170594.1120/f

NFU 50

MAF02285/a

WARNUNG

Lesen Sie alle Sicherheitshinweise und Anweisungen. Versäumnisse bei der Einhaltung der Sicherheitshinweise und Anweisungen können elektrischen Schlag, Brand und/oder schwere Verletzungen verursachen. **Bewahren Sie alle Sicherheitshinweise und Anweisungen für die Zukunft auf.**

WARNING

Please read all safety instructions and directions. Failure to comply with the safety instructions and directions can cause electric shock, fire and/or serious injuries. **Please retain all safety instructions and directions for future reference.**

AVERTISSEMENT

Veuillez lire toutes les consignes de sécurité et instructions. Tout non-respect des consignes de sécurité et instructions risque d'être à l'origine de décharges électriques, d'incendies et/ou de blessures graves. **Conservez toutes les consignes et instructions pour pouvoir les relire à tout moment.**

AVVERTENZA

Leggere tutte le avvertenze di sicurezza e le istruzioni. La mancanza del rispetto delle avvertenze di sicurezza e delle istruzioni possono causare scossa elettrica, incendio e/o gravi lesioni. **Conservare tutte le avvertenze di sicurezza e le istruzioni per il futuro.**

WAARSCHUWING

Lees alle veiligheidsaanwijzingen en instructies. Nalatigheid bij het naleven van de veiligheidsinstructies en aanwijzingen kan elektrische schok, brand en/of ernstige letsels veroorzaken. **Bewaar alle veiligheidsaanwijzingen en instructies voor later gebruik.**

ADVERTENCIA

Lea todas las indicaciones de seguridad e instrucciones. Si no se cumplen las indicacionesde seguridad e instrucciones, se pueden producir descargas eléctricas, incendios y/o lesiones graves. **Guarde todas las indicaciones de seguridad e instrucciones para el futuro.**

VAROITUS

Lue kaikki turvaohjeet ja käyttöohjeet. Laiminlyönti turvaohjeiden ja käyttöohjeiden noudattamisessa voi aiheuttaa sähköiskun, tulipalon ja/tai vakavia vammoja. **Säilytä kaikki turvaohjeet ja käyttöohjeet tulevaisuuden varalle.**

VARNING

Läs alla säkerhetsanvisningar och anvisningar. Underlåtenhet att följa säkerhetsanvisningar och anvisningar kan orsaka elstötar, brand och/eller allvarliga personskador. **Behåll alla säkerhetsanvisningar och anvisning för framtida användning.**

ADVARSEL

Læs alle sikkerhedshenvisninger og instruktioner. En manglende overholdelse af sikkerhedshenvisningerne og instruktionerne kan føre til elektrisk stød, brand og/eller alvorlige kvæstelser. **Opbevar alle sikkerhedshenvisninger og instruktioner til fremtidig brug.**

ПРЕДУПРЕЖДЕНИЕ

Прочитайте все правила и инструкции по технике безопасности. Несоблюдение этих правил и инструкций по технике безопасности может привести к поражению электрическим током, возгоранию и/или другим серьезным травмам. **Сохраните все правила и инструкции по технике безопасности для дальнейшего использования.**

OSTRZEŻENIE

Przeczytać wszystkie przepisy bezpieczeństwa i wskazówki. Zaniedbanie przestrzegania przepisów bezpieczeństwa i wskazówek może prowadzić do porażenia prądem, pożaru i/lub ciężkich zranień. **Zachować wszystkie przepisy bezpieczeństwa i wskazówki na przyszłość.**

UPOZORNĚNÍ

Přečtěte si všechna bezpečnostní upozornění a pokyny. Zanedbání bezpečnostních upozornění a pokynů může způsobit zásah elektrickým proudem, požár a/nebo vážná zranění. **Všechna bezpečnostní upozornění a pokyny si ponechejte pro pozdější použití.**

OPOZORILO

Preberite vsa varnostna opozorila in napotke. Neupoštevanje varnostnih opozoril in napotkov lahko povzroči udar električnega toka, požar in/ali hude telesne poškodbe. **Vsa varnostna opozorila in napotke shranite za prihodnjo uporabo.**

D - EG Konformitätserklärung
Wir bescheinigen hiermit, dass die Maschine NFU 50 den angeführten EU-Richtlinien entspricht. Bei Konstruktion und Bau wurden die gelisteten Normen angewendet. Bevollmächtigter für die Zusammenstellung der technischen Unterlagen: Mafell AG

GB - EC Declaration of Conformity
We herewith confirm that the machine NFU 50 complies with the EU directives quoted. The standards listed were used for design and construction. Empowered person for the configuration of the technical documents: Mafell AG

F - Déclaration CE de conformité
Nous déclarons par la présente que la machine NFU 50 est conforme aux directives CE applicables comme suit. Lors de la construction, les règlements suivants ont été utilisés. Plénipotentiaires pour l'assemblage des documentations techniques: Mafell AG

I - Dichiarazione di conformità CE
Con la presente certifichiamo che la macchina NFU 50 è conforme alle seguenti direttive CE applicabili. Nella progettazione e la costruzione sono state applicate le seguenti norme. Responsabile per la composizione della documentazione tecnica: Mafell AG

NL - EG conformiteitsverklaring
Wij bevestigen hiermede dat de machine NFU 50 aan de vermelde EU-richtlijnen beantwoord. Bij constructie en bouw werden de vermelde normen toegepast. Gemachtigde voor de samenstelling van de technische documenten: Mafell AG

