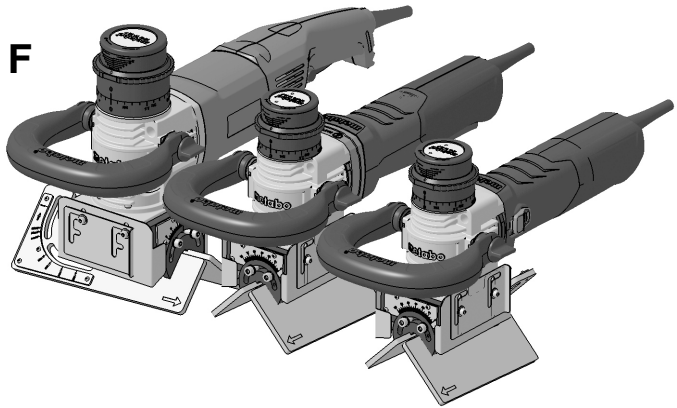


KFM 15-10 F KFMPB 15-10 F KFM 16-15 F



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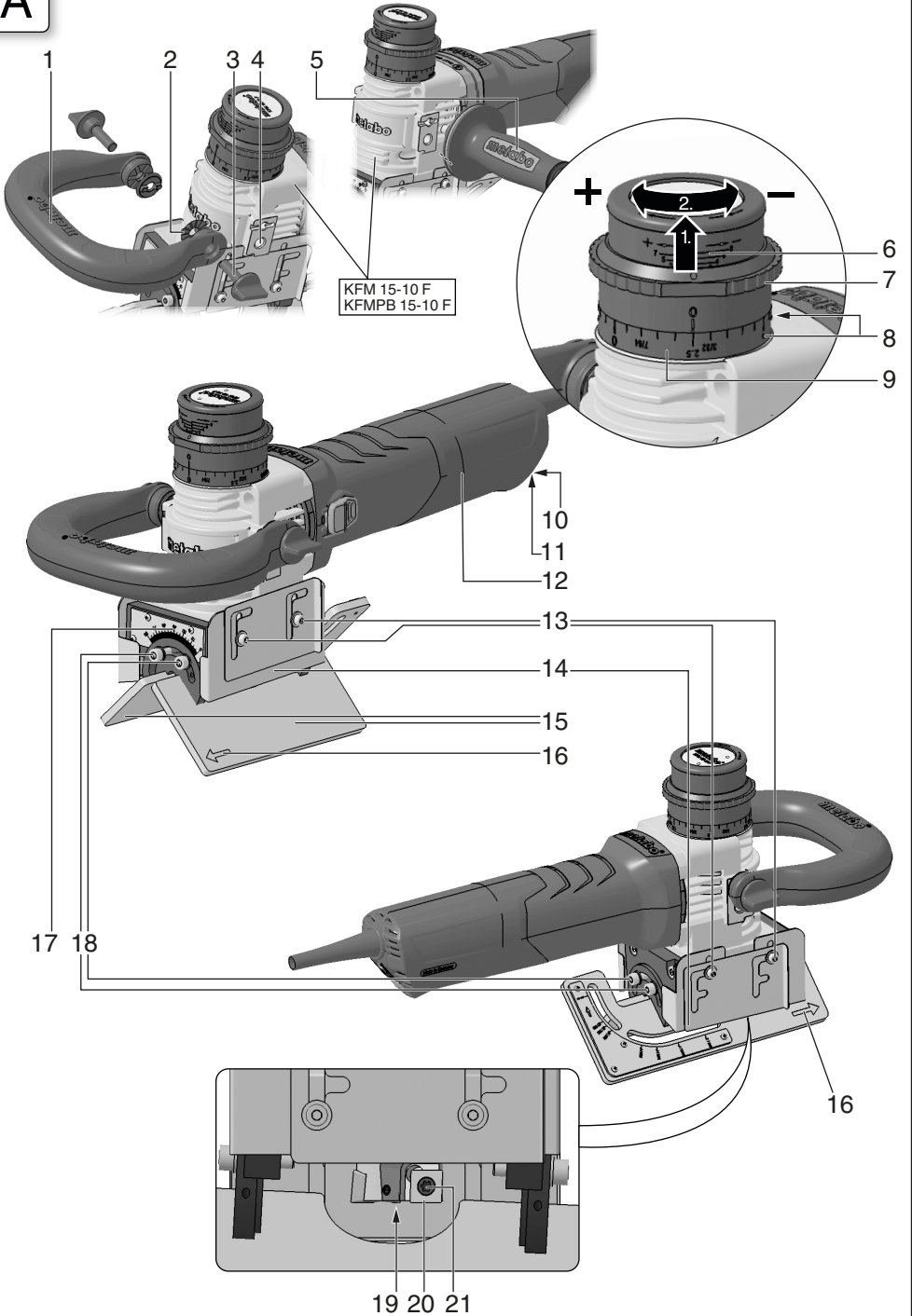
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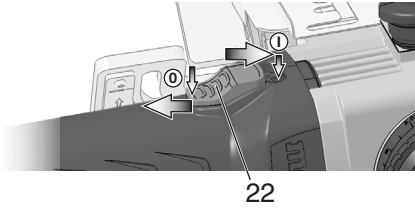
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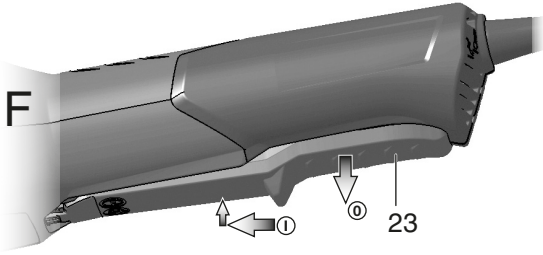


