Festool GmbH
Wertstrasse 20
73240 Wendlingen
Germany

www.festoolusa.com

FESTOOL

Instruction manual - Router

Page 6

IMPORTANT: Read and understand all instructions before using.

Guide d'utilisation - Défonceuse

Page 15

IMPORTANT: Lire et comprendre toutes les instructions avant de démarrer les travaux.

Manual de instrucciones - Fresadora

Pagina 25

IMPORTANTE: Lea y comprende todas las instrucciones antes de usar.

Instruction manual
Guide d'utilisation
Manual de instrucciones

OF 1400 EQ

708205_001

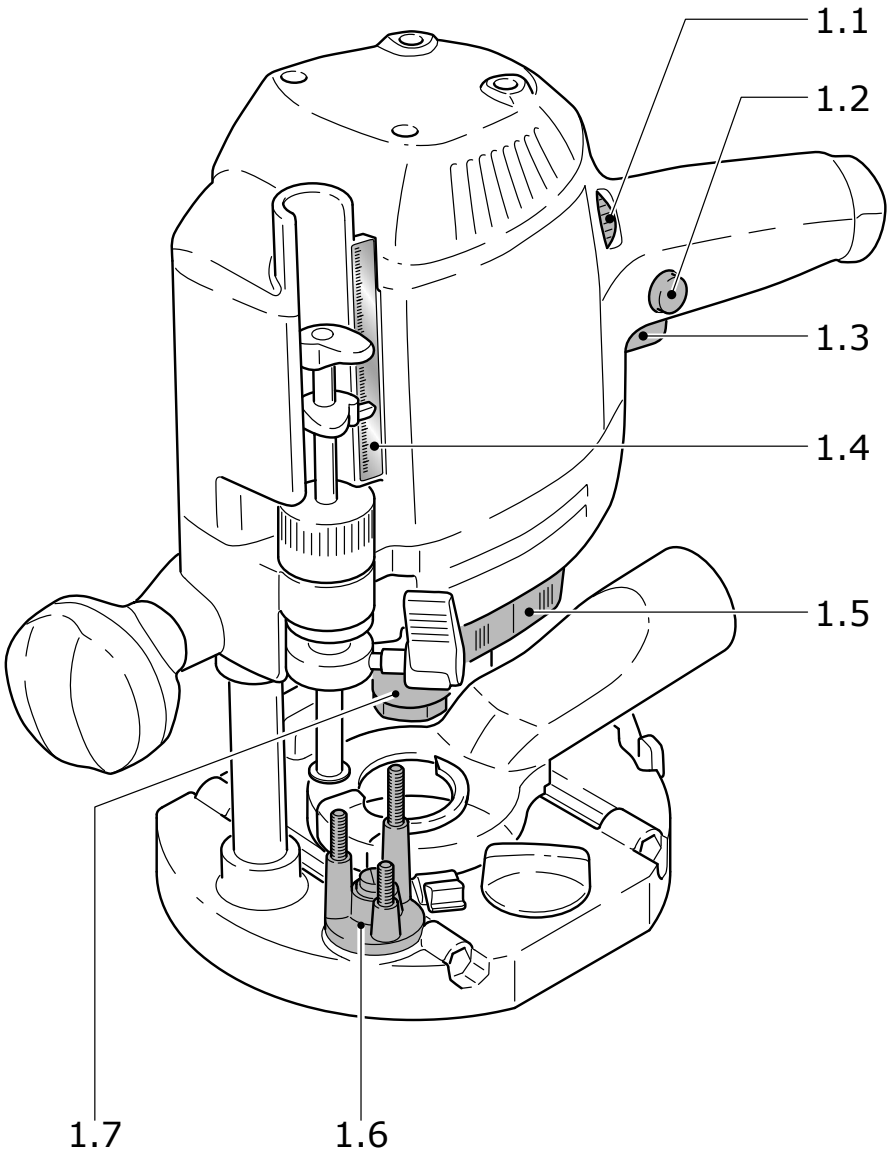

1.1
1.2
1.3
1.4
1.5
1.7
1.6

Table of contents

About this manual

Save these instructions

It is important for you to read and understand this manual. The information it contains relates to protecting **your safety** and **preventing problems**. The symbols below are used to help you recognize this information.

⚠DANGER	Description of imminent hazard and failure to avoid hazard will result in death.
⚠WARNING	Description of hazard and possible resulting injures or death.
⚠CAUTION	Description of hazard and possible resulting injuries.
! NOTICE	Statement including nature of hazard and possible result.
i HINT	Indicates information, notes, or tips for improving your success using the tool.

