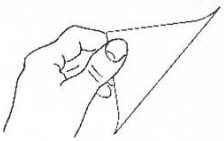
Elektrowerkzeuge ®

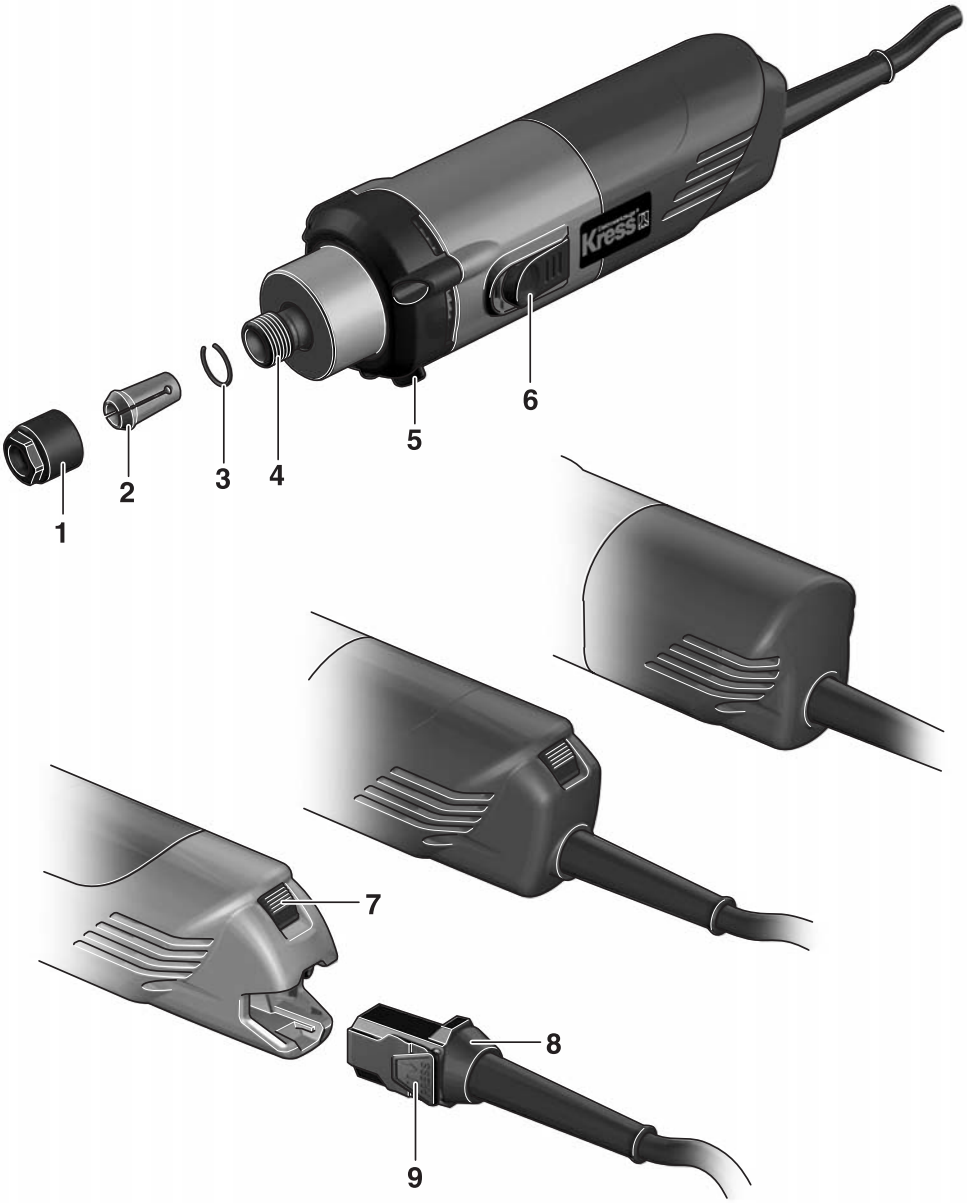
Kress

530 FM
800 FME
1050 FME
made in Germany

ME77

35664/0604

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1. Usage

The milling and grinding motor is an all-purpose device that is suitable for use as a routing machine in a drill stand or in a mill/drill system (possibly in connection with a milling table) for all milling work in wood, laminated wood and synthetic materials when the specified milling tools are being used. The milling and grinding motor can also be used for hand sanding and as a mechanism for high-speed flexible shafts.