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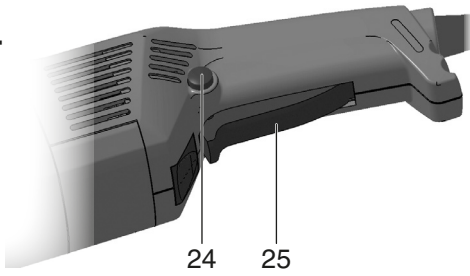
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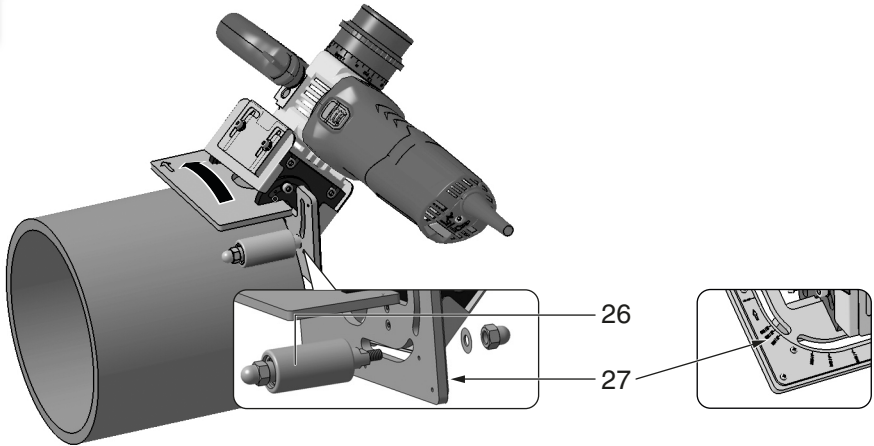
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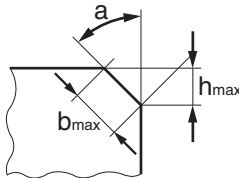
KFM 16-15 F




C



		KFM 15-10 F *1) Serial Number: 01752..	KFM PB 15-10 F *1) Serial Number: 01755..	KFM 16-15 F *1) Serial Number: 01753..
		n	min ⁻¹ (rpm)	7800 - 12200
P₁	W	1500	1550	1600
P₂	W	990	840	900
h_{max}(45°)	mm (in)	10 (³ / ₈)	10 (³ / ₈)	15 (¹⁹ / ₃₂)
h_{max}(30°)	mm (in)	13 (¹ / ₂)	13 (¹ / ₂)	20 (²⁵ / ₃₂)
b_{max}(45°)	mm (in)	14 (⁹ / ₁₆)	14 (⁹ / ₁₆)	21 (¹³ / ₁₆)
a	°	0 - 90°	0 - 90°	0 - 90°
d_{min}	mm (in)	75 (2 ¹⁵ / ₁₆)	75 (2 ¹⁵ / ₁₆)	100 (3 ¹⁵ / ₁₆)
m	kg (lbs)	4,9 (10.8)	5,1 (11.2)	6,9 (15.2)
a_n/K_h	m/s ²	<2,5 / 1,5	<2,5 / 1,5	<2,5 / 1,5
L_{pA}/K_{pA}	dB(A)	92 / 3	91 / 3	93 / 3
L_{WA}/K_{WA}	dB(A)	103 / 3	102 / 3	104 / 3




 *2) 2014/30/EU, 2006/42/EC, 2011/65/EU
 *3) EN 60745-1:2009+A11:2010, EN ISO 12100:2010, EN IEC 63000:2018

ppa. B.F.

