

INSTRUCTION MANUAL



Cordless Oil-Pulse Driver

DTS131
DTS141



Read before use.

SPECIFICATIONS

Model		DTS131	DTS141
Capacities	Machine screw	4 mm - 8 mm	4 mm - 8 mm
	Standard bolt	5 mm - 8 mm	5 mm - 8 mm
No load speed	Impact mode (Hard)	0 - 3,000 min ⁻¹	0 - 3,200 min ⁻¹
	Impact mode (Medium)	0 - 2,000 min ⁻¹	0 - 2,000 min ⁻¹
	Impact mode (Soft)	0 - 1,200 min ⁻¹	0 - 1,200 min ⁻¹
	T mode	0 - 1,200 min ⁻¹	0 - 1,200 min ⁻¹
Impacts per minute	Impact mode (Hard)	0 - 2,500 min ⁻¹	0 - 2,700 min ⁻¹
	Impact mode (Medium)	0 - 2,200 min ⁻¹	0 - 2,200 min ⁻¹
	Impact mode (Soft)	0 - 1,400 min ⁻¹	0 - 1,400 min ⁻¹
	T mode	0 - 1,400 min ⁻¹	0 - 1,400 min ⁻¹
Rated voltage		D.C. 14.4 V	D.C. 18 V
Overall length		136 mm	136 mm
Net weight		1.2 - 1.4 kg	1.3 - 1.6 kg

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications may differ from country to country.
- The weight may differ depending on the attachment(s), including the battery cartridge. The lightest and heaviest combination, according to EPTA-Procedure 01/2014, are shown in the table.

Applicable battery cartridge and charger

Battery cartridge	D.C.14.4 V Model	BL1415N / BL1430 / BL1430B / BL1440 / BL1450 / BL1460B
	D.C.18 V Model	BL1815N / BL1820 / BL1820B / BL1830 / BL1830B / BL1840 / BL1840B / BL1850 / BL1850B / BL1860B
Charger		DC18RC / DC18RD / DC18RE / DC18SD / DC18SE / DC18SF

- Some of the battery cartridges and chargers listed above may not be available depending on your region of residence.

⚠ WARNING: Only use the battery cartridges and chargers listed above. Use of any other battery cartridges and chargers may cause injury and/or fire.

Symbols

The following show the symbols used for the equipment. Be sure that you understand their meaning before use.



Read instruction manual.



Only for EU countries
Do not dispose of electric equipment or battery pack together with household waste material!
In observance of the European Directives, on Waste Electric and Electronic Equipment and Batteries and Accumulators and Waste Batteries and Accumulators and their implementation in accordance with national laws, electric equipment and batteries and battery pack(s) that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Intended use

The tool is intended for screw driving in wood, metal and plastic.

Noise

The typical A-weighted noise level determined according to EN62841:

(In soft impact force grade)

Sound pressure level (L_{pA}) : 77 dB (A)

Uncertainty (K) : 3 dB (A)

The noise level under working may exceed 80 dB (A).

NOTE: The declared noise emission value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared noise emission value(s) may also be used in a preliminary assessment of exposure.

⚠ WARNING: Wear ear protection.

⚠ WARNING: The noise emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

⚠ WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

Vibration

The vibration total value (tri-axial vector sum) determined according to EN62841:

(In soft impact force grade)

Work mode : impact tightening of fasteners of the maximum capacity of the tool

Vibration emission (a_{hv}) : 7.0 m/s²

Uncertainty (K) : 1.5 m/s²

NOTE: The declared vibration total value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared vibration total value(s) may also be used in a preliminary assessment of exposure.

⚠ WARNING: The vibration emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

⚠ WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

EC Declaration of Conformity

For European countries only

The EC declaration of conformity is included as Annex A to this instruction manual.

General power tool safety warnings

⚠ WARNING: Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

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.

