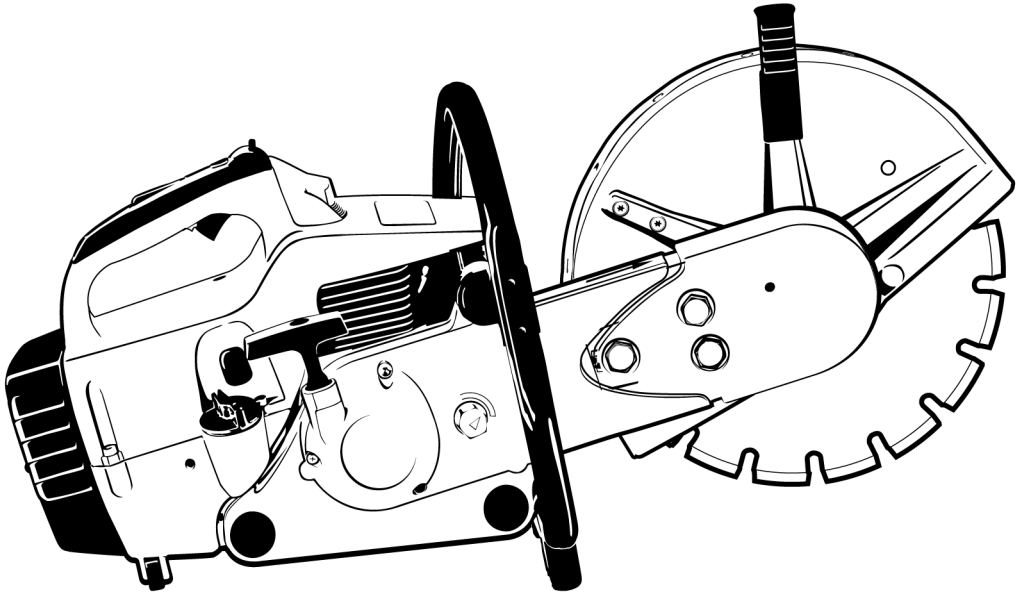
STIHL®

Cut-off Machine Safety Manual



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This brochure contains the safety precautions and working techniques described in the Instruction Manuals for STIHL cut-off machines.

The chapter "Main parts of the machine" shows the TS 420 cut-off machine as an example. Other cut-off machines may have different controls.

This brochure contains references to chapters in the Instruction Manuals for the specific machines.

Thus the Instruction Manual for the respective cut-off machine and the information sheets enclosed with the cut-off wheel must be observed.

If you still have questions after reading this brochure, please contact your STIHL servicing dealer.

Original Instruction Manual

Printed on chlorine-free paper
Printing inks contain vegetable oils, paper can be recycled.

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0457-186-0121_VA0.G15.
0000000551_004_GB

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Safety Precautions and Working Techniques

Special safety precautions must be taken when working with the cut-off machine, due to the very high rotational speed of the abrasive wheel.

It is important you read and understand the Instruction Manual before first use and keep the manual in a safe place for future reference. Non-observance of the safety instructions may result in serious or even fatal injury.

Comply with national safety regulations issued, e.g. by employers' liability insurance associations, social security institutions, occupational safety and health authorities or other organizations.

As for employers within the European Community, the provision 2009/104/EC is binding – Safety and health protection with the use of machines and devices by employees at work

Anyone using the power tool for the first time: Let a shop assistant or expert explain you the safe handling – or take part in a training course.

Minors are not allowed to work with the power tool – except adolescents above 16 years of age, who were instructed under supervision.

Children, animals and bystanders must not be allowed near the machine.

When the power tool is not in use, put it down so that it does not endanger others. The machine must be secured against unauthorized access.

The user is responsible for avoiding injury to third parties or damage to their property.

Hand-over or lend the engine-driven device to those persons only, who are familiar with this model and its handling – always pass the instruction manual to them as well.

The use of noise emitting machines may be restricted to certain times by national or local regulations.

The machine may only be operated by people who are fit, in good physical health and in good mental condition.

If you have any condition that might be aggravated by strenuous work, check with your doctor before operating a power tool.

If you have a pacemaker: The ignition system of this machine produces an electromagnetic field of very low intensity. An effect on individual pacemaker types cannot be excluded entirely. STIHL recommends that you consult your doctor and the manufacturer of your pacemaker in order to avoid health hazards.

Never work with the machine while under the influence of alcohol, medication or drugs capable of impairing your reaction speed.

Postpone the work if the weather is bad (snow, ice, wind) – **higher risk of accidents!**

The machine may only be used for cutting. It is not suitable for cutting wood or wooden objects.

Asbestos dust is extremely toxic - the machine must therefore **never be used to cut asbestos!**

Do not use the machine for any other purpose because of the increased risk of accidents and damage to the machine.

Do not modify the device – otherwise the safety may be endangered. STIHL excludes all liability for personal injury and damage to property caused while using unauthorized attachments.

Only use abrasive wheels or accessories which have been approved by STIHL for this machine or which are technically equivalent. If you have any questions in this respect, consult a servicing dealer. Only use high-quality abrasive wheels and attachments. Otherwise there may be a risk of accidents or damage to the machine.

STIHL recommends the use of genuine STIHL abrasive wheels and accessories. They are specifically designed to match your model and meet your performance requirements.

Do not use high-pressure cleaners to clean the machine. The hard water jet can damage parts of the machine.

Do not spray the machine with water.

Never use circular saw blades, carbide, rescue or wood cutting attachments or saws of any kind – **these may cause fatal injuries!** Instead of uniformly removing particles as when cutting with an abrasive wheel, the teeth of a circular saw blade may snag in the material. This causes the machine to react in a highly aggressive manner with uncontrolled and extremely dangerous kickback.

Clothing and equipment

Wear proper protective clothing and equipment.

Clothing must be sturdy and snug-fitting, but allow complete freedom of movement. Tightly fitting clothes – overall, no smock

When cutting steel, always wear clothing made of barely flammable material (e. g., leather or cotton with flame-retardant finish) – no manmade fibers – **risk of fire due to flying sparks!**

Clothing must be free from flammable deposits (chips, fuel, oil, etc.).

Do not wear such clothes that can be caught by moving parts – no scarf, no tie, no jewelry Tie up and confine long hair.

Wear **safety boots** with steel toe caps and non-slip soles.