2023-01-04, Bernd Fleischmann
 Direktor Produktentstehung & Qualität (Vice President Product Engineering & Quality)
 *4) Metabowerke GmbH - Metabo-Allee 1 - 72622 Nuertingen, Germany

Original Instructions

1. Declaration of Conformity

We hereby declare that these bevellers, identified by type and serial number *1), meet all relevant requirements of directives *2) and standards *3). Technical documents for *4) - see page 4.

For UK only:

UK We as manufacturer and authorized person to **CA** compile the technical file, see *4) on page 4, hereby declare under sole responsibility that these bevellers, identified by type and serial number *1) on page 3, fulfill all relevant provisions of following UK Regulations S.I. 2016/1091, S.I. 2008/1597, S.I. 2012/3032 and Designated Standards EN 60745-1:2009+A11:2010, EN ISO 12100:2010, EN IEC 63000:2018

2. Specified Use

The beveller is intended for the milling of edges of steel, stainless steel, aluminium and aluminium alloys in the professional sector.

For processing aluminium, aluminium alloys and stainless steel, a suitable lubricant (item no.: 6.23443) must be used.

This lubricant is also recommended when processing steel as it extends the tool life and the machine glides more easily over the workpiece.

The user bears sole responsibility for any damage caused by inappropriate use.

Generally accepted accident prevention regulations and the enclosed safety information must be observed.

3. General Safety Instructions



For your own protection and for the protection of your power tool, pay attention to all parts of the text that are marked with this symbol!



WARNING – Reading the operating instructions will reduce the risk of injury.



WARNING Read all safety warnings and instructions. Failure to follow all safety warnings and instructions may result in electric shock, fire and/or serious injury.

Keep all safety instructions and information for future reference.

Pass on your power tool only together with these documents.

4. Special Safety Instructions

a) **Do not use accessories that are not specifically designed and recommended for this power tool by the manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.

b) **Do not use damaged power tools. Before use, check the indexable inserts for chipping, cracks or signs of severe wear and tear. If a power tool or accessory is dropped, inspect for damage or install an undamaged accessory.**

c) **Wear personal protective equipment. Use a face shield, safety goggles or safety goggles depending on the application. As appropriate, wear a dust mask, hearing protectors, gloves and a workshop apron capable of stopping small abrasive or workpiece fragments.** The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.

d) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of a workpiece or broken accessory may fly away and cause injury beyond the immediate area of operation.

e) **Always hold the tool firmly in your hands during the start-up.** The reaction torque of the motor as it accelerates to full speed can cause the tool to twist.

f) **Use clamps or another practical way to secure and support the workpiece to a staple platform.** Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.

g) **Never lay the power tool down until the accessory has come to a complete stop.** The rotating accessory may grab the surface and pull the power tool out of your control.

h) **Do not run the power tool while carrying it at your side.** Accidental contact with the rotating accessory could snag your clothing, pulling the accessory into your body.

i) **Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.

j) **Do not operate the power tool near flammable materials.** Sparks and hot chips can ignite these materials.

k) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

4.1 Kickback and related warnings

Kickback is the sudden response to an accessory pinching or jamming while rotating. Pinching or snagging causes rapid stalling of the rotating accessory. This causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an indexable insert is snagged or pinched by the workpiece, the edge of the insert that is entering into the pinch point can dig into the surface of the material causing the insert to climb

out or kick out. The indexable insert may either jump towards or away from the operator depending on direction of the indexable insert holder at the point of pinching. Indexable inserts may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions. It can be prevented if suitable precautionary measures are taken as described below.

