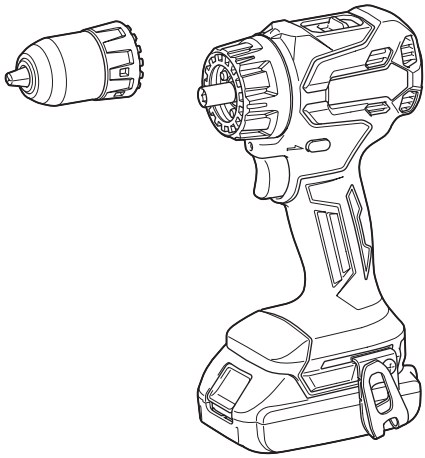
ENGLISH: Original instructions

INSTRUCTION MANUAL

Cordless Driver Drill

DDF491



Read before use.

SPECIFICATIONS

Model:		DDF491
Drilling capacities	Steel	13 mm
	Wood	Auger bit: 38 mm Self-feed bit: 38 mm Hole saw: 51 mm
Fastening capacities	Wood screw	6 mm x 75 mm
	Machine screw	M6
No load speed	High (2)	0 - 1,900 min^{-1}
	Low (1)	0 - 500 min^{-1}
Overall length (with drill chuck attachment)		186 mm
Rated voltage		D.C. 18 V
Net weight (without attachment)		1.2 - 2.1 kg
Individual attachment weight	Drill chuck attachment	0.35 kg
	Angle attachment	0.28 kg
	Offset attachment	0.30 kg
	Hex bit attachment	0.13 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 net weight value includes the lightest and heaviest combination of the attachment(s) for normal and safe use and battery cartridge(s) which are specified in the instruction manual.

Applicable battery cartridge and charger

-	LXT	LXT BASIC
Battery cartridge	BL1815N / BL1820B / BL1830B / BL1840B / BL1850B / BL1860B	BLB182
Charger	DC18RC / DC18RD / DC18RE / DC18SD / DC18SE / DC18SF / DC18SH / DC18WC	DCB18WA

- Some of the battery cartridges and chargers listed above may not be available depending on your region of residence.
- Charge the LXT battery cartridge with the LXT battery charger and the LXT BASIC battery cartridge with the LXT BASIC battery charger.

⚠***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 followings show the symbols which may be used for the equipment. Be sure that you understand their meaning before use.

Read instruction manual.

Only for EU countries
Due to the presence of hazardous components in the equipment, waste electrical and electronic equipment, accumulators and batteries may have a negative impact on the environment and human health.
Do not dispose of electrical and electronic appliances or batteries with household waste!
In accordance with the European Directive on waste electrical and electronic equipment and on accumulators and batteries and waste accumulators and batteries, as well as their adaptation to national law, waste electrical equipment, batteries and accumulators should be stored separately and delivered to a separate collection point for municipal waste, operating in accordance with the regulations on environmental protection.
This is indicated by the symbol of the crossed-out wheeled bin placed on the equipment.

Intended use

The tool is intended for screw driving and drilling in wood, metal, and plastic. For drilling, use a drill chuck attachment.

Noise

The typical A-weighted noise level determined according to EN62841-2-1:
Sound pressure level (L_{pA}) : 79 dB (A)
Sound power level (L_{WA}) : 87 dB (A)
Uncertainty (K) : 3 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) can 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 total value(s) depending on the ways in which the tool is used.

⚠*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 following table shows the continuous vibration total value (tri-axial vector sum) determined according to applicable standard.

Work mode: drilling into metal

Attachment type	Vibration emission ($a_{h,D}$) : (m/s^2)	Uncertainty (K) : (m/s^2)	Applicable standard / Test condition
Drill chuck attachment	2.0	1.5	EN62841-2-1

Work mode: screwdriving without impact

Attachment type	Vibration emission (a_h) : (m/s^2)	Uncertainty (K) : (m/s^2)	Applicable standard / Test condition
Angle attachment	1.0	1.5	EN62841-2-2
Offset attachment	0.9	1.5	EN62841-2-2
Hex bit attachment	0.8	1.5	EN62841-2-2

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) can 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 total value(s) depending on the ways in which the tool is used.

⚠*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).

The following table shows the mean values of the peak amplitude of the acceleration from repeated shock vibrations, p_F, with corresponding uncertainty (K) determined according to applicable standard.

