

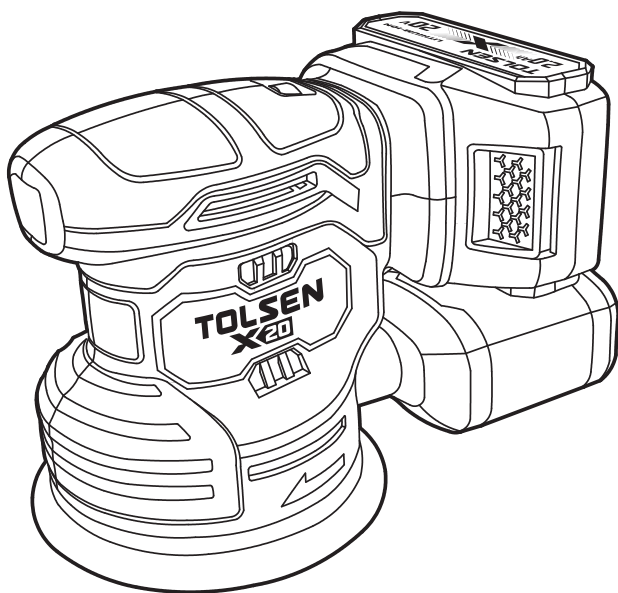
TOLSEN X20

97104

LI-ION CORDLESS RANDOM ORBIT SANDER

INSTRUCTION MANUAL

20V LITHIUM-ION



SAVE THIS MANUAL !

You will need this manual for safety instructions, operating procedures and warranty.
Put it and the original sales receipt in a safe dry place for future reference.

IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

WARNING: This appliance is not intended for use by persons (including children) with reduced, physical or mental capabilities or lack of experience or knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children must be supervised to ensure that they do not play with the appliance.

Save all warnings and instructions for future reference

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

1. Keep work area clean and well lit. Cluttered or dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

Electrical safety

1. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
2. Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
5. When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
6. If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) or ground fault circuit interrupter (GFCI) protected supply. Use of an RCD or GFCI reduces the risk of electric shock.
7. Power tools can produce electromagnetic fields [EMF] that are not harmful to the user. However, users of pacemakers and other similar medical devices should contact the maker of their device and/or doctor for advice before operating this power tool.

Personal safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
2. Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
3. Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.
4. Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
5. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
6. Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
7. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
8. Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.

Power tool use and care

1. Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
2. Do not use the power tool if the switch could not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
3. Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
4. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
5. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
6. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
7. Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.
8. Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

Battery Tool Use and Care

1. 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.
2. Use power tools only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
3. When battery pack is 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.
4. Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.
5. Do not use a battery pack or tool that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
6. Do not expose a battery pack or tool to fire or excessive temperature. Exposure to fire or temperature above 130 °C may cause explosion.
7. Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions. Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

Service

1. Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.
2. Never service damaged battery packs. Service of battery packs should only be performed by the manufacturer or authorized service providers.
3. Follow instruction for lubricating and changing accessories.

Safety Rules for Sanders

1. Disconnect the sander from power source before changing accessories. Accidental start-ups may occur if the sander is plugged in changing an accessory.
2. Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
3. If your tool is equipped with a dust bag, empty it frequently and after completion of sanding. Be extremely careful of dust disposal, materials in fine particle form may be explosive. Do not throw sanding dust on an open fire. Spontaneous combustion, may in time, result from mixture of oil or water with dust particles.
4. Always wear eye protection and a dust mask for dusty applications and when sanding overhead. Sanding particles can be absorbed by your eyes and inhaled easily and may cause health complications.
5. Use special precautions when sanding chemically pressure treated timber paint that may be lead based or any other materials that may contain carcinogens. A suitable breathing respirator and protective clothing must be worn by all persons entering the work area. Work area should be sealed by plastic sheeting and persons not protected should be kept out until work area is thoroughly cleaned.
6. Remove dust and other waste matter in an environmentally safe way
7. Do not wet sand with this sander. Liquids entering the motor housing are an electrical shock hazard.
8. Do not use sandpaper intended for larger sanding or pads. Larger sandpaper will extend beyond the sanding pad causing snagging or tearing of the paper or kick-back. Extra paper extending beyond the sanding pad can also cause serious lacerations.
9. Keep handles dry, clean and free from oil and grease. Slippery hands cannot safely control the power tool.

Battery Safety



WARNING

This battery can only be used in the machines included in the TOLSEN X20V lithium-ion power platform system. This battery can only be used cooperatively with the designated battery charger.