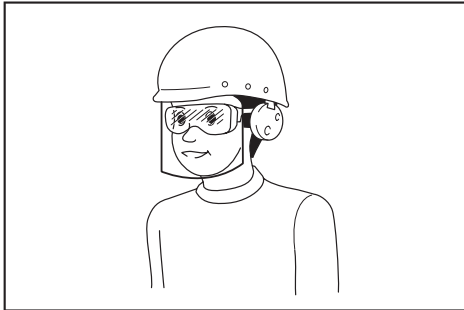
Electrical safety

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) protected supply.** Use of an RCD 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 a 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.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
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 and clothing 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.
9. **Always wear protective goggles to protect your eyes from injury when using power tools. The goggles must comply with ANSI Z87.1 in the USA, EN 166 in Europe, or AS/NZS 1336 in Australia/New Zealand. In Australia/New Zealand, it is legally required to wear a face shield to protect your face, too.**



It is an employer's responsibility to enforce the use of appropriate safety protective equipments by the tool operators and by other persons in the immediate working area.

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 does 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 remove the battery pack, if detachable, 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 and accessories. 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.
9. **When using the tool, do not wear cloth work gloves which may be entangled.** The entanglement of cloth work gloves in the moving parts may result in personal injury.

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 designed 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 accidentally 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.**

Cordless impact driver safety warnings

1. **Hold the 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.
2. **Always be sure you have a firm footing. Be sure no one is below when using the tool in high locations.**
3. **Hold the tool firmly.**
4. **Wear ear protectors.**
5. **Do not touch the bit or the workpiece immediately after operation. They may be extremely hot and could burn your skin.**
6. **Keep hands away from rotating parts.**
7. **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
8. **Hold the 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.

SAVE THESE INSTRUCTIONS.

⚠WARNING: DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to safety rules for the subject product.

MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

Important safety instructions for battery cartridge

1. **Before using battery cartridge, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.**
2. **Do not disassemble battery cartridge.**
3. **If operating time has become excessively shorter, stop operating immediately. It may result in a risk of overheating, possible burns and even an explosion.**
4. **If electrolyte gets into your eyes, rinse them out with clear water and seek medical attention right away. It may result in loss of your eyesight.**
5. **Do not short the battery cartridge:**
 - (1) **Do not touch the terminals with any conductive material.**
 - (2) **Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.**
 - (3) **Do not expose battery cartridge to water or rain.**

A battery short can cause a large current flow, overheating, possible burns and even a breakdown.

6. **Do not store the tool and battery cartridge in locations where the temperature may reach or exceed 50 °C (122 °F).**
7. **Do not incinerate the battery cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.**
8. **Be careful not to drop or strike battery.**
9. **Do not use a damaged battery.**
10. **The contained lithium-ion batteries are subject to the Dangerous Goods Legislation requirements.**

For commercial transports e.g. by third parties, forwarding agents, special requirement on packaging and labeling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is required. Please also observe possibly more detailed national regulations.

Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging.
11. **When disposing the battery cartridge, remove it from the tool and dispose of it in a safe place. Follow your local regulations relating to disposal of battery.**
12. **Use the batteries only with the products specified by Makita.** Installing the batteries to non-compliant products may result in a fire, excessive heat, explosion, or leak of electrolyte.
13. **If the tool is not used for a long period of time, the battery must be removed from the tool.**

SAVE THESE INSTRUCTIONS.

⚠CAUTION: Only use genuine Makita batteries. Use of non-genuine Makita batteries, or batteries that have been altered, may result in the battery bursting causing fires, personal injury and damage. It will also void the Makita warranty for the Makita tool and charger.

