



EN	Cordless Impact Driver	INSTRUCTION MANUAL	4
FR	Tournevis à Chocs sans Fil	MANUEL D'INSTRUCTIONS	9
DE	Akku-Schlagschrauber	BETRIEBSANLEITUNG	14
IT	Avvitatore a massa battente a batteria	ISTRUZIONI PER L'USO	20
NL	Accuslagschroevendraaier	GEBRUIKSAANWIJZING	26
ES	Atornillador de Impacto Inalámbrico	MANUAL DE INSTRUCCIONES	32
PT	Parafusadeira de Impacto a Bateria	MANUAL DE INSTRUÇÕES	38
DA	Akku slagskruemaskine	BRUGSANVISNING	43
EL	Κρουστικό κατσαβίδι μπαταρίας	ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ	48
TR	Akülü Darbeli Tornavida	KULLANMA KILAVUZU	54

DTD152



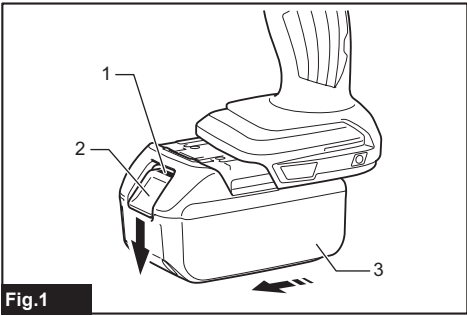


Fig.1

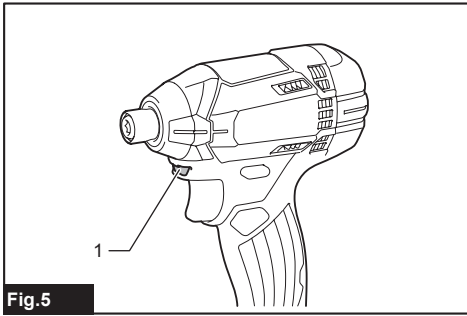


Fig.5

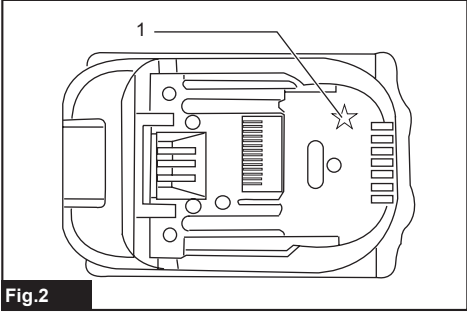


Fig.2

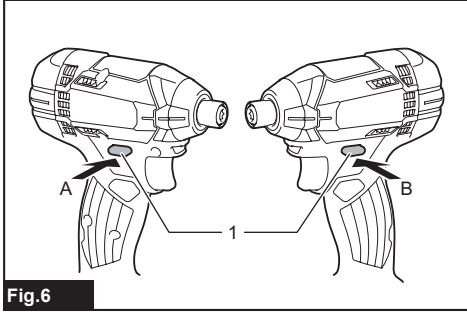


Fig.6

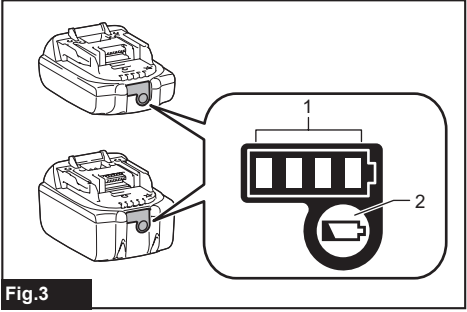


Fig.3

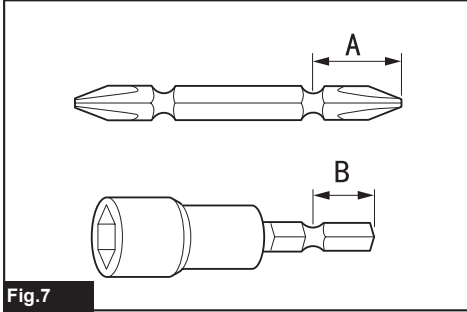


Fig.7

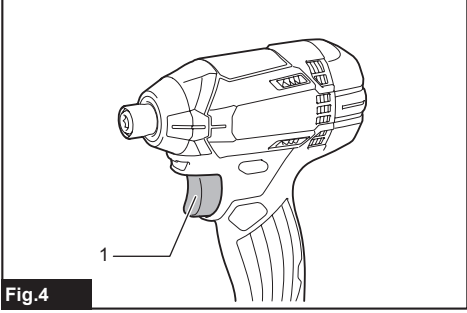


Fig.4

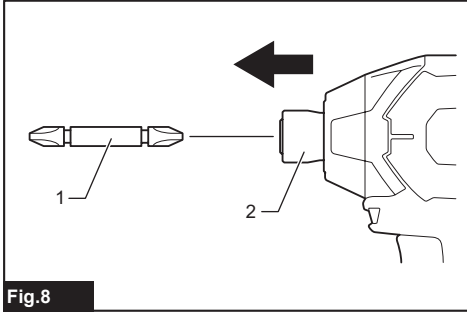


Fig.8

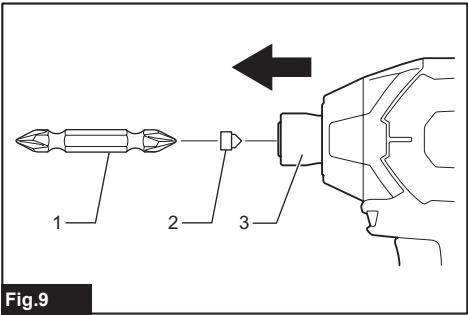


Fig.9

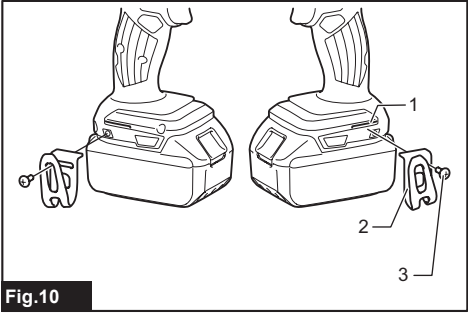


Fig.10

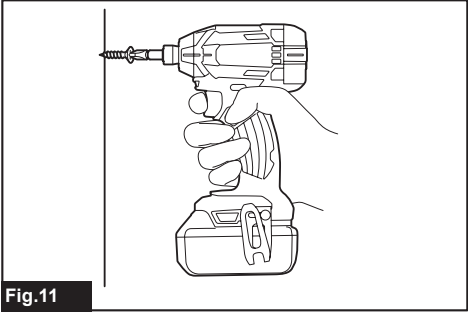


Fig.11

SPECIFICATIONS

Model:		DTD152
Fastening capacities	Machine screw	4 mm - 8 mm
	Standard bolt	5 mm - 16 mm
	High tensile bolt	5 mm - 12 mm
No load speed		0 - 2,900 min ⁻¹
Impacts per minute		0 - 3,500 min ⁻¹
Overall length		137 mm
Rated voltage		D.C. 18 V
Net weight		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	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.

Intended use

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

Noise

The typical A-weighted noise level determined according to EN62841-2-2:

Sound pressure level (L_{pA}): 93 dB(A)

Sound power level (L_{WA}): 104 dB (A)

Uncertainty (K): 3 dB(A)

⚠WARNING: Wear ear protection.

Vibration

The vibration total value (tri-axial vector sum) determined according to EN62841-2-2:

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

Vibration emission (a_v): 10.5 m/s²

Uncertainty (K): 1.5 m/s²

NOTE: The declared vibration emission value has been measured in accordance with the standard test method and may be used for comparing one tool with another.

NOTE: The declared vibration emission value 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 emission value 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).

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.

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.**

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. **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.

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

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.

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

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.

CAUTION: Do not install the battery cartridge forcibly. If the cartridge does not slide in easily, it is not being inserted correctly.

Battery protection system

Lithium-ion battery with star marking

► Fig.2: 1. Star marking

Lithium-ion batteries with a star marking are equipped with a protection system. This system automatically cuts off power to the tool to extend battery life.

