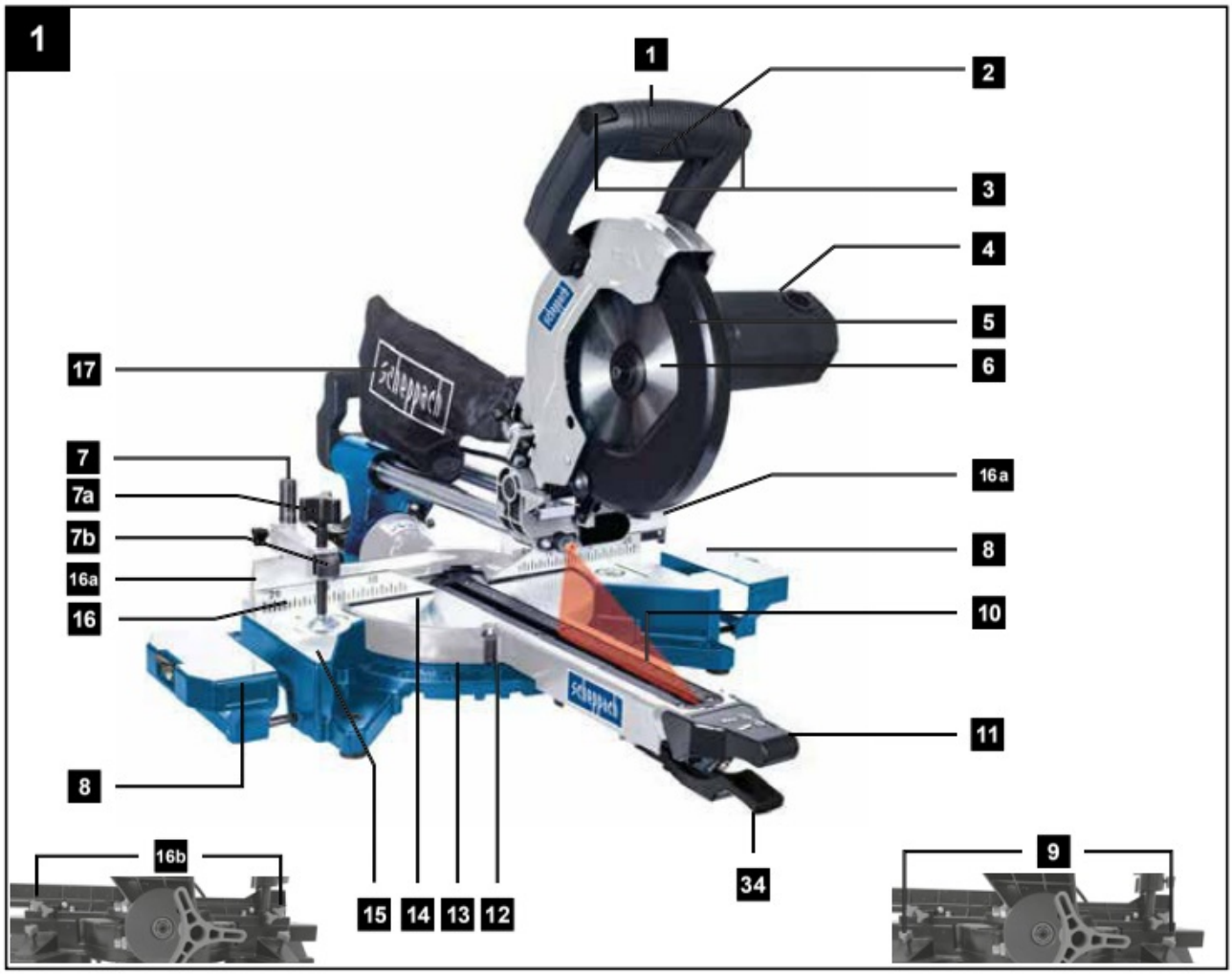
scheppach HM110MP Sliding Mitre Saw User Manual

