



OPERATOR'S MANUAL

A Division of Snow Joe®, LLC

CORDLESS BLOWER + VACUUM + MULCHER

48V MAX* | 4.0 Ah | 163 MPH MAX

Model 24V-X2-BVM143

Form No. SJ-24V-X2-BVM143-880E-M

IMPORTANT!

Safety Instructions

All Operators Must Read These Instructions Before Use

Any electrical appliance can be dangerous if used incorrectly. Some of the safety precautions given in this manual apply generally to many appliances. Other warnings are specific to the use of this cordless blower vac.

Failure to follow all warnings, and instructions may result in electric shock, fire or serious injury.

⚠ WARNING! This indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

⚠ CAUTION! This indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

⚠ DANGER! This indicates a hazardous situation, which, if not followed, will result in death or serious injury.

General Safety

FOR HOUSEHOLD USE ONLY

Before using, be sure that everyone using this tool reads and understands all safety instructions and other information contained in this manual. Save this manual and review it frequently prior to using this tool and when instructing others on the proper operating procedures.

⚠ CAUTION! Wear appropriate hearing protection during use. After long periods of extended use, the noise generated from this appliance may cause hearing loss if your ears are not properly protected.

⚠ WARNING! When using electric yard tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following:

1. **Keep work area clean and well-lit** – Cluttered, dark areas invite accidents.

2. **Replacement parts** – When servicing this unit, use only identical replacement parts.
3. **Disconnect the tool** – Remove batteries from the blower vac when it is not in use, before servicing it, when changing accessories and when performing any other maintenance task.
4. **Avoid dangerous environments** – Do not use the blower vac in rain, damp or wet locations. Do not operate the blower vac in gaseous or explosive atmospheres or use the blower vac to pick up flammable or combustible liquids. Motors in these tools normally spark, and the sparks might ignite fumes.
5. **Keep children, bystanders and pets away** – All spectators, including pets, should be kept a safe distance away from the work area.
6. **Use the right tool** – Do not use the tool for any job except that for which it is intended.
7. **Check damaged part** – Before further use of the appliance, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other condition that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless indicated elsewhere in this manual.

⚠ DANGER! Do not manually place objects into the vacuum tube while operating the unit as this can seriously damage the unit and/or harm the operator. Keep both hands on the handles while the power is on.

DO NOT ATTEMPT to remove material or hold material to be vacuumed when the blower vac is on. Make sure the blower vac is off when clearing jammed material from the vacuum tube. Do not pick up the blower vac by the tube or attempt to carry the unit by the tube.

⚠ CAUTION! Moving parts will continue to run for several seconds after turning off the machine.

8. **Moving parts** – Keep hands and feet away from moving parts. Keep guards in place and in proper working order.
9. **Do not force the tool** – It will perform better with less likelihood of personal or mechanical injury if it is used at the rate for which it was designed.

- 10. Wear personal protective equipment** – When using this tool, wear safety glasses with side shields or goggles to provide necessary eye protection. Wear ear defenders to prevent hearing damage. Use a face or dust mask if the work environment is dusty.
- 11. Dress properly** – Do not wear loose clothing or jewelry as such articles can become caught in moving parts. Wear a protective covering to contain long hair. Wearing rubber gloves and substantial non-slip footwear is recommended when working outdoors.
- 12. Stay alert** – Watch what you are doing. Use common sense. Do not operate the blower vac when you are tired or under the influence of drugs, alcohol or other medication.
- 13. Store idle tool indoors** – When not in use, the blower vac should be stored indoors in a dry and high or locked-up place out of the reach of children.
- 14. Maintain the blower vac with care** – Keep the blower tube and the fan area clear and clean for optimal performance and to reduce the risk of injury. Keep the handles dry, clean and free from oil and grease. Follow the additional recommendations described in the maintenance section of this manual.

Personal Safety

- Use extra care when cleaning on stairs.
- Keep firm footing and maintain good balance at all times. Do not overreach. Overreaching can result in loss of balance.
- Turn off all controls before unplugging the tool.
- Do not use the tool if the power switch does not turn it ON or OFF. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- Do not pick up anything that is burning or smoking, such as cigarettes, matches or hot ashes.
- Carefully inspect your appliance prior to use and follow all label and marking instructions.
- Keep the end of the blower tube away from your face and body.
- Always remove batteries before connecting or disconnecting the tubes.
- Do not use for wet material.
- Keep all parts of your body away from any moving parts and all hot surfaces of the unit.
- Do not put any object into the tool's openings. Do not use the tool with any opening blocked; keep openings free of dust, lint, hair or any other object that may reduce air flow.
- Check the work area before each use. Remove all objects such as rocks, broken glass, nails, wire or string which can be thrown or become entangled in the machine.
- Service on the product must be performed by qualified repair personnel only. Service or maintenance performed by unqualified personnel could result in injury to the user or damage to the product.
- This blower vac is intended for residential use only.
- Never run the unit without the proper equipment attached. Always ensure the blower tubes are properly installed.
- When operating the unit as a blower, never point the blower tube in the direction of people or pets or in the direction of windows. Use extra caution when blowing debris near solid objects, such as trees, automobiles and walls.
- Be sure to secure the unit when transporting it.
- Never douse or squirt the unit with water or any other liquid. Clean the unit after each use as described in the Care + Maintenance section.

Special Safety Warnings for Cordless Appliance

- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to battery packs, picking up or carrying the appliance. Carrying the appliance with your finger on the switch or energizing appliance that have the switch on invites accidents.
- Disconnect the battery packs from the appliance before making any adjustments, changing accessories, or storing appliance. Such preventive safety measures reduce the risk of starting the appliance accidentally.
- Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- Use appliances only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
- When battery packs are not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.
- Do not use a battery pack or appliance that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- Do not expose a battery pack or appliance to fire or excessive temperature. Exposure to fire or temperature above 265°F (130°C) may cause explosion.

- Follow all charging instructions and do not charge the battery packs or appliance outside of the temperature range specified in the instructions. Charging improperly or at temperatures outside of the specified range may damage the battery and increase the risk of fire.
- Have servicing performed by a qualified repair person using only identical replacement parts. This will ensure that the safety of the product is maintained.
- Do not modify or attempt to repair the appliance or the battery packs (as applicable) except as indicated in the instructions for use and care.

Service

⚠ WARNING! DO NOT OPERATE THIS TOOL IN VACUUM/MULCHER MODE WITH COLLECTION BAG REMOVED. Serious injury from the fan or flying debris could result.

⚠ WARNING! DO NOT OPERATE THIS TOOL WITH VACUUM/BLOWER TUBE REMOVED. Serious injury from the fan or flying debris could result.

⚠ WARNING! Electric shock could occur if used on wet surfaces. Do not expose to rain. Store indoors.

⚠ WARNING! Always wear eye protection to prevent rocks or debris from being blown or ricocheting into the eyes or face which can result in blindness or other serious injury.

Battery & Charger Safety Instructions

We pay a great deal of attention to the design of every battery pack to ensure that we supply you with batteries that are safe, durable and have a high energy density. The battery cells have a wide range of safety devices. Each individual cell is initially formatted and its electrical characteristic curves are recorded. This data is then used exclusively to be able to assemble the best possible battery packs.

Despite all the safety precautions, caution must always be exercised when handling batteries. The following points must be obeyed at all times to ensure safe use. Safe use can only be guaranteed if undamaged cells are used. Incorrect handling of the battery packs can cause cell damage.

IMPORTANT! Analyses confirm that incorrect use and poor care of high-performance batteries are the main factors responsible for personal and/or product damage.

⚠ WARNING! Use only approved replacement batteries; other batteries may damage the cordless blower vac and cause it to malfunction, which can lead to personal injury.

⚠ WARNING! Do not modify or attempt to repair the appliance or the battery packs except as indicated in the instructions for use and care.

Have your battery packs serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the battery packs is maintained.