Tips for maintaining maximum battery life

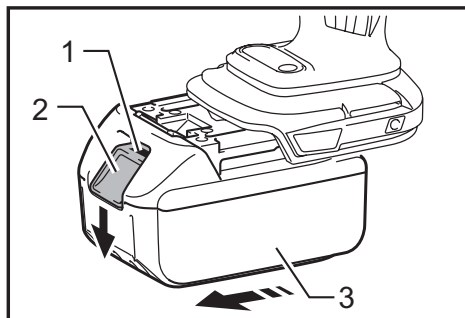
1. **Charge the battery cartridge before completely discharged. Always stop tool operation and charge the battery cartridge when you notice less tool power.**
2. **Never recharge a fully charged battery cartridge. Overcharging shortens the battery service life.**
3. **Charge the battery cartridge with room temperature at 10 °C - 40 °C (50 °F - 104 °F). Let a hot battery cartridge cool down before charging it.**
4. **Charge the battery cartridge if you do not use it for a long period (more than six months).**

FUNCTIONAL DESCRIPTION

⚠ CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before adjusting or checking function on the tool.

Installing or removing battery cartridge



► 1. Red indicator 2. Button 3. Battery cartridge

⚠ CAUTION:

- Always switch off the tool before installing or removing of the battery cartridge.
- **Hold the tool and the battery cartridge firmly when installing or removing battery cartridge.** Failure to hold the tool and the battery cartridge firmly may cause them to slip off your hands and result in damage to the tool and battery cartridge and a personal injury.

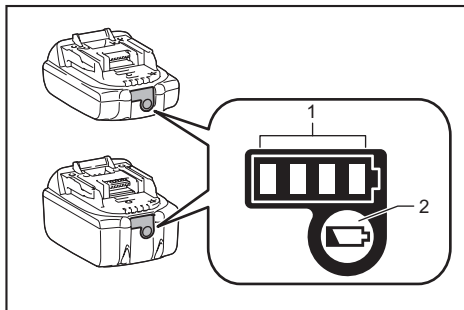
To remove the battery cartridge, slide it from the tool while sliding the button on the front of the cartridge. To install the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Insert it all the way until it locks in place with a little click. If you can see the red indicator on the upper side of the button, it is not locked completely.

⚠ CAUTION:

- Always install the battery cartridge fully until the red indicator cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Do not install the battery cartridge forcibly. If the cartridge does not slide in easily, it is not being inserted correctly.



















Indicating the remaining battery capacity

Only for battery cartridges with the indicator



► 1. Indicator lamps 2. Check button

Press the check button on the battery cartridge to indicate the remaining battery capacity. The indicator lamps light up for a few seconds.

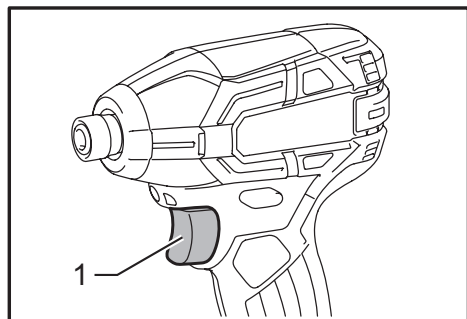
Indicator lamps			Remaining capacity
 Lighted	 Off	 Blinking	
			75% to 100%
			50% to 75%
			25% to 50%
			0% to 25%
			Charge the battery.
 	 	 	The battery may have malfunctioned.

NOTE: Depending on the conditions of use and the ambient temperature, the indication may differ slightly from the actual capacity.

Switch action

⚠ CAUTION:

- Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.



► 1. Switch trigger

To start the tool, simply pull the switch trigger. Tool speed is increased by increasing pressure on the switch trigger. Release the switch trigger to stop.

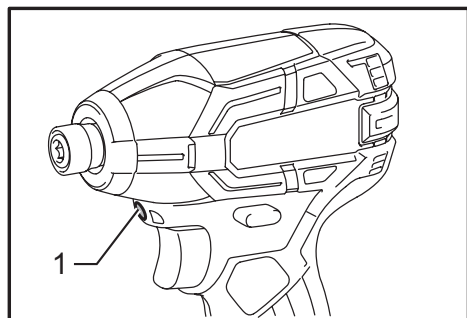
NOTE:

- The tool automatically stops if you keep pulling the switch trigger for about 360 seconds.

