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# FESTOOL

## Instruction manual

Page 3

**IMPORTANT:** Read and understand all instructions before using.

## Guide d'utilisation

Page 11

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

## Manual de instrucciones

Pagina 20

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

Instruction manual  
Guide d'utilisation  
Manual de instrucciones

## RAS 115 E



706246\_004



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## About this manual

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### 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.

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|                 |  |
|-----------------|--|
| <b>⚠ DANGER</b> | Description of imminent hazard and failure to avoid hazard will result in death. |
|-----------------|--|

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|                  |   |
|------------------|---|
| <b>⚠ WARNING</b> | Description of hazard and possible resulting injuries or death. |
|------------------|---|

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|                  |  |
|------------------|--|
| <b>⚠ CAUTION</b> | Description of hazard and possible resulting injuries. |
|------------------|--|

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|                 |   |
|-----------------|---|
| <b>ⓘ NOTICE</b> | Statement including nature of hazard and possible result. |
|-----------------|---|

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|               |  |
|---------------|--|
| <b>ⓘ HINT</b> | Indicates information, notes, or tips for improving your success using the tool. |
|---------------|--|

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## Safety instructions

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**⚠ 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

- Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- 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.
- Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

### 2) Electrical safety

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

- 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 medi-**

**cation.** 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.

#### General safety instructions for sanding

- a) **This power tool is intended to function as a sander. 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.
- b) **Operations such as grinding, polishing, wire brushing or cutting-off are not recommended to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.
- c) **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.
- d) **The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** Accessories running faster than their rated speed can break and fly apart.
- e) **The outside diameter and the thickness of accessories must be within the capacity rating of**

**your power tool.** Incorrectly sized accessories cannot be adequately guarded or controlled.

- f) **Threaded mounting of accessories must match the grinder spindle thread. For accessories mounted by flanges, the arbour hole of the accessory must fit the locating diameter of the flange.** Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.
- g) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** Damaged accessories will normally break apart during this test time.
- h) **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and shop 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.
- i) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.
- j) **Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- k) **Position the cord clear of the spinning accessory.** If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.
- l) **Never lay the power tool down until the accessory has come to a complete stop.** The spinning

accessory may grab the surface and pull the power tool out of your control.

- m) **Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.
- n) **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.
- o) **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
- p) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

## Further safety instructions for all operations

### Kickback and Related Warnings

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn 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 abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

- a) **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up.** The operator can control torque reactions or kickback forces, if proper precautions are taken.
- b) **Never place your hand near the rotating accessory.** Accessory may kickback over your hand.
- c) **Do not position your body in the area where power tool will move if kickback occurs.** Kick-

back will propel the tool in direction opposite to the wheel's movement at the point of snagging.

- d) **Use special care when working corners, 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.
- e) **Do not attach a saw chain woodcarving blade or toothed saw blade.** Such blades create frequent kickback and loss of control.

### Safety Warnings Specific for Sanding Operations

- a) **Do not use excessively oversized sanding disc paper. Follow manufacturers recommendations, when selecting sanding paper.** Larger sanding paper extending beyond the sanding pad presents a laceration hazard and may cause snagging, tearing of the disc or kickback.

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

**⚠ 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.

### Technical data

|                   |                        |
|-------------------|------------------------|
| Wattage           | 500 W                  |
| Speed             | 4000 min <sup>-1</sup> |
| Max. speed*       | 5000 min <sup>-1</sup> |
| Sanding base dia. | 115 mm (4.5 in.)       |
| Spindle thread    | M 14                   |
| Weight            | 1.6 kg (3.5 lbs.)      |
| Safety level      | □ / II                 |

\*Max. possible speed with faulty electronics.

### Symbols



Warning of general danger



Read the Operating Instructions/Notes!



Wear ear protection.



Wear eye protection.



