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FESTOOL

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Instruction manual

Page 6

IMPORTANT: Read all instructions before using.

Guide d'utilisation

Page 18

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

Manual de instrucciones

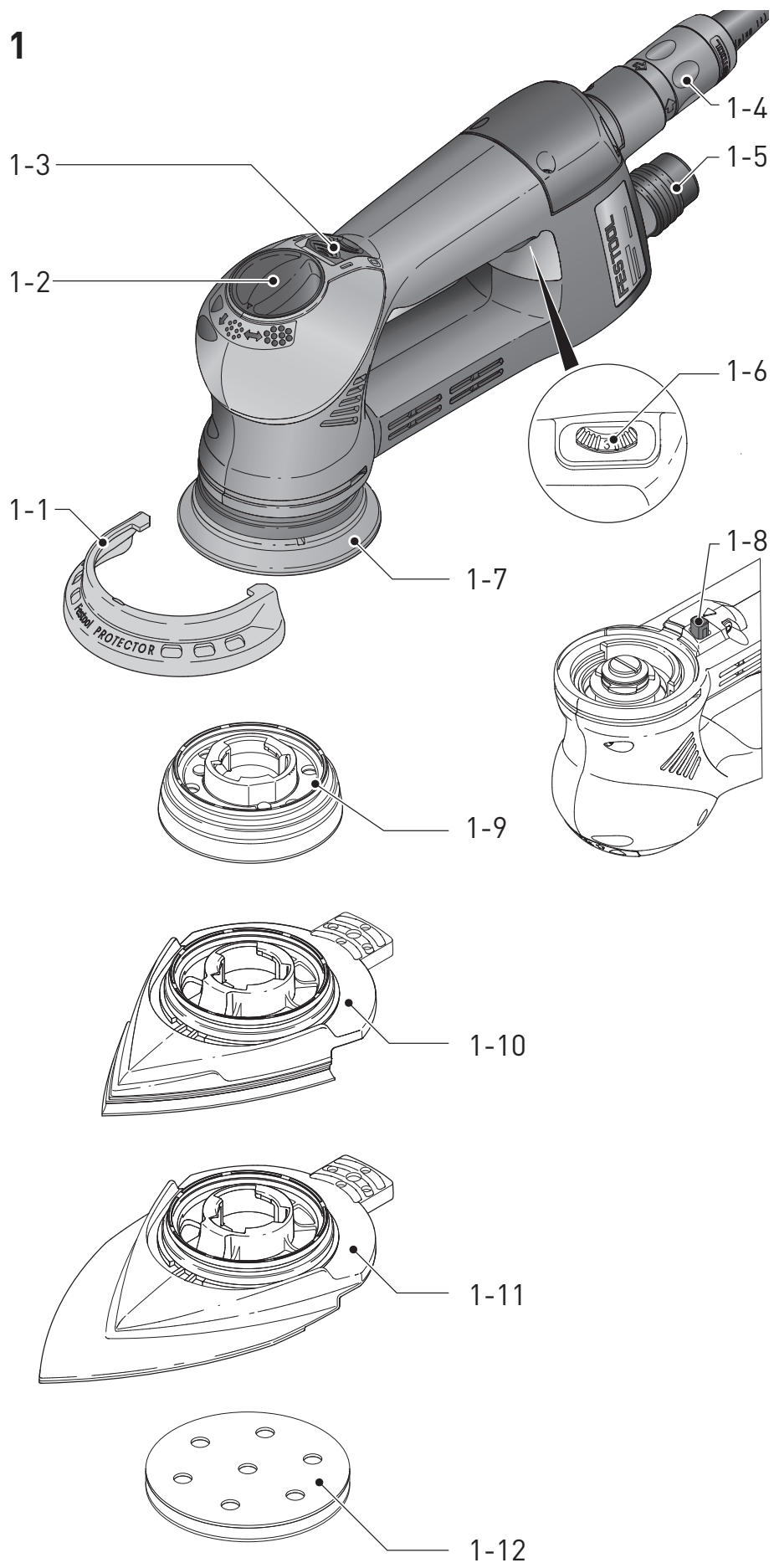
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IMPORTANTE: Lea todas las instrucciones antes de usar.

