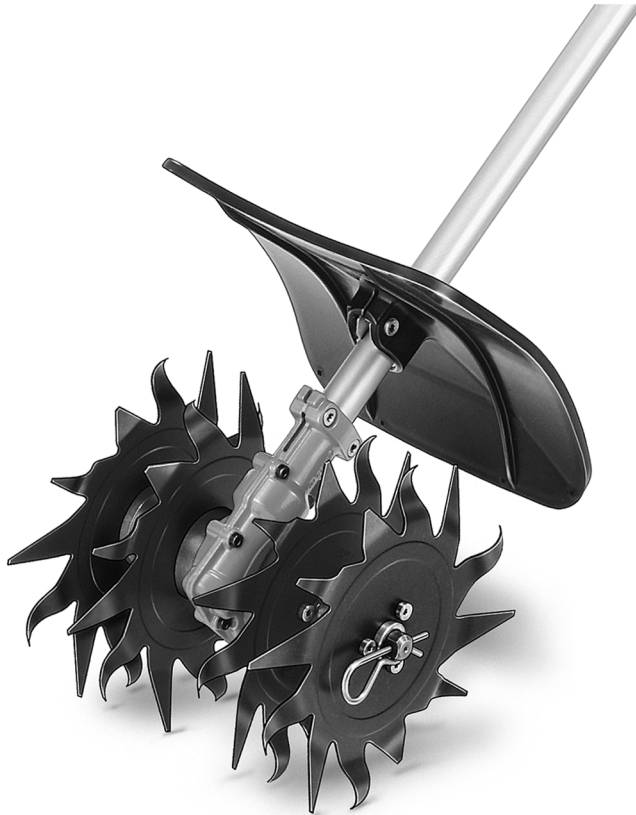


STIHL BF-KM

Instruction Manual



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STIHL®

BF-KM

Dear Customer,

Thank you for choosing a quality engineered STIHL product.

It has been built using modern production techniques and comprehensive quality assurance. Every effort has been made to ensure your satisfaction and troublefree use of the product.

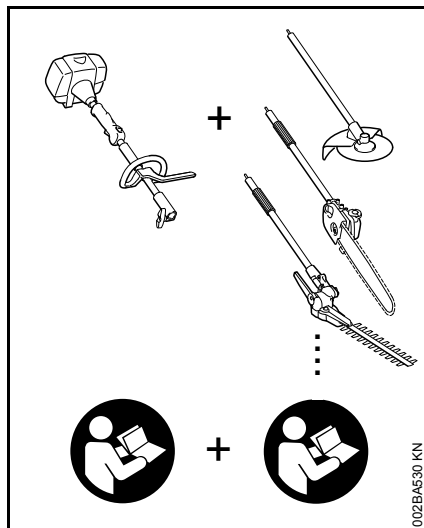
Please contact your dealer or our sales company if you have any queries concerning this product.

Your



Dr. Nikolas Stihl

KombiSystem



In the STIHL KombiSystem a number of different KombiEngines and KombiTools can be combined to produce a power tool. In this instruction manual the functional unit formed by the KombiEngine **and** KombiTool is referred to as the power tool.

Therefore, the separate instruction manuals for the KombiEngine and KombiTool should be used together for the power tool.

Always read and and make sure you understand **both** instruction manuals before using your power tool for the first time and keep them in a safe place for future reference.

Guide to Using this Manual

Pictograms

All the pictograms attached to the machine are shown and explained in this manual.

Symbols in text



WARNING

Warning where there is a risk of an accident or personal injury or serious damage to property.



NOTICE

Caution where there is a risk of damaging the machine or its individual components.

Engineering improvements

STIHL's philosophy is to continually improve all of its products. For this reason we may modify the design, engineering and appearance of our products periodically.

Therefore, some changes, modifications and improvements may not be covered in this manual.

Safety Precautions and Working Techniques



Special safety precautions must be observed when working with the cultivator because its pointed and sharp-edged rotor blades rotate at high speed.



Always read and make sure you understand both instruction manuals (KombiEngine and KombiTool) before using your power tool for the first time and keep them in a safe place for future reference. Non-observance of the safety precautions may result in serious or even fatal injury.

Lend or rent your machine only to persons who are familiar with this model and its operation – do not lend or rent your machine without the KombiEngine and KombiTool instruction manuals.

Use the cultivator tool only for tilling previously cultivated, packed or loose soil, furrowing and working in mulches.

Do not use your power tool for any other purpose because of the **increased risk of accidents**.

Only mount rotor blades and accessories that are explicitly approved for this power tool by STIHL or are technically identical. If you have any questions in this respect, consult a servicing dealer.