Work mode: drilling into metal

Attachment type	p_F (m/s^2)	Uncertainty K (m/s^2)	Applicable standard / Test condition
Drill chuck attachment	36	2	EN62841-2-1

Work mode: screwdriving without impact

Attachment type	p_F (m/s^2)	Uncertainty K (m/s^2)	Applicable standard / Test condition
Angle attachment	46	4	EN62841-2-2
Offset attachment	40	3	EN62841-2-2
Hex bit attachment	38	7	EN62841-2-2

NOTE: These declared values should not be used to determine hand arm vibration exposure.

Declarations of Conformity

For European countries only

The EU/UK Declaration of Conformity can be accessed from the following URL.

https://support.makita.biz/doc/doc_index.html

SAFETY WARNINGS

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

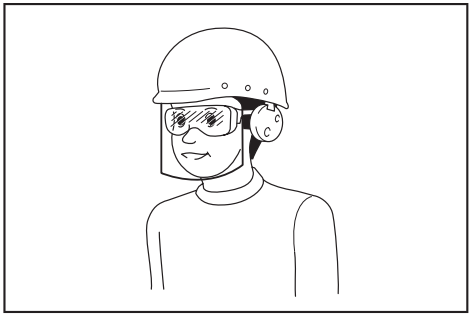
1. **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep children and bystanders 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 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 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 driver drill safety warnings

Safety instructions for all operations

1. **Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory or fasteners may contact hidden wiring.** Cutting accessory or 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. **Keep hands away from rotating parts.**
5. **Do not leave the tool running. Operate the tool only when hand-held.**
6. **Do not touch the drill bit, the driver bit, the workpiece, or chips immediately after operation. They may be extremely hot and may burn your skin.**
7. **Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.**
8. **If the drill bit cannot be loosened even you open the jaws, use pliers to pull it out.** In such a case, pulling out the drill bit by hand may result in injury by its sharp edge.
9. **Make sure there are no electrical cables, water pipes, gas pipes etc. that could cause a hazard if damaged by use of the tool.**
10. **When the drill bit gets stuck in the workpiece, switch off the tool immediately. Failure to do so may cause a strong torque reaction and result in injury.**

Safety instructions when using long drill bits

1. **Never operate at higher speed than the maximum speed rating of the drill bit.** At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.
2. **Always start drilling at low speed and with the bit tip in contact with the workpiece.** At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.
3. **Apply pressure only in direct line with the bit and do not apply excessive pressure.** Bits can bend causing breakage or loss of control, resulting in personal injury.

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 or tamper with the battery cartridge.** It may result in a fire, excessive heat, or explosion.
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 and use 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. **Do not nail, cut, crush, throw, drop the battery cartridge, or hit against a hard object to the battery cartridge.** Such conduct may result in a fire, excessive heat, or explosion.
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.**
14. **During and after use, the battery cartridge may take on heat which can cause burns or low temperature burns. Pay attention to the handling of hot battery cartridges.**
15. **Do not touch the terminal of the tool immediately after use as it may get hot enough to cause burns.**
16. **Do not allow chips, dust, or soil stuck into the terminals, holes, and grooves of the battery cartridge.** It may cause heating, catching fire, burst and malfunction of the tool or battery cartridge, resulting in burns or personal injury.
17. **Unless the tool supports the use near high-voltage electrical power lines, do not use the battery cartridge near high-voltage electrical power lines.** It may result in a malfunction or breakdown of the tool or battery cartridge.
18. **Keep the battery away from children.**

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.

NOTICE: Makita is not responsible for any accidents resulting from the use of non-genuine Makita batteries or batteries that have been modified. Genuine Makita batteries have been rigorously evaluated for compatibility with Makita tools and chargers, in line with applicable legislation and safety standards.

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. **When not using the battery cartridge, remove it from the tool or the charger.**
5. **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

⚠*CAUTION:* Always switch off the tool before installing or removing of the battery cartridge.

⚠*CAUTION:* 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 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 as shown in the figure, it is not locked completely.

To remove the battery cartridge, slide it from the tool while sliding the button on the front of the cartridge.

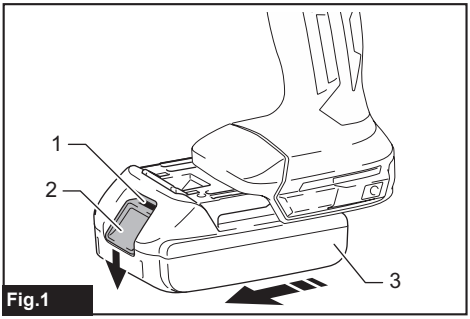


Fig.1

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

⚠*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.