⚠ CAUTION! To reduce the risk of injury, charge the iON+ 24V lithium-ion battery packs only in its designated iON+ 24V lithium-ion charger. Other types of chargers present risk of fire, personal injury and damage. Do not wire a battery pack to a power supply plug or car cigarette lighter. Such misuse will permanently disable or damage the battery pack.

- **Avoid dangerous environments** – Do not charge the battery packs in rain, snow or in damp or wet locations. Do not use the battery packs or charger in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials) because sparks may be generated when inserting or removing the battery pack, which could lead to a fire.

- **Charge in a well-ventilated area** – Do not block the charger vents. Keep them clear to allow for proper ventilation. Do not allow smoking or open flames near a charging battery pack. Vented gases may explode.

NOTE: The safe temperature range for the batteries is 41°F – 105°F (5°C – 40.5°C). Do not charge the batteries outside in freezing weather; charge it at room temperature.

- **Maintain charger cord** – When unplugging the charger, pull the plug, not the cord, from the receptacle to reduce the risk of damage to the electrical plug and cord. Never carry the charger by its cord or yank it by the cord to disconnect it from the receptacle. Keep the cord away from heat, oil and sharp edges. Make sure the cord will not be stepped on, tripped over or subjected to damage or stress when the charger is in use. Do not use the charger with a damaged cord or plug. Replace a damaged charger immediately.
- **Do not use an extension cord unless it is absolutely necessary** – Using the wrong, damaged or improperly wired extension cord poses a risk of fire and electric shock. If an extension cord must be used, plug the charger into a properly wired 16 gauge or larger extension cord with the female plug matching the male plug on the charger. Make sure that the extension cord is in good electrical condition.
- **Charger 24VCHRG-DPC is rated for 120 volt AC only** – The charger must be plugged into an appropriate receptacle.
- **Use only recommended attachments** – Use of an attachment not recommended or sold by the battery charger or battery pack manufacturer may result in risk of fire, electric shock or personal injury.
- **Unplug charger when not in use** – Make sure to remove the battery pack from unplugged charger.

⚠ WARNING! To reduce the risk of electric shock, always unplug the charger before performing any cleaning or maintenance. Do not allow water to flow into the charger. Use a Ground Fault Circuit Interrupter (GFCI) to reduce shock hazards.

- **Do not burn or incinerate battery packs –** Battery packs may explode, causing personal injury or damage. Toxic fumes and materials are created when battery packs are burned.
- **Do not crush, drop or damage battery packs –** Do not use the battery packs or charger if they have sustained a sharp blow, been dropped, run over or have been damaged in any way (i.e. pierced with a nail, hit with a hammer, stepped on, etc.).
- **Do not disassemble –** Incorrect reassembly may pose a serious risk of electric shock, fire or exposure to toxic battery chemicals. If the batteries or charger are damaged, contact an authorized Snow Joe® + Sun Joe® dealer or call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563) for assistance.
- **Battery chemicals cause serious burns –** Never let a damaged battery pack contact the skin, eyes or mouth. If a damaged battery pack leaks battery chemicals, use rubber or neoprene gloves to safely dispose of it. If skin is exposed to battery fluids, wash the affected area with soap and water and rinse with vinegar. If eyes are exposed to battery chemicals, immediately flush with water for 20 minutes and seek medical attention. Remove and dispose of contaminated clothing.
- **Do not short circuit –** A battery pack will short circuit if a metal object makes a connection between the positive and negative contacts on the battery pack. Do not place a battery pack near anything that may cause a short circuit, such as paper clips, coins, keys, screws, nails and other metallic objects. A short-circuited battery pack poses a risk of fire and severe personal injury.
- **Store your battery packs and charger in a cool, dry place –** Do not store the battery packs or charger where temperatures may exceed 105°F (40.5°C), such as in direct sunlight or inside a vehicle or metal building during the summer.

Information about the batteries

1. The battery packs supplied with your cordless blower vac are only partially charged. The battery packs have to be charged completely before you use the tool for the first time.
2. For optimum battery performance, avoid low discharge cycles by charging the battery packs frequently.
3. Store the battery packs in a cool place, ideally at 77°F (25°C) and charged to at least 40%.
4. Lithium-ion batteries are subject to a natural aging process. The battery packs must be replaced at the latest when the capacity falls to just 80% of their capacity when new. Weakened cells in an aged battery pack are no longer capable of meeting the high power requirements needed for the proper operation of your blower vac, and therefore pose a safety risk.
5. Do not throw battery packs into an open fire as this poses a risk of explosion.
6. Do not ignite the battery packs or expose them to fire.
7. Do not exhaustively discharge batteries. Exhaustive discharge will damage the battery cells. The most common cause of exhaustive discharge is lengthy storage or non-use of partially discharged batteries. Stop working as soon as the performance of the batteries falls noticeably or the electronic protection system triggers. Place the battery packs in storage only after they have been fully charged.
8. Protect batteries and the tool from overloads. Overloads will quickly result in overheating and cell damage inside the battery housing even if this overheating is not apparent externally.
9. Avoid damage and shocks. Immediately replace batteries that have been dropped from a height of more than one meter or those that have been exposed to violent shocks, even if the housing of the battery pack appears to be undamaged. The battery cells inside the battery may have suffered serious damage. In such instances, please read the waste disposal information for proper battery disposal.
10. If the battery packs suffer overloading and overheating, the integrated protective cutoff will switch off the equipment for safety reasons.
IMPORTANT! Do not press the ON/OFF switch any more if the protective cut-off has been activated. This may damage to the battery packs.
11. Use only original battery packs. The use of other batteries poses a fire risk and may result in injuries or an explosion.

Information about the charger and the charging process












1. Please check the data marked on the rating plate of the battery charger. Be sure to connect the battery charger to a power supply with the voltage marked on the rating plate. Never connect it to a different mains voltage.
2. Protect the battery charger and its cord from damage. Keep the charger and its cord away from heat, oil and sharp edges. Have damaged cords repaired without delay by a qualified technician at an authorized Snow Joe® + Sun Joe® dealer or call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563).
3. Electrical plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded appliances. Unmodified plugs and matching outlets will reduce the risk of electric shock.
4. Keep the battery charger, battery packs and the cordless tool out of the reach of children.
5. Do not use the supplied battery charger to charge other cordless tools.
6. During periods of heavy use, the battery packs will become warm. Allow the battery pack to cool to room temperature before connecting it to the charger to recharge.
7. Do not overcharge batteries. Do not exceed the maximum charging times. These charging times only apply to discharged batteries. Frequent insertion of a charged or partially charged battery pack will result in overcharging and cell damage. Do not leave batteries in the charger for days on end.
8. Never use or charge batteries if you suspect that they have been more than 12 months since the last time they were charged. There is a high probability that the battery pack has already suffered dangerous damage (exhaustive discharge).
9. Charging batteries at a temperature below 41°F (5°C) will cause chemical damage to the cells and may cause a fire.
10. Do not use batteries that have been exposed to heat during the charging process, as the battery cells may have suffered dangerous damage.
11. Do not use batteries that have suffered curvature or deformation during the charging process or those that exhibit other atypical symptoms (gassing, hissing, cracking, etc.).
12. Never fully discharge the battery packs (maximum recommended depth of discharge is 80%). A complete discharge of the battery packs will lead to premature aging of the battery cells.

