TSA 500.0-B

STIHL



2 - 29 Instruction Manual



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IMPORTANT! READ AND UNDERSTAND BEFORE USING AND KEEP IN A SAFE PLACE FOR REFERENCE.

1 Guide to Using this Manual

1.1 Applicable documents

The local safety regulations apply.

- In addition to this User Manual, you should also read, understand and retain the following documents:
  - User Manual and packaging of the cutting wheel used
  - Safety instructions and precautions for STIHL AP battery
  - User Manual for STIHL AL 101, 301, 301-4, 501 chargers
  - Safety information for STIHL batteries and products with built-in battery: www.stihl.com/safety-data-sheets

Further information on STIHL connected, compatible products and FAQs is available at www.connect.stihl.com or from a STIHL authorized dealer.

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The cut-off machine and the batteries with C are equipped with a Bluetooth® radio interface. Local operating restrictions (in aircraft or hospitals, for example) must be complied with.

1.2 Symbols used with warnings in the text

WARNING

- This symbol indicates dangers that can cause serious injuries or death.
  - The measures indicated can avoid serious injuries or death.

NOTICE

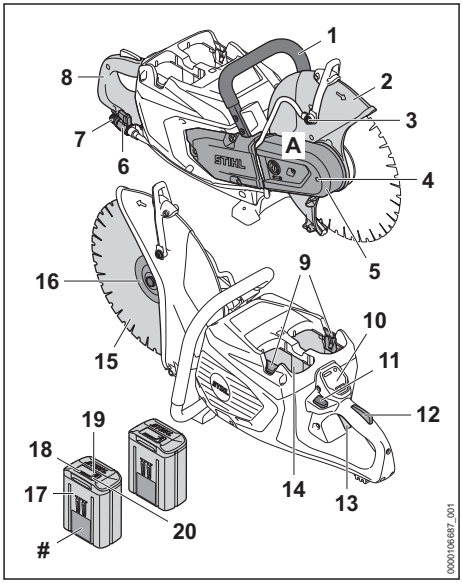
- This symbol indicates dangers that can cause damage to property.
  - The measures indicated can avoid damage to property.

1.3 Symbols in Text

This symbol refers to a chapter in this instruction manual.

2 Overview

2.1 Cut-off machine and battery



Translation of Original Instruction Manual
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Printed on chlorine-free paper
Paper is recyclable.

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1 **Handlebar**
The handlebar is used to hold, control and carry the cut-off machine.

2 **Deflector**
The deflector protects the user from flying debris and contact with the cutting wheel.

3 **Water nozzle**
The water nozzle supplies water to the cutting wheel.

4 **Spindle locking mechanism**
The spindle lock is used to attach and remove the cutting wheel.

5 **Belt guard**
The belt guard protects the V-ribbed belt.

6 **Shut-off valve**
The shut-off valve opens and closes the water supply.

7 **Coupling**
The coupling is used to connect the water hose.

8 **Control handle**
The control handle operates, holds and controls the cut-off machine.

9 **Locking lever**
The locking lever holds the battery in the battery compartment.

10 **Control panel,** 🕮 2.2
The control panel (HMI) serves to select the operating mode, read out the battery levels and display errors and operating conditions.

11 **Unlock button**
The unlock button is used to turn on the cut-off machine.

12 **Trigger lockout**
The trigger lockout unlocks the trigger.

13 **Trigger**
The trigger switches the cut-off machine on and off.

14 **Battery compartment**
The battery compartment holds the battery.

15 **Cutting wheel**
The cutting wheel cuts the material.

16 **Thrust washer**
The thrust washer is used to secure the cutting wheel.

17 **Battery**
The battery supplies the cut-off machine with power.

18 **"BLUETOOTH®" LED (only for batteries with)**
The LED indicates whether the Bluetooth® radio interface is activated or deactivated.

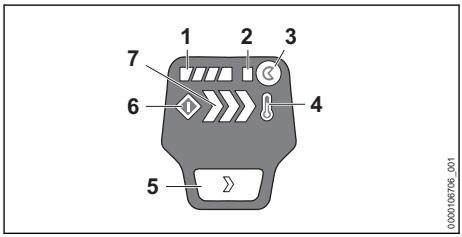
19 **Pushbutton**
The pushbutton activates the LEDs on the battery. It activates and deactivates the Bluetooth® interface (if available).

20 **LEDs**
The LEDs indicate the state of charge of the battery and any errors.

A **Label**
The label contains safety information

Rating plate with serial number

2.2 Control panel



1 **"BATTERY STATE OF CHARGE" LED**
The LEDs indicate the state of charge of the battery with the lower state of charge.

2 **"BLUETOOTH® " LED**
When the "BLUETOOTH®" button is pressed, the LEDs indicate the activation and deactivation of the Bluetooth® radio interface.

3 **"BLUETOOTH® pushbutton"**
The "BLUETOOTH®" pushbutton activates and deactivates the Bluetooth® radio interface.

4 **"OVERHEATING" LED**
This LED indicates that the machine is overheated.

5 **Operating mode button**
The operating mode button is used to set the operating mode.

6 **"ERROR" LED**
The LED indicates any errors in the machine.

7 **"OPERATING MODE" LED**
The LEDs indicate the selected operating mode.

2.3 Symbols

Meaning of the symbols that may be on the cut-off machine and the battery:


This symbol marks the unlock button.


This symbol indicates the direction of rotation of the cutting wheel.


1 LED lights up steady red. The battery is too warm or too cold.


4 LEDs flash red. There is an error in the battery.


This symbol shows the diameter of the shaft of the cut-of machine in millimeters.


This symbol shows the maximum outside diameter of the cutting wheel in millimeters.


L_{WA} Guaranteed sound power level in accordance with Directive 2000/14/EC in dB(A) for the purpose of comparing the sound emissions of products.


Recharge this battery with a STIHL charger. The permissible chargers are listed in these safety instructions.

The battery and the cut-off machine are equipped with a Bluetooth® radio interface and can be paired with the STIHL connected app.


The information next to this symbol indicates the energy content of the battery according to the cell manufacturer's specification. The energy content available in operation is lower.


Do not dispose of the product with domestic waste.

3 Safety Precautions

3.1 Warning symbols

Cut-off machine

Meaning of warning symbols on the cut-off machine:


Follow the safety instructions and take the necessary precautions.


Read and understand the User Manual and keep it in a safe place for reference.


Wear safety glasses, hearing protection and a dust mask or respirator.


Work only with an undamaged cutting wheel with an undamaged spindle bore.


Follow the safety instructions on kickback and take the necessary precautions.


Observe safety notices on risk of fire due to glowing metal particles and take the necessary precautions.


Do not breathe in dust and vapors created during the work.



Remove the battery during work interruptions, transport, storage, maintenance or repair.



The permissible cutting wheel speed must be equal to or greater than the maximum spindle speed of the cut-off machine.


Protect the battery against heat and fire.



Do not immerse the battery in liquids.

3.2 Intended Use

The STIHL TSA 500.0-B cut-off machine is designed for the following uses:
- Cutting slabs
- Cutting pipes
- Cutting round and hollow bodies
- Cutting concrete pipes

The cut-off machine is not intended for the following applications:
- Cutting asbestos
- Cutting wood or wooden objects

The cut-off machine may be used in the rain.

Two STIHL AP batteries supply the cut-off machine with power. To use all functions without limitations, STIHL recommends using at least AP 500 S batteries.

The control panel of the cut-off machine is equipped with a non-replaceable 1654 lithium-ion button cell.

If it is necessary to work on a safe scaffolding, the cut-off machine may only be used with a STIHL AP battery inserted directly into the cut-off machine.

The cut-off machine with in combination with the STIHL connected app enables the transmission of information to the cut-off machine based on Bluetooth® technology.

The battery with in combination with the STIHL connected app enables customization and the transfer of information to the battery based on Bluetooth® technology.

⚠ WARNING

- Batteries not approved by STIHL for the cut-off machine can cause fires and explosions. Persons may be seriously or fatally injured, and property may be damaged.
  - ► Use the cut-off machine with two STIHL AP batteries.
- Using the cut-off machine or the battery other than for their intended purpose can result in serious injuries or death and damage to property.
  - ► Use the cut-off machine as described in this User Manual.
  - ► Use the battery as described in this User Manual, the STIHL connected app and at www.connect.stihl.com.

3.3 Requirements for users

⚠ WARNING

- Users who have not received instruction are not aware of and cannot assess the dangers of the cut-off machine and the battery. The user or other persons may sustain serious or fatal injuries.



  - ► Read and understand the User Manual and keep it in a safe place for reference.
  - ► If the cut-off machine or battery is passed on to another person: Always give them the User Manual.
  - ► Make sure that the user meets the following conditions:
    - – The user is rested.
    - – The user is physically, sensorially and mentally able to operate and work with the cut-off machine and battery. If the user is able to operate the equipment but is physically, sensory or mentally impaired, the user may only work with the equipment under the supervision of or after receiving instruction from a responsible person.
    - – The user can recognize and assess the hazards of the cut-off machine and the battery.
    - – The user is an adult or is being trained in an occupation under supervision according to national regulations.
    - – The user has received instruction from a STIHL authorized dealer or other expert before operating the cut-off machine for the first time.
    - – The user is not under the influence of alcohol, medication or drugs.
  - ► If you are unsure: Contact a STIHL authorized dealer.

3.4 Clothing and equipment

⚠ WARNING

- Long hair may be pulled into the cut-off machine during operation. This may result in serious injury to the user.
  - ► Tie up and confine long hair above your shoulders so that it cannot be pulled into the cut-off machine.



  - ► Wear close-fitting safety glasses. Suitable protective glasses tested in accordance with European standard EN 166, EN ISO 16321 or in accordance with national standards and bearing the corresponding label are available from retailers.
  - ► Wear a long-sleeved, close fitting top.
- Noise is generated during operation. Noise can damage your hearing.



  - ► Wear hearing protection.
- If steel is being separated, sparks are produced. Sparks can ignite clothing. This may result in serious injury to the user.
  - ► Wear clothing made of flame resistant material (for example, leather or cotton with flame-retardant finish).
  - ► Wear clothing without flammable deposits (for example chips, fuel or oil).
- Falling objects can cause head injuries.



  - ► Wear a safety hard hat.
- During operation, dust can be stirred up, and fumes or smoke may be generated. Inhaled dust, fumes or smoke can damage the respiratory passages and cause allergic reactions.