Instruction manual
Guide d'utilisation
Manual de instrucciones

ROTEX
RO 90 DX FEQ





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Warning of general danger



Risk of electric shock



Read the Operating Instructions/Notes!



Wear protective goggles.



Wear ear protection.



Wear a dust mask.



Disconnect from the power supply!

1 2 3 ...

1 2 3

The numbers in the figures indicate in which order you should follow the steps.

Symbols

V	volts
A	amperes
Hz	hertz
~	alternating current
a.c.	
≡	direct current
d.c.	
n_0	no load speed
	Class II construction
rpm	revolutions per minute
min^{-1}	
"	inch
lb.	pound
	diameter
	hint, tipp

Technical data

Gear-driven eccentric sander	R090 DX FEQ
Power	400 W
Speed	
Eccentric motion	3000 - 7000 rpm
Rotex rotary motion	220 - 520 rpm
Sanding stroke	3.0 mm (0.12")
FastFix sanding pad	dia. 90 mm (3.54")
Weight (without mains cable, with sanding pad)	1.45 kg (3.20 lbs)
Safety class	/II

Safety instructions

General safety instructions



WARNING! Read all safety warnings and all instructions. Failure to follow the warnings and instructions 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.

1 WORK AREA SAFETY

- a. **Keep work area clean and well lit.** Cluttered and 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, clothing and gloves 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 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.

Machine-related safety instructions

- **Harmful/toxic dusts can be produced during your work (e.g. lead-containing paint, some types of wood and metal).** Contact with these dusts, especially inhaling them, can represent a hazard for operating personnel or persons in the vicinity. Comply with the safety regulations that apply in your country. Connect the electric power tool to a suitable extraction system.



To protect your health, wear a P2 protective mask.



Always wear protective goggles to protect against sanding hazards.

- **Prevent liquid polish from entering the machine.** The penetration of liquid polish into the

electric power tool increases the risk of an electric shock.

- **If the power tool is dropped or falls, check for damage to the machine and sanding pad. Remove the sanding pad for closer inspection. Repair damaged parts before using again.** Broken sanding pads and damaged machines can cause injuries and machine instability.

Metal processing



When processing metal, the following measures must be taken for safety reasons:

- Install an upstream residual-current circuit-breaker (FIG, PRCD).
- Connect the machine to a suitable dust extractor.
- Regularly remove dust deposits in the motor housing.



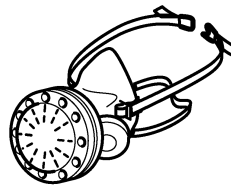
Wear protective goggles.

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, and
- 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 work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles. Wash hands after handling.



WARNING

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

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] Protector

[1-2] Change-over switch/spindle stop

[1-3] On/Off switch

[1-4] Mains power cable

[1-5] Extractor connector

[1-6] Speed control

[1-7] Sanding pad

[1-8] Stop rod

[1-9] Polishing pad*

[1-10] Delta sanding pad

[1-11] Slat sanding pad*

[1-12] Interface pad*

* not on all versions included in the scope of delivery

Intended use

As specified, the machine is designed for sanding and polishing plastic, metal, wood, composite materials, paint/clear coats, filler and similar materials. Materials containing asbestos must not be processed.

To guarantee electrical safety, the machine must

not be damp or operated in a damp environment. The machine must only be used for dry sanding.



WARNING

The user will be liable for damage due to improper use.

Operation

Consider the pictures on the fold-out page.



WARNING

Unauthorised voltage or frequency!

Risk of accident

- ▶ The mains voltage and the frequency of the power source must correspond with the specifications on the machine's name plate.
- ▶ In North America, only Festool machines with the voltage specifications 120 V/60 Hz may be used.

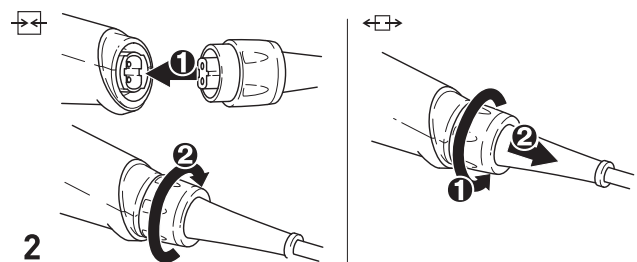


WARNING

Risk of injury, electric shock

- ▶ Always pull the mains plug out of the socket before performing any type of work on the machine!