Protection from environmental influences

1. Wear suitable work clothes. Wear safety goggles.
2. Protect your cordless tool and the battery charger from moisture and rain. Moisture and rain can cause dangerous cell damage.
3. Do not use the cordless tool or the battery charger near vapors and flammable liquids.
4. Use the battery charger and cordless tools only in dry conditions and at an ambient temperature of 41°F – 105°F (5°C – 40.5°C).
5. Do not keep the battery charger in places where the temperature is liable to reach over 105°F (40.5°C). In particular, do not leave the battery charger in a car that is parked in the sunshine.
6. Protect batteries from overheating. Overloads, overcharging and exposure to direct sunlight will result in overheating and cell damage. Never charge or work with batteries that have been overheated – replace them immediately, if possible.
7. Store the charger and your cordless tool only in dry locations with an ambient temperature of 41°F – 105°F (5°C – 40.5°C). Store your lithium-ion battery packs in a cool, dry place at a temperature of 77°F (25°C). Protect the battery packs, charger and cordless tool from humidity and direct sunlight. Only place fully charged batteries in storage (charged to at least 40%).
8. Prevent the lithium-ion battery packs from freezing. Battery packs that were stored below 32°F (0°C) for more than 60 minutes must be discarded.
9. When handling batteries, be wary of electrostatic charge. Electrostatic discharges can damage the electronic protection system and the battery cells. Avoid electrostatic charging and never touch the battery poles.

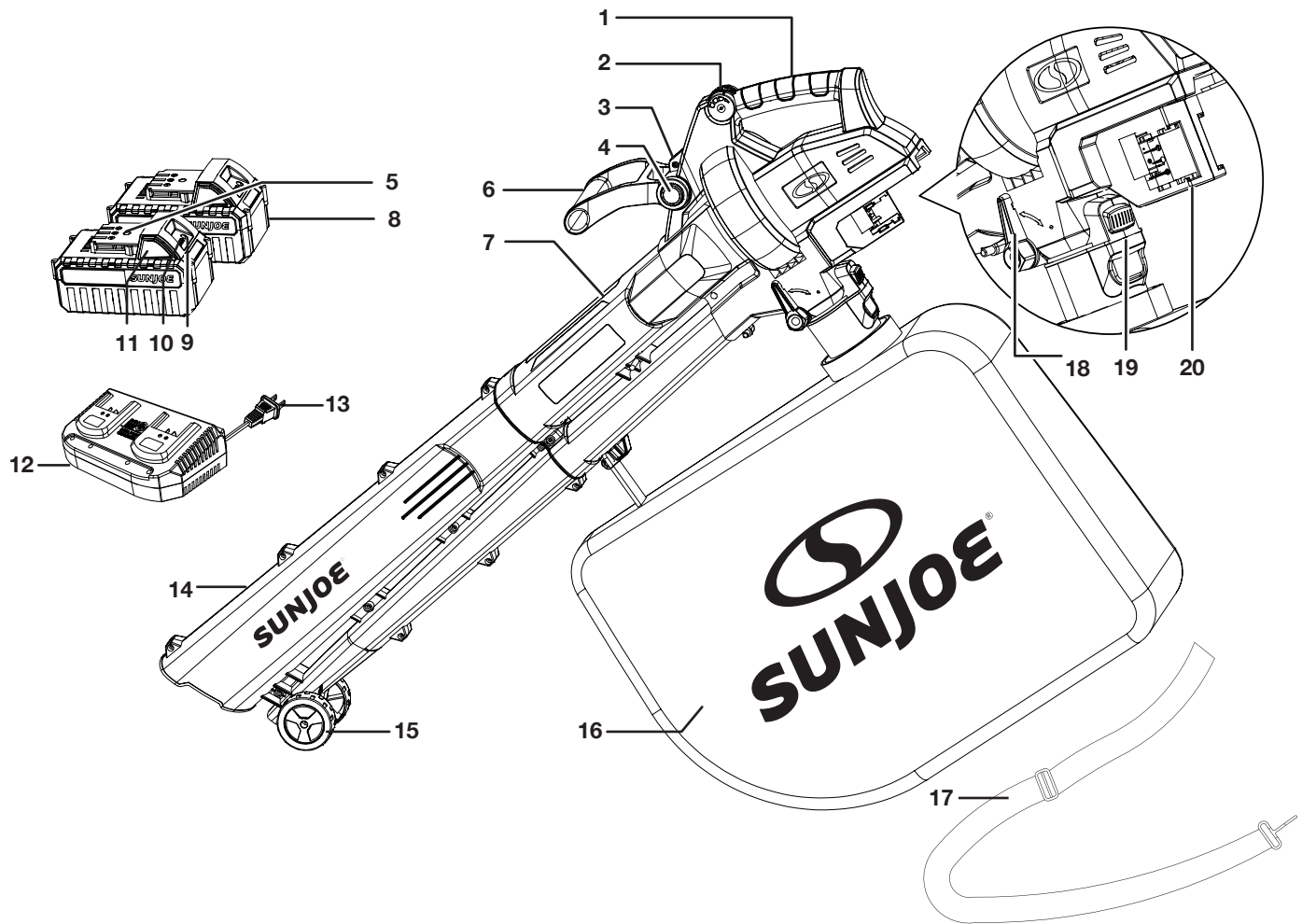
Safety Symbols

The following table depicts and describes safety symbols that may appear on this product. Read, understand, and follow all instructions on the machine before attempting to assemble and operate.

Symbols	Descriptions	Symbols	Descriptions
	READ THE OPERATOR'S MANUAL(S) – Read, understand and follow all instructions in the user manual(s) before attempting to assemble and operate.		Keep bystanders and children a safe distance away.
	SAFETY ALERT – Indicates a precaution, a warning or a danger.		WARNING! Do not expose the unit to rain or wet conditions.
	Beware of flying objects and debris.		Wear hearing protection. Wear eye protection. Wear breathing protection.
	The rotating part will continuously run for several seconds after you turn off the machine. Keep hands and feet away from openings while the machine is running.	 	ROTATING IMPELLERS! Do not put hands and feet in the opening when the machine is running.
	The impeller will continue to rotate for a little while after the machine is turned off.		Indoor use only. Only use battery charger indoors.

Know Your Cordless 3-in-1 Blower + Vacuum + Mulcher

Read the owner's manual and safety instructions carefully before operating the cordless blower vac. Compare the illustration below to the cordless blower vac in order to become familiar with the location of the various controls and adjustments. Save this manual for future reference.



- | | | |
|--|---|--|
| 1. Rear handle | 8. iON+ 24V lithium-ion batteries (2)
(24VBAT) featuring exclusive
EcoSharp® technology | 14. Lower tube |
| 2. Speed selector + switch | 9. Push button for battery indicator | 15. Supporting wheels (2) |
| 3. Shoulder support strap hook | 10. Battery indicators | 16. Collection bag |
| 4. Front handle angle adjusting
buttons (2) | 11. Push lock buttons (2) | 17. Shoulder support strap |
| 5. Charge socket | 12. iON+ 24V lithium-ion charger
(24VCHRG-DPC) | 18. Blower/vac mode selector lever |
| 6. Front handle | 13. Charger plug | 19. Collection bag releasing button |
| 7. Upper tube | | 20. Battery compartment
side 1 + side 2 (not shown) |

Technical Data

Motor	700 W
Battery Voltage Max*	48V D.C. (2 x 24V)
Battery Capacity	4.0 Ah
Charger Input	120V AC, 60 Hz, 160 W
Charger Output	26V DC, 2.2 A (2 port)
Charge Time Max	1 hr 50 min
Blower Battery Runtime Max	2 hrs 10 min for low speed (pushes up to 8,815 sq ft of debris) 20 min for high speed (pushes up to 685 sq ft of debris)
Vacuum/Mulcher Runtime Max	1 hr 50 min for low speed (Continuous suction) 20 min for high speed
No Load Speed Max	7,000 to 13,000 RPM
Impeller Material	Aluminum
Air Speed Max	163 MPH (262.3 km/h)
Blower Air Flow Max	139 CFM (3.9 m ³ /min)
Vacuum Air Flow Max	391 CFM (11.1 m ³ /min)
Variable Speed Setting	5
Mulch Reduction Ratio	10:1
Mode Conversion	Blower to mulching vacuum
Bag Capacity	9.2 gal (35 L)
Net Weight (with batteries installed)	12.7 lbs (5.75 kg)

*Initial no-load voltage, when fully charged, peaks at 48 volts; nominal voltage under typical load is 43.2 volts.