- If there is dust: Wear a dust respirator mask.
- If there is smoke: Wear a respirator.

- Inappropriate clothing can snag on the cut-off machine. Users not wearing suitable clothing may be seriously injured.
  - Wear close-fitting clothing.
  - Remove scarves and jewelry.
- The user can come into contact with the rotating cutting wheel during operation. This may result in serious injury to the user.
  - Wear steel-toed safety boots.
  - Wear long pants made of robust material.
- The user can come into contact with the cutting wheel during cleaning and maintenance work. This may result in injury to the user.
  - Wear work gloves made of robust material.
- Wearing unsuitable footwear may cause the user to slip. This may result in injury to the user.
  - Wear sturdy, closed-toed footwear with non-slip soles.

3.5 Work Area and Surroundings

3.5.1 Cut-off machine

⚠ WARNING

- Bystanders, children and animals cannot be aware of nor assess the dangers of the cut-off machine or of objects being thrown into the air. This may result in serious injury to bystanders, children and animals and damage to property.
  - Keep bystanders, children and animals away from the working area.
  - Do not leave the cut-off machine unattended.
  - Make sure that children cannot play with the cut-off machine.
- The cut-off machine's electrical components can produce sparks. Sparks may cause fires and explosions in highly flammable or explosive environments. Persons may be seriously or fatally injured, and property may be damaged.
  - Do not work in a highly flammable or explosive environment.

3.5.2 Battery

⚠ WARNING

- Bystanders, children and animals cannot recognize or assess the dangers of the battery. Bystanders, children and animals may be seriously injured.
  - Keep bystanders, children and animals away from the work area.
  - Do not leave the battery unattended.
  - Make sure that children cannot play with the battery.
- The battery is not protected against all ambient conditions. If the battery is exposed to certain ambient conditions, the battery may catch fire, explode or be irreparably damaged. This may result in serious injury to people and damage to property.



  - Protect battery from heat and fire.
  - Do not throw the battery into a fire.
  - Do not charge, use and store the battery outside of the specified temperature limits, 📖 18.3.



  - Do not immerse the battery in liquids.
  - Keep battery away from small metal parts.
  - Do not expose the battery to high pressure.
  - Do not expose the battery to microwaves.
  - Protect the battery against chemicals, salts and fertilizers.

3.6 Safe Condition

3.6.1 Cut-off machine

The cut-off machine is in a safe condition if the following points are observed:
– The cut-off machine is undamaged.
– The cut-off machine is clean.
– The deflector is not damaged.
– The controls function properly and have not been modified.
– The water supply is functioning.
– The spindle bearing is functioning.
– A cutting wheel specified in the User Manual is installed. The cutting wheel is approved and marked for use on handheld cut-off machines in accordance with EN 13236 (diamond cutting wheel) or EN 12413 (resin cutting wheel).
– The cutting wheel is properly installed.
– Original STIHL accessories designed for this cut-off machine are installed.
– The accessories are correctly installed.

⚠ WARNING

- If not in safe condition, components may no longer operate correctly, and safety devices may be rendered ineffective. Persons may be seriously injured or killed.
  - Work only with an undamaged cut-off machine.

- ► If the cut-off machine is dirty: Clean the cut-off machine.
- ► Work only with an undamaged deflector.
- ► Do not modify the cut-off machine. Exception: Installation of a cutting wheel listed in this User Manual.
- ► If the controls do not function properly: Do not use the cut-off machine.
- ► Install original STIHL accessories designed for this cut-off machine.
- ► Install the cutting wheel as described in this User Manual.
- ► The permissible cutting wheel speed must be equal to or greater than the maximum spindle speed of the cut-off machine, 🕮 18.1..
- ► Install accessories as described in this User Manual or in the User Manual for the accessories.
- ► Never insert objects in the cut-off machine's openings.
- ► Replace worn or damaged warning signs.
- ► If you are unsure: Contact a STIHL authorized dealer.

3.6.2 Resin cutting wheel

The resin cutting wheel is in a safe condition if the following conditions are met:
– The resin cutting wheel and its spindle bore are undamaged.
– The permissible resin cutting wheel speed must be equal to or greater than the maximum spindle speed of the cut-off machine.
– The resin cutting wheel is not deformed or discolored.
– The cutting wheel is not yet past its expiration date.

Cutting wheels are exposed to extremely high loads especially during freehand cutting.
– Only use approved and correspondingly labeled cutting wheels with hand-held machines as per EN 12413.
– Observe the maximum permissible speed of the cutting wheel.

⚠ WARNING



- ► Work only with an undamaged cutting wheel with an undamaged spindle bore.



- ► Ensure that the permissible resin cutting wheel speed is equal to or greater than the maximum spindle speed of the cut-off machine.
- ► If the resin cutting wheel is deformed or discolored: Replace the resin cutting wheel.
- ► If the resin cutting wheel has exceeded its expiration date: Replace the resin cutting wheel.
- ► If you are unsure: Contact a STIHL authorized dealer.

3.6.3 Diamond cutting wheel

The diamond cutting wheel is in a safe condition if the following conditions are met:
– The diamond cutting wheel and its spindle bore are undamaged.
– The permissible diamond cutting wheel speed must be equal to or greater than the maximum spindle speed of the cut-off machine.
– The diamond cutting wheel is not deformed or discolored.
– The hole diameter and the spindle diameter are identical.

Cutting wheels are exposed to extremely high loads especially during freehand cutting.
– Only use approved and correspondingly labeled cutting wheels with hand-held machines as per EN 13236.
– Observe the maximum permissible speed of the cutting wheel.

⚠ WARNING

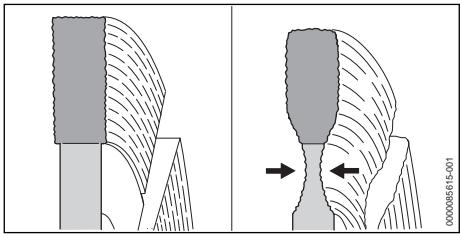


- ► Work only with an undamaged diamond cutting wheel with an undamaged spindle bore.

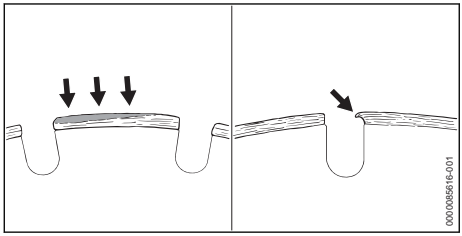


- ► Ensure that the permissible diamond cutting wheel speed is equal to or greater than the maximum spindle speed of the cut-off machine.
- ► If the diamond cutting wheel is deformed or discolored: Replace the cutting wheel.
- ► Ensure that the hole diameter and the spindle diameter are identical and that no adapter sleeve is used.
- ► If you are unsure: Contact a STIHL authorized dealer.

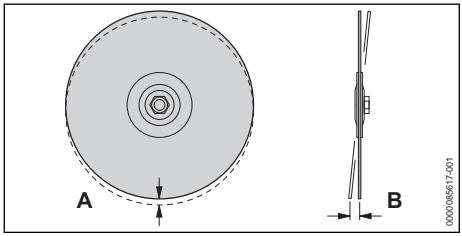
■ The cut-off machine is not suitable for cutting plastics. A special cutting wheel (D-G80) is available for cutting water-carrying plastic pipes made of PP, PE or PVC.
- ► If you need to cut water-carrying plastic pipes: Use the D-G80 cutting wheel.



- When cutting roadway pavement, you may cut into the base course (gravel). Cutting into gravel may cause excessive undercut on diamond cutting wheels. The diamond cutting wheel may get damaged.
  - ► When cutting roadway pavement: Do not cut into the base course (gravel).



- Built-up edges may take the form of a light gray deposit on the tops of the diamond segments of a diamond cutting wheel. Built-up edges may cover up the diamonds in the segments and blunt the diamond segments. Built-up edges may reinforce the vibration and cause sparks to form. Working with a diamond cutting wheel, on which built-up edges have formed, may generate considerable heat. The diamond cutting wheel may get damaged.
  - ► When built-up edges have formed on the diamond cutting wheel: Replace the diamond cutting wheel.



- When using a diamond cutting wheel, a damaged spindle bearing of the cut-off machine may cause deviations in radial run-out (A) and axial run-out (B). Any deviation in the radial run-out (A) may cause individual diamond segments to overload and overheat. The diamond segments may burn out or the diamond cutting wheel may break. If the case of deviations in the axial run-out (B), the diamond cutting wheel may become too hot and the kerf may become wider.
  - ► If the case of deviations in the radial run-out (A) or the axial run-out (B): Replace the diamond cutting wheel.
- Smears forms when certain materials stick to the cutting wheel while cutting, in particular when cutting pipes from non-weldable plastic (PP, PE, PVC).
  - ► If smears have formed on the diamond cutting wheel: "Dress" the diamond cutting wheel by briefly cutting into rough material such as sandstone, concrete or asphalt.

3.6.4 Battery

The battery is in a safe condition if the following points are observed:
– Battery is undamaged.
– The battery is clean and dry.
– Battery functions properly and has not been modified.

⚠ WARNING

- A battery that is not in a safe condition cannot operate safely. Persons may be seriously injured.
  - ► Never work with a damaged battery.
  - ► Never attempt to charge a damaged or defective battery.
  - ► If the battery is dirty: Clean the battery.
  - ► If the battery is wet or damp: Allow the battery to dry, 🕮 18.2.
  - ► Never attempt to modify the battery.
  - ► Never insert objects in the battery's openings.
  - ► Never bridge the battery's contacts with metallic objects (short circuit).
  - ► Do not open the battery.
  - ► Replace worn or damaged labels.
- Fluid may leak from a damaged battery. If that liquid comes into contact with the skin or eyes, the skin or eyes may be irritated.
  - ► Avoid contact with the liquid.
  - ► If skin contact occurs: Wash affected areas of skin with plenty of water and soap.
  - ► In the event of contact with eyes: Rinse eyes with plenty of water for at least 15 minutes and consult a doctor.
- A damaged or defective battery may smell unusual, emit smoke or burn. Persons may be seriously or fatally injured, and property may be damaged.

- ► If the battery smells unusual or emits smoke: do not use the battery and keep it away from combustible substances.
- ► If the battery catches fire: Attempt to extinguish the battery with a fire extinguisher or water.