E - Declaración de conformidad CE
Con la presente se certifica que la máquina NFU 50 cumple las directivas europeas mencionadas, las cuales forman la base tanto del diseño constructivo como de los procesos de fabricación. Apoderado legal para la compilación de la documentación técnica: Mafell AG

FIN - EY-vaatimustenmukaisuusvakuutus
Vakuutamme täten, että kone NFU 50 vastaa mainittujen EU-direktiivien vaatimuksia. Sen suunnittelussa ja valmistuksessa on sovellettu luettelossa ilmoitettuja standardeja. Teknisten asiakirjojen laatimiseen valtuutettu henkilö: Mafell AG

S - EG Konformitetsförklaring
Vi intygar härmed att maskinen NFU 50 uppfyller angivna EU direktiv. De angivna normerna användes vid konstruktion och tillverkning. Befullmäktigad för sammanställningen av den tekniska dokumentationen: Mafell AG

DK - EU overensstemmelseserklæring
Vi attesterer hermed, at maskinen NFU 50 opfylder de angivede EU-direktiver. Konstruktion og bygning er udført iht. de angivede standarder. Person, der er befuldmægtiget til at sammenstille det tekniske materiale: Mafell AG

RUS - Сертификат соответствия ЕС

Настоящим подтверждаем, что машина NFU 50 отвечает требованиям указанных директив ЕС. При проектировании и изготовлении применялись перечисленные нормы. Уполномоченный представитель по составлению технической документации: Mafell AG

PL - Deklaracja zgodności UE
Niniejszym potwierdzamy, że maszyna NFU 50 spełnia wymagania wyszczególnionych dyrektyw UE. W trakcie konstrukcji urządzenia zastosowano przedstawione normy. Pełnomocnik odpowiedzialny za zestawienie dokumentacji technicznej: Mafell AG

CZ - PROHLÁŠENÍ O SHODĚ
Tímto prohlašujeme, že stroj NFU 50 splňuje pokyny uvedených směrnic EU. Při plánování a sestavení byly využity uvedené normy. Za sestavení technických podkladů zodpovídá: Mafell AG

SLO - ES izjava o skladnosti
S tem izjavljamo, da stroj NFU 50 ustreza navedenim direktivam EU. Pri konstrukciji in izdelavi so uporabljeni našteti standardi. Za sestavo tehnične dokumentacije je pooblaščeno podjetje: Mafell AG

CE

2006/42/EG
2014/30/EU
2011/65/EU

EN 60745-1, EN 60745-2-17, EN 60745-2-5, EN55014-1, EN 55014-2, EN 61000, EN 12100, EN 847-1

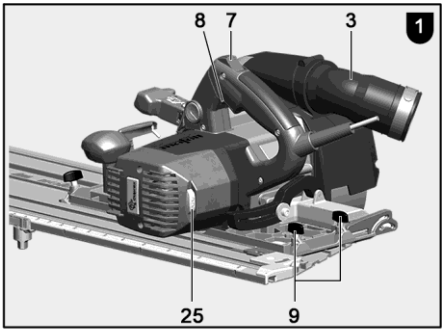
NFU 50

Art.-Nr. 918701, 918720, 918721

Mafell AG
D - 78727 Oberndorf, den 17.01.2020

Dipl.-Ing. Matthias Krauss
Vorstandsvorsitzender / CEO

i. V. Dipl.-Ing. Harald Schmid, MBA
Leitung Entwicklung und Konstruktion



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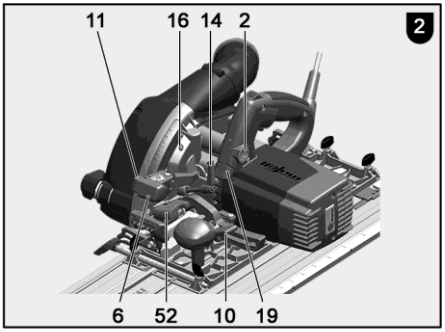

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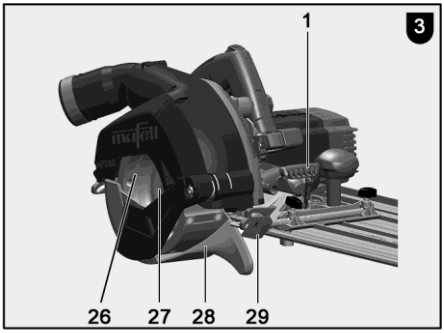

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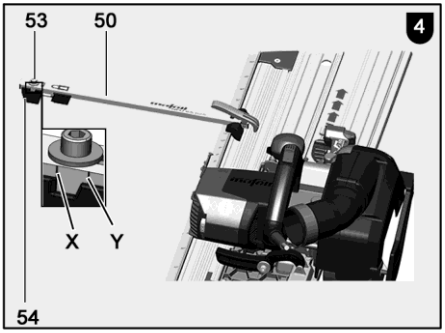

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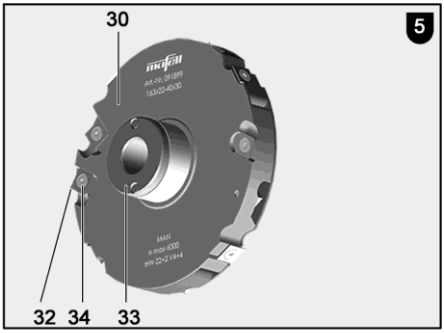