Connecting and detaching the mains power cable **[1-4]** see Fig. **[2]**.



The switch **[1-3]** is an on/off switch (I = ON, 0 = OFF).

- ① The circuit closer can only be actuated if the change-over switch **[1-2]** is in an engaged position.
- ① In case of a power failure or if the mains connector is removed, move the on/off switch immediately to the Off position. This prevents uncontrolled restarting.

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 this tool.

Total Extension Cord Length (feet)	25	50	100	150
Cable 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.

- ① The lower the AWG number, the stronger the cord.

Settings

Consider the pictures on the fold-out page.



WARNING

Risk of injury, electric shock

- ▶ Always pull the mains plug out of the socket before performing any type of work on the machine!

Electronics

The machine features full-wave electronics with the following features:

Smooth start-up

The electronically controlled smooth start-up ensures that the machine starts up jolt-free.

Speed control

You can regulate the speed steplessly with the adjusting wheel [1-6] in the speed range (see Technical data). This enables you to optimise the cutting speed to suit the surface (see table).

Constant speed

The preselected motor speed remains constant through electronic control to ensure a uniform cutting speed even when under load.

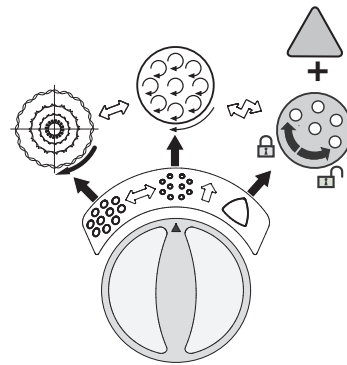
Temperature cut-out

The machine power supply is limited and the speed reduced if the motor exceeds a certain temperature. The machine continues operating at reduced power to allow the ventilator to cool the motor quickly. If the machine temperature exceeds the

maximum permitted value for longer periods, the machine switches off completely after approx. 40 seconds and can only be switched on again once the motor has cooled sufficiently.

Setting sanding motion - Fig. [3]

3



The change-over switch [1-2] can be used to set three different sanding motions.

- ① This change-over can only be carried out with the sanding pad stationary because the switch is locked during operation.

Coarse sanding, polishing - ROTEX rotary motion



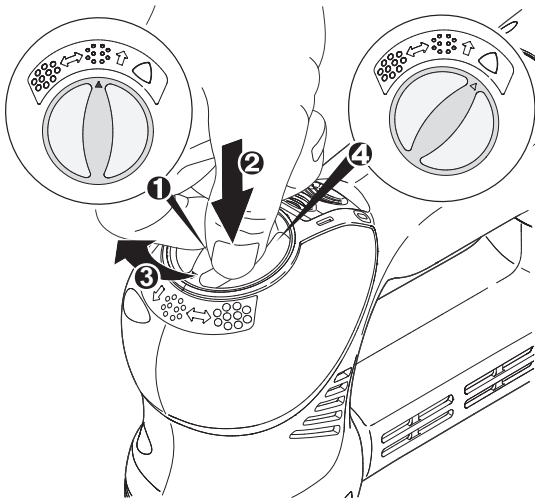
The Rotex rotary motion is a combination of rotary and eccentric motions. This position is selected for sanding with high output (coarse sanding) and polishing.

Fine sanding - eccentric motion



This position is selected for sanding with low output for a scratch-free surface (fine sanding).

Triangular sanding and pad change - Fig. [4]



4



This position is used for sanding with the delta sanding pad and slat sanding pad; the rotary motion is blocked.

