



OPERATOR'S MANUAL

A Division of Snow Joe®, LLC

**CORDLESS 3-IN-1 BLOWER + VACUUM
+ MULCHER – TOOL ONLY**

48V MAX* | 190 MPH MAX

Model 24V-X2-BVM190-CT-RM

Form No. SJ-24V-X2-BVM190-CT-RM-880E-M-V1

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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 removing the batteries.
- 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 them 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

NOTE: This unit is tool only. The batteries and the charger are not included. They must be purchased separately.

Model 24V-X2-BVM190-CT-RM is compatible with the iON+ 24V System batteries and chargers. See page 17 for more information.

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 24V iON+ lithium-ion battery packs only in its designated 24V iON+ 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.

- **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 packs 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. For optimum battery performance, avoid low discharge cycles by charging the battery packs frequently.
2. Store the battery packs in a cool place, ideally at 77°F (25°C) and charged to at least 40%.
3. 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.
4. Do not throw battery packs into an open fire as this poses a risk of explosion.
5. Do not ignite the battery packs or expose them to fire.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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


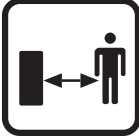









1. Please check the data marked on the rating plate of the battery charger. Be sure to connect the battery charger to a power supply with the voltage marked on the rating plate. Never connect it to a different mains voltage.
2. Protect the battery charger and its cord from damage. Keep the charger and 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. 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.
6. 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.
7. 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).
8. Charging batteries at a temperature below 41°F (5°C) will cause chemical damage to the cells and may cause a fire.
9. Do not use batteries that have been exposed to heat during the charging process, as the battery cells may have suffered dangerous damage.
10. 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.).
11. 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.

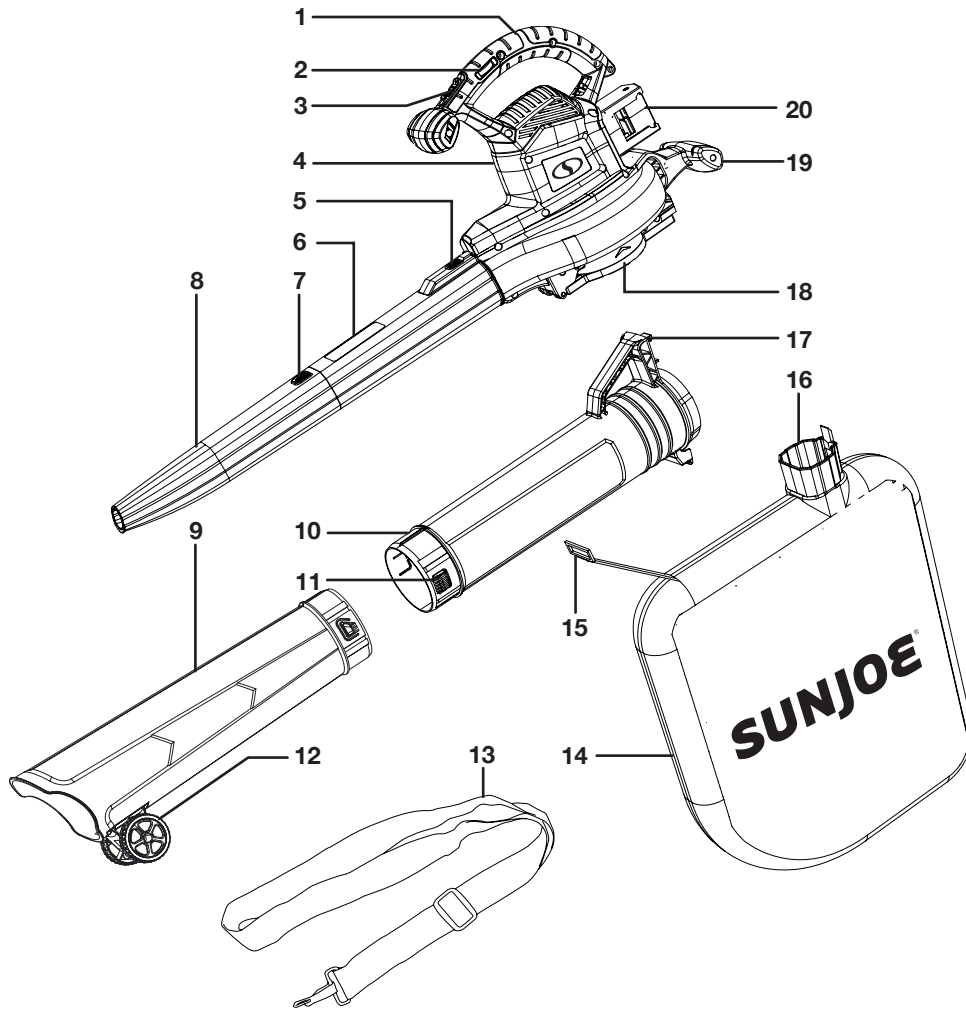
Safety Symbols

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.

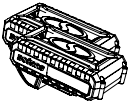
Know Your Cordless 3-in-1 Blower + Vacuum + Mulcher

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.