Art.№
5901220901

HM110MP
Sliding cross-cut miter saw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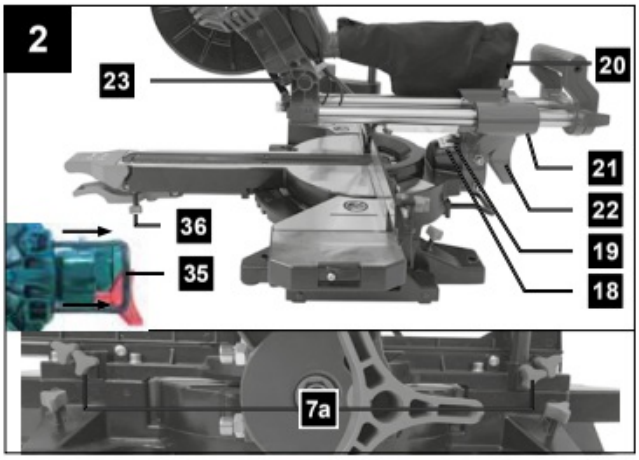
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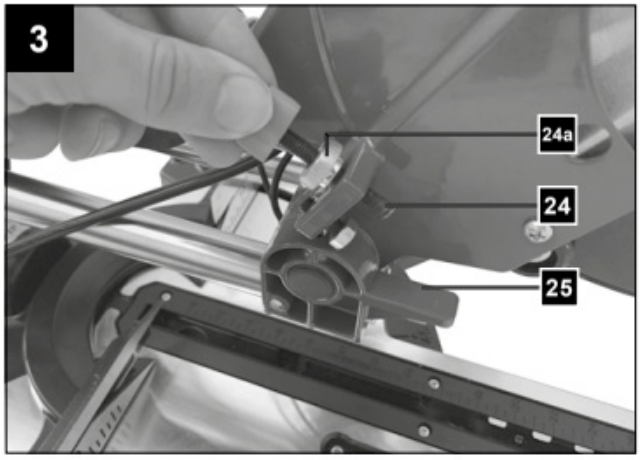
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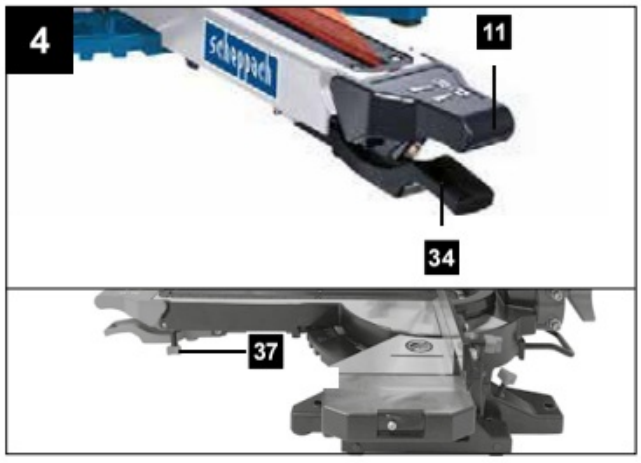
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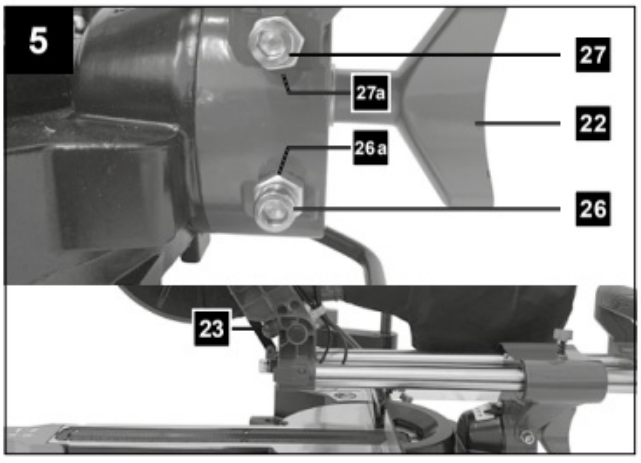
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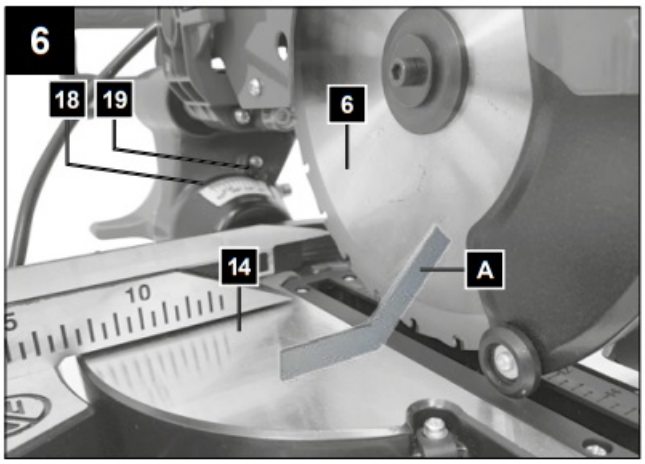
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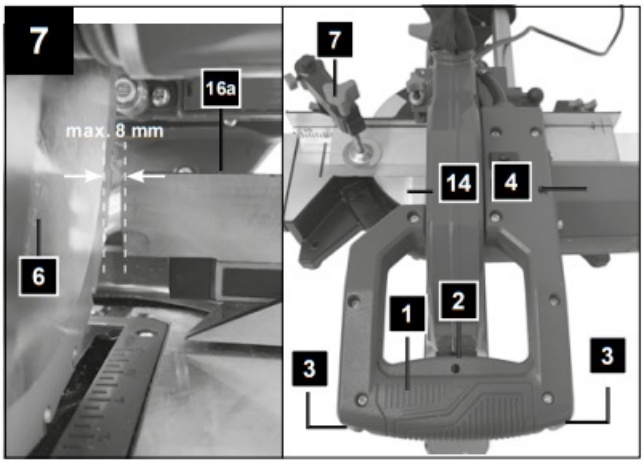
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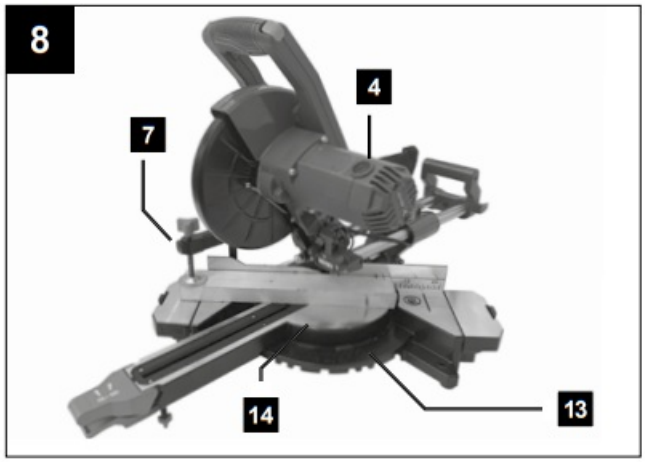