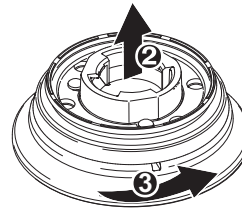
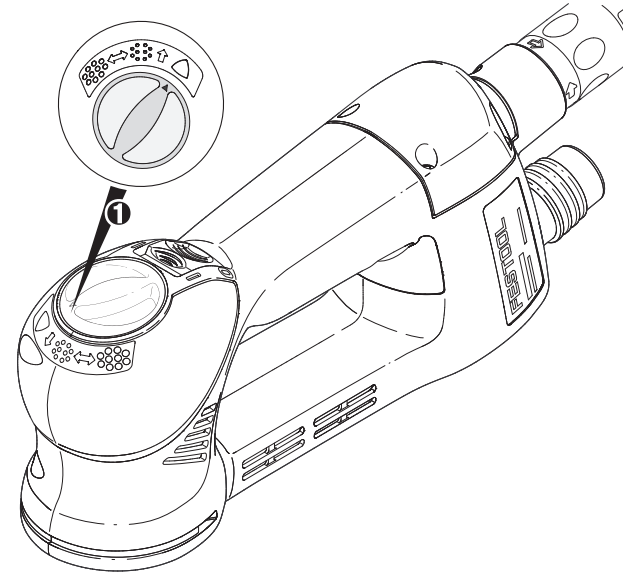


You can change the sanding pad in this position.

- ① The stop rod [1-8] blocks the installation of the sanding pad in the change-over switch positions ROTEX rotary motion and eccentric motion.

Changing sanding/polishing pad - Fig. [5]

- ① Only use sanding and polishing pads that are suitable for the maximum speed specified.



5



Tuned to the surface being processed, the machine can be equipped with two sanding pads of different hardnesses.

Hard: Coarse and fine sanding on surfaces. Sanding edges.

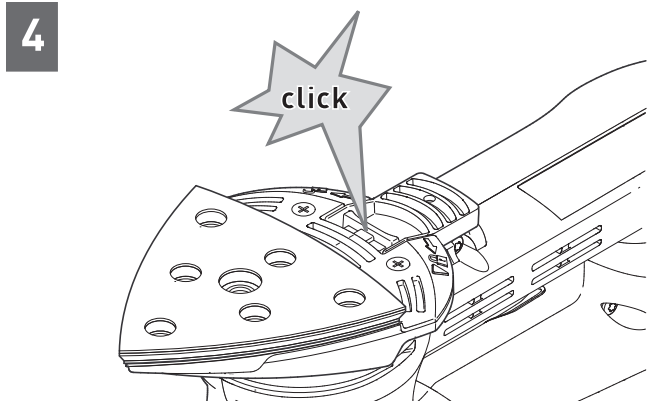
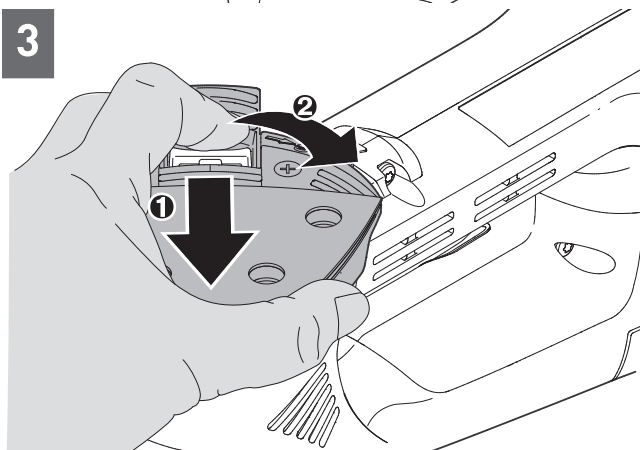
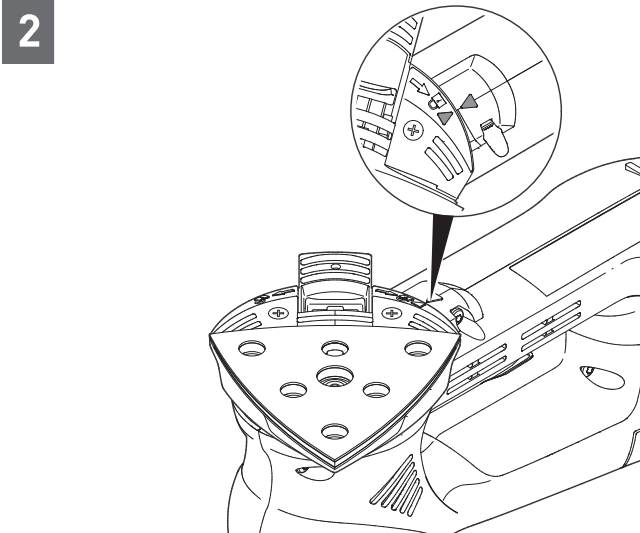
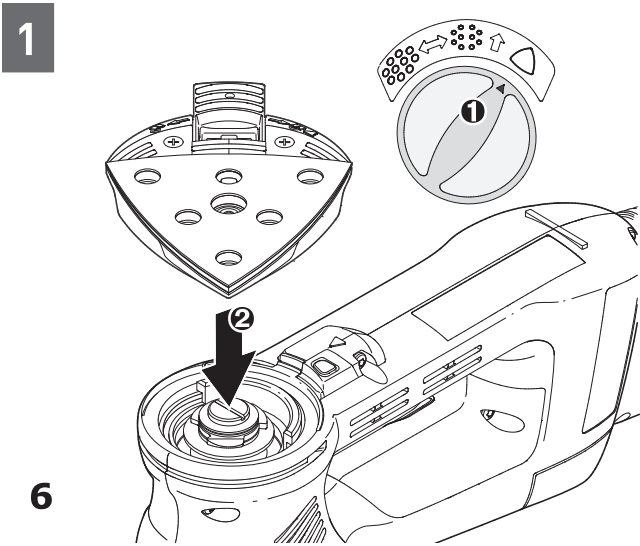
Soft: Universal for coarse and fine sanding, for flat and convex surfaces.