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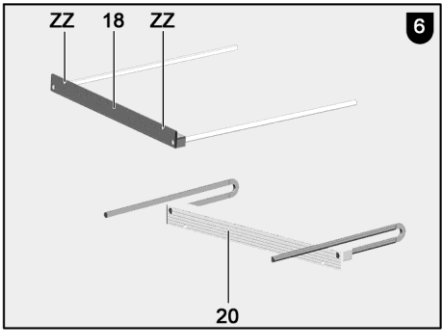

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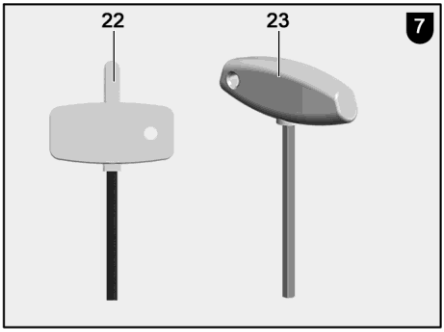

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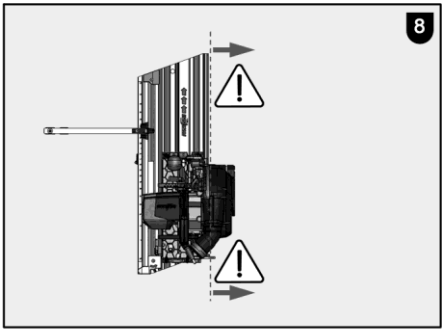

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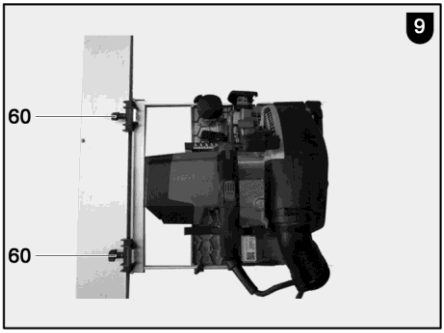

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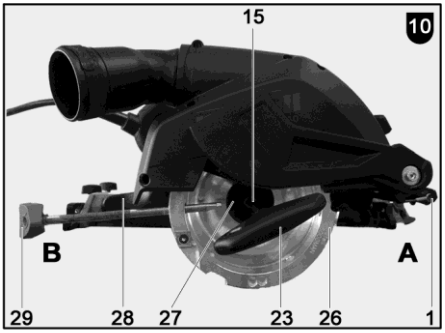

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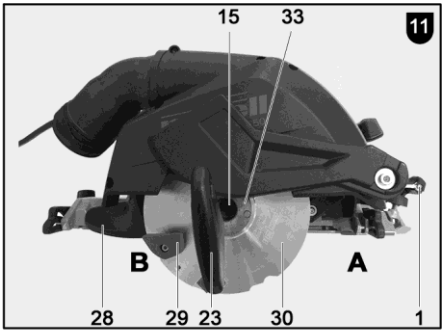


MAF02294/b

MAF02295/a

Table of Contents

1 Signs and symbols

This symbol appears at places where you will find instructions for your own safety.

Non-compliance with these instructions may result in very serious injuries.

This symbol indicates a potentially hazardous situation.

If this situation is not avoided, the product or objects in its vicinity may get damaged.

This symbol indicates tips for the user and other useful information.

2 Product information

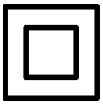
in respect of machines with item number 918701, 918702, 918720, 918721

2.1 Manufacturer´s data

MAFELL AG, Beffendorfer Straße 4, D-78727 Oberndorf / Neckar, Phone +49 (0)7423/812-0, Fax +49 (0)7423/812-218

2.2 Machine identification

All details required for machine identification are available on the attached rating plate.



Protection class II

CE symbol to document compliance with the basic safety and health requirements according to Appendix I of the Machinery Directive.

For EU countries only

Do not dispose of electric tools together with household waste material!

In accordance with the European directive 2002/96/EC on waste electrical and electronic equipment and transposition into national law, obsolete electrical tools must be collected separately and recycled in an environmentally-compatible manner.

To reduce the risk of injury, please read the operating instructions.

2.3 Technical data

Universal motor, radio and TV interference suppressed	230 V~, 50 Hz
Power input (nominal load)	2300 W
Current at nominal load	10.8 A
Tool speed while idling	5900 rpm
Tool speed at normal load	4500 rpm
Milling depth 0°	50 mm (1 31/32 in)
Tilting milling unit	0° – 45°
Tool diameter	163 mm (6 27/64 in)
Basic tool body thickness	58,1 mm (2 9/32 in)
Tool milling width	60.5 mm (2 3/8 in)
Tool mounting hole	30 mm (1 3/16 in)
Hose connector diameter	58 mm (2 9/32 in)
Weight	7.7 kg (16 63/64 lbs)
Dimensions (W x L x H)	340 x 420 x 280 mm (13 25/64 x 16 17/32 x 11 1/32 in.)
as cross-cut milling system	
Milling depth 0°	44 mm (1 47/64)
Milling length	370 mm (14 9/16)
Weight with guiding device	9.4 kg (20 47/64 lbs)
Dimensions incl. guiding device (W x L x H)	370 x 810 x 280 mm (14 37/64 x 31 57/64 x 11 1/32 in.)