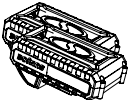


- | | |
|---|---------------------------------|
| 1. Handle grip | 11. Vacuum tube locking tab (2) |
| 2. Variable speed control (speed settings 1 to 6) | 12. Vacuum tube wheels (2) |
| 3. On/Off switch | 13. Shoulder strap |
| 4. Motor housing | 14. Collection bag |
| 5. Tube release button | 15. Collection bag strap |
| 6. Rear blower tube | 16. Collection bag adapter |
| 7. Blower tube locking tab | 17. Blower tube handle |
| 8. Front blower tube | 18. Vacuum/mulcher inlet cover |
| 9. Front vacuum tube | 19. Auxiliary handle |
| 10. Rear vacuum tube | 20. Battery compartment |


SOLD SEPARATELY
 Battery + Charger options available at sunjoe.com



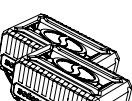
24VBAT-LTE




24VBAT-LT




24VBAT



24VBAT-XR



24VCHRG-QC



24VCHRG-DPC

Technical Data

Motor	800 W
Battery Voltage Max*	48V D.C. (2 x 24V)
No Load Speed	7500 - 14500 rpm
Impeller	Aluminum
Air Speed Max	190 MPH
Blower Air Flow Max	150 CFM
Vacuum Air Flow Max	340 CFM
Variable Speed Settings	6
Mulch Reduction Ratio	8:1
Mode Conversion	Blower to mulching vacuum
Bag Capacity	9.2 gal (35 l)
Net Weight	8.8 lbs (4 kg)

* Generates 48 V max with two 24 V lithium-ion batteries. Initial no-load voltage, per fully charged battery, peaks at 24 V. Nominal voltage under typical load is 21.6 V.

Unpacking

Carton Contents

- Cordless blower + vacuum + mulcher
- Front blower tube
- Rear blower tube
- Front vacuum/mulcher tube
- Rear vacuum/mulcher tube
- Collection bag
- Shoulder strap
- Manual with registration card

1. Carefully remove the cordless blower vac 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 vac. 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.

TOOL ONLY

BATTERY + CHARGER SOLD SEPARATELY





In order to operate this cordless blower vac you will need two batteries and one charger from the iON+ 24V System. See page 17 for battery and charger options and specifications, or for more information visit sunjoe.com.

!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.

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 batteries 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

TOOL ONLY BATTERY + CHARGER SOLD SEPARATELY

In order to operate this cordless blower vac you will need two batteries and one charger from the iON+ 24V System. See page 17 for battery and charger options and specifications, or for more information visit sunjoe.com.

⚠ 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.

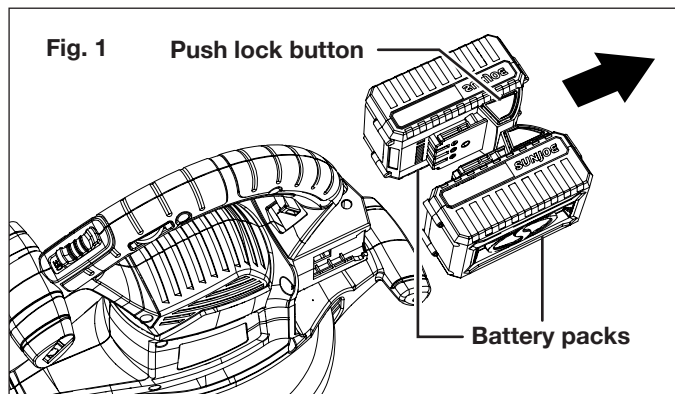
When to Charge the iON+ 24V Lithium-iON Battery

NOTE: The iON+ 24V 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 packs before charging them again.

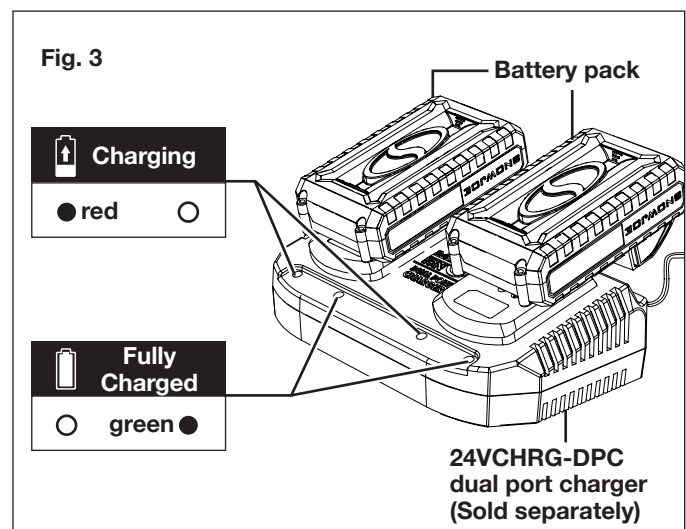
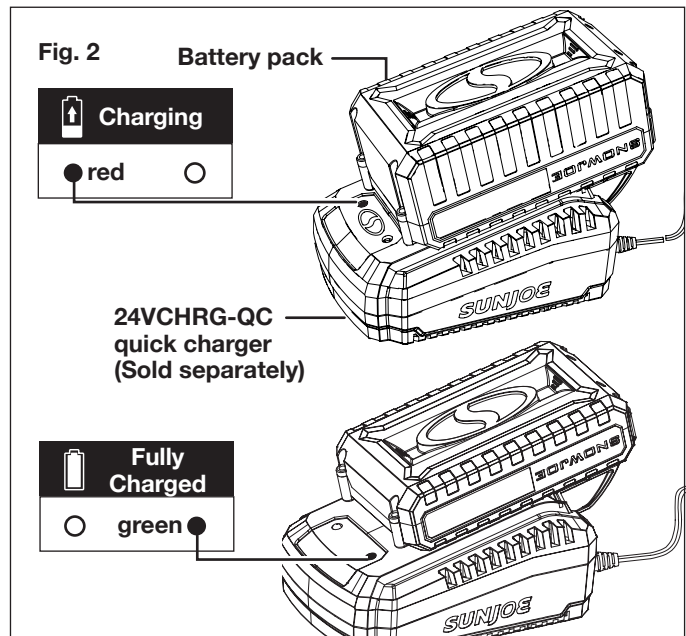
- Use the battery indicator lights to determine when to charge your iON+ 24V lithium-iON battery packs.
- You can "top-off" your battery packs' charge before starting a big job or after a long day of use.