- a) **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces.** The operator can control kickback forces if proper precautions are taken.
- b) **Use special care when working in corners, on sharp edges etc. Avoid bouncing and snagging the accessory.** Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.
- c) **Always feed the accessory into the material in the same direction as the cutting edge is exiting from the material (which is the same direction as the chips are thrown).** Feeding the power tool in the wrong direction causes the cutting edge of the accessory to move out of the workpiece and pull the tool in the direction of this feed.
- d) **Prevent any jamming of the indexing insert or excessive pressure. Do not set the chamfer height greater than the permitted maximum.** Overstressing the indexable insert increases the loading and susceptibility to twisting or binding of the disc in the cut and the possibility of kickback or breakage of the indexable insert.
- e) **Do not position your hand in line with and behind the indexable insert.** When the indexable insert is moving away from your body at the point of operation, the possible kickback may propel the rotating indexable insert and the power tool directly at you.

Turn/replace blunt indexable inserts or inserts where the coating is worn in due time. Blunt indexable inserts increase the risk of the machine getting jammed and breaking.

4.2 Additional safety instructions:

Hold the power tool by the insulated gripping surfaces because the milling cutter may hit its own cord. Contact with a live lead may also make metal power tool parts "live" and lead to an electric shock.

Keep the work area clean and well lit. Cluttered or dark areas invite accidents.



WARNING – Always wear protective goggles.



Wear ear protectors.



Pull the plug out of the socket before making any adjustments, changing tools, carrying out maintenance or cleaning.



Wear suitable work clothes.



Ensure that nobody gets injured by catapulted foreign bodies.



Keep persons nearby and pets at a safe distance to the device.



Keep away hair, loose clothing, fingers and other body parts. They can get caught and sucked in. Use a hair net for long hair.



Warning of rotating tools

Always wear protective goggles, gloves and sturdy shoes when working with this tool.

Danger of injury from sharp edges. Wear protective gloves.

Indexable inserts, holders for indexable inserts, the workpiece and chips can be hot after work. Wear protective gloves.

A damaged or cracked additional handle must be replaced. Never operate the machine with a defective additional handle.

Pull the plug out of the socket before making any adjustments, changing tools, carrying out maintenance or cleaning.

Use of a fixed extractor system is recommended. Always install an RCD with a maximum trip current of 30 mA upstream. When the machine is shut down by the RCD, it must be checked and cleaned. See chapter 10. Cleaning.

Wear ear protectors when working for long periods of time. High noise levels over a prolonged period of time may damage your hearing.

Use only sharp, undamaged indexable blades.

The workpiece must lay flat and be secured against slipping, e.g. using clamps. Large workpieces must be sufficiently supported.

Ensure that sparks produced during work do not constitute a risk to the user or others and are not able to ignite flammable substances. Areas at risk must be protected with flame-resistant covers. Always keep a fire extinguisher on hand when working in areas prone to fire risk.

Always hold the machine with both hands on the designated handles, take a secure stance and concentrate on the work.

Keep your hands away from the milling area and from the tool.

Do not touch the rotating accessory! Remove chips and similar material only with the machine at a standstill. Pull the mains plug out of the socket.

Damaged, eccentric or vibrating tools must not be used.

Do not work overhead.

Never use an incomplete tool or one on which an unauthorised modification has been made.

Reducing dust exposure:



Some dust created by using this power tool may contain chemicals known to cause cancer, allergic reaction, respiratory disease, birth defects or other reproductive harm. Some of these

substances include: lead (in paint containing lead), mineral dust (from bricks, concrete etc.), additives used for wood treatment (chromate, wood preservatives), some wood types (such as oak or beech dust), metals, asbestos.

The risk from exposure to such substances will depend on how long you or people nearby are exposed to them.

Do not let particles enter the body.

Do the following to reduce exposure to these substances: ensure good ventilation of the workplace and wear appropriate protective equipment, such as respirators able to filter microscopically small particles.

Observe the relevant guidelines for your material, staff, application and place of application (e.g. occupational health and safety regulations, disposal).

Collect the generated particles at the source, avoid deposits in the surrounding area.

Reduce dust exposure with the following measures:
- Do not direct the escaping particles and the exhaust air stream at yourself or nearby persons or on dust deposits.

- Use an extraction unit and/or air purifiers
- Ensure good ventilation of the workplace and keep clean using a vacuum cleaner Sweeping or blowing stirs up dust
- Vacuum or wash protective clothing Do not blow, beat or brush.


5. Overview

See pages 2 and 3.