3.7 Working

⚠ WARNING

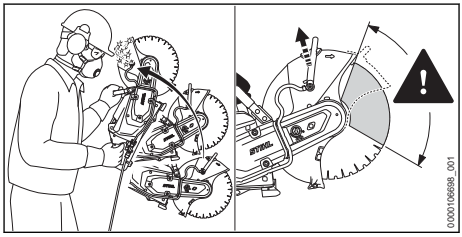
- Always work within calling distance of others so that you can summon help in an emergency.
  - ► Make sure that people are within earshot outside the working area.
- In certain situations, the user may no longer be able to concentrate on their work. This may result in the user stumbling, falling and suffering serious injury.
  - ► Work calmly and methodically.
  - ► If light and visibility are poor: Do not work with the cut-off machine.
  - ► Operate the cut-off machine alone.
  - ► Do not work above shoulder height.
  - ► Do not lean too far forward and never bend over the cutting wheel.
  - ► Do not work on a ladder
  - ► Do not work on an unstable surface.
  - ► Do not work with just one hand.
  - ► Watch out for obstacles.
  - ► Work standing on the ground and keep your balance.
  - ► If you start feeling fatigue: Take a break.
- The turning cutting wheel may cut the user. This may result in serious injury to the user.
  - ► Never touch a rotating cutting wheel.
  - ► If the cutting wheel is blocked by an object: Switch off the cut-off machine and remove the batteries. Only then remove the object.
- If the behavior of the cut-off machine changes during operation or feels unusual, it may no longer be in a safe condition. This may result in serious injury to people and damage to property.
  - ► Stop working, remove the battery and contact a STIHL authorized dealer.
- Vibrations may occur while using the cut-off machine.
  - ► Wear gloves.
  - ► Take breaks.
  - ► If signs of a circulatory disorder occur: Consult a doctor.
- Sparks may fly while working. Sparks may cause fires and explosions in highly flammable or explosive environments. Persons may be seriously or fatally injured, and property may be damaged.



  - ► Do not work in a highly flammable or explosive environment.
  - ► Ensure that pipes, metal tanks or other containers that are to be cut do not contain any volatile or flammable substances.
- Note that the cutting wheel still continues to run for a short period after you release the trigger. People may suffer serious injuries as a result.
  - ► Wait until the cutting wheel is no longer rotating.

3.8 Reactive Forces

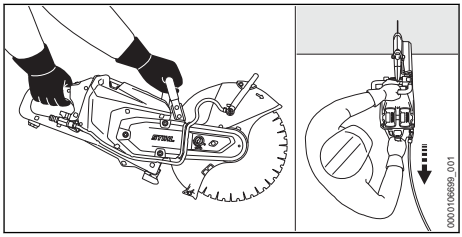
3.8.1 Kickback





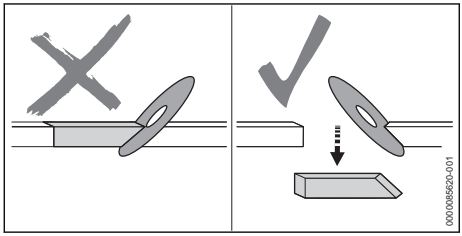
Kickback can be caused for the following reasons:
- – The rotating cutting wheel is jammed or pinched.
- – The rotating cutting wheel makes contact with a hard object in the area of the top quadrant.

⚠ WARNING

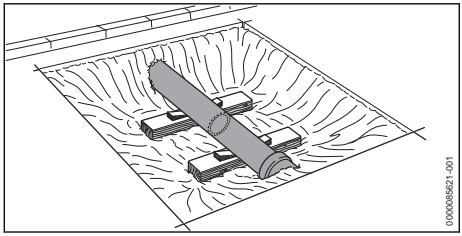


- If a kickback occurs, the cut-off machine may be thrown up in the direction of the user. The operator may lose control of the cut-off machine and be seriously or fatally injured.
  - ► Hold the cut-off machine firmly with both hands.
  - ► Always keep your body out of the plane of the cut-off machine.
  - ► Work as described in this User Manual.
  - ► Do not cut with the upper quadrant of the cutting wheel.
  - ► Work with the engine running at full throttle.

- ► Pull the cutting wheel into the workpiece. It must never be pushed.
- ► Do not use circular saw blades, carbide, rescue or wood cutting attachments or saws of any kind.
- ► If you use a diamond cutting wheel: Work with wet cutting.
- ► If the diamond cutting wheel wobbles: Replace the cutting wheel.
- ► Do not use diamond cutting wheels that are coated on the side.
- ► If you use a resin cutting wheel that is only suitable for wet cutting: Work with wet cutting.

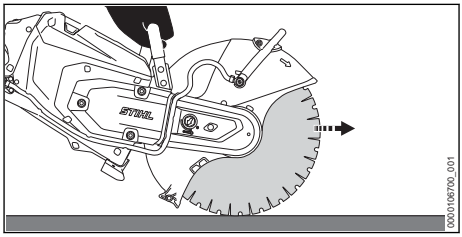


- The wedge effect may pinch the cutting wheel, and the operator can lose control of the cut-off machine and sustain serious or fatal injuries.
  - ► Avoid wedge effect.
  - ► Always be aware that the part to be cut may move and other factors that may cause the cut to close and jam the cutting wheel.
  - ► The object to be cut must be secured and supported so that the kerf remains open during and after cutting.
  - ► Make sure that the object to be cut is not hollow, is secured against oscillations and cannot roll or slip.



- The pipe can slip due to material that comes loose. The operator may lose control of the cut-off machine and be seriously or fatally injured.
  - ► Support an uncovered pipe so that it is stable and capable of bearing weight.

3.8.2 Pull away from



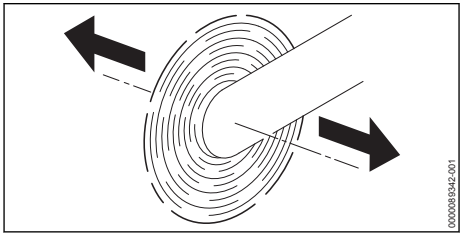
The cutting wheel will be pulled away from the user if the bottom of the cut-off machine is used for cutting.

⚠ WARNING

- If the cutting wheel makes contact with a hard object and is suddenly pinched, the cut-off-machine may be abruptly jerked away from the operator. The operator may lose control of the cut-off machine and be seriously or fatally injured.
  - ► Hold the cut-off machine firmly with both hands.
  - ► Work as described in this User Manual.
  - ► Keep the cutting wheel straight in the cut.
  - ► Do not use for lateral grinding or roughing.

3.8.3 Gyroscopic force

⚠ WARNING



- When a cut-off machine with a rotating cutting wheel moves in the direction of the arrow, gyroscopic force may be produced. This gyroscopic force can cause the cut-off machine to tip over. The operator can lose control of the cut-off machine and be seriously or fatally injured.
  - ► Hold the cut-off machine securely with both hands.
  - ► Do not swivel the cut-off machine.
  - ► Work as described in this User Manual.

3.9 Transporting

3.9.1 Cut-off machine

⚠ WARNING

- When cutting without a water supply, the cutting wheel can become hot. There is a risk of burn injuries.
  - ► Never touch a cutting wheel.
- The cut-off machine may tip over or shift during transport. People may be injured or property may be damaged.
  - ► Remove the cutting wheel.



  - ► Remove the batteries.
  - ► Secure the cut-off machine with lashing straps, belts or a net to prevent it from tipping over and moving.

3.9.2 Battery

⚠ WARNING

- The battery is not protected against all ambient conditions. The battery may be damaged if it is exposed to certain ambient conditions, and damage to property may occur.
  - ► Never transport a damaged battery.
- The battery may turn over or shift during transport. This may result in injury to people and damage to property.
  - ► Pack the battery in packaging in such a way that it cannot move.
  - ► Secure the packaging so that it cannot move.

3.10 Storing

3.10.1 Cut-off machine

⚠ WARNING

- Children are not aware of and cannot assess the dangers of the cut-off machine. Children may be seriously injured.



  - ► Remove the batteries.
  - ► Store the cut-off machine out of the reach of children.
- Moisture may cause the electrical contacts on the cut-off machine and metal components to corrode. The cut-off machine may be damaged.



  - ► Remove the batteries.
  - ► Store the cut-off machine in a clean and dry condition.

3.10.2 Battery

⚠ WARNING

- Children are not aware of and cannot assess the dangers of the battery. Children may be seriously injured.
  - ► Store the battery out of the reach of children.
- The battery is not protected against all ambient conditions. If the battery is exposed to certain ambient conditions, the battery may be irreparably damaged.
  - ► Store the battery in a clean and dry condition.
  - ► Store the battery in an enclosed space.
  - ► Store the battery separately from the cut-off machine.
  - ► If the battery is stored in the charger, disconnect the mains plug and store the battery at a state of charge between 40% and 60% (2 lit green LEDs).
  - ► Do not store the battery outside of the specified temperature limits, 🕮 18.3.

3.11 Cleaning, maintenance and repair

⚠ WARNING

- The cut-off machine may start up unintentionally if the batteries are left in place during cleaning, maintenance or repair operations. This may result in serious injury to people and damage to property.



  - ► Remove the batteries.
- When cutting without a water supply, the cutting wheel can become hot. There is a risk of burn injuries.
  - ► Never touch a cutting wheel.
- Harsh detergents or cleaning with a high-pressure washer or sharp objects can damage the cut-off machine, the cutting wheel and the battery. If the cut-off machine, cutting wheel or battery are not cleaned correctly, components may no longer function properly or safety devices may be rendered inoperative. People may suffer serious injuries as a result.

- ► Always clean the cut-off machine, the cutting wheel and the battery as described in this User Manual.

■ If the cut-off machine, the cutting wheel or the battery are not maintained and repaired correctly, components may no longer function properly or safety devices may be rendered inoperative. Persons may be seriously injured or killed.
- ► Do not attempt to carry out any maintenance work or repairs on the cut-off machine, the cutting wheel or the battery yourself.
- ► If the cut-off machine, cutting wheel or battery require servicing or repairs, contact a STIHL authorized dealer for assistance.