Charging the Battery

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



2. Depending on your Snow Joe® + Sun Joe® charger model, how to recharge your lithium-ion batteries will vary. You may either insert your 24-volt batteries into the 24VCHRG-QC Quick Charger (sold separately) or the 24VCHRG-DPC Dual Port Charger (sold separately) (Figs. 2 – 3).



3. The battery indicator LEDs will illuminate one by one during the charging process. Unplug the charger immediately when the 3 LEDs are all illuminated.
4. The 24VCHRG-QC Quick Charger (sold separately) and the 24VCHRG-DPC Dual Port Charger (sold separately) are also equipped with additional charging indicating lights which will indicate the charging status (Figs. 2 – 3).

⚠ CAUTION! FIRE HAZARD. When removing 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.

5. 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.

IMPORTANT! Never allow the battery packs to become fully discharged as this will cause irreversible damage to the batteries.

6. When charging is complete, remove the batteries from the charger by pulling the push lock button and sliding the batteries backward to unlock it from the charger.

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.

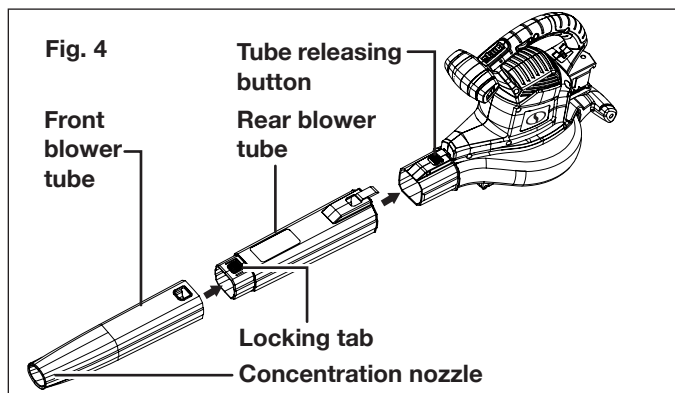
⚠ WARNING! Before performing any maintenance, make sure the batteries are removed from the tool. Failure to heed this warning could result in serious personal injury.

⚠ WARNING! To prevent serious personal injury, make sure the switch is in the OFF (O) position, the batteries are disconnected and the impeller has come to a complete stop before attaching or removing tubes.

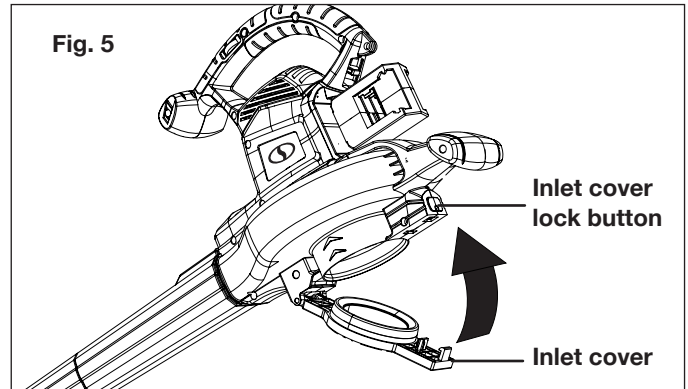
Assemble as a Blower

1. Slide the rear blower tube forward until the tube releasing button on the motor housing clicks into the slot on the blower tube (Fig. 4).
2. Slide the front blower tube onto the rear blower tube until the locking tab on the rear blower tube clicks into the slot on the front blower tube (Fig. 4).

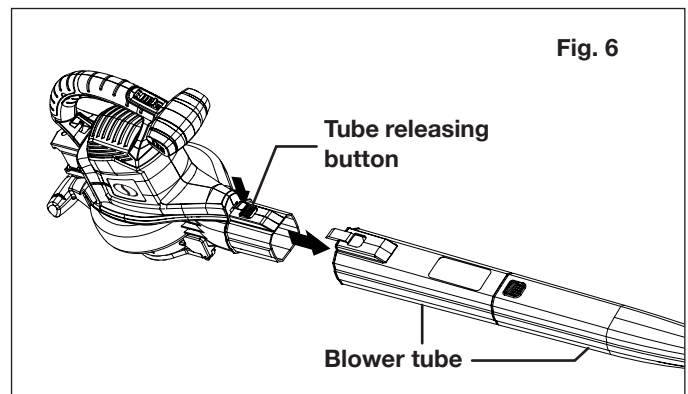
NOTE: The front blower tube is equipped with a concentrator nozzle, which is used to increase air flow in tight areas (i.e. around flower beds, under decks, etc.).



3. Before using the blower function, securely fasten the inlet cover over the air inlet by closing the inlet cover until the lock button clicks and locks (Fig. 5).

