

# READ THIS FIRST

VENTILATOR USER GUIDE

MODEL V20-BK





### **PERSONAL RESPONSIBILITY CODE**

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.



Fire and Emergency Manufacturers and Services Association, Inc.  
P.O. Box 147, Lynnfield, MA 01940 [www.FEMSA.org](http://www.FEMSA.org)

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## USER GUIDE

This manual covers the description, cautions, operation, and maintenance of the Super Vac V20-BK.

 **WARNING** Read this manual before operating the ventilator.

Save this guide for future reference.

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### 1. Breakage or Damage During Shipment

The transportation company is fully responsible for all shipping damage and will resolve problems promptly if you handle it correctly. Please read these instructions carefully.

Examine the contents of all shipping cases. If you find any damage, call your transportation agent at once and have them make a description on the freight or express bill describing the damage and the number of pieces. Then write us and we will send you the original bill of lading. Get a claim blank from the express or truck company. Fill the claim form out. Attach the claim blank to the original bill of lading together with a copy of our invoice. Attach a memo on which you show the value of the damaged goods. Mail or hand these papers to your local transportation agent. They will process your claim with reasonable promptness.

Please note, we cannot and will not enter claims for damages. If we filed claim here, it would be sent to your local freight agent for verification and investigation. This time can be saved by your filing the claim directly. Every consignee is on the ground floor and in contact with the local agent who inspects the damaged goods, and thus, each claim can be given individual attention.

Since our goods are packed to comply with the regulations of all railroad, truck, and express companies, we cannot allow deduction from any invoice because of any damage, however, be sure to file your claim promptly. Our goods are sold F.O.B. factory. We take receipt from the transportation company certifying that the goods were delivered to them in good order, and our responsibility ceases.

It is seldom that any breakage or damage occurs in any of our shipments, and in no case will the customer be out any expense if they follow the above instructions.

Be sure to keep all damaged goods subject to examination of the truck or express company inspector, who may call on you sometime later. These damaged goods, of course, will belong to them, and they will inform you what to do with them. If you dispose of these damaged goods, your claim may not be paid.

## 2. General Description and Specifications

Super Vac ventilators are specifically designed to provide a convenient and portable source of air. Super Vac positive pressure ventilators are tested to AMCA Standard 240-15, for use in extreme conditions.

Model #	RPM	Motor	H x W x D	Weight
V20-BK	2100	1 HP Variable Speed DC	28.25" x 28.75" x 12.25"	61 lbs

*Specifications are subject to change without notification. Refer to model decal affixed to ventilator to determine actual specifications.*

This ventilator is designed for high powered air movement. Super Vac's propeller produces a greater intake of air and reduces turbulence at the tips. Each blade is dynamically balanced for high efficiency and long life.