4 Preparing the cut-off machine for use

4.1 Preparing the cut-off machine

The following steps must be performed before commencing work:
- ► Ensure that the following components are in a safe condition:
  - – Cut-off machine, 🕮 3.6.1.
  - – Cutting wheel, 🕮 3.6.3.
  - – Battery, 🕮 3.6.4.
- ► Check the battery, 🕮 10.2.
- ► Fully charge the battery as described in the User Manual for the STIHL AL 101, 301, 301-4, 501 chargers.
- ► Clean the cut-off machine, 🕮 15.1.
- ► Attach the cutting wheel, 🕮 7.2.2.
- ► Adjust the deflector, 🕮 7.3.1
- ► Check the controls, 🕮 10.1.
- ► Connect water supply, 🕮 11.3.
- ► If you cannot carry out these steps: Do not use the cut-off machine and instead contact a STIHL authorized dealer for assistance.

4.2 Connecting the STIHL product with the STIHL connected app via a Bluetooth® radio interface

- ► Activate the Bluetooth® radio interface on the mobile device.
- ► Activating the Bluetooth® radio interface on the control panel, 🕮 6.1.
- ► Download the STIHL connected app to the mobile device from the App Store and create an account.
- ► Open and sign in to the STIHL connected app.
- ► Add the STIHL product in the STIHL connected app and follow the instructions on the screen.

For contacts and other information, please visit https://support.stihl.com or see the STIHL connected app.

The STIHL connected app is available in certain markets.

4.3 Connecting a battery with Bluetooth® radio interface with the STIHL connected app

- ► Activate the Bluetooth® radio interface on the mobile device.
- ► Activating the Bluetooth® radio interface on the battery, 🕮 6.2.1.
- ► Download the STIHL connected app to the mobile device from the App Store and create an account.
- ► Open and sign in to the STIHL connected app.
- ► Add the battery in the STIHL connected app and follow the instructions on the screen.

For contacts and other information, please visit https://support.stihl.com or see the STIHL connected app.

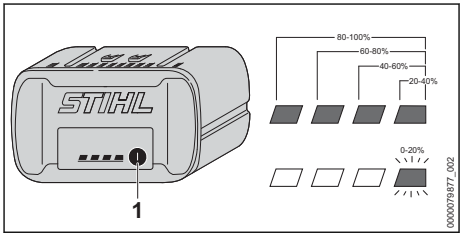
The STIHL connected app is available internationally.

5 Charging the Battery, LEDs

5.1 Charging the battery

The charging time depends on various factors, e.g. the battery temperature or the ambient temperature. For optimal performance, note the recommended temperature ranges, 🕮 18.4. The actual charging time may vary from the charging time indicated. The charging time is indicated at www.stihl.com/charging-times.
- ► Recharge the battery as described in the User Manual for STIHL AL 101, 301, 301-4, 501 chargers.

5.2 Displaying the charge level



- Press the button (1).
  The LEDs light up green for about 5 seconds and indicate the state of charge.
- If the LED on the right flashes green: Charge the battery.

5.3 LEDs on the battery

The LEDs can indicate the state of charge of the battery or any faults. The LEDs can may light up steady or flash in green or red.

If the LEDs light up or flash green, the state of charge of the battery is indicated.

- If the LEDs light up red or flash red: Trouble-shooting, 🕮 17.1.
  There is an error in the cut-off machine or in the battery.

6 Activating and Deactivating Bluetooth® Radio Interface

6.1 Cut-off machine

6.1.1 Activating the Bluetooth® radio interface

Activating the Bluetooth® radio interface on the control panel

- Switch on the cut-off machine.
- Press and hold the "BLUETOOTH®" pushbutton for about 3 seconds until the "BLUETOOTH®" LED next to the symbol lights up blue for about 5 seconds.
  The Bluetooth® radio interface on the cut-off machine is activated.

6.1.2 Deactivating the Bluetooth® radio interface

- Remove the cut-off machine from the STIHL connected app.

Deactivating the Bluetooth® radio interface on the control panel

- Press and hold the "BLUETOOTH®" pushbutton for about 10 seconds until the "BLUETOOTH®" LED next to the symbol flashes blue six times.
  The Bluetooth® radio interface on the cut-off machine is deactivated.

6.2 Battery

6.2.1 Activating the Bluetooth® Radio Interface

- If the battery has a Bluetooth® radio interface: Press and hold the pushbutton until the "BLUETOOTH®" LED next to the symbol lights up blue for approximately 3 seconds.
  The Bluetooth® radio interface on the battery is activated.

6.2.2 Deactivating the Bluetooth® Radio Interface

- If the battery has a Bluetooth® radio interface: Press and hold the pushbutton until the "BLUETOOTH®" LED next to the symbol lights up blue six times.
  The Bluetooth® radio interface on the battery is deactivated.

6.2.3 Resetting the battery to the factory setting via a Bluetooth® radio interface (if available)

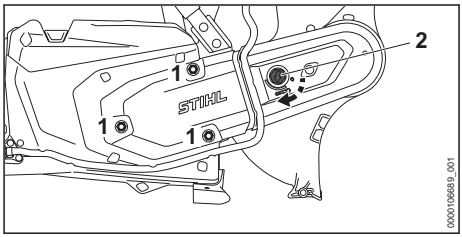
Resetting the battery to the factory setting means that all user-specific data will be deleted.

- Press the pushbutton four (4) times in quick succession and keep it pressed on the fourth time until the "BLUETOOTH®" LED next to the symbol flashes blue.
- Then release the pushbutton immediately.
- Connect the battery to the STIHL connected app and check whether all user-specific data has been deleted.

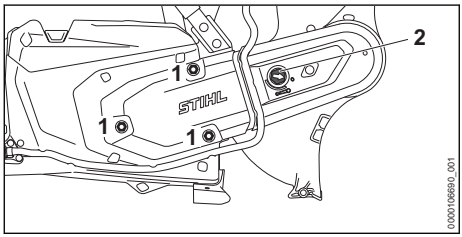
7 Assembling the cut-off machine

7.1 Tensioning the V-ribbed belt

- Switch off the cut-off machine and remove the batteries.



- Loosen the nuts (1).
- Turn the tensioning nut (2) clockwise until the arrow of the tensioning nut points to **0**.
  The tensioning nut (2) is released.



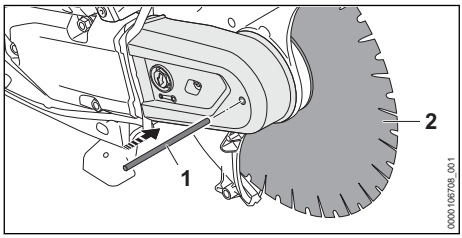
- Turn tensioning nut (2) clockwise by 1/8 turn until resistance is felt.
  The V-ribbed belt is tensioned.
- Tighten the nuts (1).

7.2 Attaching and removing the cutting wheel

7.2.1 Locking the shaft

The shaft must be locked before attaching or removing the cutting wheel.

- Switch off the cut-off machine and remove the batteries.

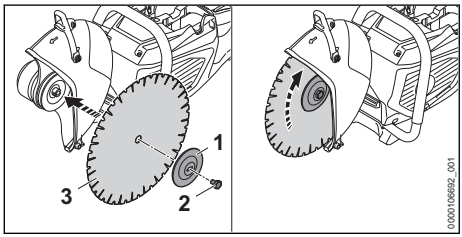


- Slide the stop pin (1) through the hole in the belt guard.
- Turn the cutting wheel (2) until the stop pin engages in one of the holes.
  The shaft is now locked.

7.2.2 Attaching the cutting wheel

The cutting wheels that can be attached are listed in the technical specifications, 📖 19.1.

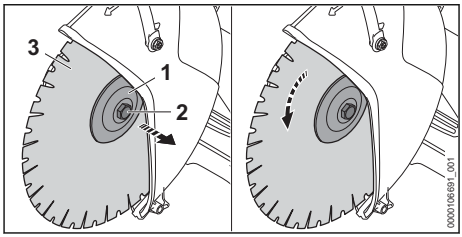
- Switch off the cut-off machine and remove the batteries.



- Insert the cutting wheel (3).
- If you are using a diamond cutting wheel: Align the diamond cutting wheel until the arrows on the diamond cutting wheel point in the same direction as the arrow for the direction of rotation on the deflector.
- Position the thrust washer (1) on the cutting wheel (3) so that the words **TOP SIDE** are visible.
- Screw in the screw (2).
- Tighten the screw (2) with a tightening torque of 30 Nm.

7.2.3 Removing the cutting wheel

- Switch off the cut-off machine and remove the batteries.



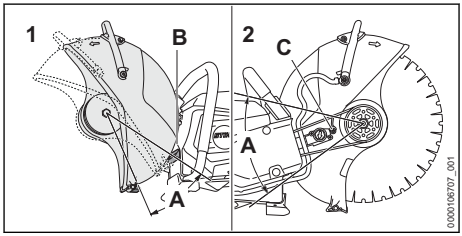
- Loosen and remove the screw (2).
- Remove the cutting wheel (3) together with the thrust washer (1).

7.3 Adjusting the deflector

7.3.1 Adjusting the deflector

The deflector can be continuously adjusted. The adjustment range A is limited by the limit stop B and the stop pin C.

- Switch off the cut-off machine and remove the batteries.

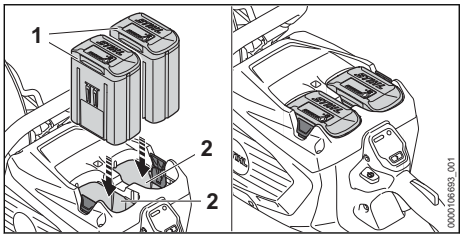


- Adjust the deflector.

8 Removing and Fitting the Battery

8.1 Inserting the battery

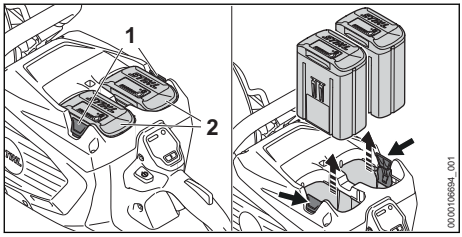
Stihl recommends using and marking the batteries in pairs.



- Push the battery (1) into the battery compartment (2) as far as it will go.
  The battery (1) engages with a click and is now locked.

8.2 Removing the battery

- Place the cut-off machine on a level surface.