WARNING

To reduce the risk of eye injuries, wear tight-fitting safety goggles conforming to standard EN 166. Make sure that the safety goggles fit correctly.

Wear a face shield and make sure it fits correctly. A face mask alone is not sufficient to protect the eyes.

Wear a hard hat wherever there is any risk of falling objects.

While working, dust (for example, crystalline material from the object to be parted-off), vapor and smoke may be produced – **danger for health!**

Always wear a **dust mask** if dust is generated.

If fumes or smoke are anticipated (e. g., when cutting composite materials), wear **respiratory protection**.

Wear "personal" **noise protectors** – for example, ear protectors.

Wear sturdy protective gloves made of a resistant material (e. g. leather).

STIHL can supply a comprehensive range of personal protective clothing and equipment.

Transporting the machine

Always turn off the engine first.

Carry the device at the tubular handle only – abrasive wheel pointing to the rear – hot muffler away from the body.

Do not touch hot device parts, in particular the muffler surface – **risk of burns!**

Never transport the engine-driven device with attached abrasive wheel – **risk of breakage!**

In vehicles: Properly secure the machine to prevent turnover, fuel spillage and damage.

Refueling

Petrol is an extremely flammable fuel – keep clear of naked flames and fire – do not spill any fuel – no smoking.

Switch off the engine before refueling.

Never refuel the machine while the engine is still hot – the fuel may spill over – **risk of fire!**

Open the fuel filler cap carefully so that any excess pressure is relieved gradually and fuel does not splash out.

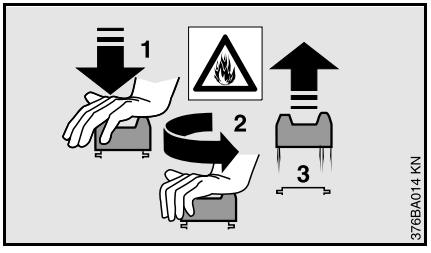
The machine may only be refueled in a well ventilated place. If fuel has been spilled, clean immediately the engine-driven device – prevent your clothes from being contaminated with fuel, otherwise change clothes at once.

Dust may collect on the engine unit, especially around the carburetor. If dust gets mixed with fuel – risk of fire! Remove the dust from the engine unit regularly.

Look out for leaks! Never start the engine if fuel has been spilled or is leaking – **Fatal burns may result!**

Various cut-off machines may be equipped with various filler caps:

Bayonet filler cap



Never use a tool to open or close the bayonet filler cap. The cap can be damaged and fuel may escape.

Secure the bayonet filler cap tightly after refueling.

Filler cap with screw thread

Close the filler cap as tightly as possible after refueling.

This helps reduce the risk of unit vibrations causing an incorrectly tightened filler cap to loosen or come off and spill quantities of fuel.

Cut-off machine, spindle bearing

Faultless spindle bearings provide for concentricity and axial running of the diamond-tipped abrasive wheel – if necessary, get it checked by a competent dealer.

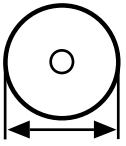
Abrasive wheels

Selecting the abrasive wheels

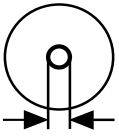
Abrasive wheels must be approved for hand-held cutting. Do not use other abrasive wheels and attachments – **danger of accident!**

Abrasive wheels are suitable for different materials: Observe the identification of the abrasive wheels.

STIHL generally recommends wet cutting.



Observe the outer diameter of the abrasive wheel.



Spindle hole diameter of the abrasive wheel and shaft of cut-off machine must match.

Check the spindle hole for damage. Do not use abrasive wheels with damaged spindle bore – **risk of accident!**

The permissible speed of the abrasive wheel must be equal to or greater than the maximum spindle speed of the cut-off machine. – Refer to the chapter "Specifications".

Before fitting a used abrasive wheel, check that it is not cracked, chipped, undercut or uneven, and does not display any signs of core fatigue or overheating (discoloration); check also that there are no damaged or missing segments and that the spindle bore is not damaged.

Never use cracked, chipped or bent abrasive wheels.

Substandard and/or unapproved diamond abrasive wheels can shimmy during cutting. This shimmying can cause such diamond abrasive wheels to be abruptly braked or become stuck in the cut – **Danger of kickback! Kickback can result in fatal cuts!** Diamond abrasive wheels that shimmy constantly or even only intermittently must be replaced immediately.

Never straighten diamond abrasive wheels.

Do not use abrasive wheels, which has fallen to the ground – damaged abrasive wheels may break – **risk of accident!**

Observe the expiration date where resin abrasive wheels are concerned.

Fitting abrasive wheels

Inspect the spindle of the cut-off machine. Do not work with a device whose spindle is damaged – **risk if accident!**

Note the arrows indicating the direction of rotation on diamond abrasive wheels.

Position the front pressure plate – rigidly tighten the clamping screw – rotate the abrasive wheel by hand and take sight check for concentricity and axial running.

Storing abrasive wheels

Store abrasive wheels in dry and frost-free manner, place them on plane ground, at constant temperature – **risk of breakage and splintering!**

Always protect the abrasive wheel against sudden contact with the ground or objects.

Before starting

Inspect the cut-off machine for safe-to-operate state – observe the respective chapters in the instruction manual:

- Check the fuel system for leaks, especially the visible parts, e. g., filler cap, hose connections, manual fuel pump (only in machines with a manual fuel pump). In case of leakage and damage, do not start the engine – **risk of fire!** Have the machine serviced by a servicing dealer before using it.
- The abrasive wheel must be suitable for the material to be cut. It must be in good condition and fitted correctly (direction of rotation, secure).
- Inspect the abrasive wheel guard for tight seat – if loose, contact your specialist dealer.
- Both the throttle trigger and its throttle trigger lockout to move smoothly – the throttle trigger has automatically to return to its idle run position.
- Slide control / master control / stop switch must move easily to **STOP** or **0**
- Check that the spark plug boot is secure. A loose boot can lead to flying sparks which may ignite the escaping fuel/air mixture – **risk of fire!**
- Never attempt to modify the controls or safety devices in any way
- Keep the handles clean, dry and free of oil as well as dirt – important for safe guiding of the cut-off machine.
- For wet applications, provide sufficient water

The machine should only be used if it is in good working order – **risk of accident!**

Starting the engine

Move at least 3 meters away from the place at which the machine was refueled and never start the machine in enclosed spaces.