The tool will automatically stop during operation if the tool and/or battery are placed under one of the following conditions:

Overloaded:

The tool is operated in a manner that causes it to draw an abnormally high current.

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.

If the tool does not start, the battery is overheated. In this situation, let the battery cool before turning the tool on again.

Low battery voltage:

The remaining battery capacity is too low and the tool will not operate. In this situation, remove and recharge the battery.

Indicating the remaining battery capacity

Only for battery cartridges with the indicator

► Fig.3: 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

► Fig.4: 1. Switch trigger

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.

Lighting up the front lamp

► Fig.5: 1. Lamp

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

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 10 -15 seconds after releasing the trigger.

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

Reversing switch action

► Fig.6: 1. Reversing switch lever

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.

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.

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/ socket bit

► Fig.7

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

For tool with shallow driver bit hole

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

Procedure 1

For tool without one-touch type sleeve

► Fig.8: 1. Driver bit 2. Sleeve

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

Then release the sleeve to secure the driver bit.

For tool with one-touch type sleeve

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

Procedure 2

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

► Fig.9: 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.

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 hook

CAUTION: When installing the hook, always secure it with the screw firmly. If not, the hook may come off from the tool and result in the personal injury.

► Fig.10: 1. Groove 2. Hook 3. Screw

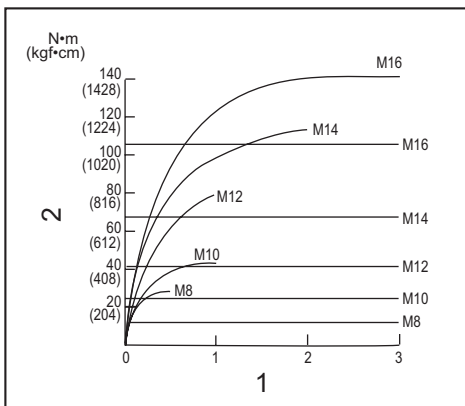
The hook is convenient for temporarily hanging the tool. This can be installed on either side of the tool. To install the hook, insert it into a groove in the tool housing on either side and then secure it with a screw. To remove, loosen the screw and then take it out.

OPERATION

► Fig.11

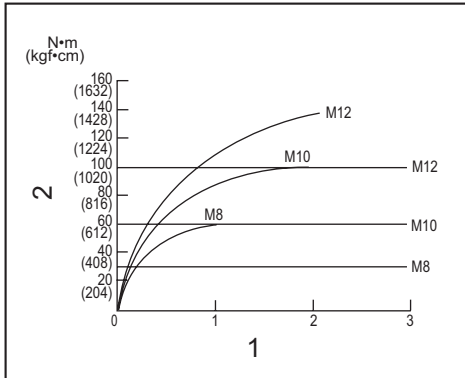
The proper fastening torque may differ depending upon the kind or size of the screw/bolt, the material of the workpiece to be fastened, etc. The relation between fastening torque and fastening time is shown in the figures.

Proper fastening torque for standard bolt



1. Fastening time (second) 2. Fastening torque

Proper fastening torque for high tensile bolt



1. Fastening time (second) 2. Fastening torque

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.

NOTICE: If you use a spare battery to continue the operation, rest the tool at least 15 min.

NOTE: Use the proper bit for the head of the screw/bolt that you wish to use.

NOTE: When fastening M8 or smaller screw, carefully adjust pressure on the switch trigger so that the screw is not damaged.

NOTE: Hold the tool pointed straight at the screw.

NOTE: If the impact force is too strong or 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.

NOTICE: Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

To maintain product SAFETY and RELIABILITY, repairs, carbon brush inspection and replacement, 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 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.