Safety instructions

⚠WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

General safety instructions

1) Work area safety

a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.

b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.

c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical safety

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.

b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

f) **If operating a power tool in a damp location is unavoidable, use a residual current device**

(RCD) protected supply. Use of an RCD reduces the risk of electric shock.

3) Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.

g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore, tool safety principles.** A careless action can cause severe injury within a fraction of a second.

4) Power tool use and care

a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

h) **Keep handles dry, clean and free from oil and grease.** Slippery handles do not allow for safe handling and control of the tool in unexpected situations.

5) Service

a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Specific safety instructions

a) Hold power tool by insulated gripping surfaces, because the cutter may contact its own cord. Cutting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.

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

Health hazard by dust

⚠WARNING Various dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
- Crystalline silica from bricks and cement and other masonry products,
- Arsenic and chromium from chemically-treated lumber.

The risk from these exposures varies, depending on how often you do this type of work.

To reduce your exposure to these chemicals work in a well ventilated area and use approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

⚠WARNING TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL.

Technical data

Power	12 A
Voltage	~ 120 V, 60 Hz
No load speed	10000 - 22500 min^{-1}
Quick height adjustment	2-3/4" (70 mm)
Fine height adjustment	5/16" (8 mm)
Router diameter, max.	2-7/16" (63 mm)
Drive shaft connection of the spindle	M 22x1
Weight	9.9 lbs (4.5 kg)
Protection class	⧈ / II

Symbols

Warning of general danger!

Risk of electric shock!

Read the Instructions!

Wear protective goggles!

V Volts
A Amperes
Hz Hertz
~ Alternating current
n_0 No load speed
⧈ Class II Construction
min^{-1}
rpm Revolutions or reciprocation per minute
Ø Diameter

Functional description

The pictures for the functional description are on a fold-out page at the beginning of the instruction manual. When reading of the manual you can fold out this page for having always an overview of the machine.

1.1 Speed controller
1.2 Locking button
1.3 On/Off switch
1.4 Scale
1.5 Spindle stop
1.6 Pivoted turret stop
1.7 Collet nut

Use for intended purpose

The routers are designed for routing wood, plastics and similar materials. Aluminium and plasterboard can also be processed with corresponding cutters such as are listed in the Festool catalogues.

⚠WARNING Festool electric power tools should only be installed in work benches specially designed by Festool. The electric power tool may become unsafe and cause serious accident if installed in benches from other manufacturers or self-manufactured work benches.

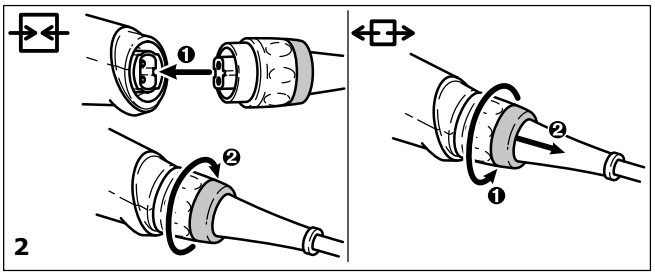
⚠WARNING The user is liable for damages and injuries due to incorrect usage.

Electrical connection

The network voltage must conform to the voltage indicated on the rating plate. A 16 A safety fuse (for 120 V) or a corresponding protective circuit-breaker is required.

See the following figure for connection and disconnection of the power cable.

⚠WARNING Always switch the machine off before connecting or disconnecting the power cable!



Extension cable

If an extension cable is required, it must have a sufficient cross-section so as to prevent an excessive drop in voltage or overheating. An excessive drop in voltage reduces the output and can lead to failure of the motor. The table below shows you the correct cable diameter as a function of the cable length for the router OF 1400 EQ. Use only U.L. and CSA listed extension cables. Never use two extension cables together. Instead, use one long one.

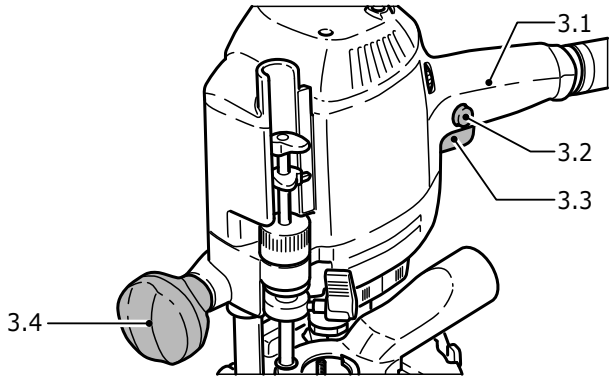
Total Extension Cord Lenght (feet)	25	50	100	150
Cord size (AWG)	16	14	12	10

Note: The lower the AWG number, the stronger the cable.

