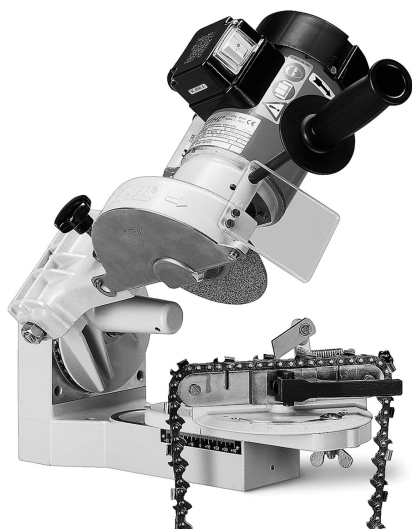


USG

STIHL



2 - 30

Instruction Manual



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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 trouble-free use of the product.

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

Your



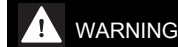
Dr. Nikolas Stihl

1 Guide to Using this Manual

1.1 Pictograms

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

1.2 Symbols in text



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.

1.3 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.

2 Safety Precautions



Special safety precautions must be observed when working with the sharpener.



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



Observe all applicable local safety regulations, standards and ordinances.

If you have not used this sharpener model before: Have your dealer or a trained expert show you how to operate it properly and safely.

Minors should never be allowed to use an electric sharpener.

Keep bystanders, especially children, and animals away from the work area.

Only use the grinding wheels supplied by STIHL or expressly approved by STIHL for use with your specific model.

Other grinding wheels must not be used because of the **increased risk of accidents**.

Switch on the motor only if its operating voltage agrees with the voltage of your power supply.

2.1 Clothing and Equipment

Wear proper protective clothing and equipment.

The grinding dust produced when using this sharpener may cause health problems. Always use a **dust extractor** or **wear a suitable respirator**.

The sparks created during sharpening **increase the risk of eye injuries**.



Always wear safety glasses and hearing protection, e.g. earplugs or ear muffs.



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.

Do not wear garments that could get caught in moving parts of the machine – such as scarfs, neckties, jewellery. Tie up and confine long hair.



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



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

2.2 Before Starting Work

Check that your sharpener is properly assembled and in good condition. **To reduce the risk of accidents**, do not operate your sharpener with a damaged connecting cord or grinding wheel.

Voltage and frequency of the machine (see rating plate) and the voltage and frequency of your power supply must be the same.

To reduce the risk of stumbling, position and mark the connecting cord so that it cannot be damaged or endanger others.

Do not drive over, squash or jerk the connecting cord. Protect it from heat, oil and sharp edges.

Always switch off the sharpener before carrying out any maintenance work.

To reduce the risk of accidents, switch off the motor and wait for the grinding wheel to come to a standstill before checking its profile.



Check the outside diameter of the grinding wheel.



The diameters of the grinding wheel's bore and the sharpener's spindle must match.

Check the grinding wheel's bore for damage. Do not use grinding wheels with a damaged bore – **risk of accidents**.



The permissible RPM of the grinding wheel must be the same as or higher than the maximum RPM of the sharpener's shaft – see "Specifications".

Before mounting used grinding wheels, check them for cracks, excessive wear and damage to the mounting bore.

2.3 During Operation

Red-hot particles occur during grinding. There is a risk of fire if these particles land on combustible material.

2.4 Storing Grinding Wheels

To reduce the risk of breakage or shattering, store grinding wheels on a flat surface in a dry location free from frost and at a uniform temperature.

Do not drop the grinding wheel on the floor and protect it from knocks and bumps.

2.5 Maintenance and Repairs

Always disconnect the unit from the power supply before carrying out any maintenance work.

Do not attempt any maintenance or repair work not described in the instruction manual. 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 recommends the use of genuine STIHL replacement parts. They are specifically designed to match your model and meet your performance requirements.

Never attempt to modify your tool in any way since this may increase the risk of personal injury.

3 Intended use

The STIHL USG sharpens all STIHL Oilomatic saw chains, hedge trimmer blades and circular saw blades.

Optional swivelling tool rests are required for sharpening scratcher tooth chain, hedge trimmer blades and circular saw blades.

All the necessary setting data and grinding wheels are listed in the separate sheet 0457 716 0000.

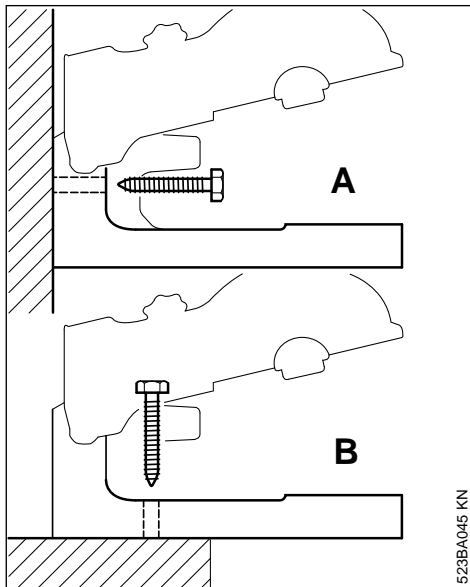
It must not be used for any other purpose because of the increased risk of accidents and damage to the sharpener. Never attempt to modify this product in any way since this may result in accidents or damage to the sharpener.

4 Mounting the Tool

The sharpener may be mounted to a wall or workbench.

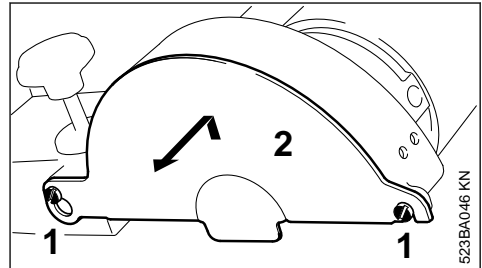
If you mount it on a bench, note that it must overhang the bench by at least 120 mm.

If you use the special attachment for hedge trimmer blades: If you mount the sharpener to a wall, note that a clearance of at least 450 mm is required between the wall and sharpener for setting up the hedge trimmer blade. Recommendation: Mount the sharpener on a workbench.

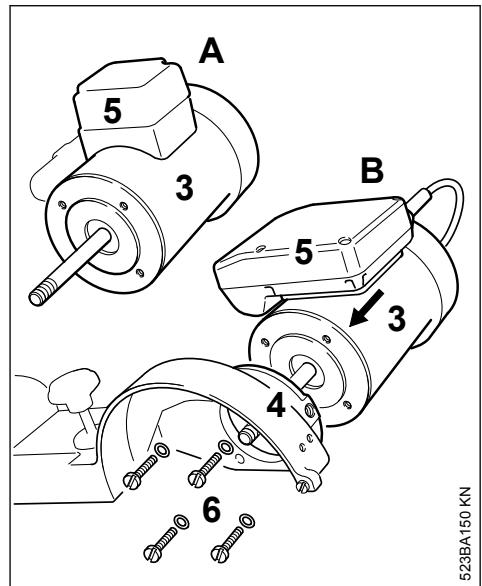


Mount the sharpener

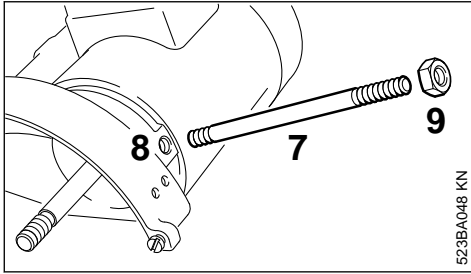
- ▶ to a wall (A) with three 8 mm dia. screws (e.g. wood screws: 8 mm dia. x 100 mm long, DIN 571-St), 8.4 mm dia. washers and suitable wall plugs (e.g. plastic, 10x50 mm).
- ▶ to a bench (B) with two 8 mm dia. screws (e.g. wood screws: 8 mm dia. x 100 mm long, DIN 571-St) and 8.4 mm dia. washers.



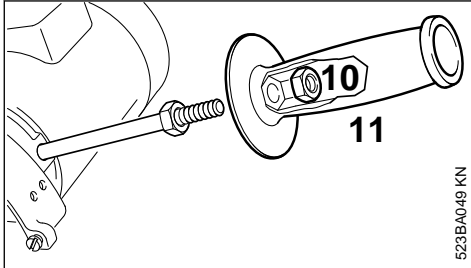
- ▶ Loosen the M5x10 screws (1), lift and remove the guard plate (2).



- ▶ Fit the motor (3) on the motor arm (4). The switchbox (5) must face up.
- ▶ Insert the four M5x22 screws (6) and tighten them down firmly in a crosswise pattern.

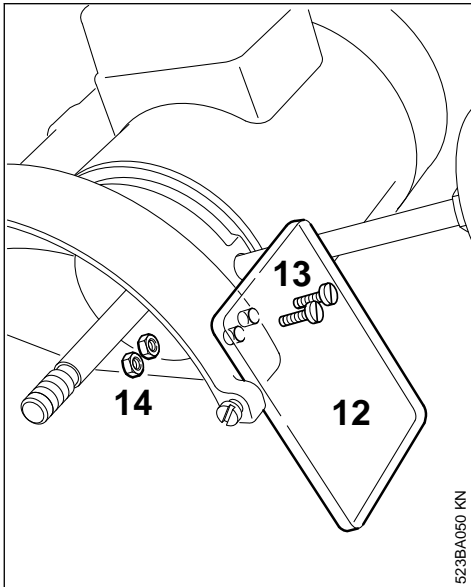


523BA048 KN



523BA049 KN

- ▶ Screw short threaded end of the M10x145 stud (7) into the housing bore (8).
- ▶ Screw the M10 nut (9) onto the other end of the stud as far as stop.
- ▶ Insert the M10 nut (10) in the handle's hexagon recess (11) – fit the handle and tighten it down firmly.

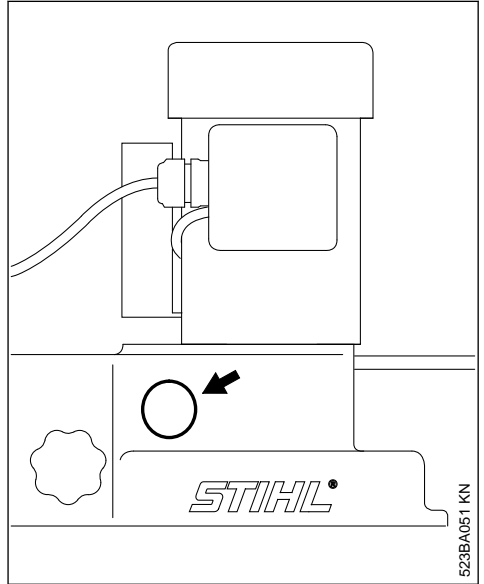


523BA050 KN

- ▶ Place the transparent shield (12) against the guard and line up the holes.

- ▶ Insert the M4x12 screws (13) in the holes.
- ▶ Screw on the M4 nuts (14) and tighten them down firmly.
- ▶ Refit the guard plate.

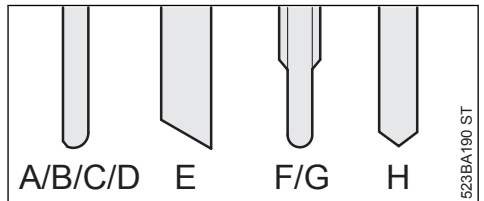
4.1 Work Light (depending on model)



523BA051 KN

- ▶ Use a punch to pierce the casting skin
- ▶ and clean up the edges with a round file.
- ▶ Position the lamp socket in the opening from outside and secure it with the screw ring.