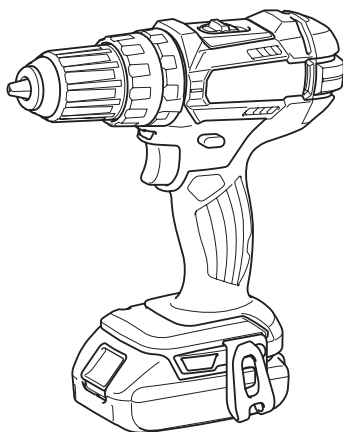
- Driver bits
- Hook
- Plastic carrying case
- Makita genuine battery and charger
- Battery protector

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



EN	Cordless Hammer Driver Drill	INSTRUCTION MANUAL	5
FR	Perceuse Percussion-Visseuse sans Fil	MANUEL D'INSTRUCTIONS	11
DE	Akku- Schlagbohrschrauber	BETRIEBSANLEITUNG	18
IT	Trapano avvitatore a percussione a batteria	ISTRUZIONI PER L'USO	25
NL	Accuklopboor/-schroefmachine	GEBRUIKSAANWIJZING	32
ES	Rotomartillo Atornillador Inalámbrico	MANUAL DE INSTRUCCIONES	39
PT	Parafusadeira/Furadeira de Impacto a Bateria	MANUAL DE INSTRUÇÕES	46
DA	Akku skrue-/boremaskine med slag	BRUGSANVISNING	53
EL	Κρουστικό δραπανοκατσαβίδα μπαταρίας	ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ	59
TR	Akülü Darbeli Matkap Tornavida	KULLANMA KILAVUZU	66