Switching the machine on and off

⚠WARNING Keep the machine steady during switching and during use by holding the handles (3.1, 3.4) with both hands.

Switch (3.3) serves as an On/Off switch. It may be latched with the locking knob on the side (3.2) for continuous operation. Pressing the switch again releases the lock.



⚠WARNING After the machine has been switched off, the milling cutter will still rotate for a time. Take care that parts of your body do not come into contact with the milling cutter while it is still rotating!

Tool settings

⚠WARNING Always disconnect the plug from the power supply before making any adjustments to the router or installing or removing any accessory!

Electronic control

The router OF 1400 EQ has solid shaft electronics with the following functions:

Smooth start-up:

The electronically controlled smooth start-up facility enables start-up of the machine without jerks and requires a lower start-up current.

Speed regulation:

Using the electronic speed control (1.1) the motor speed can be continuously adjusted from 10000 and 22500 rpm. The table below offers a guide to the correct electronic setting for various materials. The settings are naturally infinitely variable.

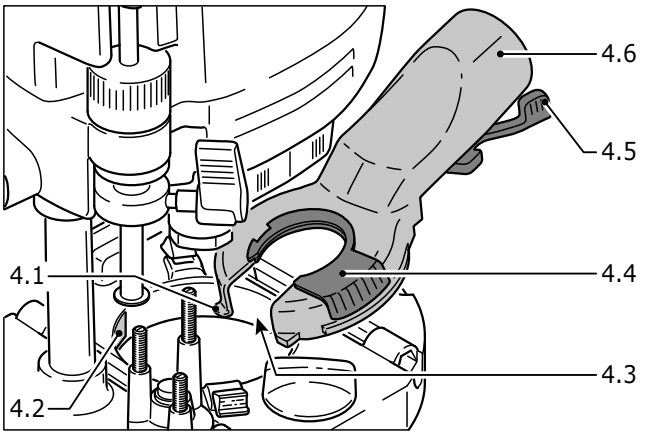
Material	Cutter diameter			Cutter material
	3/8" - 1" 10-25 mm	1" - 1-1/2" 25-40 mm	1-1/2" - 2-7/16" 40 -63 mm	
Hard wood	6-4	5-3	3-1	HW/HSS
Soft wood	6-5	6-4	5-3	HSS/HW
Panels	6-5	6-4	4-2	HW
Plastic	6-4	6-3	3-1	HW
Aluminium	3-1	3-1	2-1	HSS/HW
Plasterboard	2-1	1	1	HW

Constant speed:

The selected motor speed is electronically maintained to a constant level. By this means a uniform cutting speed is achieved.

⚠WARNING Do not work with the OF 1400 EQ if the electronic control is defective since this may lead to excessive speeds. A defect in the electronic control is indicated by the absence of a smooth run-up, a higher noise level at idle or the fact that no speed control is possible.

Chips extraction



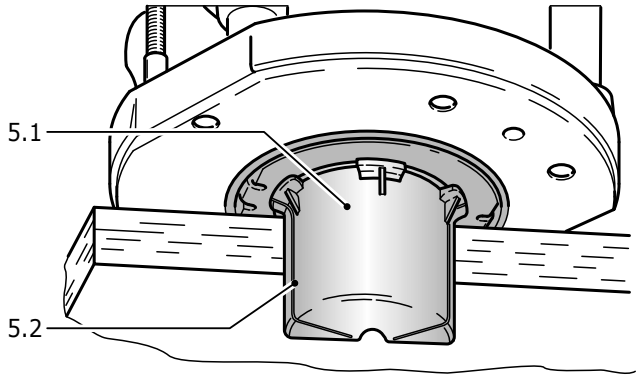
Chips and dust from routing can be removed by means of a extractor hood. See-through plastic material gives good view of rotating tool. You can connect a Festool extractor with an extractor hose diameter of 36 mm or 27 mm to the extractor connector (4.6). We recommend a diameter of 36 mm because it minimises the risk of blockages.

– Fit the extractor hood to the router base by first inserting the two tenons (4.1) on the extractor hood into the recesses (4.2) on the router base, then place the extractor hood on the router base and close the lever (4.5). To enable fitting and removing the extractor hood with the router attached, the recess (4.3) in the extractor hood can be opened by turning the segment (4.4). For optimised dust extraction, the recess with the rotating segment must be closed during work.

