

# TOLSEN X20

**97072**

**LI-ION**

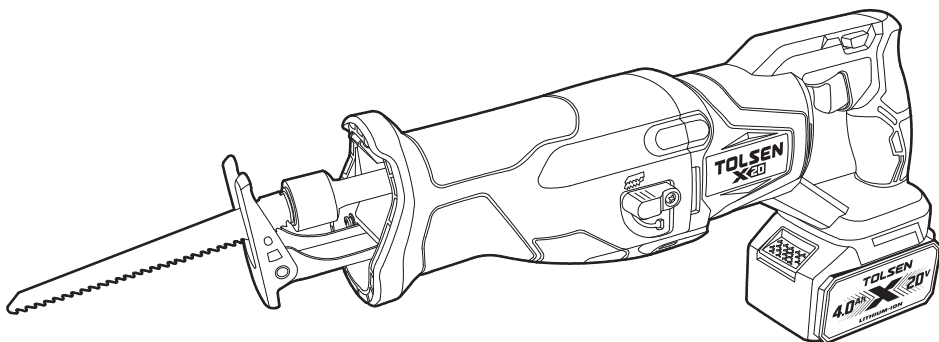
**CORDLESS RECIPROCATING SAW**

**INSTRUCTION MANUAL**

**20V LITHIUM-ION**

**BL** BRUSHLESS  
MOTOR

**「INDUSTRIAL」**



**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

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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

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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

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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.

## Additional Safety for Reciprocating Saw



### WARNING

1. Hand-held saws Hold power tool by insulated gripping surfaces when performing an operation where the cutting accessory may contact hidden wiring. Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
2. Hold power tool by insulated gripping surfaces, when performing an operation where the fastener may contact hidden wiring. Fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
3. Use clamps or another practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body leaves it unstable and may lead to loss of control.
4. Keep hands away from cutting area. Never reach underneath the work piece any reason. Do not insert fingers or thumb into the vicinity of the reciprocating blade and blade damp. Do not stabilize the saw by gripping the shoe.
5. Keep blades sharp. Dull or damaged blades may cause the saw to swerve or stall under pressure. Always use the appropriate type of saw blade for the workpiece material and type of cut.
6. When cutting pipe or conduit, make sure that they are free from water, electrical wiring, etc.
7. Do not touch the workpiece or the blade immediately after operating the tool. They can become very hot.
8. Be aware of hidden hazards, before cutting into walls, floors or ceilings, check for the location of wiring and pipes.
9. The blade will continue to move after releasing the switch. Always switch the tool off and wait for the saw blade to come to a complete standstill before putting the tool down.

### WARNING!

The vibration emission value during actual use of the power tool can differ from the declared value depending on the ways in which the tool is used. The vibration level may increase above the level stated.

The intended use is described in this instruction manual. The use of any accessory or attachment or performance of any operation with this tool other than those recommended in this instruction manual may present a risk of personal injury and/or damage to property.

## Safety of others

1. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
2. Children should be supervised to ensure that they do not play with the appliance.

### Residual risks.

Additional residual risks may arise when using the tool which may not be included in the enclosed safety warnings. These risks can arise from misuse, prolonged use etc.

Even with the application of the relevant safety regulations and the implementation of safety devices, certain residual risks can not be avoided. These include:

Injuries caused by touching any rotating/moving parts.

Injuries caused when changing any parts, blades or accessories.

Injuries caused by prolonged use of a tool. When using any tool for prolonged periods ensure you take regular breaks.

Impairment of hearing.

Health hazards caused by breathing dust developed when using your tool (example:- working with wood, especially oak, beech and MDF.)

## Battery Safety

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### 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

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### 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

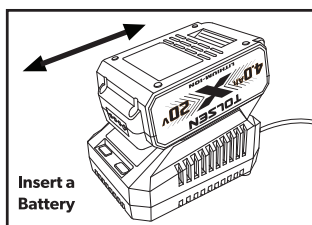
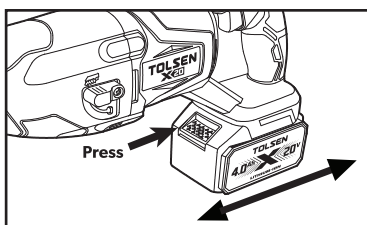
**Note:** Make sure the Battery and tool are lined up correctly. If the Battery does not slide into the tool easily, do not force it. Instead, slide the Battery out of the tool again, check the top of Battery and the tool battery slot are clean and undamaged and that the contacts are not bent

### 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.

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

**Note:** Normal charging time is approximately 125 minutes for a recently discharged 4.0Ah 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

