

TEMPESTTM TECHNOLOGY **POWER BLOWERS**[®]

Operations Manual

2012 Version

ELECTRIC

Single Speed

Variable Speed

VSG

VSX

VSM



Tempest Power Blower
Electric - **Single Speed**



Tempest Power Blower
Electric - **VSX**



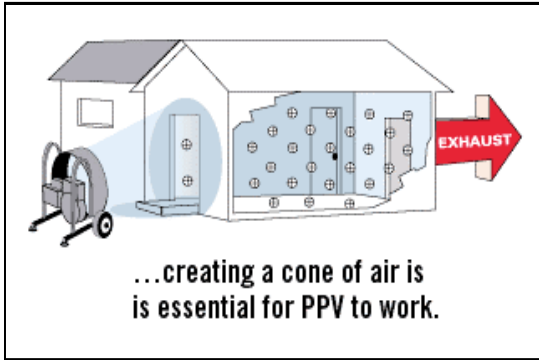
Tempest Power Blower
Electric - **VSG**



Tempest Power Blower
Electric - **VSM**

Introduction

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. These 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 construction contractors 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.

TEMPEST™
POWER BLOWERS



About This Manual

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® 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

Phone: 559.277.7577

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WEB PAGE: www.tempest-edge.com

Table of Contents

INTRODUCTION	1
ABOUT THIS MANUAL	2
CONTACT INFORMATION	2
SAFETY GUIDE	4
GENERAL INFORMATION	5
BLOWER IDENTIFICATION	5
SERIAL NUMBER LOCATION	5
WARRANTY	5
POWER BLOWER DATA	6-7
POWER BLOWER INFORMATION	8
OPERATING PROCEDURES	9-12
PRE OPERATION	9
VISUAL INSPECTION	9
OPERATION	9
SET-UP	9
STARTING, ADJUSTING, STOPPING - VSX	10
STARTING, ADJUSTING, STOPPING - VSG	11
STARTING, ADJUSTING, STOPPING - VSM	11
STARTING, ADJUSTING, STOPPING - Single Speed	12
MAINTENANCE PROCEDURES	13-16
MAINTENANCE SCHEDULE	13
BLADE REMOVAL AND INSTALLATION, 3-BOLT DESIGN	13-14
BLADE REMOVAL AND INSTALLATION, 2-BOLT REAR DESIGN	15
TROUBLE SHOOTING - VSX	16-18
TROUBLE SHOOTING - VSG	19
TROUBLE SHOOTING - VSM	20
TROUBLE SHOOTING - Single Speed	21
NOTES	22
EXPLODED VIEW - VSM & SINGLE SPEED	23
PARTS LIST - VSM & SINGLE SPEED	24
EXPLODED VIEW - VSX & VSG	25
PARTS LIST - VSX & VSG	26

Safety Guide

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

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 Operation and Maintenance 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 the blower.
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 grill 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. Motor and air noise may exceed safe dB levels.
8. **DO NOT** move blower while it is running!
9. It is the sole responsibility of the owner/operator to develop and practice the proper use of the TEMPEST POWER BLOWER® in accordance with generally accepted ventilation procedures as well as the department's own operating procedures before placing the unit into service.

Blower Identification

Each TEMPEST POWER BLOWER® has a model number as well as a serial number. The model number signifies information such as blade diameter, engine type and horsepower. 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.

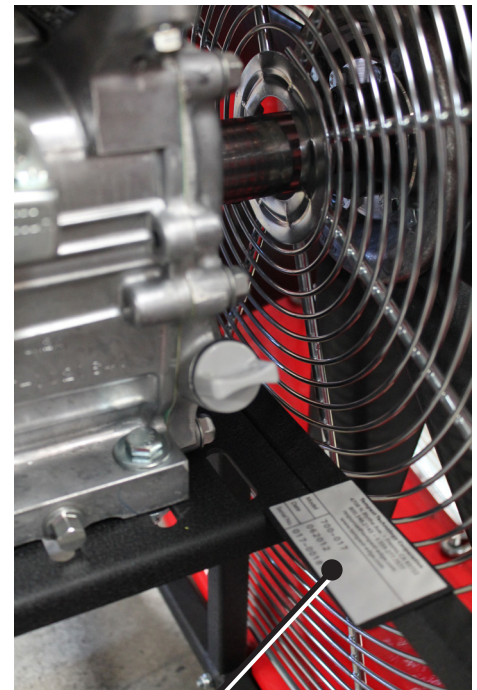
SERIAL NUMBER LOCATIONS

ELECTRIC POWER UNITS:

The serial number is located on a small plate welded to the frame.

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	
Date	
Serial No.	



Blower Identification

This plate/information may be located on the left or right side of the Blower.

Warranty

Please visit www.tempest-feedback.com to complete your warranty information and activate your warranty.

Power Blower Data

TYPE:

Positive Pressure Ventilator

BLADE:

Air Flex Fiberglass Reinforced Polyamide

BUSHING:

Keyed Shaft and Set or Cap Screws.

SHROUD:

Turbo 2000 Tapered Aluminum.

DRIVE:

Direct-drive Electric Motor.