⚠CAUTION This suction hood can be used only for cutters up to 1-1/8" (28 mm)diameter.

Chip catcher KSF-OF

Using the KSF-OF chip catcher (5.1) (sometimes included in the scope of delivery), the efficiency of the extraction can be increased when routing edges.

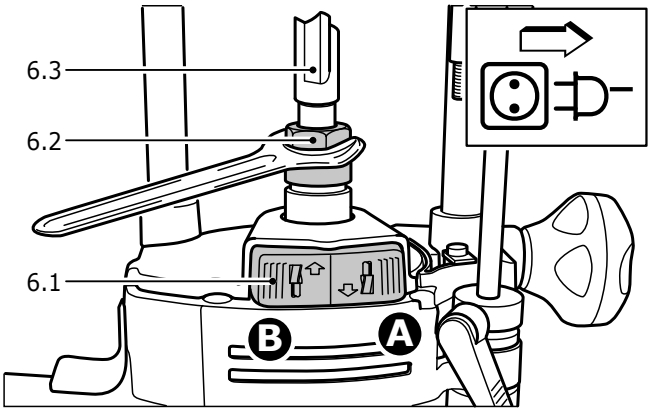


Installation is similar to that of the copying ring (see fig. 12).

The hood can be cut off along the grooves (5.2) using a hacksaw and can thus be reduced in size. The chip catcher can then be used for interior radiuses up to a minimum radius of 1-1/2" (40 mm).

Milling cutters

⚠WARNING Do not exceed the maximum speed specified on the tool and/or keep to the speed range. Cracked or distorted cutters must not be used.



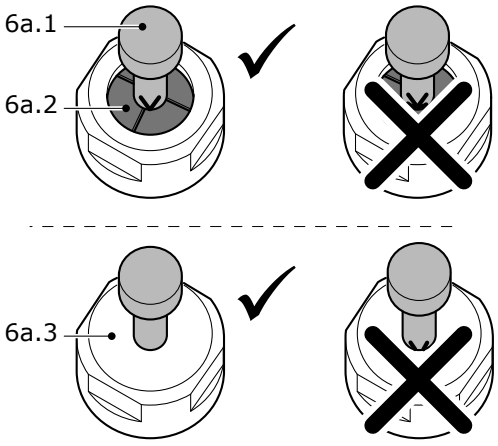
You can turn the machine upside down when changing the tool.

Inserting the tool

– Insert the router (6.3/6a.1) into the open clamping collet (6a.2) as far as possible, but at least up to the mark ⩛ on the router shank. If the collet is not visible because it is blocked by the union nut (6a.3), the milling tool must be inserted into the collet at least far enough that the marker ⩛ no longer overlaps with the union nut.

– Press the switch (6.1) for locking the spindle on the right-hand side (A).

– Tighten the locking nut (6.2) with a 24 mm open-end spanner.



Removing the tool

– Press the switch (6.1) for locking the spindle on the left-hand side (B).

– Undo the nut (6.2) using an open-end wrench (SW 24) until you are able to remove the tool.

Note: the spindle lock only blocks the motor spindle in one direction of rotation at any one time. Therefore when the nut is undone or tightened, the wrench does not need to be offset but can be moved back and forth like a ratchet.

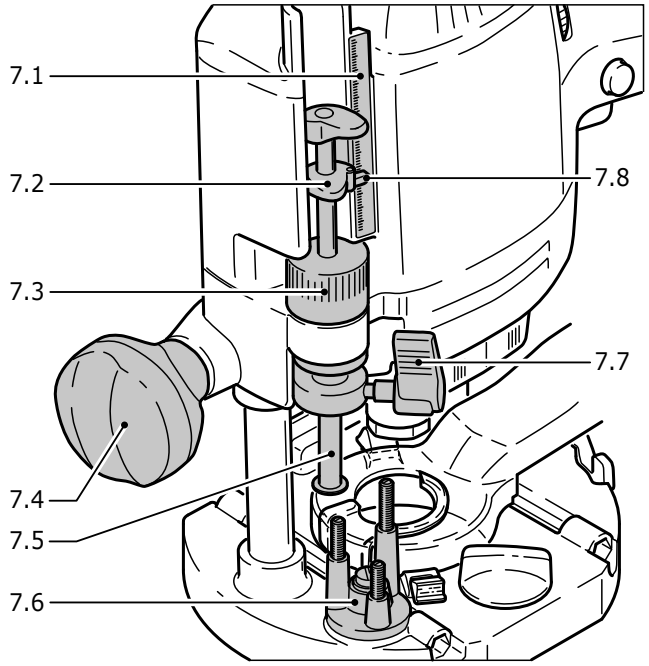
Clamping collet changing

– Press the switch (6.1) for locking the spindle on the left-hand side. Fully unscrew the nut (6.2) and remove from spindle together with the clamping collet.
– Press the switch (6.1) for locking the spindle on the right-hand side. Insert a new clamping collet with nut into the spindle and slightly tighten the nut. Do not tighten the nut until a milling cutter has been fitted.