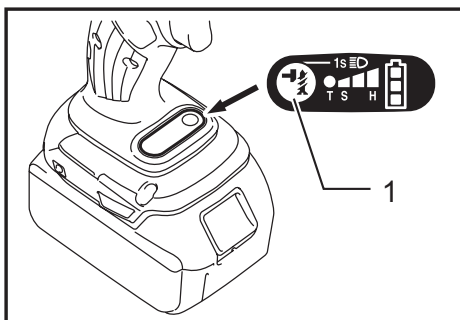
Lighting up the front lamp

⚠ CAUTION:



- Do not look in the light or see the source of light directly.



► 1. Lamp



► 1. Button

To turn on the lamp status, press the button  for few seconds. To turn off the lamp status, press the button  for few seconds again.

With the lamp status ON, pull the switch trigger to turn on the lamp. To turn off, release it. The lamp goes out approximately 10 seconds after releasing the switch trigger.

With the lamp status OFF, the lamp will not turn on even if the trigger is pulled.

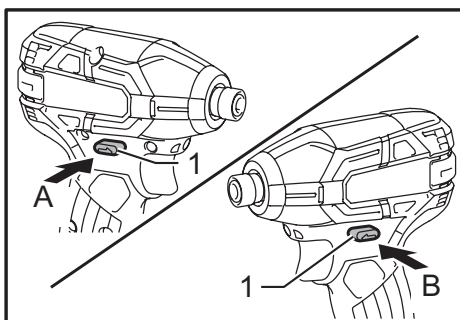
NOTE:

- To confirm the lamp status, pull the trigger. When the lamp lights up by pulling the switch trigger, the lamp status is ON. When the lamp does not come on, the lamp status is OFF.
- While pulling the switch trigger, the lamp status cannot be changed.
- For approximately 10 seconds after releasing the switch trigger, the lamp status can be changed.

Reversing switch action

⚠ CAUTION:

- Always check the direction of rotation before operation.
- Use the reversing switch only after the tool comes to a complete stop. Changing the direction of rotation before the tool stops may damage the tool.
- When not operating the tool, always set the reversing switch lever to the neutral position.



► 1. Reversing switch lever

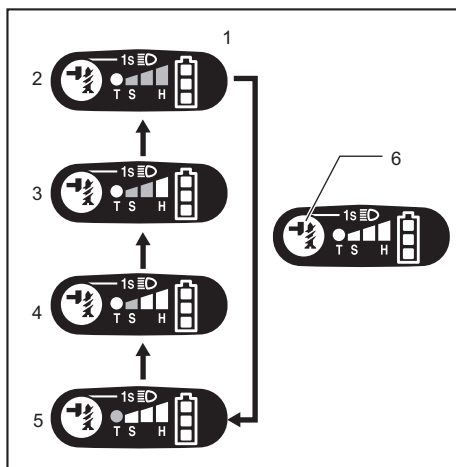
This tool has a reversing switch to change the direction of rotation. Depress the reversing switch lever from the A side for clockwise rotation or from the B side for counterclockwise rotation. When the reversing switch lever is in the neutral position, the switch trigger cannot be pulled.

Characteristics of Cordless Oil-impulse Driver

The Makita Cordless Oil-impulse Driver is a hydraulically operated impact tool using oil viscosity to produce impacts. Since oil viscosity changes with the temperature, be aware of the following two points when operating the tool.

1. Avoid using the tool below $-10\text{ }^{\circ}\text{C}$ ($14\text{ }^{\circ}\text{F}$) of temperature. When the tool temperature goes down below the degrees, this may cause damage to the motor of tool due to poor impulse.
2. When the tool becomes too hot, it may take longer to set screws.
3. The tool can overheat, causing a failure or hand burn if you operate it continuously for long hours. Let the tool cool off for more than 30 minutes before changing batteries during a long, continuous job.