BEARINGS:

Locking, Self-Aligning and Permanently Lubricated.

FRAME:

Rugged, Lightweight, Square-Steel Tubing with Powder-Coat Finish.

TILT MECHANISM:

Patented Five-Positions, Foot-Operated Tilt Mechanism (The Winning Step).

GRILL:

Continuous Circular-Wound, External-Weld Steel Wire with 8 Tie Points for Additional Safety.

VIBRATION DAMPENERS:

Steel-Reinforced Rubber.

Power Blower Data Continued

SINGLE SPEED ELECTRIC POWER BLOWERS

Model	Part #	Blade Size	Dimensions (WxDxH)	Weight	CFM
EBS-16	700-108	16"	18.75" x 14.25" x 19.50"	47 lbs.	3,200
EB-16	700-099	16"	18.50" x 20.00" x 20.50"	66 lbs.	11,804
EB-18	700-056	18"	22.25" x 21.00" x 24.00"	71 lbs.	8,748
EB-21	700-060	21"	25.00" x 21.00" x 26.00"	72 lbs.	11,968
EB-24	700-062	24"	28.25" x 22.50" x 30.00"	75 lbs.	12,867

VSG VARIABLE SPEED BLOWERS

Model	Part #	Blade Size	Dimensions (WxDxH)	Weight	CFM
EB-16-VSG	700-316	16"	19.25" x 19.25" x 21.25"	83 lbs.	11,125
EB-18-VSG	700-318	18"	23.50" x 20.75" x 24.00"	88 lbs.	11,861
EB-21-VSG	700-321	21"	25.50" x 20.75" x 26.25"	94 lbs.	13,414
EB-24-VSG	700-324	24"	28.25" x 21.25" x 30.00"	100 lbs.	12,901

VSX VARIABLE SPEED BLOWERS

Model	Part #	Blade Size	Dimensions (WxDxH)	Weight	CFM
EB-16-VSX	700-350	16"	19.25" x 19.25" x 21.25"	86 lbs.	11,804
EB-18-VSX	700-352	18"	23.50" x 20.75" x 24.00"	91 lbs.	8,748
EB-21-VSX	700-354	21"	25.50" x 20.75" x 26.25"	97 lbs.	11,968
EB-24-VSX	700-356	24"	28.25" x 21.25" x 30.00"	102 lbs.	12,867

VSM VARIABLE SPEED BLOWERS

Model	Part #	Blade Size	Dimensions (WxDxH)	Weight	CFM
EB-16-VSM	700-261	16"	19.00" x 19.25" x 21.25"	66 lbs.	10,650
EB-18-VSM	700-262	18"	22.25" x 20.75" x 24.00"	71 lbs.	8,465
EB-21-VSM	700-263	21"	25.00" x 20.75" x 26.25"	76 lbs.	11,475

Power Blower Information

The TEMPEST POWER BLOWER® is a high powered, portable blower used for Positive Pressure Ventilation and Attack (PPV/PPA), ventilation techniques that quickly and efficiently replaces hazardous interior environments.

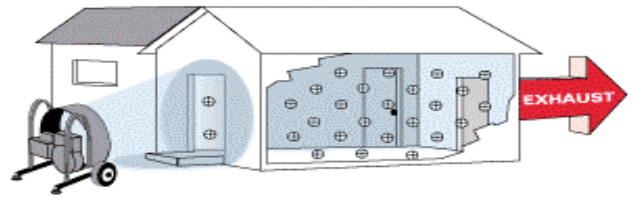


Figure 1.2

...creating a cone of air is essential for PPV to work.

PPV and PPA were pioneered in the fire fighting industry where fire fighters 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) a cone shaped air pattern, 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 cone shaped air pattern created by the blower completely seals the entrance opening (Figure 1.2). 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 tapered shroud design creates a wide, stable, conical air pattern. Second, the seven blade air movement impeller used on all Tempest blowers is designed to create high pressure. These two features make the TEMPEST POWER BLOWER® such a powerful 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-edge.com, www.positivepressuretraining.com or contact us at 1.800.346.2143.

Pre-Operation

VISUAL INSPECTION

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
1.800.346.2143**

Operation

SET-UP, STARTING AND STOPPING

Assuming the previous Pre-Operation 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.

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.

NOTE:

The following sections cover separate operating instructions for each type of electric blower. Please be sure to follow the operating instructions specific to your particular blower model. (ex. VSG, VSX, VSM, Single Speed)

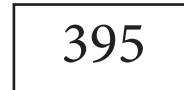
Operating Procedures Continued

STARTING - VSX (WILL NOT RUN ON GFCI CIRCUITS)

1. Plug the blower power cord into power source receptacle. The following displays on the LED screen immediately upon applying power:



LED flashes a 3 digit number (parameter version) momentarily, then...



STOP condition indicator is displayed.



2. Using the ▲ INCREASE button and/or the ▼ DECREASE button, set the desired operation load %. Operation loads range from approximately 10% to 100%.



3. Start the blower by depressing the green button.



ADJUSTING SPEED WITH BLOWER ON

It is safe to change speed while the blower is running simply depress ▲ INCREASE or ▼ DECREASE buttons to set to desired speed.