Unpacking

Carton Contents

- Cordless blower + vacuum + mulcher
 - Collection bag
 - Shoulder support strap
 - Lower tube
 - Lower tube retaining screw
 - iON+ 24V lithium-ion batteries (2)
 - iON+ 24V lithium-ion battery charger
 - Manuals with registration card
1. Carefully remove the cordless blower + vacuum + mulcher and check to see that all of the above items are supplied.
 2. Inspect the product carefully to make sure no breakage or damage occurred during shipping. If you find damaged or missing parts, DO NOT return the unit to the store. Please call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563).

NOTE: Do not discard the shipping carton and packaging material until you are ready to use the cordless blower + vacuum + mulcher. The packaging is made of recyclable materials. Properly dispose of these materials in accordance with local regulations.

IMPORTANT! The equipment and packaging material are not toys. Do not let children play with plastic bags, foils or small parts. These items can be swallowed and pose a suffocation risk!

Battery Pack Operation

The equipment is powered by 2 lithium-ion batteries. The battery packs are completely sealed and maintenance free.






⚠ WARNING! The blower vac can only be powered by both of the batteries together. Use one battery cannot provide sufficient power for the tool. Make sure to use two batteries of the same voltage and the same capacity. Using the tool with batteries of different capacity will cause damage to the batteries.

⚠ WARNING! Before first use, the batteries require at least 1 hr 50 min charge time to be fully charged. When the batteries are at low capacity, recharge for 1 hr 50 min again before resuming operation.

Battery Charge Level Indicator

The battery packs are equipped with a push button for checking the charge level. Simply press the push button to read off the battery charge level from the LEDs of the battery indicator:

- All 3 level monitoring LEDs are lit: Battery charge level is high.
- 2 level monitoring LEDs are lit: Battery charge level is decreasing. Stop work as soon as possible.
- 1 level monitoring LED is lit: Battery is flat. Stop work IMMEDIATELY and charge the battery. Otherwise the battery's service life will be greatly shortened.

	
Lights	Light Indicators
	Charge level button
	The battery is at 30% capacity and requires charging
	The battery is at 60% capacity and requires charging soon
	The battery is at full capacity

NOTE: If the charge level button does not appear to be working, connect the battery with the charger and charge as needed.

NOTE: Immediately after using the battery packs, the charge level buttons may display a lower charge than they will if checked a few minutes later. The battery cells “recover” some of their charge after resting.

Charger Operation

⚠ WARNING! Charge only iON+ 24V lithium-ion battery packs with their compatible iON+ 24V lithium-ion charger. Other types of batteries may cause personal injury and damage.

To reduce the risk of electric shock, do not allow water to flow into the charger's AC/DC plug.

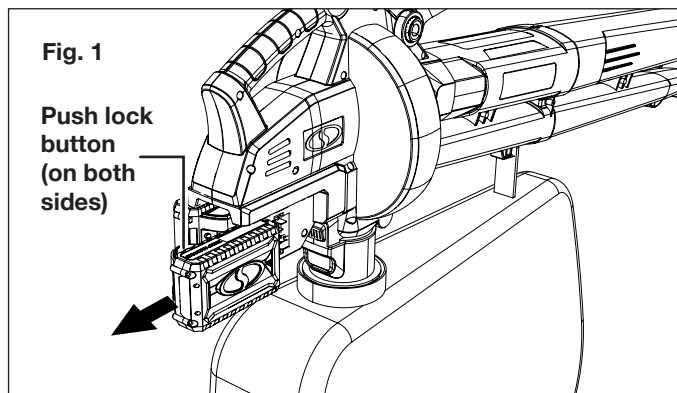
When to Charge the iON+ 24VBAT Lithium-Ion Batteries

NOTE: The iON+ 24VBAT lithium-ion battery packs do not develop a “memory” when charged after only a partial discharge. Therefore, it is not necessary to run down the battery pack before connecting it with the charger.

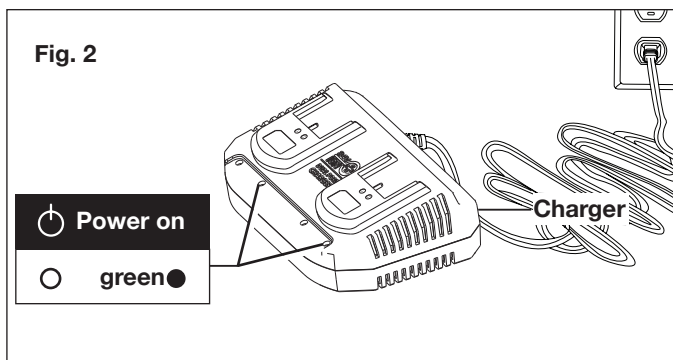
- Use the battery charge indicator lights to determine when to charge your iON+ 24VBAT lithium-ion battery packs.
- You can “top-off” your battery packs’ charge before starting a big job or after a long day of use.

Charging the Battery

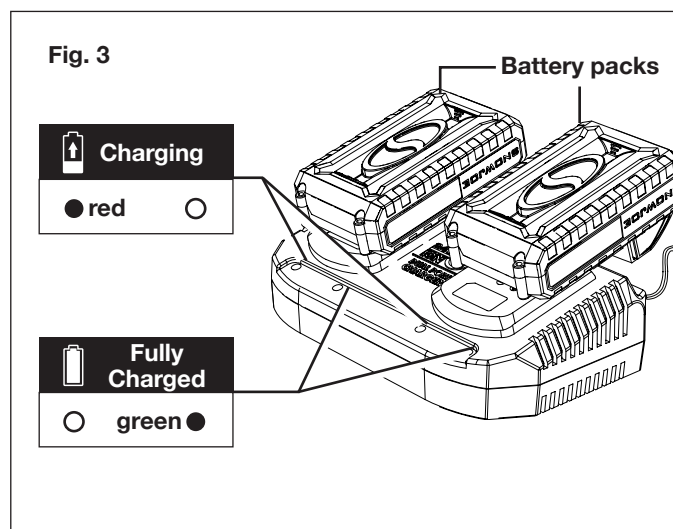
1. Press the push lock buttons on the batteries to pull them out of the equipment (Fig. 1).



2. Check that the mains voltage is the same as that marked on the rating plate of the battery charger. Then, insert the charger's plug into the electrical wall outlet. When you plug in the charger, two green lights will illuminate and stay green (Fig. 2).



3. Place the battery packs into the charger by sliding the packs to lock them into position. When you insert the batteries into the charger, the two green lights will go off, and the red lights will illuminate to indicate that the batteries are charging (Fig. 3).

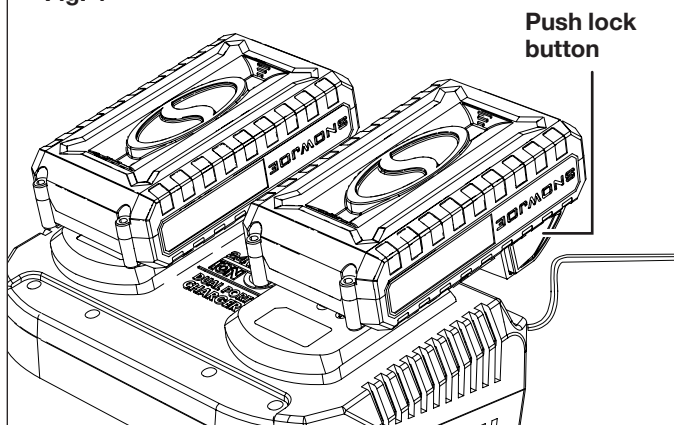


4. When the charger lights turn green, the batteries are fully charged (Fig. 3).

NOTE: A fully discharged pack with an internal temperature in the normal range will fully charge in 1 hr 50 min (between 32°F/0°C and 113°F/45°C).