Changing the impact force



1. Changed in four steps
2. Hard
3. Medium
4. Soft
5. T mode
6. Button

Impact force grade displayed on panel	Maximum blows		Application	Work
	DTS131	DTS141		
Hard 	2,500 (min ⁻¹)	2,700 (min ⁻¹)	Tightening when force and speed are desired.	Tightening in underwork material / Tightening long screws.
Medium 	2,200 (min ⁻¹)	2,200 (min ⁻¹)	Tightening when a good finishing is needed.	Tightening in the finishing board, plaster board.
Soft 	1,400 (min ⁻¹)	1,400 (min ⁻¹)	Tightening when excessive tightening need to be avoided because of potentially clogged female screw and broken or damaged screw head.	Tightening sash screw / Tightening small screws such as M6. Tightening bolt up to M8.
T mode 	1,400 (min ⁻¹)	1,400 (min ⁻¹)	Tightening when speed and good finishing are needed.	Tightening when speed and good finishing are needed. Tightening bolt up to M8.

The impact force can be changed in four steps: hard, medium, soft, and T mode.

This allows a tightening suitable to the work.

Every time the button is pressed, the number of blows changes in four steps.

For approximately one minute after releasing the switch trigger, the impact force can be changed.

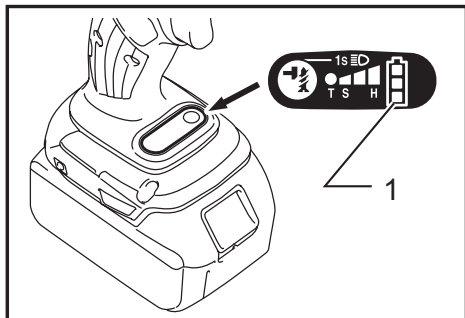
"T" is a special mode for fastening self drilling screws and bolts. In this mode, the tool starts to drive a screw with faster rotation, which is suited for drilling with the self-drilling -screw tip. Once the tool starts to tighten the screw, it impacts in soft force grade.

NOTE:

- When all lamps on the switch panel go out, the tool is turned off to save the battery power. The impact force grade can be checked by pulling the switch trigger to the extent that the tool does not operate.
- While pulling the switch trigger, the impact force grade cannot be changed.
- The tool automatically stops to prevent the damages on the parts during heavy load operation with hard or medium impact force grade. In that case select the soft or T mode impact force grade.

Indicating the remaining battery capacity

(Country specific)



► 1. Battery capacity

When you pull the switch trigger, the LED display shows the remaining battery capacity. The remaining battery capacity is shown as the following table.

Battery indicator status	Remaining battery capacity
█:On □:Off █:Blinking	
	50% - 100%
	20% - 50%
	0% - 20%
	Charge the battery

NOTE:

- Approximately one minute after the motor stops, the indicators go off to save the battery power. To check the remaining battery capacity, slightly pull the switch trigger.

Tool / battery protection system

The tool is equipped with a tool/battery protection system. This system automatically cuts off power to the motor to extend tool and battery life.

The tool will automatically stop during operation if the tool or battery are placed under one of the following conditions. In some conditions, the indicator lights up.

Overload protection

When the tool is operated in a manner that causes it to draw an abnormally high current, the tool automatically stops without any indications. In this situation, turn the tool off and stop the application that caused the tool to become overloaded. Then turn the tool on to restart.

Overheat protection for tool

When the tool is overheated, the tool stops automatically and the battery indicator shows following state. In this situation, let the tool cool before turning the tool on again.

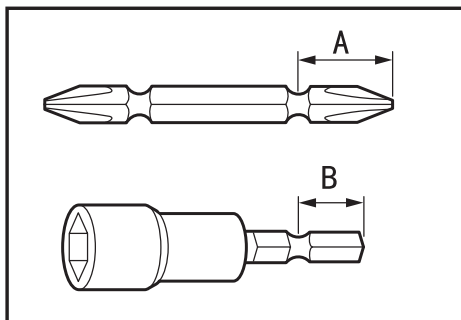
Battery indicator	█:On	□:Off	█:Blinking
	Tool is overheated		

ASSEMBLY

⚠CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before carrying out any work on the tool.