Use only high quality tools and accessories in order to avoid the risk of accidents and damage to the machine.

STIHL recommends the use of original STIHL replacement parts, rotor blades and accessories. They are specifically designed to match the product and meet your performance requirements.

The deflector on this power tool cannot protect the operator from all objects thrown by the blade (stones, glass, wire, etc.). Such objects may ricochet and then hit the operator.

Never attempt to modify your machine in any way since this may increase the risk of personal injury. STIHL excludes all liability for personal injury and damage to property caused while using unauthorized attachments.

Do not use a pressure washer to clean your power tool. The solid jet of water may damage parts of the power tool.

Clothing and Equipment

Wear proper protective clothing and equipment.



Clothing must be sturdy but allow complete freedom of movement. Wear snug-fitting clothing, an overall and jacket combination, do not wear a work coat.

Avoid clothing that could get caught on branches or brush or moving parts of the machine. Do not wear a scarf, necktie or jewelry. Tie up and confine long hair (e.g. with a hair net, cap, hard hat, etc.).



Wear steel-toed safety boots with non-slip soles.



WARNING



To reduce the risk of eye injuries, wear close-fitting safety glasses in accordance with European Standard EN 166. Make sure the safety glasses are a comfortable and snug fit.

Wear hearing protection, e.g. earplugs or ear muffs.

Wear a face shield and make sure it is a good fit. A face shield alone does not provide adequate eye protection.



Wear heavy-duty work gloves made of durable material (e.g. leather).

STIHL offers a comprehensive range of personal protective clothing and equipment.

Transporting the Power Tool

Always shut off the engine.

Carry the unit hanging from the shoulder strap or properly balanced by the drive tube.

Do not touch hot parts of the machine since **burn injury** will result.

Transporting by vehicle: Properly secure your power tool to prevent turnover, fuel spillage and damage.

Before Starting

Check that your power tool is properly assembled and in good condition – refer to appropriate chapters in the KombiEngine and KombiTool instruction manuals.

- Rotor blades correctly and securely mounted and in good condition (clean, move freely, not warped).
- Inspect the deflectors for damage and wear. Do not operate the machine with a damaged deflector – replace damaged parts.
- Never attempt to modify the controls or safety devices – work only with a properly mounted deflector.
- Keep the handles dry and clean – free from oil and dirt – for safe control of the power tool.
- Adjust shoulder strap and handles to suit your height and reach. See chapter on "Fitting the Harness".

To reduce the risk of accidents, do not operate your power tool if it is damaged or not properly assembled.

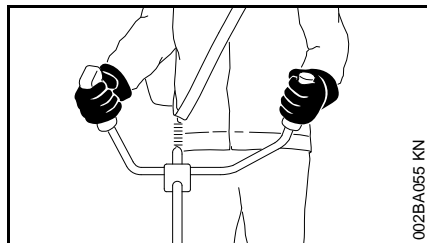
If you use a shoulder strap or full harness: Practice removing and putting down the machine as you would in an emergency. To avoid damage, do not throw the machine to the ground when practicing.

Holding and Controlling the Power Tool

Make sure you always have good balance and secure footing.

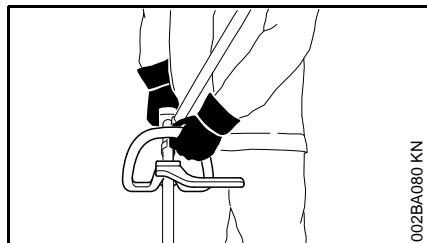
Always hold the power tool firmly with both hands on the handles.

Models with bike handle



Right handle on control handle, left hand on left handle.

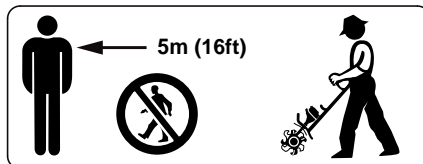
Models with loop handle



On models with a loop handle and barrier bar, left hand on loop handle, right hand on control handle, even if you are left-handed.

During Operation

In the event of impending danger or in an emergency, switch off the engine immediately by moving the slide control / stop switch / button to **0** or **STOP**.



To reduce the risk of injury from thrown objects, do not allow any other persons within a radius of 5 meters of your own position. **To reduce the risk of damage to property**, also maintain this distance from other objects (vehicles, windows).



To reduce the risk of injury, avoid contact with the rotor blades.



Your power tool produces toxic exhaust fumes as soon as the engine is running. These fumes may be colorless and odorless and contain unburned hydrocarbons and benzol. Never run the engine indoors or in poorly ventilated locations, even if your model is equipped with a catalytic converter.