- 1 Bow handle
- 2 Locking discs
- 3 Thumb screws
- 4 Threaded holes on gear housing
- 5 Side handle *
- 6 Scale (chamfer height)
- 7 Adjusting ring (chamfer height)
- 8 Clamping screws on scale ring
- 9 Scale ring (chamfer height)
- 10 Speed adjustment wheel *
- 11 Electronic signal indicator *
- 12 Handle
- 13 Chip protection plate screws
- 14 Chip protection plates
- 15 Guide rail
- 16 Arrow = prescribed working direction
- 17 Scale (chamfer angle)
- 18 Screws (chamfer angle)
- 19 Indexable insert holder / milling head
- 20 Indexable insert
- 21 Fastening screw for indexable insert
- 22 Slide switch *
- 23 Paddle switch *
- 24 Lock *
- 25 Trigger*
- 26 Guide roller
- 27 Scale (pipe diameter)


*equipment-specific

6. Commissioning

 Before commissioning, check that the rated mains voltage and mains frequency, as stated on the type plate match your power supply.

 Always install an RCD with a maximum trip current of 30 mA upstream.


6.1 Attaching the additional handle

 Only work with attached bow handle (1) or side handle (5) (depending on equipment)! Attach the handle as shown (see page 2, Fig. A).

Attach bow handle (1)


- Fit locking discs (2) to the left and right of the handle (1).
- Move the handle (1) with the locking discs (2) from the front to the gear housing.
- Insert the thumb screws (3) to the left and right of the handle (1) and turn gently.
- Adjust the handle (1) to the required angle.
- Firmly tighten the thumb screws (3) to the left and right manually.


Attach side handle (5) (depending on equipment, only for KFM 15-10 F, KFMPB 15-10 F):


 When milling edges of small angles (setting $< 30^\circ$) depending on the working conditions it may be advantageous to use the side handle (5) rather than the bow handle (1). For larger angles, always use the bow handle (1) so that you can hold the machine securely.

- Attach the side handle (5) on the **right or left** side of the machine and secure.

7. Setting

 Pull the plug out of the socket before making any adjustments, changing tools, carrying out maintenance or cleaning.

 Indexable inserts, holders for indexable inserts, the workpiece and chips can be hot after work. Wear protective gloves.

 Danger of crushing! Wear protective gloves.

7.1 Setting the chamfer angle

1. Read the set angle on the scale (17).
2. Loosen the screws (13) and slide both chip protection plates (14) (on the left and right of the machine) upwards.
3. Loosen the screws (18) (front and back) and set the chamfer angle to the desired angle by turning the guide rail (15). Read the set chamfer angle on the scale (17).
4. Firmly tighten the screws (18) (front and back).
5. Slide both chip protection plates (14) (on the left and right of the machine) all the way down. Tighten the screws (13) (on the left and right of the machine).
6. Changing the chamfer angle also changes the chamfer height (due to the design). Therefore, also set the chamfer height again every time you adjust the chamfer angle. See chapter 7.2

7.2 Setting the chamfer height

Set the chamfer angle first:

1. First check that the desired chamfer angle is set: read the set chamfer angle on the scale (17). Adjust if necessary. See chapter 7.1

Determining the setting value:

Note: always produce large chamfer heights in several milling operations (at least 3). Hard materials require more milling operations. This has the following advantages: a higher indexable insert service life, work results with a higher surface quality, more pleasant working conditions.

! Do not exceed the "maximum chamfer height per milling operation" specified below.

KFM 15... (at 45°):

- 1st milling operation: max. 6 mm
- 2nd +3rd milling operation: max. 2 mm

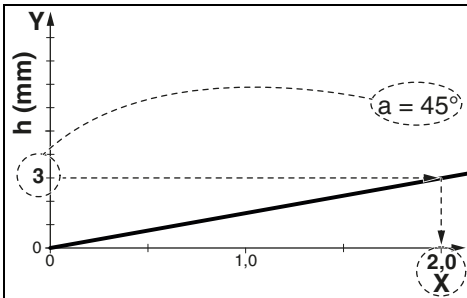
KFM 17... (at 45°)

- 1st milling operation: max. 9 mm
- 2nd +3rd milling operation: max. 3 mm

Do not exceed the maximum permitted chamfer height (h_{max}) (see the Technical Specifications chapter).

It is recommended that very little material is removed during the last milling operation to ensure an optimum surface quality.