STOPPING

To stop operation, depress the red button.



NOTE:

RPM setting at shut down will be the same RPM setting at restart.

CAUTION:

DO NOT plug the unit in again until the LED display is clear (blank.)

Operating Procedures Continued

STARTING - VSG

1. Check that toggle switch is set to STOP.
2. Plug the blower cord into power source receptacle. If power is properly brought to the control, the “ON” LED and the “STOP” LED indicators will be lit.
3. Engage START toggle. The toggle is momentary switch to start. The center position is the run location.

STOPPING

Stop unit before unplugging from power source. Make sure toggle is set to STOP.



STARTING - VSM

1. Set speed control knob (rheostat) to STOP.
2. Plug blower power cord into power supply.
3. Adjust rheostat to desired RPM. The GREEN LED will indicate power is supplied to unit.

STOPPING

Turn rheostat knob to the STOP position to shut the unit off. DO NOT unplug unit before shutting off.



Operating Procedures Continued

STARTING - Single Speed

-NO SWITCH

Plug blower into power source. Unit will begin running automatically.



-WITH SWITCH

1. Ensure blower toggle is switched to the off position.
2. Plug blower into power source.
3. Switch toggle to the ON position.

STOPPING

-NO SWITCH

Unplug unit from power source or switch off power source.

-WITH SWITCH

Stop unit before unplugging from power source. Make sure toggle switch is set to STOP.

SINGLE SPEED REQUIREMENTS

Based on 115v blower on a 20 amp circuit

Model	Motor HP	Starting Amps	Starting Watts	Running Amps	Starting Watts
EB-16	1.5	54.6	6,300	18.2	2,100
EBS-16	1/3	10.9	1,300	6.3	756
EB-18	1	48	6,000	16	1,900
EB-21	1	48	6,000	16	1,900
EB-24	1	48	6,000	16	1,900

MAXIMUM POWER CORD LENGTH

Based on 1 blower on a 20 amp circuit

Motor HP	14 gauge	12 gauge	10 gauge	8 gauge	6 gauge
EBS-16	215'	330'	550'	850'	1,350'
EB-16	60'	95'	150'	240'	380'
EB-18	45'	65'	115'	190'	300'

Maintenance Procedures

Although the Tempest Variable Speed 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
- INSPECT BLADE FOR NICKS/CUTS OR DAMAGE

✓ EVERY MONTH OR 10 HOURS

- INSPECT & CLEAN SHROUD & GRILLS

If the blade has made contact with a hard object, and damage has occurred, please follow these simple instructions for removing and reinstalling the blade assembly.

BLADE REMOVAL/INSTALLATION PROCEDURES

IMPORTANT: Tempest Variable and Single Speed Electric Power Blowers feature two different blade to shaft mount designs. When attempting to remove/install a blade to your electric blower, you will need to identify which design your blower uses. The instructions on the following pages touch on both designs individually. Using the images provided, match the blade-shaft design you have with the ones shown in order to decide which set of directions to follow. If you have any questions, please contact us at **1.800.346.2143**

BLADE REMOVAL PROCEDURES

1. Remove the eight bolts holding the front grill in place and remove the grill. (Figure 4.1)



Figure 4.1

Maintenance Procedures Continued

2. Remove the three bolts from blade and remove the blade from the hub. (Figure 4.2) Remove the two bolts that secure the bushing to the hub. Put the two bolts in the threaded part of the bushing and turn evenly until bushing separates from hub.

Figure 4.2



BLADE INSTALLATION PROCEDURES

1. Make sure that the shaft and keyway are clean and smooth before installing the bushing. Remove the hub from the new blade assembly.
2. Put “Loc-Tite” on the screws that secure the bushing to the hub. Insert the cap screws through the clearance holes in the bushing and loosely place the bushing into the hub of the blade. Do not press the bushing in. Hand start the screws into the hub, turning them just enough to engage the threads in the tapped holes on the hub. The bushing should be loose in the hub. Place the hub and the bushing onto the motor shaft. Insert the key into the keyway (Figure 4.3) and tighten the two bolts drawing the bushing and hub together.
3. Slide the blade onto the bushing/hub assembly and place “Lock-Tite” on the three bolts, then insert the three bolts through the blade and turn evenly but do not tighten. Make sure blade is in line with hub then tighten bolts (Figure 4.3). Locate the blade and bushing so that the blade tips do not hit the rear grill eyelets.



Figure 4.3

NOTE:

On some models the blade and bushing may be in beyond or out away from the end of the shaft up to ¼” but no further. This is necessary for proper blade clearance.

4. Tighten the cap screw bolts progressively with a wrench. Tighten each cap screw, partial turns successively until all are tight. Final tightening should be done with torque wrench with the torque set at 7.5 ft/lbs. for each screw. Over tightening will cause the cap screws to break or crack the blade. (Figure 4.2)
5. Carefully turn the blade and check for clearance between the blade and shroud. Confirm that the blade is free to rotate without hitting other parts.
6. Reinstall the front grill and test the blower.
7. If you have any trouble removing or installing the blade on your blower, contact the factory for assistance at **1.800.346.2143**.