5. If the light indicators do not come on at all, check that the battery packs are fully seated into the bay. Remove the battery packs and reinsert. If the problem persists, contact an authorized Snow Joe® + Sun Joe® dealer or call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563) for assistance.
6. When charging is complete, remove the batteries from the charger by pressing the push lock buttons and sliding the batteries backward to unlock them from the charger (Fig. 4).

Fig. 4



⚠ CAUTION! FIRE HAZARD. When remove the batteries from the charger, be sure to unplug the charger from the outlet first, then remove the batteries from the charger.

⚠ WARNING! This charger does not automatically turn off when the batteries are fully charged. Please take care not to leave the batteries in the charger. Switch off or unplug the charger at the mains when charging is complete.

7. Timely recharging of the batteries will help prolong the batteries' life. You must recharge the battery packs when you notice a drop in the equipment's power.

Assembly

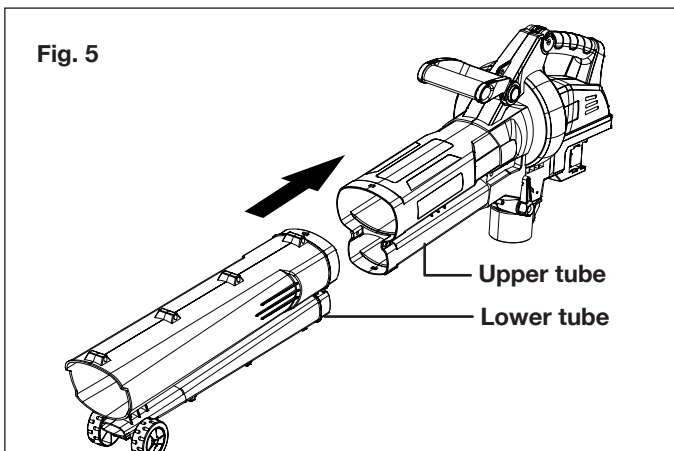
⚠ WARNING! To avoid serious personal injury, read and understand all safety instructions provided.

⚠ WARNING! Do not insert batteries until assembly is complete. Failure to comply could result in accidental starting and possible serious personal injury.

Lower Tube Assembly

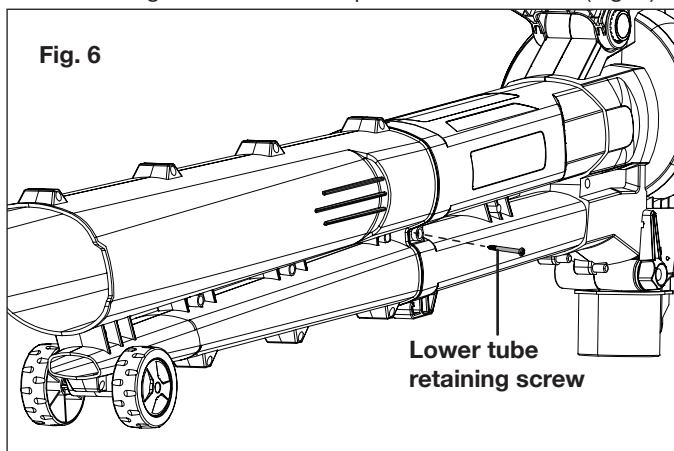
1. Insert the lower tube into the end opening on the upper tube (Fig. 5).

Fig. 5



2. Secure the tube assembly using the provided retaining screw. Tighten it with a Phillips head screw driver (Fig. 6).

Fig. 6

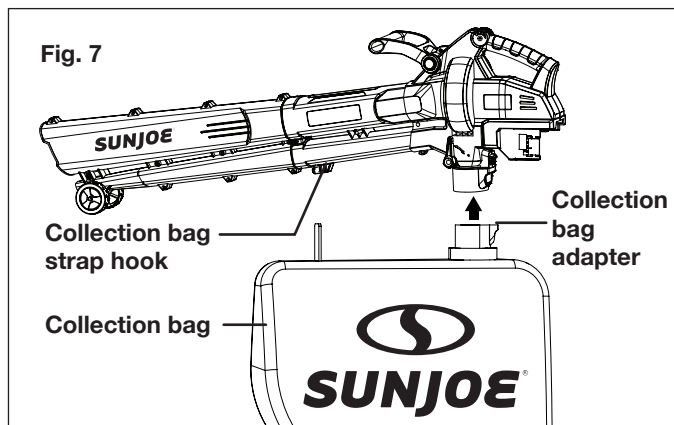


Collection Bag Assembly

When the unit is to be used as a vacuum/mulcher, the collection bag must be attached. Follow the instructions below to install the collection bag.

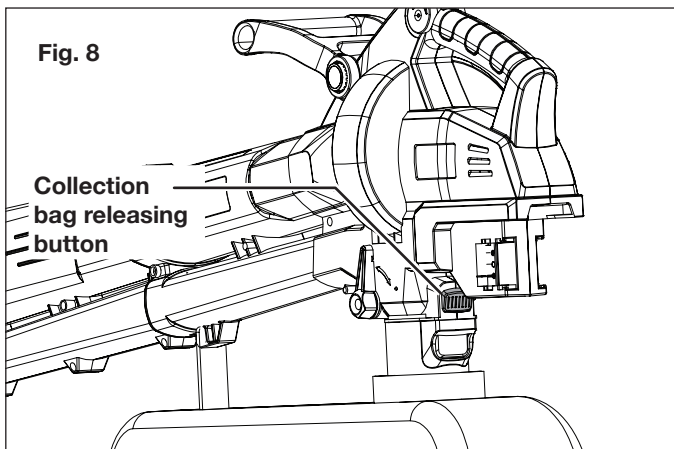
1. Insert the collection bag adapter into the vacuum/mulcher air outlet until the collection bag clicks in, then fasten the bag strap to the strap hook (Fig. 7).

Fig. 7



2. To remove the bag, simply press the bag releasing button, and pull the bag off (Fig. 8). Detach the strap from the strap hook.

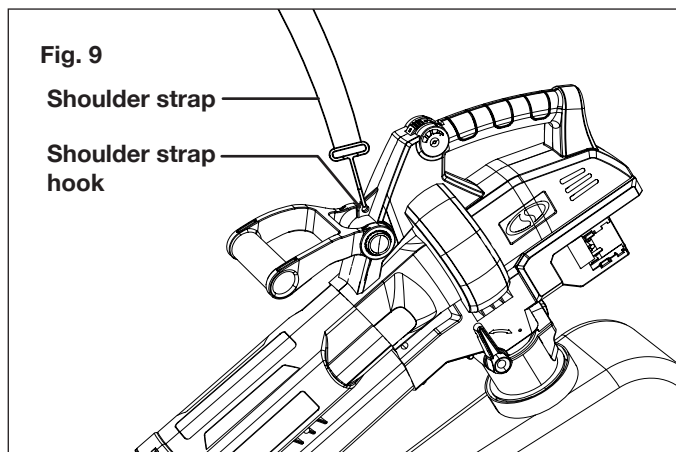
Fig. 8



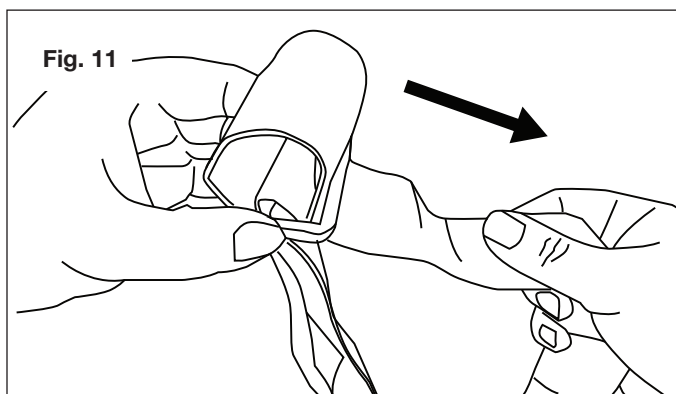
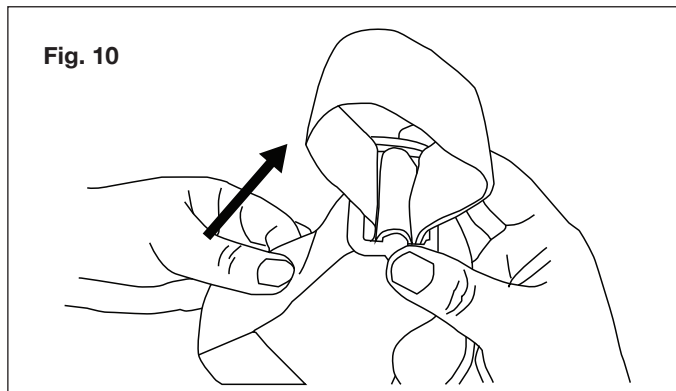
⚠ WARNING! DO NOT OPERATE THIS TOOL AS A VACUUM/MULCHER WITH COLLECTION BAG REMOVED. Serious injury from the fan or flying debris could result.