Wear a dust mask!

|                        |                        |
|------------------------|------------------------|
| V                      | Volts                  |
| A                      | Amperes                |
| Hz                     | Hertz                  |
| W                      | Watt                   |
| ~                      | Alternating current    |
| n                      | Speed                  |
| □                      | Class II Construction  |
| rpm/ min <sup>-1</sup> | Revolutions per minute |
| ∅                      | Diameter               |

### Intended use

The RAS 115 E is designed for sanding wood, plastics, stone, composite materials, paints / lacquers, fillers, stoppers and similar materials.

**⚠ WARNING** Never use the tool for grinding or cutting metal. Materials containing asbestos must not be processed.

**⚠ WARNING** Never fasten grinding disks on the tool. Work only with the provided sanding pad and whereupon fastened abrasives.

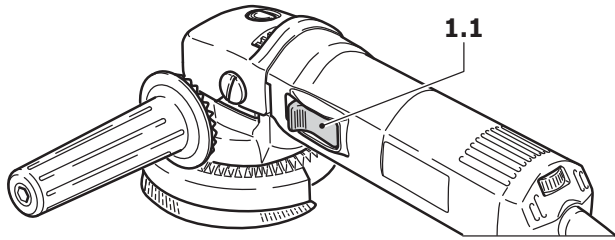
**⚠ WARNING** The device is unsuitable for wet sanding for reasons of electrical safety.

If explosive or self-inflammable dusts are produced when sanding certain materials, refer to the processing instructions of the material manufacturer.

**⚠ WARNING** The user bears sole responsibility for any damage or accidents resulting from incorrect use.

## Electrical connection and operation

**⚠ WARNING** The mains voltage must correspond to the voltage on the rating plate!



To switch the tool on, push the safety sliding switch (1.1) forwards. The tool is switched off by gently pressing the rear end of the switch.

## Extension cord

If an extension cord is required, it must have sufficient cross-section 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 cord diameter as a function of the cord length for the RAS 115 E.

|                                    |    |    |     |     |
|------------------------------------|----|----|-----|-----|
| Total Extension Cord Length (feet) | 25 | 50 | 100 | 150 |
| Cord size (AWG)                    | 18 | 16 | 16  | 14  |

Use only U.L. and CSA listed extension cords. Never use two extension cords together. Instead, use one long one.

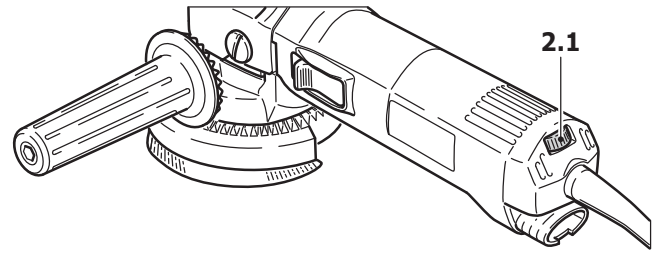
**Note:** The lower the AWG number, the stronger the cord.

## Electronic control

The tool has full-wave electronics with the following features.

**⚠ WARNING** Do not use the rotary sander if the electronic control is defective, since this can lead to excessive speeds. A defect of this kind can be recognized by the fact that the smooth run-up is absent, the noise level under no-load conditions is higher or the speed cannot be controlled.

## Speed adjustment



You can regulate the speed steplessly between 1500 and 4000 rpm using the adjusting wheel (2.1). This lets you optimize the sanding speed to suit the material (see "Working with the tool").

## Smooth start-up

The smooth start-up ensures jolt-free startup.

## Constant speed

The pre-selected speed remains constant whether the tool is in operation or in neutral position.

## Temperature control

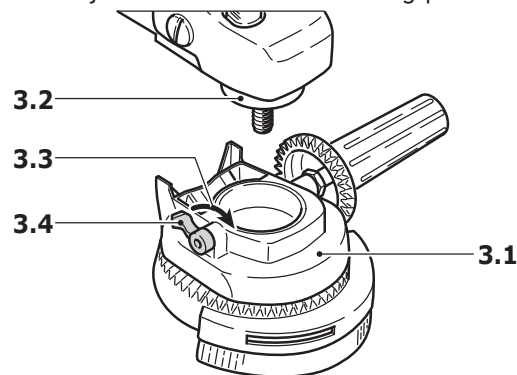
To prevent overheating, the safety electronics switch the tool off when it reaches a critical motor temperature. Let the tool cool down for approx. 3-5 minutes before using it again. The tool requires less time to cool down if it is running, i.e. in neutral position.