When the interface pad [1-12] is fitted on the sanding pad, strength is reduced = extra soft.

- Following the sanding pad change, switch the change-over switch [1-2] to the desired sanding motion.

Changing sanding pad - Fig. [6]

The delta sanding pad DSS-GE-STF-R090 can be used for sanding close to borders, in corners or on edges. The slat sanding pad LSS-STF-R090 can be used for sanding in narrow gaps, e.g. louvres.

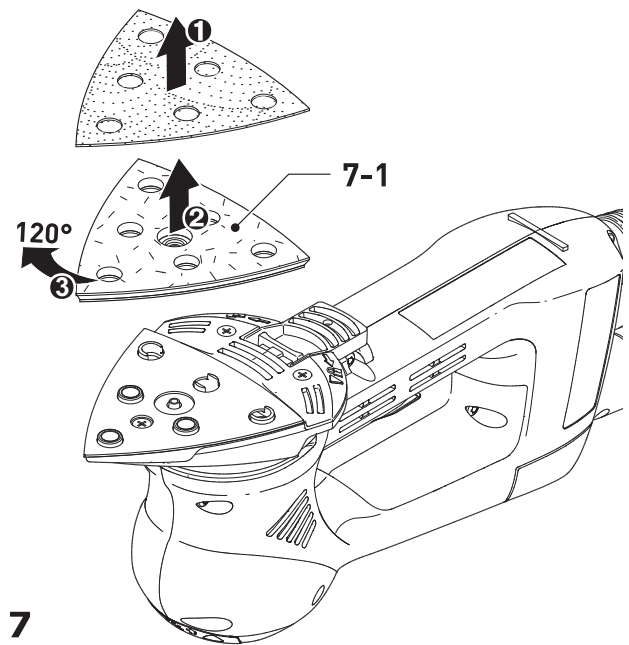


Observe the following instructions:

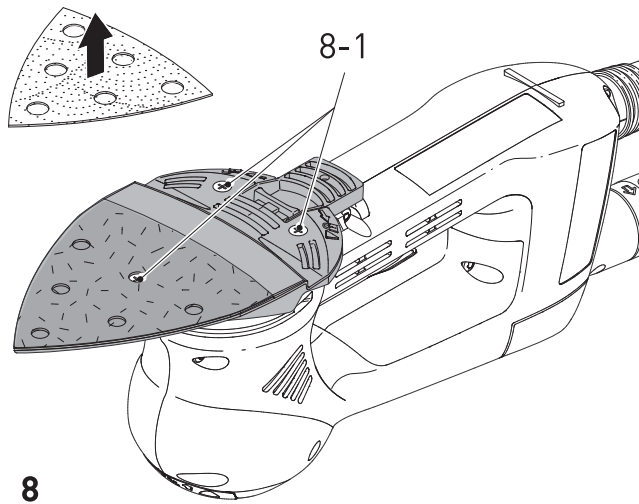
Work in corners and on edges tends to subject the tip to increased stress and results in increased heat development. In such cases, work with reduced contact pressure.