On even ground, ensure a firm and secure footing and hold the engine-driven device firmly – the abrasive wheel must not touch any objects or the ground and must not be in cutting action.

The abrasive wheel may begin to rotate as soon as the machine is started

The engine-driven device is operated by a single person only – do not allow any person to stay within the working area – nor with starting.

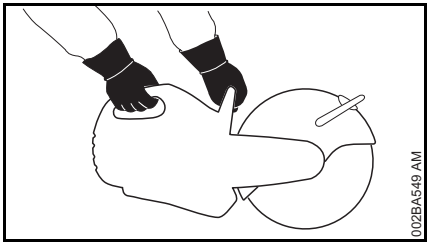
Do not drop-start the engine – start as described in the Instruction Manual.

After releasing the throttle trigger, the abrasive wheel keeps on running for a while – **danger of injury due to slowing down!**

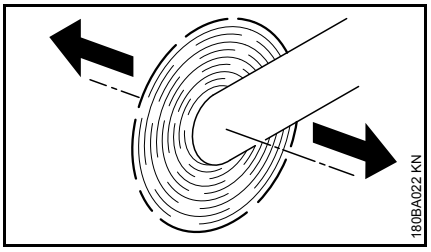
Holding and controlling the machine

The cut-off machine may only be used for hand-held cutting or when mounted on a STIHL cut-off machine cart.

Hand-held cutting



Always hold the machine **firmly with both hands**: Right hand on the rear handle – even if you are left-handed. To ensure reliable control, wrap your thumbs tightly around the handlebar and handle.



When a cut-off machine with an abrasive wheel rotating is moved in the direction of the arrow, a force is produced which causes the machine to tip sideways.

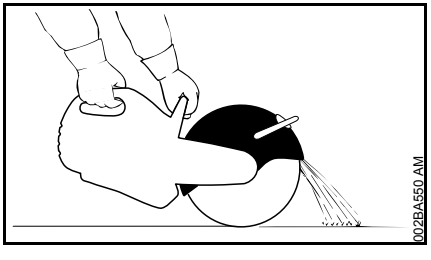
The object to be parted-off has to be firmly supported. Always guide the device towards the workpiece – never in reverse.

Cut-off machine cart

STIHL cut-off machines can be mounted onto a STIHL cut-off machine cart.

Guard

The adjustment range of the guard is determined by a stop pin. Never push the guard over the stop pin.



Set the abrasive wheel guard correctly: Guide particles of material away from the user and machine.

Note the direction of flight of the removed particles of material.

During operation

With impending threat or emergency, immediately stop the engine – set the combi-slide / combi-lever /stop switch to **STOP** or **0.**

Check for correct idling so that the abrasive wheel is no longer driven when the throttle trigger is released and comes to a complete halt.

Check and/or correct the idle setting regularly. Have the machine repaired by a STIHL servicing dealer if the abrasive wheel continues to turn nevertheless.

Keep clear the working area – bear in mind obstacles, holes and pitches.

Take care with slickness, moisture, snow, on slopes, on uneven terrain, etc. – **risk of slipping!**

Don not work while standing on a ladder – not at unstable places – not over your shoulder height – not with one hand only – **risk of accident!**

Ensure you always have a firm and safe footing.

Never work alone – stay always in earshot to other persons, who can render first aid in case of emergency.

Keep out further persons from the working area – maintain sufficiently large distance to additional persons to protect them from noise and flying objects.

Pay increased attention and caution with your ear defenders put-on – the perception of noise of potential danger (shouts, signal sounds, etc.) is restricted.

Take a break before it is too late.

Work calmly and carefully – in daylight conditions and only when visibility is good. Work with particular care, do not endanger others.

Your power tool produces toxic exhaust fumes as soon as the engine is running. These gases may be colorless and odorless and may contain unburnt hydrocarbons and benzene. Never work with the engine-driven device in closed or poorly vented rooms – even not with devices equipped with a catalyst.

Ensure proper ventilation when working in trenches, hollows or similar locations – **risk of fatal injury from breathing toxic fumes!**

With sick feeling, headache, eye defect (for example, shrinking field of vision), hearing impairment, dizziness, fading powers of concentration, stop working immediately – such symptoms may be caused, among others, by high exhaust gas concentration – **risk of accident!**

No smoking when working with or near the machine - **risk of fire!**

If the engine-driven device has been exposed to stress due to improper use (e. g. impact of force by blow and crash), test the device for safe-to-operate condition before continuing work, in every case – see also "Before start-up". Check the fuel system for leaks and make sure the safety devices are working properly. Do not continue operating the machines if damaged. In case of doubt, have the unit checked by your servicing dealer.

Do not work with the throttle trigger in the starting throttle position – with that position of the throttle trigger, the engine speed cannot be controlled.

Never touch a rotating abrasive wheel with your hand or any other part of your body.

Check the work area. Avoid danger due to damage to pipes and electric power lines.

The machine must not be used in the vicinity of flammable substances and combustible gases.

Do not cut into pipes, metal tanks or other containers if you are not sure that they do not contain any volatile or inflammable substances.

Never leave the machine unattended with the engine running. Stop the engine before leaving the machine unattended (e. g. for breaks).

Before putting the cut-off machine down on the ground:

- Switch off the engine
- Wait until the abrasive wheel has come to a standstill or brake the abrasive wheel until it comes to a standstill by carefully touching a hard surface (e. g., concrete slab)

Repeatedly inspect the abrasive wheel – replace the wheel if there are visible cracks, buckling or other damages (for example, overheating) due to breakage – **risk of accident!**

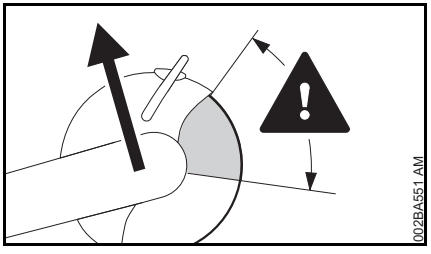
In the event of changes in cutting behavior (e. g., increased vibration, reduced cutting performance), stop work and eliminate the causes of the changes.

Reactive forces

The most frequently occurring reactive forces are kickback and pull-in.

Dangers of kickback

Kickback can result in fatal injuries.