5 Selecting the Grinding Wheel



523BA190 ST

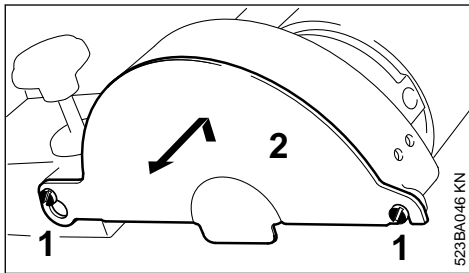
- Grinding wheel (A) 5203 750 7010 (2.4 mm radius at one side)
- Grinding wheel (B) 5203 750 7013 (2.0 mm radius at one side)
- Grinding wheel (C) 5203 750 7017 (1.7 mm radius at one side)
- Grinding wheel (D) 5202 750 7010 (2.8 mm radius at one side)
- Grinding wheel (E) 5203 750 7015

- Diamond grinding wheel (F) 5203 757 0901
- Diamond grinding wheel (G) 5203 757 0906
- Diamond grinding wheel (G) 5203 750 7018

Grinding wheel Application

A	Circular saw blades, Hedge trimmers, Oilomatic saw chain, pitch: 3/8", 0.325"
B	Oilomatic saw chain, pitch: 1/4", 3/8" P
C	Oilomatic saw chain, pitch: 1/4" P
EN	Oilomatic saw chain, pitch: 0.404"
E	Oilomatic saw chains: Depth gauge
F	Carbide Tipped Circular Saw Blade, Oilomatic saw chains: 3/8" Rapid Duro (RD), 3/8" Rapid Duro R (RDR)
G	Oilomatic saw chains: 3/8" P Picco Duro 3 (PD3), .325" Rapid Duro 3 (RD3), 3/8" Rapid Duro 3 (RD3)
H	Hexacut saw chains: 3/8" Rapid Hexa (RH)

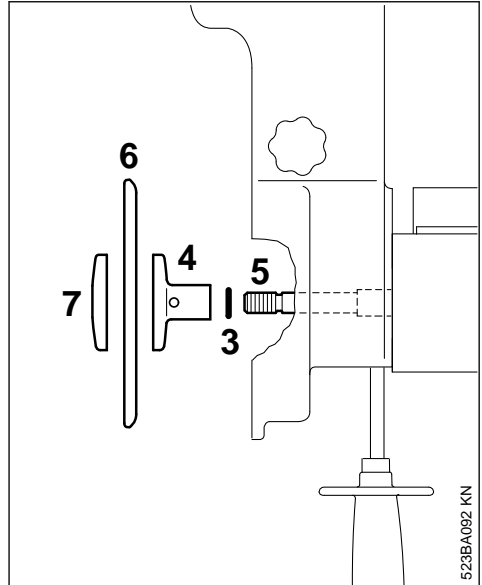
6 Fitting the Grinding Wheel



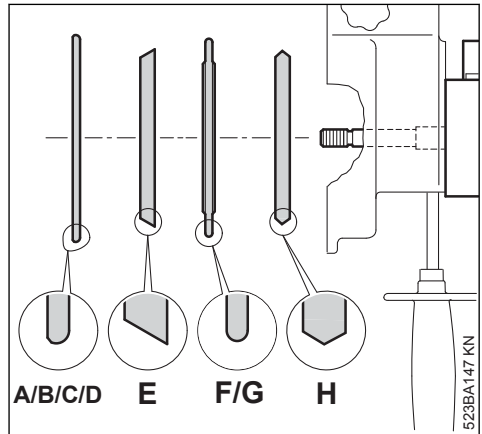
! WARNING

Always check condition of grinding wheels by performing a ringing test before mounting. To reduce the **risk of accidents**, never use damaged grinding wheels.

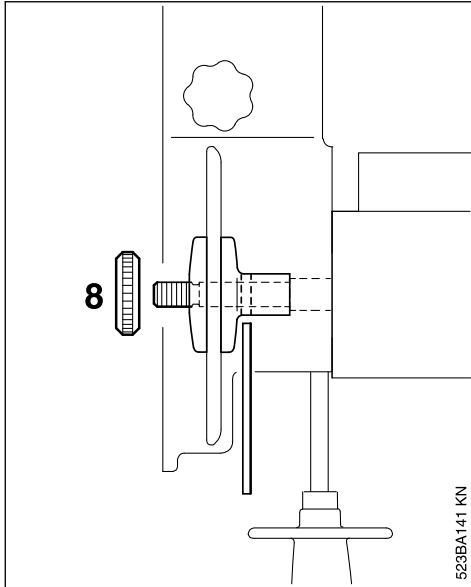
- ▶ Take out the screws (1) M5x10, raise and remove guard plate (2)



- ▶ Fit the O-ring (3) in the groove in the spacer (4). Push the spacer onto the motor shaft (5) (spacer flange must face away from motor). Fit the required grinding wheel (6) and the thrust washer (7) (rounded side facing away from the motor) onto the motor shaft.



Grinding wheel	Installed position
A/B/C/D	Radius facing motor (pointing to the right)
E	Large outside diameter facing motor (pointing to the right)
F/G/H	any

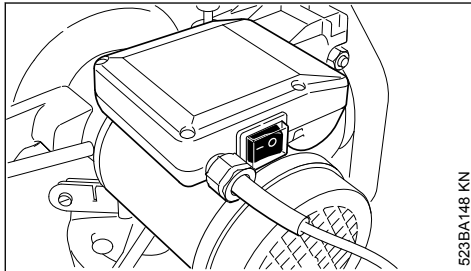


523BA141 KN

- ▶ Line up the cross holes in the spacer and motor shaft and insert the locking pin
- ▶ Tighten down the grinding wheel firmly with the knurled nut (8) – left-hand thread
- ▶ Remove the stop pin
- ▶ Reinstall the guard plate

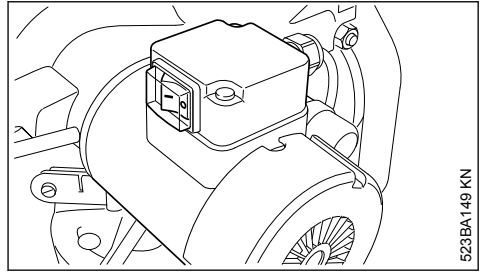
7 Switching On the Motor

7.1 Version A



523BA148 KN

7.2 Version B



523BA149 KN

Switch positions

0 – sharpener switched off

I – sharpener switched on

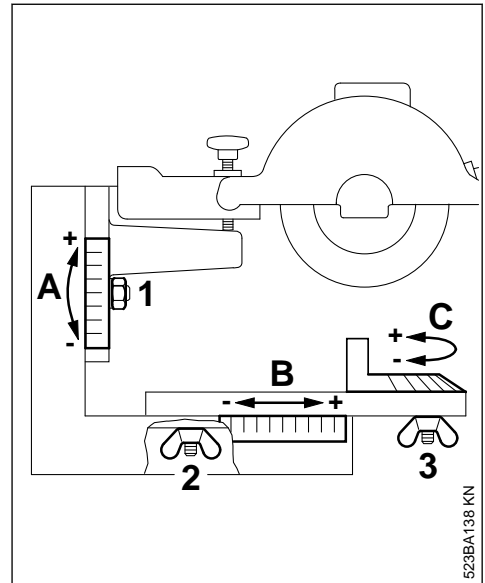
- ▶ To switch on the sharpener, set the switch to position I.

8 Test Run

Every time you mount a grinding wheel:

- ▶ Cordon off the general work area (danger zone).
- ▶ Run the grinding wheel at maximum permissible speed for at least one minute.

9 Scales



523BA138 KN

Scale A

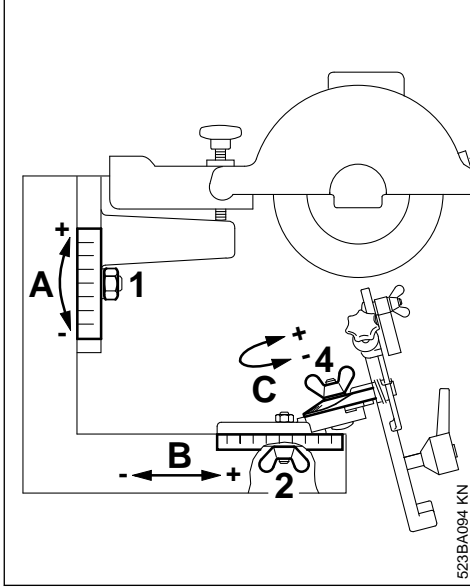
- ▶ Loosen the nut (1), adjust angle.
- ▶ Tighten down the nut firmly.

Scale B

- ▶ Loosen the wingnut (2) on the underside of the base, adjust to required value.
- ▶ Tighten down the wingnut firmly.

Scale C

- ▶ Loosen the wingnut (3), adjust angle.
- ▶ Tighten down the wingnut firmly.



523BA094 KN

Scale C (attachment for circular saw blades)

- ▶ Loosen the wingnut (4), adjust angle.
- ▶ Tighten down the wingnut firmly.

10 Preparations for Sharpening

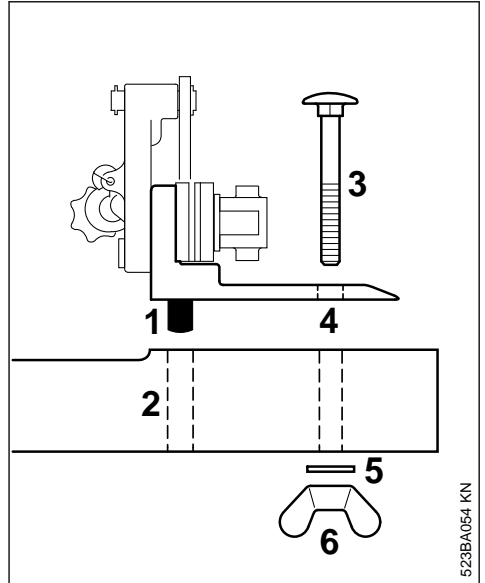
NOTICE

Inspect the saw chain.

Replace any damaged or worn parts of the chain and match the new parts to the shape and size of the original parts.

- ▶ Select the grinding wheel – see separate sheet 0457 716 000.
- ▶ Mount the grinding wheel – see "Mounting the Grinding Wheel".
- ▶ Perform test run – see "Test Run".
- ▶ Switch off the motor.
- ▶ Check contour of grinding wheel and dress if necessary – see "Dressing the Grinding Wheel".

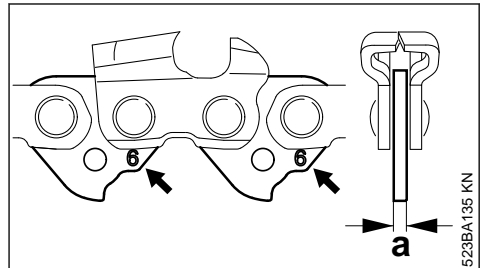
10.1 Mounting Attachment for Saw Chain



523BA054 KN

- ▶ Engage the pin (1) in the hole (2) in the sharpener's base.
- ▶ Insert the screw (3) through the slot (4).
- ▶ Fit the washer (5) and wingnut (6) and tighten down moderately.