Shoulder Support Strap Fitting + Adjusting

1. Clip the shoulder support strap to the strap hook on the top of the blower, as shown (Fig. 9).



2. To adjust the length of the strap, push it from one end to form a loop above, and let out as needed, then pull the strap from the other side to tighten (Figs. 10 – 11).

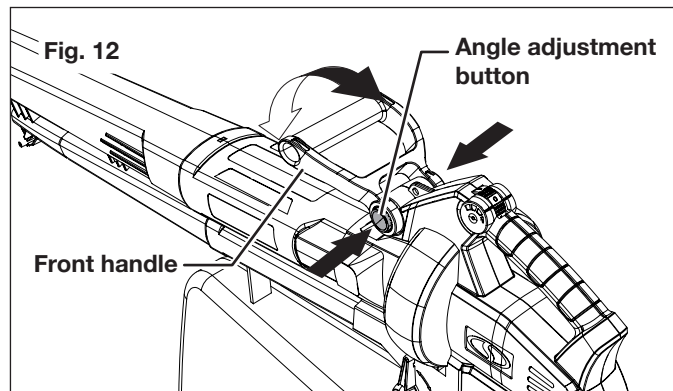


3. With machine on operator's right hand side, place shoulder strap across chest and over left shoulder.

Operation

Front Handle Adjustment

1. Press the angle adjustment buttons on both sides, and turn the front handle to a comfortable place (Fig. 12).

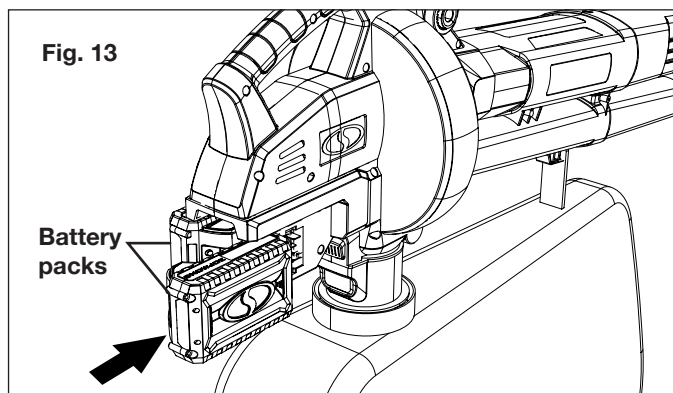


2. Release the angle adjustment buttons and the front handle will reset to lock into position automatically.

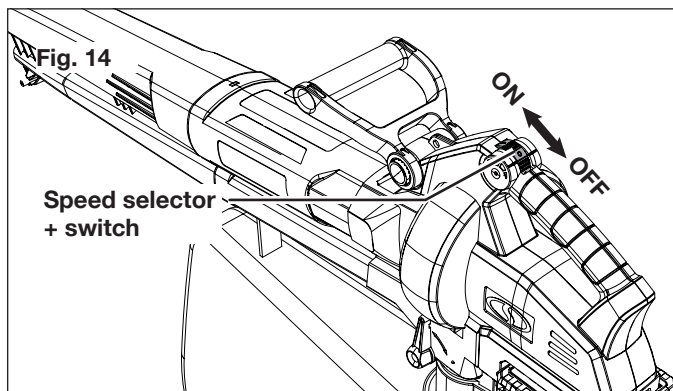
Starting + Stopping

⚠ WARNING! Before switching on the tool, ensure that it is not in contact with any object.

1. Insert both batteries into the battery compartments (Fig. 13).



2. To start the unit, slide the speed selector + switch forward (Fig. 14).



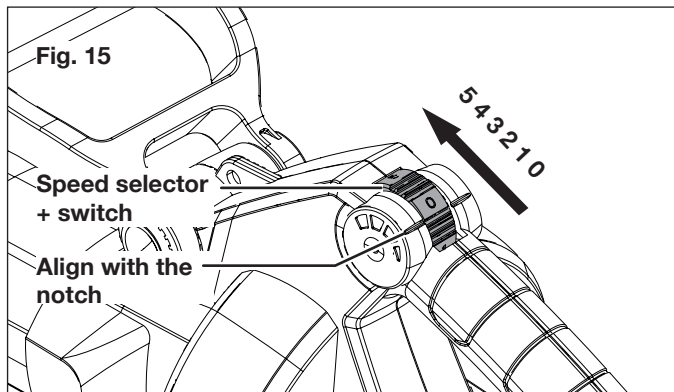
3. To stop the tool, slide the speed selector + switch backward until the notches in the housing align with the 0 position (Fig. 15).

⚠ WARNING! After switching off the tool the motor continues to run for a few seconds.

Speed Control

This unit is equipped with five variable speed settings (1 to 5) (Fig. 15), which can be controlled by the speed selector + switch.

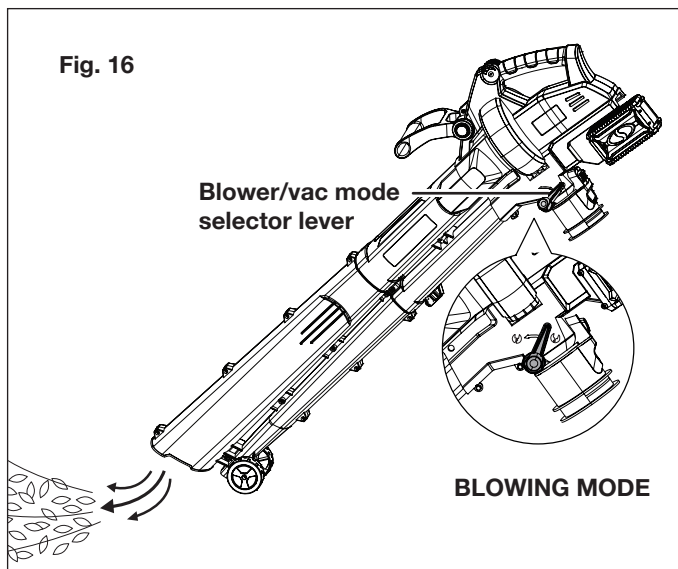
To set the wind speed, scroll the speed selector + switch until the desired speed mark is lined up with the notches on the housing.



Blower Mode

⚠ WARNING! Before operating with the blower/vac mode selector, make sure that the mode selector lever moves smoothly and is not obstructed by debris from previous use.

- To use the unit in the blower mode, turn the blower/vac mode selector lever to BLOWING MODE. Turn unit on (Fig. 16).



- Hold the blower firmly with one hand on the rear handle and the other hand on the front handle. Sweep from side to side with the wheels on ground.

- Slowly advance the unit by the wheels, keeping the accumulated pile of debris in front of you. Most dry blowing operations are better suited to low speeds rather than high speeds. High speed blowing is best for moving heavier items like large debris or gravel.