⚠*CAUTION:* 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

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

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

LXT

Only for battery cartridges with the indicator

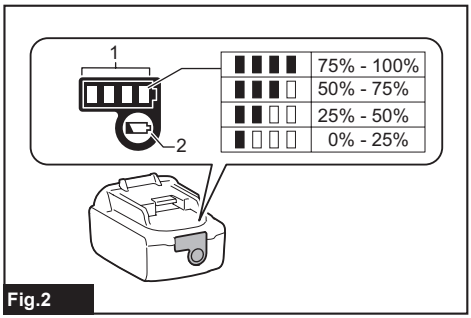


Fig.2

► **1.** Indicator lamps **2.** Check button

Indicator lamps	Error description
	The battery protection system works. Charge the battery, or check other factors of the battery protection system.
	The battery may have malfunctioned.

LXT BASIC

Country specific

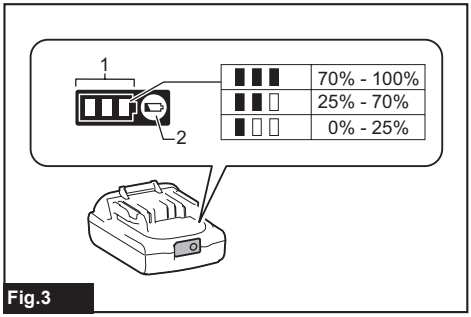


Fig.3

► **1.** Indicator lamps **2.** Check button

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 is placed under one of the following conditions.

Overload protection

When the tool/battery is operated in a manner that causes it to draw an abnormally high current, the tool stops automatically. 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

When the tool is overheated, the tool stops automatically and the lamp blinks. In this situation, let the tool/battery cool before turning the tool on again.

Overdischarge protection

When the battery capacity is not enough, the tool stops automatically. In this case, remove the battery from the tool and charge the battery.

Protections against other causes

Protection system is also designed for other causes that could damage the tool and allows the tool to stop automatically. Take all the following steps to clear the causes, when the tool has been brought to a temporary halt or stop in operation.

1. Turn the tool off, and then turn it on again to restart.
2. Charge the battery(ies) or replace it/them with recharged battery(ies).
3. Let the tool and battery(ies) cool down.

If no improvement can be found by restoring protection system, then contact your local Makita Service Center.

Electric brake

This tool is equipped with an electric brake. If the tool consistently fails to quickly stop after the switch trigger is released, have the tool serviced at a Makita service center.

Switch action

⚠*CAUTION:* Before installing the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

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.

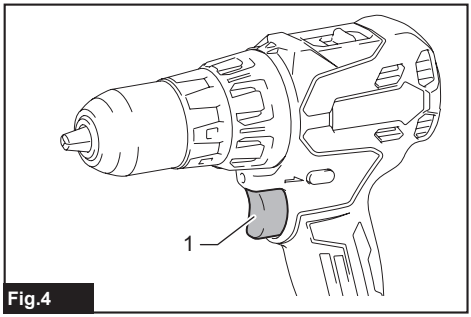


Fig.4

► **1.** Switch trigger

NOTE: The tool automatically stops if you keep pulling the switch trigger for about 6 minutes.

Lighting up the front lamp

⚠*CAUTION:* Do not look into the light or look directly at the light source.

Pull the switch trigger to light up the lamp. The lamp keeps on lighting while the switch trigger is being pulled. The lamp goes out approximately 10 seconds after releasing the switch trigger.

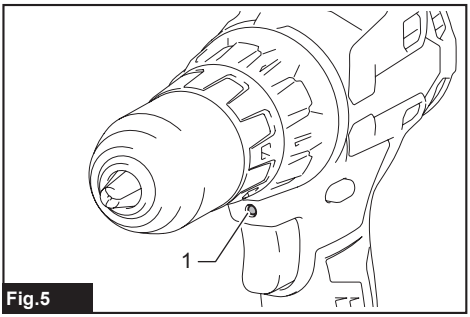


Fig.5

► **1.** Lamp

NOTE: When the tool is overheated, the tool stops automatically and the lamp starts flashing. In this case, release the switch trigger. The lamp turns off in one minute.