Li-Ion batteries, if incorrectly used, stored or charged will cause a fire, burn and explosion hazard.

Failure to follow these instructions may cause overheating or fire.

1. Keep the battery out of reach of children.
2. The battery should be charged at ambient temperatures between 5 and 40°C (ideally around 20°C) . After charging, allow 15 minutes for the battery to cool before use.
3. The Battery Charger monitors battery temperature and voltage while charging. DO NOT leave batteries on charge for extended periods and NEVER store batteries on charge. Ensure that the charger is disconnected from the mains supply after use.
4. When not in use batteries should be stored at room temperature. Do not store the tool and battery cartridge in locations where the temperature may reach or exceed 40°C (ideally around 20°C) .
5. Ensure that battery contacts cannot accidentally short in storage. Keep batteries clean; foreign objects or dirt may cause a short. Keep away from other metal objects, for example, paperclips, coins, keys, nails and screws.
6. **DO NOT** store lithium-ion battery packs in a discharged state over a long period as this can damage the lithium-ion cells. For long-term storage, store batteries in a high charge state disconnected from the power tool.
7. Batteries can become faulty over time, individual cells in the battery can fail and the battery could short. The charger will not charge faulty batteries. Use another battery, if possible, to check correct functionality of the charger and purchase a replacement battery if a faulty battery is indicated.
8. **DO NOT** open, disassemble, crush, heat or incinerate. Do not dispose of in fire or similar.

Battery Charger Safety



WARNING

This charger can only be used to charge the batteries which has TOLSEN X20V symbol. If it is used to charge other kinds of batteries, there is a risk of explosion. **DO NOT** attempt to recharge non-rechargeable batteries.

1. This is class 2 power supply. It is suitable for indoor use only.
2. Before use, the input and output technical data must be checked to secure correct use.
3. Do not use the Battery Charger in the circumstances that the output polarity does not match the load polarity.
4. Do not attempt to use the charger with any batteries other than those supplied. Keep your battery charger clean; foreign objects or dirt may cause a short or block air vents. Failure to follow these instructions may cause overheating or fire
5. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Before Use

Removing a battery

Remove the Battery from the tool by pressing the lock button, then slide the Battery out of the Battery Slot.

WARNING:

DO NOT try to remove the Battery without pressing the lock button. The tool or Battery could be damaged.

Fitting a battery

1. Fit a battery by sliding it on to the Battery Slot of the tool until it clicks and locks into position

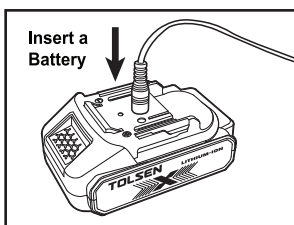
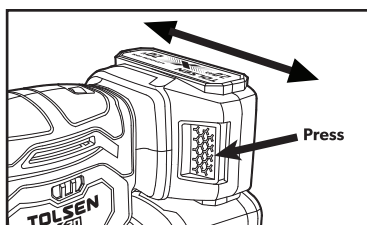
Note: Make sure the Battery and tool are lined up correctly. If the Battery does not slide into the tool easily, do not force it. Instead, slide the Battery out of the tool again, check the top of Battery and the tool battery slot are clean and undamaged and that the contacts are not bent

Setting up the battery charger

1. If there is battery fitted, remove any battery from battery charger first

2. Insert the Battery Charger mains plug into a suitable mains socket

Note: The Green LED on the Charger will always bright to indicate that the charger is ready to charge the battery.



WARNING: Use this charger ONLY to charge the supplied battery or additional purchased batteries that are specifically designed for this tool.

Charging the battery

WARNING: Failure to follow the correct procedure when charging batteries will result in permanent damage.

Note: Normal charging time is approximately 85 minutes for a recently discharged 2.0Ah capacity battery.

However, if the Battery has been left in a discharged state for some time, it may take additional time to charge.

1. Slide a fully or partially discharged Battery on to the Battery Charger .

2. Once charging commences, the Red LED will on.

3. When the Battery is fully charged, the Red LED will off and Green LED will on.

IMPORTANT: When a low charge level is indicated, the tool may stop operating while in use, which is dangerous when operating it. Always ensure the battery pack has a good charge level.