Maintenance Procedures Continued

BLADE REMOVAL PROCEDURES

1. Remove the eight bolts holding the front grill in place and remove the grill. (Figure 4.1, Page 13)
2. Remove the three Allen bolts from blade/hub assembly. **DO NOT** remove the four nuts/bolts holding the two blade hub halves that secure the blade fins. (Figure 5.1)
3. Insert bolts into adjoining threaded holes of blade/hub assembly, hand tighten. (Figure 5.2)
4. With Allen wrench, consecutively tighten bolt 1,2,3 half turn and repeat until blade separates from bushing.



Figure 5.1



Figure 5.2

BUSHING REMOVAL

Loosen Allen set screw. Insert small screw driver into bushing slot applying a little pressure to release bushing from engine shaft. (Some bushings may have a set screw securing the bushing to the key on the motor shaft). Be careful not to damage end of shaft. (Figure 5.3)



Figure 5.3

BLADE INSTALLATION

1. Check key. A worn key should be replaced. Make sure motor shaft keyway is clean.
2. Align bushing keyway with shaft key and position bushing on shaft to insure blade fins are centered between front and rear grill mounting bolts. Put blue “Loc-Tite” on bushing allen set screw and tighten.
3. Align non-threaded holes of blade/hub assembly with threaded holes of bushing. Put lock washers on bushing bolts. Put blue “Loc-Tite” on bushing bolts. Insert through non-threaded holes of blade/hub assembly, hand tighten. With Allen wrench tighten bolts 1,2,3 consecutively until tight, torque to 7ft pounds. (Figure 5.4)
4. Reinstall the front grill and test the blower.

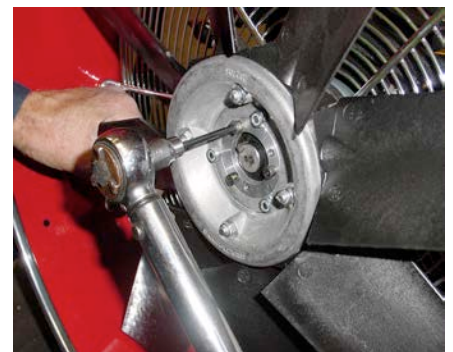


Figure 5.4

Trouble Shooting - VSX

Many 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

MAKE SURE BLOWER IS CONNECTED TO POWER SOURCE.

IF LED DISPLAY DOES NOT LIGHT UP:

Confirm that adequate power is being supplied to blower. If power supply is adequate, **DISCONNECT BLOWER FROM POWER SOURCE** and check for loose or faulty wiring on blower electrical system and repair.

Connect blower to power source and attempt restarting, if blower still does not run, contact Tempest at 1.800.346.2143.

IF LED DISPLAY LIGHTS UP AND:

Fault Code is given, reference Fault Code Table on the next page for diagnostics.

If “---“ appears on LED, but motor does not run, **DISCONNECT BLOWER FROM POWER SOURCE** and check wiring between drive and motor, repair any faulty wiring.

Also check to ensure that the EPM chip is fully inserted into the socket on the top of the blower control. Connect blower to power source and attempt restarting, if blower still does not run, contact manufacturer.

BLOWER RUNS THEN CUTS OFF

Check generator rating. The VSX blower series requires minimum 3.5kw rating for maximum load operation.

After the blower cuts off, check the fault code reading on the LED. Reference the fault code chart on the next page.

Trouble Shooting - VSX

FAULT CODES

FAULT	DESCRIPTION & POSSIBLE CAUSES	ACTION
JF	KEYPAD FAULT: THE COMMUNICATION LINK BETWEEN THE DRIVE AND THE KEYPAD HAS BEEN LOST.	CHECK KEYPAD WIRING AND MAKE NECESSARY REPAIRS.
LF	LOW DC BUS VOLTAGE FAULT: TYPICALLY, CIRCUIT BREAKER HAS TRIPPED DUE TO EXCESSIVE AMP DRAW.	<p>L. CHECK CIRCUIT BREAKER SIZE, RECOMMENDED SIZE FOR VSX SERIES IS 20 AMP. CHANGE CIRCUIT BREAKER IF TOO SMALL.</p> <p>LL. CHECK GENERATOR KW RATING, IF TOO SMALL, UPGRADE GENERATOR, OR RUN BLOWER LOWER THAN MAXIMUM BLOWER SPEED.</p> <p>LLL. CHECK LINE VOLTAGE AT J-BOX RECEPTACLE. LINE VOLTAGE SHOULD BE 120V, $\pm 10\%$. MAKE NECESSARY ADJUSTMENTS TO INSURE PROPER SUPPLY VOLTAGE.</p> <p>LLLL. CHECK FOR UNDERSIZED POWER SUPPLY CORD. ACCEPTABLE CORD IS 10/3 AWG X 200 FT. MAX. CHANGE CORD ACCORDINGLY.</p>
PF	CURRENT OVERLOAD FAULT: EXCESSIVE CURRENT DRAW BETWEEN DRIVE AND MOTOR.	<p>L. CHECK FOR UNDERSIZED POWER SUPPLY CORD. ACCEPTABLE CORD IS 10/3 AWG X 200 FT. MAX. CHANGE CORD ACCORDINGLY.</p>

CHANGING EPM (PROGRAM CHIP)

When replacing the EPM (program chip), use a ¼” nut driver to remove the opposing self tapping screws on the black cover of the VSX box. The EPM is located in the upper left corner of the white controller under a small piece of protective film. Remove the tape and using needle nose pliers, remove the EPM and replace with new one. Replace the tape over the EPM, replace black cover and opposing screws.