Delta sanding pad DSS-GE-STF-R090 - Fig. [7]

If the front tip of the StickFix pad [7-1] of your delta sanding pad is worn, take it off and turn it 120°.



Slat sanding pad LSS-STF-R090 - Fig. [8]



If the StickFix coating of the slat sanding pad is worn, the complete table can be replaced. Open the screws to do this [8-1].

Attaching sanding accessories

The suitable StickFix sandpaper and StickFix sanding cloth can be attached quickly and simply to the StickFix sanding pad.

- ▶ Press the self-adhesive sanding accessory onto the sanding pad [1-7].



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).

Attaching polishing accessories

To prevent damage, PoliStick accessories (polishing sponges, polishing felt, sheepskin) must only be used on the special polishing pad.

- ▶ Press the self-adhesive polishing accessory onto the sanding pad [1-9].

Dust extraction



WARNING

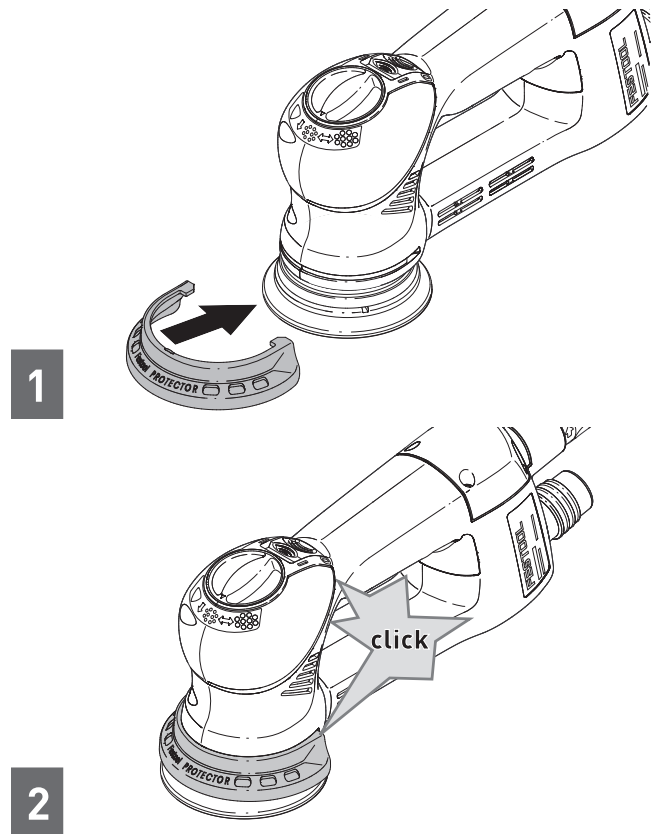
Dust hazard

- ▶ Dust can be hazardous to health. Always work with a dust extractor.
- ▶ Always read applicable national regulations before extracting hazardous dust.

At the extractor connector [1-5], a Festool mobile dust extractor with an extraction hose diameter of 27 mm can be connected.

Edge protector - Fig. [9]

The edge protector [1-1] reduces contact of the sanding pad circumference with a surface (e.g. when sanding along a wall or a window), thus preventing back-kick of the machine, or machine damage.



Working with the machine



WARNING

Risk of injury

- ▶ Always secure the workpiece in such a manner that it cannot move while being machined.

Observe the following instructions:

- Do not overload the machine by pressing with excessive force! The best sanding results are achieved with moderate application pressure. The sanding capacity and quality are mainly dependent on the selection of the correct abrasive.

- Hold the machine with two hands, one on the motor housing and one on the gear head.

- ① Tables A and B show the settings we recommend for different sanding and polishing work.

Service 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 cord 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 tool!

- Do not use compressed air to clean the electrical tool! Do not try to clean parts inside the tool in this way, as you could let foreign objects in through the openings of the tool housing.