DHP482



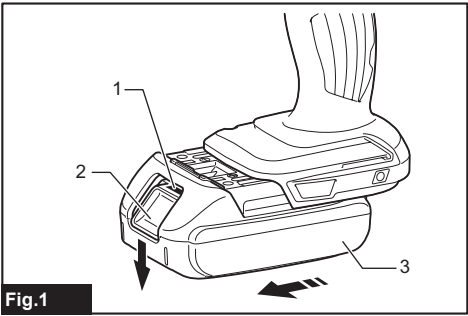


Fig.1

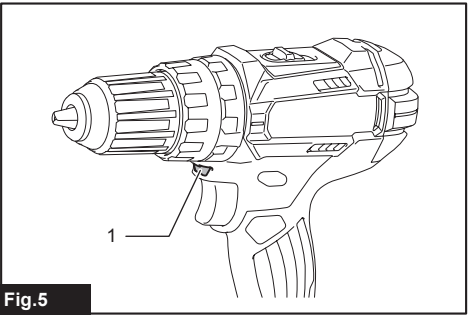


Fig.5

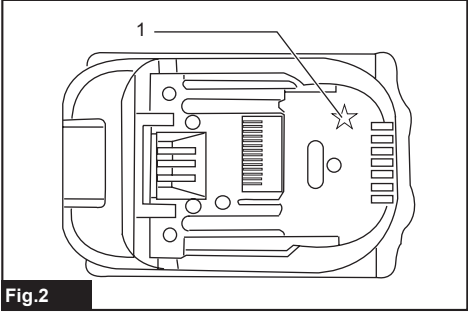


Fig.2

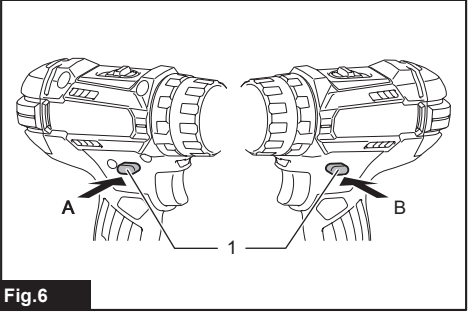


Fig.6

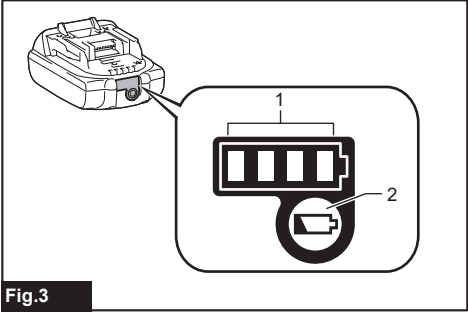


Fig.3

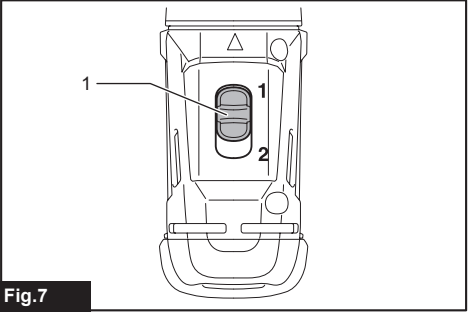


Fig.7

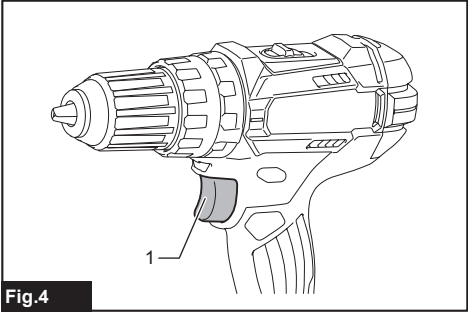


Fig.4

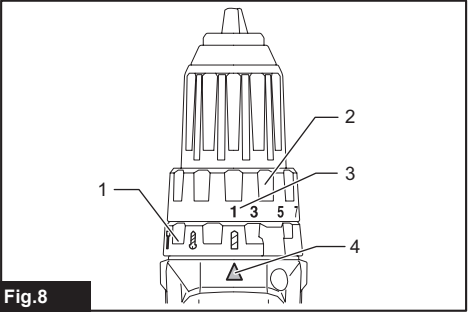


Fig.8

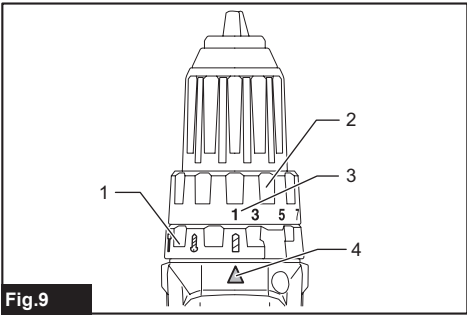


Fig.9

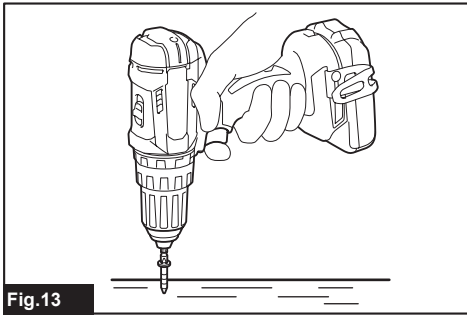


Fig.13

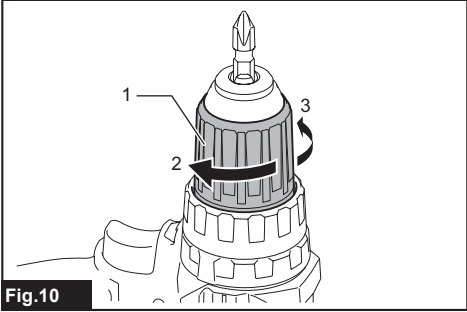


Fig.10

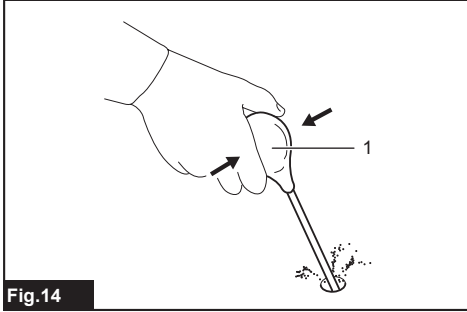


Fig.14

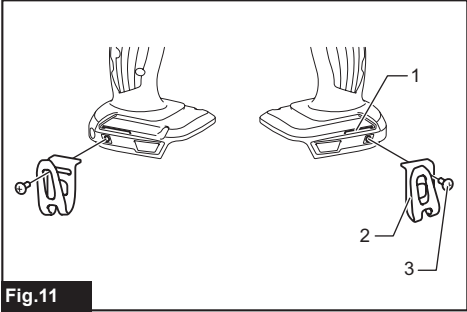


Fig.11

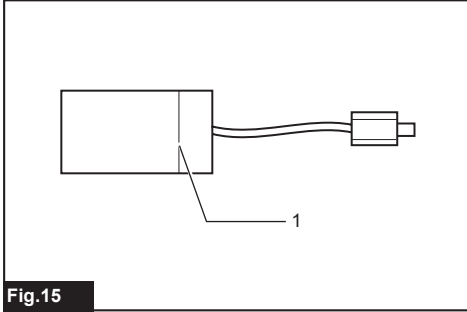


Fig.15

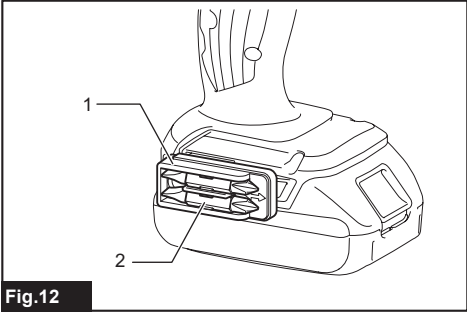


Fig.12

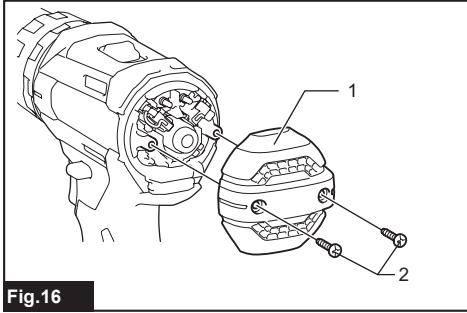
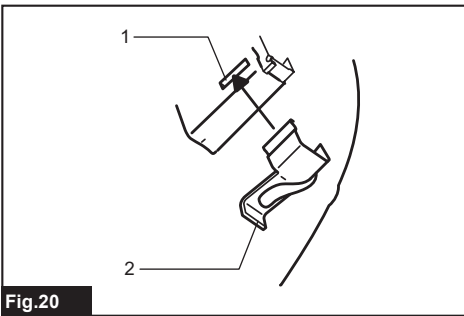
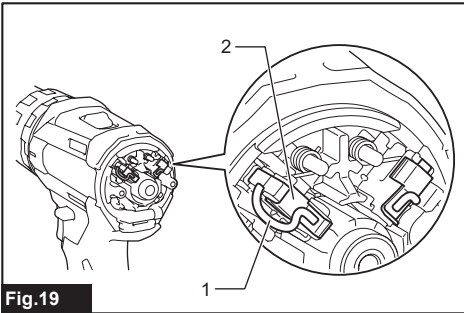
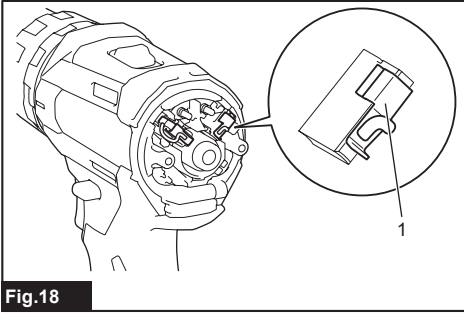