BLOWER MOVEMENT OR “WALKING”

- Adjust the rubber footpads on the back of the Blower by turning them either in or out. Adjust the side that is walking. This will help to evenly distribute the weight of the Blower to all four points of the frame
- Most Blowers will walk if not running at full speed, make sure the Blower is running at full speed.
- Make sure the Blower is sitting flat and not on small rocks or other objects.

Many 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.

MAKE SURE BLOWER IS CONNECTED TO POWER SOURCE.

IF THE “ON” AND THE “STOP” LEDS DO NOT LIGHT UP:

Confirm that adequate power is being supplied to blower. If power supply is adequate, **DISCONNECT BLOWER FROM POWER SOURCE** and check for loose or faulty wiring on blower electrical system and repair.

Connect blower to power source and attempt restarting, if blower still does not run, contact Tempest at 1.800.346.2143.

BLOWER RUNS THEN CUTS OFF:

Check that the overload indicator light is lit. If the light is lit, this means there is insufficient voltage going to the unit. This can be caused by too long of a extension cord, faulty extension cord or low voltage from the power source. If none of the above exist, the unit may be set to draw more amperage than the power supply delivers. If this is the case, there is an adjustment inside the drive to correct the amperage draw when running at 100%. Please contact Tempest for instructions.

BLOWER SURGES WHEN RUNNING ON GENERATOR:

Check generator that it meets the proper voltage output to operate the blower.

BLOWER MOVEMENT OR “WALKING”

- Adjust the rubber footpads on the back of the Blower by turning them either in or out. Adjust the side that is walking. This will help to evenly distribute the weight of the Blower to all four points of the frame
- Most Blowers will walk if not running at full speed, make sure the Blower is running at full speed.
- Make sure the Blower is sitting flat and not on small rocks or other objects.

Many 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.

MAKE SURE BLOWER IS CONNECTED TO POWER SOURCE.

BLOWER WILL NOT START WHEN RHEOSTAT TURNED:

Check the LED light on the drive. It should be lit when the rheostat is in the “RUN” position. If not lit, confirm that adequate power is being supplied to blower. If power supply is adequate, **DISCONNECT BLOWER FROM POWER SOURCE** and check for loose or faulty wiring on blower electrical system and repair. Connect blower to power source and attempt restarting. If blower does not run, remove the drive cover and check the internal wiring connections. Check the internal fuse located on the circuit board of the drive also.

If the LED light is on and the blower will not start and all electrical connections have been checked as in the above paragraph, the VSM drive may need to be replaced.

Contact Tempest at 1.800.346.2143 for assistance.

BLOWER MOVEMENT OR “WALKING”

- Adjust the rubber footpads on the back of the Blower by turning them either in or out. Adjust the side that is walking. This will help to evenly distribute the weight of the Blower to all four points of the frame
- Most Blowers will walk if not running at full speed, make sure the Blower is running at full speed.
- Make sure the Blower is sitting flat and not on small rocks or other objects.

Trouble Shooting - Single Speed

Many 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:

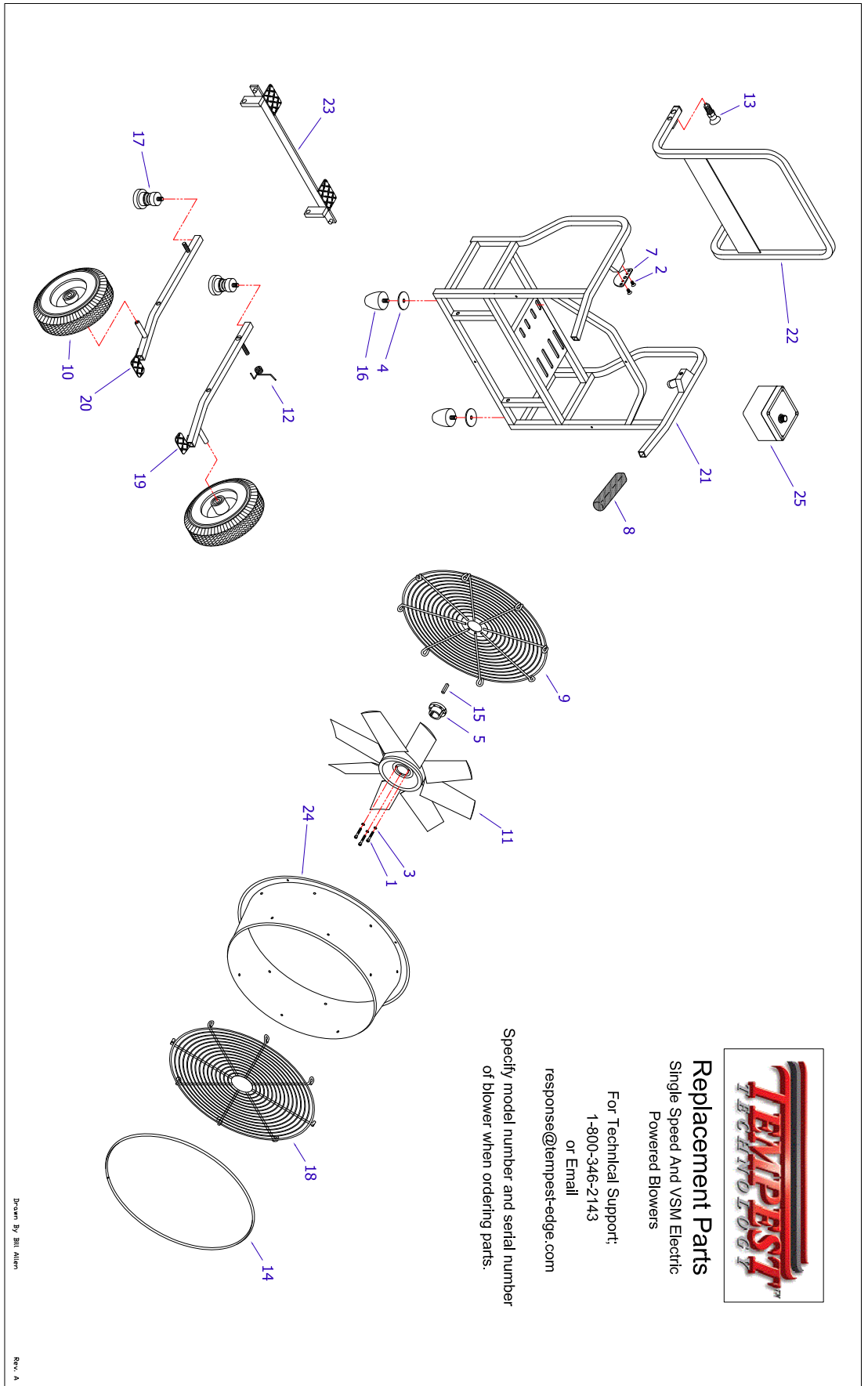
MAKE SURE BLOWER IS CONNECTED TO POWER SOURCE.

- Thoroughly check the power cord. If the cord shows any signs of serious wear it may need to be replaced before running properly.
- Many blowers are equipped with an “automatic reset.” This reset will kill power to the blower when the unit is at risk of overheating. Let the blower cool and attempt to start it again.
- There may be damage to the internal wiring. Have a qualified technician or electronics specialists examine the blower circuitry and wiring and make any necessary repairs.
- If your Tempest Single Speed Blower is not running after pursuing the steps mentioned above, please contact us at 1.800.346.2143 or response@tempest-edge.com

BLOWER MOVEMENT OR “WALKING”

- Adjust the rubber footpads on the back of the Blower by turning them either in or out. Adjust the side that is walking. This will help to evenly distribute the weight of the Blower to all four points of the frame
- Most Blowers will walk if not running at full speed, make sure the Blower is running at full speed.
- Make sure the Blower is sitting flat and not on small rocks or other objects.

Electric Power Blowers Exploded View - VSM & Single Speed



Replacement Parts
Single Speed And VSM Electric
Powered Blowers

For Technical Support:
1-800-346-2143

or Email
response@tempest-edge.com

Specify model number and serial number
of blower when ordering parts.

Drawn By Bill Allen

Rev. A

Electric Power Blowers Parts List - VSM & Single Speed

May 2012 and Later
Replacement Parts For Single Speed and VSM Electric Powered Blowers