## Tool settings

**⚠ WARNING** Always remove the power plug from the socket before carrying out any work on the power tool.

### Extraction hood AH-RAS D 115

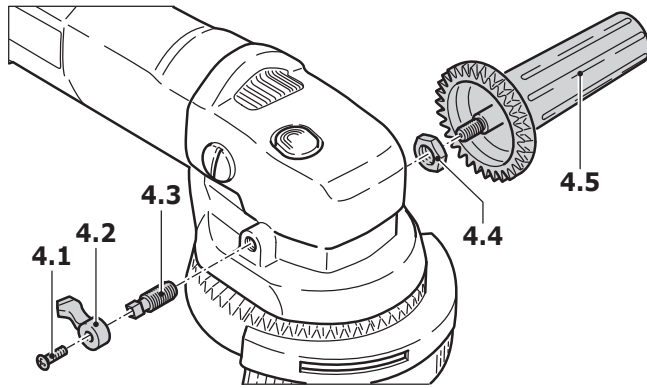
The extraction hood AH-RAS D 115 (3.1) can be used in conjunction with the sanding pads STF D 115.



#### a) Fitting

Before fitting the extractor hood, ensure that the clamping lever is in "released" position (3.4). Press the extractor hood onto the clamping throat (3.2) of

the rotary sander and secure the hood by moving the clamping lever forward (3.3).



Do not work with the machine unless the extractor hood is clamped firmly and securely to the clamping throat. If the clamping force is reduced as the result of frequent use, the clamping lever can be re-adjusted.

- Release the screw (4.1) on the clamping lever and remove the lever (4.2).
- Tighten the square-headed screw (4.3) by hand until a tension is obtained.
- Re-fit the clamping lever and secure it with the screw. The optimum clamping force can be determined by closing the clamping lever before the clamping screw is tightened.

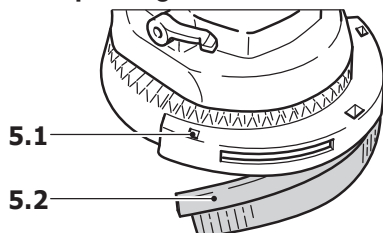
### b) Repositioning the rotatable handle

The rotatable additional handle can, if required, also be fitted to the right-hand side of the extractor hood. For this purpose, the handle and the clamping lever should be interchanged.

- Release the screw (4.1) on the clamping lever and remove the lever (4.2).
- Remove the square-headed screw (4.3).
- Detach the additional handle (4.5), using a 6 mm A/F Allen key.

The clamping lever and the additional handle can now be interchanged. Fitting is carried out in the reverse of the above sequence. The locking nut (4.4) can be used to vary the turning resistance of the rotatable additional handle by tightening the nut against the housing, using a 13 mm A/F open-ended wrench, before fully tightening the additional handle.

### c) Replacing the brush insert



In order to replace this, press out the brush insert by inserting a screwdriver through the square apertures (5.1). Insert the new brush strip (5.2) into the groove, slightly bend this to obtain the correct radius and press in firmly until the brush strip is in contact with the base of the hood. The inclination of the brush bristles must point outwards.