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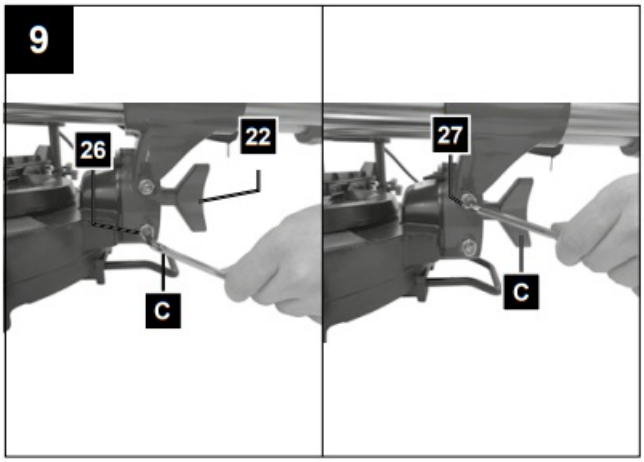
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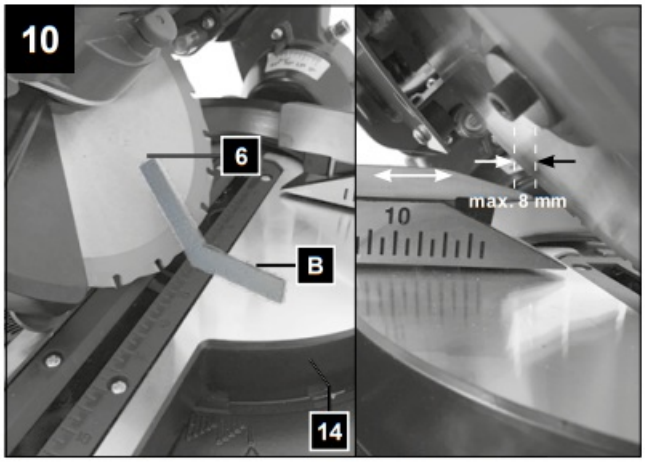
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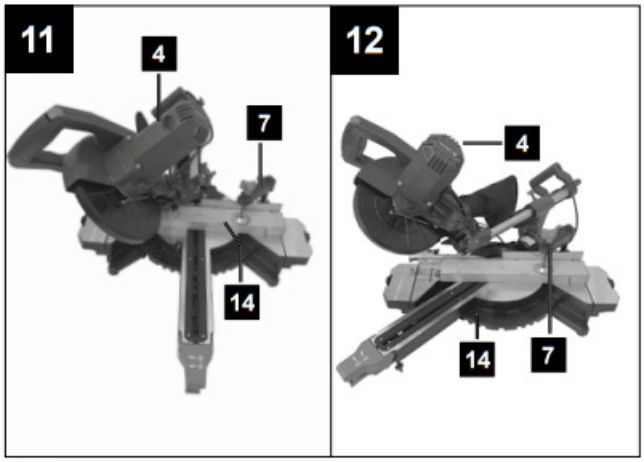
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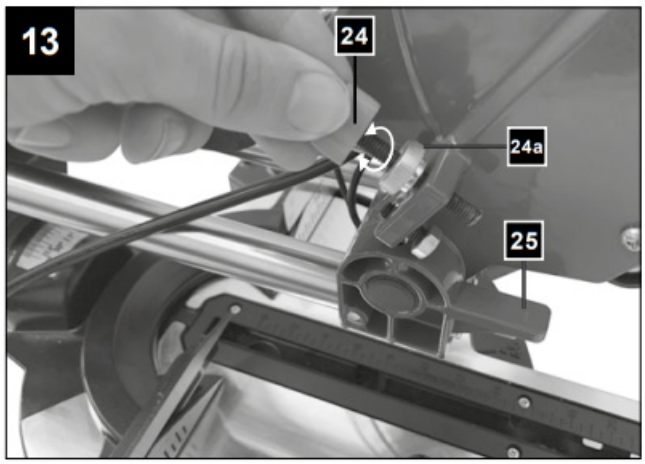
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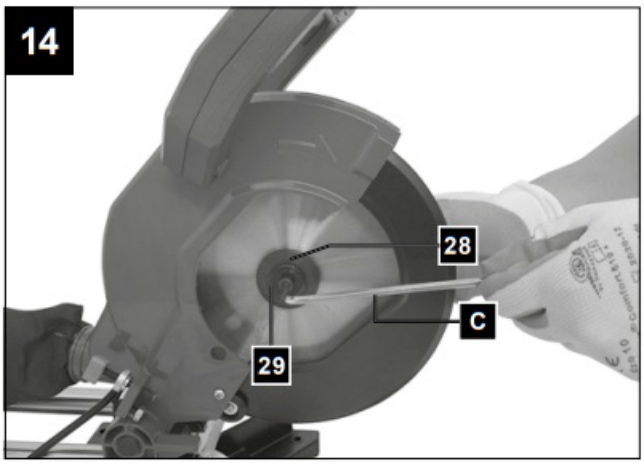
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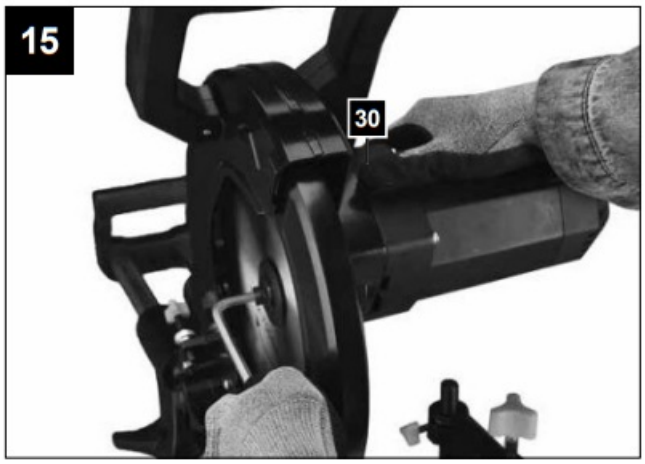
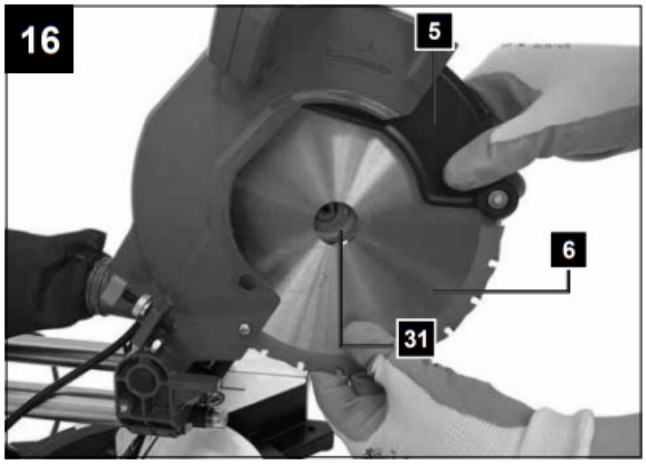
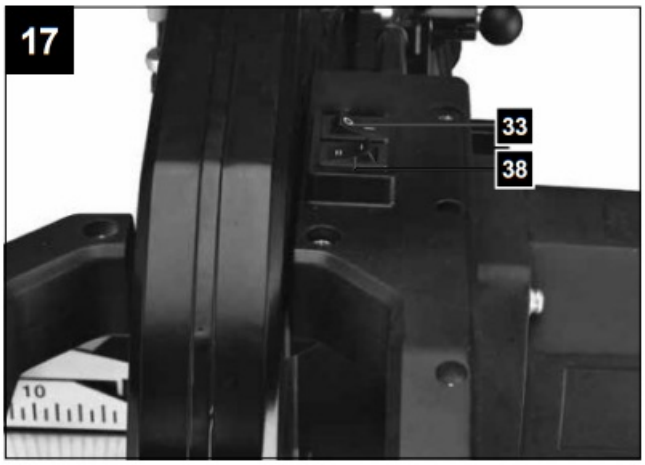
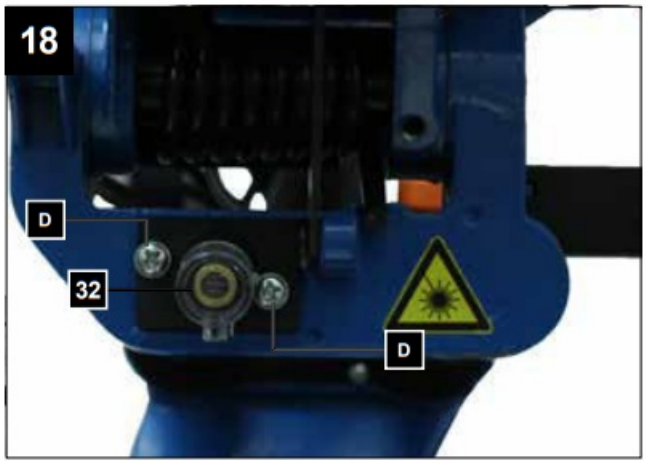
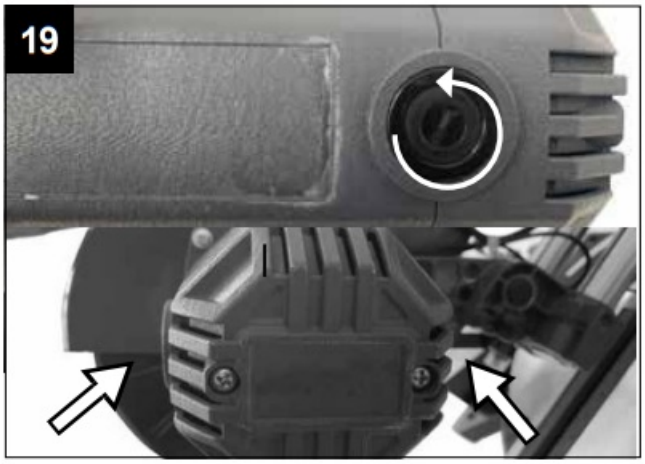
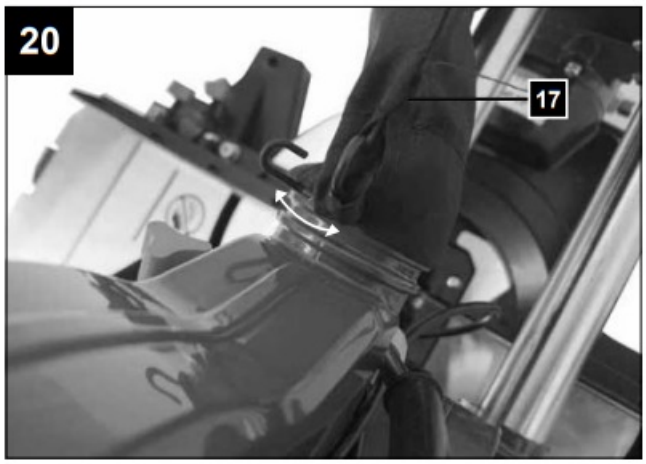