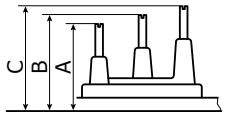
Adjusting the milling depth

The milling depth is adjusted in three stages:

a) Setting the zero point



– Open the clamping lever (7.7) so that the stop cylinder (7.5) can move freely.
– Place the router with router table onto a smooth surface. Open the rotary knob (7.4) and press the machine down until the milling cutter rests on the base. Clamp the machine tight in this position with the rotary knob (7.4).
– Press the stop cylinder against one of the three sensing stops of the pivoted turret stop (7.6).
– The individual height of each sensing stop can be adjusted with a screwdriver.

Sensing stop		min. height	max. height
	A	1-13/16" (47 mm)	2-5/16" 60 mm
	B	2-1/16" (53 mm)	2-7/8" 74 mm
	C	2-5/16" 60 mm	3-3/8" 86 mm

– Push the pointer (7.2) down so that it shows 0 mm on the scale (7.1).

If the base position is incorrect, this can be adjusted with the screw (7.8) on the indicator.

b) Setting the milling depth

The desired milling depth can be set either with the quick depth adjustment or with the fine depth adjustment.

Quick depth adjustment:

– Pull the stop cylinder (7.5) up until the pointer shows the desired milling depth. Clamp the stop cylinder in this position with the clamping lever (7.7).

Fine depth adjustment:

– Clamp the stop cylinder with the clamping lever (7.7). Set the desired milling depth by turning the adjusting wheel (7.3) in. Turn the adjusting wheel to the next mark on the scale to adjust the milling depth by 0.004" (0.1 mm). One full turn adjusts the milling depth by ~1/16" (1 mm). The maximum adjustment range with the adjusting wheel is 5/16" (8 mm).

c) Increasing the milling depth

– Open the rotary knob (7.4) and press the tool down until the stop cylinder touches the sensing stops.
– Clamp the machine in this position by tightening the rotary knob (7.4).

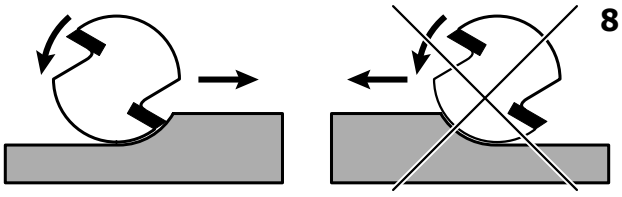
Working with the router

⚠WARNING Always secure the workpiece in such a manner that it cannot move while being sawed.

⚠WARNING The machine must always be held with both hands by the designated handles.

⚠WARNING Always switch the router on first before bringing the tool into contact with the workpiece!

⚠WARNING Always advance the router in the same direction as the cutting direction of the cutter (counter-routing)!



Support of the workpieces

⚠WARNING Ensure that your workpieces are securely fixed and cannot move during routing. Otherwise, there is an increased risk of accident. Use screw clamps or some other suitable devices to fix your workpiece.

Aluminium processing

⚠WARNING The following precautions are to be taken when processing aluminium for safety reasons:

- Pre-connect a residual current circuit-breaker.
- Connect the machine to a suitable dust extractor.
- Clean tool regularly of dust accumulations in the motor housing.
- Wear protective goggles.

Freehand routing

Freehand routing is the method normally used for lettering or shapes, and for routing edges using cutters with a guide pin or ring.