NOTE: Use a dry cloth to wipe the dirt off the lens of the lamp. Be careful not to scratch the lens of the lamp, or it may lower the illumination.

Reversing switch action

⚠*CAUTION:* Always check the direction of rotation before operation.

⚠*CAUTION:* 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.

⚠*CAUTION:* When not operating the tool, always set the reversing switch lever to the neutral position.

⚠*CAUTION:* When you reverse the rotation to remove the drill bit, make sure to hold the tool firmly before switching it on. Failure to do so may cause the tool to swing and result in personal injury.

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.

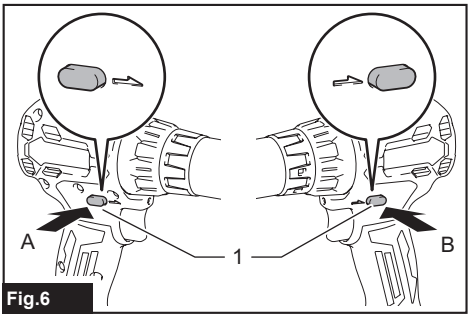


Fig.6

► **1.** Reversing switch lever

Speed change

⚠***CAUTION:*** **Always set the speed change lever fully to the correct position.** If you operate the tool with the speed change lever positioned halfway between the "1" side and "2" side, the tool may be damaged.

⚠***CAUTION:*** **Do not use the speed change lever while the tool is running.** The tool may be damaged.

Displayed Number	Speed	Torque	Applicable operation
1	Low	High	Heavy loading operation
2	High	Low	Light loading operation

To change the speed, switch off the tool first. Push the speed change lever to display "2" for high speed or "1" for low speed but high torque. Be sure that the speed change lever is set to the correct position before operation.
If the tool speed is coming down extremely during the operation with display "2", push the lever to display "1" and restart the operation.

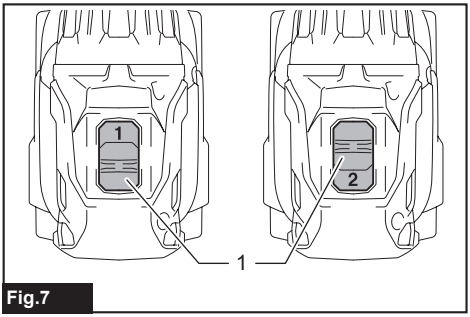


Fig.7

► **1.** Speed change lever

Selecting the action mode

This tool has two action modes.

Mark	Action mode
	Drilling mode (rotation only)
1 - 20	Screwdriving mode (rotation with clutch)

Select the mode suitable for your work. Turn the adjusting ring and align the mark that you select with the arrow on the tool body.

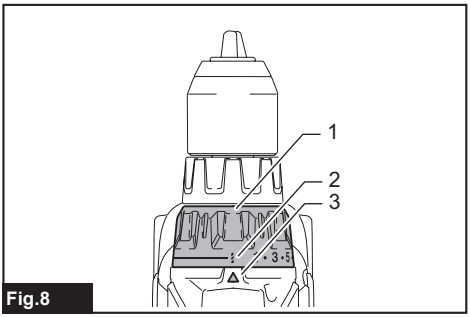


Fig.8

► **1.** Adjusting ring **2.** Mark **3.** Arrow

NOTICE: Always set the ring correctly to your desired mode mark. If you operate the tool with the ring positioned halfway between the mode marks, the tool may be damaged.

NOTICE: Do not change the action mode while tool is rotating.

NOTICE: If it is difficult to slide the adjusting ring, switch on and run the tool for a second, then stop the tool and slide the adjusting ring to your desired position again.

Adjusting the fastening torque

The fastening torque can be adjusted in 21 levels by turning the adjusting ring. Align the graduations with the arrow on the tool body. You can get the minimum fastening torque at 1 and maximum torque at marking.
The clutch will slip at various torque levels when set at the number 1 to 20. The clutch does not work at the marking.

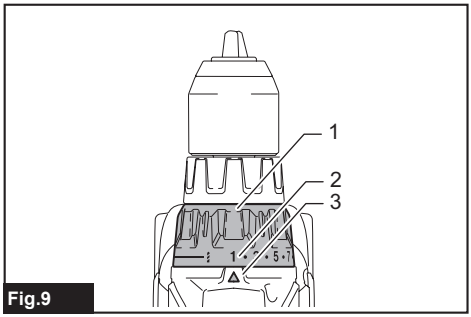


Fig.9

► **1.** Adjusting ring **2.** Graduation **3.** Arrow

Before actual operation, drive a trial screw into your material or a piece of duplicate material to determine which torque level is required for a particular application.
The following shows the rough guide of the relationship between the screw size and graduation.