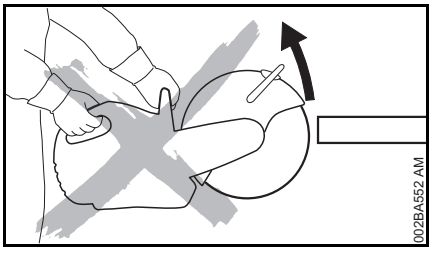
Kickback occurs when the cut-off machine is suddenly thrown up and back in an uncontrolled arc towards the operator.

Kickback occurs if, for example, the abrasive wheel

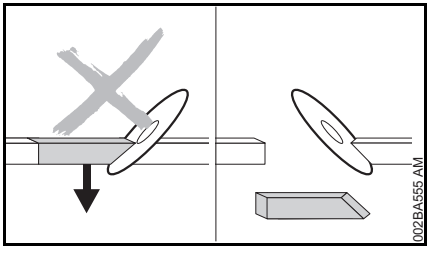
- gets jammed – primarily in its upper quarter, or
- is abruptly braked through friction contact with a solid object

Reducing the risk of kickback

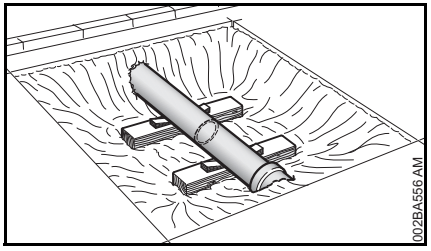
- Work cautiously and methodically
- Hold the cut-off machine firmly with both hands and maintain a secure grip



- Whenever possible, do not use the upper quarter of the abrasive wheel for cutting. Use extreme caution when entering the abrasive wheel in a cut, do not twist or push into the cut

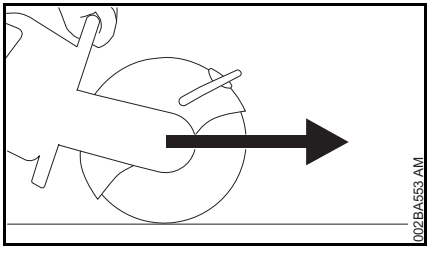


- Avoid wedge effect, the severed part must not brake the abrasive wheel
- Always be aware that the object to be cut may move and other factors may cause the cut to close and jam the abrasive wheel.
- The object to be cut must be secured and supported so that the kerf remains open during and after cutting
- Objects to be cut must therefore be fully supported and must be secured against rolling away, slipping off or vibrations



- Support an uncovered pipe stable and solid, if necessary, use wedges – always bear in mind a proper support and ground – material may crumble away,
- Always work with water and wet cutting when using diamond abrasive wheels
- Depending on the version, resin abrasive wheels are only suitable for dry cutting or only for wet cutting. Always use wet cutting with composite resin abrasive wheels that are suitable only for wet cutting

Pulling away

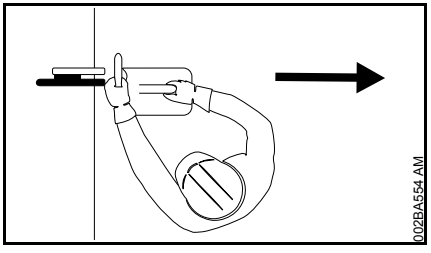


The cut-off machine pulls forwards, away from the user, when the abrasive wheel touches the object to be cut from above.

Working with the cut-off machine

The abrasive wheel must be guided straight in the cut, without wedging. Never exert lateral pressure on the abrasive wheel.

Do not use for lateral grinding or scrubbing.



Do not stand in line with the abrasive wheel. Ensure sufficient freedom of movement, especially in construction trenches there must be sufficient space for the user and for the part being cut to fall.

Do not lean too far forwards and never bend over the abrasive wheel when the guard has been pulled back.

Don't work above shoulder height.

The cut-off machine may only be used for cutting. It must not be used as a lever or shovel.

Do not press down on the cut-off machine

Always decide the cutting direction before positioning the cut-off machine. Do not change the cutting direction. Never push or hit with the device into the cutting gap – do not let the cut-off machine fall into the cutting depth – **risk of breakage!**

Diamond abrasive wheels: If cutting performance begins to deteriorate, check the sharpness of the diamond abrasive wheel, resharpen as needed. To do this, briefly cut through abrasive material, e. g., sandstone, aerated concrete or asphalt.

At the end of the cut, the cut-off machine is no longer supported by the abrasive wheel in the cut. The user has to absorb the weight force – **risk of loss of control!**

When cutting steel: glowing metal particles **may cause fires!**

Keep water and sludge away from alive electrical cables – **risk of electric shock!**

Drag the abrasive wheel into the workpiece – do not push it into the material. Do not correct severing cuts with the cut-off machine. Do not re-cut – remove left webs or breaking edges (for example, with a hammer).

When applying diamond-coated abrasive wheels, take a wet cut – for example, use the STIHL water connector.

Depending on the version, resin abrasive wheels are only suitable for dry cutting or only for wet cutting.

When applying abrasive wheels made from synthetic resin, which are suited for wet cuts only, take such wet cuts only – for example, use the STIHL water connector.

When using abrasive wheels made from synthetic resin, which are suited for dry cuts only, take such dry cuts only. If however composite resin abrasive wheels of this type become wet, their cutting performance is reduced and they become dull. If composite resin abrasive wheels of this type become wet while working (e. g., due to puddles or water in pipes), do not increase the cutting pressure, but continue working with the same pressure – **risk of breakage!** Use up such composite resin abrasive wheels immediately.

Cut-off machine cart

Clear a path for the cut-off machine cart. If the cart is pushed over objects, the abrasive wheel may become wedged in the cut and **shatter**!

Vibrations

Prolonged use of the power tool may result in vibration-induced circulation problems in the hands (whitefinger disease).

No general recommendation can be given for the length of usage because it depends on several factors.

The period of usage is prolonged by:

- Hand protection (wearing warm gloves)
- Work breaks

The period of usage is shortened by:

- Any personal tendency to suffer from poor circulation (symptoms: frequently cold fingers, tingling sensations).
- Low outside temperatures.
- The force with which the handles are held (a tight grip restricts circulation).

Continual and regular users should monitor closely the condition of their hands and fingers. If any of the above symptoms appear (e.g. tingling sensation in fingers), seek medical advice.

Maintenance and repairs

The machine must be serviced regularly. Do not attempt any maintenance or repair work not described in the Instruction Manual. All other work should be carried out by a servicing dealer.