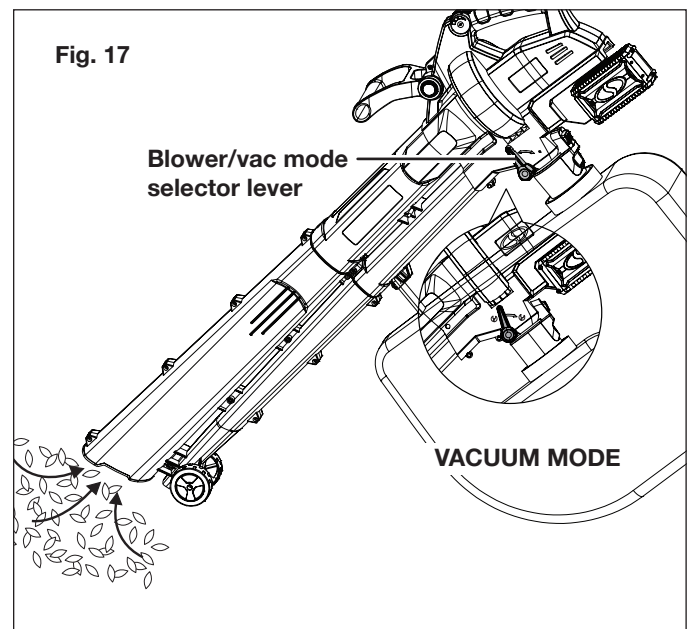
Vacuum/Mulcher Mode

⚠ WARNING! Any hard objects, such as stones, cans and glass, will damage the impeller.

⚠ WARNING! Do not use the unit to suck up water or very wet debris.

⚠ WARNING! Never operate the unit in vacuum/mulcher mode without the collection bag being assembled on.

- Once you have blown the debris/leaves into a pile, you can convert to vacuum mode to collect the debris.
- Ensure the collection bag are assembled correctly before operating. Turn the blower/vac mode selector lever to VACUUM MODE. Turn unit on (Fig. 17).

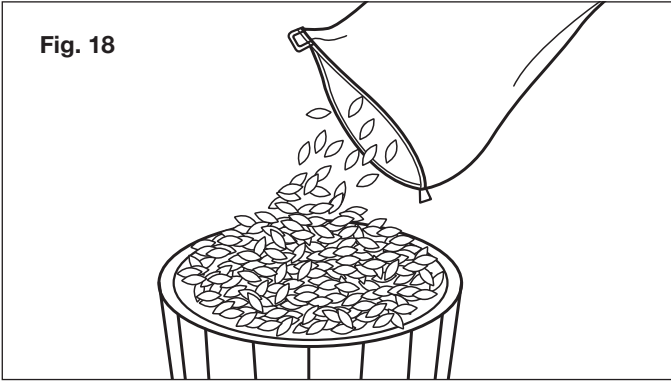


- With a firm hold on the vac, tilt the tube 5 – 10 cm from the ground and use a sweeping action to collect light debris. The debris will flow into the bag. Items such as small leaves and twigs will be mulched as they pass through the fan housing. For longer bag life and increased performance, empty the bag frequently.

⚠ WARNING! Switch off the tool and remove the batteries, and wait until the impeller comes to a standstill before dumping the collection bag.

- Open the zipper of the collection bag and empty it completely (Fig. 18).

Fig. 18



- Compost material does not belong with domestic waste.
- Regularly empty collection bag (the vacuum capacity decreases considerably when the collection bag is full).

⚠ WARNING! Do not vacuum solid objects such as stones, broken glass, pieces of metal.

⚠ WARNING! Do not vacuum liquids.

⚠ WARNING! Do not vacuum large volumes of leaf material at one time thus avoiding clogging of the vacuuming opening and blocking of the mulcher impeller.

NOTE: The mulching intensity depends on the size of the leaf material and its residual moisture.

Operating Tips

⚠ WARNING! Use the blower + vacuum + mulcher only in daylight or good artificial light.

- When using the blower vac, plant your feet firmly on the ground and place one hand on the rear handle and the other hand on the front handle.
- Wear personal protective equipment during your work session. This includes boots, safety glasses/goggles, ear defenders, long pants and a long-sleeve shirt.
- When using the unit as vac/mulcher, make sure the bag is properly installed and zipped closed.
- Make sure the blower tube is not directed at anybody or any loose debris before starting the unit.
- Verify that the unit is in good working condition. Make sure the tube (and/or bag) is in place and secure.
- Use the shoulder strap when using the unit as a vac/mulcher.
- Use the supporting wheels to easily guide the tube along the ground.
- Operate power equipment only at reasonable hours—not early in the morning or late at night when people might be disturbed. Comply with times listed in local ordinances. Typical recommendations are 9:00 am to 5:00 pm, Monday through Saturday.

- To reduce noise levels, limit the number of pieces of power equipment used at any one time and operate power blowers at the lowest possible speed setting necessary to do the job.
- Use rakes and brooms to loosen debris before blowing.
- In dusty conditions, slightly dampen surfaces.

Care + Maintenance

To order genuine replacement parts or accessories for the Sun Joe® 24V-X2-BVM143 cordless blower + vacuum + mulcher, please visit sunjoe.com or contact the Sun Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563).

⚠ WARNING! Remove the batteries before performing any maintenance task.

If the batteries are still inserted in the machine, someone could accidentally turn on the unit while you are performing maintenance on it, which could result in serious personal injury.

Clearing a Blocked Tube/Impeller

During the vacuuming/mulching process, certain objects such as cloth, rope, or large diameter sticks may obstruct the fan and block the motor.

If an obstruction occurs:

1. Slide the switch trigger + speed selector switch backwards to the “0” OFF position. Remove the battery packs.
2. Remove the collection bag by pressing the bag releasing button, and pull the bag out (Fig. 6). And untie the strap from the strap hook.
3. Using a long probe or a garden stake, insert into the vacuum/mulcher air outlet to loosen and remove the obstruction.
4. Reattach the collection bag. Insert the batteries and start the machine in vacuum/mulcher mode with high speed. Idle the unit for a while to clean up any residual debris.

Cleaning

1. Use a small brush to clean the outside of the unit. Do not use strong detergents, household cleaners that contain aromatic oils (e.g. pine and lemon) or harsh solvents such as kerosene as these substances can damage the plastic housing or the handles. Wipe off any moisture with a soft, dry cloth.
2. Keep the ventilation slots of the machine clean to prevent overheating.
3. If needed, clean the tube and impeller as indicated above.
4. Wear eye protection and a dust mask. Clean the bag as needed. Turn the bag inside out after initial emptying and vigorously shake out dust and debris.

5. After removing the collection bag, ensure that any possible dirt residues are removed from the air outlet area.
6. Wash the bag once a year, or more often if needed. Follow the steps below:
 - i. Remove the bag.
 - ii. Turn the bag inside out.
 - iii. Hang it up.
 - iv. Hose it down thoroughly.
 - v. Leave it hanging to dry.
 - vi. Turn the bag right-side out and reinstall.

NOTE: Empty the bag after each use to avoid deterioration and obstructing air flow, which will reduce the performance of the unit.

⚠ WARNING! Never use solvents such as gasoline, alcohol, ammonia water, etc. These solvents may damage the plastic parts.

Storage

1. Examine the cordless blower + vacuum + mulcher thoroughly for worn, loose or damaged parts. Should you need to repair or replace a part, contact an authorized Snow Joe® + Sun Joe® dealer or call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563) for assistance.
2. Remove the batteries from the machine before storing.
3. Store the batteries, charger with the cordless blower + vacuum + mulcher indoors in a clean, dry and locked location out of the reach of children and animals.

Battery Caution + Disposal

Always dispose of your battery packs according to federal, state, and local regulations. Contact a recycling agency in your area for recycling locations.

⚠ CAUTION! Even discharged battery packs contain some energy. Before disposing, use electrical tape to cover the terminals to prevent the battery pack from shorting, which could cause a fire or explosion.