Graduation		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Machine screw		M4					M5									M6					
Wood screw	Soft wood (e.g. pine)	–						ø3.5 x 22				ø4.1x 38				–					
	Hard wood (e.g. lauan)	–							ø3.5 x 22						ø4.1x 38				–		

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.

Attachment and tool combination

Optional accessory

You can replace attachments according to your work requirements. Refer to the following figure for the appropriate combinations.

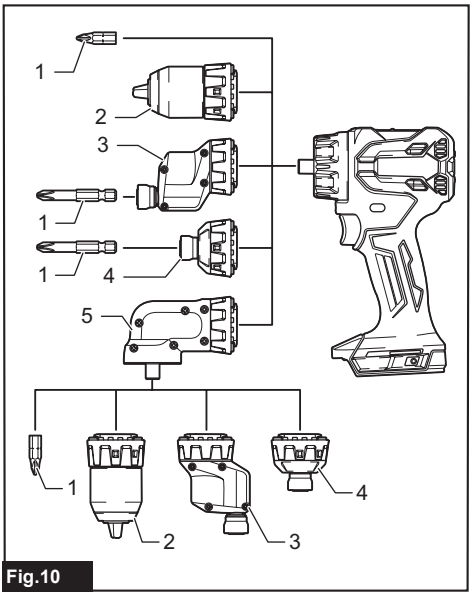


Fig.10

► **1.** Driver bit **2.** Drill chuck attachment **3.** Offset attachment **4.** Hex bit attachment **5.** Angle attachment

Installing or removing the attachment

***CAUTION:* Do not attach the angle attachment to another angle attachment.**

To install the attachment:
Insert the attachment fully into the holder. Make sure that the ridges and grooves on the tool and the attachment are matched. Then turn the locking ring clockwise until the lock indicator turns white. Finally, pull the attachment lightly to ensure that it is securely locked.

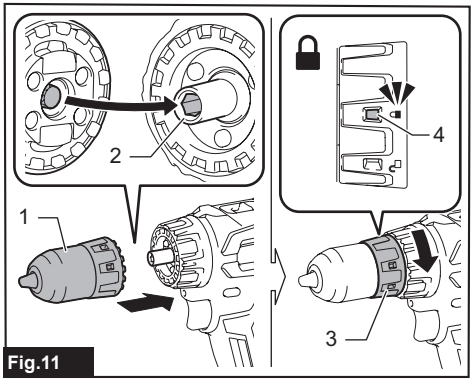


Fig.11

► **1.** Attachment **2.** Holder **3.** Locking ring **4.** Lock indicator

***NOTICE:* If the attachment falls off the tool while the locking ring is in the locked position, unlock the locking ring before reinstalling the attachment.** Turn the locking ring by gripping the width across flats with a hand tool such as a plier.

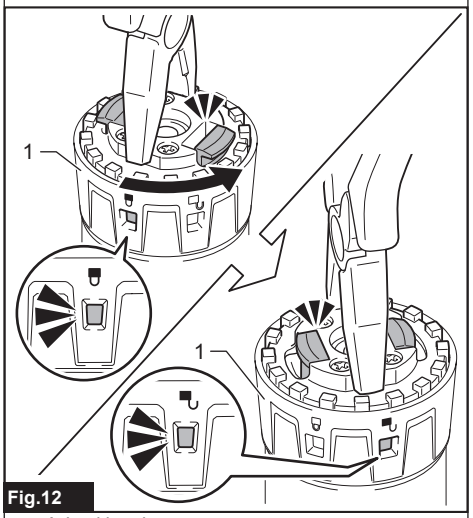


Fig.12

► **1.** Locking ring

NOTE: The angle attachment and the offset attachment can be adjusted to 16 different angles when installing the tool.

NOTE: When you mount any attachment onto the angle attachment, install the angle attachment on the tool in advance. This makes the process easier.

To remove the attachment:
Turn the locking ring counterclockwise until the unlock indicator turns white, then pull the attachment off.