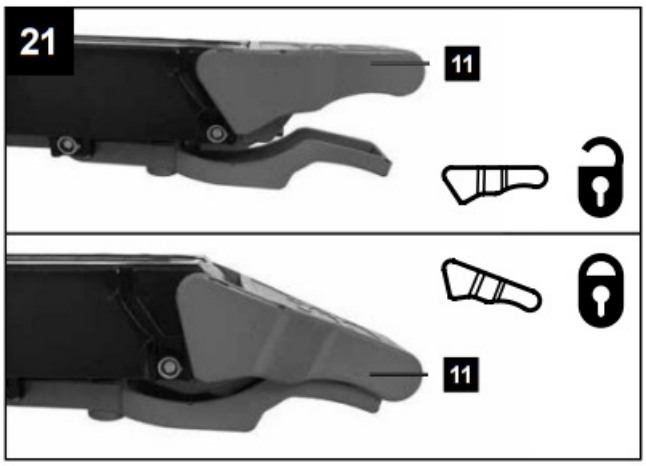








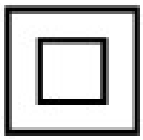




Explanation of the symbols on the equipment

Symbols are used in this manual to draw your attention to potential hazards. The safety symbols and the

accompanying explanations must be fully understood. The warnings themselves will not rectify a hazard and cannot replace proper accident prevention measures.

	Before commissioning, read and observe the operating instructions and safety instructions!
	Wear safety goggles!
	Wear ear-muffs!
	Wear breathing protection when generating dusk!
	Important! Risk of injury. Never reach into the running saw blade!
	Important! Laser radiation
	Protection Class II (double insulated)
	Observe warnings and safety instructions!
	Do not dispose of electric tools together with household waste material!
	The product complies with the applicable European directives.

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Introduction

Manufacturer:
scheppach
Fabrikation von Holzbearbeitungsmaschinen GmbH
Günzburger Straße 69
D-89335 Ichenhausen

Dear Customer,
we hope your new tool brings you much enjoyment and success.

Note:
According to the applicable product liability laws, the manufacturer of the device does not assume liability for damages to the product or damages caused by the product that occurs due to:

- Improper handling,
- Non-compliance of the operating instructions,
- Repairs by third parties, not by authorized service technicians,
- Installation and replacement of non-original spare parts,
- Application other than specified,
- A breakdown of the electrical system that occurs due to non-compliance with the electric regulations and VDE regulations 0100, DIN 57113 / VDE0113.

We recommend:
Read through the complete text in the operating instructions before installing and commissioning the device. The operating instructions are intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.
The operating instructions contain important information on how to operate the machine safely, professionally, and economically, how to avoid danger, and costly repairs, reduce downtimes, and how to increase the reliability and

service life of the machine. In addition to the safety regulations in the operating instructions, you have to meet the applicable regulations that apply to the operation of the machine in your country.
Keep the operating instructions package with the machine at all times and store it in a plastic cover to protect it from dirt and moisture. Read the instruction manual each time before operating the machine and carefully follow its information.
The machine can only be operated by persons who were instructed concerning the operation of the machine and who are informed about the associated dangers. The minimum age requirement must be complied with. In addition to the safety instructions contained in this operating manual and the specific regulations of your country, the technical rules generally accepted for the operation of machines of the same type must be observed.
We accept no liability for damage or accidents which arise due to non-observance of these instructions and the safety information.