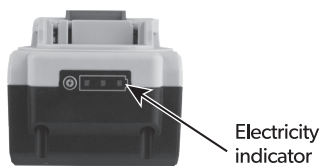
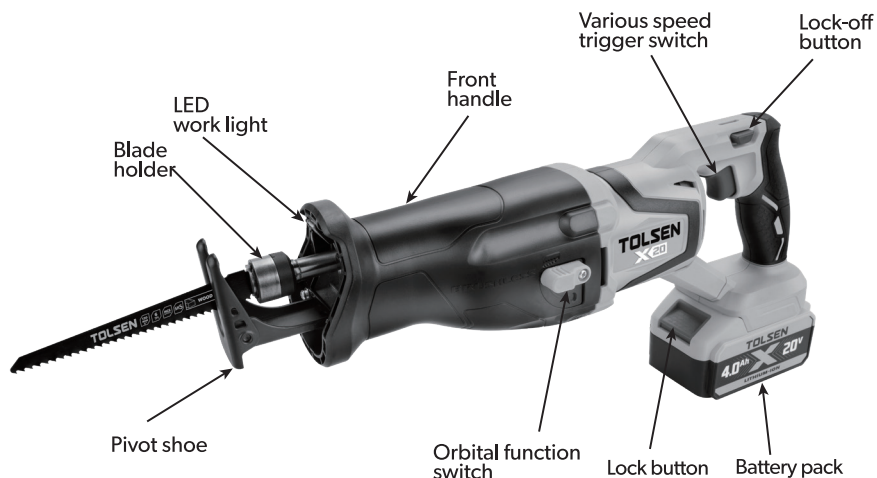
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Class II<br>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                    | 2200/3000min <sup>-1</sup>                                                        |
| Stroke length                    | 32mm(1-1/4")                                                                      |
| Cutting capacity in wood         | 255mm(10")                                                                        |
| Cutting capacity in Pipe         | 130mm(5-1/8")                                                                     |
| Battery pack (96072 not include) |                                                                                   |
| Battery pack Voltage             | 20VDC                                                                             |
| Battery capacity                 | 4.0Ah                                                                             |
| Charger (96072 not include)      |                                                                                   |
| Input Voltage                    | 110-120VAC 60Hz                                                                   |
| Output Voltage                   | 21VDC                                                                             |
| Rated output current             | 2.0A                                                                              |
| Charging Time                    | 125 minutes fast charging(4.0Ah battery)                                          |
| Protection class                 |  |



### FUNCTIONS



## OPERATING INSTRUCTIONS



### WARNING

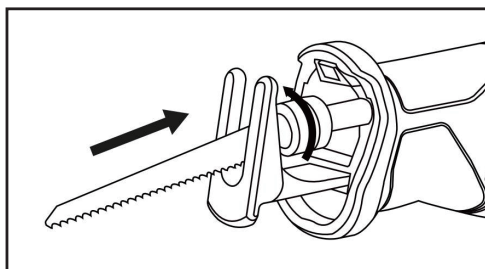
Disconnect battery pack from tool before making any assembly, adjustments or changing accessories. Such preventive safety measures reduce the risk of starting the tool accidentally.

#### Blade selection

To obtain the best performance from the saw, it is important to select the correct blade for the particular application and type of material to be cut.

### Installing and removing a blade

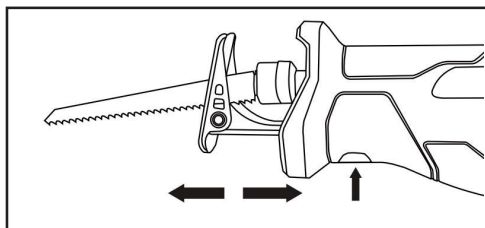
1. Rotate the Blade Holder in the direction of arrow (as shown in the photo).
2. Insert the blade shank into the slot in the Blade Holder. Ensure the small hole in the blade is on the pin in the clamp, then release your hand. Wear protective gloves while handling sharp blades.
3. Pull up on blade to make sure that it is securely locked in.
4. To remove a blade, rotate the Blade Holder in reverse direction.



### Adjusting the pivot shoe

Your tool is equipped with a pivot shoe that can slide in and out to adjust the effective stroke length for maximum control and longer blade life.

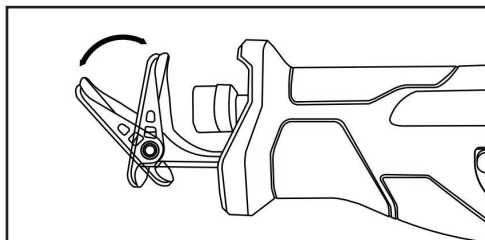
1. Remove the battery pack from the reciprocating saw.
2. Press the button for adjusting the pivot shoe. Slide out the pivot shoe plate to the desired position. Then release the button.



### Pivoting the shoe

The pivot shoe blade must be held firmly against the material being cut to reduce saw vibration, blade jumping and blade breakage. The pivot shoe tilts in order to keep as much of its surface in contact with the work surface.