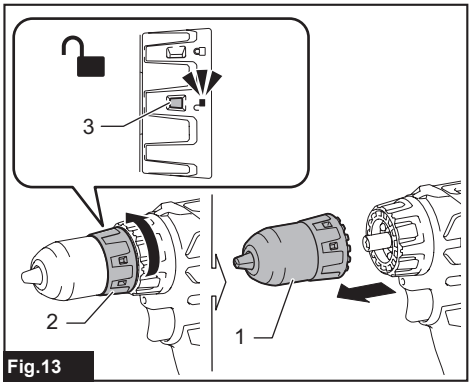


Fig.13

► **1.** Attachment **2.** Locking ring **3.** Unlock indicator

Installing or removing driver bit/ drill bit

***CAUTION:* Insert the bit fully and make sure it is securely locked.**

***CAUTION:* Keep the bit away from your body when carrying the tool, especially if using the angle attachment.**

***CAUTION:* Make sure the attachment is properly installed on the tool before installing the bit.**

For the drill chuck attachment

Turn the sleeve counterclockwise to open the chuck jaws. Place the driver bit/drill bit in the chuck as far as it will go. Turn the sleeve clockwise to tighten the chuck. To remove the driver bit/drill bit, turn the sleeve counterclockwise.

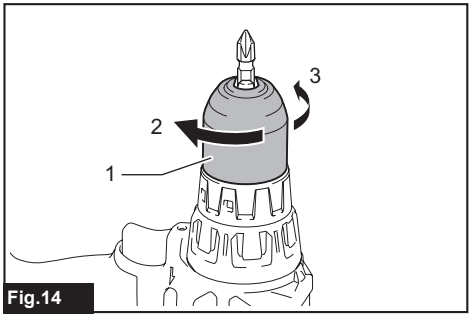


Fig.14

► **1.** Sleeve **2.** Close **3.** Open

For without attachment / angle attachment (optional accessory)

To install the driver bit, insert it into the bit sleeve. The driver bit will be held in place by a magnet. To remove the driver bit, pull it out.

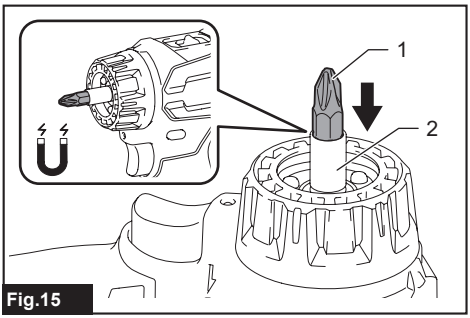


Fig.15

► **1.** Driver bit **2.** Bit sleeve

For the hex bit attachment / offset attachment

Optional accessory

Use only the driver bit that has the inserting portion shown in the figure. Do not use any other driver bit.

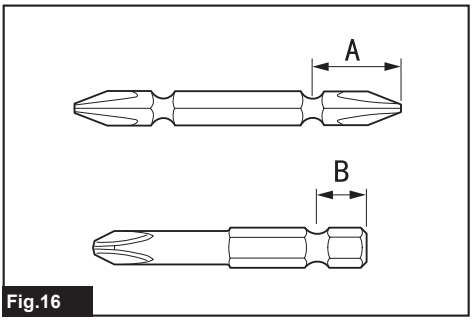


Fig.16

For attachment with a shallow driver bit hole

A=12mm B=9mm	Use only these types of driver bits. Follow the procedure 1. (Note) The bit piece is not necessary.

For attachment with a deep driver bit hole

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

Procedure 1

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

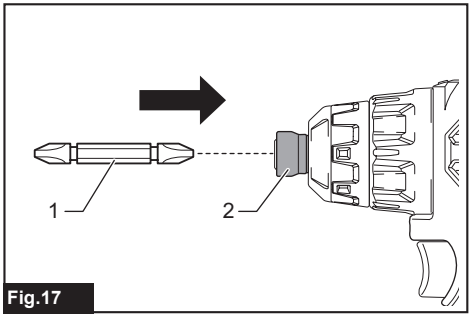


Fig.17

► **1.** Driver bit **2.** Sleeve

Procedure 2

In addition to **Procedure 1**, insert the bit piece into the sleeve with its pointed end facing in.