STIHL recommends that maintenance and repair work be carried out only by authorized STIHL dealers. STIHL dealers receive regular training and are supplied with technical information.

Use only high-quality replacement parts, in order to avoid the risk of accidents or damage to the machine. Contact a dealer if in doubt.

STIHL recommends the use of genuine STIHL spare parts. Such parts have been optimized for the machine and the user's requirements.

Before starting any maintenance or repair work and before cleaning the machine, always **stop the engine and disconnect the spark plug boot – risk of injury** if the engine starts up inadvertently! – Exception: adjustment of carburetor and idle speed.

To reduce the **risk of fire** due to ignition outside the cylinder, move the slide control / stop switch to **STOP** or **0** before turning the engine over on the starter with the spark plug boot removed or the spark plug unscrewed.

Do not service or store the machine near a naked flame – **risk of fire** due to the fuel.

Check fuel cap regularly for tightness.

Use only spark plugs that are in perfect condition and have been approved by STIHL – see Specifications.

Inspect ignition lead (insulation in good condition, secure connection).

Check that the muffler is in perfect working condition.

Do not use the machine if the muffler is damaged or missing - **risk of fire! – Hearing damage!**

Never touch a hot muffler – **risk of burns!**

Check the rubber buffers underneath the machine - the housing must not rub against the ground - **risk of damage!**

The condition of the antivibration elements influences vibration behavior – inspect antivibration elements periodically.

Sample applications

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

Extend service life and increase cutting speed

Always ensure a supply of water to the abrasive wheel.

Binding dust

The abrasive wheel must be supplied with at least 0.6 liters of water per minute.

Water attachment

- Water attachment on the machine for all types of water supplies
- Pressurized water tank 10 l for binding dust
- water tank usable on the cut-off machine cart for binding dust

Use composite resin abrasive wheels with or without water – depending on version

Depending on the version, resin abrasive wheels are only suitable for dry cutting or only for wet cutting.

Composite resin abrasive wheels suitable only for dry cutting

During dry cutting, wear a suitable dust mask.

If fumes or smoke are anticipated (e. g., when cutting composite materials), wear **respiratory protection**.

Composite resin abrasive wheels suitable only for wet cutting

Use abrasive wheel only with water.

To bind dust, the abrasive wheel must be supplied with at least 1 liter of water per minute. To avoid a reduction in cutting performance, the abrasive wheel must be supplied with not more than 4 liters of water per minute.

After using the abrasive wheel, the wheel should be allowed to continue spinning at operating speed for approx. 3 to 6 seconds without water in order to spin off the water remaining on it.

- Water attachment on the machine for all types of water supplies
- Pressurized water tank 10 l for binding dust
- water tank usable on the cut-off machine cart for binding dust

Observe with diamond and composite resin abrasive wheels

Objects to be cut

- Must be fully supported
- Must be secured so it cannot roll or slip off
- Must be prevented from vibrating

Severed parts

With openings, recesses, etc., the sequence of the cuts is important. Always make the last cut so that the abrasive wheel does not become jammed and so that the operator is not endangered by the severed or separated part.

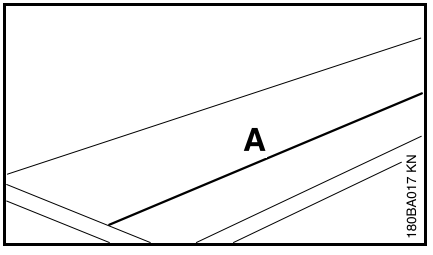
If necessary, leave small ridges that hold the part that is to be separated in position. Break these ridges later.

Before finally separating the part, determine:

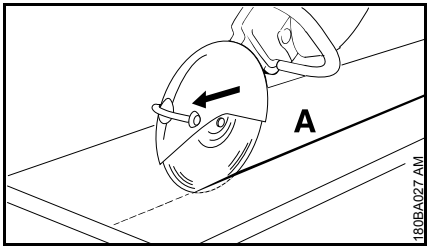
- how heavy the part is
- how it can move after separation
- whether it is under tension

When breaking out the part, do not endanger assistants.

Cut in several passes



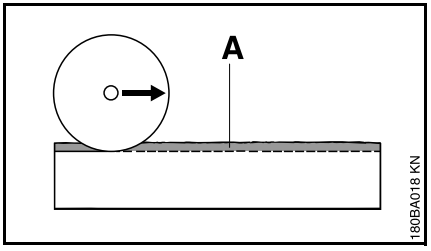
- Mark cutting line (A)



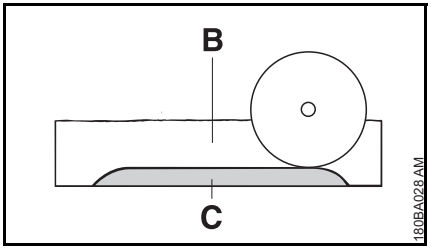
- Work along the cutting line. When making corrections, do not tilt the abrasive wheel, but always set the abrasive wheel against the workpiece anew – the cutting depth for each operation should not exceed 5 to 6 cm. Cut thicker material in multiple operations

Cutting plates

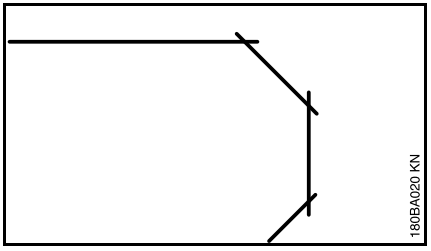
- Secure the plate (e. g. on a non-slip surface, sandbed)



- Grind a guide groove (A) along the line marked



- Make the cut (B) deeper
- Leave a "hinge" (C)
- First sever the plate at the cut ends so that no material breaks away
- Break plate

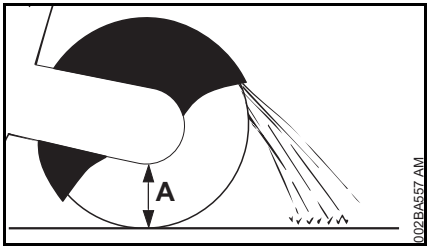


- Make curves in multiple operations – make certain that the abrasive wheel does not tilt