1. Remove the battery pack from the reciprocating saw.
2. Firmly hold the saw and then pivot the shoe to the desired position



### WARNING

Make sure that the front end of the blade extends through the pivot shoe for the entire stroke length. Do not use specialty blades that are very short or those with a significant cant. Blade must not contact footplate. A blade which is too short or tilted could jam inside the foot and snap.

### Switching ON and OFF

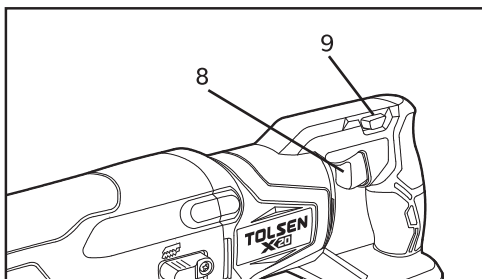
Your tool is equipped with a variable speed trigger switch (8). A lock-off button (9) is located above the variable-speed trigger switch, to prevent the saw from being activated unintentionally.

#### To switch on

1. Depress the lock-off button (9) from either the left or right side, and hold it in place.
2. Squeeze the trigger switch (8).

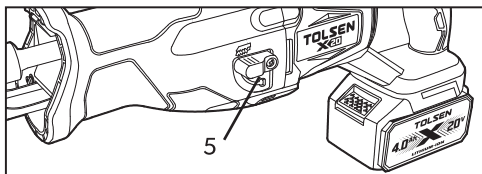
#### To switch off

Simply release the variable-speed trigger.



### Orbital function

Orbital function switch for faster cutting through wood or other applications. Turn the orbital function switch (5) in the direction of the arrow shown in the picture, and the saw blade will show the orbital action when in use.



### General cutting



#### WARNING

Hold the tool only by the plastic handle and the insulated grip area to help prevent electrical shock.

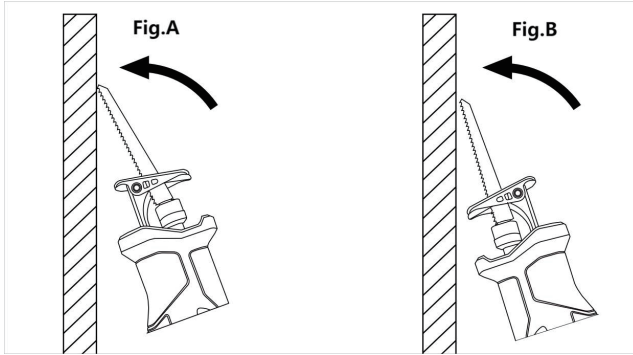
When sawing into walls or floors you may encounter electrical wiring. Sawing into a "live" wire will conduct electricity into the tool.

1. Make sure the workpiece is firmly anchored. Clamp the workpiece to prevent slipping or moving while cutting.
2. Install the appropriate type and size of blade for the workpiece material and size.
3. Adjust the pivot shoe as necessary to make sure that the blade will extend beyond the shoe and through the workpiece at all times.
4. Mark the line of cut clearly.
5. Attach the battery pack to the reciprocating saw.
6. Hold the saw firmly with one hand on the rear handle and the other placed on the insulated grip area over the front housing to help prevent electrical shock.
7. Depress the lock-off button and hold it in place. Squeeze the variable-speed trigger switch to start the saw. Allow the tool to build to the maximum desired cutting speed before applying the blade to the workpiece.
8. Place the pivot shoe firmly against the workpiece and move the blade along the cutting line. Use only enough steady pressure on the blade to keep the saw cutting. Do not force the tool.
9. Reduce pressure as the blade comes to the end of the cut.

**NOTICE:** When sawing fiberglass, plaster, wallboard, or spackling compound, clean the motor vents frequently with a vacuum or with compressed air. These materials are highly abrasive and may accelerate the wear on motor bearings and brushes.

## Plunge cutting

Your reciprocating saw is ideal for plunge cutting directly into softer material that cannot be cut from an edge, such as in wood or light building materials for walls or floors. **DO NO PLUNGE CUT IN METAL SURFACES.** Plunge cutting may be done two ways, depending on how the blade is inserted.



**Fig A How to plunge cut with the teeth of the blade facing up.**

**Fig B How to plunge cut with the teeth of the blade facing down.**

1. Mark the line of cut clearly.
2. Set the tool with one edge of the footplate firmly against the material.
3. Choose a convenient starting point inside the area to be cut out and place the tip of the blade over that point.
4. Rest front edge of pivot shoe on work and hold firmly in position.
5. Depress the lock-off button, then pull trigger switch to start the cutting action.
6. With saw blade is at full cutting speed, slowly tilt saw downward until tip of blade starts cutting work.
7. After blade penetrates through work, continue sawing along the marked cutting line

## Metal cutting

The saw can be used to cut metals such as sheet steel, pipe, steel rods, aluminium, brass, and copper. Be careful not to twist or bend the saw blade. **DO NOT FORCE.**

Apply a lubricant for easier, smoother, faster cutting and longer blade life.