10.2 Determining Drive Link Gauge



523BA135 KN

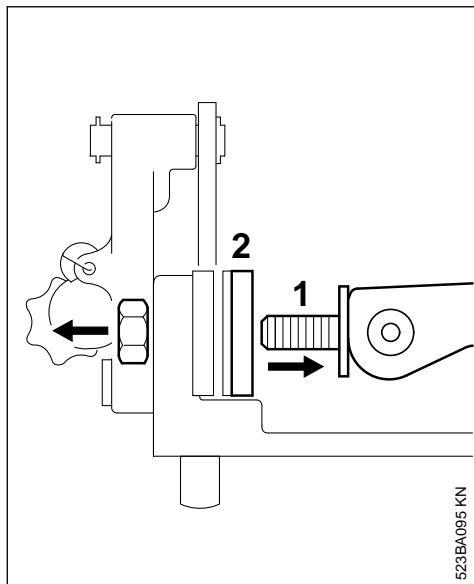
The clamp must be adjusted to suit the drive link gauge.

Drive link gauge:

- ▶ Use slide caliper to measure dimension "a" or
- ▶ note the digit (arrow).

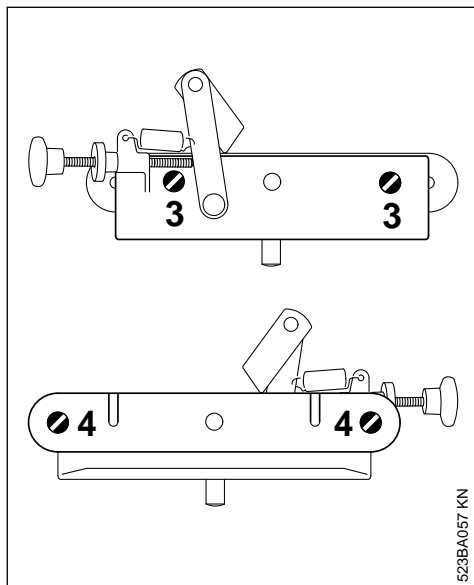
Digit	Drive link gauge
1	1.1 mm
3	1.3 mm
5	1.5 mm
6	1.6 mm
0	2.0 mm

10.3 Adjusting the Clamp



523BA095 KN

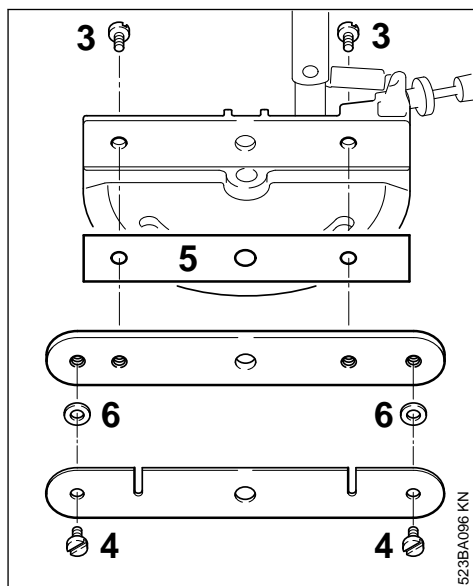
- ▶ Unscrew the clamping lever (1).
- ▶ Remove the thrust plate (2) and nut.



523BA057 KN

- ▶ Take out the screws (3).
- ▶ Take out the screws (4).

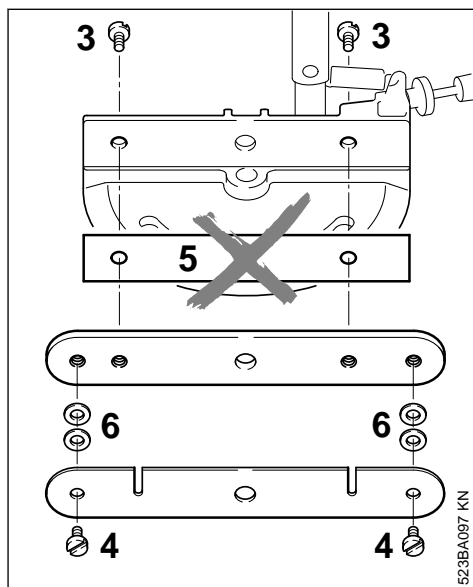
Chain with 1.1/1.3 mm drive link gauge



523BA096 KN

- ▶ Fit the shim (5).
- ▶ Fit the screws (3).
- ▶ Install a 1.6 mm washer (6) between the guide rail and clamping rail.
- ▶ Fit the screws (4).

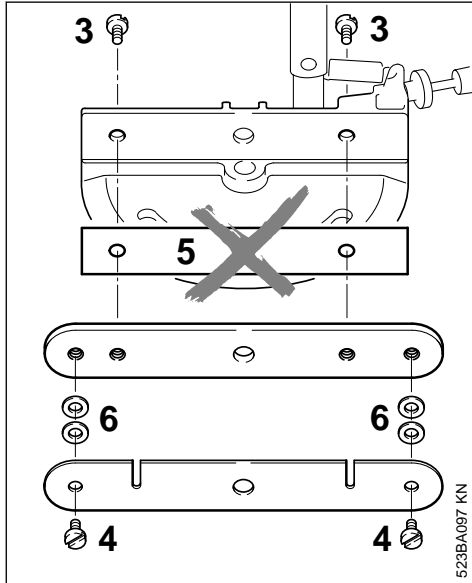
Chain with 1.5/1.6 mm drive link gauge



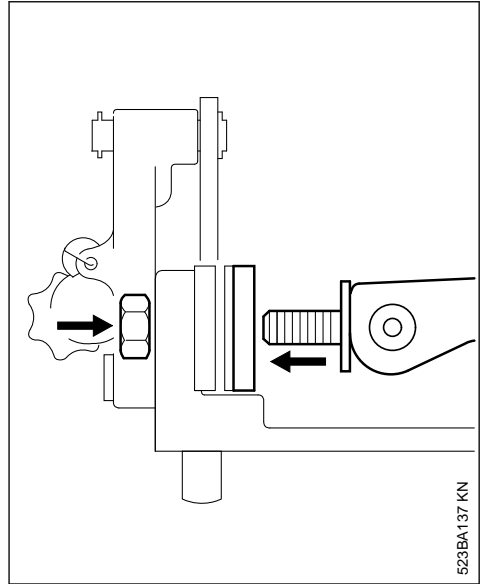
523BA097 KN

- ▶ Remove the shim (5) (if fitted).
- ▶ Fit the screws (3).
- ▶ Install two 0.9 mm washers (6) between the guide rail and clamping rail.
- ▶ Fit the screws (4).

Chain with 2.0 mm drive link gauge

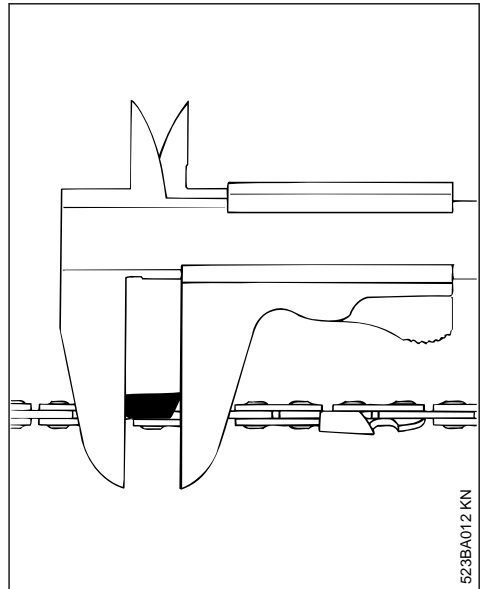


- ▶ Remove the shim (5) (if fitted).
- ▶ Fit the screws (3).
- ▶ Install one 0.9 mm and one 1.6 mm washer (6) between the guide rail and clamping rail.
- ▶ Fit the screws (4).



- ▶ Fit the clamping lever.

10.4 Finding the Master Cutter

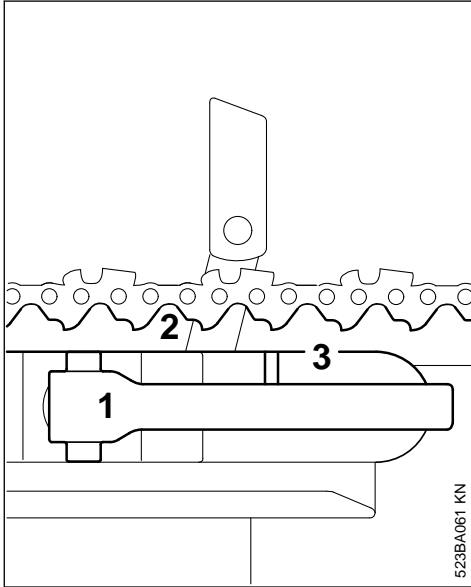


The shortest cutter is used as the master cutter.

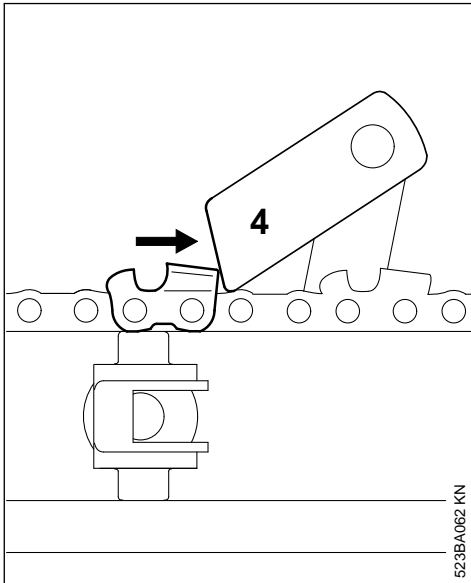
The master cutter is sharpened first. All other cutters are ground to the same length as the master cutter.

- ▶ Use a slide caliper to find the shortest cutter and mark it, e.g. with chalk.

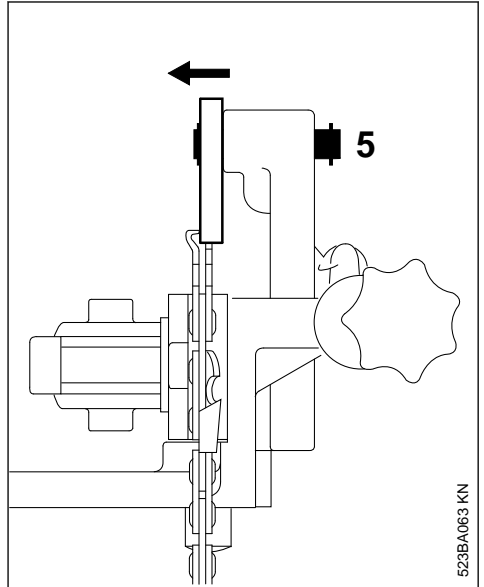
10.5 Fitting the Saw Chain



- ▶ Loosen the clamping lever (1).
- ▶ Place the chain, drive link tangs (2) facing down, in the clamping rail (3) – cutting edges must point to the left.

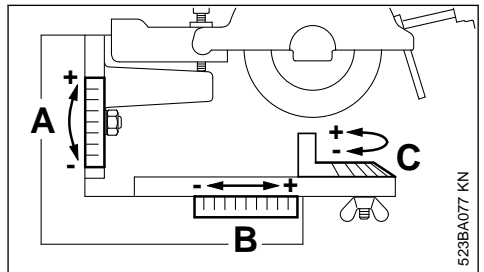


- ▶ Pull the master cutter back against the stop (4).