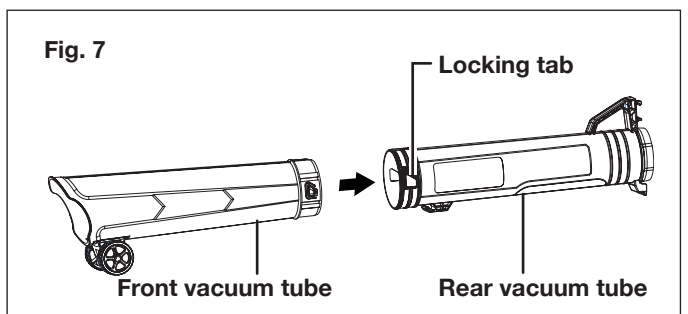


4. To remove the blower tube, turn the ON/OFF power switch to the OFF (O) position and remove both the batteries.
5. Press the tube release button and remove the blower tube (Fig. 6).

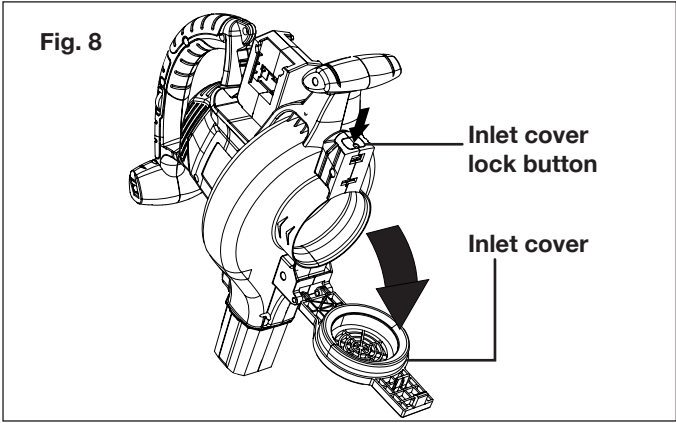


Assemble as a Vacuum/Mulcher

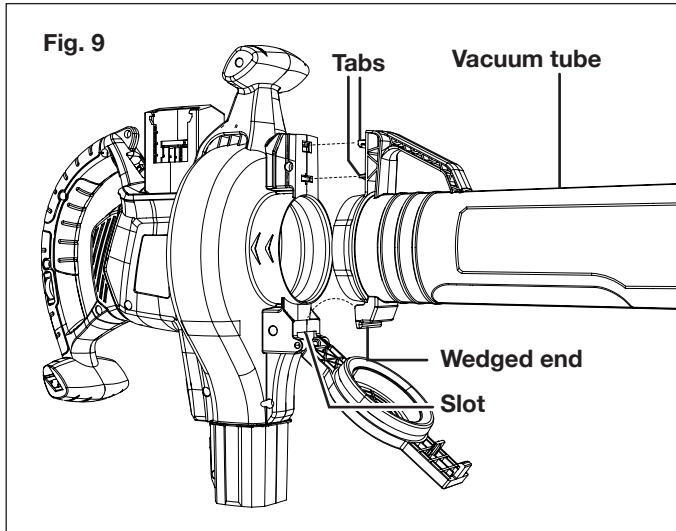
1. Slide the front and rear vacuum/mulcher tubes together until the locking tabs on both sides engages (Fig. 7).



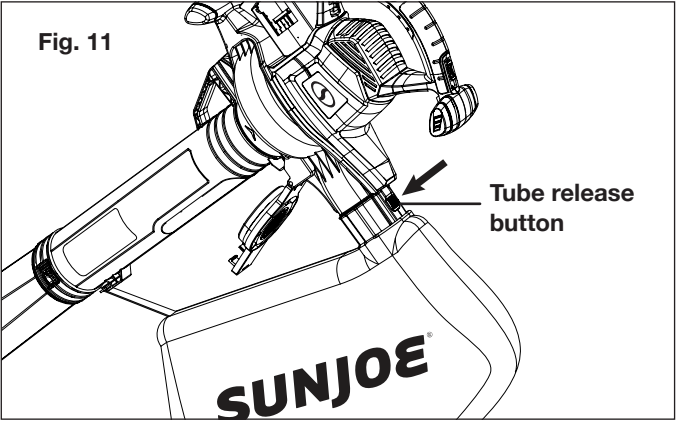
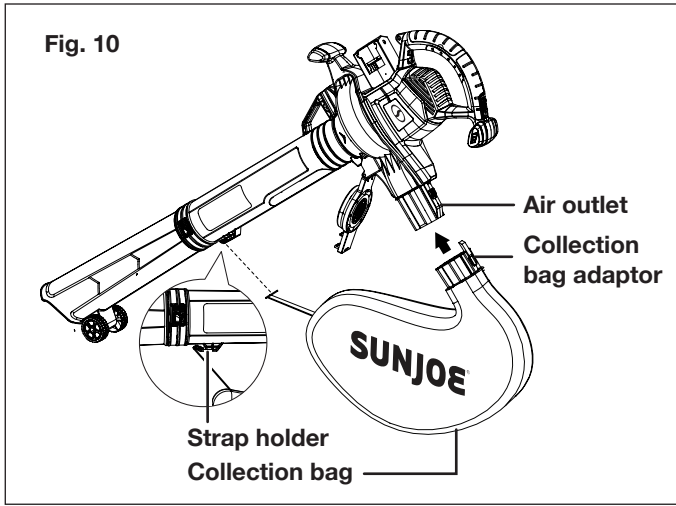
2. Press inlet cover lock button forward to disengage the inlet cover. Hold the cover open (Fig. 8).