This machine must only be used in accordance with the specified regulations.

You must not operate the motor manually without appropriate milling attachments.

This machine is manufactured in Germany by Kress-Elektrik GmbH & Co.KG.

Address: Hechinger Str. 48, D-72406 Bisingen, Germany.

2. Safety

Read the operating instructions fully before you start operating the machine and follow the accompanying safety instructions.

Before you start any work on the machine, disconnect the mains plug.

Disconnect the mains plug immediately if the mains cable is damaged while you are working.

Ensure that an expert immediately replaces the damaged mains cable.

Before you replace a tool, disconnect the mains plug!

For longer running work, wear hearing and breathing protection.

Wear protective goggles.

To label the machine, you must not drill the casing because this will overcome the protective insulation. Use adhesive labels.

Do not handle any asbestos-containing or other hazardous materials!

You may only operate the machine with the relevant protective devices.

Make sure that the milling tools are sharp. Blunt tools result in uneven milling work and lead to the motor being overloaded unnecessarily.

An even feed that is not too extensive will extend the service life of the milling cutter, prevent burn marks on the wood and protect the motor from becoming overloaded.

The allowed rotational speed of the insertion tool must be at least as high as the overspeed of the milling and grinding motor.

Ensure that the dimensions of the grinding tool fit the grinder.

You must store and operate the grinding discs carefully in accordance with the manufacturer's instructions.

Check the grinding disc before you use it and do not use any broken, flawed or otherwise damaged products.

Ensure that the grinding discs are mounted in accordance with the manufacturer's instructions.

Make sure that the grinding disc is mounted and fixed correctly before use. Run the tool at an idling speed of 30 s in a safe location and stop it immediately if it starts to vibrate significantly or if you notice other problems. If such a situation occurs, check the machine to determine the cause of the problem.

For grinding tools with thread inserts, make sure that the thread is long enough to accommodate the spindle length.

The workpiece is sufficient to secure in place.

Where the work is dusty, make sure that the vent holes are not obstructed. If you need to remove the dust, first disconnect the power tool from the power supply system (use non-metallic objects) and avoid damage to internal parts.

The grinding tool continues running after the tool has been disconnected.

Attention: Do not reach in the area of the milling cutter.

When storing the grinding motor, make sure that the machine is disconnected.

The spindle must not be clamped in the vice.

Clamp the milling motor on the clamping collar with a round flange on the entire area (euroneck). Isolated clamping destroys the bearing.

Take into account the specified rotational direction on the motor flange. Hold the device in such a way that the dust caused by the grinding and the flying sparks are away from the body but cannot cause any fire or other damage.

For heavier use, you must clamp the tool on the spindle and locknut using 2 SW 14/17 open-ended spanners.

3. Double insulation

Our machines are built to the highest possible degree of safety for users in accordance with European regulations (EN standards). Double-insulated machines are always labelled with the international ⧈ safety symbol. The machines must not be earthed. A two-core cable is sufficient. The machines have interference suppression in accordance with EN 55014.

4. Spare parts/exploded views

For exploded views and lists of spare parts, refer to our home page at http://www.spareparts.kress-elektrik.de.

5. Description of picture

The numbering of the parts of the milling and grinding motor refers to the display on the fold-out page.

1. Locknut
2. Collet chuck
3. Annular spring
4. Spindle
5. Locking button
6. On/off switch
7. Speed governor turning wheel
8. Mains cable module
9. Locking for mains cable module

Accessories displayed or described must not be part of the scope of delivery.

6. Wear parts

Annular spring	14348
Collet chuck	14820
Locknut	21208
Arresting pin	35370
Carbon brush	35635
Mains cable (530 FM/800 FME)	27794
Mains cable module (1050 FME)	27280

7. Noise/vibration information

Measured values are determined according to EN 50 144.