2.4 Emissions

The values stated are emission levels. Although there is a correlation between emission and imission level, it cannot be reliably derived from this whether additional precautions are necessary. Factors influencing the current immission level existing at the workplace comprise the duration of exposure, the room characteristic, other sources of noise, etc. such as e.g. the number of machines and other adjacent machining operations. In addition, the permissible immission level may differ from country to country. This information is nevertheless suitable for providing the machine user with an improved assessment of the hazard and risk.

2.4.1 Noise emission specifications

Noise emission values determined according to EN 62841-1 and EN 62841-2-5:

Sound pressure level	L_{PA} = 87,8 dB (A)
Uncertainty	K_{PA} = 1.5 dB (A)
Sound power level	L_{WA} = 98,8 dB (A)
Uncertainty	K_{WA} = 1.5 dB (A)

The noise measurement was recorded using the tool included in the standard equipment.

2.4.2 Vibration specifications

The typical hand-arm vibration is less than 2.5 m/s^2.

2.5 Scope of supply

Cross-cut milling system NFU50 complete with:

1 KKS-guiding device
1 milling head
1 lateral stop
1 position indicator
1 parallel stop cpl.
2 operating tools
1 operating manual
1 folder “Safety instructions”

2.6 Safety devices

Danger

These devices are required for the machine's safe operation and may not be removed or rendered inoperative. If one of the safety devices is defective, return the machine to the MAFELL customer service for repair. Never repair the safety devices yourself.

The machine is equipped with the following safety devices:

- Upper stationary saw guard
- Lower retractable saw guard
- Large base plate
- Handles
- Index mechanism and brake
- Hose connector
- Orange flashing warning light when tool is rotating
- Lateral access protection

2.7 Use according to intended purpose

The MAFELL cross-cut milling system NFU50 is intended exclusively for processing wood and wood panel materials such as three-layer panels, Multiplex, Kerto (laminated veneer lumber) as well as insulating panels, Styrodur and polyurethane rigid foam.

Intended use is the making of grooves, flattenings and notches in materials. A secure support on the workpiece is required for all work. The machine can be used with or without guiding devices. Please observe the respective instructions in this operating manual when working with the different guiding devices. They form an integral part of the intended use. (see chapter 5.3 and 5.10)

The tool supplied was manufactured in accordance with the European standard EN 847-1.

The use of third-party tools is not permitted. Please make exclusive use of the tools recommended by MAFELL.

Any other use than described above is not permissible. The manufacturer cannot be held liable for any damage arising from such other use.

So as to use the machine as intended, comply with the operating, maintenance and repair instructions specified by Mafell.

2.7.1 Plunge milling

Danger

Danger of recoil during plunge milling! Plunging and reverse milling is not permitted!

2.8 Residual risks

Danger

Even if used in accordance with its intended purpose and despite conforming with the safety instructions, residual risks caused by the intended use that can lead to health consequences will always remain.

- Touching the milling head in the area of the start-up opening.
- Touching the part of the milling head that protrudes below the workpiece when milling.

- Touching the milling head below the guiding device before it enters and after it exits the workpiece.
- Touching the milling head below the guiding device when it is lifted out when the machine has not been retracted to the safe position.
- Machine recoil when it gets jammed in the workpiece or when it moves backwards through the prefabricated groove, with the tool running or coasting down.
- Breakage and hurling out of the tool, parts of the tool or splinters.
- Hearing impairment when working for long periods without ear protectors.
- Emission of hazardous wood dusts when operating the machine for longer periods of time without extraction.

3 Safety instructions

Danger

Always observe the following safety instructions and the safety regulations applicable in the respective country of use!

General instructions:

- Children and adolescents must not operate this machine. This rule does not apply to young persons receiving training and being supervised by an expert.
- Never work without the protection devices prescribed for the respective operating sequence and do not make any changes to the machine that could impair safety.
- When operating the machine outdoors, use of an earth-leakage circuit-breaker is recommended. Use in wet conditions or in rain is excluded. There is danger of electric shock.
- Damaged cables or plugs must be immediately replaced. Replacement may only be carried out by Mafell or an authorised MAFELL service workshop in order to avoid safety hazards.
- Avoid sharp bends in the cable. Especially when transporting and storing the machine, do not wind the cable around the machine.

Instructions on the use of personal protective equipment:

- Always wear ear protectors during work.
- Always wear protective goggles during work.
- Always where a dust mark during work.

Instructions on operation:

- Hold the machine in any situation with both hands at the handles provided.
- Provide a free and non-slip location with adequate lighting.
- Ensure that no persons are within the danger zone (Fig. 8).
- Unplug the power cord before changing tools, making adjustments or rectifying faults (including the removal of jammed chips).
- Do not work on workpieces which are too small or too large for the capability of the machine.
- Install and fasten the milling head properly. Use sharp cutters and taper taps; blunt cutters increase the risk of recoil. Immediately replace damaged cutters and taper taps and fasten them so that they cannot become loose during operation.
- The switch may not be wedged in place.
- Before switching on, make sure that the milling head is tightly secured and that the wrench has been removed.
- Always ensure that the workpiece is secured against slipping, e.g. with tension clamps.
- Hold firmly onto the machine before switching it on.
- Begin milling the workpiece only once the milling head had reached its full speed.
- Examine the workpiece for foreign objects. Do not mill into metal parts, e.g. nails.
- Never reach under the workpiece (risk of injury!) or under the guiding system.
- While milling, always lead the connecting cable to the back and away from the machine.
- An even forward feed during milling extends the service life of the milling cutter bit and the machine.
- Remove the machine from the workpiece only when the milling head has come to a standstill.