Cutting pipes, round and hollow bodies

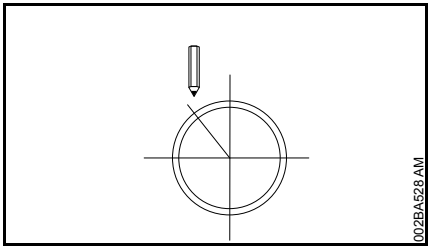
- Secure pipes, round and hollow bodies against vibrations, slipping and rolling away
- Note direction of fall and weight of the severed part
- Determine and mark the cutting line, avoid reinforcement, especially in the direction of the severing cut
- Determine sequence of severing cuts
- Grind a guide groove along the line marked
- Make cut deeper along the guide groove – observe the recommended cutting depth for each operation – for small corrections of direction, do not tilt the abrasive wheel, but always position it anew instead – if necessary, leave small ridges that hold the part that is to be separated in position. Break these ridges after the last planned cut

Cutting concrete pipe



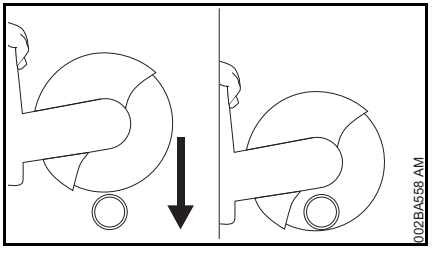
The procedure is dependent on the outer diameter of the pipe and the maximum possible cutting depth of the abrasive wheel (A).

- Secure pipe against vibrations, slipping and rolling away
- Note weight, tension and direction of fall of the part to be severed



- Determine and mark direction of cut
- Determine sequence of cuts

Outer diameter is smaller than the maximum cutting depth

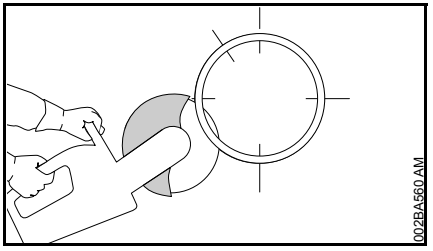


- Make **one** cut from the top to the bottom

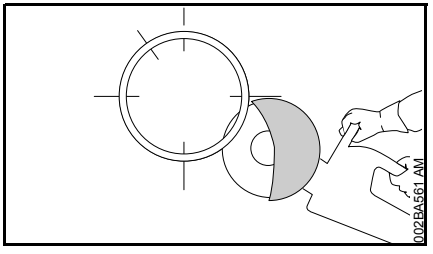
Outer diameter is greater than the maximum cutting depth

Plan first, then cut. **Several** cuts are needed – correct sequence is important.

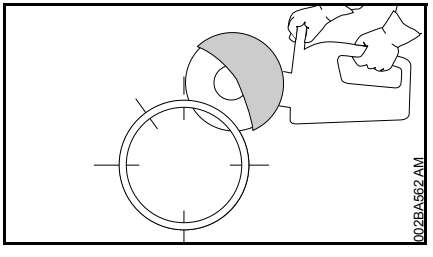
- Turn guard at rear stop



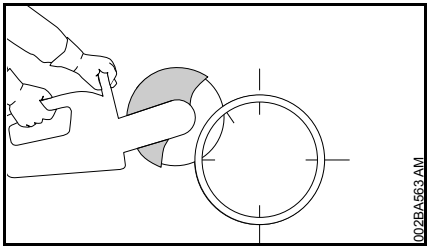
- Always start at the bottom, use the upper quarter of the abrasive wheel for cutting



- Use the upper quarter of the abrasive wheel for cutting the opposite lower side.

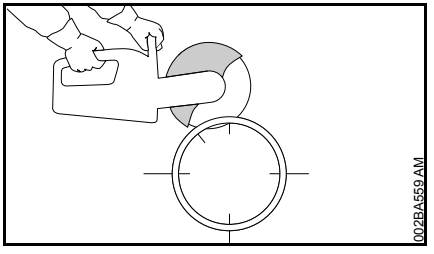


- First lateral cut on the top half of the pipe



- Second lateral cut in the marked area – never cut into the area of the last cut, to ensure a firm hold on the part of pipe to be cut

Only make the last top cut once all bottom and lateral cuts have been made.

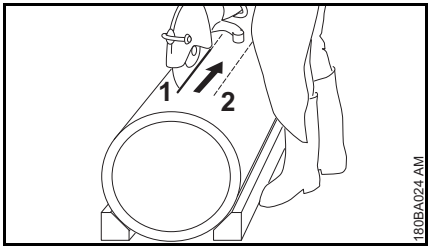


- Last cut always from the top (approx. 15 % of the pipe circumference)

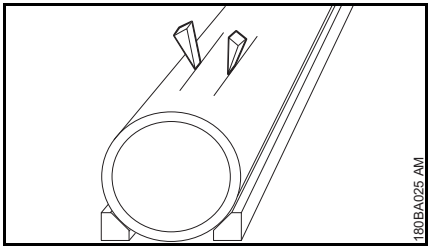
Concrete pipe – cut recess

Sequence of cuts (1 to 4) is important:

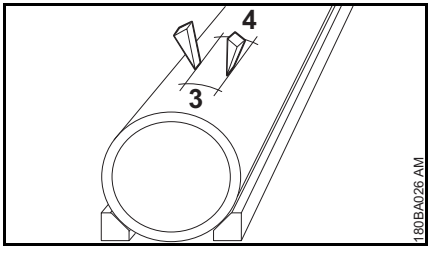
- First, cut hard-to-reach areas



- Always make severing cuts so that the abrasive wheel is not pinched



- Use wedges and/or leave ridges that are broken after cutting



- If the severed part remains in the recess after cutting (due to wedges, ridges used), do not make any further cuts – break the severed part

Cutting wheels

Abrasive wheels are exposed to extremely high loads especially during freehand cutting.

Therefore only for use of approved and correspondingly labeled abrasive wheels with hand-held machines as per EN 13236 (diamond) or EN 12413 (composite resin). Note maximum permissible speed of the abrasive wheel – **risk of accident!**

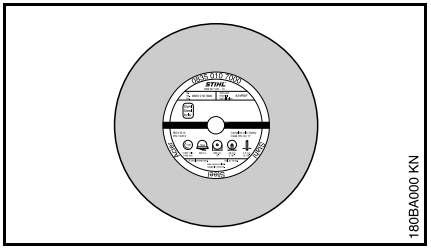
The abrasive wheels, which have been developed by STIHL in cooperation with renowned manufacturers of abrasive wheels, are of high quality and tailored precisely to the respective intended use as well as the engine performance of the cut-off machine.