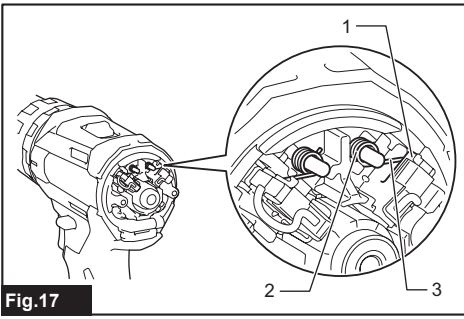


Fig.16



SPECIFICATIONS

Model:		DHP482
Drilling capacities	Concrete	13 mm
	Steel	13 mm
	Wood	38 mm
Fastening capacities	Wood screw	10 mm x 90 mm
	Machine screw	M6
No load speed	High (2)	0 - 1,900 min ⁻¹
	Low (1)	0 - 600 min ⁻¹
Blows per minute	High (2)	0 - 28,500 min ⁻¹
	Low (1)	0 - 9,000 min ⁻¹
Overall length	198 mm	
Rated voltage	D.C. 18 V	
Battery cartridge	BL1815N, BL1820, BL1820B	BL1830, BL1840, BL1850, BL1830B, BL1840B, BL1850B, BL1860B
Net weight	1.5 kg	1.8 kg

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications and battery cartridge may differ from country to country.
- Weight, with battery cartridge, according to EPTA-Procedure 01/2003

Intended use

The tool is intended for impact drilling in brick, concrete and stone. It is also suitable for screw driving and drilling without impact in wood, metal, ceramic and plastic.