3. With the blower tube removed, insert the "wedged" end of the mulcher tube into the slot on the unit. Securely fasten the mulcher tube by pushing the 2 tabs on the mulcher tube until they snap into the holes on the housing (Fig. 9).

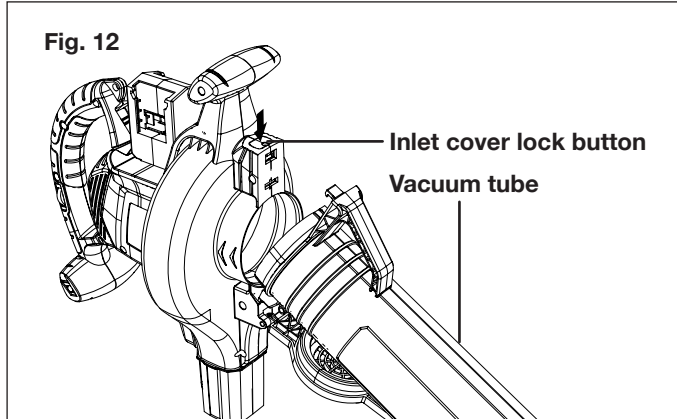


4. Insert the collection bag adaptor into the air outlet until the collection bag is securely fastened, then clip the bag to the strap holder (Fig. 10). Simply press the tube release button to remove the bag (Fig. 11).

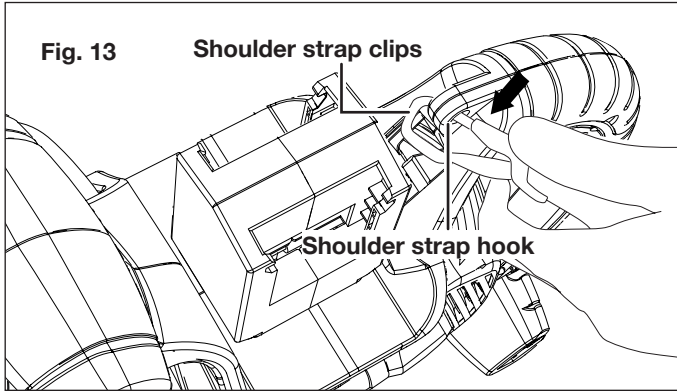


5. To remove the vacuum/mulcher tube assembly, press the inlet cover lock button to unlock, then remove the tube assembly from its housing (Fig. 12).

NOTE: It may be necessary to remove the blower tubes or vacuum/mulcher tubes to clear a blocked tube or impeller. Make sure to remove the batteries before attempting to clear any obstructions.



6. Clip the shoulder support strap to the strap hook on the top of the blower, as shown (Fig. 13).



7. 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. 14 – 15).

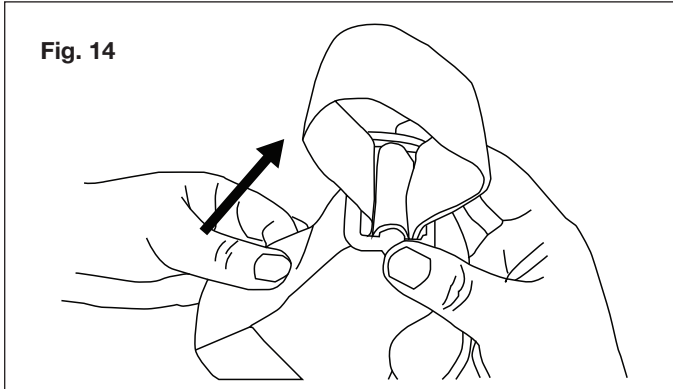


Fig. 14

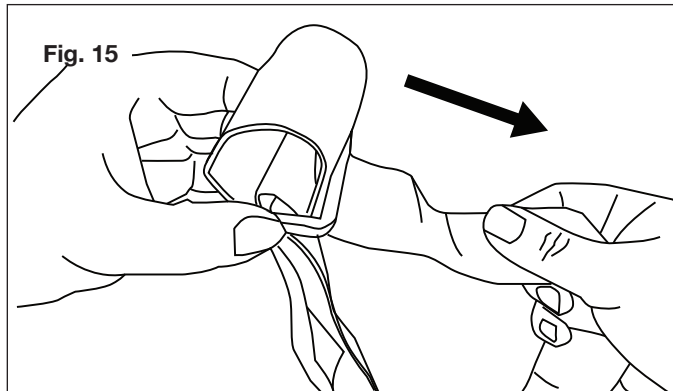


Fig. 15

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

Operation

Starting and 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. 16).

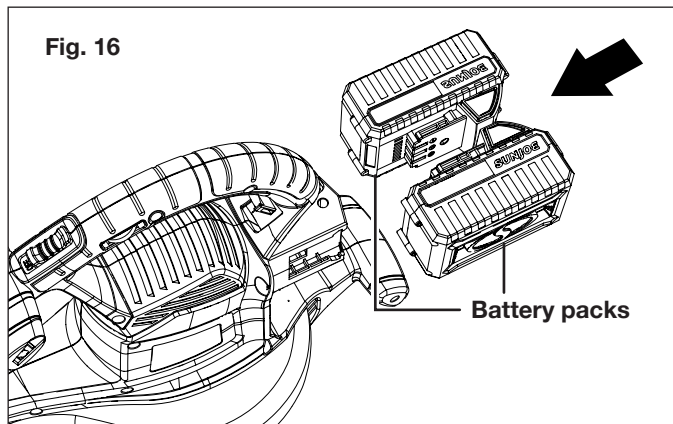


Fig. 16

2. To start the cordless blower + vacuum + mulcher, slide the ON/OFF switch forward to show the ON mark (Fig. 17).
3. To stop the unit, slide the ON/OFF switch backward until the OFF mark appears (Fig. 17).