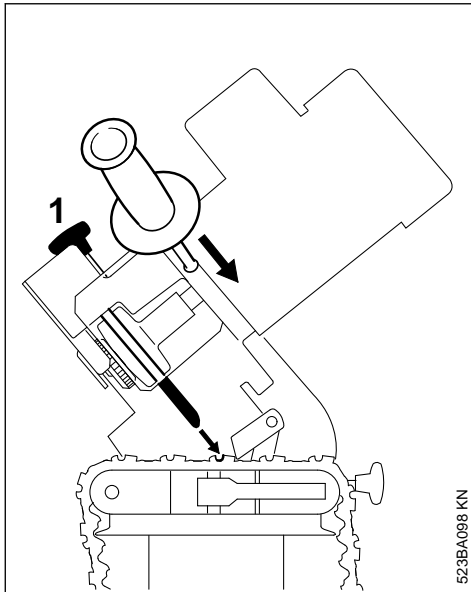
- ▶ The pivot pin (5) can be moved backward and forward in the arm so that it is properly positioned behind the cutter.
- ▶ Sharpening the **left-hand** row of cutters: Move the stop **in the direction of the arrow**.
- ▶ Sharpening the **right-hand** row of cutters: Move the stop **in the opposite direction**.

10.6 Setting the Scales

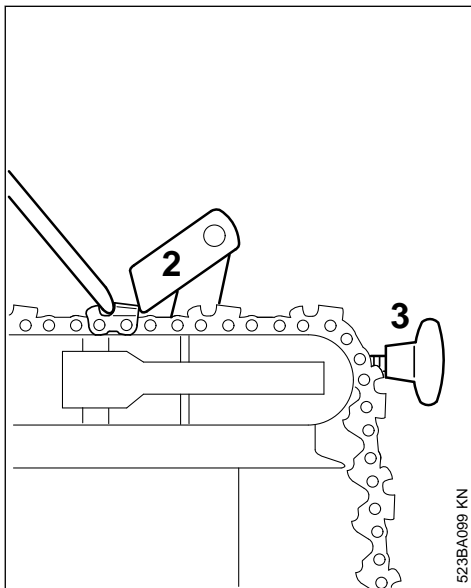


- ▶ Set the scales to the values specified in the separate sheet 0457 716 0000.

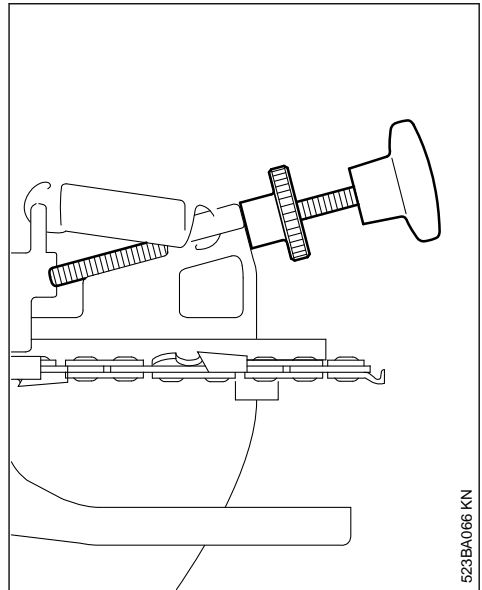
10.7 Adjusting the Lateral Stop



- ▶ Back off the travel limiting screw (1).
- ▶ Use the handle to bring the grinding wheel down to the chain.

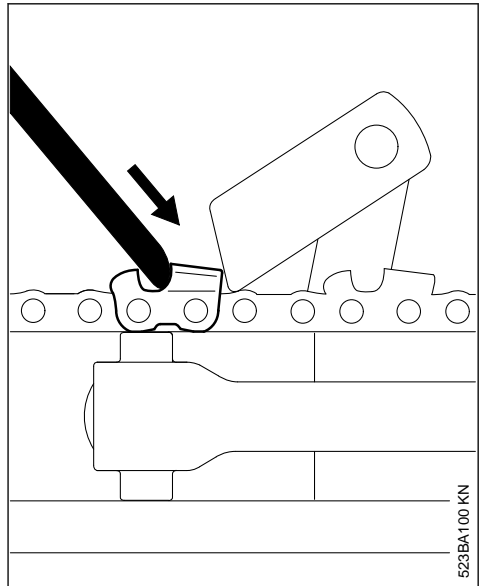


- ▶ Move the stop (2) with the adjusting screw (3) so that the master cutter's side plate locates against the grinding wheel.
- ▶ Clamp the chain in position.

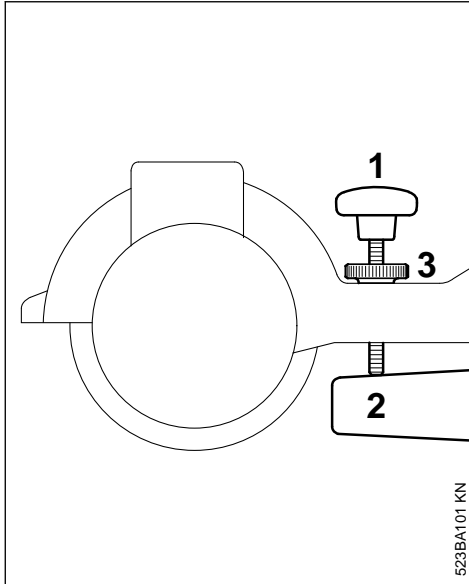


- ▶ Lock the adjusting screw in position with the knurled nut.

10.8 Adjusting Grinding Depth



- ▶ Swing the motor arm down until the grinding wheel touches the gullet of the cutter – hold it in that position.



- ▶ Screw home the travel limiting screw (1) until it butts against the stop lug (2) – tighten down the knurled nut (3) firmly.
- ▶ Swing the motor arm up again.

11 Sharpening Procedure

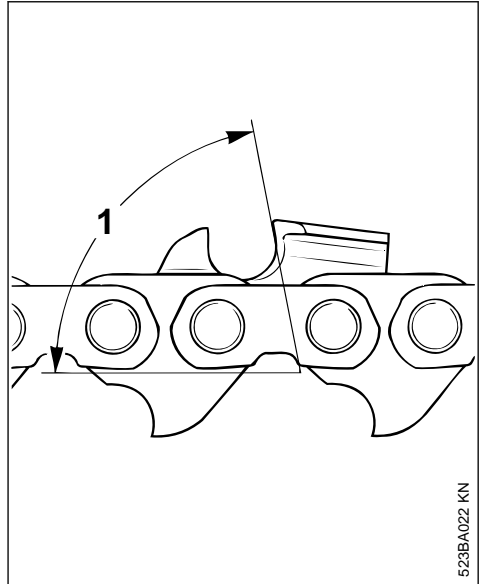
! WARNING

To reduce the risk of injury, wear safety glasses.

11.1 Sharpening the Master Cutter

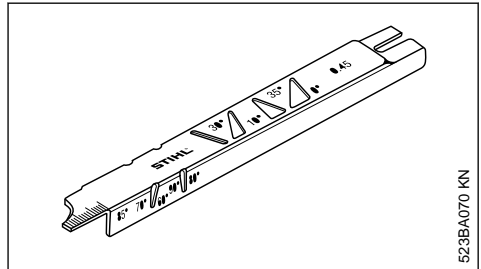
- ▶ Switch on the motor.
- ▶ Bring motor arm slowly downward. Just touch the cutter briefly with the grinding wheel. Take away a minimum of material.
- ▶ If necessary, switch off motor and readjust – see "Lateral Adjustment" in chapter on "Setup for Sharpening Saw Chain".
- ▶ Sharpen the side plate by applying the wheel several times – do not sharpen in a single pass.
- ▶ If result is satisfactory, check the grinding depth.

11.2 Checking Side Plate Angle



The travel limiting screw must butt against the stop lug and the side plate angle (1) should be as specified.

- ▶ Chose side plate angle – see instruction sheet 0457 716 000.



- ▶ Use filing gauge to check sharpening data.

Side plate angle too obtuse (wide):

- ▶ Set motor arm lower with the travel limiting screw.

! WARNING

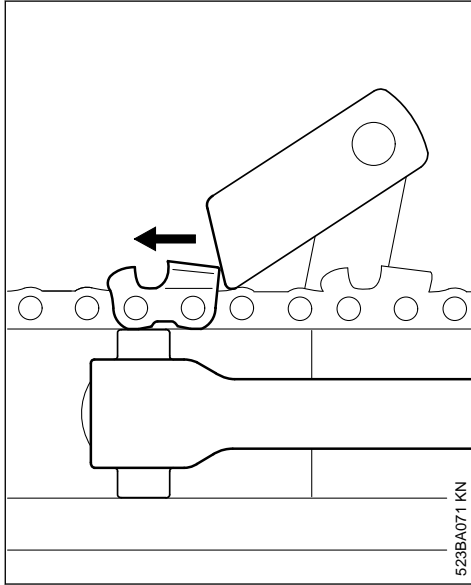
Avoid touching the drive links or tie straps with the grinding wheel – the chain may otherwise break.

Side plate angle too acute (narrow):

- ▶ Set motor arm higher with the travel limiting screw.

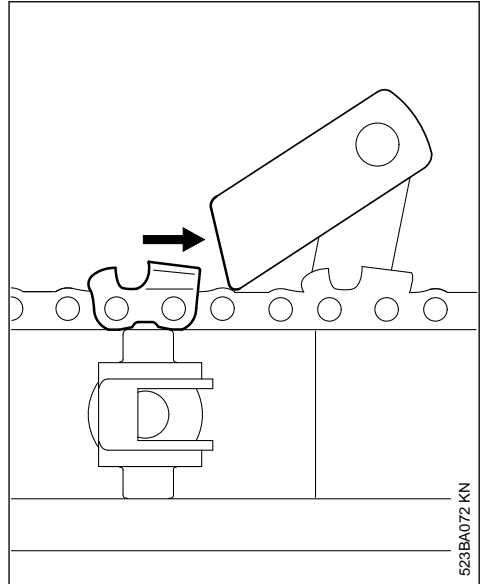
- ▶ Lock the adjusting and travel limiting screws with the knurled nuts.

11.3 Sharpening the Row of Cutters



Use the setting for the master cutter to sharpen all the other cutters in the row.

- ▶ Release the clamping lever. Pull the chain to the left until the stop is behind the next cutter but one.



- ▶ Pull the chain to the right until the back of the cutter butts against the stop.
- ▶ Clamp the chain in position.
- ▶ Sharpen the cutter.
- ▶ Repeat this procedure until all side plates on one side have been sharpened.

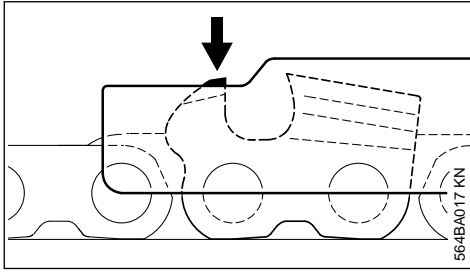
11.4 Sharpening the Second Row of Cutters

- ▶ Set scale **B** to the same value on the other side of the chain.
- ▶ Set scale **C** to the specified angle on the other side of the chain.
- ▶ Move the stop with pivot pin – the stop must locate properly against the back of the cutter.
- ▶ After sharpening the first cutter, check its length against that of the other row and adjust the stop if necessary.
- ▶ Sharpen the cutters.

12 Lowering Depth Gauges

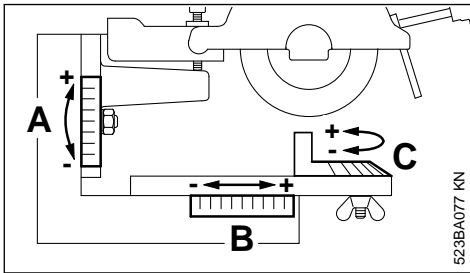
12.1 Checking Depth Gauge Setting

- ▶ Select the filing gauge (special accessory) that matches the chain pitch (see separate sheet 0457 716 0000).