Device description (fig. 1-22)

1. Handle
2. ON/OFF switch
3. Lock switch
4. Machine head
5. Moving saw blade guard
6. Saw blade
7. Clamping device
   - 7a. Star-grip screw
   - 7b. Quick lock button
8. Workpiece support
9. Set screw for workpiece support
10. Table insert
11. Locking handle
12. Pointer
13. Scale
14. Rotary table
15. Fixed saw table
16. Stop rail
    - 16a. Movable stop rail
    - 16b. Set screw
17. Chip collection bag
18. Scale
19. Pointer
20. Set screw for drag guide
21. Drag guide
22. Set screw
23. Locking bolt
24. Screw for cutting depth limiting
    - 24a. Knurled nut
25. Stop cutting depth limiting
26. Adjusting screw (90°)
    - 26a. Locknut

27. Adjusting screw (45°)
    27a. Locknut
28. Flange screw
29. Outer flange
30. Saw shaft lock
31. Inner flange
32. Laser
33. ON/OFF switch laser
34. Latched position lever
35. Tilt protection
36. Adjusting screw
37. Cable holder
38. Speed selector switch

A.) 90° stop angle (not supplied)
B.) 45° stop angle (not supplied)
C.) Allen key, 6 mm
D.) Philips head screw (Laser)

Scope of delivery

- Sliding compound miter saw
- 1 x Clamping device (7) (preassembled)
- 2 x Workpiece support (8) (preassembled)
- Chip collection bag (17)
- Allen key 6 mm (C)
- Operating manual

Intended use

The sliding compound miter saw is designed to crosscut wood and plastic respective of the machine's size. The sliding cross-cut miter saw is not designed for cutting firewood.

Warning! Do not use the sliding cross-cut miter saw to cut materials other than those specified described in the manual.
Warning! The supplied saw blade is intended exclusively for sawing the following materials: wood, wood-derived products (MDF, chipboard, plywood, blockboard, hardboard, etc.), wood with nails and 3 mm mild steel plates.
Note: Wood containing non-galvanized nails or screws can also be safely cut when carefully handled.
Note: Do not use the saw blade to cut galvanized materials or wood containing galvanized nails. Do not use the saw blade to saw firewood!

The equipment is to be used only for its prescribed purpose. Any other use is deemed to be a case of misuse. The user/operator and not the manufacturer will be liable for any damage or injuries of any kind caused as a result of this. The equipment is to be operated only with suitable saw blades. It is prohibited to use any type of cutting-off wheel.
To use the equipment properly you must also observe the safety information, the assembly instructions, and the operating instructions to be found in this manual. All persons who use and service the equipment have to be acquainted with this manual and must be informed about the equipment's potential hazards. It is also imperative to observe the accident prevention regulations in force in your area. The same applies to the general rules of

health and safety at work.
The manufacturer will not be liable for any changes made to the equipment nor for any damage resulting from such changes.
Even when the equipment is used as prescribed it is still impossible to eliminate certain residual risk factors. The following hazards may arise in connection with the machine's construction and design:

- Contact with the saw blade in the uncovered saw zone.
- Reaching into the running saw blade (cut injuries).
- Kick-back of workpieces and parts of workpieces.
- Saw blade fracturing.
- Catapulting of faulty carbide tips from the saw blade.
- Damage to hearing if ear-muffs are not used as necessary.
- Harmful emissions of wood dust when used in closed rooms. Please note that our equipment has not been designed for use in commercial, trade, or industrial applications. Our warranty will be voided if the equipment is used in commercial, trade, or industrial businesses or for equivalent purposes.

Safety information

General power tool safety warnings
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.

1. Work area safety
   a) Keep the 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 that may ignite 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 the 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 the 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. The 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. The 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 a dust mask, nonskid safety shoes, hard hats, 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 a power source and/or battery pack, picking up, or carrying the tool. Carrying power tools with your finger on the switch or energizing 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 jewelry. Keep your hair and clothing away from moving parts. Loose clothes, jewelry, 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. The use of dust collection can reduce dust-related hazards.

h) Do not let familiarity gained from the 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 remove the battery pack, if detachable, 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 and accessories. 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 and grasping surfaces dry, clean, and free from oil and grease. Slippery handles and grasping surfaces 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.

Warning!

This electric tool generates an electromagnetic field during operation. This field can impair active or passive

medical implants under certain conditions. In order to prevent the risk of serious or deadly injuries, we recommend that persons with medical implants consult with their physician and the manufacturer of the medical implant prior to operating the electric tool.

Safety instructions for mitre saws

a) Mitre saws are intended to cut wood or wood-like products, they cannot be used with abrasive cut-off wheels for cutting ferrous material such as bars, rods, studs, etc. Abrasive dust causes moving parts such as the lower guard to jam. Sparks from abrasive cutting will burn the lower guard, the kerf insert, and other plastic parts.
b) Use clamps to support the workpiece whenever possible. If supporting the workpiece by hand, you must always keep your hand at least 100 mm from either side of the saw blade. Do not use this saw to cut pieces that are too small to be securely clamped or held by hand. If your hand is placed too close to the saw blade, there is an increased risk of injury from blade contact.
c) The workpiece must be stationary and clamped or held against both the fence and the table. Do not feed the workpiece into the blade or cut “freehand” in any way. Unrestrained or moving workpieces could be thrown at high speeds, causing injury.
d) Push the saw through the workpiece. Do not pull the saw through the workpiece. To make a cut, raise the saw head and pull it out over the workpiece without cutting, start the motor, press the saw head down and push the saw through the workpiece. Cutting on the pull stroke is likely to cause the saw blade to climb on top of the workpiece and violently throw the blade assembly toward the operator.
e) Never cross your hand over the intended line of cutting either in front or behind the saw blade. Supporting the workpiece “cross handed” i.e. holding the workpiece to the right of the saw blade with your left hand or vice versa is very dangerous.
f) Do not reach behind the fence with either hand closer than 100 mm from either side of the saw blade, to remove wood scraps, or for any other reason while the blade is spinning. The proximity of the spinning saw blade to your hand may not be obvious and you may be seriously injured.
g) Inspect your workpiece before cutting. If the workpiece is bowed or warped, clamp it with the outside bowed face toward the fence. Always make certain that there is no gap between the workpiece, fence and table along the line of the cut. Bent or warped workpieces can twist or shift and may cause binding on the spinning saw blade while cutting. There should be no nails or foreign objects in the workpiece.
h) Do not use the saw until the table is clear of all tools, wood scraps, etc., except for the workpiece. Small debris or loose pieces of wood or other objects that contact the revolving blade can be thrown with high speed.
i) Cut only one workpiece at a time. Stacked multiple workpieces cannot be adequately clamped or braced and may bind on the blade or shift during cutting.
j) Ensure the mitre saw is mounted or placed on a level, firm work surface before use. A level and firm work surface reduce the risk of the miter saw becoming unstable.
k) Plan your work. Every time you change the bevel or miter angle setting, make sure the adjustable fence is set correctly to support the workpiece and will not interfere with the blade or the guarding system. Without turning the tool “ON” and with no workpiece on the table, move the saw blade through a complete simulated cut to assure there will be no interference or danger of cutting the fence.
l) Provide adequate support such as table extensions, saw horses, etc. for a workpiece that is wider or longer than the tabletop. Workpieces longer or wider than the miter saw table can tip if not securely supported. If the cutoff piece or workpiece tips, it can lift the lower guard or be thrown by the spinning blade.
m) Do not use another person as a substitute for a table extension or as additional support. Unstable support for the workpiece can cause the blade to bind or the workpiece to shift during the cutting operation pulling you and the helper into the spinning blade.
n) The cut-off piece must not be jammed or pressed by any means against the spinning saw blade. If confined, i.e. using length stops, the cut-off piece could get wedged against the blade and thrown violently.
o) Always use a clamp or a fixture designed to properly support round material such as rods or tubing. Rods have a tendency to roll while being cut, causing the blade to “bite” and pull the work with your hand into the blade.
p) Let the blade reach full speed before contacting the workpiece. This will reduce the risk of the workpiece being thrown.
q) If the workpiece or blade becomes jammed, turn the miter saw off. Wait for all moving parts to stop and disconnect the plug from the power source and/or remove the battery pack. Then work to free the jammed material. Continued sawing with a jammed workpiece could cause loss of control or damage to the miter saw.
r) After finishing the cut, release the switch, hold the saw head down and wait for the blade to stop before removing the cut-off piece. Reaching with your hand near the coasting blade is dangerous.
s) Hold the handle firmly when making an incomplete cut or when releasing the switch before the saw head is

