V 17.5AH 110v
7*	610-1328K	FRAME VS-1
NI	610-1330K	FRAME VS-1.2 FOLDING HANDLE MODEL
8	610-1427	GRILL REAR
9*	610-1428K	GRILL FRONT A/S
10*	610-1521K	SHROUD MOUNT BRACKET LEFT
11*	610-1522K	SHROUD MOUNT BRACKET RIGHT
12*	705-122	SHROUD, RED
13*	705-295	BLADE ASSEMBLY
6*	600-840K	DRIVE ASSEMBLY COMPLETE
NI	581-015	BOOT TOGGLE SWITCH
NI	581-190	BLDC SPEED CONTROLLER
NI	581-191	48 VOLT DC POWER SUPPLY
NI	581-192K	VS1 POTENTIOMETER KIT
NI	581-197	FUSE HOLDER WATER PROOF IP66 115v
NI	581-196	SWITCH TOGGLE DPDT W/ SCREW TERMINALS
NI	581-206	SWITCH TOGGLE DPDT W/ FLAG TERMINALS
NI	581-210	FUSE, 15 AMPS VS1 115v
NI	581-284	FUSE, 20 AMPS 48 VDC BLADE TYPE
NI	585-016	RAIL MOUNT VS1 BATTERY

\* denotes item includes hardware for installation

NI Not Illustrated

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Information and Material Subject to Change Without Notice

# TEMPEST TECH SERIES

(VS-1.2D)

TEMPEST POWER BLOWERS

tempest.us.com



## SPECIFICATIONS

<b>Air Volume</b>	10,887 CFM (18497 m <sup>3</sup> /h)	<b>Motor</b>	0.87 HP / 744W Variable Speed Drive BLDC Totally Enclosed, Air over IP66
<b>Weight</b>	With batteries 51 lbs. / Without batteries 41 lbs.	<b>Battery</b>	Removable DeWalt FLEXVOLT 12AH or 9AH Li-Ion (1 and up to 3)
<b>Dimensions (L x H x D)</b>	Handle Down - 22.88"L x 24.4"H x 12.25"D Handle Up +4.9"	<b>Charging Time</b>	100% Charge in 2-hours with External Optional Charger
<b>Propeller Diameter</b>	18"	<b>Ingress Protection</b>	IP66 (excludes DeWalt Batteries)
<b>Run Time</b>	<i>Average run time at full speed 40 minutes with 3 x 12AH batteries</i>	<b>Drop Test</b>	Designed to resist a Drop Test of 1.5M / 5'
<b>Operating Temperature</b>	-5°F to +113°F	<b>Noise Level</b>	76.3dB at 3m-10'

## AVAILABLE OPTIONS

PART NUMBER	PRODUCT	INCLUDES
910-1860	VS-1.2D - without battery or charger	Electric PPV Blower, Variable Speed Drive, 18" Impeller Brushless DC Electric motor, 1 Shoulder Strap, No charger, No battery
910-1861	VS-1.2D - with 3 - 12AH DeWalt batteries and 1 single-bay charger	Electric PPV Blower, Variable Speed Drive, 18" Impeller Brushless DC Electric motor, with 3 - 12AH DeWalt batteries, 1 Shoulder Strap, 1 single-bay charger
910-1862	VS-1.2D - with 3 - 12AH DeWalt batteries and 4-bay charger	Electric PPV Blower, Variable Speed Drive, 18" Impeller Brushless DC Electric Motor, with 3 - 12AH DeWalt batteries, 1 Shoulder Strap, 4-bay charger
910-1863	VS-1.2D - with 3 - 9AH DeWalt batteries and 1 single-bay charger	Electric PPV Blower, Variable Speed Drive, 18" Impeller Brushless DC Electric Motor, with 3 - 9AH DeWalt batteries, 1 Shoulder Strap, 1 single-bay charger
910-1864	VS-1.2D - with 3 - 9AH DeWalt batteries and 4-bay charger	Electric PPV Blower, Variable Speed Drive, 18" Impeller, Brushless DC Electric Motor, with 3 - 9AH DeWalt batteries, 1 Shoulder Strap, 4-bay charger
610-1840	VS1 DeWalt Conversion Kit	Includes Battery Mounting System, No Batteries, No Charger
610-1841	VS1 DeWalt Conversion Kit	Includes Battery Mounting System, 3 x 12Ah DeWalt Batteries, and 1 single-bay charger
610-1842	VS1 DeWalt Conversion Kit	Includes Battery Mounting System, 3 x 12Ah DeWalt Batteries, and 4-bay charger