The A-rated noise level of the machine is typically as follows: sound pressure level 77 dB (A); sound power level 88 dB (A). Measurement uncertainty K=3 dB.

Wear hearing protection!

The rated speed is typically 11.6 m/s².

8. Technical data

530 FM

Power consumption	**530 W**
Power output	**270 W**
Idling speed	**29,000 min^{-1}**
Speed for rated load	**14,300 min^{-1}**
Tool fitting with collet chuck Ø	**8 mm**
Max. grinding tool Ø	**40 mm**
Max. milling diameter	**30 mm**
Dimension	**240x73 mm**
Weight	**1.3 kg**
Protection class	**II /** ⧈

800 FME

Power consumption	**800 W**
Power output	**420 W**
Idling speed	**10,000 – 30,000 min^{-1}**
Speed for rated load	**25,000 min^{-1}**
Tool fitting with collet chuck Ø	**8 mm**
Max. grinding tool Ø	**40 mm**
Max. milling diameter	**36 mm**
Dimension	**262x73 mm**
Weight	**1.4 kg**
Protection class	**II /** ⧈

1050 FME

Power consumption	**1050 W**
Power output	**560 W**
Idling speed	**10,000 – 30,000 min^{-1}**
Speed for rated load	**28,300 min^{-1}**
Tool fitting with collet chuck Ø	**8 mm**
Max. grinding tool Ø	**40 mm**
Max. milling diameter	**36 mm**
Dimension	**289x73 mm**
Weight	**1.7 kg**
Protection class	**II /** ⧈

9. Mounting a mains cable module (1050 FME)

Before you start any work on the machine, disconnect the mains plug.

Connect the mains cable module to the machine. The plug must lock into place.

You must not use damaged mains cables. These must be replaced immediately. Press the two locking buttons **9** and disconnect mains cable module **8**.

Only use the mains cable module for Kress power tools. Do not attempt to use it with other devices.

Only use original Kress mains cable modules.

10. Before the initial operation

CLAMPING THE TOOLS

The spindle **4** of the milling and grinding motor is equipped with a precision collet chuck **2** to hold the tools. A spindle lock enables you to tighten and loosen the locknut **1**. To clamp the tool, you lock the spindle **1** by pressing the locking button **5**. You tighten the locknut **1** using a SW 17 open-ended spanner. When you unclamp the tool, the spindle **4** in turn is locked. You loosen the locknut **1** by turning the open-ended spanner. You can remove the tool by continually turning the open-ended spanner.

REPLACING A COLLET CHUCK

An annular spring **3** holds the collet chuck **2** in the locknut **1**. By forceful turning, you can loosen the collet chuck **2** from the locknut **1**. Press down heavily to lock the new collet chuck into place in the locknut **1**.

⚠ **Caution! Lightly unscrew the locknut to protect the thread on the spindle but never tighten it if a tool is not being used. This might compress the collet chuck too much, which could lead to it becoming damaged.**

11. Initial operation

⚠ Before you start operating the machine, check whether the mains voltage corresponds to the information on the machine's tool identification plate.

SWITCHING ON THE MACHINE

Push the on/off switch **6** forward until the tilt lever is automatically locked into place.

SWITCHING OFF THE MACHINE

Press down and backwards on the on/off switch **6**. The switch returns to the Off position and the machine stops.

12. Operation

WORKING WITH THE MILLING MOTOR

Attention! Wear protective goggles and hearing protection!

When you use a drill stand or a mill/drill unit (possibly with a milling table), you must refer to the notes in the instructions for use provided there.

Also note that you must add the alignment fences as far as possible on the milling cutter, the hand deflector (screen) must be set down as tightly as possible on the workpiece surface and, for milling work, you must always use equipment that can guarantee safe use of the tool, for example, alignment fence, auxiliary bearings, automatic feeders or a non-return block for milling work.

The feed direction of the tool must always be the opposite of the circulation direction of the milling cutter (counter direction):

⚠ **Attention! Always mill in a counter direction!**

HANDS-FREE WORK

- Due to its low measurements and light weight, the milling and grinding motor is also extremely suitable for a lot of hands-free work. As a milling motor, the machine must only be operated using the appropriate attachments (tray router, laminate trimmers or stationary).