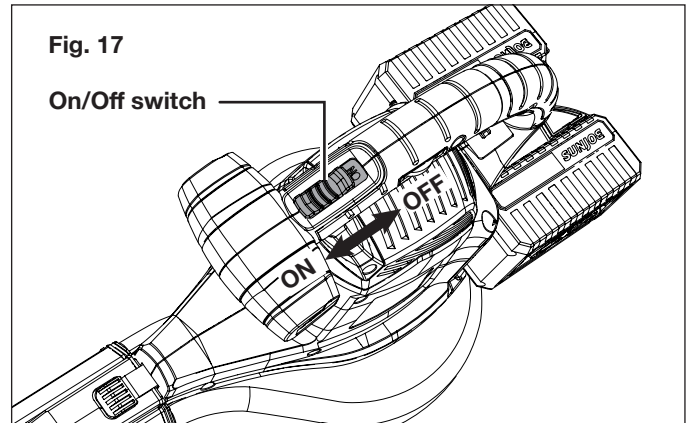


Fig. 17

On/Off switch

Speed Control

This unit is equipped with six variable speed settings (1 to 6) (Fig. 18).

- Turn the speed dial to position “1” or “2” for LOW speeds.
- Turn the speed dial to position “3” or “4” for MEDIUM speeds.
- Turn the speed dial to position “5” or “6” for HIGH speeds.

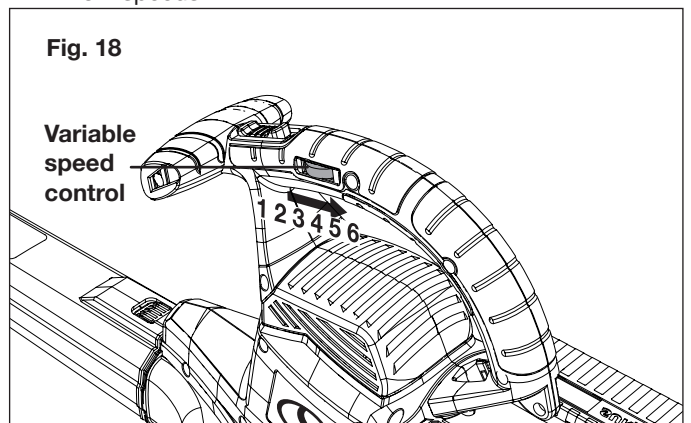


Fig. 18

Variable speed control

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 unit handle and the other hand on the auxiliary 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 mulcher, make sure the bag is properly installed and zipped closed.
- Make sure the blower tube nozzle 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 tubes and guards are in place and secure.

- When used as a blower, ensure that the inlet cover is completely closed and locked.
- Keep a firm grip on both the handle and auxiliary handle.
- To reduce the risk of hearing loss associated with sound level(s), hearing protection is required.
- Use the shoulder strap when using the unit as a mulcher.
- 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. Usual 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.
- Conserve water by using power blowers instead of hoses for many lawn and garden applications, including areas such as gutters, screens, patios, grills, porches and gardens.
- Blow debris into a safe, open area away from children, pets, open windows or freshly washed cars.
- Clean up after using leaf blowers and other lawn equipment. Dispose of debris appropriately.

⚠ WARNING! To avoid serious personal injury, wear ear defenders, goggles or safety glasses at all times when operating this unit. Wear a face mask or dust mask in dusty locations.

⚠ WARNING! To prevent serious personal injury or damage to the unit, make sure the blower tube or the mulcher tubes and the bag are in place before operating the unit.

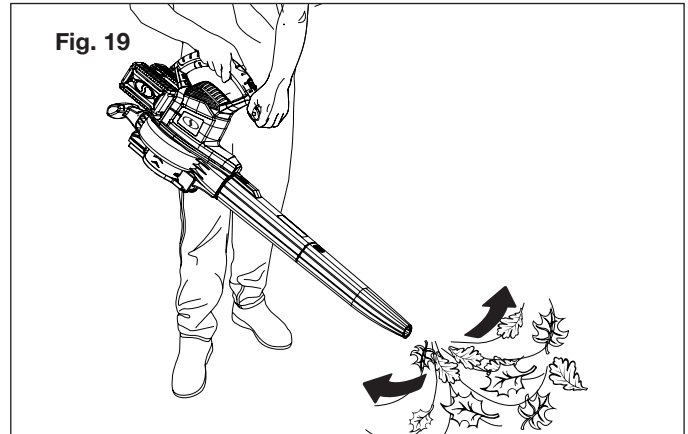
Air Vents

Never cover air vents. Keep them free from obstructions and debris. They must always remain clear for proper motor cooling.

⚠ WARNING! To avoid serious personal injury, do not wear loose fitting clothing or articles such as scarves, strings, chains, ties, etc., that could get drawn into the air vents. To make sure long hair does not get drawn into the air vents, tie back long hair.