2. Select the diagram that applies to your machine (see back).
3. Select the line that applies to the set chamfer angle (see back).
4. **Example** for a chamfer angle of 45° and a desired chamfer height of 3 mm (see figure below). Result: setting value = 2.0.



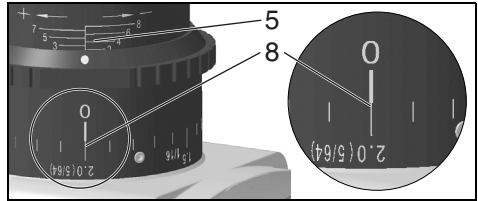
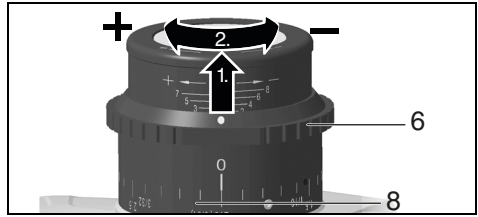
Select the chamfer height that you want to set on the Y-axis. Draw a horizontal line to the intersection with the line. Draw a vertical line from this intersection to the X-axis. Read the value on the X-axis. You must now set this "X" value as follows on the machine.

Note: The diagram is based on sharp-edged workpieces. For workpieces with rounded edges, the milling height must be taken into account during setting.

Setting the chamfer height:

5. Pull the adjusting ring (7) upwards and turn it so that the "X" value from the diagram is set on the scale (9). See figure (below): set "X" value = 2.0.

(One revolution corresponds to "X"=3. For large X values: perform several revolutions. The scale (6) is used for rough orientation during the setting process).



6. Carry out a trial cut.
7. Proceed as follows if the chamfer height should be set very accurately for the last milling operation:
Carry out a trial cut. Measure the cut chamfer height and adjust it by one scale mark if necessary by turning the adjusting ring (7): clockwise rotation = larger chamfer height. Anticlockwise rotation = lower chamfer height. Carry out another trial cut. Repeat this step if necessary.

8. Use

8.1 Switching on and off

- !** Always guide the machine with both hands.
- !** Switch on first, then guide the accessory towards the workpiece.
- !** Avoid inadvertent starts: always switch the tool off when the plug is removed from the mains socket or if there has been a power cut.
- !** In continuous operation, the machine continues running if it is forced out of your hands. Therefore, always hold the machine with both hands using the handles provided, stand securely and concentrate.
- !** Avoid the machine swirling up or taking in dust and chips. After switching off the machine, only place it down when the motor has come to a standstill.

KFM 15-10 F (see page 3, Fig. B):

Switching on: push the sliding switch (22) forwards. For continuous operation, now tilt it downwards until it engages.

Switching off: press the rear end of the slide switch (22) and release it.

KFMPB 15-10 F (see page 3, Fig. B):

Switching on: slide the paddle switch (23) in the direction of the arrow and then press the paddle switch (23).

Switching off: release the paddle switch (23).

KFM 16-15 F (see page 3, Fig. B):**Torque activation:**

Switching on: press in the lock (24) and then press the trigger switch (25). Release the lock (24).

Switching off: release the trigger switch (25).

Continuous operation:

Switching on: press in the lock (24) and hold it in place. Press and hold in the trigger switch (25). The machine is now switched on. Now press in the lock (24) once more to lock the trigger (25) (continuous operation).

Switching off: press the trigger switch (25) and release.

8.2 Setting speed (KFM 15-10 F)

The speed can be preset via the speed adjustment wheel (10) and is infinitely variable.

Positions 1-6 correspond approximately to the following no-load speeds:

1..... 7800 / min	4 10200 / min
2..... 8600 / min	5 11100 / min
3..... 9400 / min	6 12200 / min

The VTC electronics make material-compatible work possible and an almost constant speed, even under load.


Speed recommendations for different materials:

Aluminium, copper, brass	4-6
Steel up to 400 N/mm ²	4-6
Steel up to 600 N/mm ²	3-5
Steel up to 900 N/mm ²	2-4
Stainless steel.....	1-3

The best way to determine the ideal setting is through a practical trial.