Make sure the idle speed setting is correct. The rotor blades must not rotate when the engine is idling with the throttle trigger released. Check and correct the idle speed setting regularly. If the rotor blades still rotate when the engine is idling, have your dealer check your machine and make proper adjustments or repairs – see KombiEngine service manual.

To reduce the risk of injury from thrown objects, never operate the unit without a properly mounted deflector designed specifically for the power tool and KombiTool being used.

Take special care in slippery conditions (ice, wet ground, snow), on slopes or uneven ground.

Watch out for obstacles: Roots and tree stumps which **could cause you to trip or stumble**.

Inspect the work area: Stones, pieces of metal or other solid objects **may be thrown and cause personal injury** or damage the rotor blades.



To avoid the risk of electric shock, never use your power tool in areas where electrical lines are laid on the surface or buried just below the surface. Striking and damaging such lines with the KombiTool **could cause serious or even fatal injury**.

Make sure you always have good balance and secure footing.

Operate your power tool at normal walking pace only.

Take particular care when working close to fences, walls, stones, roots, trees and areas of dense growth. The rotor blades may snag **and cause injury**.

Be extremely cautious when pulling the power tool towards you **because of the risk of injury** from contact with the rotating blades.

Be particularly alert and cautious when wearing hearing protection because your ability to hear warnings (shouts, alarms, etc.) is restricted.

To reduce the risk of accidents, take a break in good time to avoid tiredness or exhaustion.

Work calmly and carefully – in daylight conditions and only when visibility is good. Stay alert so as not to endanger others.

If your power tool is subjected to unusually high loads for which it was not designed (e.g. heavy impact or a fall), always check that it is in good condition before continuing work – see also "Before Starting". Make sure the safety devices are working properly. Do not continue operating your power tool if it is damaged. In case of doubt, consult your servicing dealer.

Do not touch the rotor blades while the engine is running. If the rotor blades become jammed by thick branches or other obstructions, switch off the engine immediately before attempting to free the blades – **there is otherwise a risk of injury**.

Opening the throttle while the rotor blades are blocked increases the load and reduces engine speed. The clutch then slips continuously and this causes overheating and damage to important components (e.g. clutch, polymer housing components) – and **this can increase the risk of injury** from the rotor blades running while the engine is idling.

Check the rotor blades at regular short intervals during operation or immediately if there is a noticeable change in operating behavior:

- Shut off the engine, hold the unit securely.
- Check condition and tightness, look for cracks.
- Replace damaged rotor blades immediately, even if they have only superficial cracks.

Clean the rotor blades and deflector at regular intervals during operation.

- Shut off the engine.
- Wear gloves.
- Remove grass, weeds, clumps of soil, etc.

To reduce the risk of injury, shut off the engine before changing the rotor blades.

Do not continue using or attempt to repair damaged or cracked rotor blades by welding or straightening – risk of out of balance.

This may cause parts of the cutting attachment to come off and hit the operator or bystanders at high speed and **result in serious or fatal injuries**.

After Finishing Work

After finishing work or before leaving the unit unattended: Shut off the engine.

After finishing work, clean dust, dirt, soil and plant residue off the KombiTool – **wear gloves to reduce the risk of injury**.

Do not use grease solvents for cleaning.

After thoroughly cleaning, coat surface of metal KombiTools with a corrosion inhibitor.

Maintenance and Repairs

Service the machine regularly. Do not attempt any maintenance or repair work not described in the KombiTool and KombiEngine instruction manuals. Have all other work performed by a servicing dealer.

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

Only use high-quality replacement parts in order to avoid the risk of accidents and damage to the machine. If you have any questions in this respect, consult a servicing dealer.

STIHL recommends the use of genuine STIHL replacement parts. They are specifically designed to match your model and meet your performance requirements.

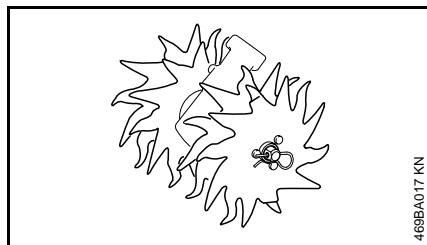
To reduce the risk of injury, **always shut off the engine** before carrying out any maintenance or repairs or cleaning the machine.

Using the Unit

General



The KombiTool is also available in a version with pick tines (BF-KM).

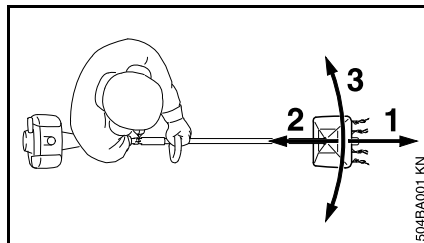


Pick tines are particularly suitable for tilling and loosening hard or packed soil.