Blower Mode

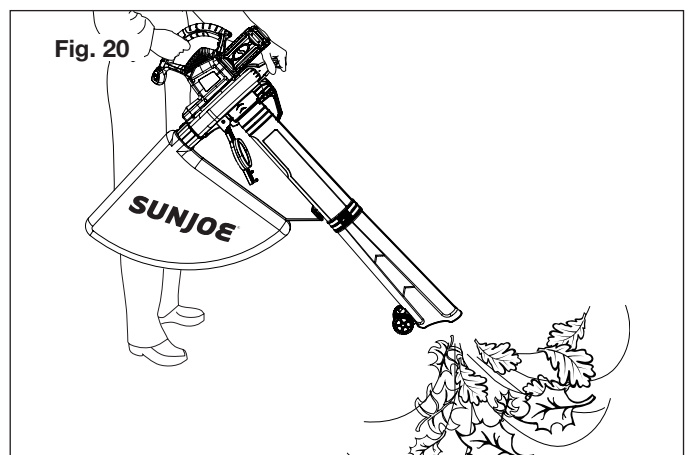
- Hold the blower firmly with one hand on the main handle and the other hand on the auxiliary handle. Sweep from side to side with the nozzle several inches above the ground or floor (Fig. 19).



- Slowly advance the unit, 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

- Once you have blown the debris/leaves into a pile, you can convert to vacuum mode to collect the debris.
- With a firm hold on the vac, tilt the mulcher tubes 2 in – 4 in. (5 cm – 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 (Fig. 20).



- As the bag fills, suction power will decrease. When this happens, turn the power switch to the OFF position and remove the batteries. Unzip the bag and empty the debris.
- To remove the bag, press the tube release button (Fig. 12). Turn the bag upside down and shake out any debris and leaves.

⚠ WARNING! Never remove the collection bag without first turning the power switch to the OFF position and remove the batteries.

⚠ WARNING! Do not use in vacuum/mulcher mode without the vacuum tubes and collection bag in place.

Clearing a Blocked Tube/Impeller

⚠ WARNING! To avoid serious personal injury, be sure the unit is OFF and remove the batteries before clearing the impeller.

⚠ WARNING! To avoid serious personal injury, always wear gloves to protect yourself from the impeller blades or other sharp objects.

During the vacuuming process, certain objects such as cloth, rope or large diameter sticks may obstruct the fan and block the motor. A thermal protection device, which is built into the batteries, will cut off the electricity to the motor to prevent damage from overheating.

In the event an obstruction occurs and power is curtailed:

1. Slide the ON/OFF switch to the OFF position until the unit comes to a complete stop.
2. Remove the batteries.
3. Remove the blower tube or vacuum/mulcher tubes and the bag.
4. Using a chute clean-out tool, carefully remove the material blocking the tube or impeller. Inspect to ensure no damage has occurred. Rotate the impeller blades by hand to ensure the blockage is completely cleared.
5. Reinstall the blower tube or vacuum/mulcher tubes and the bag.
6. Wait 3 minutes for the motor to cool.
7. Reinsert the batteries and slide the ON/OFF switch to ON. The blower vac will resume normal function.

Care + Maintenance

To order genuine replacement parts or accessories for the Sun Joe® 24V-X2-BVM190-CT-RM 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.

Cleaning the Unit

⚠ WARNING! To avoid serious personal injury, always turn the unit off and remove the batteries before cleaning or servicing.

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.

1. Empty the bag after each use to avoid deterioration and obstructing air flow, which will reduce the performance of the mulcher.
2. 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.
3. 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 up and reinstall.

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.

Disposal

Recycling + Disposal

The product comes in a package that protects it against damage during shipping. Keep the package until you are sure that all parts have been delivered and the product is functioning properly. Recycle the package afterwards or keep it for long-term storage.



WEEE symbol. Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or local store for recycling regulations.

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 packs 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-BVM190-CT-RM cordless blower + vacuum + mulcher requires service or maintenance, please call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563).

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 9 0 - C T - R M	
Serial #:	

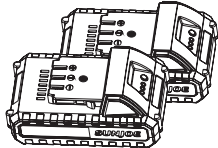
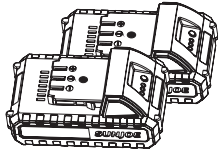
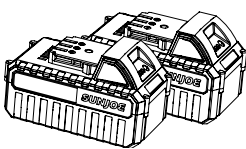
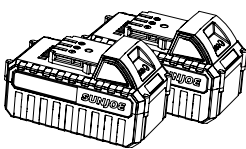
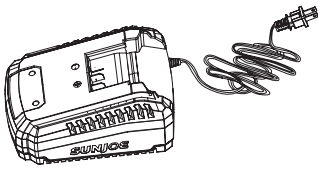
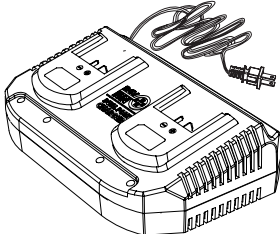
Troubleshooting

- Remove the batteries before carrying out maintenance on the machine or when checking that its parts are in proper working order.
- To avoid unnecessary hassles, consult the following table before contacting a qualified repair person with any mechanical issues.

Problem	Possible Cause	Solution
Unit will not blow or mulch	<ol style="list-style-type: none"> 1. Bag full 2. Blocked tube 3. Blocked impeller 4. Tubes are not installed properly. 5. Collection bag is not installed properly 6. Batteries are not inserted properly or batteries are flat. 	<ol style="list-style-type: none"> 1. Empty the bag. 2. Clear the blockage. 3. Clear the blockage. 4. Remove and reinstall the tubes. Make sure they are locked in securely. 5. Remove and reinstall the collection bag. Make sure it is locked in securely. 6. Charge the batteries and insert them in the compartment properly.
Unit will not start	<ol style="list-style-type: none"> 1. Batteries are not inserted properly or batteries are flat. 2. On/Off switch is in the OFF position. 3. Defective power switch 4. Tubes are not installed properly 5. Collection bag is not installed properly 6. Intake cover is not closed. 	<ol style="list-style-type: none"> 1. Charge the batteries and insert them in the compartment properly. 2. Slide the power switch to the ON position and select your desired speed setting with the speed control. 3. Call the Snow Joe® + Sun Joe® customer service center at 1-866-SNOWJOE (1-866-766-9563). 4. Remove and reinstall the tubes. Make sure they are locked in securely. 5. Remove and reinstall the collection bag. Make sure it is locked in securely. 6. Ensure that cover is fully closed and locked.