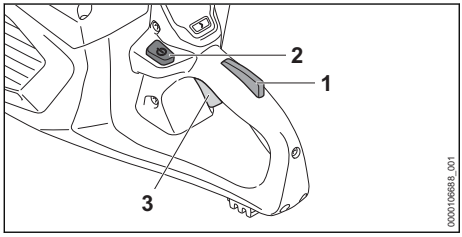


- Press both locking levers (1).
  The battery (2) is now unlocked and can be removed.

9 Switching the cut-off machine on and off

9.1 Switching on the cut-off machine

- Hold the cut-off machine firmly with your right hand on the control handle so that your thumb wraps around the handle.
- Hold the cut-off machine by the handlebar with your left hand so that your thumb wraps around the handlebar.



- Press the trigger lockout (1) with your hand and keep it pressed.
- Press the unlock button (2).
  The LEDs on the control panel light up.
- Press and hold the trigger (3) with your index finger.
  The cut-off machine accelerates and the cutting wheel rotates.

The more you press the trigger (3), the faster the cutting wheel rotates.

You can also turn on the cut-off machine by first pressing the unlock button (2) and then pressing the trigger lockout (1) within 5 seconds (as long as the "OPERATING MODE" LED lights up). The trigger (3) is now unlocked and the cut-off-machine is ready for use.

If the trigger (3) and the trigger lockout (1) are released after starting, the "OPERATING MODE" LED continues to light up for another 5 seconds. As long as the LED is flashing, the cut-off machine can be switched on again without pressing the unlock button (2).

9.2 Switching off the cut-off machine

- Release the trigger and trigger lockout.
  The cutting wheel no longer rotates.
- If the cutting wheel continues to rotate:
  Remove the batteries and contact a STIHL authorized dealer.
  The cut-off machine is defective.

10 Checking the cut-off machine and battery

10.1 Checking the controls

Trigger lockout and trigger

- Remove the batteries.
- Try pressing the trigger without pressing the trigger lockout.
- If the trigger can be pulled: Do not use the cut-off machine and contact a STIHL authorized dealer.
  The trigger lockout is defective.
- Depress and hold the trigger lockout.
- Press and release the trigger.
- If the trigger switch or the trigger switch lockout is stiff or does not spring back to its initial position: Do not use the cut-off machine and contact a STIHL authorized dealer for assistance.
  The trigger or the trigger lockout is defective.

Switching on the cut-off machine

- Insert the batteries.
- Press and hold the trigger lockout.
- Press the unlock button.

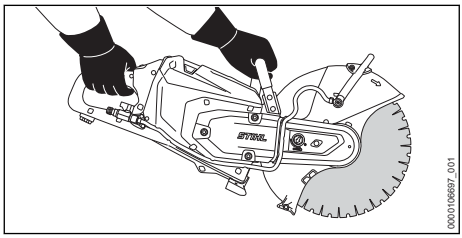
- ► Press and hold the trigger.
  The cutting wheel rotates.
- ► If the "ERROR" LED on the control panel is flashing red: Remove the batteries and consult a STIHL authorized dealer.
  There is an error in the cut-off machine.
- ► If 3 LEDs on the battery flash red: Remove the batteries and contact a STIHL authorized dealer.
  There is an error in the cut-off machine.
- ► Release the trigger.
  The cutting wheel no longer rotates.
- ► If the cutting wheel continues to run: Remove the batteries and contact a STIHL authorized dealer for assistance.
  The cut-off machine is defective.

10.2 Testing the Battery

- ► Press button on battery.
  The LEDs glow or flash.
- ► If the LEDs do not glow or flash: Do not use the battery and contact your STIHL servicing dealer.
  There is a malfunction in the battery.

11 Working with the cut-off machine

11.1 Holding and controlling the cut-off machine



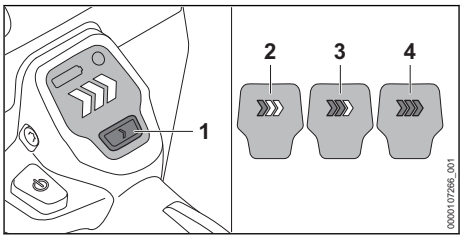
- ► Hold and control your cut-off machine with your left hand on the handlebar and your right hand on the control handle so that your left thumb wraps around the handlebar and your right thumb wraps around the control handle.

11.2 Selecting the operating mode

The full scope of functions is available with the AP 500 S. The LEDs on the control panel of the cut-off machine indicate the selected operating mode.

The selected operating mode affects the battery's runtime.

- ► Switch on the cut-off machine.
  The LEDs on the control panel of the cut-off machine light up and indicate the selected operating mode.



- ► Press the operating mode button (1).
  This sets the next operating mode. The third operating mode is followed by the first operating mode.
- ► Press the operating mode button (1) as often as necessary until the required operating mode is set.

Operating modes:

"POWER" mode (4)

- ► For short separating cuts at maximum power.

"STANDARD" operating mode (3)

- ► For long cuts, suitable for all separating cuts.

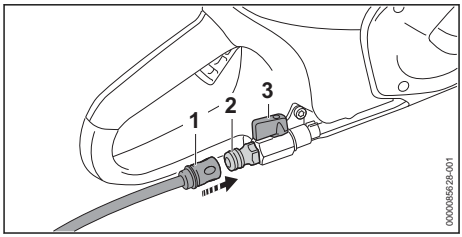
"PRECISION" mode (2)

- ► For fine, precise separating cuts.

11.3 Connecting and disconnecting the water hose

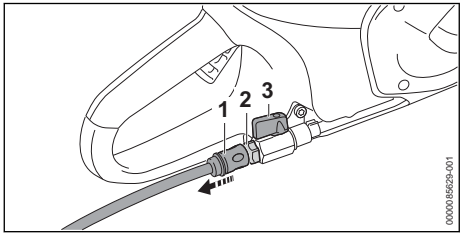
Connecting the water hose

For wet cutting, a water hose or the STIHL pressurized water tank (accessory) must be connected.



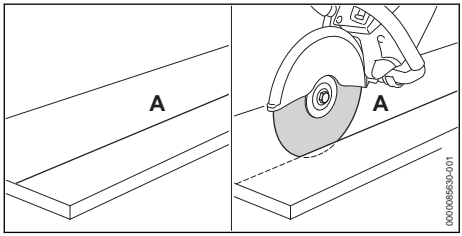
- ► Push the coupling (1) onto the connector (2).
  The coupling (1) engages with an audible click.
- ► Turn on water supply.
- ► Open the shut-off valve (3).
- ► The cut-off machine must be supplied with at least 0.6 liters of water per minute.

Removing the water hose



- Close the shut-off valve (3).
- To unlock the coupling (1), pull the ring or twist and hold it.
- Pull the coupling (1) off the connector (2).
- Switch on the cut-off machine for about three to six seconds.
  This will spin off any residual water.

11.4 Cutting thicker material

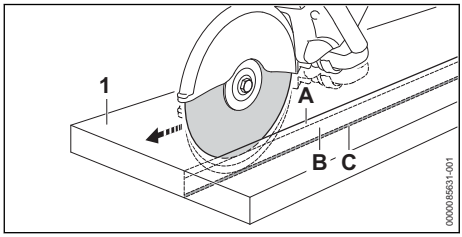


- Mark cutting line (A).
- Cut along the cutting line (A) while ensuring that with each pass the cut is not more than 2 cm deep.
- If you need to cut thicker material: Cut it in several passes.
- If you need to correct the cut: Reposition the cutting wheel without tilting.

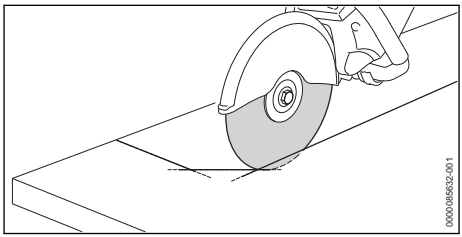
For optimum performance, note the recommended temperature ranges, 🕮 18.4.

11.5 Cutting plates

- Secure the plate on a non-slip surface



- Mark a cutting line
- Cut a guide groove (A) along the cutting line.
- Deepen the kerf (B) and leave a "hinge" (C).
- Cut through the plate (1) at the cutting edges.
- Break the plate (1).



- If you need to cut a curve: Cut the curve in several passes and do not tilt the cutting wheel.

11.6 Cutting pipes, round and hollow bodies

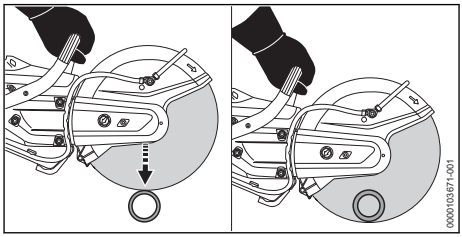
- Secure pipes, round or hollow bodies so that the pipe, round or hollow body cannot vibrate, slip or roll away.
- Note the fall and weight of the severed part.
- Mark the cutting line and avoid reinforcements, especially in the direction of the severing cut.
- Determine the sequence of the severing cuts.
- Cut a guide groove along the cutting line.
- Deepen the kerf along the guide groove.
- In the case of directional corrections, do not tilt the cutting wheel but instead reposition on the part to be cut. Leave small ridges that hold the part that is to be separated in position.
- Break these ridges after the severing cut.

11.7 Cutting concrete pipes

Concrete pipe with a small outside diameter

This method must be selected if the outside diameter of the concrete pipe is smaller than the maximum possible cutting depth of the cutting wheel.

- Secure the concrete pipe so that the concrete pipe cannot vibrate, slip or roll away.

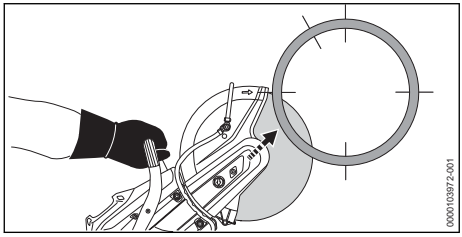


- Carry out a single severing cut from the top to the bottom.

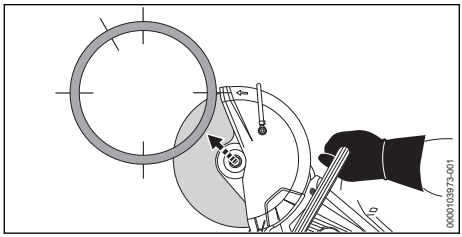
Concrete pipe with a large outside diameter

This method must be selected if the outside diameter of the concrete pipe is larger than the maximum possible cutting depth of the cutting wheel.