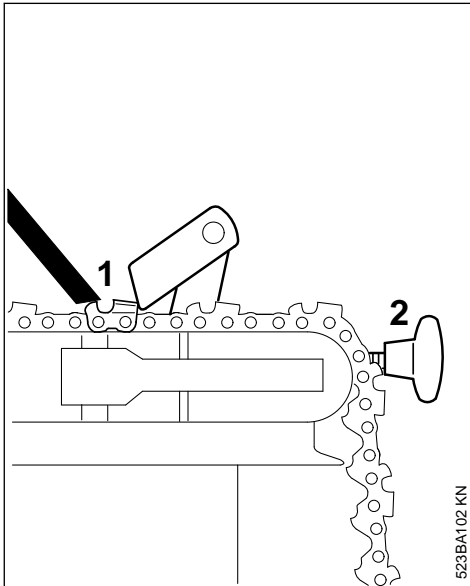
- ▶ Place the filing gauge on the saw chain. If the depth gauge projects above the filing gauge, it has to be lowered.

12.2 Setting the Scales



- ▶ Set scale **A** to 40°
- ▶ Set scales **B** and **C** to 0°

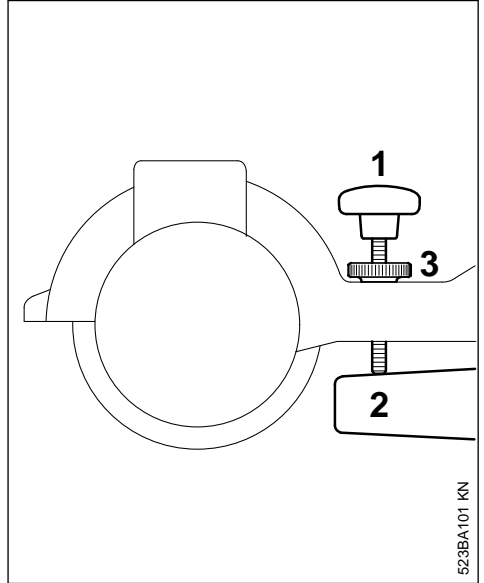
12.3 Adjusting the Lateral Stop



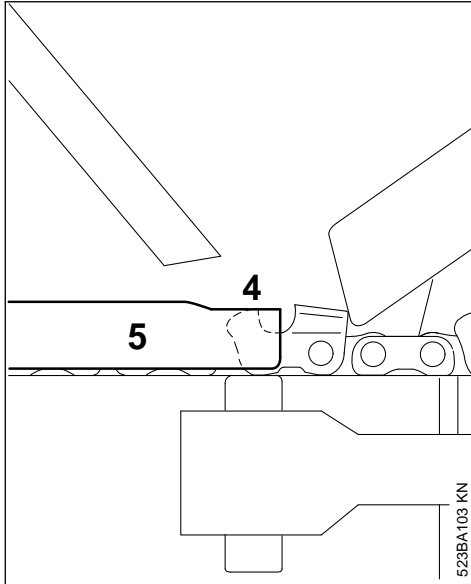
- ▶ Swing the motor arm down.

- ▶ Slide the chain along the guide rail until the profile of the grinding wheel (1) is centered above the depth gauge.
- ▶ Clamp the chain in position.
- ▶ Turn the adjusting screw (2) until the back of the cutter butts against the stop.

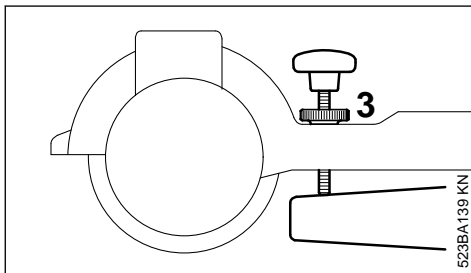
12.4 Adjusting Grinding Depth



- ▶ Swing the motor arm down until the grinding wheel touches the depth gauge.
- ▶ Screw home the travel limiting screw (1) until it butts against the stop lug (2).
- ▶ Put on safety glasses.
- ▶ Switch on the motor.
- ▶ Carefully bring the motor arm down as far as the stop.



- ▶ Switch off the motor.
- ▶ Place the filing gauge (5) on the chain.
- ▶ If the depth gauge (4) still projects above the filing gauge, make appropriate adjustments with the travel limiting screw (1).
- ▶ Remove the filing gauge (5).
- ▶ Switch on the motor.
- ▶ Carefully bring the motor arm down as far as the stop.
- ▶ Switch off the motor.
- ▶ Repeat the procedure until the depth gauge is level with the filing gauge.



- ▶ Tighten down the knurled nut (3) firmly.
- ▶ Use this setting to lower all the other depth gauges.

! WARNING

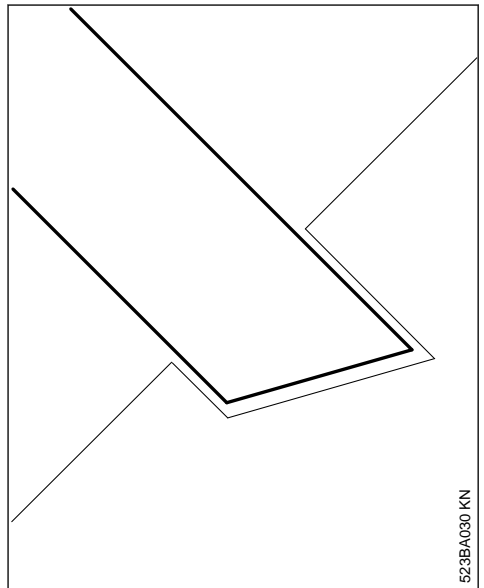
The kickback tendency of the saw is increased if the depth gauges are too low.

On RDR chain the rear hump of the tie strap (with service marking) is lowered at the same time as the depth gauge. On RSC3, RMC3, PMC3 and PMMC3 chains the upper part of the humped drive link (with service marking) is lowered at the same time as the depth gauge.

! WARNING

The other parts of the triple-humped tie strap and humped drive link must not be lowered since this may increase the kickback tendency of the saw.

13 Dressing the Grinding Wheel



! WARNING

To reduce the risk of accidents, switch off the motor and wait for the grinding wheel to come to a standstill before checking its profile.

- ▶ Use dressing gauge (special accessory) to check the profile of the grinding wheel
- ▶ Switching on the Motor

- ▶ Use dressing stone (special accessory) or diamond dressing attachment (special accessory) to correct the profile of the grinding wheel.

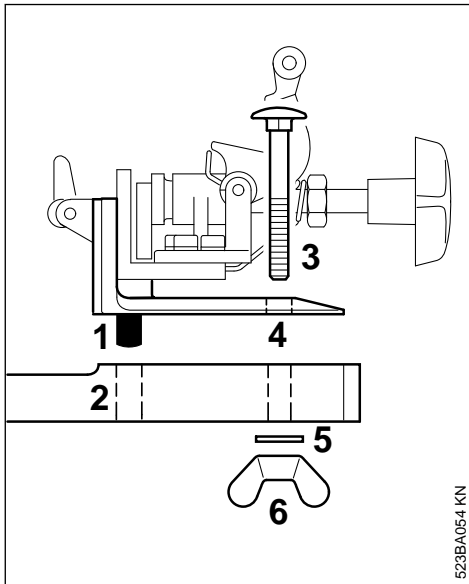
Additionally note for Hexacut grinding wheel:

- ▶ Apply dressing stone to clamping plate
- ▶ Set sharpening depth in such a way that the grinding wheel touches the dressing stone
- ▶ Correct the grinding wheel with sideways movement of the dressing stone
- ▶ Turn grinding wheel and repeat the procedure

14 Setup for Sharpening Hedge Trimmer Blades

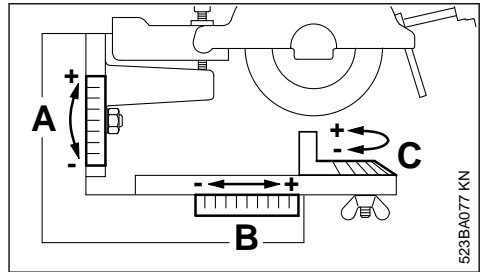
- ▶ Select the correct grinding wheel – see "Selecting Grinding Wheel".
- ▶ Mount the grinding wheel – see "Mounting the Grinding Wheel".
- ▶ Test run the grinding wheel – see "Test Run".
- ▶ Switch off the motor.
- ▶ Check contour of grinding wheel and dress if necessary – see "Dressing the Grinding Wheel".

14.1 Mounting the Attachment for Hedge Trimmer Blades



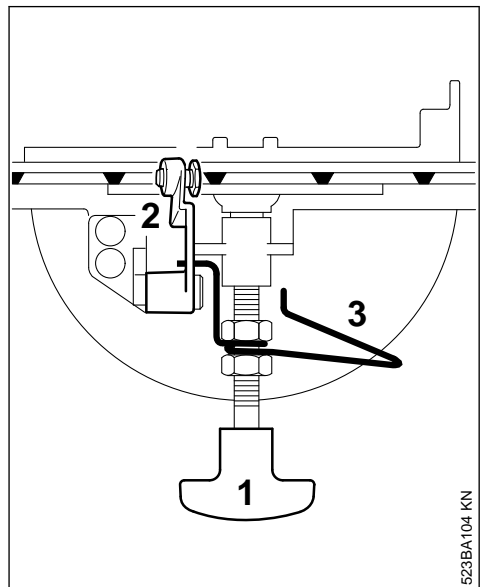
- ▶ Engage the pin (1) in the hole (2) in the sharpener's base.
- ▶ Insert the screw (3) through the slot (4).
- ▶ Fit the washer (5) and wingnut (6) and tighten down moderately.

14.2 Setting the Scales



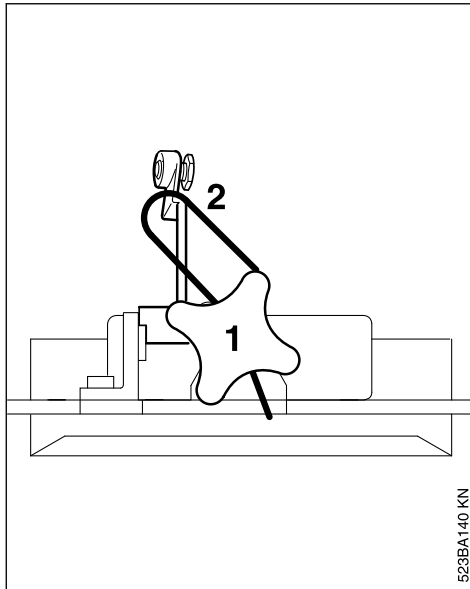
- ▶ Set the scales to the values specified in leaflet 0457 716 0001.