Danger

The warning light 25 (Fig. 1) indicates the rotation of the tool by means of an “orange” signal. The warning light 25 switches off when the tool is stationary. As long as the signal glows, you may not lift the machine off the workpiece or pull it back in the workpiece.

- Switch off the machine and let the milling head come to a standstill before making various angle and height adjustments on the machine.
- **Do not place the machine onto the workbench or floor without the mobile lower guard covering the tool.** An unguarded, coasting tool moves the machine opposite to the milling direction and may injure you. Keep in mind the tool’s coasting time (warning light).
- Do not clamp the mobile lower guard or remove any protective parts. Please note that the mobile lower guard consists of two parts - the lower guard and the side access protection.
- **Prior to every use, check whether the mobile lower guard is closing properly. Do not use the machine if the mobile lower guard is not freely movable and does not close immediately.** If the machine is dropped inadvertently, the mobile lower guard can get bent. Open the mobile lower guard with the pre-feed lever 1 (Fig. 3) and ensure that it moves freely and touches neither the tool nor other parts irrespective of the milling angle and depth.
- **Check the function of the spring for the mobile lower guard. Have the machine serviced prior to use if the mobile lower guard and spring do not work properly.** Damaged parts, sticky deposits or accumulated chips will cause the mobile lower guard to operate with a delay.
- **Only open the mobile lower guard with the pre-feed lever for special types of milling, such as angled milling. Open the mobile lower guard using the pre-feed lever and release the lever as soon as the tool has penetrated the workpiece.** During all other milling work, the mobile lower guard opens automatically.

Instructions on service and maintenance:

- Regularly cleaning the machine, especially the adjusting devices and guides, constitutes an important safety factor.
- Only original MAFELL spare parts and accessories may be used. Otherwise the manufacturer will not accept any warranty claims and cannot be held liable.

4 Setting / Adjustment

4.1 Mains connection

Prior to commissioning make sure that the mains voltage complies with the operating voltage stated on the machine's rating plate.

4.2 Chip extraction

Danger

Substances that are harmful to health must be taken up with an M-suction device.

Connect the machine to a suitable external dust extractor during all work generating a considerable amount of dust. The air velocity must be at least 20 m/s (65.6 ft / sec.).

The inside diameter of the hose connector 3 (Fig. 1) is 58 mm (2 9/32 in.).

The extraction nozzle can be rotated through 360°. It can thus be brought into the most favourable position for extraction. If you operate the machine without extraction, bring the extraction nozzle into a position where the chips are guided away from your working position.

4.3 Tool change

Danger

The maximum permissible speed (indicated on the tool) must not be exceeded!

The operating speed must not exceed the maximum speed indicated on the tool.

Pay attention to the correct direction of rotation!

Clamp the tool so that it cannot become loose during operation. The tightening torque must be at least 20 Nm.

The blades must touch neither each other nor the clamping pieces.

Pay attention to cleanliness when changing tools. The clamping surfaces must be free of dirt.

Check the tool clamping at regular intervals

Checking the tool clamping

- Unplug the power plug before checking the tool clamping.
- Put down the machine as shown in Figure 10.
- Press the push-button 2 (Fig. 2) and pull the locking lever 19 upwards. The shift lever 8 is now locked.
- Open the retractable saw guard 28 by means of plunge lever 1.
- Lock the tool with position indicator 29. Position the position indicator 29 in Pos. B (Fig. 10).
- To check the tool clamping: Firmly tighten the cylinder head screw 15 (at least 20 Nm).

Tool change

- Pull the plug before changing tools.
- Put down the machine as shown in Figure 10.
- Press the push-button 2 (Fig. 2) and pull the locking lever 19 upwards. The shift lever 8 is now locked.
- Open the retractable saw guard 28 by means of pre-feed lever 1.
- Lock the tool with position indicator 29. Position the position indicator 29 in Pos. A (Fig. 10).
- Use the hexagon screw driver 23 to unscrew the cylinder head screw 15 counter clockwise; detach flange 27 and milling head 26.
- Clean the tool spindle and clamping surfaces of adhering chips and dust. Attach the tool. When doing so ensure that both drive pins on the spindle engage in both bores on the tool. If any dirt gets between the components or if the components are not correctly fitted, there is a risk that the milling head 26 may come loose during machining despite this procedure.
- Lock the tool with position indicator 29. Position the position indicator 29 in Pos. B (Fig. 10).
- Insert the cylinder head screw 15 and the flange 27 and tighten clockwise with hexagon screw driver 23 (at least 20 Nm).
- Caution: After the check and tool change, remove position indicator 29 and the hexagon screw driver 23 from the tool.
- Close the retractable saw guard 28 and press down the locking lever 19 (Fig. 2).

4.4 Indexable cutting insert change

Danger

Always pull the power plug before making changes or adjustments.

Install and remove the cutters in accordance with the instructions in the operating manual. Utmost caution is mandatory!

Ensure clean clamping surfaces.

Observe the specified tightening torques! The clamping screws must be tightened only with the tools provided or with a tool of the same dimensions. No striking tools, levers, extensions or other tools may be used.

All blades must always be fitted in order to prevent imbalance.

The milling head (scope of supply) is equipped with 12 interchangeable carbide indexable cutting inserts. Resharpening is not possible. When blades are blunt, the carbide indexable cutting inserts are turned or

replaced. The adjustable groove cutter (optional accessories) 30 (Fig. 5) is equipped with 12 carbide indexable cutting inserts 32.