Installing or removing driver bit or socket bit



Use only bits that has inserting portion shown in the figure.

For tool with shallow bit hole

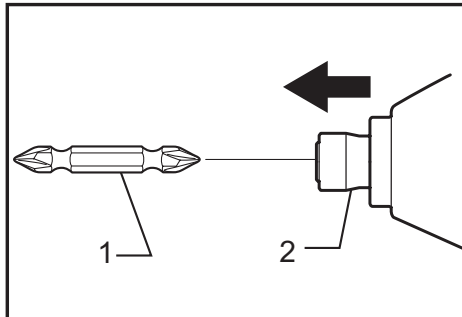
A=12 mm B=9 mm	Use only these type of bit. Follow the procedure (1). (Note) Bit-piece is not necessary.
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For tool with deep bit hole

A=17 mm B=14 mm	To install these types of bits, follow the procedure (1).
A=12 mm B=9 mm	To install these types of bits, follow the procedure (2). (Note) Bit-piece is necessary for installing the bit.

Procedure 1

For tool with normal sleeve



► 1. Bit 2. Sleeve

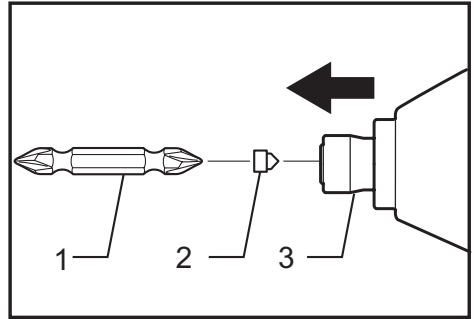
To install the bit, pull the sleeve in the direction of the arrow and insert the bit into the sleeve as far as it will go. Then release the sleeve to secure the bit.

For tool with one-touch type sleeve

To install the bit, insert the bit into the sleeve as far as it will go.

Procedure 2

In addition to the procedure(1) above, insert the bit-piece into the sleeve with its pointed end facing in.



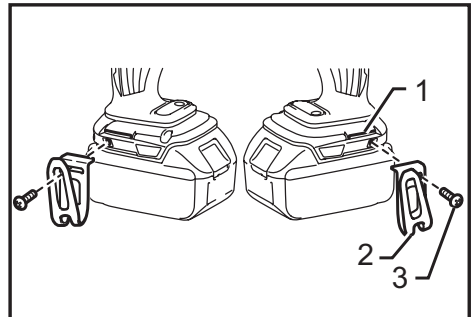
► 1. Bit 2. Bit-piece 3. Sleeve

To remove the bit, pull the sleeve in the direction of the arrow and pull the bit out.

NOTE:

- If the bit is not inserted deep enough into the sleeve, the sleeve will not return to its original position and the bit will not be secured. In this case, try re-inserting the bit according to the instructions above.
- When it is difficult to insert the bit, pull the sleeve and insert it into the sleeve as far as it will go.
- After inserting the bit, make sure that it is firmly secured. If it comes out, do not use it.

Hook

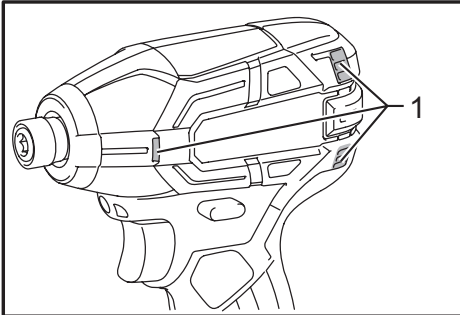


► 1. Groove 2. Hook 3. Screw

The hook is convenient for temporarily hanging the tool. This can be installed on either side of the tool.

To install the hook, insert it into a groove in the tool housing on either side and then secure it with a screw. To remove, loosen the screw and then take it out.