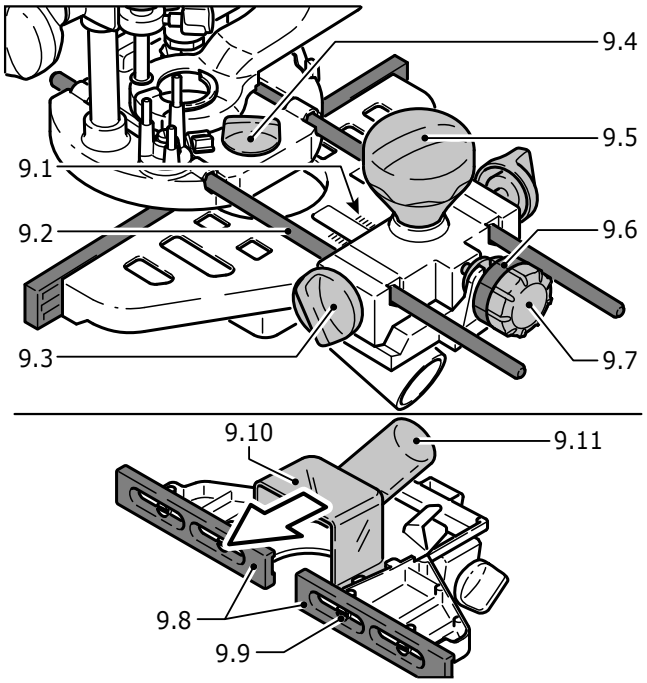
Routing with the parallel guide

The parallel guide (accessory) can be used for routing parallel to the edge of the workpiece.

– Secure both guide rods (9.2) with the two rotary knobs (9.3) on the side stop.
– Insert the guide rods into the grooves on the router base to the required distance and secure them by turning the rotary knob (9.4).

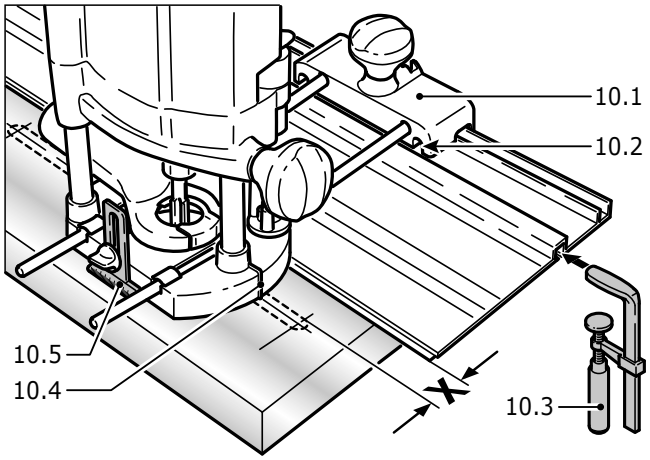
Fine adjustment:

– Unscrew the rotary knob (9.5) to make fine adjustments with the adjusting wheel (9.7). The scale ring (9.6) has a 0.1 mm scale for this purpose. If the adjusting wheel is held secure, the scale ring can be turned separately and set to „Zero“. The millimetre scale (9.1) on the main casing is useful when making larger adjustments. Tighten the rotary knob (9.5) again on completion of any fine adjustments.
– Adjust both guidance jaws (9.8) so that they are approx. 7/32" (5 mm) from the router. To do this, undo screws (9.9) and tighten again after completing the adjustments.
– Slide the extractor hood (9.10) from behind until it latches into place on the side stop. You can connect an extractor hose with a diameter of 27 mm or 36 mm to the extractor connector (9.11).



Routing with the FS guide system

The guide system (accessory) facilitates routing straight grooves.

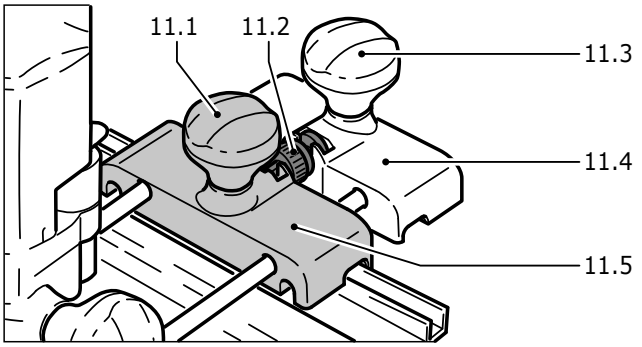


– Fasten the guide stop (10.1) to the platen with the guide rails of the parallel guide.
– Fasten the guide rail with FSZ screw clamps (10.3) to the workpiece. Make sure that the safety distance X of 7/32" (5 mm) between the front edge of the guide rail and cutter or groove is observed.
– Place the guide stop onto the guide rail as shown in Fig. 10. To ensure a backlash-free guidance of the router stop you can adjust two guide cheeks with a screwdriver through the side openings (10.2).