Only the screws and indexable cutting inserts provided for this purpose by MAFELL may be used.

- Remove the tool from the machine (see 4.3 Tool change, page 27).
- Loosen the countersunk screws on the tool with the wrench included in the supply.
- Clean all parts and cutter chambers of the tool.
- Turn the carbide indexable cutting inserts or replace them with new carbide indexable cutting inserts after they have been turned three times.
- Fasten the turned or new indexable cutting inserts with the countersunk screws and retighten the screws with the torx screw driver 22 (Fig 7) with 4 Nm.

Aluminium tools may only be deresinified with solvents which do not corrode the aluminium.

- Re-install the tool (see 4.3 Tool change, page 27).

4.5 Tool change of the adjustable groove cutter (special accessories)

Danger

The maximum permissible speed (indicated on the tool) must not be exceeded!

The operating speed must not exceed the maximum speed indicated on the tool.

Pay attention to the correct direction of rotation!

Clamp the tool so that it cannot become loose during operation. The tightening torque must be at least 20 Nm.

The blades must touch neither each other nor the clamping pieces.

Pay attention to cleanliness when changing tools. The clamping surfaces must be free of dirt.

Check the tool clamping at regular intervals

- Pull the plug before changing tools.
- Put down the machine as shown in Figure 11.
- Lock the tool with position indicator 29. Position the position indicator 29 in Pos. A (Fig. 11).
- Use the hexagon screw driver 23 to unscrew the cylinder head screw 15 counter clockwise; detach flange 33 and the adjustable groove cutter 30.
- Clean the tool spindle and clamping surfaces of adhering chips and dust. Attach the tool. When doing so ensure that both drive pins on the spindle engage in both bores on the tool. If any dirt gets between the components or if the components are not correctly fitted, there is a risk that the adjustable groove cutter 30 may come loose during machining despite this procedure.
- Lock the tool with position indicator 29. Position the position indicator 29 in Pos. B (Fig. 11).

- Insert the cylinder head screw 15 and the flange 33 and tighten clockwise with hexagon screw driver 23 (at least 20 Nm).
- Caution: After the check and tool change, remove position indicator 29 and the hexagon screw driver 23 from the tool.
- Close the retractable saw guard 28 and press down the locking lever 19 (Fig. 2).

4.6 Adjusting the milling cutter: Adjustable groove cutter (optional accessories)

The adjustable groove cutter 30 (Fig. 5) is an adjustable groove cutter with indexable cutting inserts, which can be adjusted to milling widths between 22 and 40 mm. Different spacers are included with the adjustable groove cutter. These can be used to realise different intermediate widths.

Follow the procedure below:

- First compile the required adjustable groove cutter width with the enclosed spacers (the adjustable groove cutter without spacers has a groove width of 22 mm).
- Place the compiled spacer packet onto the pins in the rear part of the adjustable groove cutter (side without labelling).
- Place the spacers that are not required onto the front part of the adjustable groove cutter. Then join the front part of the adjustable groove cutter 30 (Fig. 5) and the inserted spacer packet.
- Now fasten both parts of the adjustable groove cutter with the front flange of the adjustable groove cutter 33 (Fig. 5) and mount the entire adjustable groove cutter onto the drive flange of the NFU50.

The adjustment range specified on the adjustable groove cutter may on no account be exceeded. Ensure that all the enclosed spacers are fitted at all times.

4.7 Indexable cutting insert change "adjustable groove cutter"

Danger

Always pull the power plug before making changes or adjustments.

Install and remove the cutters in accordance with the instructions in the operating manual. Utmost caution is mandatory!

Ensure clean clamping surfaces.

Observe the specified tightening torques! The clamping screws must be tightened only with the tools provided or with a tool of the same dimensions. No striking tools, levers, extensions or other tools may be used.

All blades must always be fitted in order to prevent imbalance.

The adjustable groove cutter 30 (Fig. 5) is equipped with 12 carbide indexable cutting inserts 32. Resharpening is not possible. When blades are blunt, the carbide indexable cutting inserts are turned or replaced.

Only the screws and indexable cutting inserts provided for this purpose by MAFELL may be used.

Follow the procedure below:

- Remove the tool from the machine (see 4.5 Tool change of the adjustable groove cutter (special accessories), page 28).
- Loosen the countersunk screws 34 (Fig. 5) on the tool with the wrench included in the supply.
- Clean all parts and cutter chambers of the tool.
- Turn the carbide indexable cutting inserts or replace them with new carbide indexable cutting inserts after they have been turned three times.
- Fasten the turned or new indexable cutting inserts with the countersunk screws and retighten the screws with the corresponding wrench (Fig. 7) with 4 Nm.

The two parts have been inserted correctly if the rear of a cutter edge is resting against the carrier body and the countersunk screw can be screwed in that far that the surface of the countersunk screw is located

below or on the same level as the surface of the indexable cutting insert (see Fig. 5).

4.8 Laying the connection cable

Danger

While working, pay attention to how the connecting cable is laid. A poorly laid connecting cable can impair safety functions and working functions and come into contact with the tool.

How to lay the cable is shown in Fig. 12 by way of example.

Lead the connecting cable away from the machine in the direction of the cable sleeve. Always keep the connecting cable as far away as possible from the working tool. For support, use the Velcro fastener on the extraction connection.

5 Operation

5.1 Initial operation

Personnel entrusted to work with the machine must be made aware of the operating instructions, calling particular attention to the chapter "Safety instructions".