Only use milling, drill, polishing and grinding tools that are approved for high-speed operation (30,000 min^{-1}).

GRINDING WORK

When you use the milling and grinding motor as a grinder in a manual operation, you must take into account that the peripheral (circumference) speed must not exceed 80 m/s.

The peripheral (circumference) speed is calculated as follows:

$$V = \frac{d \times \pi \times n}{60\,000}$$

V = Peripheral (circumference) speed $\frac{m}{s}$

d = grinding tool Ø in mm

л = 3.14

n = Idling speed of the milling and grinding motor in revolutions/min.

Example: The grinding tool used has a diameter of 25 mm.

$$V = \frac{25 \times л \times 30\,000}{60\,000}\ \frac{m}{s} = 39.75\ \frac{m}{s}$$

The accepted overspeed is not exceeded. The maximum peripheral (circumference) speed allowed is reached with a grinding tool Ø of 50 mm. You must not use bigger grinding tools.

⚠ **Attention! After you use the insertion tool, perform a test run with an overspeed and make sure that no-one is within reach of the rotating insertion tool. Damaged tools usually break in this test period.**

Make sure that

- the grinding tool used is bound with ceramic or resin.
- the grinding tools are stored in such a way that they are not damaged (cracks in the grinding tool, damaged tool shanks and so on, mean that the user's life is in danger).
- before you use new grinding tools, you must carry out a test run for at least 5 minutes without the device being overloaded.

In practice

Note! Very high rotational speeds result in the tools wearing rapidly and consequently in low service lives for the tools!

⚠ **Important!** Only use sharp milling tools that are in good condition! Preferably use our original milling tools.

When you use other milling tools, the steady rotational speeds per minute indicated on the manufacturer's rotating tools must not be exceeded!

Subject to change without notice!

WORKING WITH FLEXIBLE SHAFTS

Due to its high rotational speed, the milling and grinding motor is also highly suitable as a drive motor for flexible shafts.

Note here that the maximum rotational speed of the flexible shaft must at least correspond to the rotational speed of the motor.

Attention! Wear protective goggles!

Full-wave electronic regulations (800 FME/ 1050 FME) with electronic motor protection monitoring (safety electronics). The following are integrated into these full-wave electronics with an built-in tachogenerator:

SOFT STARTER

The starting current limitation reduces the starting current. The motor revs up slowly until it reaches the preselected rotational speed. This can extend the service life of the machine.

ELECTRONIC OVERLOAD PROTECTION

With a load that is too high, which therefore implies a risk to the motor, the rotational speed of the milling motor is reduced by the integrated monitoring of the motor. The machine must be released (preferably remove it a short distance from the workpiece) to ensure that you can have full capacity again.

Electronic regulation with tachogenerator

The full-wave electronic regulation allows a large control range of 10,000 – 30,000 min^{-1}. If an overload situation occurs, the tachogenerator supplies the power. The preselected rotational speed is constantly adhered to. With the turning wheel **7** of the full-wave electronic regulations, irrespective of

- material (for example, hardwood, softwood, synthetics) and
- milling or grinding tool (for example, smaller diameter, lower quality, high quality)

the optimum cutting speed or working rotational speed is used. The required cutting speed or work rotational speed depends on many factors (for example, different hardness of the material to be processed, milling quality, feed, and so on). The best setting should be determined through tests at the beginning of the work.

13. Cleaning and maintenance

Before you start any work on the machine, disconnect the mains plug.

- Always keep the ventilation slots unobstructed and clean to guarantee constant ventilation.
- Regularly wipe the outside of synthetic parts with a detergent-free cloth.
- After each job, blow the dust from the fan. This will increase your machine's service life.

After extensive operational demands over a longer period of time, the machine should undergo an inspection and thorough cleaning at a Kress service centre.

14. Environmental Protection

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

Recycle raw materials instead of disposing as waste

The machine, accessories and packaging should be sorted for environmental-friendly recycling.

These instructions are printed on recycled paper manufactured without chlorine.

The plastic components are labelled for categorised recycling.