completely in the down position. The braking action of the saw may cause the saw head to be suddenly pulled downward, causing a risk of injury.

Safety Instructions for the handling of saw blades

1. Do not use damaged or deformed saw blades.
2. Do not use any insertion tools with cracks. Sort out cracked insertion tools. Repairs are not permitted.
3. Do not use saw blades made of high-speed steel.
4. Check the condition of the saw blades before using the trim, chop and miter saw.
5. Make sure that a suitable saw blade for the material to be cut is selected.
6. Only use saw blades recommended by the manufacturer. Saw blades designed to cut wood and similar materials must comply with EN 847-1.
7. Do not use saw blades made of high-speed alloy steel (HSS steel).
8. Only use saw blades for which the maximum permissible speed is not lower than the maximum spindle speed of the trim, chop, and miter saw, and which are suitable for the material to be cut.
9. Observe the saw blade's direction of rotation
10. Only insert the saw blade if you have mastered its use.
11. Observe the maximum speed. The maximum speed specified on the insertion tool may not be exceeded. If specified, observe the speed range.
12. Clean grease, oil, and water off of the clamping surfaces.
13. Do not use any loose reducing rings or bushes for the reduction of holes on saw blades.
14. Make sure that fixed reducer rings for securing the insertion tool have the same diameter and have at least 1/3 of the cutting diameter.
15. Make sure that fixed reducer rings are parallel to each other.
16. Handle the insertion tool with caution. They are ideally stored in the original package or special containers. Wear protective gloves in order to improve grip and to further reduce the risk of injury.
17. Prior to the use of insertion tools, make sure that all protective devices are properly fastened.
18. Prior to use, ensure that the saw blade meets the technical requirements of this trim, chop, and miter saw, and is properly fastened.
19. Only use the supplied saw blade for cutting wood, never for the processing of metals.
20. Only use saw blade diameters in accordance with the markings on the saw.
21. Use additional workpiece supports, if required for workpiece stability.
22. Workpiece support extensions must always be secured and used during work.
23. Replace table inserts when worn! 24. Avoid overheating the saw teeth.
24. When sawing plastic, avoid melting the plastic. Use the appropriate saw blades for this purpose. Replace damaged or worn saw blades immediately.
    When the saw blade overheats, stop the machine.

Allow the saw blade to cool down before using the machine again.

Attention: Laser radiation

Do not stare into the beam Class 2 laser

Protect yourself and your environment from accidents using suitable precautionary measures!

- Do not look directly into the laser beam with unprotected eyes.
- Never look into the path of the beam.
- Never point the laser beam towards reflecting surfaces and persons or animals. Even a laser beam with a low output can cause damage to the eyes.
- Caution – methods other than those specified here can result in dangerous radiation exposure.
- Never open the laser module. Unexpected exposure to the beam can occur.
- The laser may not be replaced with a different type of laser.
- Repairs of the laser may only be carried out by the laser manufacturer or an authorized representative.

Residual risks
The machine has been built according to the state of the art and the recognized technical safety requirements. However, individual residual risks can arise during operation.

- Health hazards due to electrical power, with the use of improper electrical connection cables.
- Furthermore, despite all precautions having been met, some non-obvious residual risks may still remain.
- Residual risks can be minimized if the „safety instructions“ and the „Proper use“ are observed along with the whole of the operating instructions.
- Do not load the machine unnecessarily: excessive pressure when sawing will quickly damage the saw blade, which results in reduced output of the machine in the processing and in cut precision.
- When cutting plastic material, please always use clamps: the parts which should be cut must always be fixed between the clamps.
- Avoid accidental starting of the machine: the operating button may not be pressed when inserting the plug into an outlet.
- Use the tool that is recommended in this manual. In doing so, your machine provides optimal performance.
- Hands may never enter the processing zone when the machine is in operation.
- Release the handle button and switch off the machine prior to any operations.

Technical data

Technical data …… 220 – 240 V~ 50Hz
Power S1* ……2000 Watt Idle speed n0
1. Gear ……..3200 min-1
2. Gear ……4500 min-1
Carbide saw blade …….. ø 254 x ø 30 x 2,2 mm
Number of teeth……28
Maximum tooth width of saw blade ……..3 mm
Swivel range ……-45° / 0°/ +45°
Mitre cut ……0° bis 45° to the left
Saw width at 90° …….. 340 x 90 mm
Saw width at 45°…….240 x 90 mm Saw width at 2 x 45°
(double miter cut) ……..240 x 45 mm
Protection class …….. II /
Weight ……. ca. 13,6 kg
Laser class ……2
The wavelength of laser ……. 650 nm
Laser output …… < 1 mW

* S1 operating mode, continuous duty
The workpiece must have a minimum height of 3 mm and a minimum width of 10 mm.