## AVAILABLE ACCESSORIES

585-040	 DeWalt FLEXVOLT Li-Ion Battery 12AH / 240 WH <i>Average run time at full speed 40 minutes with 3 batteries (Run-time depending on battery condition).</i>	585-046	 Single Bay DeWalt Quick Charger
585-041	 DeWalt FLEXVOLT Li-Ion Battery 9AH / 180 WH <i>Average run time at full speed 30 minutes with 3 batteries (Run-time depending on battery condition).</i>	585-047	 Four Bay DeWalt Quick Charger
725-070	 Flex Tube Ducting	610-1801	 Shoulder Carry Strap (1 is included with every VS1.2D)
725-200	 Rehab Misting Ring	300-141 / 300-142	 Door Bar Holder and Bracket Set
		300-187	 (2) Pack Glow Wedges

Please fill out and mail the warranty card that was supplied in the information packet.

## WARRANTY REGISTRATION

Serial No.	Model No.
------------	-----------

*(Serial and model numbers are located on the blower's frame near the motor/engine.)*

### PLEASE PRINT

Your Name \_\_\_\_\_  
Department/Company Name \_\_\_\_\_  
Address \_\_\_\_\_  
City/St/Zip \_\_\_\_\_  
Phone \_\_\_\_\_  
Email \_\_\_\_\_

### PURCHASE INFORMATION

Date of Purchase \_\_\_\_\_ Name of Dealer \_\_\_\_\_  
Why did you purchase your Tempest product? (Check all that apply)  
 Reputation     Demonstration     Quality     Price  
 Recommended by \_\_\_\_\_     Advertising  
 Other \_\_\_\_\_  
Is this your first Tempest?     Yes     No  
What is the most important factor in purchasing this product?  
\_\_\_\_\_  
In what applications will you use this Tempest product?  
\_\_\_\_\_

### PPV INFORMATION (If Applicable)

Are you using any other PPV equipment?  
 Yes (which) \_\_\_\_\_     No  
How long have you used PPV? \_\_\_\_\_  
Has your organization ever participated in a formal PPV training program?  
 Yes     No

### ADDITIONAL INFORMATION

I would like information on Tempest PPV/Ventilation Training.  
 I would like to receive information on product accessories.  
 I would like to join your information network and receive regular Tempest product and ventilation updates.  
E-mail \_\_\_\_\_

**SUGGESTIONS AND COMMENTS** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TEMPEST**<sup>TM</sup>  
4708 N. Blythe Ave.  
Fresno, CA 93722

800.346.2143  
www.tempest.us.com

p/n 410-1038



# WARRANTY INFORMATION

Except as otherwise set forth below, any claim by Customer with reference to the Goods sold shall be deemed waived by the Customer unless submitted in writing to Tempest within the earlier of (i) five (5) business days following the date Customer discovered, or by reasonable inspection should have discovered, any claimed breach of the foregoing warranty, or (ii) thirty (30) calendar days following the date of shipment. Any cause of action for breach of the foregoing warranty shall be brought within one (1) year from the date the alleged breach was discovered or should have been discovered, whichever occurs first.

## Limited Power Blower Warranty

Tempest warrants to the original purchaser that all Tempest gasoline and electric powered blowers (except the engine or motor, drive, and power supply) will be free from original defects in workmanship and material, under normal-use conditions, and Tempest will replace any defective power blower part (except the engine or motor and drive) if returned during the applicable warranty period, for the time frame indicated below:

### Firefighting Industry:

Five (5) years from date of shipment

### Industrial/Rental Industry:

One (1) year from date of shipment

## Blower Engine / Motor & Drive Warranty

The engines manufactured by Honda® and Briggs & Stratton® are covered by a separate manufacturer's warranty for a period of two (2) years. Electric motors manufactured by Magnetek, Marathon, Baldor, Franklin Electric and Multi-Fan are covered by a separate manufacturer's warranty for a period of one (1) year.

## Batteries

The batteries are covered by a separate manufacturer's warranty. Refer to warranty information supplied with the batteries.

Note: Unauthorized repair or modification of the factory assembly or parts voids the warranty.

All information provided in this operations manual is subject to change without notice. Please refer to our website for the most recent sales terms and conditions.

# **TEMPEST™**

Tempest Technology Corporation

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