14.3 Clamping Mechanism



- ▶ Turn the star knob (1) to open and close the clamp.
- ▶ The stop (2) is automatically engaged and disengaged by the spring (3)

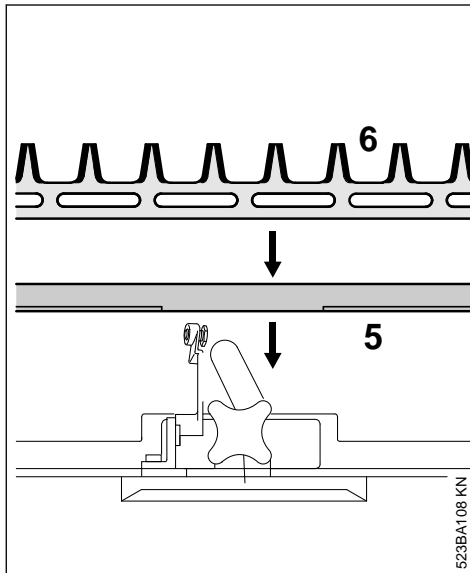
14.4 Fitting the Cutting Blade



- ▶ Turn the star knob (1) until the spring (2) is in the position shown.

The clamp is open in this position – the cutting blade may be fitted.

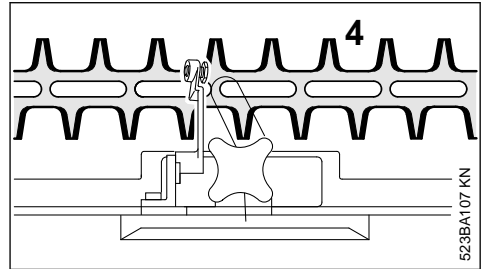
Fitting One-Sided Cutting Blade



- ▶ Fit the angle iron rail (5).

- ▶ Fit the cutting blade (6) in position so that its cutting edges point to the rear.

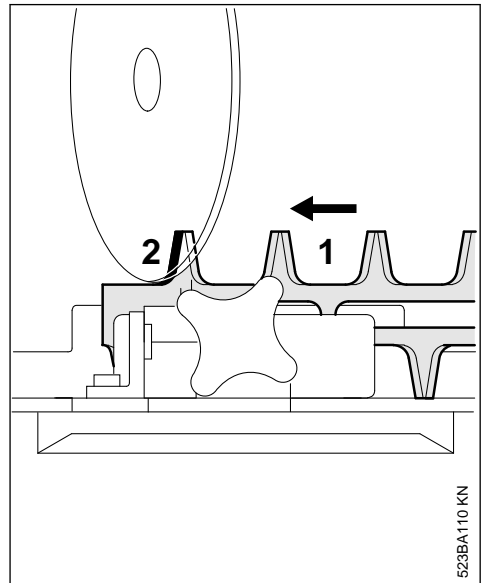
Fitting Double-Sided Cutting Blade



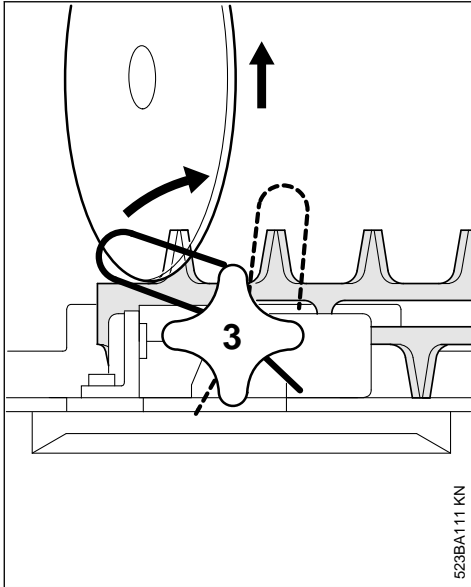
- ▶ Fit the cutting blade (4) in position so that its cutting edges point to the rear.

14.5 Adjusting the Stop

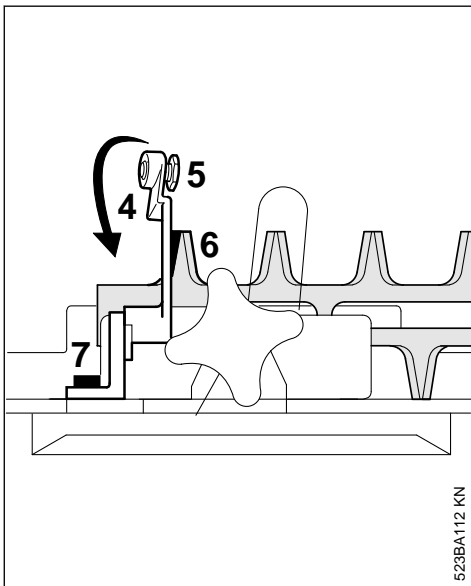
Adjusting the Lateral Stop



- ▶ Swing the motor arm down until the grinding wheel is above the gullet of the tooth – hold it in that position.
- ▶ Pull the cutting blade (1) to the left until the first
- ▶ tooth (2) in the row butts against the grinding wheel.



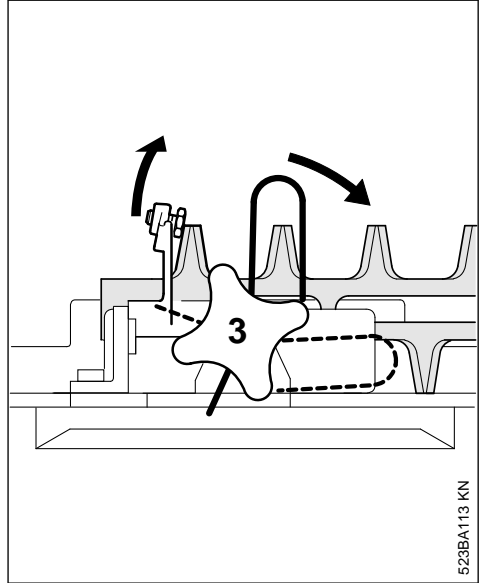
- ▶ Swing the motor arm up again.
- ▶ Turn the star knob (1) clockwise until the spring is in the position shown – the clamp is closed.



- ▶ Swing the stop (4) into position by hand.
- ▶ Turn the adjusting screw (5) until the stop butts against the tooth (6).

If range of adjustment is insufficient,

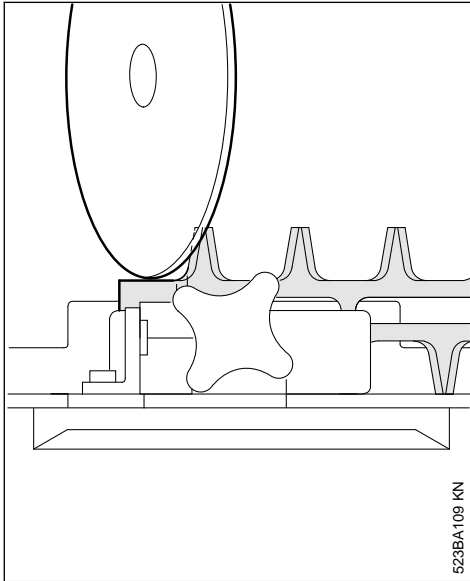
- ▶ loosen the screws (7) on the stop.
- ▶ Move the stop (4) until it butts against the tooth.
- ▶ Tighten down the screws (7) firmly.



If stop is now correctly positioned:

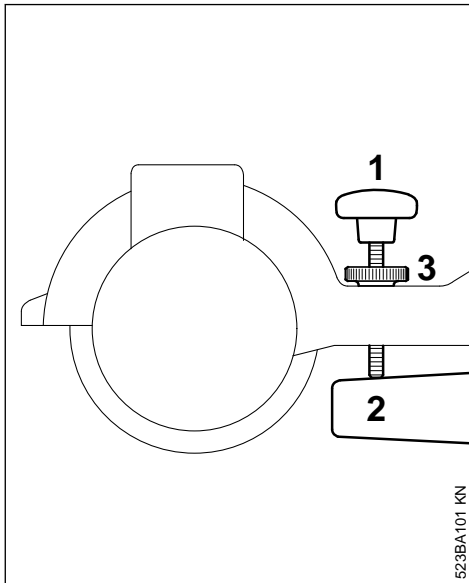
- ▶ Continue turning the star knob (3) clockwise until the stop swings back.

14.5.1 Adjusting Grinding Depth



523BA109 KN

- ▶ Swing the motor arm down until the grinding wheel touches the gullet of the tooth – hold it in that position.



523BA101 KN

- ▶ Screw home the travel limiting screw (1) until it butts against the stop lug (2).
- ▶ Tighten down the knurled nut (3) firmly.

15 Sharpening Hedge Trimmer Blades

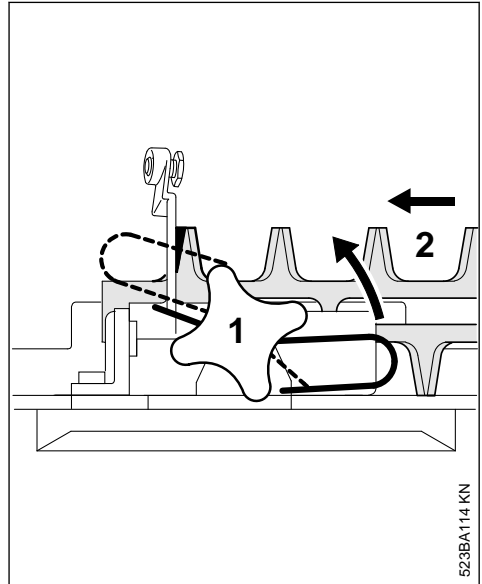
**WARNING**

To reduce the risk of injury, wear safety glasses.

Observe the following points when sharpening:

- ▶ The cutting blade must be correctly clamped in position and the stop must be swung back out of the way.
- ▶ Bring the motor arm slowly downward. Check the sharpening process. Do not remove too much material. If necessary, switch off the motor and readjust.
- ▶ Sharpen the cutting edges by applying the wheel several times – do not sharpen in a single pass.

15.1 Sharpening Row of Teeth

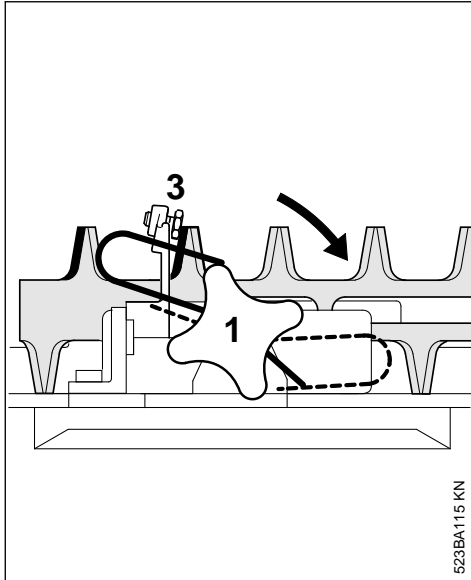


523BA114 KN

- ▶ Switch on the motor.
- ▶ Sharpen the first tooth.

Then

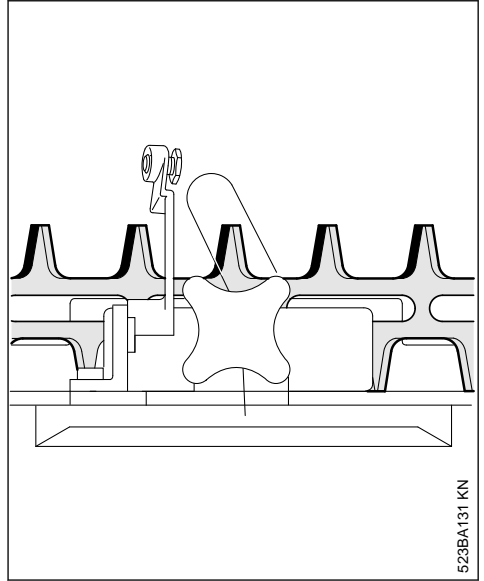
- ▶ Turn the star knob (1) counterclockwise to loosen the clamp.
- ▶ Move the cutting blade (2) one tooth to the left.
- ▶ Continue turning the star knob (1) until the stop swings forwards. The left tooth flank must butt against the stop.