⚠ WARNING! To reduce the risk of injury or explosion, never burn or incinerate a battery pack even if it is damaged, dead, or completely discharged. When burned, toxic fumes and materials are emitted into the surrounding atmosphere.

1. Batteries vary according to device. Consult your manual for specific information.
2. Install only new batteries of the same type in your product (where applicable).
3. Failure to insert batteries in the correct polarity, as indicated in the battery compartment or manual, may shorten the life of the batteries or cause batteries to leak.
4. Do not mix old and new batteries.

5. Do not mix Alkaline, Standard (Carbon-Zinc), or Rechargeable (Nickel Cadmium, Nickel Metal Hydride, or Lithium-Ion) batteries.
6. Do not dispose of batteries in fire.
7. Batteries should be recycled or disposed of as per state and local guidelines.

Service and Support

If your Sun Joe® 24V-X2-BVM143 cordless blower + vacuum + mulcher requires service or maintenance, please call 1-866-SNOWJOE (1-866-766-9563) for assistance.

Model and Serial Numbers

When contacting the company, reordering parts, or arranging service from an authorized dealer, you will need to provide the model and serial numbers, which can be found on the decal located on the housing of the unit. Copy these numbers into the space provided below.

Record the following numbers from the housing or handle of your new product:																			
Model #:																			
2	4	V	-	X	2	-	B	V	M	1	4	3							
Serial #:																			

Troubleshooting

Most difficulties are easy to fix. Consult the troubleshooting table for common problems and their solutions. If you continue to experience problems or need repairs beyond these minor adjustments, please call 1-866-SNOWJOE (1-866-766-9563) for assistance.

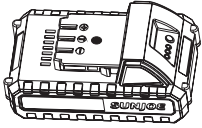
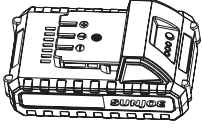
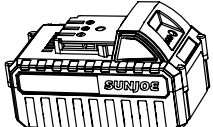
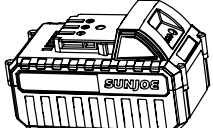

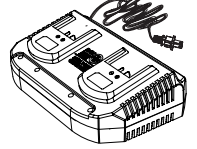


WARNING! Always remove the batteries before performing any adjustments, maintenance, or repairs to your cordless blower vac.

Problem	Possible Cause	Remedy
The blower + vacuum + mulcher fails to operate	<ul style="list-style-type: none">• Batteries are not inserted well• Batteries are flat	<ul style="list-style-type: none">• Reinsert the batteries• Charge the batteries
No/low blowing power	<ul style="list-style-type: none">• Mode selector lever in vacuuming mode	<ul style="list-style-type: none">• Set selector lever to blowing mode
No/low vacuuming power	<ul style="list-style-type: none">• Mode selector lever switch in blowing mode• Collection bag is full, dirty• Vacuuming opening clogged or blocked by foreign object	<ul style="list-style-type: none">• Set selector lever switch in vacuuming mode• Empty/clean collection bag• Remove blockage

Optional Accessories

⚠️ WARNING! ALWAYS use only authorized Snow Joe® + Sun Joe® replacement parts and accessories. NEVER use replacement parts or accessories that are not intended for use with this tool. Contact Snow Joe® + Sun Joe® if you are unsure whether it is safe to use a particular replacement part or accessory with your tool. The use of any other attachment or accessory can be dangerous and could cause injury or mechanical damage.

Accessories	Item	Model
1 	iON+ 24V 2.0 Ah Lithium-Ion Battery <i>Charge times vary by charger. See website for details.</i> <i>Blower Battery Run Time:</i> High speed 10 min (pushes up to 345 sq ft of debris) Low speed 1 hr 5 mins (pushes up to 4,400 sq ft of debris) <i>Vacuum Battery Run Time:</i> High speed 10 min Low speed 55 min (continuous suction)	24VBAT-LTE
2 	iON+ 24V 2.5 Ah Lithium-Ion Battery <i>Charge times vary by charger. See website for details.</i> <i>Blower Battery Run Time:</i> High speed 13 min (pushes up to 430 sq ft of debris) Low speed 1 hr 20 mins (pushes up to 5,490 sq ft of debris) <i>Vacuum Battery Run Time:</i> High speed 12 min Low speed 1 hr 10 mins (continuous suction)	24VBAT-LT
3 	iON+ 24V 4.0 Ah Lithium-Ion Battery <i>Charge times vary by charger. See website for details.</i> <i>Blower Battery Run Time:</i> High speed 20 min (pushes up to 685 sq ft of debris) Low speed 2 hrs 10 mins (pushes up to 8,815 sq ft of debris) <i>Vacuum Battery Run Time:</i> High speed 20 min Low speed 1 hr 50 mins (continuous suction)	24VBAT
4 	iON+ 24V 5.0 Ah Lithium-Ion Battery <i>Charge times vary by charger. See website for details.</i> <i>Blower Battery Run Time:</i> High speed 25 min (pushes up to 860 sq ft of debris) Low speed 2 hrs 40 mins (pushes up to 10,980 sq ft of debris) <i>Vacuum Battery Run Time:</i> High speed 23 min Low speed 2 hrs 15 mins (continuous suction)	24VBAT-XR
5 	iON+ 24V Lithium-Ion Battery Quick Charger	24VCHRG-QC
6 	iON+ 24V Lithium-Ion Battery Dual Port Charger	24VCHRG-DPC

NOTE: Accessories are subject to change without any obligation on the part of Snow Joe® + Sun Joe® to provide notice of such changes. Accessories can be ordered online at sunjoe.com or via phone by contacting the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563).

NOTES

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SNOW JOE® + SUN JOE® CUSTOMER PROMISE

ABOVE ALL ELSE, Snow Joe, LLC (“Snow Joe”) is dedicated to you, our customer. We strive to make your experience as pleasant as possible. Unfortunately, there are times when a Snow Joe®, Sun Joe®, or Aqua Joe® product (“Product”) does not work or breaks under normal operating conditions. We think it’s important that you know what you can expect from us. That’s why we have a Limited Warranty (“Warranty”) for our Products.

OUR WARRANTY:

Snow Joe warrants new, genuine, powered and non-powered Products to be free from defects in material or workmanship when used for ordinary household use for a period of two years from the date of purchase by the original, end-user purchaser when purchased from Snow Joe or from one of Snow Joe’s authorized sellers with proof of purchase. Because Snow Joe is unable to control the quality of its Products sold by unauthorized sellers, unless otherwise prohibited by law, this Warranty does not cover Products purchased from unauthorized sellers. If your Product does not work or there’s an issue with a specific part that is covered by the terms of this Warranty, Snow Joe will elect to either (1) send you a free replacement part, (2) replace the Product with a new or comparable product at no charge, or (3) repair the Product. How cool is that!

This Warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

PRODUCT REGISTRATION:

Snow Joe strongly encourages you to register your Product. You can register online at snowjoe.com/register, or by printing and mailing in a registration card available online from our website, or calling our Customer Service Department at **1-866-SNOWJOE (1-866-766-9563)**, or by e-mailing us at help@snowjoe.com. Failure to register your Product will not diminish your warranty rights. However, registering your Product will allow Snow Joe to better serve you with any of your customer service needs.

WHO CAN SEEK LIMITED WARRANTY COVERAGE:

This Warranty is extended by Snow Joe to the original purchaser and original owner of the Product.

WHAT IS NOT COVERED?

This Warranty does not apply if the Product has been used commercially or for non-household or rental applications. This Warranty also does not apply if the Product was purchased from an unauthorized seller. This Warranty also does not cover cosmetic changes that do not affect performance. Wearing parts like belts, augers, chains and tines are not covered under this Warranty, and can be purchased at snowjoe.com or by calling **1-866-SNOWJOE (1-866-766-9563)**.



sunjoe.com