5.2 Switching on and off

- **Switching on:** Press the switch-on lock 7 (Fig. 1) forward to unlock it. Then, with the switch-on lock depressed, press shift lever 8.

As this is a switch without locking device, the machine will only run for as long as this shift lever is pressed.

The built-in electronic system provides for jerk-free acceleration when the machine is switched on and readjusts the speed to the fixed setting.

In addition, the electronic system switches off the motor in case of overload, i.e. the tool will stop. Release shift lever 8. Then switch the machine on again and continue milling at a reduced feed speed.

- **Switching off:** To switch off, release the shift lever 8 (Fig 1). The built-in automatic brake limits the coasting time of the tool to approx. 3 s. The switch-on lock takes effect again automatically and secures the cross-cut milling system against accidental switch-on.

5.3 Milling depth adjustment

The milling depth is continuously variable between 0 and 50 mm.

Follow the procedure below:

- Press the push-button 11 (Fig. 2) and adjust the milling depth with the plunge lever 6.
- The milling depth can be read off the scale on the cover. The area of plunge lever 6 with the red background serves as indicator.

5.4 Milling depth locking device / repeater depth stop

The milling depth locking device is used to lock the set milling depth. After defining the milling depth once, it can easily be set without measuring again.

Follow the procedure below:

- Set the machine to the desired milling depth.
- Open the clamping lever 14 (Fig. 2) and set the stop bar 16 downwards to the limit stop.
- Retighten the fastening lever 14 (Fig. 2).

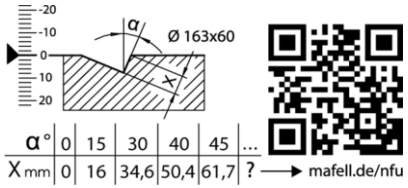
At low milling depths, you must position the repeater depth stop adapter 52 (Fig. 2) underneath the stop bar 16.

5.5 Setting for working at a tilt

The milling unit can be set to any angle between 0° and 45° for both tilted milling and notch milling work.

- In order to incline it, bring the machine into home position and support it such that it is possible to tilt the milling unit.
- Unfasten the clamping lever 10 (Fig. 2).
- Adjust the angle according to the scale on the swivel segment.
- Retighten the clamping lever 10.

We provide a calculation tool for calculating the milling depth. You can access this tool via the QR code on the machine or the website specified on the label.



5.6 Working with the parallel stop

The parallel stop 18 (Fig. 6) is used to work parallel to an already existing edge. The limit stop can be attached to the left or right of the machine.

- You can adjust the milling position after unfastening the wing screws 9 (Fig. 1) by moving the limit stop accordingly and afterwards retightening the wing screws.

In addition, the parallel stop can be guided along a lath that is fastened on the workpiece.

5.7 Working with the roller edge guide

The roller edge guide 20 (Fig. 6) is used to work parallel to an already existing edge. The limit stop can be attached to the left side of the machine.

- You can adjust the milling position after unfastening the wing screws 9 (Fig. 1) by moving the limit stop accordingly and afterwards retightening the wing screws.

Now the machine can be guided along a narrow workpiece running below the base plate.

5.8 Grooves with F-guide rail

Setting the desired milling depth according to chapter 5.3.

Carry out groove milling using an F-guide rail. Wider grooves are achieved by laterally offsetting the guiding device from the right to the left.

5.9 Working with the guide rail

It is recommended to use the guide rails (see Chapter 8, Optional accessories) with the adapter pair for machining notches.

Follow the procedure below:

- Attach the parallel stop 18 (Fig. 6) to the machine.
- Mount the adapter pairs 60 (Fig. 9) in the positions ZZ (Fig. 6) intended for this purpose.
- Hook the adapter pairs into the guide rail attached parallel to the milling groove.
- Set the machine to an inclination and depth as described under 4.4 and 4.5
- Move the milling cutter across the parallel stop bars to the desired position.
- Tighten the screws 9 (Fig. 1).

5.10 Working according to tracings with KSS-guiding device

- Secure the workpiece against movement.
- Adjust the milling depth.
- Hold the machine by both handles and push the two stop cams against the workpiece. Place the front part of the KSS-guiding device onto the workpiece. The left hand side of the milling head corresponds to the front edge of the guiding device.
- Switch on the cross-cut milling system (see 5.2 Switching on and off, page 30).
- Slide the machine evenly forward in milling direction.
- At the end of milling, switch off the cross-cut milling system by releasing the shift lever 8 (Fig. 1).
- Wait until the milling tool is completely stationary, then pull the machine back to its starting position while it rests on the workpiece and remove it from the workpiece in this position. This guarantees that the mobile lower guard 28 (Fig. 3) is completely closed. The starting position is signalled by the yellow label on the guiding device. The machine will be in the safe starting position if you pull back the machine behind the marking in the direction of “Safe”.

Danger

The warning light 25 (Fig. 1) indicates the rotation of the tool by means of an “orange” signal. The warning light 25 switches off when the tool is stationary. Now you can pull the machine back into the starting position. As long as the signal glows, you may not lift the machine off the workpiece or pull it back.

5.11 Working with position indicator (for KSS-guiding device and F-rail)

Use position indicator 29 (Fig. 3) to align the KSS-guiding device. The position indicator shows the right side of the milling cutter, set the position indicator to the same angle as the machine. The position indicator is enclosed with the machine.