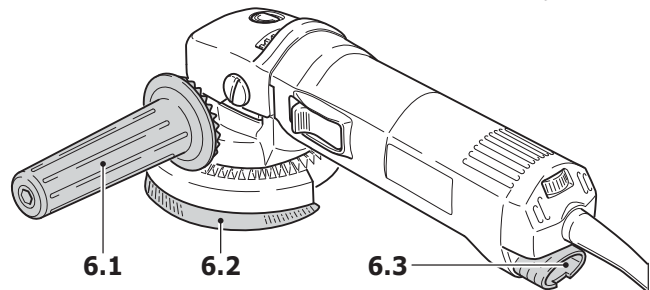
Two different brush inserts are available:

- AH-RAS D 115 Poly (484727): Pack of 2 polyamide brushes (replacement for worn originals)
- AH-RAS D 115 metal (484728): Pack of 1 metal brush (for use with spark-generating materials)

### d) Sanding with dust extraction

For dust extraction, the suction hose (27 mm dia.) of a Festool dust extractor should be inserted into the connection socket (6.3) at the end of the rotary sander housing.

The brush ring (6.2) can be adjusted by means of the additional rotatable handle (6.1). This makes it possible to achieve an optimum setting for the working position used. Always turn the brush ring into the direction of travel of the sanding dust. A considerable quantity of air-borne sparks are generated during the sanding of metals and other spark-generating materials. For safety reasons, therefore, a spark-trap (484733) must be fitted between the extractor hood and the rotary sander.



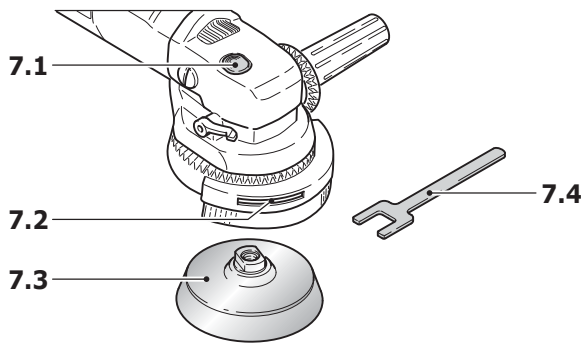
### Fitting tool inserts

**⚠ WARNING** Use only tool inserts whose maximum permissible speed is at least equal to the speed given on the rating plate of the rotary sander. This is the case with all original Festool accessories.

The Stickfix sanding pads STF D 115 are provided with an M 14 thread which enables these to be screwed directly onto the drive spindle.

It is normally possible to unscrew the sanding pad (7.3) by hand from the drive spindle after pressing the spindle stop (7.1).

**⚠ CAUTION** Actuate the spindle stop only when the drive spindle is stationary. Do not switch on the motor when the spindle stop is pressed in.



In case the pad should seize:

- Remove the brush insert.
- Insert the special spanner (7.4) through the slot (7.2) and place on spanner flats of tool.
- Release the tool with the spindle stop pressed by turning the special spanner.

**Please note:** Always screw the sanding pad onto the drive spindle by hand. This will make it considerably easier to remove it subsequently.

### Attaching the abrasive



Stickfix is a hook-and-loop fastening system. Stickfix sanding pads allow the use of self-adhesive hook-and-loop abrasives such as Stickfix sandpapers and sanding cloths.

Simply press the abrasive onto the sanding pad and pull it off again after use.

**⚠ WARNING** Use only abrasives with an undamaged Stickfix hook-and-loop coating. Before use, check that the coating has not been damaged by improper use (such as overheating).

**⚠ WARNING** In the case of a weakening adhesive effect of the StickFix surface, the sanding pad accessories, in particular those which are not yet touching the workpiece, **may come loose from the sanding pad and cause injuries**. Replace the sanding pad!

**⚠ CAUTION** The Mini-Stickfix D 52 sanding pad was developed for use in confined spaces and with small areas. This small-diameter pad and the affixed abrasive will inevitably heat up in use more than larger pads, since the same pressure is distributed over a smaller area. Sand only with moderate pressure and do not sand continuously for too long. Lift the sander off the workpiece at intervals to allow friction heat to dissipate.

## Working with the tool

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

**⚠ CAUTION** Never overload the tool by using too much pressure! The best sanding results are achieved when applying moderate pressure. Sanding performance and quality depend primarily on the choice of the right abrasive.