## 3. Product Safety Precautions

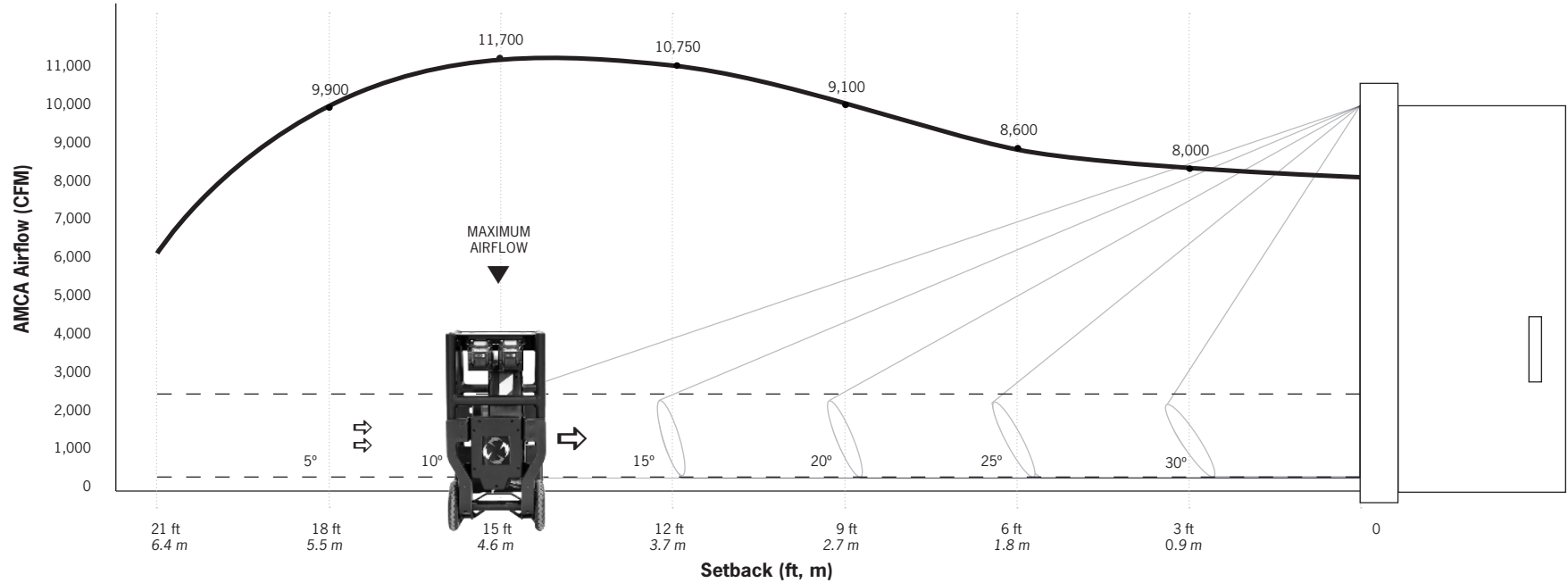
- Wear eye and ear protection when operating the ventilator.
- Never operate ventilator while fatigued.
- Do not disassemble or modify the ventilator in any way. Doing so may lead to mechanical failure or personal injury.
- Do not wear loose clothing that could become entangled in the operating ventilator.
- Never permit anyone to operate ventilator without proper instruction.
- Do not operate ventilator without proper inlet or outlet guards in place. If guards are missing or damaged, contact factory for replacements.
- Do not place fingers or other foreign objects through inlet or outlet guards. Should a foreign object enter the ventilator, immediately stop motor. Be certain all mechanical motion has stopped. Do not use with any power voltage other than the indicated voltage.
- Never handle energized power cords with wet hands.
- Do not place or operate ventilator on unsteady tables, slanted surfaces or other unstable surfaces. Never use this ventilator in any explosive environment.
- Never let extension cords or plug connections lay in water. Locate the ventilator so that it cannot fall into water inadvertently.

### 4. Before Operating Ventilator

#### 4. Before Operating Ventilator

- This ventilator has been designed to work with either the Makita® 4.0Ah or 5.0Ah XGT® batteries.
- **⚠ CAUTION** This ventilator will not work with any LXT batteries from Makita.
  - Check all threaded fasteners for proper tightness.
  - Check ventilator inlet and outlet guards for obstructions. Check and remove from immediate surrounding area any objects that could be drawn into the ventilator intake.
  - Replace damaged or missing guards before operating ventilator.
- Never store or carry the battery pack so that metal objects can contact exposed battery terminals. Transporting batteries can possibly cause fires if the battery terminals contact loose nails, screws, keys, hand tools and the like.
- **⚠ CAUTION** If using shore or mains power:
  - o Never use power cords with frayed, cut, or brittle insulation.
  - o Inspect power cord plug for proper connections to the ground fault interrupter circuit.