– Screw the height-adjustable support (10.5) of the router table's threaded bore in such a way that the underside of the router table is parallel to the surface of the workpiece.

When working with marking-up lines, the marks on the platen (10.4) and the scale on the support (10.5) show the centre axis of the cutter.

Fine adjustment



The distance X (fig. 10) of the router to the guide rail can be set finely using the fine adjustment (Accessories).

– Fit the fine adjustment (11.5) between the router and guide stop (11.4) on the guide bars.
– Insert the adjusting wheel (11.2) for the fine adjustment in the recesses of the fine adjustment and guide stop, and screw the thread of the adjusting wheel approximately half way into the nut of the fine adjustment.
– To set, close the rotary knob (11.3) of the fine adjustment and open the rotary knob (11.1) of the guide stop.
– After making the setting, close the rotary knob (11.1) of the guide stop.

Copy cutting

A copying ring or the copying device is used to exactly reproduce existing workpieces (both available as accessories).

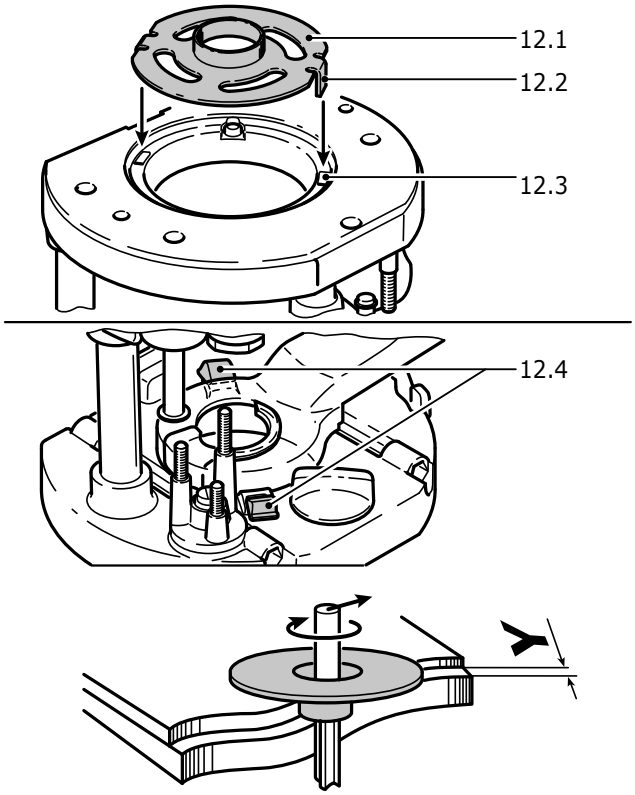
▶ It comes with an adapter plate for imperial templet guides included.

a) Copying ring

– Secure the copying ring (12.1) to the router base by inserting both tenons (12.2) into the recesses (12.3).
– To loosen the copying ring, press both buttons (12.4) inwards simultaneously.

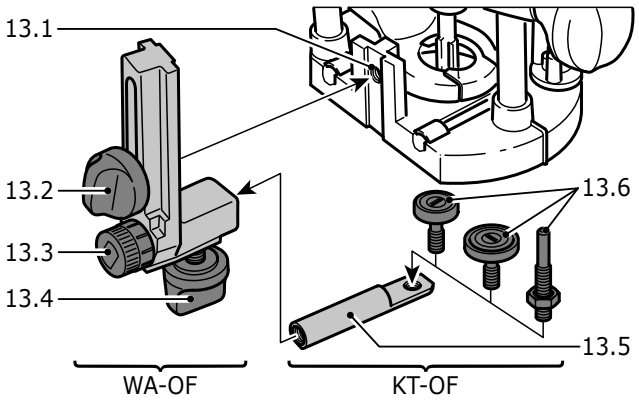
⚠CAUTION When choosing the size of the copying ring make sure that the cutter used fits through the ring's opening.

The distance Y between the workpiece and template is calculated by Y = 1/2 (Ø copying ring - Ø cutter)



b) Copying device

The angle arm WA-OF and copier scanning set KT-OF, consisting of roller holder (13.5) and three copying rollers (13.6), are required for the copying device.



– Screw the angle arm at the desired height in the platen's threaded bore (13.1) with the rotating knob (13.2).
– Fit a copying roller in the roller holder and bolt this to the angle arm with the rotating knob (13.4). Make sure that the copying roller and cutter have the same diameter!
– Turn the adjusting wheel (13.3) to adjust the distance between the copying roller and cutter axis.

Accessories, tools

⚠WARNING For safety reasons, only use original Festool accessories and tools!