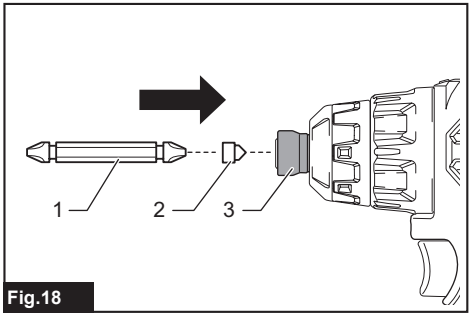


Fig.18

► **1.** Driver bit **2.** Bit-piece **3.** Sleeve

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

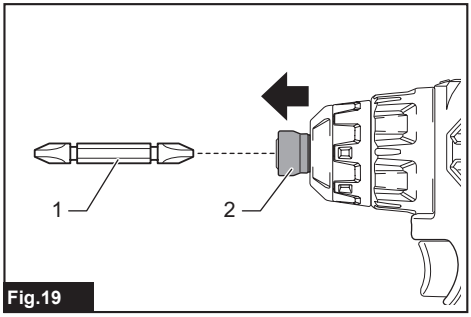


Fig.19

► **1.** Driver bit **2.** Sleeve

NOTE: If the driver bit is not inserted deep enough into the sleeve, the sleeve will not return to its original position and the driver bit will not be secured. In this case, try re-inserting the bit according to the instructions above.

NOTE: When it is difficult to insert the driver bit, pull the sleeve and insert it into the sleeve as far as it will go.

NOTE: After inserting the driver bit, make sure that it is firmly secured. If it comes out, do not use it.

Installing the hook

Optional accessory

⚠***WARNING:*** **Use the hanging/mounting parts for their intended purposes only, e.g., hanging the tool on a tool belt between jobs or work intervals.**

⚠***WARNING:*** **Be careful not to overload the hook as too much force or irregular overburden may cause damage to the tool resulting in personal injury.**

⚠***CAUTION:*** **When you install the hook, always secure it firmly with the screw.** If the hook is not secured, it may come off the tool and result in personal injury.

⚠***CAUTION:*** **Make sure to hang the tool securely before releasing your hold.** Insufficient or unbalanced hooking may cause the tool to fall off and you may be injured.

The hook is convenient for temporarily hanging the tool. The hook can be installed on either side of the tool. To install the hook, insert it into the groove in the tool housing on either side and then secure it with a screw. To remove the hook, loosen the screw and then take the hook out of the groove.

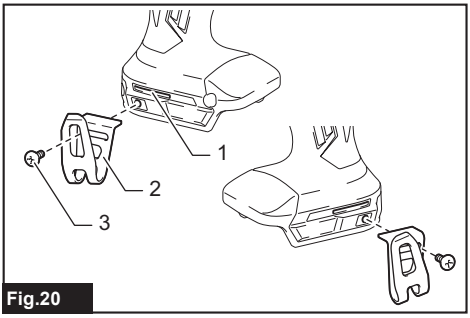


Fig.20

► **1.** Groove **2.** Hook **3.** Screw

Using hole

⚠***WARNING:*** **Never use the hanging hole for a purpose other than its intended purpose; for instance, tethering the tool at high location.** Bearing stress in a heavily loaded hole may cause damage to the hole, resulting in injuries to you or people around or below you.

Use the hanging hole at the bottom rear of the tool to hang the tool on a wall using a hanging cord or similar strings.

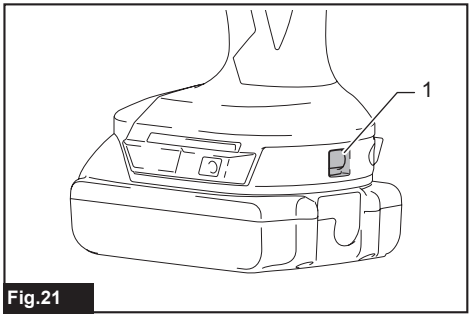


Fig.21

► **1.** Hanging hole

Installing driver bit holder

Optional accessory

Fit the driver bit holder into the protrusion at the tool foot on either right or left side and secure it with a screw. When not using the driver bit, keep it in the driver bit holders. Driver bits 45 mm-long can be kept there.