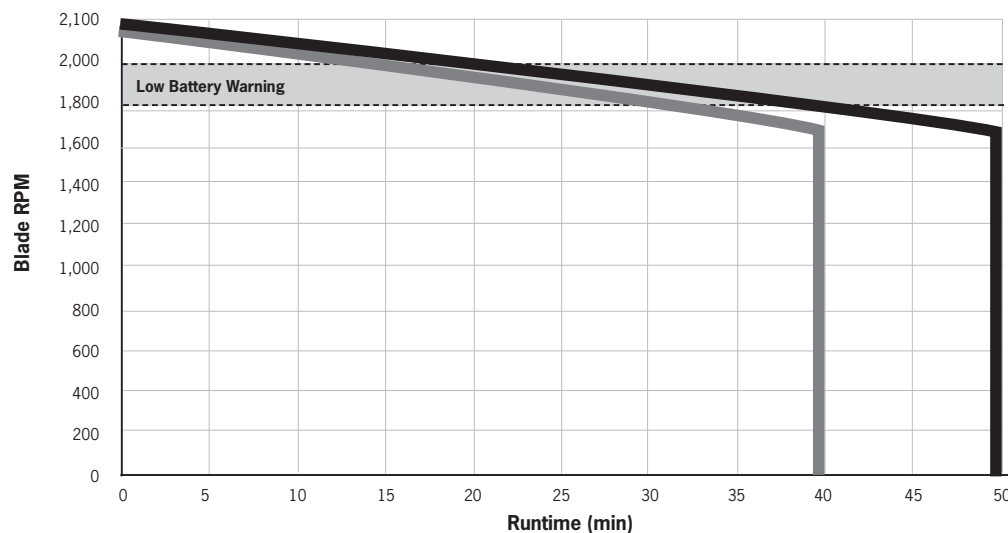
### Airflow vs Setback



## 5. Operation

- **⚠ WARNING** Use caution not to direct toxic fumes into confined spaces with the ventilator.
- Insert a Makita XGT battery until it clicks. Only a single battery is necessary for operation.
- Battery removal will get easier with more remove/replace cycles. The Battery Adapter & XGT Battery interface is required by Makita.
- Fan will need to be reset (turned off & on) if a new battery is inserted.
  - If fan is not reset, then the fan will not recognize the new battery and run until previous battery is empty.
- If using shore (mains) power, use an extension cord to connect to 110 – 240V AC.
- Press and hold power button until blue backlight indicates powering up.
- When the fan is on, it will need to run at the minimum speed allowed by Makita. (This feature is to protect the batteries from small parasitic draws)
- Turn speed control clockwise until desired speed is reached.
- Power button will indicate approximate power left. (It is normal for colors to flicker back and forth if 2 batteries are being used)
  - Green: 50 - 100%
  - Yellow: 20 - 50%
  - Red: 0 - 20% (Low Battery Warning: Front Facing LED will also flash if turned on)
- To turn off, press and hold power button until blue backlight shows.

### V20-BK-WH Runtimes (at Max Speed)



■ (2)XGT x 4.0 Ah      ■ (2)XGT x 5.0 Ah

\*Runtimes dependent on air density, and battery condition.  
Test data shown taken at 5,000 ft elevation,  
25% RH, 70°F with new batteries.

\*Air density is primarily affected by elevation, humidity and  
temperature.

\*At temperatures below freezing expect battery life to  
decrease.

\*Other XGT Batteries will operate the fan, but at reduced  
runtimes.

## 6. Charging the Battery Packs

- Remove Makita batteries from fan.
- **CAUTION** Insert in Makita Charger. Use only Makita XGT® brand battery chargers.
- When the battery pack temperature is outside the charging range (40-105°F or 5-40°C), the red light on the charger will flash and the battery will not charge.
- Once the battery pack is within the acceptable temperature range, normal charging will take place.
- Using the Makita Rapid Optimum Charger, a 4.0 Amp hour battery will recharge in 45 minutes and an 5.0 Amp hour battery will recharge in 50 minutes.
- Other Makita chargers, including units that work with vehicle DC power, may take longer to fully charge the batteries.

### **CAUTION**

- Do not store battery packs or chargers above 120°F (50°C) or in direct sunlight.
- Never use charger or batteries in explosive atmospheres.
- Never attempt to open the battery pack. If cracked or damaged, return it to a service center for recycling.
- Do not splash or immerse charger in water or other liquids.

## 7. Maintenance and Repair **CAUTION**

Maintenance should only be performed by experienced and trained personnel.

If you have any questions, contact Super Vac before attempting any maintenance at [info@supervac.com](mailto:info@supervac.com) or 1-800-525-5224.

### To-Do Checklists:

#### Daily/After Each Use:

- Charge batteries completely
- Check that Guards are undamaged and effectively prevent objects from contacting the blade
- Wheels and feet are in place and tight
- Tilt Mechanism works properly
  - If tilt adjust is too loose, tighten knurled nut on the Tilt Mechanism.
  - For larger adjustments, tighten nut with 9/16" (14mm) wrench.