Preparations

- Start the engine.
- Put on the shoulder strap.

Working Technique



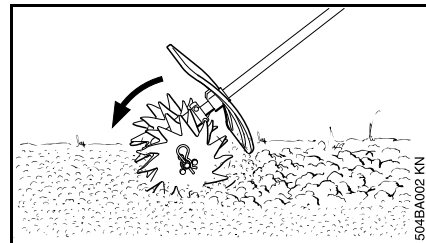
You can work with your cultivator in the forward (1) and backward (2) directions, from left to right or vice versa (3) or in a circular motion.

Choose the best method to suit your purpose, i.e. this depends on the shape and size of the area and soil conditions.

Working in an alternating backwards and forwards motion is particularly suitable for loosening packed soil.

The rotor blades may only be mounted and operated in one position. Arrows on the blades show the required direction of rotation.

Typical Applications

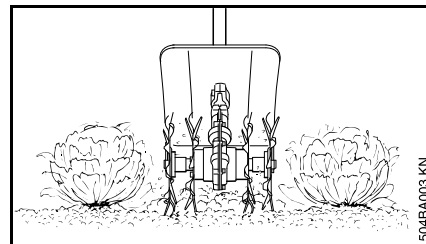


● Breaking up soil

A few preparations are necessary before you begin to break up soil which has been previously tilled (e.g. last year's vegetable or flower garden). First clear away surface weeds and remains of other plants as well as hard objects like rocks, stones, bottles, pieces of wood etc.

Hold the cultivator firmly with both hands and till only a small area at a time to the required depth.

Finish tilling the area by guiding the cultivator in such a way that you leave no footprints. Use a rake to level off the entire area.



● Loosening soil around plants

Only loosen the surface soil around plants. Avoid going too deep as this could damage the shallow roots of some plants.

To avoid any damage to the cultivator or trees, be wary not to catch the blades on the large roots of trees.

● Working in soil improvers

The cultivator can be used for mulching with loam, compost, leaves, other organic material or fertilizers.

Prepare the area by removing all old roots, the remains of large plants and hard objects (stones etc.). Spread the mulch evenly on the ground.

Work in the mulch with a circular or back and forth motion.

Finish off by leveling the area with a rake.

● Trenching or furrowing

Walk slowly backward and pull the cultivator to create the furrow required. Repeat as necessary to obtain deeper furrows.

Cleaning the rotor blades

Parts of plants, e.g. roots, can become tightly wrapped around or between the rotor blades during operation. To clean the rotor blades:

- Wear work gloves.
- Pull the hitch pins out of the axle.
- Pull the rotor blades off the shaft.
- Remove pieces of roots, plants and soil.

Approved KombiEngines

KombiEngines

Only use KombiEngines supplied by STIHL or explicitly approved by STIHL for use with the KombiTool.

This KombiTool may be operated only in combination with the following KombiEngines:

STIHL KM 55 R, KM 56 R, KM 85 R, KM 90, KM 90 R, KM 94 R, KM 100, KM 100 R, KM 110, KM 110 R, KM 130, KM 130 R



WARNING

Loop-handled power tools must be equipped with a barrier bar.

Brushcutters with split drive tube

This KombiTool may also be mounted to STIHL brushcutters (basic power tools) with a split drive tube (T models).

Operation of this KombiTool is therefore also permitted on the following power tool model:

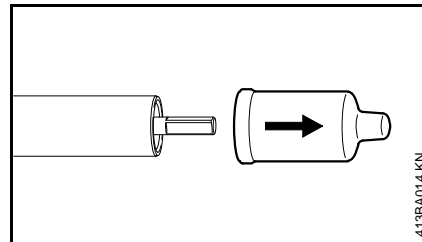
STIHL FR 130 T



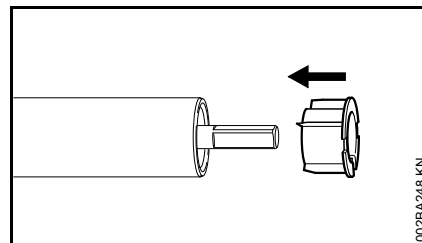
WARNING

Refer to the power tool's instruction manual for use of the barrier bar.

Assembling the Unit



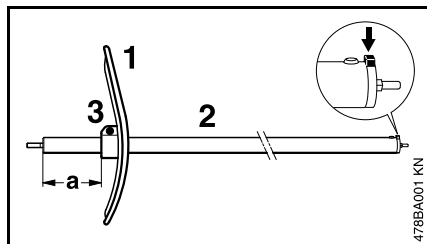
- Pull the protective caps off the ends of the drive tube and keep them in a safe place for later use – see "Storing the Machine".