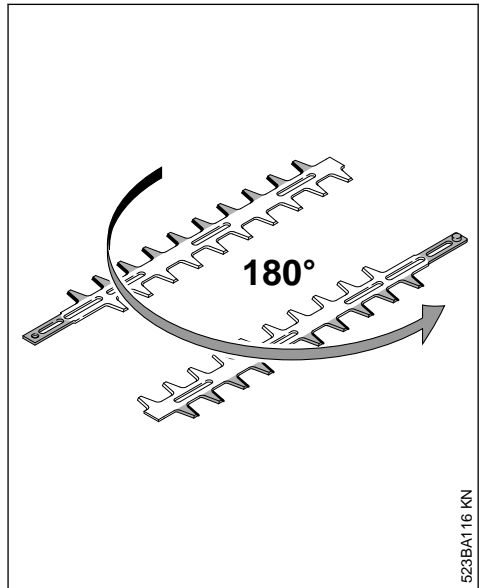
- ▶ Turn the star knob (1) clockwise until the stop swings back automatically – the cutting blade is now clamped in position.
- ▶ Sharpen the tooth.

Repeat the above procedure until all the teeth in the row have been sharpened. Now follow the separate descriptions for sharpening one-sided and double-sided cutting blades.

15.2 Sharpening Double-Sided Hedge Trimmer Blades



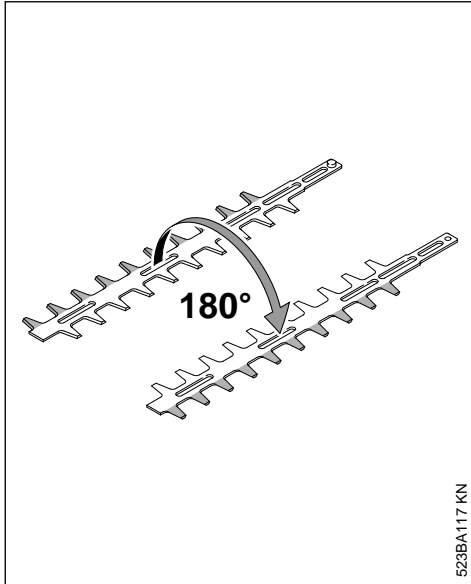
- ▶ Sharpen the first row of teeth – cutting edges point to the rear.



- ▶ Take the cutting blade out of the clamp and turn it 180° lengthwise – cutting edges point to the rear.
- ▶ Sharpen the teeth.

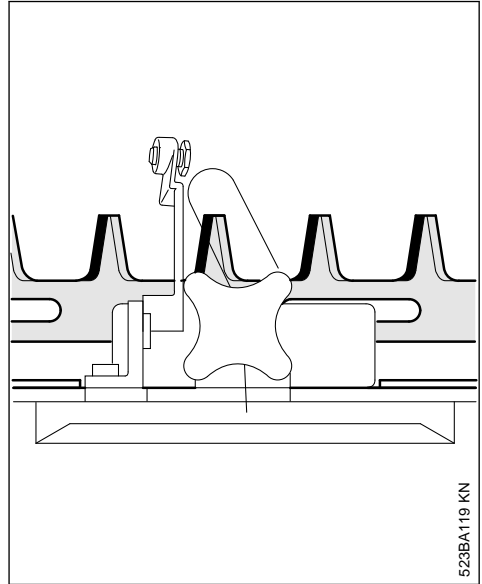
- ▶ Sharpen the teeth.

15.3 Sharpening One-Sided Hedge Trimmer Blades



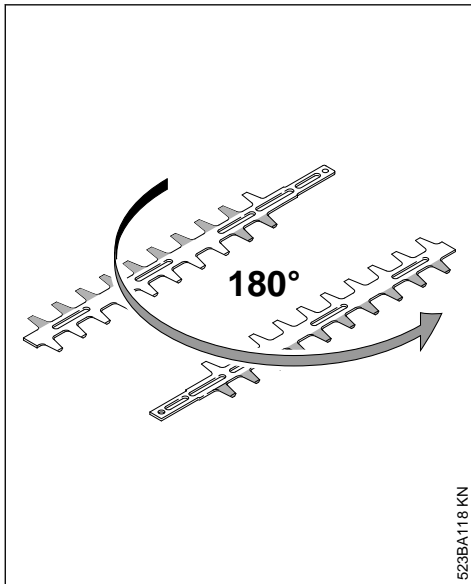
523BA117 KN

- ▶ Take the cutting blade out of the clamp and turn it over (180°) – cutting edges point forwards.
- ▶ Set scale **C** to the opposite angle.
- ▶ Sharpen the teeth.



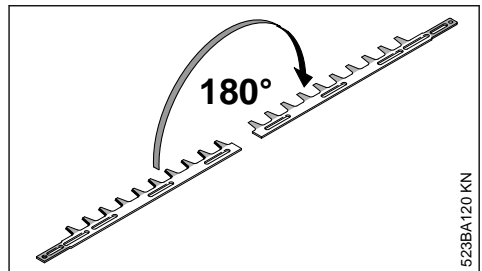
523BA119 KN

- ▶ Sharpen the first row of teeth – cutting edges point to the rear.



523BA118 KN

- ▶ Take the cutting blade out of the clamp and turn it over (180°) – cutting edges point forwards.



523BA120 KN

- ▶ Take the cutting blade out of the clamp and turn it over (180°) – cutting edges point forwards.
- ▶ Set scale **C** to the opposite angle.
- ▶ Sharpen the teeth.

16 Preparations for Sharpening Circular Saw Blades



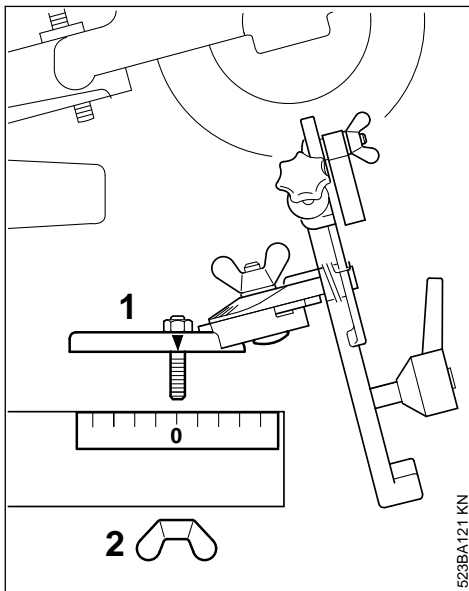
WARNING

Check the blade. Always perform a ringing test.

To reduce the risk of injury, do not continue using warped or cracked blades.

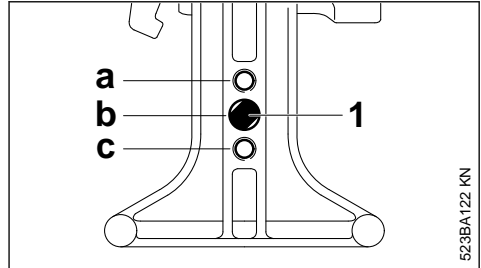
- ▶ Select the correct grinding wheel – see "Selecting Grinding Wheel".
- ▶ Mount the grinding wheel – see "Mounting the Grinding Wheel".
- ▶ Test run the grinding wheel – see "Test Run".
- ▶ Switch off the motor.
- ▶ Check contour of grinding wheel and dress if necessary – see "Dressing the Grinding Wheel".

16.1 Mounting the Special Attachment



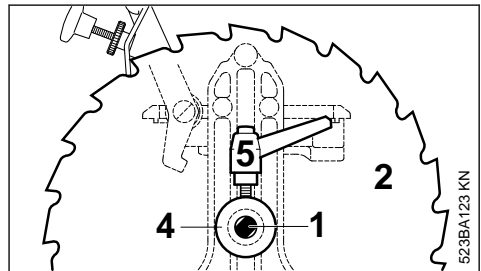
- ▶ Fit the attachment (1) so that the arrow points to "0" on the scale.
- ▶ Tighten down the star knob (2) firmly.

16.2 Clamping the Circular Saw Blade



- ▶ Use the tapped hole specified for the saw blade diameter:

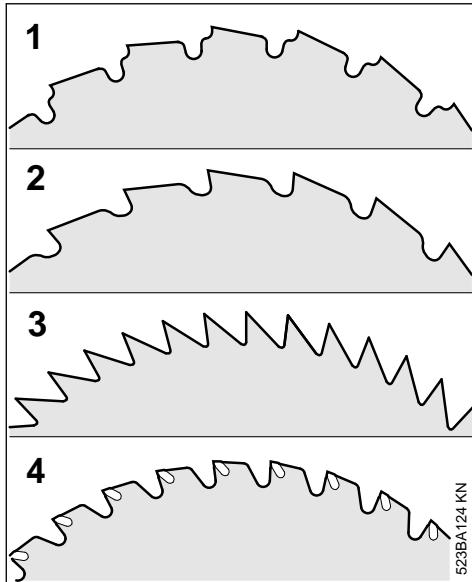
- a** for 200 mm
- b** for 225 mm
- c** for 250 mm



- ▶ If necessary, change the position of the shoulder stud (1).
- ▶ Position the saw blade (2) on the shoulder stud (1) – the cutting edges must point to the left (counterclockwise).
- ▶ Fit the locator (4) over the shoulder stud and push it home – this centers the saw blade.
- ▶ Tighten down the clamping lever (5) firmly.

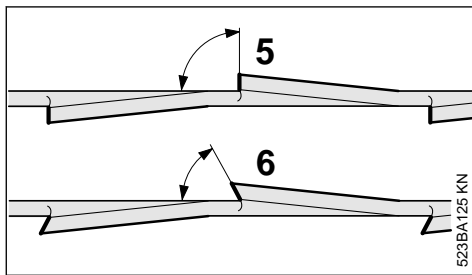
The saw blade must now locate against the retaining plate free from play, but it must still be possible to turn the blade by hand.

16.3 Setting the Scales



The settings depend on the type of saw blade:

- 1 Chisel tooth, standard
- 2 Chisel tooth, special
- 3 Scratcher tooth
- 4 Carbide tipped blade



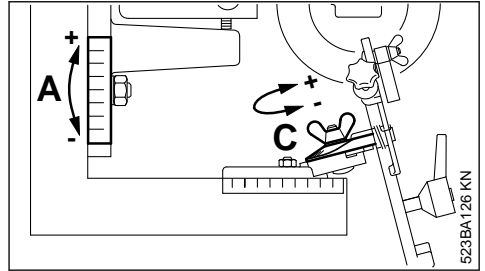
There are saw blades with

- square ground teeth (5) (scale **C** = 0)

or

- bevel ground teeth (6)

In the case of bevel ground teeth, mark the teeth that have the same sharpening angle (every second tooth). Marking them helps avoid accidentally sharpening a tooth on the other side of the blade.



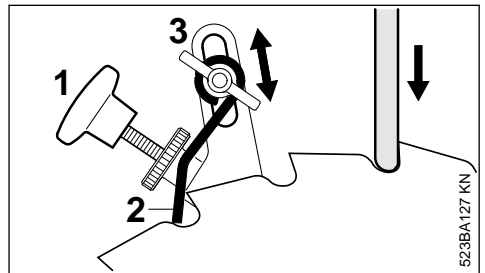
- ▶ Set the scales to the values specified in leaflet 0457 716 0001.