8.3 General working instructions

1. Check the indexable inserts (20). Change damaged or worn indexable inserts.
2. Fix workpiece without vibrations using clamping devices.
3. Pay attention to chapter 8.4 when working on pipes.
4. Set the chamfer angle (see chapter 7.1).
5. Set the chamfer height (see chapter 7.2).
6. Always hold the machine with both hands on the designated handles, take a secure stance and concentrate on the work.
7. The indexable inserts (20) do not touch the workpiece. First switch on, then place the machine with the guide rail (15) onto the workpiece and only then put the tool close to the workpiece.
8. Slide the machine only in the direction specified by an arrow on the machine (16).

 Slide the machine only in the direction of the arrow (16). Otherwise there is the risk

of kickback. Guide the machine evenly at a speed suitable for the material being processed. Do not tilt, apply excessive force or sway from side to side.

9. Guide the machine in such a way that the guide rail (15) is in contact with the workpiece.
10. Finishing the work: remove the tool from the workpiece, switch off machine. Let motor come to a stop, put down machine.

8.4 Working on the outer edge of pipes


1. Determine the diameter of the pipe to be worked on.
2. See page 3, Fig. C: attach the guide roller (26) to the guide rail (15) as shown. Move the guide roller (26) and adjust on the scale (27) on the pipe diameter. Tighten the guide roller nut with a spanner and thus tighten the guide roller.
3. Pay attention to the general working instructions (chapter 8.3).
4. Always hold the machine with both hands on the designated handles, take a secure stance and concentrate on the work.
5. Place the machine with the guide roller (26) on the outer surface of the pipe. Then place the guide rail on the surface of the pipe end.
6. The indexable inserts (20) do not yet touch the workpiece. First switch on, then slowly tilt the machine around the guide roller (26) to move the milling head close to the workpiece.
7. Pay attention to the general working instructions (chapter 8.3).


8.5 KFM 16-15 F: Possibility for rotating the guide rail (15)

The guide rail (15) of the KFM 16-15 is installed transversely. This permits better absorption of high forces and permits low-fatigue working for most tasks.

If you prefer to install the guide rail (15) in a longitudinal manner, the Metabo customer service will provide you with conversion instructions on request.


9. Maintenance**9.1 Changing indexable inserts**




 Pull the plug out of the socket before making any adjustments, changing tools, carrying out maintenance or cleaning.

 Indexable inserts, holders for indexable inserts, the workpiece and chips can be hot after work. Wear protective gloves.

Regularly check the indexable insert holder (19). Repair/replace damaged or worn holders for the indexable inserts.

Regularly check all indexable inserts (20). Change damaged or worn indexable inserts.

 Turn/replace blunt indexable inserts or inserts where the coating is worn in due time. Blunt indexable inserts increase the risk that the machine will catch and breaks loose or that the indexable insert plate holder (19) is damaged.

-  Do not use heavily worn or defective indexable insert plates.
-  Always turn or replace all indexable inserts.
-  Use only indexable inserts approved by Metabo. See the Accessories Section.

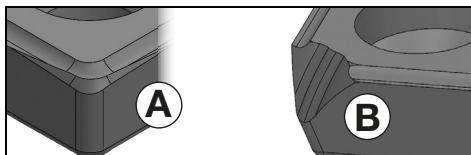
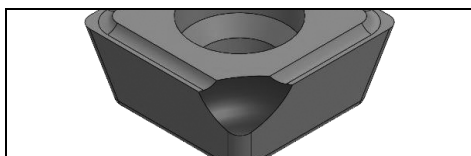


Figure A: Normal wear: turn / replace indexable insert.

Figure B: Wear after working on hard materials: turn / replace turning plate. In the event of heavier wear, do not use the indexable insert plate and instead replace.

1. Loosen the screws (13) and slide one chip protection plate (14) upwards.
2. Turn the indexable insert holder (19) manually if necessary.
3. Unscrew the fastening screw (21) and remove the indexable insert (20).
4. Clean indexable insert (20) and clamping surfaces on the indexable insert holder (19).
5. Turn the indexable insert or, if all blades are blunt, replace the indexable inserts.
6. Fix again the indexable insert (20) with a fastening screw (21). Torque: 3.5 Nm.
7. Slide the chip protection plate (14) all the way down. Tighten the screws (13).

Note: Causes for indexable inserts with broken corners or, in extreme cases, for broken indexable inserts, can include:



- Impacts on the indexable insert due to incorrect use: See chapter 8.3.
- Workpiece vibrations: Fix workpiece without vibrations using clamping devices.
- Indexable insert not correctly fastened: Always clean clamping surfaces and note torque.
- Indexable insert not correctly fastened: Strongly worn indexable inserts do not have sufficient contact surfaces and therefore may not be fastened sufficiently. Replace the strongly worn indexable inserts.