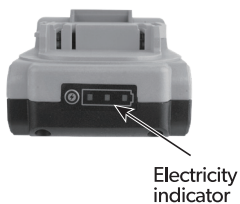
Note: Symbology

	Class II Double insulated for additional protection
	Read the instruction manual before using
	Wear hearing protection while operating the tool
	Wear hand protection
	Always use breathing apparatus when machining materials which generate dust.
	Wear ear protection.
	Operating environmental temperature
	Do not incinerate battery pack
	Do not expose to water
	Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.
	Batteries and rechargeable batteries are not household waste! As a consumer, you are required by law to dispose of all batteries and accumulators, whether or not they contain harmful substances *, at a collection point in your municipality / neighborhood or in commerce so that they can be disposed of in an environmentally sound manner.
	Battery pack is recyclable and should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice
	Safety alert
	For indoor use only
	Internal time lag fuse with a maximum current of 2A.

SPECIFICATIONS

Rated Voltage	20VDC
No-Load Speed	n_0 : 6000-12000min ⁻¹
Working Current	< 8 A
Working Power	150 W
Sanding Pad Diamete	125 mm / 5"
Speed Control	6-Speed Dial
Battery pack (96104 not include)	
Battery pack Voltage	20VDC
Battery capacity	2.0Ah
Charger (96104 not include)	
Input Voltage	110-120VAC 60Hz
Output Voltage	21.5VDC
Rated output current	1.5A
Charging Time	85 minutes fast charging(2.0Ah battery)
Protection class	

FUNCTIONAL DESCRIPTION



OPERATING INSTRUCTIONS

The detail sander is intended for light to medium duty detail sanding tasks on wood, plastic, painted surfaces and other surface coatings. This tool is particularly suitable for one-handed operation and access to corners and edges that are otherwise difficult to reach and would require hand sanding. Profiles and grooves may be finished using the tip or edge of the selected attachment.

WARNING

Disconnect battery pack from tool before making any assembly, adjustments or changing accessories. Such preventive safety measures reduce the risk of starting the tool accidentally

Fitting the sanding sheets

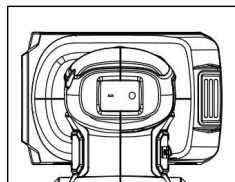
 **WARNING** Never use the tool without a sanding sheet or accessory in place.

1. Turn the sander over so that the backing pad is facing upward.
2. Remove all dirt or foreign matter from the backing pad.
3. Then attach the sandpaper to the backing pad, using the hook-and-loop system of the sand paper and the sanding plate.
4. Make sure the perforations in the paper coincide with those on the sanding pad, to ensure optimal dust collection.
5. Press the sandpaper around the edges of the sanding pad until the sandpaper is firmly stuck onto the sanding pad.

 **WARNING** The sand paper must be stick firmly on sanding pad and should not come loose. Never use the tool without sandpaper or accessory in place.

Switching On/Off

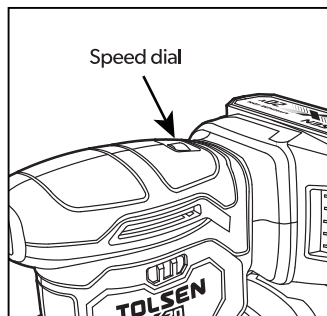
The tool is switched "On" by the ON/OFF switch located on the front of the tool housing. To turn on the sander, depress the side of the On/Off switch marked "I". To turn it off, depress the side of the On/Off switch marked "O".



Speed dial

The sander features 6 speed gear box which allows you to match the proper speed to the material being sanded. The speed dial allows you to increase or decrease the speed from 7,000-13,000 orbits per minute. The optimal speed setting for each application is very much dependent on personal preference. Generally, you will want to use a higher setting on harder materials and a lower setting on softer materials. Material removal rate increases as speed

 **WARNING** The tool must be turned off before switching speed.



Pad brake

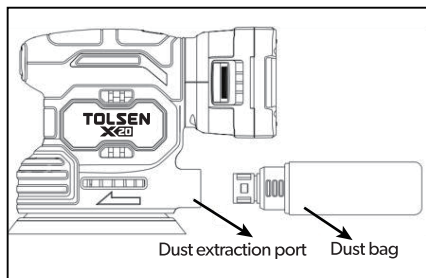
These sanders are equipped with a pad brake that prevents over-speeding of the pad. If the tool is lifted off the work surface while the motor is running, the brake will limit pad rotation to no more than 500 OPM. The plastic pad brake is used to provide the braking action.

Using the dust collection bag

The dust extraction system extracts sanding dust from the work piece through the holes in the backing pad. The dust is then transferred through the dust extraction port on the rear of the sander housing.

To install: users can directly insert the dust bag onto the dust extraction port. please make sure the dust bag is tightly fastened.