- For non-ferrous metals, aluminium, bronze or brass, use a stick wax on the blade.
- For ferrous metals, iron and steel, use machine or cutting oil along the surface to be cut.

**WARNING!** To avoid possible serious injury:

1. NEVER use gasoline since normal sparking of motor could ignite fumes.
2. Clamp the work firmly and cut close to the clamping point to eliminate any vibration of the work being cut.
3. When cutting conduit pipe or angle iron, clamp work in a vise if possible and cut close to the vise.
4. To cut thin sheet material, sandwich the material between hardboard or plywood and clamp the layers to eliminate vibration and material tearing.

### 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.

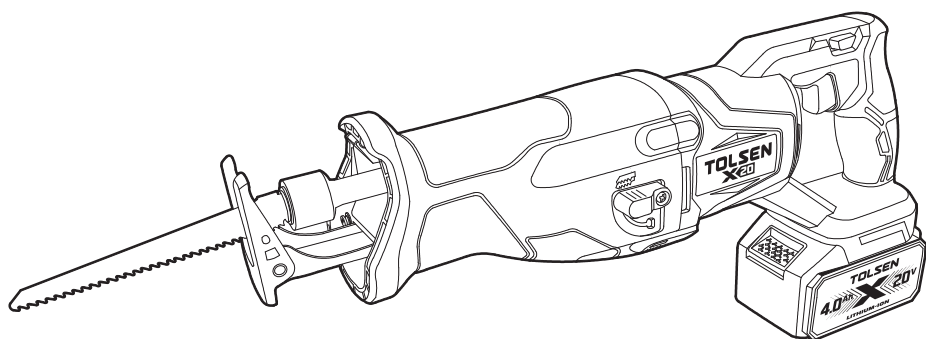


- Do not dispose of power tools, or other waste electrical and electronic equipment (WEEE), with household waste.
- Contact your local waste disposal authority for information on the correct way to dispose of power tools

## TROUBLESHOOTING

| problem                          | possible causes                                                                                                                                                                                                                                                                                                                                                                                                                               | Likely Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tool will not start.             | <ol style="list-style-type: none"> <li>1. Battery Pack not properly connected.</li> <li>2. Battery Pack not properly charged.</li> <li>3. Battery Pack worn out.</li> <li>4. Internal damage or wear. (Carbon brushes or Trigger, for example.)</li> <li>5. Contact chips of switch or battery pack deformed.</li> <li>6. Battery is not suitable for TOLSEN X20V lithium-ion power platform system</li> <li>7. Overload operation</li> </ol> | <ol style="list-style-type: none"> <li>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.</li> <li>2. Make sure Charger is connected and operating properly. Give enough time for Battery Pack to recharge properly.</li> <li>3. Dispose of old Battery Pack properly or recycle. Replace Battery Pack.</li> <li>4. Have technician service tool.</li> <li>5. Replace switch or Battery Pack</li> <li>6. Replace the battery of TOLSEN X20V</li> <li>7. Stop to use and restart the machine after cooling.</li> </ol> |
| Tool operates slowly.            | <ol style="list-style-type: none"> <li>1. Excess pressure applied to workpiece.</li> <li>2. Battery Pack wearing out.</li> <li>3. Low battery</li> </ol>                                                                                                                                                                                                                                                                                      | <ol style="list-style-type: none"> <li>1. Decrease pressure, allow tool to do the work.</li> <li>2. Dispose of old Battery Pack properly or recycle. Replace Battery Pack.</li> <li>3. Recharge or replace a fully charged battery</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Performance decreases over time. | <ol style="list-style-type: none"> <li>1. Battery Pack worn out.</li> <li>2. Blade dull or damaged.</li> </ol>                                                                                                                                                                                                                                                                                                                                | <ol style="list-style-type: none"> <li>1. Dispose of old Battery Pack properly or recycle. Replace Battery Pack.</li> <li>2. Keep Blade sharp. Replace as needed.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Excessive noise or rattling.     | Internal damage or wear.(Gear or Bearings,for example.)                                                                                                                                                                                                                                                                                                                                                                                       | Have technician service tool.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Overheating.                     | <ol style="list-style-type: none"> <li>1. Forcing tool to work too fast.</li> <li>2. Blocked motor housing vents.</li> </ol>                                                                                                                                                                                                                                                                                                                  | <ol style="list-style-type: none"> <li>1. Allow tool to work at its own rate.</li> <li>2. Clean the Blocked motor housing vents</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |





## SUZHOU TOLSEN TOOLS CO.,LTD.

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