10. Cleaning

Pull the mains plug out of the socket.

Chips and particles can deposit at the milling head (19). This can lead to blockage of the milling head.


Regularly clean the milling head and its surroundings and remove chips and particles.


It is possible that particles deposit inside the power tool during operation. This impairs the cooling of the power tool. Conductive build-up can impair the protective insulation of the power tool and cause electrical hazards.

The power tool should be cleaned regularly, often and thoroughly through all front and rear air vents using a vacuum cleaner. Prior to this operation, separate the power tool from the power source and wear protective goggles and a dust mask.

11. Troubleshooting

KFM 15-10 F, KFMPB 15-10 F:

 **The electronic signal indicator (11) lights up and the load speed decreases.** There is too much load on the machine! Run the machine in idling until the electronic signal indicator switches off.

 **-The machine does not start. The electronic signal indicator (11) flashes** (depending on the model). The restart protection is active. If the mains plug is inserted with the machine switched on or if the power supply is restored following an interruption, the machine does not start up. Switch the machine off and on again.

KFM 16-15 F:

- **Restart protection:** if the mains plug is inserted with the machine switched on or if the power supply is restored following an interruption, the machine does not start up. Switch the machine off and on again.
- **Overload protection: there is a reduction in load speed. The coil temperature is too high!** Allow the machine to run at idle speed until it has cooled down.
- Switching on the machine briefly reduces the voltage. Unfavourable mains power conditions may have a detrimental effect on other machines. Power impedances less than 0.4 ohm should not cause malfunctions.

12. Accessories

Use only genuine Metabo accessories.

Use only accessories that fulfil the requirements and specifications listed in these operating instructions.

Fit accessories securely. If the machine is operated in a holder: secure the machine well. Loss of control can cause personal injury.

- A 10 HM universal inserts.....6.23564
- B Fastening screw for inserts6.23566
- C Cooling lubrication stick6.23443

For a complete range of accessories, see www.metabo.com or the catalogue.

13. Repairs



Repairs to power tools must only be carried out by qualified electricians!

Contact your local Metabo representative if you have Metabo power tools requiring repairs. See www.metabo.com for addresses.

You can download a list of spare parts from www.metabo.com.

14. Environmental Protection

Observe national regulations on environmentally compatible disposal and on the recycling of disused tools, packaging and accessories.

Packaging materials must be disposed of according to their labelling in accordance with municipal guidelines. Further information can be found at www.metabo.com in the "Service" section.



Only for EU countries: never dispose of power tools in your household waste! Used power tools must be collected separately and handed in for environmentally compatible recycling in accordance with European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in national legal systems.

15. Technical Specifications

Explanatory notes regarding the specifications on page 4. Subject to change in accordance with technical progress.

n	= No-load speed (maximum speed)
P_1	= Rated input power
P_2	= Power output
h_{\max}	= Max. chamfer height
b_{\max}	= Max. chamfer width
a	= Chamfer angle
d_{\min}	= Minimum pipe diameter
m	= Weight without mains cable

Measured values determined in conformity with EN 60745.

Machine in protection class II

~ AC power

The technical specifications quoted are subject to tolerances (in compliance with the relevant valid standards).



Emission values

These values make it possible to assess the emissions from the power tool and to compare different power tools. The actual load may be higher or lower depending on the operating conditions, the condition of the power tool or the accessories.

Please allow for breaks and periods when the load is lower for assessment purposes. Arrange protective measures for the user, such as organisational measures based on the adjusted estimates.

Vibration total value (vector sum of three directions) determined in accordance with EN 60745:

$a_{h, SG}$ = Vibration emission value

$K_{h, SG}$ = Uncertainty (vibration)

Typical A-weighted sound levels:

L_{pA} = Sound pressure level

L_{WA} = Acoustic power level

K_{pA}, K_{WA} = Uncertainty

The noise level can exceed 80 dB(A) during operation.



Wear ear protectors!

Electromagnetic disturbances:

In individual cases, the speed may fluctuate temporarily if the machine is exposed to extreme external electromagnetic disturbances or the electronic restart protection may respond. In this case, switch the machine off and on again.