Noise

The typical A-weighted noise level determined according to EN60745:

Sound pressure level (L_{pA}): 82 dB(A)

Sound power level (L_{WA}): 93 dB (A)

Uncertainty (K): 3 dB(A)

⚠ WARNING: Wear ear protection.

Vibration

The vibration total value (tri-axial vector sum) determined according to EN60745:

Work mode: impact drilling into concrete

Vibration emission ($a_{h,D}$): 6.0 m/s²

Uncertainty (K): 1.5 m/s²

Work mode: drilling into metal

Vibration emission ($a_{h,D}$): 2.5 m/s² or less

Uncertainty (K): 1.5 m/s²

NOTE: The declared vibration emission value has been measured in accordance with the standard test method and may be used for comparing one tool with another.

NOTE: The declared vibration emission value 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 emission value 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).

EC Declaration of Conformity

For European countries only

Makita declares that the following Machine(s):

Designation of Machine: Cordless Hammer Driver Drill

Model No./ Type: DHP482

Conforms to the following European Directives: 2006/42/EC

They are manufactured in accordance with the following standard or standardized documents: EN60745

The technical file in accordance with 2006/42/EC is available from:

Makita, Jan-Baptist Vinkstraat 2, 3070, Belgium
30.3.2015



Yasushi Fukaya
Director

Makita, Jan-Baptist Vinkstraat 2, 3070, Belgium

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.

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.

Cordless hammer driver drill safety warnings

1. **Wear ear protectors when impact drilling.** Exposure to noise can cause hearing loss.
2. **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
3. **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.
4. **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.
5. **Always be sure you have a firm footing. Be sure no one is below when using the tool in high locations.**
6. **Hold the tool firmly.**
7. **Keep hands away from rotating parts.**
8. **Do not leave the tool running. Operate the tool only when hand-held.**
9. **Do not touch the bit or the workpiece immediately after operation; they may be extremely hot and could burn your skin.**
10. **Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.**

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. Follow your local regulations relating to disposal of battery.

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

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.

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

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.

CAUTION: Do not install the battery cartridge forcibly. If the cartridge does not slide in easily, it is not being inserted correctly.

Battery protection system

Lithium-ion battery with star marking

► Fig.2: 1. Star marking

Lithium-ion batteries with a star marking are equipped with a protection system. This system automatically cuts off power to the tool to extend battery life.

The tool will automatically stop during operation if the tool and/or battery are placed under one of the following conditions:

Overloaded:

The tool is operated in a manner that causes it to draw an abnormally high current.

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.

If the tool does not start, the battery is overheated. In this situation, let the battery cool before turning the tool on again.

Low battery voltage:










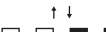
The remaining battery capacity is too low and the tool will not operate. In this situation, remove and recharge the battery.

Indicating the remaining battery capacity

Only for battery cartridges with "B" at the end of the model number

► Fig.3: 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 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

► Fig.4: 1. Switch trigger

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.

Lighting up the front lamp

► Fig.5: 1. Lamp

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

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 10 -15 seconds after releasing the trigger.

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

Reversing switch action

► Fig.6: 1. Reversing switch lever

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.

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.

Speed change

► Fig.7: 1. Speed change lever

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.

Position of speed change lever	Speed	Torque	Applicable operation
1	Low	High	Heavy loading operation



Position of speed change lever	Speed	Torque	Applicable operation
2	High	Low	Light loading operation

To change the speed, switch off the tool first. Select the "2" side 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 "2", slide the lever to the "1" and restart the operation.




Selecting the action mode

CAUTION: 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.

CAUTION: When you change the position from "  " to other modes, it may be a little difficulty to slide the action mode changing ring. In this case, switch on and run the tool for a second at the "  " position, then stop the tool and slide the ring to your desired position.