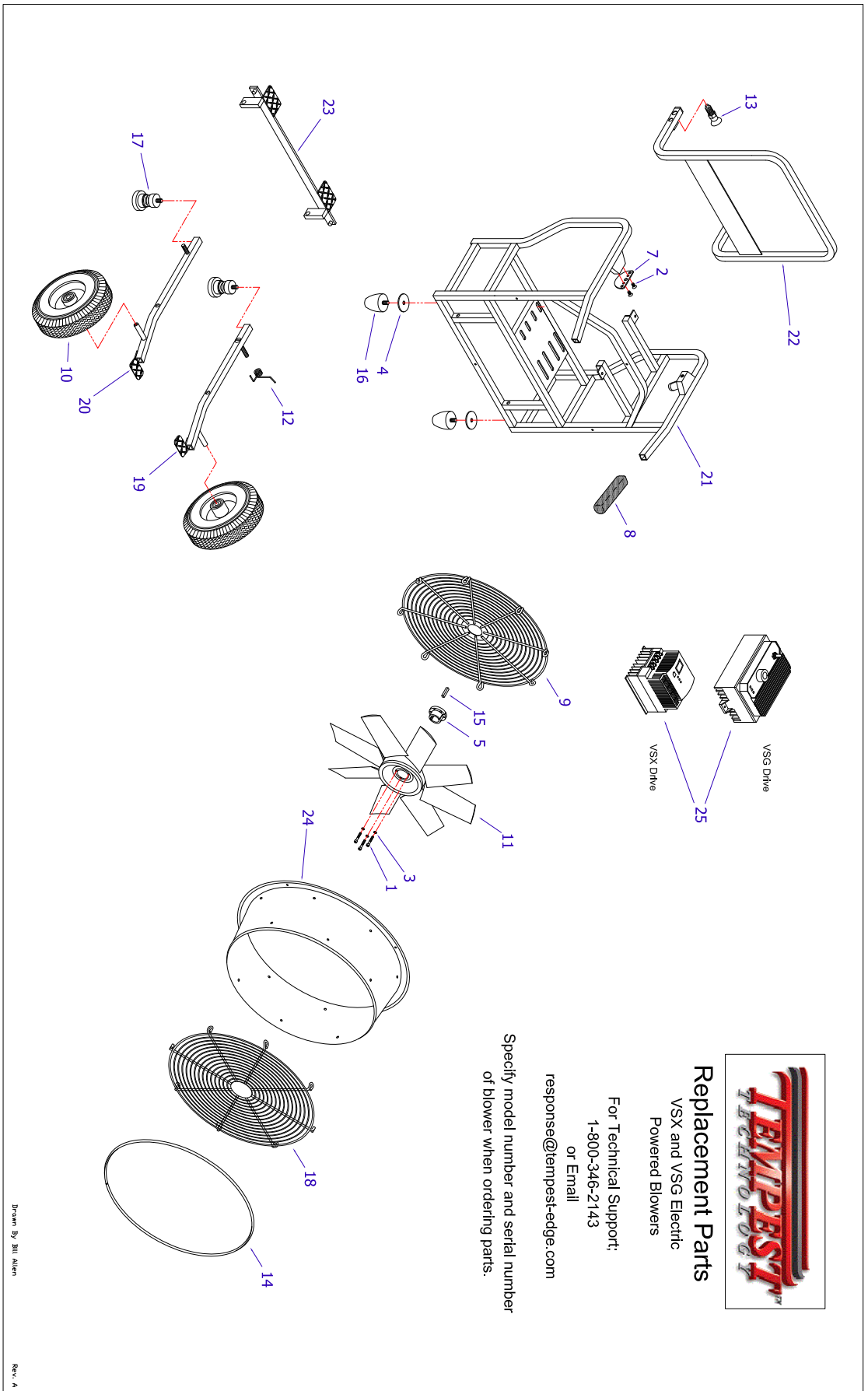
Item #	Description	VSM 16 Part number	VSM 18 Part number	VSM 21 Part number	EB16 Part number	EB18 Part number	EB21 Part number	EB24 Part number
1	BOLT 10-24 X 1 1/4 SOC P	NA	100-059	100-059	NA	100-059	100-059	100-059
2	1/4 X 1/2 FLAT SOC C/S ZINC	100-079	100-079	100-079	100-079	100-079	100-079	100-079
3	WASHER #10 HIGH COLLAR LOCK	NA	120-034	120-034	NA	120-034	120-034	120-034
4	WASHER 3/8 X 2 FENDER HYYZ	120-037	120-037	120-037	120-037	120-037	120-037	120-037
5	TAPER LOCK BUSHING	NA	160-048	160-048	160-040	160-039	160-039	160-039
7	HANDLE BRACKET	220-069	220-069	220-069	220-069	220-069	220-069	220-069
8	GRIP BASIC BLOWER HANDLE	220-248	220-248	220-248	220-248	220-248	220-248	220-248
9	REAR GRILL	230-028	230-023	230-038	230-028	230-023	230-038	230-022
10	WHEEL FLAT FREE	240-008	240-012	240-012	240-008	240-012	240-012	240-012
11	BLADE ASSEMBLY (DD) (EB)	260-074	260-075	260-019	260-069	260-075	260-019	260-021
12	SPRING TORSION	300-019	300-018	300-018	300-019	300-018	300-018	300-018
13	SPRING PLUNGER W/HANDLE	300-170	300-170	300-170	300-170	300-170	300-170	300-170
14	TRIM FRONT	410-012	410-002	410-003	410-012	410-002	410-003	410-004
15	KEYSTOCK SQ STEEL (CUT 1.5")	NA	NA	NA	460-062	460-062	460-062	460-062
16	FOOT TAPERED	580-006	580-006	580-006	580-006	580-006	580-006	580-006
17	SPRING ASSEMBLY	600-001	600-001	600-001	600-001	600-001	600-001	600-001
18*	FRONT GRILL	600-008	600-002	600-003	600-008	600-002	600-003	600-004
19*	LEG ASSEMBLY LEFT 2012	600-361K	600-350K	600-350K	600-361K	600-350K	600-350K	600-350K
20*	LEG ASSEMBLY RIGHT 2012	600-362K	600-351K	600-351K	600-362K	600-351K	600-351K	600-351K
21*	FRAME 2012	600-669K	600-670K	600-672K	600-669K	600-670K	600-672K	600-674K
22*	HANDLE 2012	600-677K	600-678K	600-679K	600-677K	600-678K	600-679K	600-680K
23*	WIN STEP 2012	600-683K	600-684K	600-687K	600-683K	600-684K	600-687K	600-689K
24*	SHROUD, RED	705-100	705-105	705-110	705-100	705-105	705-110	705-115
25*	VSM DRIVE ASSEMBLY	581-085K	581-085K	581-085K	NA	NA	NA	NA
NI*	ELECTRIC MOTOR ASSEMBLY STD	360-041	360-042	360-042	600-135	600-131	600-131	600-131
NI*	ELECTRIC MOTOR ASSEMBLY EP	NA	NA	NA	NA	600-132	600-132	600-132