NOTICE

The plug may come out of the drive tube when you pull off the cap. Push it back into the drive tube as far as stop.

Mounting the Deflector



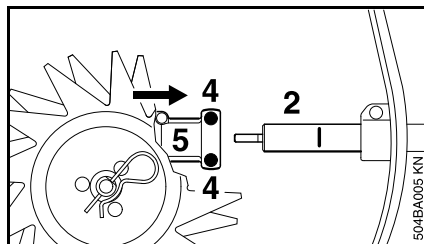
- Slide the deflector (1) onto the drive tube (2) until distance "a" is 100 mm.
- Line up the deflector (1) so that it is vertical and the fixing lug (arrow) on the drive tube points up.
- Tighten the clamp screw (3) moderately.



NOTICE

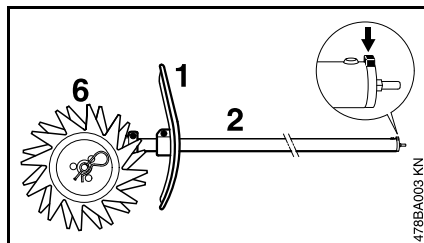
Check that the deflector is secure – it must not be possible to rotate it on the drive tube.

Mounting the Gearbox



- Loosen the clamp screws (4).
- Push the gearbox (5) onto the drive tube (2) – turn the gearbox back and forth as necessary until the housing is approximately in line with the mark.

Aligning the Drive Tube



- Line up the gearbox on the drive tube so that the deflector (1) and the rotor blades (6) are vertical and the fixing lug (arrow) on the drive tube (2) points up.
- Tighten down the clamp screws **firmly**.



NOTICE

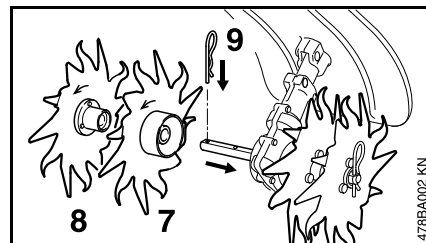
Check that the deflector is secure – it must not be possible to rotate it on the drive tube.

Mounting the Rotor Blades

Take care not to lose the two washers on the gearbox output shaft.

- Arrange the blades in the order they will be fitted on the shaft, noting the following points:

Left-hand and right-hand blades are different. The direction of rotation is marked with arrows on the gearbox and blades.

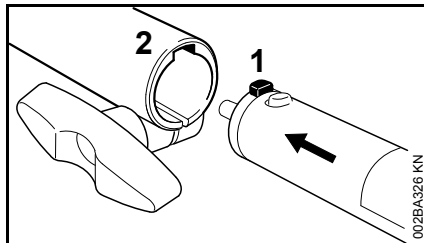


- Rotate the inner right-hand blade (7) on the shaft until it can be pushed into position – check the direction of rotation again (arrows).

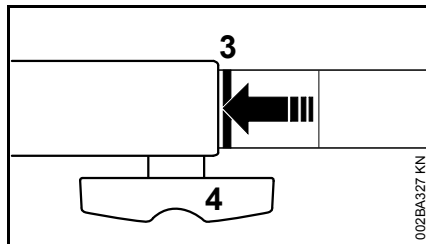
The hub of the inner blade is larger than that of the outer blade.

- Rotate the outer right-hand blade (8) on the shaft until it can be pushed into position – check the direction of rotation again (arrows).
- Insert and engage the hitch pin (9) in the hole in the shaft – fold the hitch pin flat against the blade.
- Use the same procedure to mount the rotor blades on the left-hand side.

Mounting the KombiTool



- Push the lug (1) on the drive tube into the slot (2) in the coupling sleeve as far as stop.



When correctly installed, the red line (3) (arrow point) must be flush with the end of the coupling sleeve.

- Tighten down the star knob (4) **firmly**.

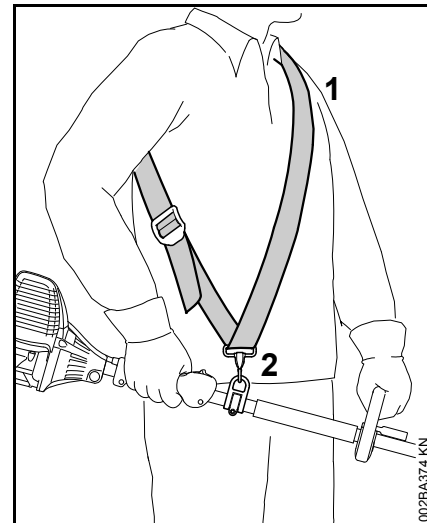
Removing the KombiTool

- Reverse the above sequence to remove the drive tube.