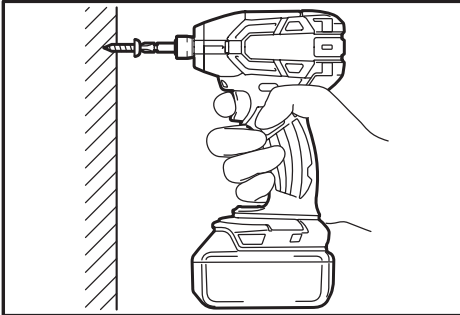
OPERATION



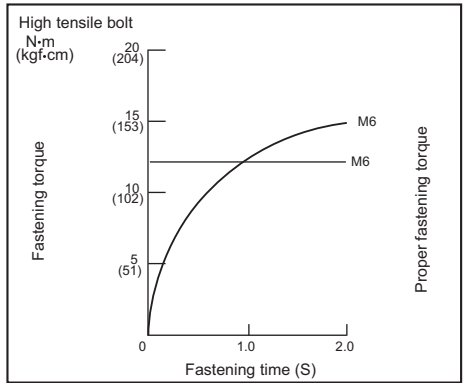
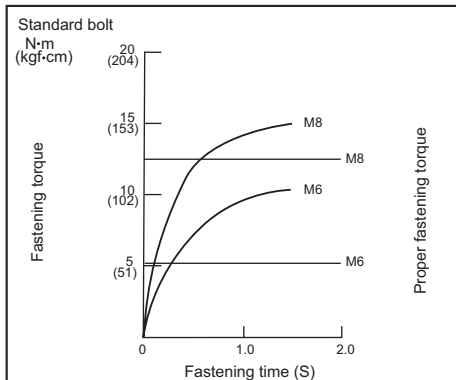
► 1. Vent

CAUTION:

- Never obstruct the air vents on the side of the tool for cooling down oil unit and motor during operation. Failure to do so may cause the tool excessive heat and damage.



The proper fastening torque may differ depending upon the kind or size of the screw/bolt, the material of the workpiece to be fastened, etc. The relation between fastening torque and fastening time is shown in the figures.



Hold the tool firmly and place the point of the driver bit in the screw head. Apply forward pressure to the tool to the extent that the bit will not slip off the screw and turn the tool on to start operation.

NOTE:

- Use the proper bit for the head of the screw/bolt that you wish to use.
- Choose a proper impact force and carefully adjust pressure on the switch trigger so that the screw is not damaged.
- Hold the tool pointed straight at the screw.
- For tightening bolt, select the soft or T mode impact force grade.
- If the impact force is too strong you tighten the screw for a time longer than shown in the figures, the screw or the point of the driver bit may be overstressed, stripped, damaged, etc. Before starting your job, always perform a test operation to determine the proper fastening time for your screw.

The fastening torque is affected by a wide variety of factors including the following. After fastening, always check the torque with a torque wrench.

1. When the battery cartridge is discharged almost completely, voltage will drop and the fastening torque will be reduced.
2. Driver bit or socket bit
Failure to use the correct size driver bit or socket bit will cause a reduction in the fastening torque.
3. Bolt
 - Even though the torque coefficient and the class of bolt are the same, the proper fastening torque will differ according to the diameter of bolt.
 - Even though the diameters of bolts are the same, the proper fastening torque will differ according to the torque coefficient, the class of bolt and the bolt length.
4. The manner of holding the tool or the material of driving position to be fastened will affect the torque.
5. Operating the tool at low speed will cause a reduction in the fastening torque.

MAINTENANCE

CAUTION:

- Always be sure that the tool is switched off and the battery cartridge is removed before attempting to perform inspection or maintenance except for the following troubleshooting related to the light.
- Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized Service Centers, always using Makita replacement parts.

OPTIONAL ACCESSORIES

CAUTION:

- These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. Only use accessory or attachment for its stated purpose.

If you need any assistance for more details regarding these accessories, ask your local Makita Service Center.

- Screw bits
- Socket bits
- Hook
- Plastic carrying case
- Makita genuine battery and charger
- Bit-piece
- Battery protector
- Tool hanger

NOTE:

- Some items in the list may be included in the tool package as standard accessories. They may differ from country to country.

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