Follow the procedure below:

- Fasten the position indicator 29 with the wing bolts 9 (Fig. 3).
- Set the position indicator 29 to the same angle as the machine tilt. You can also determine the position of position indicator 29 by means of an auxiliary milling groove in the tool.
- The angle scaling refers to the right side of the milling head.
- Set the required milling depth and machine the workpiece.

5.12 Working with the lateral stop in combination with KSS-guiding device

The lateral stop 50 (Fig. 4) is used to work parallel to an already existing groove. Lock the stop in the guide groove of the KSS-rail. The lateral stop is preset to approximately 625 mm, fine adjustment at the stop is possible.

Different rafter spacings can be set via the markings X and Y at the face edge stop:

X = 625 mm with 60 mm milling head

Y = 600 mm with 46 mm milling head

Follow the procedure below:

- Unfasten the locking screw 53 with the wrench AF 5 that is kept on the position indicator.
- Turn the adjusting screw 54 in the corresponding direction.
- Retighten the locking screw 53.

6 Service and maintenance

Danger

Pull the power plug during all service work.

MAFELL machines are designed to be low in maintenance.

The ball bearings used are greased for life. When the machine has been in operation for a longer period of time, we recommend to hand the machine in at an authorised MAFELL customer service shop for inspection.

Only use our special grease, order No. 049040 (1 kg tin) for all greasing points.

Check the braking effect of your machine at regular intervals. If the braking effect worsens, always contact your MAFELL after-sales service to have the braking system serviced.

In order to check the safety functions, the machine must be handed in at a MAFELL service workshop for inspection at the latest after 3 years of use.

6.1 Storage

If the machine is not used for a longer period of time, it has to be carefully cleaned. Spray bright metal parts with a rust inhibitor.

Store the machine only in dry rooms and protect it from the effects of weather.

6.2 Tools

The milling heads used on the machine should be regularly deresinified, as clean tools improve the cutting quality.

Deresinify them by placing them in petroleum or a commercially available deresinification agent for 24 hours.

Aluminium tools may only be deresinified with solvents which do not corrode the aluminium.

Promptly replace damaged clamping screws and cutting elements.

The design of progressive tools must not be modified during maintenance.

6.3 Tools of older machine types

Please request the installation instructions adjustable groove cutter, Art.-No. 170650, if you intend to use the adjustable groove cutter of the NFU 32 (Art.-No. 091418) in the NFU 50.

7 Troubleshooting

Danger

Determining the causes for existing defects and eliminating these always requires increased attention and caution. Pull the mains plug beforehand!

Some of the most frequent defects and their causes are listed in the following chart. In case of other defects, please contact your dealer or the MAFELL customer service directly.

Defect	Cause	Elimination
Machine cannot be switched on	No mains voltage	Check power supply
	Mains fuse defective	Replace fuse
	Carbon brushes worn	Take the machine to a MAFELL customer service shop
Machine stops while milling	Mains failure	Check mains back-up fuses
	Machine overloaded	Reduce feed speed Turn or replace carbide indexable cutting inserts
Burn marks on the milled surfaces	Tool unsuitable or too blunt for the work process	Replace tool Turn or replace carbide indexable cutting inserts
Chip ejection blocked	Wood is too damp	Dry the wood
	Milling without extraction	Connect machine to an external extraction system
	Large wood chip in ejector or extraction hose	Clean machine or hose Pull the mains plug during this work
	Too many chips accumulating	Reduce feed speed
Increased vibration and poor milling pattern	Cutter head comes loose	Take the machine to a MAFELL customer service shop
Milling tool cannot be released/tightened.	Friction clutch activates	Lock milling tool with pin and loosen/tighten the screw
Formation of odour	Brake lining heated	Odour formation decreases over the operating time

8 Optional accessories

- Guide rail length 3 m (2 parts with connector) Order No. 037037
- Guide rail length 3 m (1 part) Order No. 200672
- Guide rail extension length 1.5 m Order No. 036553
- Adapter pair for parallel stop Order No. 037195
- Guide rail F 80, 800 mm long Order No. 204380
- Guide rail F 110, 1100 mm long Order No. 204381
- Guide rail F 160, 1600 mm long Order No. 204365
- Guide rail F 210, 2100 mm long Order No. 204382
- Guide rail F 310, 3100 mm long Order No. 204383
- Accessories for guide rail:
  - Connecting piece F-VS Order No. 204363
  - Sliding bevel segment F-WA Order No. 205357
  - Rail bag 160 Order No. 204626
- Rail bag kit F160/160 consisting of: 2 x F160 + connecting piece + 2 screw clamps + rail bag Order No. 204805
- Rail bag kit F80/160 with sliding bevel segment consisting of: F80 + F160 + connecting piece + sliding bevel + 2 screw clamps + rail bag Order No. 204749
- End caps packed F-EK Order No. 205400
- Adhesive profile packed F-HP 6.8M Order No. 204376
- Splinter guard packed F-SS 3.4M Order No. 204375
- Tension clamp packed F-SZ 180MM (2 pcs) Order No. 207770
- Recoil stop packed F-RS Order No. 202867
- Roller edge guide K85-UA Order No. 205166
- Adjustable groove cutter Rd153-22-40x30 Order No. 091899
- Indexable cutting inserts (12 pieces per milling head and adjustable groove cutter) Order No. 201927
- Guiding device L packed Order No. 208171
- Cutter head ø 163 x 46 mm Order No. 091902

9 Exploded drawing and spare parts list

The corresponding information in respect of spare parts can be found on our homepage: www.mafell.com