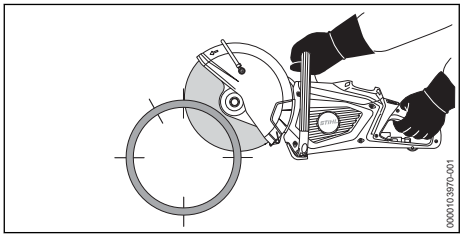
- ► Secure the concrete pipe so that the concrete pipe cannot vibrate, slip or roll away.
- ► Determine and mark direction of cut.
- ► Determine sequence of cuts



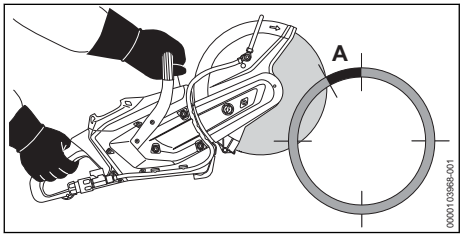
- ► Cut one lower side with the top quarter of the cutting wheel.



- ► Cut one opposite lower side with the top quarter of the cutting wheel.

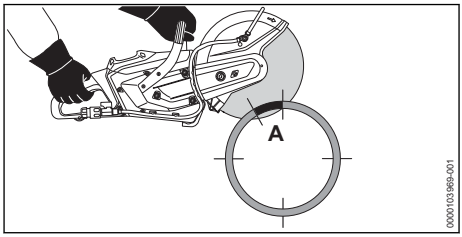


- ► Cut one upper side.



WARNING

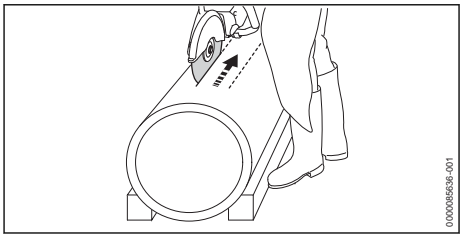
- If you make a cut into the marked area (A, approx. 15% of the circumference of the concrete pipe) or if the pipe is cut off too soon, the operator can loose control of the cut-off machine. The user may be seriously injured or killed, and property may be damaged.
  - ► Only cut through the marked area (A) only when all bottom and lateral cuts have been completed.



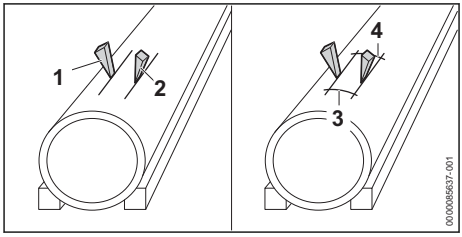
- ► Cut through the marked area (A) from the top.

11.8 Cutting recesses in concrete pipes

- ► Secure the concrete pipe so that the concrete pipe cannot vibrate, slip or roll away.



- ► First, cut hard-to-reach areas.
- ► Always make severing cuts so that the cutting wheel is not jammed.



Wedges (1 and 2) may be used, and ridges (3 and 4) can be left standing.

- ► Once all steps have been completed: Break off the ridges (3 and 4).

- If the part to be cut remains in its position: Do not cut again and break off the part that is to be removed.

11.9 Working with a diamond cutting wheel

Water must always be used for wet cutting when working with diamond cutting wheels.

12 After Finishing Work

12.1 After finishing work

- Switch off the cut-off machine and remove the batteries.
- If the cut-off machine is wet: Allow the cut-off machine to dry.
- If the battery is moist or wet: Allow the battery to dry, 🕮 18.4.
- Clean the cut-off machine.
- Clean the battery.

13 Transporting

13.1 Transporting the cut-off machine

- Switch off the cut-off machine and remove the batteries.
- Remove the cutting wheel.
- Carry the cut-off machine by the handlebar with your right hand so that the deflector is pointing backwards.
- Transporting the cut-off machine in a vehicle: Secure the cut-off machine to prevent it from turning over and moving.

13.2 Transporting the battery

- Switch off the cut-off machine and remove the battery.
- Check that the battery is in a safe condition.
- Pack the battery in packaging in such a way that it cannot move inside the packaging.
- Secure the packaging so that it cannot move.

The battery is subject to the Carriage of Dangerous Goods regulations. The battery is classified as UN 3480 (lithium ion batteries) and has been tested pursuant to UN Manual Tests and Criteria Part III, Subsection 38.3.

The transport regulations can be found at www.stihl.com/safety-data-sheets.

14 Storing

14.1 Storing the cut-off machine

- Switch off the cut-off machine and remove the batteries.
- The cut-off machine should be stored in such a way that the following conditions are met:
  - The cut-off machine cannot tip over or move.
  - The cut-off machine is out of the reach of children.
  - The cut-off machine is clean and dry.
- If you store the cut-off machine for more than 30 days: Remove the cutting wheel.

14.2 Storing the cutting wheel

- The cutting wheel should be stored in such a way that the following conditions are met:
  - The cutting wheel is out of reach of children.
  - The cutting wheel is clean and dry.
  - The cutting wheel is in an enclosed space.
  - The cutting wheel is stored in its original packaging.
  - The cutting wheel is stored at a temperature range between 0°C and 50°C.

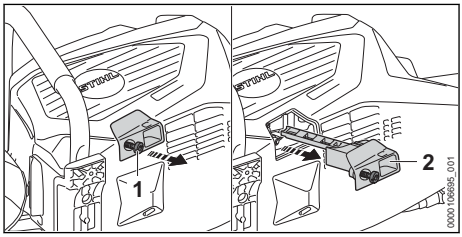
15 Cleaning

15.1 Cleaning the cut-off machine

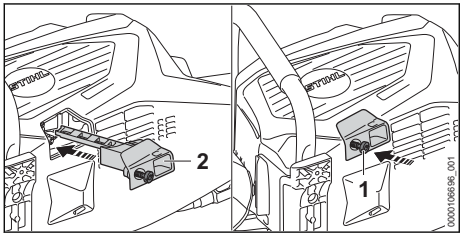
- Switch off the cut-off machine and remove the batteries.
- Clean the cut-off machine with a damp cloth.
- Clean the ventilation slots.
- Clean the throttle lever.
- Clean the magnetic separator, 🕮 15.2.
- Vacuum metal chips with a suitable vacuum cleaner.
- Remove foreign particles from the magnetic separator compartment and ventilation area.
- Remove foreign objects from the battery compartment and clean the battery compartment with a damp cloth.
- Use a paintbrush or soft brush to clean the electrical contacts in the battery compartment.

15.2 Cleaning the magnetic separator

- Switch off the cut-off machine and remove the batteries.
- Place the cut-off machine on its side.



- Unscrew the screw (1) and pull out the magnetic separator (2).
- Clean the magnetic separator (2) with a cloth.



- Insert the magnetic separator (2), screw in the screw (1) and tighten it.

15.3 Cleaning the Battery

- Clean the battery with a damp cloth.

16 Maintenance and Repairs

16.1 Maintenance and repairs of the cut-off machine and the cutting wheel

The user cannot carry out maintenance or repairs on the cut-off machine and its cutting wheel.

- If the cut-off machine or cutting wheel requires servicing or is defective or damaged: Contact a STIHL authorized dealer for assistance.

16.2 Servicing and Repairing the Battery

The battery requires no servicing and cannot be repaired.

- If the battery has a malfunction or is damaged: Replace the battery.

17 Troubleshooting

17.1 Troubleshooting the cut-off machine or battery

Error	LEDs on the control panel	LEDs on the battery	Cause	Remedy
The cut-off machine does not reach its usual power.	The "OVERHEATING" LED lights up yellow.		The temperatures of the electronics or the motor are too high.	► Allow the cut-off machine to cool down. ► Do not switch on the cut-off machine too often within a short span of time. ► Clean the ventilation slots. ► When working in "POWER" mode: Change the mode.
The cut-off machine cuts out during operation.	The "OVERHEATING" LED flashes red.		The cut-off machine is too hot.	► Remove the batteries. ► Allow the cut-off machine to cool down. ► Clean the ventilation slots.
The cut-off machine does not start when switched on.	The "BATTERY STATE OF CHARGE" LED flashes green.	1 LED flashes green.	The state of charge of at least one battery is too low.	► Check the state of charge on the battery. ► Charge the battery as described in the User Manual for chargers STIHL AL 101, 301, 301-4, 501.
		1 LED lights up steady red.	The battery is too warm or too cold.	► Remove the battery. ► Allow the battery to cool down or warm up.
	The "ERROR" LED flashes red.	3 LEDs flash red.	There is an error in the cut-off machine.	► Remove the batteries.

Error	LEDs on the control panel	LEDs on the battery	Cause	Remedy
				► Clean the electrical contacts in battery compartment 1 and battery compartment 2. ► Insert the batteries. ► Switch on the cut-off machine. ► If 3 LEDs continue to flash red: Do not use the cut-off machine and instead contact a STIHL authorized dealer for assistance.
	The "OVERHEATING" LED flashes red.	3 LEDs light up red.	The cut-off machine is too hot.	► Remove the batteries. ► Allow the cut-off machine to cool down.
		4 LEDs flash red.	There is an error in the battery.	► Remove the battery and reinsert it. ► Switch on the cut-off machine. ► If 4 LEDs continue to flash red: Do not use the battery and instead contact a STIHL authorized dealer.
			There is no electrical contact between the cut-off machine and the batteries.	► Remove the batteries. ► Clean the electrical contacts in battery compartment 1 and battery compartment 2. ► Insert the batteries.
			Communication with the operating unit has been interrupted.	► Remove the batteries. ► Do not use the cut-off machine and instead consult a STIHL authorized dealer.
			The cut-off machine or the batteries are damp.	► Remove the batteries. ► Clean the cut-off machine. ► Allow the cut-off machine or the batteries to dry, 🕮 18.4.
The cut-off machine cuts out during operation.	The "OVERHEATING" LED flashes red.	3 LEDs light up red.	The cut-off machine is too hot.	► Remove the batteries. ► Allow the cut-off machine to cool down. ► Clean the cut-off machine.
			There is an electrical error.	► Remove the batteries and insert them again. ► Switch on the cut-off machine.
Run time of the cut-off machine is too short.			At least one battery is not fully charged.	► Fully charge the batteries as described in the User Manual for STIHL AL 101, 301, 301-4, and 501 chargers.
			The inserted batteries have different power ratings.	► Batteries must be used and marked in pairs.
			The service life of at least one battery has expired.	► Replace the battery.
The STIHL connected app is unable to find the cut-off machine.	The "BLUETOOTH®" LED does not light up.		The Bluetooth® radio interface on the control panel of the cut-off machine or on the mobile device is deactivated.	► Activate the Bluetooth® radio interface on the control panel of the cut-off machine and on the mobile device.