► Fig.8: 1. Action mode changing ring 2. Adjusting ring 3. Graduation 4. Arrow

This tool has three action modes.

-  Drilling mode (rotation only)
-  Hammer drilling mode (rotation with hammering)
-  Screwdriving mode (rotation with clutch)

Select one mode suitable for your work. Turn the action mode changing ring and align the mark that you selected with the arrow on the tool body.

Adjusting the fastening torque

► Fig.9: 1. Action mode changing ring 2. Adjusting ring 3. Graduation 4. Arrow

The fastening torque can be adjusted in 21 steps 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 21. 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	21
Machine screw		M4						M5						M6								
Wood screw	Soft wood (e.g. pine)	-						φ3.5 x 22						φ4.1 x 38								
	Hard wood (e.g. lauan)	-						φ3.5 x 22						φ4.1 x 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.

Installing or removing driver bit/ drill bit

Optional accessory

► **Fig.10:** 1. Sleeve 2. Close 3. Open

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.

Installing hook

► **Fig.11:** 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.

Installing driver bit holder

Optional accessory

► **Fig.12:** 1. Driver bit holder 2. Driver bit

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.

OPERATION

⚠ CAUTION: Always insert the battery cartridge all the way until it locks in place. If you can see the red indicator on the upper side of the button, it is not locked completely. Insert it 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: When the speed comes down extremely, reduce the load or stop the tool to avoid the tool damage.


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.13**

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.

First, turn the action mode changing ring so that the arrow on the tool body points to the  marking. 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.

Hammer drilling operation

⚠ CAUTION: There is a tremendous and sudden twisting force exerted on the tool/drill bit at the time of hole breakthrough, when the hole becomes clogged with chips and particles, or when striking reinforcing rods embedded in the concrete.

First, turn the action mode changing ring so that the arrow on the tool body points to the  marking. The adjusting ring can be aligned in any torque levels for this operation.

Be sure to use a tungsten-carbide tipped drill bit. Position the drill bit at the desired location for the hole, then pull the switch trigger. Do not force the tool. Light pressure gives best results. Keep the tool in position and prevent it from slipping away from the hole. Do not apply more pressure when the hole becomes clogged with chips or particles. Instead, run the tool at an idle, then remove the drill bit partially from the hole. By repeating this several times, the hole will be cleaned out and normal drilling may be resumed.


Blow-out bulb

Optional accessory

► **Fig.14:** 1. Blow-out bulb

After drilling the hole, use the blow-out bulb to clean the dust out of the hole.

Drilling operation

First, turn the adjusting ring so that the pointer 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. The exceptions are iron and brass which should be drilled dry.

⚠ 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 small 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.

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.

Replacing carbon brushes

► **Fig.15:** 1. Limit mark

Check the carbon brushes regularly. Replace them when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.

1. Use a screwdriver to remove two screws then remove the rear cover.

► **Fig.16:** 1. Rear cover 2. Screw

2. Raise the arm part of the spring and then place it in the recessed part of the housing with a slotted bit screwdriver of slender shaft or the like.

► **Fig.17:** 1. Recessed part 2. Spring 3. Arm

3. Use pliers to remove the carbon brush caps of the carbon brushes. Take out the worn carbon brushes, insert the new ones and replace the carbon brush caps in reverse.

► **Fig.18:** 1. Carbon brush cap

4. Make sure to place the lead wire in opposite side of the arm.

► **Fig.19:** 1. Lead wire 2. Carbon brush cap

5. Make sure that the carbon brush caps have fit into the holes in brush holders securely.

► **Fig.20:** 1. Hole 2. Carbon brush cap

6. Reinstall the rear cover and tighten two screws securely.

7. Insert the battery cartridge into the tool and break in brushes by running tool with no load for about 1 minute.

8. Check the tool while running and electric brake operation when releasing the switch trigger. If electric brake is not working well, ask Makita Authorized or Factory Service Centers for repair.

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 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.

- Drill bits
- Driver bits
- Tungsten-carbide tipped drill bit
- Blow-out bulb
- Driver bit holder
- 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.