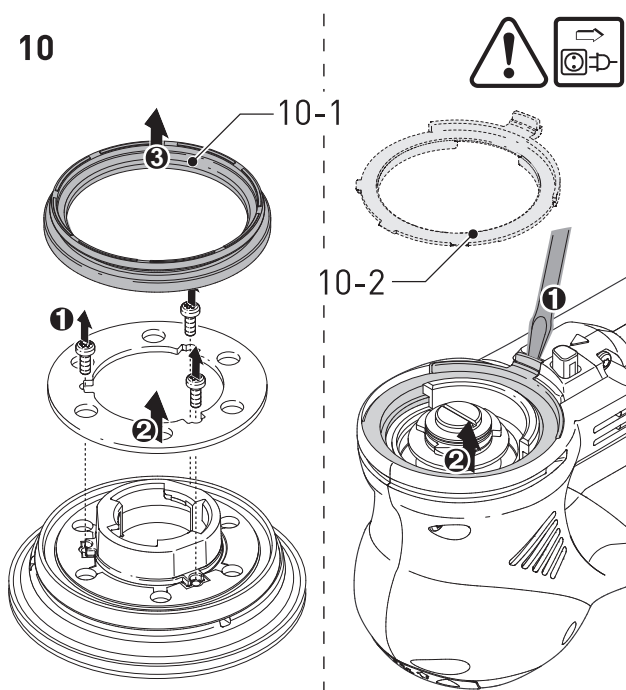
To ensure constant air circulation, always keep the cooling air openings in the motor housing clean and free of blockages.

The machine is equipped with special carbon brushes. If they are worn, the power is interrupted

automatically and the machine comes to a standstill.

Sanding pad brake

The rubber collar [10-1] on the sanding pad and the stop ring [10-2] on the machine prevent uncontrolled excessive turning of the sanding pad during eccentric motion (fine sanding). As these parts are subject to wear in the course of time, they must be replaced when reduced braking force is observed (for order no., see spare parts list).



Accessories

Use only original Festool accessories and Festool consumable material intended for this machine because these components are designed specifically for the machine. Using accessories and consumable material from other suppliers will most likely affect the quality of your working results and limit any warranty claims. Machine wear or your own personal workload may increase depending on the application. Protect yourself and your machine, and preserve your warranty claims by always using

original Festool accessories and Festool consumable material!

Only use original sanding and polishing pads from Festool. Low-quality sanding and polishing pads may cause serious machine imbalance that decreases the quality of the working results and increases machine wear.

The order numbers of the accessories and tools 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.

To open the Systainer



Turn the T-loc [11-1] to this position.

To lock the Systainer



Turn the T-loc [11-1] to this position.

To connect two Systainers

Place one Systainer on the top of the other (Fig. [11 A]).

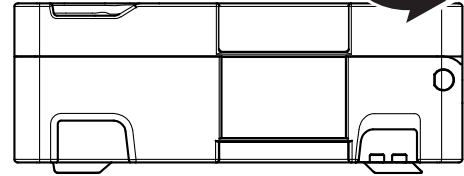
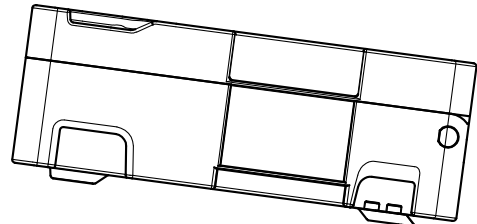


Turn the T-loc [11-1] to one of this positions (Fig. [11 B]).

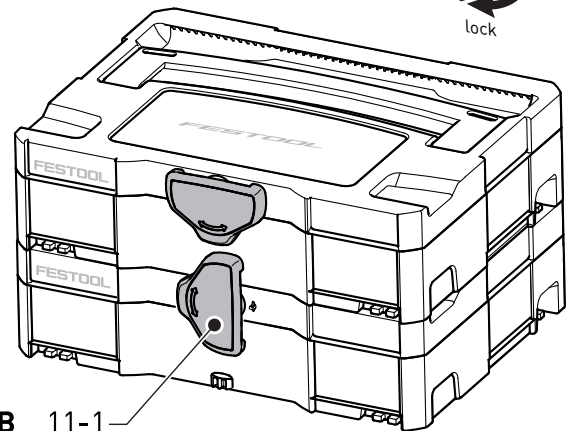
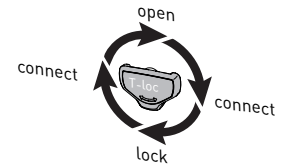
The Systainers are connected and locked.