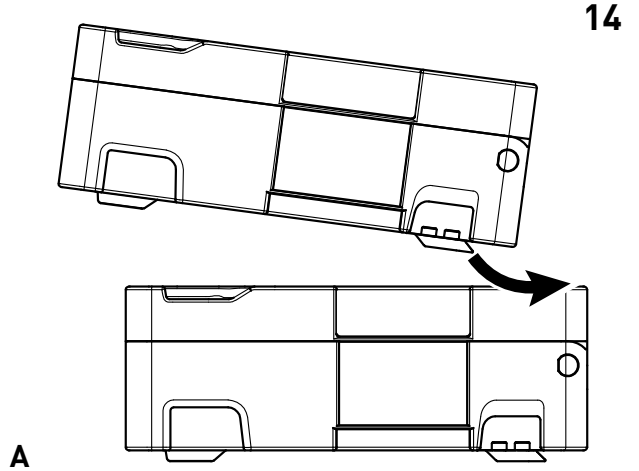
Festool offers a wide range of accessories for the routers, e.g. to make wooden joints or drill rows of holes.

The accessory and tool order number can be found in the Festool catalogue or on the Internet under **www.festoolusa.com**.

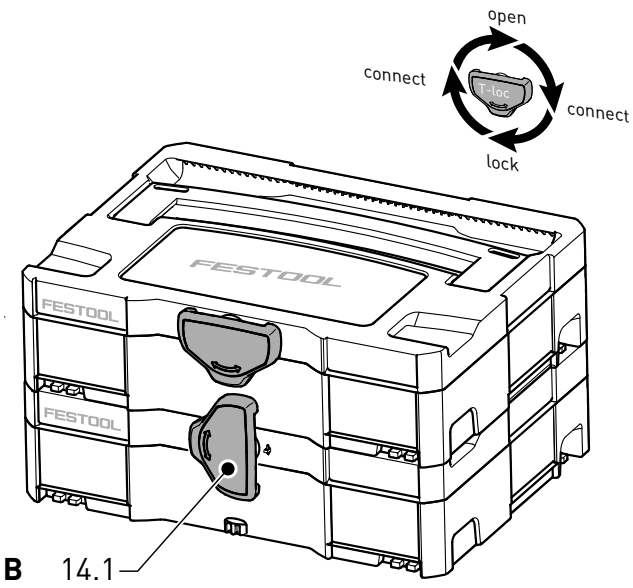
Systainer

Many Festool products are shipped in a unique system container, called "Systainer". This provides protection and storage for the tool and accessories. The Systainers are stackable and can be interlocked together. They also can be interlocked atop Festool CT dust extractors.

14



A



B 14.1

– To open the Systainer:
  • Turn the T-loc [14.1] to the position .
– To lock the Systainer:
  • Turn the T-loc [14.1] to the position .
– To connect two Systainers:
  • Place one Systainer on the top of the other (Fig. 14 A).
  • Turn the T-loc [14.1] to the position or (Fig. 14 B).

  The Systainers are connected and locked.

▶ A new generation Systainer is connectable on top of a previous generation Systainer by the four latches of the previous Systainer.

Servicing and maintenance

⚠WARNING Any maintenance or repair work that requires opening of the motor or gear housing should only be carried out by an authorised Customer Service Centre (name supplied by your dealer)! Maintenance or repair work carried out by an unauthorised person can lead to the wrong connection of the power leads or other components, which in turn can lead to accidents with serious consequences.

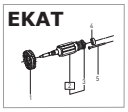
⚠WARNING To prevent accidents, always remove the plug from the power supply socket before carrying out any maintenance or repair work on the machine! Do not use compressed air to clean the electrical tool! Do not try to clean parts inside the machine in this way, as you could let foreign objects in through the openings of the machine housing.

⚠CAUTION Certain cleaning agents and solvents are harmful to plastic parts. Some of these are: gasoline, carbonyl chloride, cleaning solutions containing chlorine, ammonia and household cleaners containing ammonia.

▶ To assure the circulation of air, the cool air vents in the motor housing must always be kept clear and clean.

▶ This unit is fitted with special, automatically disconnecting carbon brushes. If these become worn, the current is automatically switched off and the unit shuts down. In this case, take the unit to an authorised Customer Service Centre and have the carbon brushes changed.

Customer service and repair only through manufacturer or service workshops: Please find the nearest address at: www.festoolusa.com/service



Use only original **Festool spare parts**! Order No. at:

www.festoolusa.com/service