Make sure that the workpiece is always secured with the clamping device.

Noise
Total noise values determined in accordance with EN 62841-1.
Sound pressure level LpA……97,2 dB(A)
Uncertainty KpA …… 3 dB
Sound power level LWA ……110,2 dB(A)
Uncertainty KWA …… 3 dB

Wear hearing protection.
The effects of noise can cause a loss of hearing
The above-mentioned noise emission values were measured in accordance with a standardized test procedure and can be used to compare one power tool with another.
The above-mentioned noise emission values can also be used for the preliminary assessment of exposure.

Warning:

- The noise emissions during the actual use of the power tool may differ from the above-mentioned values depending on the power tool being used, in particular on the type of workpiece being processed.
- Try to keep emissions as low as possible, for example by limiting your working time. In this regard, all the operational cycle phases must be taken into consideration (such as the times when the tool is switched off or running idle).

Before starting the equipment

- Open the packaging and remove the device carefully.
- Remove the packaging material as well as the packaging and transport bracing (if available).
- Check that the delivery is complete.
- Check the device and accessory parts for transport damage.
- If possible, store the packaging until the warranty period has expired.

ATTENTION
The device and packaging materials are not toys! Children must not be allowed to play with plastic bags, film and small parts! There is a risk of swallowing and suffocation!

- The equipment must be set up where it can stand securely. Secure the machine on a workbench or a base frame with 4 screws (not included in delivery) using the holes on the fixed saw table (15).
- Pull out the pre-installed tilt protection (35) completely and secure it with an Allen key.
- Adjust the adjusting screw (36) to the level of the tabletop to avoid wobbling of the machine.
- All covers and safety devices have to be properly fitted before the equipment is switched on.
- It must be possible for the blade to run freely.
- When working with wood that has been processed before, watch out for foreign bodies such as nails or screws, etc.
- Before you press the ON/OFF switch check that the saw blade is fitted correctly. Moving parts must run smoothly.
- Before you connect the equipment to the power supply make sure the data on the rating plate is identical to the mains data.

7.1 Checking the moving saw blade guard safety device (5)
The saw blade guard protects against accidental contact with the saw blade and from chips flying around. Check function To do so, fold the saw downwards:

- The saw blade guard must provide free access to the saw blade without touching other parts.
- When folding the saw upwards into the starting position, the saw blade guard must cover the saw blade automatically.

Attachment and operation

8.1 Assembling the trim, chop, and miter saw (fig. 1, 2, 4, 5, 21)

- In order to adjust the rotary table (14), fold the locking handle (11) upwards and pull up the latched position lever (34) with your index finger.
- Turn the rotary table (14) and pointer (12) to the desired angle measurement of the scale (13). To fix the setting, fold the locking handle (11) downwards.
- Pressing the machine head (4) lightly downwards and removing the locking bolt (23) from the motor bracket at the same time disengages the saw from the lowest position.
- Swing the machine head (4) up.
- It is possible to secure the clamping devices (7) to the left or right on the fixed saw table (15). Insert the clamping devices (7) in the holes on the rear side of the stop rail (16) and secure it with the star grip screws (7a).
- You can press the quick locking button (7b) to adjust the clamping device's pressure plate (7) easily to the workpiece height.
- For 0°- 45° mitre cuts, the clamping device (7) must only be mounted on the right side (see fig. 11-12).
- It is possible to tilt the machine head (4) a max. 45° to the left by loosening the set screw (22).
- Workpiece supports (8) must always be secured and used during work. Set the desired table size by loosening the set screw (9). Then tighten the set screw (9) again.

8.2 Precision adjustment of the stop for crosscut 90° (fig. 1, 2, 5, 6)
No stop angle included.

- Lower the machine head (4) and secure it using the locking bolt (23).
- Loosen the set screw (22).
- Position the angle stop (A) between the saw blade (6) and the rotary table (14).
- Loosen the lock nut (26a).
- Adjust the adjusting screw (26) until the angle between the saw blade (6) and rotary table (14) is 90°.
- Re-tighten the lock nut (26a).
- Subsequently check the position of the angle indicator. If necessary loosen the pointer (19) using a Philips screwdriver, set it to position 0° on the angle scale (18), and re-tighten the retaining screw.

8.3 Crosscut 90° and turntable 0° (fig. 1, 2, 7)
In the case of cutting widths up to approx. 100 mm it is possible to fix the traction function of the saw with the set screw (20) in the rear position. In this position, the machine can be operated in cross-cutting mode. If the cutting width is over 100 mm then it is necessary to ensure that the set screw (20) is loose and the machine head (4) can move.

Attention!
For 90° crosscuts, the moveable stop rail (16a) must be fixed in the inner position.

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) inwards.
- The moveable stop rail (16a) must be locked in a position far enough from the inner position that the distance between the stop rail (16a) and the saw blade (6) is no more than 8 mm.
- Before making the cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Re-tighten the set screw (16b).
- Move the machine head (4) to its upper position.
- Use the handle (1) to push back the machine head (4) and fix it in this position if required (dependent on the cutting width).
- Place the piece of wood to be cut at the top rail (16) and on the turntable (14).
- Lock the material with the clamping devices (7) on the fixed saw table (15) to prevent the material from moving during the cutting operation.
- Release the lock switch (3) and press the ON/OFF switch to start the motor.
- With the drag guide (21) fixed in place: use the handle (1) to move the machine head (4) steadily and with light pressure downwards until the saw blade (6) has completely cut through the workpiece.
- With the drag guide (21) not fixed in place: pull the machine head (4) all the way to the front. Lower the handle (1) to the very bottom by applying steady and light downward pressure. Now push the machine head (4) slowly and steadily to the very back until the saw blade (6) has completely cut through the workpiece.
- When the cutting operation is completed, move the machine head back to its upper (home) position and release the ON/OFF button (2).

Attention!
The machine executes an upward stroke automatically due to the return spring, i.e. do not release the handle (1) after completing the cut; instead, allow the machine head to move upwards slowly whilst applying light counter pressure.