* denotes item includes necessary hardware for installation

NI = Not Illustrated

REV A

Electric Power Blowers Exploded View - VSX & VSG



Replacement Parts

VSX and VSG Electric
Powered Blowers

For Technical Support:
1-800-346-2143
or Email
response@temppest-edge.com

Specify model number and serial number
of blower when ordering parts.

Drawn By: Bill Allen

Rev. A

Electric Power Blowers Parts List - VSX & VSG

May 2012 and Later
Replacement Parts For VSX and VSG Electric Powered Blowers



Item #	Description	VSX 16 Part number	VSX 18 Part number	VSX 21 Part number	VSX 24 Part number	VSG 16 Part number	VSG 18 Part number	VSG 21 Part number	VSG 24 Part number
1	BOLT 10-24 X 1/4 SOG P	NA	NA	100-059	100-059	NA	NA	NA	100-059
2	1/4 X 1/2 FLAT SOG C/S ZINC	100-079	100-079	100-079	100-079	100-079	100-079	100-079	100-079
3	WASHER #10 HIGH COLLAR LOCK	NA	NA	120-034	120-034	NA	NA	NA	120-034
4	WASHER 3/8 X 2 FENDER HVY Z	120-037	120-037	120-037	120-037	120-037	120-037	120-037	120-037
5	TAPER LOCK BUSHING	160-046*	160-046*	160-055	160-055	160-045*	160-045*	160-045*	160-039
7	HANDLE BRACKET	220-069	220-069	220-069	220-069	220-069	220-069	220-069	220-069
8	GRIP BASIC BLOWER HANDLE	220-248	220-248	220-248	220-248	220-248	220-248	220-248	220-248
9	REAR GRILL	230-028	230-023	230-038	230-022	230-028	230-023	230-038	230-022
10	WHEEL FLAT FREE	240-008	240-012	240-012	240-012	240-008	240-012	240-012	240-012
11	BLADE ASSEMBLY	260-030	260-068	260-019	260-021	260-030	260-068	260-071	260-080
12	SPRING TORSION	300-019	300-018	300-018	300-018	300-019	300-018	300-018	300-018
13	SPRING PLUNGER W/HANDLE	300-170	300-170	300-170	300-170	300-170	300-170	300-170	300-170
14	TRIM FRONT	410-012	410-002	410-003	410-004	410-012	410-002	410-003	410-004
15	KEYSTOCK SQ STEEL (CUT 1.5")	460-062	460-062	460-062	460-062	460-062	460-062	460-062	460-062
16	FOOT TAPERED	580-006	580-006	580-006	580-006	580-006	580-006	580-006	580-006
17	SPRING ASSEMBLY	600-001	600-001	600-001	600-001	600-001	600-001	600-001	600-001
18*	FRONT GRILL	600-008	600-002	600-003	600-004	600-008	600-002	600-003	600-004
19*	LEG ASSEMBLY LEFT 2012	600-361K	600-350K	600-350K	600-350K	600-361K	600-350K	600-350K	600-350K
20*	LEG ASSEMBLY RIGHT 2012	600-362K	600-351K	600-351K	600-351K	600-362K	600-351K	600-351K	600-351K
21*	FRAME 2012	600-692K	600-693K	600-694K	600-695K	600-692K	600-693K	600-694K	600-695K
22*	HANDLE 2012	600-677K	600-678K	600-679K	600-680K	600-677K	600-678K	600-679K	600-680K
23*	WIN STEP 2012	600-683K	600-684K	600-687K	600-689K	600-683K	600-684K	600-687K	600-689K
24*	SHROUD	705-101	705-106	705-111	705-116	705-102	705-107	705-112	705-117
25	VSX OR VSG DRIVE	581-150	581-150	581-150	581-150	581-180K*	581-180K*	581-180K*	581-180K*
NI*	ELECTRIC MOTOR ASSEMBLY STD	360-047	360-047	360-047	360-047	360-051	360-051	360-051	360-051

* denotes item includes necessary hardware for installation

NI = Not Illustrated

REVA



Mission Statement

Tempest Technology Corporation's mission is the promotion of the use of air as a tool for eliminating hostile interior environments encountered by firefighters, rescue teams, industrial workers, and industrial contractors worldwide.

This mission will be accomplished by identifying opportunities where Positive Pressure Ventilation and other ventilation techniques can be applied to make a work or emergency environment safer and educating manufacturers, distributors and end users through live demonstrations and professional training programs.

Tempest will continually improve and expand its existing product line to meet the needs of customers in various domestic and international markets. In order to fully utilize the strength of its resources and worldwide distribution system, Tempest will develop strategic partnerships, add complementary product lines and engage in private labeling agreements with other manufacturers.

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