Fitting the Harness

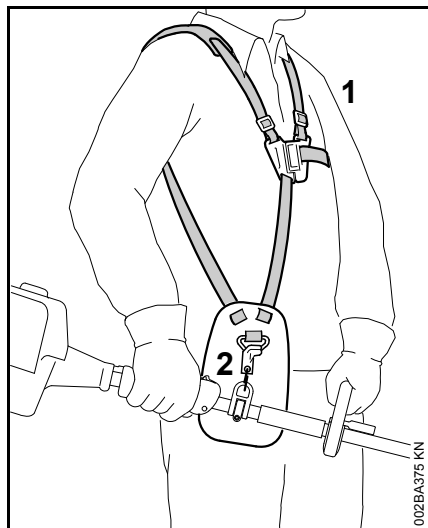
The type and style of the harness, carrying ring and carabiner (spring hook) depend on the market.

Shoulder Strap



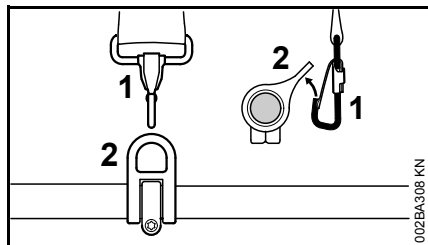
- Put on the shoulder strap (1).
- Adjust the length of the strap so that the carabiner (2) is about a hand's width below your right hip.

Full harness



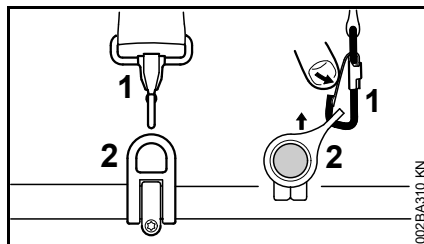
- Put on the full harness (1).
- Adjust the length of the strap so that the carabiner (2) is about a hand's width below your right hip.

Attaching Machine to Harness



- Attach the carabiner (1) to the carrying ring (2) on the drive tube – hold the carrying ring steady.

Disconnecting Machine from Harness



- Press down the bar on the carabiner (1) and pull the carrying ring (2) out of the carabiner.

Throwing Off the Machine



The machine must be quickly thrown off in the event of imminent danger. Practice removing and putting down the machine as you would in an emergency. To avoid damage, do not throw the machine to the ground when practicing.

Practice quickly detaching the power tool from the carabiner as described under "Disconnecting Machine from Harness".

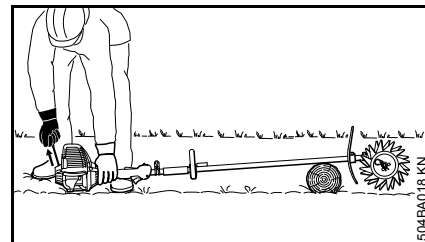
If you are using a shoulder strap: Practice slipping the strap off your shoulder.

If you are using a full harness: Practice quickly opening the locking plate and slipping the harness straps off your shoulders.

Starting / Stopping the Engine

Starting the Engine

Always follow the operating instructions for the KombiEngine and basic power tool.



- Place the machine on the ground: It must rest securely on the machine support. Rest the deflector end of the drive tube on a raised support (e.g. mound, log, brick).

To reduce the risk of accidents, check that the rotor blades are not touching the ground of any other obstacles.

- Make sure you have a firm footing, either standing, stooping or kneeling.
- Hold the machine with you left hand and press it down **firmly** – do not touch the controls on the control handle – see KombiEngine or basic power tool instruction manual.



NOTICE

Do not stand or kneel on the drive tube.

WARNING

The blades may begin to rotate as soon as the engine starts. For this reason, blip the throttle after starting – the engine returns to idling speed.

The starting procedure is now as described in the instruction manual of the KombiEngine or basic power tool you are using.

Stopping the Engine

- See KombiEngine or basic power tool instruction manual.

Storing the Machine

For periods of 3 months or longer

- Remove, clean and inspect the rotor blades.
- If the KombiTool is removed from the KombiEngine and stored separately: Fit the protective cap on the drive tube to avoid dirt getting into the coupling.
- Store the machine in a dry, high or locked location – out of the reach of children and other unauthorized persons.

Maintenance and Care

The following intervals apply to normal operating conditions only. If your daily working time is longer or operating conditions are difficult (very dusty work area, etc.), shorten the specified intervals accordingly.