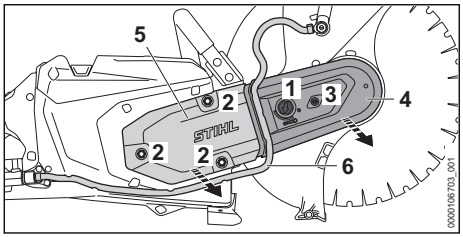
Error	LEDs on the control panel	LEDs on the battery	Cause	Remedy
			The battery in the control panel is not fully charged.	► Insert the batteries. ► Switch on the cut-off machine. The battery in the control panel is charged via the batteries in the cut-off machine.
			The distance between the cut-off machine and the mobile device is too great.	► Reduce the distance, 🕮 18.2. ► If the STIHL connected app is still unable to find the cut-off machine: Contact a STIHL authorized dealer.
The STIHL connected app is unable to find the battery with .			The Bluetooth® radio interface on the battery or mobile device is deactivated.	► Activate the Bluetooth® radio interface on the battery or mobile device.
			Excessive distance between the battery and the mobile device.	► Reduce the distance, 🕮 18.2. ► If the STIHL connected app is still unable to find the cut-off machine or the battery: Contact a STIHL authorized dealer.

17.2 Troubleshooting the diamond cutting wheel

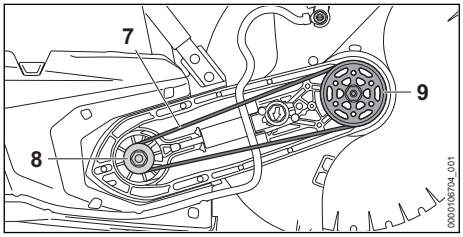
Error	Cause	Remedy
The cutting edges are not clean or the cut drifts.	The radial run-out or the axial run-out deviates.	► Do not use the diamond cutting wheel and consult a STIHL authorized dealer for assistance.
	The diamond cutting wheel wobbles.	► Replace the diamond cutting wheel.
The cutting edges are not clean, the cut drifts or sparks form.	The diamond cutting wheel is blunt.	► If you are using a diamond cutting wheel: Sharpen the diamond cutting wheel by cutting briefly through abrasive material. ► If you are using a diamond cutting wheel for asphalt: Replace the diamond cutting wheel.
	Built-up edges have formed.	► If you are using a diamond cutting wheel: Sharpen the diamond cutting wheel by cutting briefly through abrasive material. ► If you are using a diamond cutting wheel for asphalt: Replace the diamond cutting wheel.
The cutting performance is too weak, and the diamond segments wear out quickly.	The diamond cutting wheel is turning in the wrong direction.	► Install the diamond cutting wheel correctly.
The diamond segments or the diamond cutting wheel has visible cracks.	The diamond cutting wheel is overloaded.	► Replace the diamond cutting wheel.
Undercut develops.	Unsuitable material is being cut.	► Use a diamond cutting wheel suitable for the material.

17.3 Replacing the V-ribbed belt

► Switch off the cut-off machine and remove the batteries.



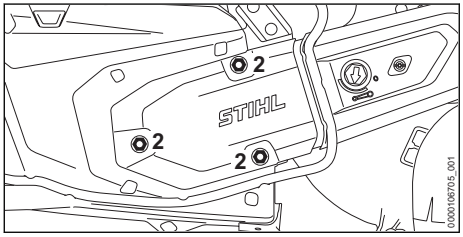
- Turn the tensioning nut (1) counterclockwise by 1/4 turn until the arrow of the tensioning nut points to **0**.
  The tensioning nut (1) is released.
- Remove the hose (6) from the guide of the belt guard (4).
- Rotate the nuts (2) counterclockwise until the cover (5) can be removed and the V-ribbed belt can be removed from the rear belt pulley.
- Unscrew screw (3).
- Remove the belt guard (4).
- Remove the V-ribbed belt (7).



- Insert the V-ribbed belt (7) into the V-belt pulley (8).
- Fit the V-ribbed belt (7) in the belt pulley (9).
- Position the V-ribbed belt guard (4).
- Insert the screw (3) and tighten it securely.
- Place cover (5) in position.
- Turn the nuts (2) on the pins.
- Place the hose (6) into the guide of the belt guard.
- See Tensioning the V-ribbed belt.

17.4 Re-tensioning the V-ribbed belt

- Switch off the cut-off machine and remove the batteries.



- Loosen the nuts (2).
  The V-ribbed belt is tensioned by the force of the spring.
- Tighten the nuts.

17.5 Product Support and Assistance on Use

Product support and assistance on use are available from STIHL servicing dealers.

For contacts and other information, please visit https://support.stihl.com or www.stihl.com.

18 Specifications

18.1 STIHL TSA 500.0-B Cut-off machine

– Approved batteries:
  – STIHL AP 300, 300 S, 500 S
– Weight without battery and cutting wheel: 9.1 kg
– Max. pressure of water supply: 4 bar
– Degree of protection: IPX4 (protection against splash water from any direction)
– Bluetooth® radio interface :
  – Data connection: Bluetooth® 5.1. The mobile device must be compatible with Bluetooth® Low Energy 5.0 and support Generic Access Profile (GAP).
  – Frequency band: ISM band 2.4 GHz
  – Maximum RF power transmitted: 1 mW
  – Signal range: approx. 10 m. The signal strength depends on the ambient conditions and the mobile device. The signal range can vary greatly depending on local conditions and the receiver used. The range may be perceptibly reduced inside enclosed rooms and through metal barriers (such as walls, shelves or cases).
  – Mobile device operating system requirements: Android or iOS (current version or higher)

For runtime, see www.stihl.com/battery-life.

18.2 STIHL AP Battery

– Battery technology: Lithium-ion
– Voltage: 36 V
– Capacity in Ah: see rating label
– Energy content in Wh: see rating label
– Weight in kg: See rating label
– Bluetooth® radio interface (only for batteries with):
  – Data connection: Bluetooth® 5.1. The mobile device must be compatible with

Bluetooth® Low Energy 5.0 and support Generic Access Profile (GAP).
– Frequency band: ISM band 2.4 GHz
– Maximum RF power transmitted: 1 mW
– Signal range: approx. 10 m. The signal strength depends on the ambient conditions and the mobile device. The signal range can vary greatly depending on local conditions and the receiver used. The range may be perceptibly reduced inside enclosed rooms and through metal barriers (such as walls, shelves or cases).
– Mobile device operating system requirements: Android or iOS (current version or higher)

The power output of the battery may vary depending on the battery product used.

18.3 Temperature limits

WARNING

- The battery is not protected against all ambient conditions. If the battery is exposed to certain environmental conditions, it may catch fire or explode. This may result in serious injury to people and damage to property.
  - ► Do not charge and use the battery below -20°C or above 50°C.
  - ► Do not store the battery below -20°C or above 70°C.
  - ► Do not use the cut-off machine below -15°C or above 40°C.
  - ► Do not store the cut-off machine below - 35 C or above 60°C.

18.4 Recommended temperature ranges

For optimum performance of the cut-off machine and battery, note the following temperature ranges:
– Cut-off machine:
  – Use: - 15°C to 40°C
  – Storage: - 35°C to 60°C
– Battery:
  – Charging: 5°C to 40°C
  – Use: -10°C to 40°C
  – Storage: -20°C to +50°C

If the battery is charged, used or stored outside the recommended temperature ranges, performance may be restricted.

If the battery is wet or moist, allow the battery to dry for at least 48 h between 15°C and 50°C and with less than 70% humidity. Higher humidity levels may extend the drying time.

18.5 Sound and vibration values

STIHL recommends wearing hearing protection.

Values when cutting concrete under pressure with the D-B10 diamond cutting wheel
– Sound pressure level L_{peq} measured according to EN 60745-2-22: 106 dB(A), uncertainty K: 2 dB(A)
– Sound power level L_w measured according to EN 60745-2-22: 117 dB(A), uncertainty K: 2 dB(A)
– Vibration value $a_{hv,eq}$ measured according to EN 60745-2-22:
  – Control handle: 2.0 m/s², uncertainty K_a: 2.0 m/s²
  – Handlebar: 2.4 m/s², uncertainty K_a: 2.0 m/s²
– Vibration value p_F determined according to EN ISO 5349-3:
  – Control handle: 57 m/s², uncertainty K_p: 16 m/s²
  – Handlebar: 68 m/s², uncertainty K_p: 16 m/s²

The sound and vibration values indicated were measured according to a standardized test method and can be used as a basis for comparing electric power tools. The actual sound and vibration levels may vary from the values indicated, depending on the type of application and the accessories used. The sound and vibration levels indicated can be used for an initial estimate of the sound and vibration load. The actual sound and vibration stress has to be estimated. The times can be taken into account in the estimate when the electric power tool is switched off and also when it is switched on but running without any load.

For information on compliance with the Physical Agents (Vibration) Directive 2002/44/EC, see www.stihl.com/vib.

18.6 REACH

REACH is an EC regulation and stands for the Registration, Evaluation, Authorisation and Restriction of Chemical substances.

For information on compliance with the REACH regulation see www.stihl.com/reach.