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 electric blower vac. Contact Snow Joe® + Sun Joe® if you are unsure whether it is safe to use a particular replacement part or accessory with your electric blower vac. The use of any other attachment or accessory can be dangerous and could cause injury or mechanical damage.

Accessories	Item	Model
	<p>24V iON+ 2.0 Ah Lithium-Ion Batteries</p> <p><i>Blower Battery Run Time:</i> High speed – 10 min (pushes up to 1345 sq ft of debris) Low speed – 25 mins (pushes up to 2600 sq ft of debris)</p> <p><i>Vacuum/Mulcher Battery Run Time:</i> High speed – 8 min Low speed – 20 min (continuous suction)</p>	24VBAT-LTE
	<p>24V iON+ 2.5 Ah Lithium-Ion Batteries</p> <p><i>Blower Battery Run Time:</i> High speed – 12 min (pushes up to 1680 sq ft of debris) Low speed – 30 mins (pushes up to 3200 sq ft of debris)</p> <p><i>Vacuum/Mulcher Battery Run Time:</i> High speed – 10 min Low speed – 25 min (continuous suction)</p>	24VBAT-LT
	<p>24V iON+ 4.0 Ah Lithium-Ion Batteries</p> <p><i>Blower Battery Run Time:</i> High speed – 20 min (pushes up to 2690 sq ft of debris) Low speed – 50 mins (pushes up to 5110 sq ft of debris)</p> <p><i>Vacuum/Mulcher Battery Run Time:</i> High speed – 15 min Low speed – 40 min (continuous suction)</p>	24VBAT
	<p>24V iON+ 5.0 Ah Lithium-Ion Batteries</p> <p><i>Blower Battery Run Time:</i> High speed – 25 min (pushes up to 3365 sq ft of debris) Low speed – 65 mins (pushes up to 6390 sq ft of debris)</p> <p><i>Vacuum/Mulcher Battery Run Time:</i> High speed – 20 min Low speed – 50 min (continuous suction)</p>	24VBAT-XR
	<p>iON+ 24V lithium-ion Battery Quick Charger</p>	24VCHRG-QC
	<p>iON+ 24V lithium-ion Dual-port Battery Charger</p>	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).



SNOW JOE® + SUN JOE® REFURBISHED GOODS WARRANTY

GENERAL CONDITIONS:

Snow Joe® + Sun Joe® operating under Snow Joe®, LLC warrants this refurbished product to the original purchaser for 90 days against defects in material or workmanship when used for normal residential purposes. If a replacement part or product is needed, it will be sent free of charge to the original purchaser except as noted below.

The duration of this warranty applies only if the product is put to personal use around the household. It is the owner's responsibility to correctly perform all maintenance and minor adjustments explained in the owner's manual.

HOW TO OBTAIN YOUR REPLACEMENT PART OR PRODUCT:

To obtain a replacement part or product, please visit snowjoe.com/help or email us at help@snowjoe.com for instructions. Please be sure to register your unit beforehand to speed up this process. Certain products may require a serial number, typically found on the decal affixed to the housing or guard of your product. All products require a valid proof of purchase.

EXCLUSIONS:

- Wearing parts like belts, augers, chains and tines are not covered under this warranty. Wearing parts can be purchased at snowjoe.com or by calling 1-866-SNOWJOE (1-866-766-9563).
- Batteries are covered in full for 90-days from the date of purchase.

Snow Joe® + Sun Joe® may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating Snow Joe® + Sun Joe® to incorporate such design changes into previously manufactured products, nor shall such changes be construed as an admission that previous designs were defective.

This warranty is intended to cover product defects only. Snow Joe®, LLC is not liable for indirect, incidental or consequential damages in connection with the use or misuse of the Snow Joe® + Sun Joe® products covered by this warranty. This warranty does not cover any cost or expense incurred by the purchaser in providing substitute equipment or service during reasonable periods of malfunction or non-use of this product while waiting for a replacement part or unit under this warranty. Some states do not allow exclusions of incidental or consequential damages so the above exclusions may not apply in all states. This warranty may give you specific legal rights in your state.

HOW TO REACH US:

We're here to help Monday through Friday from 9AM to 7PM EST and Saturday and Sunday 9AM to 4PM. You can reach us at 1-866-SNOWJOE (1 866-766-9563), online at snowjoe.com, via email at help@snowjoe.com or tweet us @snowjoe.

EXPORTS:

Customers who have purchased Snow Joe® + Sun Joe® products exported from the United States and Canada should contact their Snow Joe® + Sun Joe® distributor (dealer) to obtain information applicable to your country, province or state. If for any reason, you are not satisfied with the distributor's service, or if you have difficulty obtaining warranty information, contact your Snow Joe® + Sun Joe® seller. If in the event your efforts are unsatisfactory, please reach out to us directly.



sunjoe.com