All accessible screws and nuts

- Retighten if necessary

Sweeping attachments and deflectors

- Visual inspection, check tightness before starting work and after every refueling stop
- Replace if damaged

Safety labels

- Replace illegible safety labels

Minimize Wear and Avoid Damage

Observing the instructions in this manual and the KombiEngine manual helps reduce the risk of unnecessary wear and damage to the power tool.

The power tool must be operated, maintained and stored with the due care and attention described in these instruction manuals.

The user is responsible for all damage caused by non-observance of the safety precautions, operating and maintenance instructions. This includes in particular:

- Alterations or modifications to the product not approved by STIHL.
- Using tools or accessories which are neither approved or suitable for the product or are of a poor quality.
- Using the product for purposes for which it was not designed.
- Using the product for sports or competitive events.
- Consequential damage caused by continuing to use the product with defective components.

Maintenance Work

All the operations described in the chapter on "Maintenance and Care" must be performed on a regular basis. If these maintenance operations cannot be performed by the owner, they should be performed by a servicing dealer.

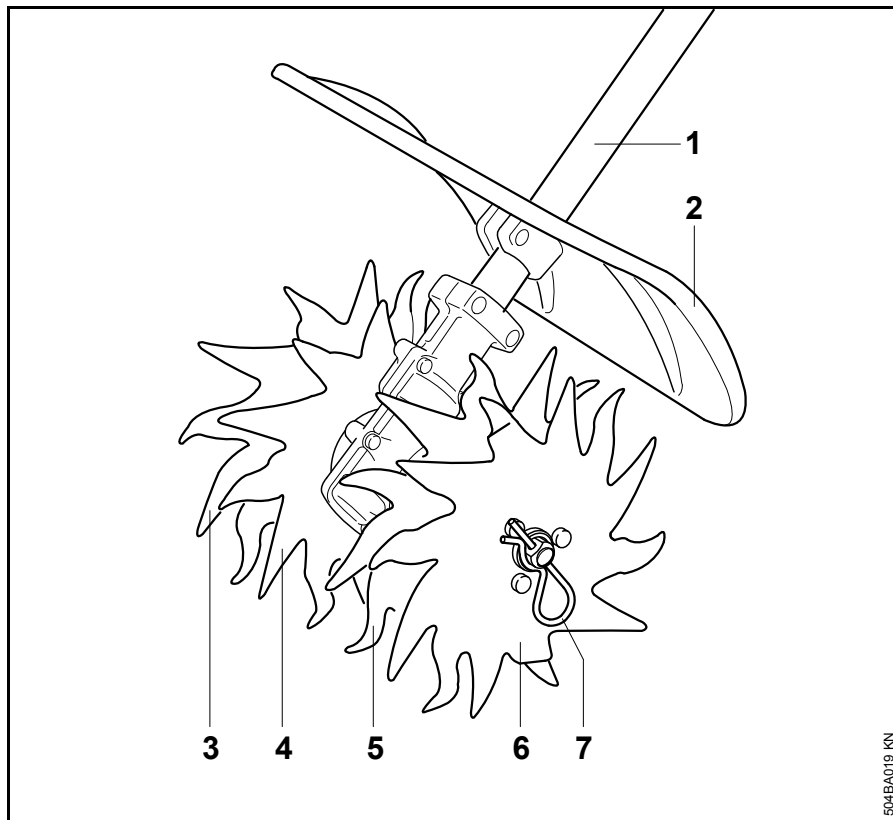
STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL

servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

If these maintenance operations are not carried out as specified, the user assumes responsibility for any damage that may occur. Among other parts, this includes:

- Corrosion and other consequential damage resulting from improper storage.
- Damage to the product resulting from the use of poor quality replacement parts.

Main Parts



- 1 Drive tube
- 2 Deflector
- 3 Outer right-hand rotor blade
- 4 Inner right-hand rotor blade
- 5 Inner left-hand rotor blade
- 6 Outer left-hand rotor blade
- 7 Hitch pin

504BA019 KN

Specifications

Gearbox

Single-stage worm gear

Reduction ratio: 44:1

Rotor Blades

Four rotor blades, double-edged, rotate in same direction

Diameter: 230 mm

Working width: 220 mm

Weight

Complete with deflector and drive tube:
4.1 kg

Noise and Vibration Data

Noise and vibration data measurements on power tools with the BF-KM KombiTool include idling and rated maximum speed in a ratio of 1:6.

For further details on compliance with Vibration Directive 2002/44/EC see www.stihl.com/vib.