They are of consistently outstanding quality.

Transport and storage

- Do not expose abrasive wheels to direct sunshine or other thermal stresses during transport and storage
- Avoid jolting and impacts
- Stack abrasive wheels flat on a level surface in the original packaging in a dry place where the temperature is as constant as possible
- Do not store abrasive wheels in the vicinity of aggressive fluids
- Store abrasive wheels in a frost-free place

Composite resin cutting wheels



Types:

- for dry applications
- for wet applications

The proper selection and use of composite resin cutting wheels ensures economical use and avoids accelerated wear. The product code which appears

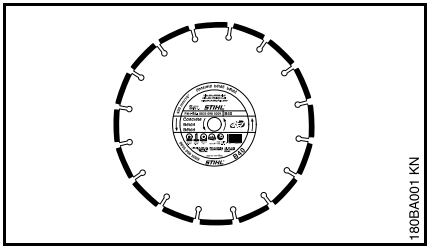
- on the label and
- on the packaging (table with recommendations for use) is an aid to selection

STIHL composite resin cutting wheels are suitable, depending on the version, for cutting the following materials:

- Asphalt
- Concrete
- Stone
- Ductile cast iron pipes
- Steel; STIHL composite resin cutting wheels are not suitable for cutting railway tracks

Do not cut any other materials – **risk of accident!**

Diamond cutting wheels



For wet applications.

The proper selection and use of diamond abrasive wheels ensures economical use and avoids accelerated wear. The product code which appears

- on the label and
- on the packaging (table with recommendations for use) is an aid to selection

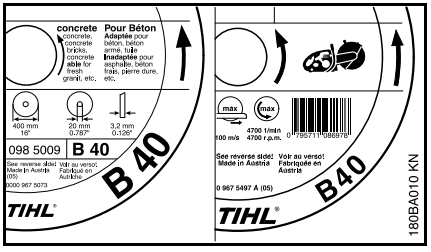
STIHL diamond abrasive wheels are suitable, depending on the version, for cutting the following materials:

- Asphalt
- Concrete
- Stone (hard stone)
- Abrasive concrete
- Fresh concrete
- Clay brick
- Clay pipe

Do not cut any other materials – **Risk of accident!**

Never use diamond abrasive wheels with side plating as they jam in the cut and can result in extreme kickback – **Risk of accident!**

Product Codes



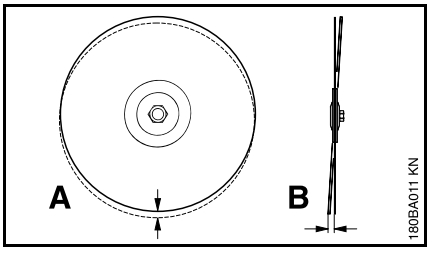
The product code is a combination of letters and numbers, consisting of up to four characters:

- the letters denote the main field of application of the abrasive wheel
- the numbers denote the performance class of the STIHL diamond abrasive wheel

Axial and radial run-out

A faultless spindle bearing of the cut-off machine is necessary for a long service life and efficient functioning of the diamond abrasive wheel.

Using the abrasive wheel on a cut-off machine with a faulty spindle bearing can lead to deviations in radial and axial run-out.



An excessively high radial run-out deviation (**A**) overloads individual diamond segments, which overheat in the process. This can lead to stress cracks in the parent wheel or to annealing of individual segments.

Deviations in axial run-out (**B**) result in higher thermal loading and wider cuts.

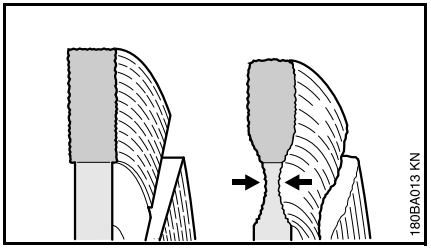
Troubleshooting

Abrasive wheel

Error	Cause	Remedy
ragged edges or cut surfaces, crooked cut	Deviation in radial or axial run-out	Contact a servicing dealer[1)]
heavy wear on the sides of the segments	Abrasive wheel gyrates	use a new abrasive wheel
ragged edges, crooked cut, no cutting performance, generation of sparks	Abrasive wheel is dull; built-up edges with abrasive wheels for stone	Sharpen abrasive wheels for stone by briefly cutting through abrasive materials; replace abrasive wheel for asphalt with a new one
poor cutting performance, high segment wear	Abrasive wheel is turning in the wrong direction	Mount abrasive wheel so that it turns in the right direction
Breakdowns or tears in the parent wheel and segment	Overloading	use a new abrasive wheel
Undercut	Cutting in the wrong material	use new abrasive wheel; observe separating layers of various materials

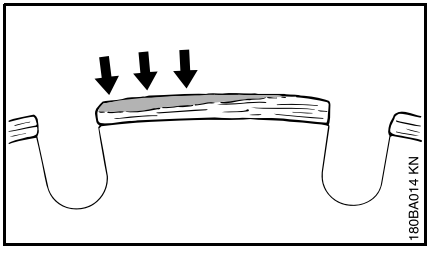
1) STIHL recommends STIHL servicing dealers

Undercut



Do not cut into the base course (frequently chipped stones and gravel) when cutting roadway pavement – cutting in chipped stones and gravel is revealed by light-colored dust – excessive undercut may occur as a result – **Danger of shattering!**

Built-up edges, sharpen



Built-up edges take the form of a light gray deposit on the tops of the diamond segments. This deposit on the segments clogs the diamonds and blunts the segments.

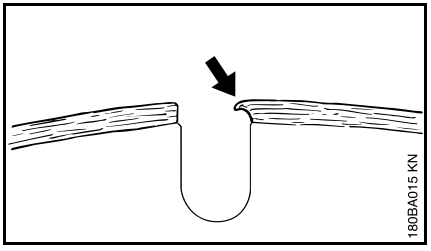
Built-up edges can form:

- when cutting extremely hard materials, e. g., granite
- with incorrect handling, e. g., excessive feed effort

Built-up edges increase vibration, reduce cutting performance, and cause formation of sparks.

At the first signs of built-up edges, immediately "sharpen" the diamond abrasive wheel – to do this, briefly cut through abrasive material such as e. g. sandstone, aerated concrete or asphalt.