The setting on scale **A** depends on the type of wood:

- hard (hard wood)
- soft (soft wood)
- ▶ Scratcher tooth circular saw blade with 80 teeth cannot be sharpened with the USG

16.4 Adjusting the Stop

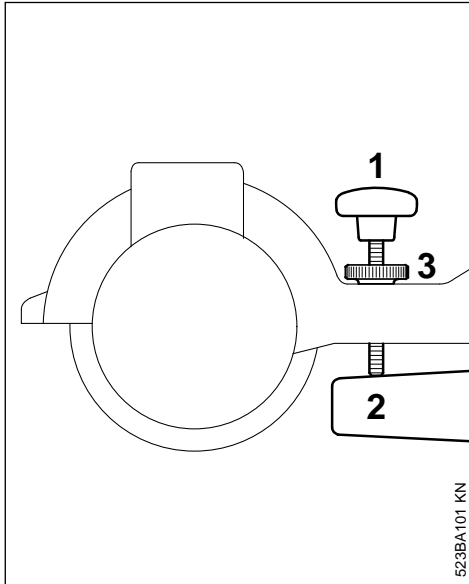
Adjusting the Lateral Stop



- ▶ Swing the motor arm down.
- ▶ Use the adjusting screw (1) to move the stop (2) so that the side plate of the tooth to be sharpened butts against the grinding wheel – make sure the stop locates firmly against the back of one tooth.

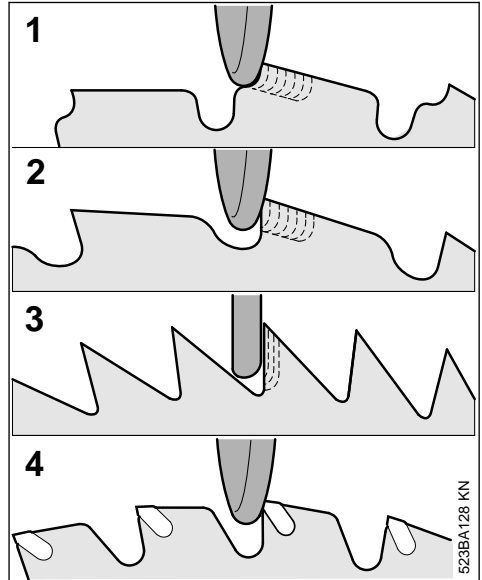
The stop can be moved in the slot (3) to suit the saw blade.

Adjusting Grinding Depth



- ▶ Swing the motor arm down until the required sharpening depth is reached – see "Sharpening profiles"
- ▶ Screw home the travel limiting screw (1) until it butts against the stop lug (2).
- ▶ Tighten down the knurled nut (3) firmly.

Sharpening profiles



- 1 Chisel tooth, standard
- 2 Chisel tooth, special
- 3 Scratcher tooth
- 4 Carbide tipped blade

16.5 Sharpening Limits

Chisel tooth

- Sharpening depth: max. 5 mm
- Top plate must not be ground back to more than half its length.
- Tooth set must not be less than 1 mm

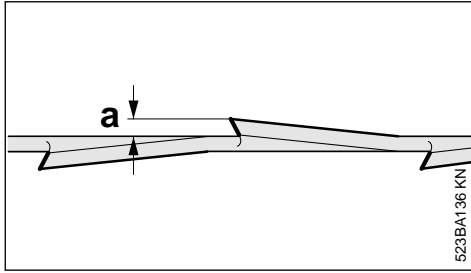
Scratcher tooth

- Sharpening depth: no more than diameter of blade body.
- Do not reduce tooth height by more than 1/3
- Do not touch back of next tooth with grinding wheel.

Carbide tipped

- Sharpen carbide tip only – do not sharpen material of blade body.

16.6 Checking Tooth Set



After sharpening chisel tooth saw blades:

- ▶ Use saw set (special accessory) to check tooth set (a) and correct if necessary

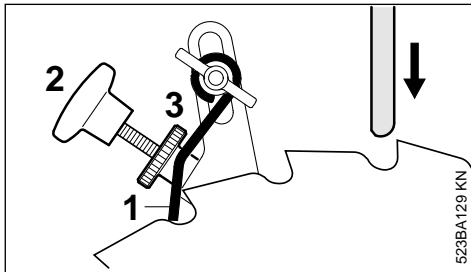
17 Sharpening Circular Saw Blades



To reduce the risk of injury, wear safety glasses and work gloves.

17.1 Sharpening the First Tooth

- ▶ Switching On the Motor



- ▶ Push the saw blade clockwise against the stop (1) with your left hand.
- ▶ With the motor running, carefully swing the motor arm down.
- ▶ Only remove sufficient material to obtain a "clean" cutting edge. If necessary, use adjusting screw (2) to correct the position of the stop.

17.2 Sharpening Remaining Teeth

The sharpening process now depends on how the teeth are ground.

Saw blade **without** bevel ground teeth (scale **C** = 0°):

- ▶ Rotate the saw blade counterclockwise to the next tooth.
- ▶ Sharpen all teeth with the same setting.

Saw blade **with** bevel ground teeth:

- ▶ Rotate the saw blade counter-clockwise to the **next tooth but one**.
- ▶ Sharpen all the teeth in one row that have the same sharpening angle (every second tooth).
- ▶ Then set scale **C** to the angle for the opposite row of teeth – all other settings are left unchanged, do not turn the saw blade over.
- ▶ Now sharpen all the teeth in the second row.

18 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.

		before starting work	after finishing work or daily	weekly	monthly	if problem	if damaged	if required
Complete machine	Visual inspection (condition)	X						
	Clean		X					

¹⁾ STIHL recommends a STIHL servicing dealer.

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.		before starting work	after finishing work or daily	weekly	monthly	if problem	if damaged	if required
Machine mounting	Inspect	X						
	Retighten							X
Trigger switch	Check operation	X						
	Have replaced by dealer ¹⁾					X	X	
Power cord	Inspect	X						
	Have replaced by dealer ¹⁾					X	X	
Grinding wheel	Check (wear)	X						
	Check profile			X				
	Dress			X				X
	Replace						X	X
Cooling inlets	Clean		X					
All accessible screws and nuts	Retighten							X
Shield	Inspect	X						
	Replace						X	X
Clamp and guide rail	Inspect	X						
	Replace							X
Stop and lock	Inspect	X						
	Replace							X

19 Minimize Wear and Avoid Damage

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

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

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 attachments or sharpening tools not approved by STIHL.
- Using the product for purposes for which it was not designed.

- Consequential damage caused by continuing to use the product with defective components.

19.1 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 an authorized STIHL servicing dealer.

If these maintenance operations are not carried out as specified, the user assumes responsibility for any damage that may occur.

Among other things, this includes:

- Damage to the unit due to neglect or deficient maintenance.
- Corrosion and other consequential damage resulting from improper storage.

¹⁾ STIHL recommends a STIHL servicing dealer.

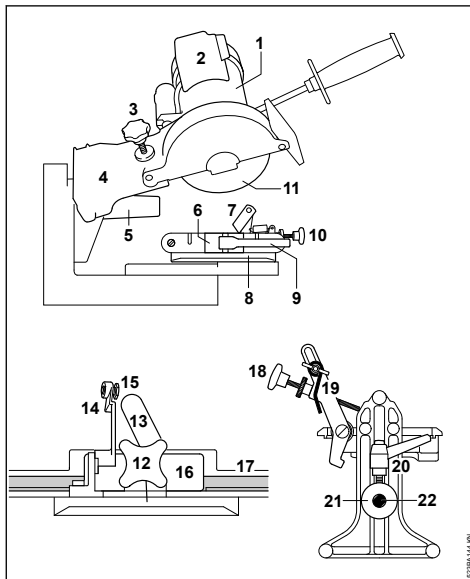
- Damage and consequential damage resulting from the use of parts other than original STIHL replacement parts.
- Damage resulting from maintenance or repair work not performed by authorized STIHL servicing dealers.

19.2 Parts Subject to Wear and Tear

Some parts of the power tool are subject to normal wear and tear even during regular operation in accordance with instructions and, depending on the type and duration of use, have to be replaced in good time. Among other parts, this includes:

- Grinding wheels
- Transparent shield
- Clamping lever and thrust pad
- Clamping and guide rails
- Stop

20 Main Parts



20.1 USG with attachment for Oilmatic saw chain

- 1 Motor
- 2 Switchbox
- 3 Travel limiting screw
- 4 Motor arm
- 5 Stop lug
- 6 Thrust plate

- 7 Stop
- 8 Attachment
- 9 Clamping lever
- 10 Adjusting screw
- 11 Grinding wheel

20.2 Attachment for hedge trimmer blades

- 12 Star knob
- 13 Spring
- 14 Stop
- 15 Adjusting screw
- 16 Clamp
- 17 Angle iron rail

20.3 Attachment for circular saw blades

- 18 Adjusting screw
- 19 Stop
- 20 Clamping lever
- 21 Locator
- 22 Shoulder stud

21 Specifications

21.1 Motor (230 V)

Type:	Single-phase AC, squirrel cage motor
Voltage:	230 V
Frequency:	50 Hz
Rated current:	1.1 A
Power consumption:	180 W
Motor speed:	2,800 rpm
Weight	8.8 kg
Type of protection	I

21.2 Motor (120 V)

Type:	Single-phase AC, squirrel cage motor
Voltage:	120 V
Frequency:	60 Hz
Rated current:	2.3 A
Power consumption:	180 W
Motor speed:	3,400/min
Weight	8.8 kg
Type of protection	I

21.3 Grinding wheels

The maximum permissible speed of the grinding wheel must be higher than or equal to the maximum rated speed of the sharpener.

Max. outside diameter: 140 mm
Bore / shaft diameter: 12 mm

21.4 Noise and Vibration Data

Noise and vibrations were measured during the sharpening process.

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

21.4.1 Sound pressure level L_p to EN 61029

92 dB(A)

21.4.2 Sound power level L_w to EN 61029

97 dB(A)

21.4.3 Vibration measurement a_h to EN 61029

Handle: 2 m/s²

The K-factor in accordance with Directive 2006/42/EC is 2.0 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 level.

22 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.

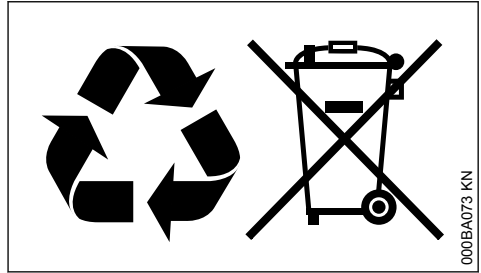
When repairing the machine, only use replacement parts which have been approved by STIHL for this power tool or are technically identical. Only use high-quality replacement parts in order to avoid the risk of accidents and damage to the machine.

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 **G** (the symbol may appear alone on small parts).

23 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.

24 EC Declaration of Conformity

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

Germany

declares under our sole responsibility that

Designation: Universal sharpener
Make: STIHL
Series: LSL
Serial identification number: 5203

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

EN 61029-1, EN 61029-2-4, EN 55014-1,
EN 55014-2, EN 61000-3-2, EN 61000-3-3

Technical documents deposited at:

ANDREAS STIHL AG & Co. KG
Produktzulassung

The year of manufacture and serial number are applied to the product.

Done at Waiblingen, 03.02.2020

ANDREAS STIHL AG & Co. KG

pp

J. Hoffmann

Dr. Jürgen Hoffmann

Head of Product Data, Regulations and Licensing



www.stihl.com



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