- ① A new generation Systainer is connectable on top of a previous generation Systainer by the four latches of the previous Systainer.

11



A



B 11-1

Environment

Do not dispose of the device together with domestic waste! Dispose of machines, accessories and

packaging at an environmentally responsible recycling centre. Observe the valid national regulations.

Warranty

Garantie 1 + 2

Festool offers a 3 year limited warranty, one of the strongest in the industry. This warranty is valid on the pre-condition that the tool is used and operated in compliance with the Festool operating instructions. Festool warrants that the specified tool will be free from defects in materials and workmanship for a term of 3 years from the date of purchase.

Conditions of 1 + 2 warranty

All customers receive a free extended limited warranty (1 year + 2 years = 3 Years) on new Festool

power tools purchased from an authorized retailer. Festool is responsible for all shipping costs during the first year of the warranty. During the second and third year of the warranty the customer is responsible for shipping the tool to Festool. Festool will pay for return shipping to the customer using UPS Ground Service. All warranty service is valid 3 years from the date of purchase on your receipt or invoice. Proof of purchase may be required.

Excluded from the coverage under this warranty are: normal wear and tear, damages caused by misuse, abuse, or neglect; damage caused by any-

thing other than defects in material and workmanship. This warranty does not apply to accessory items such as circular saw blades, drill bits, router bits, jigsaw blades, sanding belts, and grinding wheels. Operating a tool at a voltage or frequency different from the tool's rating will void the warranty. This includes the usage of the tool in combination with a transformer. Festool does not condone nor support the use of any non-Festool engineered, designed, and manufactured accessories or consumables with Festool products. Use of any non-Festool products may affect performance or void the warranty. Festool is not responsible for any damages or losses incurred and user assumes all risk and responsibility with non-Festool derived products. Also excluded are "wearing parts," such as carbon brushes, lamellas of air tools, rubber collars and seals, sanding discs and pads, and Festool gear (hats and shirts).

The obligations of Festool in its sole discretion under this warranty shall be limited to repair or replacement or a refund of the purchase price for any Festool portable power tool that is found to have a defect in materials or workmanship during the warranty period. FESTOOL SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES REGARDLESS OF THE THEORY OF LAW ON WHICH THE CLAIM IS BASED. ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE

IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY LIMITED TO THE DURATION OF THREE YEARS.

Some states in the U.S. and some Canadian provinces do not allow the limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state in the U.S. and from province to province in Canada.

With the exception of any warranties implied by state or province law as limited above, the foregoing express limited warranty is exclusive and in lieu of all other warranties, guarantees, agreements, and similar obligations of Festool. Festool makes no other warranty, express or implied, for Festool portable power tools. This warranty policy is only valid for tools that are purchased in the US and Canada. Warranty policies of other countries may vary when obtaining warranty service outside the US and Canada. Some countries do exclude warranty for products bought outside their territory. Festool reserves the right to reject the repair of any tool that is not part of the US/Canada product line. No agent, representative, distributor, dealer, or employee of Festool has the authority to increase or otherwise change the obligations or limitations of this warranty.






















Table A:		Coarse sanding				Fine sanding			
Sanding									
 Clear coat, filler, putty	x			5 - 6	soft		x	1 - 3	extra soft
 Clear coat, paint	x			5 - 6	hard		x	3 - 6	hard
 Wood, veneered surface	x			5 - 6	hard		x	3 - 6	soft
 Plastic	x	x		1-4	soft		x	1 - 4	soft/ extra soft
 Steel, copper, aluminium	x			6	soft		x	3 - 6	soft
 VOC clear coats							x	2 - 4	extra soft - hard

Table B:				
Polishing		Polishing	Sealing	High-gloss polishing
Clear coat		6	3	4 - 6
		Sponge rough/smooth	Sponge fine/honeycombed	Sheepskin
		Polishing paste	Hard wax	-
Plastic		6	3	6
		Felt hard	Felt soft	Sheepskin
		Polishing paste	Hard wax	-