19 Cutting wheels

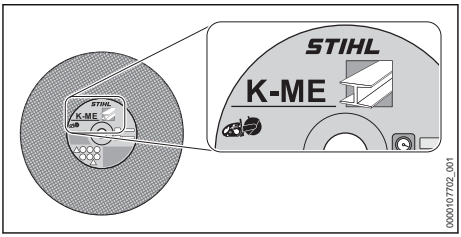
19.1 Cutting wheels for STIHL TSA 500.0-B

The specified maximum permitted operating speed of the cutting wheel must be greater than or equal to the maximum spindle speed of the cut-off machine used.
– Maximum spindle speed: 5020 rpm
– Outside diameter: 350 mm
– Hole diameter or spindle diameter: 20 mm
– Tightening torque: 30 Nm
– Minimum outside diameter of thrust washers: 118 mm

Resin cutting wheels
– Maximum cutting depth: 125 mm
– Maximum thickness: 4.5 mm

Diamond cutting wheels
– Maximum cutting depth: 125 mm
– Maximum thickness: 4.1 mm

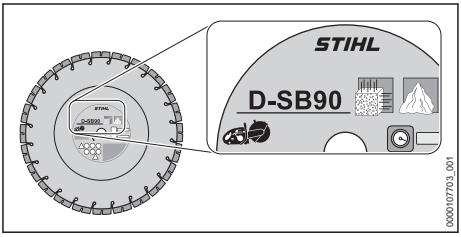
19.2 Resin cutting wheels



Depending on the version, STIHL resin cutting wheels are suitable for cutting the following materials:
– Stone
– Ductile cast iron pipes
– Steel
– Stainless steel

STIHL resin cutting wheels are not suitable for cutting railroad tracks.

19.3 Diamond cutting wheels



Diamond cutting wheels can be used for wet cutting.
Depending on the version, STIHL diamond cutting wheels are suitable for cutting the following materials:
– Asphalt
– Concrete
– Stone (hard rock)
– Abrasive concrete
– Fresh concrete
– Clay bricks
– Clay pipes
– Water-carrying plastic pipes made of PP, PE or PVC (using the D-G80 cutting wheel).

STIHL diamond cutting wheels are differentiated by a letter/number combination of up to four digits:
– The letters denote the main field of application of the diamond cutting wheel.
– The numbers denote the performance class of the diamond cutting wheel.

20 Spare Parts and Accessories

20.1 Spare parts and accessories

STIHL These symbols indicate original STIHL spare parts and original STIHL accessories.

STIHL recommends the use of original STIHL spare parts and accessories.

Despite ongoing market observation, STIHL is unable to judge the reliability, safety and suitability of other manufacturers' spare parts and accessories; accordingly, STIHL cannot warrant for the use of those parts.

Original STIHL spare parts and original STIHL accessories are available from STIHL dealers.

21 Disposal

21.1 Disposal of the cut-off machine and battery

Contact local authorities or a STIHL authorized dealer for information about disposal.

Improper disposal can be harmful to health and pollute the environment.

The control panel contains an installed lithium-ion button cell.
► Take STIHL products including packaging to a suitable collection point for recycling in accordance with local regulations.
► Do not dispose with domestic waste.

22 EU conformity

The EU Declaration of Conformity is available at stihl.link/compliance.

Further information and a form for reporting security vulnerabilities are available at vdp.stihl.com.

23 Addresses

www.stihl.com

24 General Power Tool Safety Warnings

24.1 Introduction

This chapter reproduces the pre-formulated, general safety notices specified in the EN/IEC 60745 standard for hand-held motor-operated electric tools.

STIHL is required to reproduce the wording.

The safety notices described under “Electrical Safety” for avoiding electric shock does not apply to STIHL cordless products.

WARNING

- **Read all the safety precautions, instructions, illustrations and specifications accompanying this electric power tool.** Failure to follow the safety warnings and instructions may result in electric shock, fire and/or serious injury. **Keep all safety notices and instructions for the future.**

The term “electric power tool” used in the safety notices refers to electric power tools powered by mains electricity (by means of a power cord) or electric power tools powered by rechargeable batteries (without a power cord).

24.2 Work area safety

a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.

b) **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.

c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

24.3 Electrical safety

a) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

24.4 Personal safety

a) **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.

b) **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.

c) **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.

d) **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.

e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f) **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.

g) **If devices are provided for the connection of dust extraction and collection facillities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

h) **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.

24.5 Power tool use and care

a) **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.

b) **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.

c) **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.

d) **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.

e) **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.

f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g) **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.

h) **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.

24.6 Battery tool use and care

a) **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.

b) **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.

c) **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.

d) **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.

e) **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.

f) **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130 °C may cause explosion.

g) **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.

24.7 Service

a) **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.

b) **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

24.8 Safety instructions for cutting wheel applications

Safety instructions for cut-off machines

a) **The guard for the electric power tool must be mounted securely and set to achieve a maximum level of safety, i.e., the smallest possible part of the abrasive element points openly toward the operator. Make sure that you and any other person is outside the plane of the rotating abrasive wheel.** The guard is designed to protect the operator against fragments and accidental contact with the abrasive element.

b) **Use only bound reinforced or diamond-tipped cutting wheels for your electric power tool.** Just because the accessory can be mounted

to the electric power tool does not ensure safe use.

c) **The permissible speed of the insert tool must be at least as high as the maximum speed indicated on the electric power tool.** An accessory that rotates faster than permitted can break and fly around.

d) **Abrasive elements must only be used for the recommended applications. For example: Never grind with the side surface of a cutting wheel.** Cutting wheels are designed to remove material with the edge of the wheel. Lateral forces applied to these abrasive elements can break them.

e) **Always use an undamaged clamping flange of the correct size and shape for the abrasive wheel you have chosen.** Suitable flanges support the abrasive wheel and reduce the risk of the abrasive wheel breaking.

f) **Do not use worn abrasive wheels from larger electric power tools.** Abrasive wheels for larger electric power tools are not designed for the high engine speeds of smaller electric power tools and can break.

g) **The outer diameter and thickness of the tool being used must correspond to the dimensions of your electric power tool.** Incorrectly measured tools that are used cannot be adequately shielded or controlled.

h) **Abrasive wheels and flanges must fit exactly onto the grinding spindle of your electric power tool..** Insert tools that do not fit exactly onto the grinding spindle of the electric power tool, rotate unevenly, vibrate a lot and can result in loss of control.

i) **Do not use damaged abrasive wheels. Before each use, check the abrasive wheels for splitting and cracks. If the electric power tool or abrasive wheel falls, check if it is damaged or use an undamaged abrasive wheel. When you have checked the abrasive wheel and started it, make sure that you and everyone else nearby remain outside of the plane of the rotating abrasive wheel and allow the machine to run for a minute at maximum speed.**Damaged abrasive wheels usually break during this test period.

j) **Wear personal protective equipment. Depending on the operation, wear full face protection, eye protection or safety glasses. Where appropriate, wear a dust mask, ear protection, protective gloves or a special apron that keeps small ground particles and material particles away from you.** Eyes must be protected against foreign bodies flying around that occur with certain applications. The dust mask or respirator must filter the dust created during the operation. If subjected to loud noise for a longer period of time, you may suffer from loss of hearing.

k) **Make sure that other persons keep a safe distance to your work area. Anyone entering the work area must wear personal protective equipment.** Fragments from the workpiece or broken tool insert tools can fly off and cause injuries even when the person is outside of the direct work area.

l) **Hold the machine only by the insulated handle surfaces when carrying out work where the insert tool can hit hidden power lines.** Contact with a live line can also render metal machine parts live and cause an electric shock.

m) **Keep the power cable away from rotating insert tools.** If you lose control of the device, the power cable can become disconnected and caught, and your hand or arm can get into the rotating insert tool.

n) **Never put the electric power tool down before the insert tool has fully stopped.** The rotating insert tool could make contact with the surface, causing you to lose control of the electric power tool.

o) **Do not leave the electric power tool running while carrying it.** Your clothing may get caught in the rotating insert tool, and the insert tool may penetrate your body.

p) **Clean the vents of your electric power tool regularly.**The engine fan pulls dust into the housing, and a large volume of metal dust collected can be an electrical hazard.

q) **Do not use the electric power tool near combustible materials.** Sparks can ignite these materials.

24.9 Additional safety instructions for abrasive wheel applications

Kickback and associated safety instructions

Kickback is the sudden reaction as a result of a snagging or jammed rotating abrasive wheel. Snagging or jamming causes the rotating insert tool to stop abruptly. An uncontrolled electric power tool is thereby accelerated against the direction of rotation of the insert tool at the site of the jam.

If, for example, an abrasive wheel snags or jams in the workpiece, the edge of the abrasive wheel that penetrates the workpiece can get caught, thereby causing the abrasive wheel to break away or cause a kickback. The abrasive wheel then travels toward or away from the operator depending on the direction of rotation of the wheel at the blockage site. Abrasive wheels can also break here.

Kickback is the result of wrong or erroneous use of the electric power tool. It can be avoided by taking proper precautions as described below:

a) **Hold the electric power tool securely and make sure your body and arms are in a position so that you can absorb the kickback forces. Always use the additional handle, if available, to maintain the best possible control of kickback forces or reactive torques during start-up.** The operator can control the kickback and reactive forces by taking suitable precautions.

b) **Never place your hand near the rotating insert tool.** The insert tool can move across your hand in the event of a kickback.

c) **Avoid the area in front of and behind the rotating cutting wheel.** The kickback drives the electric power tool in a direction that is opposite to the movement of the abrasive wheel at the site of the jam.

d) **Work with great care around corners, sharp edges, etc. Prevent insert tools from recoiling from the workpiece and jamming.** The rotating insert tool tends to jam when it hits corners, sharp edges or if it recoils. This results in the loss of control or kickback.

e) **Do not use a chain or toothed saw blade or a segmented diamond wheel with more than a 10 mm wide slit.** Such insert tools often cause kickback or the loss of control of the electric power tool.

f) **Avoid a jam of the cutting wheel or a surface pressure that is too high. Do not make overly deep cuts.** Overloading the cutting wheel increases its stress level and the likelihood of tilting or jamming, and thereby the possibility of a kickback or breakage of the abrasive element.

g) **If the cutting wheel jams or if you interrupt your work, switch off the machine and hold it still until the wheel stops. Never try to remove a cutting wheel that is still rotating out of the cut as this may lead to a kickback.** Determine and rectify the cause of the jam.

h) **Do not switch the electric power tool back on if it is still in the workpiece. Allow the cutting wheel to reach its full speed before carefully continuing with the cut.** Otherwise the wheel may catch, jump out of the workpiece or cause a kickback.

i) **Support plates or large workpieces to reduce the risk of a kickback due to a jammed cutting wheel.** Large workpieces can bend under their own weight. The workpiece must be supported on both sides of the wheel, both near the cut and at the edge.

j) **Be especially careful with "pocket cuts" in existing walls or other blind areas.** The penetrating cutting wheel can cut into gas or water pipes, electric cables or other objects and cause kickback.



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