To remove: When removing the dust bag, follow the above procedure in reverse order. If the dust collection bag is full, you can remove it from this tool and empty dust.

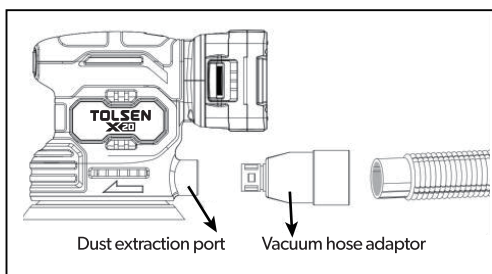


⚠ WARNING Please empty the dust collection bag frequently, after completion of sanding and before storing the sander. Be extremely careful of dust disposal; materials in fine particle form may be explosive. Do not throw sanding dust on an open fire. Combustion from mixtures of varnishes, lacquers, polyurethane, oil or water with dust particles can occur if there is a static discharge, spark introduced in the box, or excessive heat.

Attaching to a vacuum cleaner

⚠ WARNING The tool must be turned off before connecting to a vacuum hose.

1. Remove the dust bag from the sander.
2. Attach the vacuum hose adapter to dust extraction port and slide the suction mouth of a vacuum cleaner onto the connector.
3. Attach the vacuum hose adapter to dust extraction port. Push sander and adapter together firmly.
4. Connect the vacuum hose to the adapter, twisting together to secure.



Using the sander

1. Secure the work to prevent it from moving under the sander.
2. Place the sander on the workpiece so that **all** of the sanding disc surface is in contact with the workpiece.
3. Grasp it as shown and turn it on. Start the sander and move it slowly. Move the sander in long, steady strokes over the workpiece. The random orbital action of your sander allows you to sand with the grain or at any angle across it for most sanding jobs.
4. Upon completion of the sanding operation, turn the sander off and wait until the sanding disc comes to a complete stop before removing it from the workpiece

Tool tips

If the surface is rough, begin with coarser grits and then complete the surfacing with medium and fine abrasives. To avoid uneven results, do not skip more than one grit size when going from coarser to finer grits, and do not sand in one area for too long.

NEVER FORCE THE SANDER. The weight of the sander supplies adequate pressure so let the sandpaper and the sander do the work. Applying additional pressure only slows the motor, rapidly wears the sandpaper and greatly reduces the sander speed. Excessive pressure will overload the motor causing possible damage from motor overheating and can result in inferior work. Any finish or resin on wood may soften from frictional heat. This will cause the material to rapidly clog the sandpaper, rendering it useless. A heat gun will work much better to remove paint before sanding. Do not allow sanding on one spot too long, as the sander's rapid action may remove too much material, particularly when using only one corner of the pad, making the surface uneven.

Sandpaper Selection

Sanding paper is available with different grain sizes (grit) and for different material. The grain size is indicated with a number on the reverse of the sanding paper, the higher the number the finer is the grain size.

Grain size	Coarse	Application
< 60	Coarse	Removal of paint and varnish, preparation of rough surfaces.
80-120	Medium	Medium For face sanding and smoothing small irregularities.
>240	Fine	Finishing, cleaning plaster and water stain from wood

1. Only use suitable sandpaper in terms of application and size. Do not use the papers that are bigger than the base plate of the product.
2. Replace worn or damaged sandpaper immediately.
3. Start with a coarse sanding paper and finish with a fine-grained one to achieve a satisfactory result.
4. Do not use the same sanding paper on different materials, e. g. do not use the sanding paper that has been used for sanding metal to sand wood. Small metal particles remaining in the sanding paper will lead to scratches.
5. We recommend using sandpaper with a hole pattern for sufficient dust extraction.

WARNING

Precautions to take when sanding paint

Sanding of lead based paint is **NOT RECOMMENDED** due to the dangers of lead poisoning. In dusty areas a dust mask should be worn.

MAINTENANCE

WARNING: ALWAYS disconnect from the mains power supply, before carrying out any maintenance/ cleaning of the charger. Remove the battery before carrying out any maintenance/ cleaning of the tool.

Note: Both the tool and the charger contain no user-serviceable parts. If the device does not perform as outlined in this manual, return it to an authorised service centre for repair

General inspection

- Regularly check that all the fixing screws are tight
- Inspect the supply cord of the tool, prior to each use, for damage or wear. Repairs should be carried out by an authorised service centre. This advice also applies to extension cords used with this tool.