Addition of water prevents the formation of built-up edges.



If work continues with dull segments, these may soften due to the high heat generated – the parent wheel is annealed and its strength is compromised – this can lead to stresses that are clearly recognizable by gyrations of the abrasive wheel. Do not continue to use the abrasive wheel – **Risk of accident!**

Maintenance and Care

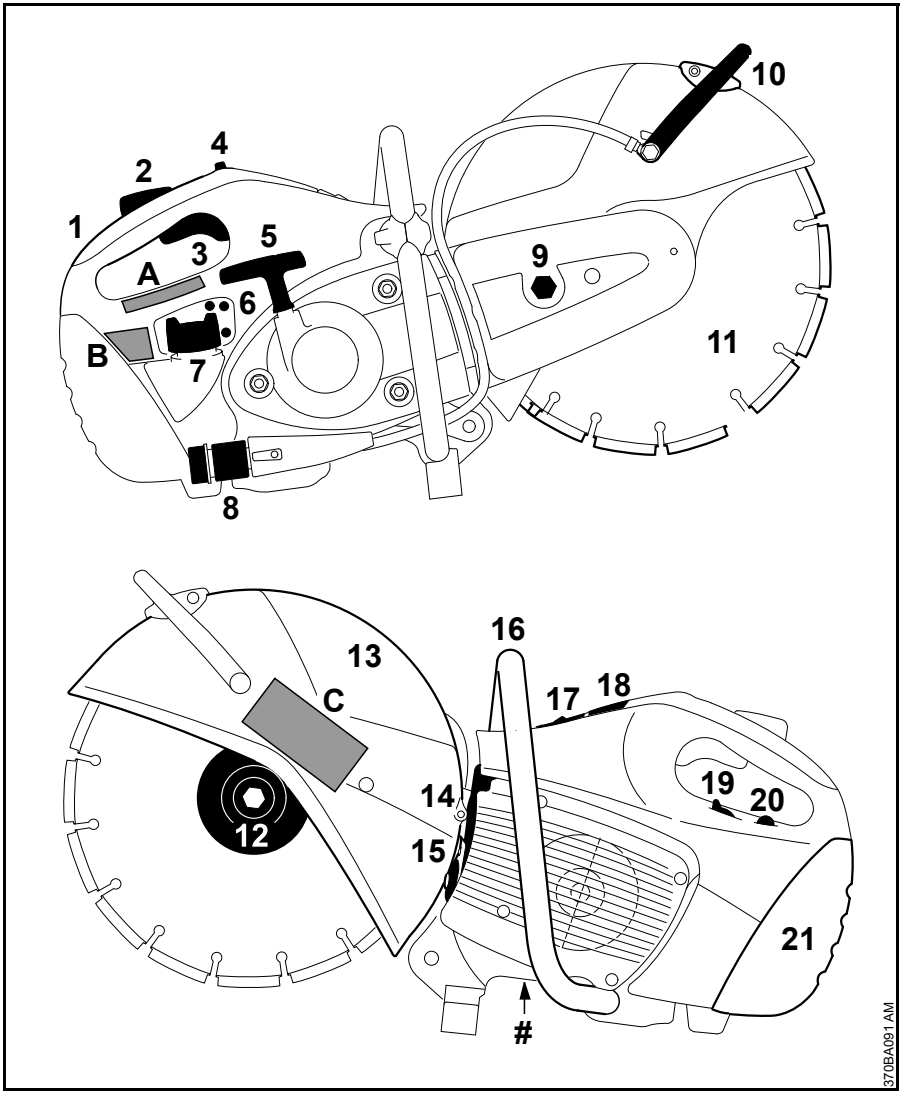
The following maintenance intervals apply in normal operating conditions. The specified intervals must be shortened accordingly when working for longer than normal or under difficult cutting conditions (extensive dust, etc.).		Before starting work	At the end of work and/or daily	Whenever tank is refilled	Weekly	Monthly	Yearly	If faulty	If damaged	As required
Complete machine	Visual inspection (condition, leaks)	X		X						
	Clean		X							
Operating elements	Function tests	X		X						
Manual fuel pump (if present)	Check	X								
	Have repaired by a specialist dealer[1)]								X	
Fuel pickup body in fuel tank	Check							X		
	Replace						X		X	X
Fuel tank	Clean					X				
Poly V-belt	Clean / retension					X				X
	Replace								X	X
Air filter (all filter components)	Change	**Only if there is a noticeable loss of engine power**								
Cooling air intake slits	Clean		X							
Cylinder fins	Have them cleaned by a servicing dealer [1)]						X			
Spark arresting screen[2)] in muffler	Check		X							
	Clean or replace									X
Water attachment	Check	x						x		
	Have them maintained by a servicing dealer[1)]								x	
Carburetor	Check idle adjustment – abrasive wheel must not rotate	X		X						
	Readjust idle speed									X
Spark plug	Adjust electrode gap							X		
	Replace after 100 hours operation									
All accessible screws, nuts and bolts (not adjusting screws)	Retighten		X							X

The following maintenance intervals apply in normal operating conditions. The specified intervals must be shortened accordingly when working for longer than normal or under difficult cutting conditions (extensive dust, etc.).		Before starting work	At the end of work and/or daily	Whenever tank is refilled	Weekly	Monthly	Yearly	If faulty	If damaged	As required
Anti-vibration elements	Check	X						X		X
	Have them replaced by a servicing dealer[1)]								X	
Abrasive wheel	Check	X		X						
	Replace								X	X
Supports/rubber buffers (underneath the machine)	Check		X							
	Replace								X	X
Safety information label	Replace								X	

1) STIHL recommends STIHL servicing dealers

2) present only in some countries

Main Parts



1 Rear handle
2 Throttle lever lock
3 Throttle trigger
4 Slide control
5 Starter grip
6 Carburetor adjusting screws
7 Filler cap
8 Water attachment
9 Tensioning nut
10 Adjusting lever
11 Abrasive wheel
12 Front thrust washer
13 Guard
14 Muffler
15 Spark arresting screen (present only in some countries)
16 Handlebar
17 Decompression valve[1)]
18 Cap for spark plug boot
19 Choke lever
20 Manual fuel pump
21 Filter cover
Serial number
A Safety information label
B Safety information label
C Safety information label

1) According to version

0457-186-0121

englisch

GB

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