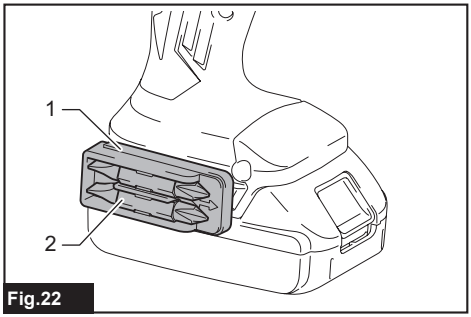


Fig.22

► **1.** Driver bit holder **2.** Driver bit

OPERATION

⚠***CAUTION:*** **Switch off the tool immediately if the tool malfunctions, foreign matter enter the tool, or abnormal noises are heard.** Contact Makita service center or your local dealer to have the tool serviced or repaired.

⚠***CAUTION:*** **When the speed comes down extremely, reduce the load or stop the tool to avoid the tool damage.**

⚠***CAUTION:*** **Before operation, make sure the attachment is securely locked.** Failure to do so may cause the attachment to fall and result in personal injury.

Hold the tool firmly with one hand on the grip and the other hand on the bottom of the battery cartridge to control the twisting action.

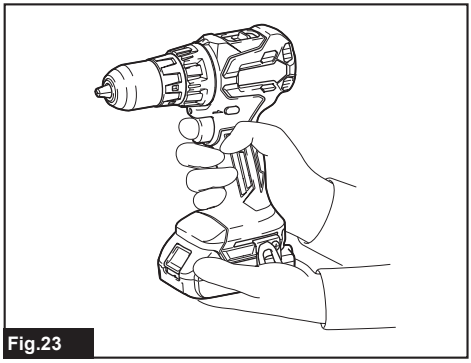


Fig.23

NOTICE: Do not cover vents, or it may cause overheating and damage to the tool.

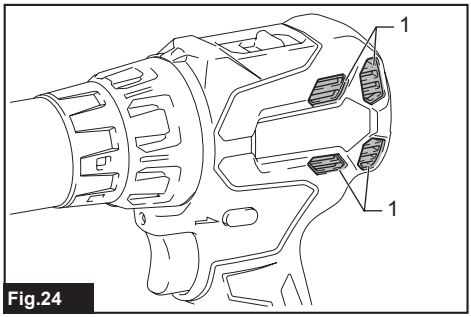


Fig.24

► **1.** Vent

Screwdriving operation

⚠***CAUTION:*** **Adjust the adjusting ring to the proper torque level for your work.**

⚠***CAUTION:*** **Make sure that the driver bit is inserted straight in the screw head, or the screw and/or driver bit may be damaged.**

Place the point of the driver bit in the screw head and apply pressure to the tool. Start the tool slowly and then increase the speed gradually. Release the switch trigger as soon as the clutch cuts in.

NOTE: When driving wood screw, pre-drill a pilot hole 2/3 the diameter of the screw. It makes driving easier and prevents splitting of the workpiece.

Drilling operation

⚠***CAUTION:*** **Pressing excessively on the tool will not speed up the drilling.** In fact, this excessive pressure will only serve to damage the tip of your drill bit, decrease the tool performance and shorten the service life of the tool.

⚠***CAUTION:*** **Hold the tool firmly and exert care when the drill bit begins to break through the workpiece.** There is a tremendous force exerted on the tool/drill bit at the time of hole break through.

⚠***CAUTION:*** **A stuck drill bit can be removed simply by setting the reversing switch to reverse rotation in order to back out. However, the tool may back out abruptly if you do not hold it firmly.**

⚠***CAUTION:*** **Always secure workpieces in a vise or similar hold-down device.**

⚠***CAUTION:*** **If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.**

First, turn the adjusting ring so that the arrow points to the marking. Then proceed as follows.

Drilling in wood

When drilling in wood, the best results are obtained with wood drills equipped with a guide screw. The guide screw makes drilling easier by pulling the drill bit into the workpiece.

Drilling in metal

To prevent the drill bit from slipping when starting a hole, make an indentation with a center-punch and hammer at the point to be drilled. Place the point of the drill bit in the indentation and start drilling.
Use a cutting lubricant when drilling metals. Some iron and brass which should be drilled dry are exceptions.

MAINTENANCE

⚠***CAUTION:*** **Always be sure that the tool is switched off and the battery cartridge is removed before attempting to perform inspection or maintenance.**

NOTICE: **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 or Factory 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. Only use an accessory or attachment for its stated purpose.

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

- Drill bits
- Driver bits
- Driver bit holder
- Drill chuck attachment
- Offset attachment
- Hex bit attachment
- Angle attachment
- Hook
- Makita genuine battery and charger

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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