Cleaning

- Keep your tool clean at all times. Dirt and dust will cause internal parts to wear quickly, and shorten the machine's service life. Clean the body of your machine with a soft brush, or dry cloth. If available, use clean, dry, compressed air to blow through the ventilation holes
- Clean the tool casing with a soft damp cloth using a mild detergent. Do not use alcohol, petrol or strong cleaning agents
- Never use caustic agents to clean plastic parts

Lubrication

- Slightly lubricate all moving parts at regular intervals with a suitable spray lubricant



Disposal

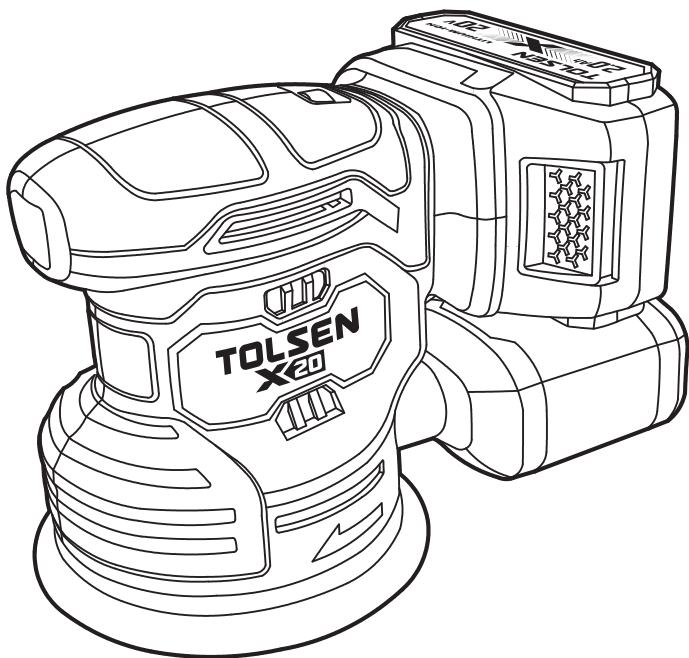
Always adhere to national regulations when disposing of power tools that are no longer functional and are not viable for repair.

Li-Ion

- Do not dispose of power tools, or other waste electrical and electronic equipment (WEEE), with household waste.
- Contact your local waste disposal authority for information on the correct way to dispose of power tools

TROUBLESHOOTING

problem	possible causes	Likely Solutions
Tool will not start.	1. Battery Pack not properly connected. 2. Battery Pack not properly charged. 3. Battery Pack worn out. 4. Internal damage or wear. (Carbon brushes or Trigger, for example.) 5. Contact chips of switch or battery pack deformed. 6. Battery is not suitable for TOLSEN X20V lithium-ion power platform system 7. Overload operation	1. Remove Battery Pack, make sure there are no obstructions, clean battery contacts on tool, reinsert the Battery Pack according to its shape (it should only fit one way), and press firmly until the Battery Pack locks in place. 2. Make sure Charger is connected and operating properly. Give enough time for Battery Pack to recharge properly. 3. Dispose of old Battery Pack properly or recycle. Replace Battery Pack. 4. Have technician service tool. 5. Replace switch or Battery Pack 6. Replace the battery of TOLSEN X20V 7. Stop to use and restart the machine after cooling.
Tool operates slowly.	1. Excess pressure applied to workpiece. 2. Battery Pack wearing out. 3. Low battery	1. Decrease pressure, allow tool to do the work. 2. Dispose of old Battery Pack properly or recycle. Replace Battery Pack. 3. Recharge or replace a fully charged battery
Performance decreases over time.	1. Battery Pack worn out. 2. Wheel or blade dull	1. Dispose of old Battery Pack properly or recycle. Replace Battery Pack. 2. Replace wheel or blade
Excessive noise or rattling.	Internal damage or wear. (Gear or Bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing tool to work too fast. 2. Blocked motor housing vents.	1. Allow tool to work at its own rate. 2. Clean the Blocked motor housing vents
Tool does not grind, sand or brush effectively.	1. Disc accessory may be loose on Spindle. 2. Disc accessory may be damaged, worn or wrong type for the material.	1. Be sure disc accessory arbor is correct and Outer Flange/ Arbor Nut is tight. 2. Check condition and type of disc accessory. Use only proper type of disc accessory in good condition.



SUZHOU TOLSEN
TOOLS CO.,LTD.

www.tolsentools.com

TOLSEN is a trademark or
registered trademark of TOLSEN
TOOLS. All rights reserved.
MADE IN CHINA



SCAN TO VISIT
PRODUCT LINK