**⚠ WARNING** For safe guidance, always hold the tool with both hands.

We recommend the following settings on the rotary control (2.1) for electronic machines:

### 6

- Sanding hard GRP components (limited suitability).

### 3 - 6

- Sanding off dry, cracked paint.
- Stripping anti-fouling paints.
- Sanding wood.

### 2 - 4

- Sanding paint/varnish with tendency to smear
- Light sanding of thin top coats of paint.
- Cleaning sandstone, concrete, formwork materials.

### 1 - 2

- Sanding thermoplastic materials.

## Maintenance and care

**⚠ WARNING** All maintenance or repair work requiring the motor housing to be opened must be carried out only by an authorized service workshop. Maintenance or repair work carried out by an unauthorized person can lead to the incorrect connection of the wiring or other components, which in turn can lead to accidents with serious consequences.

**⚠ WARNING** Always remove the plug from the mains supply socket before carrying out any work on the machine!

Always keep the tool and in particular the ventilation slots clean.

The tool is fitted with special motor brushes with an automatic cut-out. When the brushes become worn the power supply is shut off automatically and the tool comes to a standstill.





**Customer service and repair.** Only through manufacturer or service workshops: Please find the nearest address at: [www.festoolusa.com/Service](http://www.festoolusa.com/Service)



Use only original Festool spare parts! Order No. at: [www.festoolusa.com/Service](http://www.festoolusa.com/Service)


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.

## Accessories, tools


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

The accessory and tool order number can be found in the Festool catalog or on the Internet under [www.festoolusa.com](http://www.festoolusa.com).



### To open the Systainer:

- Turn the T-loc (8.1) to the position .

### To lock the Systainer:

- Turn the T-loc (8.1) to the position .

### To connect two Systainers:

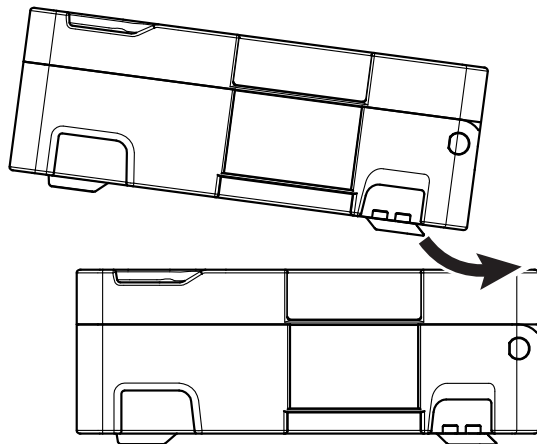
- Place one Systainer on the top of the other (Fig. 8 A).
- Turn the T-loc (8.1) to the position  or  (Fig. 8 B).

The Systainers are connected and locked.

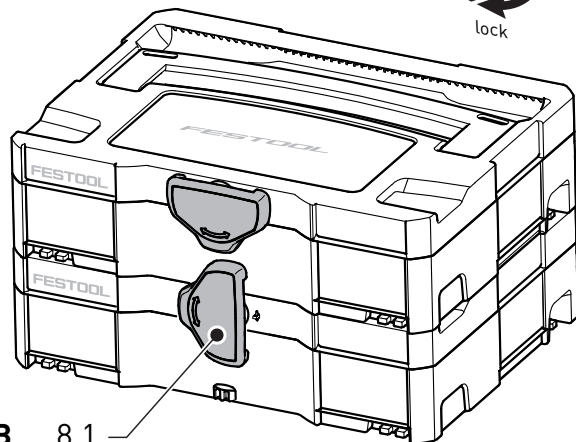
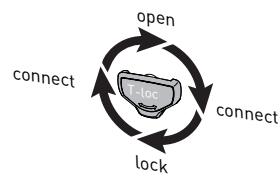
- ▶ A new generation Systainer is connectable on top of a previous generation Systainer by the four latches of the previous Systainer.

## Systainer

8



A



B 8.1