Sound pressure level L_p to ISO 11201

KM 55 R with loop handle: 95 dB(A)
KM 56 R with loop handle: 95 dB(A)
KM 85 R with loop handle: 95 dB(A)
KM 90 R with loop handle: 97 dB(A)
KM 94 R with loop handle: 95 dB(A)

KM 100 R with loop handle: 91 dB(A)
KM 130 with bike handle: 97 dB(A)
KM 130 R with loop handle: 99 dB(A)
FR 130 T: 97 dB(A)

Sound power level L_w to ISO 3744

KM 55 R with loop handle: 105 dB(A)

Sound power level L_w to ISO 3744

KM 56 R with loop handle: 105 dB(A)
KM 85 R with loop handle: 106 dB(A)
KM 90 R with loop handle: 101 dB(A)
KM 100 R with loop handle: 101 dB(A)
KM 130 with bike handle: 105 dB(A)
KM 130 R with loop handle: 105 dB(A)
FR 130 T: 105 dB(A)

Sound power level L_w to ISO 11201

KM 94 R with loop handle: 105 dB(A)

Vibration measurement $a_{hv,eq}$ to ISO 20643

	Handle, left	Handle, right
KM 55 R with loop handle:	6.9 m/s ²	8.0 m/s ²
KM 56 R with loop handle:	5.5 m/s ²	7.4 m/s ²
KM 85 R with loop handle:	2.2 m/s ²	6.3 m/s ²
KM 90 R with loop handle:	3.6 m/s ²	5.1 m/s ²
KM 100 R with loop handle:	3.6 m/s ²	6.5 m/s ²

	Handle, left	Handle, right
KM 130 with bike handle:	2.1 m/s ²	3.3 m/s ²
KM 130 R with loop handle:	5.6 m/s ²	7.9 m/s ²
FR 130 T:	1.4 m/s ²	1.8 m/s ²

Vibration measurement $a_{hv,eq}$ to ISO 22867

	Handle, left	Handle, right
KM 94 R with loop handle:	3.9 m/s ²	4.2 m/s ²

The K-factor in accordance with Directive 2006/42/EC is 2.5 dB(A) for the sound pressure level and sound power level; the K-factor in accordance with Directive 2006/42/EC is 2.0 m/s² for the vibration measurement.

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 (EC) No. 1907/2006 see www.stihl.com/reach.


Maintenance and Repairs

Users of this machine may only carry out the maintenance and service work described in this user manual. All other repairs must be carried out by a servicing dealer.

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

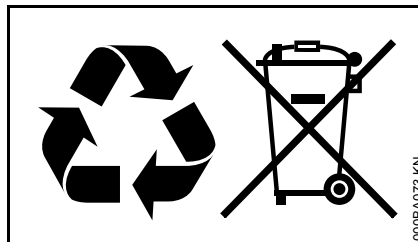
When repairing the machine, only use replacement parts which have been approved by STIHL for this power tool or are technically identical. Only use high-quality replacement parts in order to avoid the risk of accidents and damage to the machine.

STIHL recommends the use of original STIHL replacement parts.

Original STIHL parts can be identified by the STIHL part number, the **STIHL** logo and the STIHL parts symbol  (the symbol may appear alone on small parts).

Disposal

Observe all country-specific waste disposal rules and regulations.



STIHL products must not be thrown in the garbage can. Take the product, accessories and packaging to an approved disposal site for environment-friendly recycling.

Contact your STIHL servicing dealer for the latest information on waste disposal.

EC Declaration of Conformity

ANDREAS STIHL AG & Co. KG
Badstr. 115
D-71336 Waiblingen

Germany

declare in exclusive responsibility that the product

Category: Pick tine
KombiTool

Make: STIHL

Model: BF-KM

Serial identification: 4601

conforms to the relevant provisions of Directives 2006/42/EC, 2014/30/EU and 2000/14/EC and has been developed and manufactured in compliance with the following standards in the versions valid on the date of production:

EN ISO 12100 (in conjunction with the specified KM- and FS-models).

Technical documents deposited at:

ANDREAS STIHL AG & Co. KG
Produktzulassung (Product Licensing)

The year of manufacture is applied to the power tool.

English

Done at Waiblingen, 28.10.2016

ANDREAS STIHL AG & Co. KG

A handwritten signature in black ink, reading "Thomas Elsner". The signature is fluid and cursive, with the first name "Thomas" and the last name "Elsner" clearly distinguishable.

Thomas Elsner

Director Product Management and
Services

The CE mark, consisting of the letters "C" and "E" in a stylized, bold, sans-serif font, indicating conformity with European standards.

0458-478-0121-A

englisch



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