#### Weekly/Monthly/Quarterly:

- Calibrate Battery
  - Fully charging, then fully discharging, and fully charging once again before storage
  - Replace battery (-ies) if battery shows signs of damage from dropping or excessive heat
- Check for loose fasteners
- Check condition of the power cord (if purchased with Shore Power) (14mm) wrench.

#### Yearly:

- Battery Condition
  - Check runtime in low wind and average temperature conditions
  - If runtime is below 75% of advertised runtime, replacing batteries is recommended
- Excessive vibration
  - Blade imbalance due to accumulation of dirt on blade
- Check Blade interference
  - Remove front guard and rotate manually to check for interference



## 8. Warranty

Makita products carry a separate 3-year limited warranty for the compatible battery packs, chargers and battery adapter. For more information contact them at [www.makitatools.com](http://www.makitatools.com) or 1-800-462-5482.

Super Vacuum Manufacturing Company warrants that the equipment is free from defects in materials and workmanship when used and operated for a period of five years, excluding the motor which has a 3-year warranty. The responsibility of Super Vacuum Manufacturing Company under this limited warranty is limited to the repair and replacement of any parts which are found defective and which are returned to Super Vacuum Manufacturing Company at 3842 Redman Dr, Fort Collins, CO 80524 with transportation charges prepaid (C.O.D. shipments will not be accepted).

Prior to returning defective parts to SUPER VACUUM MANUFACTURING COMPANY, the original purchaser shall make a claim in writing to SUPER VACUUM MANUFACTURING COMPANY at the above address indicating the model number and type of defect. No parts or equipment will be received by SUPER VACUUM MANUFACTURING COMPANY for repair or replacement under this warranty without specific written authority from it in advance.

Any parts damaged by improper installation, overloading, abuse or accident of any type or cause are not covered by this warranty.

All equipment manufactured by us is pre-run and tested before leaving our plant and is shipped in good working order and condition. We therefore extend to the original purchasers the following Limited Warranty for the period of five years from the original date of purchase:

1. This warranty does not apply to defects caused by accident, misuse, neglect, or wear and tear, nor can we be held responsible for incidental and consequential expense and loss, nor does this warranty apply to equipment where alterations have been executed without our knowledge or consent. These conditions are readily discernible when the equipment is returned to us for inspection.
2. On all component parts not manufactured by SUPER VACUUM MANUFACTURING COMPANY, their warranty is to the extent that the manufacturer of such component warrants them to SUPER VACUUM MANUFACTURING COMPANY, if at all. Look in your local business phone directory for the nearest repair station for the brand of parts you have or write to us for the address.
3. If equipment received is found to have been damaged in transit, a claim should be made against the carrier within three days, as we assume no responsibility for such damage.
4. Any service other than our Authorized Service voids this warranty.
5. This warranty is in lieu of and is intended to exclude all other warranties, express or implied, oral or written, including any warranties of MERCHANTABILITY or FITNESS for a particular purpose.

## 9. Contact



For parts or service information, contact:

**Super Vacuum Manufacturing Company, Inc.**

3842 Redman Dr.  
Fort Collins, CO 80524

Phone: 800-525-5224  
970-297-7100

Fax: 970-297-7099

Email : info@supervac.com  
Internet: www.supervac.com

## 10. Parts List

PARTS LIST							
ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	003-15320	BUSHING, BLADE, V1X-BX	34	1	019-20533	PLATE COVER MOTOR, V20-BX
2	1	003-15340	Blade, 21in_25Deg, V20-BX	35	1	019-20540	WLDMNT HANDLE, V20-BX
3	1	005-10255	T-HANDLE, PLUNGER, VALOR	36	1	019-20541	FRAME WLDMENT, V20-BX
4	6	005-10256	PLUG, 1.25, TUBE END ROUND, VALOR	37	1	019-20543	SHROUD WLDMNT, V20-BX
5	1	005-10266	HANDLE, TENSION, V1X-BX	38	1	021-10514	CONTROLLER, HG, 18V / 36V DC MOTOR
6	1	005-10267	KNOB, POTENTIOMETER, V1X-BX	39	4	024-13473	FEET RUBBER CONE SHAPE VBM-4002
7	1	005-10268	VALOR, POTENTIOMETER, VXX-BX	40	1	025-16020	DECAL, SHROUD, CENTER, V1X-BX
8	1	005-10270	WASHER, RUBBER, ROTATION, V1X-BX	41	1	025-16030	DECAL, SHROUD, CHEVRON, V16-BX
9	4	005-10271	GROMMET, PUSH-IN, 0.75 ID, 1.125 OD, 0.0938 GROOVE	42	1	025-16032	DECAL, SV LOGO, SIDE, VXX-FX
10	1	005-13562	SWITCH, MOMENTARY, RGB, V1X-BX	43	2	032-10120	WASHER, PLASTIC, 5/16
11	2	005-13563	LIGHT, LED, V1X-BX	44	4	032-10140	INSERT, BRASS HEAT SET, 4/40
12	1	005-13564	SWITCH, LATCHING, V1X-BX	45	23	032-10142	INSERT, BRASS HEAT SET, 8/32
13	1	005-18001	BOX CONTROLLER, V20-BX	46	4	032-10143	INSERT, BRASS HEAT SET, 10/24
14	1	005-18002	BOX CONTROLLER COVER, V20-BX	47	4	032-10713	NUT, NYLOCK, 10-24 UNC, SS
15	1	005-18003	BOX TOP ELECTRIC, V20-BX	48	2	032-10745	SCREW, HH, 1/4-20x1, SS
16	1	005-18004	BOX TOP ELECTRIC COVER, V20-BX	49	6	032-10754	WASHER, LOCK, SPRING, REGULAR, 1/4", SS
17	1	005-18005	BOX POWER SUPPLY, V20-BX	50	2	032-10789	NUT, NYLOCK, 5/16-18 UNC, SS
18	1	005-18006	BOX POWER SUPPLY COVER, V20-BX	51	2	032-14564	SCREW, BHS, 3/8-16x2-1/2, SS
19	2	005-18012	SEAL, CONTA-CLIP - 5MM	52	4	032-20202	SCREW, PHP, 4-40 UNCx0.25
20	2	005-18014	SEAL, CONTA-CLIP - 10MM	53	2	032-21682	SCREW, PHP, 8-32 UNCx0.375
21	2	005-18015	SEAL, CONTA-CLIP - 15MM	54	21	032-21954	SCREW, SHCS, 8-32x3/8, SS
22	1	005-18016	SEAL, CONTA-CLIP - 8MM	55	21	032-22249	O-RING, 8-32 UNC, HARDWARE Buna
23	1	005-18020	BOX POWER SUPPLY GASKET, V20-BX	56	8	032-22483	SCREW, FHPMS, 10-24 UNC x 5/8 in, SS
24	1	005-18021	BOX CONTROLLER GASKET, V20-BX	57	13	032-22685	SCREW, SHCS, 10-24x3/8, SS
25	1	005-18022	MOTOR PLATE GASKET, V20-BX	58	13	032-22980	O-RING, 10-24 UNC, HARDWARE Buna
26	1	005-18025	SHROUD SLEEVE SEAL, V20-BX	59	4	032-24011	SCREW, FHPMS, 1/4-20 UNC x 3/8 in, SS
27	2	008-13804	WHEEL, V1X-BX, 6 INCH	60	2	032-24486	SCREW, FHPMS, 5/16-18 UNC x 1 in, SS
28	1	008-14131	PLASTIC, PAC CORD CLAMP	61	1	032-24487	RING, SNAP RETAINING, EXTERNAL, S, BLACK
29	1	008-14165	KEYSTOCK, MOTOR, BM, VALOR, BATTERY	62	3	032-27512	SCREW, SHCS, M4x0.7x8
30	2	012-14196	INSERT, 3/8-16, TUBE, V1X-BX AXLE MOUNT	63	4	032-29215	SCREW, SHCS, M6x1x10
31	1	012-15394	STREAMSHAPER GUARD FOR 20" SMOKE FAN	64	8	034-10963	SCREW, PHP, 10-24 UNCx0.5
32	1	019-20509	TUBE WHEEL SPACER, V20-BX	65	1	034-11073	NUT, NYLOCK, 3/8-16 UNC, SS
33	2	019-20518	PLASTIC STAIR SKID, V20-BX	66	1	005-10180	CORD, POWER SUPPLY, 120VAC, 24 IN.

11. Exploded View