8.4 Crosscut 90° and turntable 0° – 45° (fig. 1, 7, 8)
The trim, chop, and miter saw can be used for angled cuts of 0°-45° to the left and right. Important! For 90° crosscuts, the moveable stop rail (16a) must be fixed in the inner position.

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) inwards.
- The moveable stop rail (16a) must be fixed far enough in front of the innermost position that the distance between the stop rail (16a) and the saw blade (6) amounts to a minimum of 8 mm.
- Before making the cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Secure the set screw (16b) again.
- Loosen the locking handle (11) if tightened, pull up the latched position lever (34) with your index finger, and use the locking handle (11) to set the rotary table (14) to the desired angle.
- The pointer (12) on the rotary table must match the desired angle on the scale (13) on the fixed saw table (15).
- Re-tighten the locking handle (11) to secure the rotary table (14).
- Cut as described under section 8.3.

8.5 Precision adjustment of the stop for miter cut 45° (fig. 1, 2, 5, 9, 10)
No stop angle included.

- Lower the machine head (4) and secure it using the locking bolt (23).
- Fix the rotary table (14) in the 0° position.

  Attention!

  For miter cuts (inclined saw head), the left side of the moveable stop rails (16a) must be fixed in the outer position.
- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) outwards.
- The moveable stop rail (16a) must be fixed far enough in front of the innermost position that the distance between the stop rail (16a) and the saw blade (6) amounts to a maximum of 8 mm.
- The right side of the moveable stop rails (16a) must be in the inner position.
- Before making a cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Loosen the set screw (22) and use the handle (1) to angle the machine head (4) 45° to the left.
- 45° – position angle stop (B) between the saw blade (6) and rotary table (14).
- Loosen the lock nut (27a) and adjust the adjustment screw (27) until the angle between the saw blade (6) and the rotary table (14) is precisely 45°.
- Re-tighten the lock nut (27a).
- Subsequently check the position of the angle indicator. If necessary, loosen the pointer (19) using a Philips screwdriver, set it to position 45° on the angle scale (18), and re-tighten the retaining screw.

8.6 Mitre cut 0°- 45° and turntable 0° (fig. 1, 2, 11)
The trim, chop and mitre saw can be used for mitre cuts of 0°- 45° to the left of the work surface.
Attention!
For miter cuts (inclined saw head), the left side of the moveable stop rails (16a) must be fixed in the outer position.

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) outwards.
- The moveable stop rail (16a) must be fixed far enough in front of the innermost position that the distance between the stop rail (16a) and the saw blade (6) amounts to a minimum of 8 mm.
- The right side of the moveable stop rails (16a) must be in the inner position.
- Before making a cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Secure the set screw (16b) again.
- Move the machine head (4) to the top position.
- Fix the rotary table (14) in the 0° position.
- Loosen the set screw (22) and use the handle (1) to angle the machine head (4) to the left, until the pointer (19) indicates the desired angle measurement on the scale (18).
- Re-tighten the set screw (22).
- Cut as described in section 8.3.

8.7 Mitre cut 0°- 45° and turntable 0°- 45° (fig. 2, 4, 12)
The trim, chop, and miter saw can be used for miter cuts of 0°- 45° to the left of the work surface and of 0°- 45° to the stop rail (double miter cut).

Attention!
For miter cuts (inclined saw head), the left side of the moveable stop rails (16a) must be fixed in the outer position.

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) outwards.

- The moveable stop rail (16a) must be fixed far enough in front of the innermost position that the distance between the stop rail (16a) and the saw blade (6) amounts to a minimum of 8 mm.
- Before making a cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Re-tighten the set screw (16b).
- Move the machine head (4) to its upper position.
- Fold the locking handle (11) upwards to loosen the rotary table (14).
- Set the rotary table (14) to the desired angle (refer also to point 8.4 in this regard).
- Fold the locking handle (11) downwards to secure the rotary table (14).
- Undo the set screw (22).
- Use the handle (1) to tilt the machine head (4) to the left until it coincides with the required angle value (in this connection see also section 8.6).
- Re-tighten the set screw (22).
- Cut as described under section 8.3.

8.8 Limiting the cutting depth (fig. 3, 13)

- The cutting depth can be infinitely adjusted using the screw (24). To do this loosen the knurled nut (24a) on the screw (24). Turn the screw (24) in or out to set the required cutting depth. Then re-tighten the knurled nut (24a) on the screw (24).
- Check the setting by completing a test cut.

8.9 Chip collection bag (fig. 1, 20)
The saw is equipped with a debris bag (17) for sawdust and chips.
Attention!
The chip collection bag may only be used when cutting wood and wood-like materials! Squeeze together the metal ring on the dust bag and attach it to the outlet opening in the motor area. The debris bag (17) can be emptied by means of a zipper at the bottom.

Connection to an external dust extractor

- Connect the vacuum hose with the dust extraction spout.
- The industrial vacuum cleaner must be suitable for the material being worked.
- When vacuuming dust that is especially detrimental to health or carcinogenic, use a special vacuum cleaner.

8.10 Changing the saw blade (fig. 1, 2, 14-16)
Remove the power plug!
Important!
Always use the correct saw blade for the material to be sawn.

Only use saw blades that comply with the machine specifications regarding the bore diameter and the maximum kerf of the saw blade.
Only use saw blades marked with a speed equal to or higher than the machine specifications. Wear safety gloves when changing the saw blade. Risk of injury!

- Swing the machine head (4) upwards and lock it with the locking bolt (23).
- Fold the saw blade guard (5) upwards.
- Use one hand to insert the Allen key (C) in the flange screw (28).

- Firmly press the saw shaft lock (30) and slowly rotate the flange screw (28) in a clockwise direction. The saw shaft lock (30) engages after no more than one rotation.
- Now, using a little more force, slacken the flange screw (28) in the clockwise direction.
- Turn the flange screw (28) right out and remove the outer flange (29).
- Take the blade (6) off the inner flange (31) and pull it out downwards.
- Carefully clean the flange screw (28), outer flange (29), and inner flange (32).
- Fit and fasten the new saw blade (6) in reverse order.
- **Important!**
  The cutting angle of the teeth, in other words, the direction of rotation of the saw blade (6) must coincide with the direction of the arrow on the housing.
- Before continuing your work make sure that all safety devices are in good working condition.
- **Important!**
  Every time that you change the saw blade (6), check to see that it spins freely in the table insert (10) in both perpendicular and 45° angle settings.
- **Important!**
  The work to change and align the saw blade (6) must be carried out correctly.

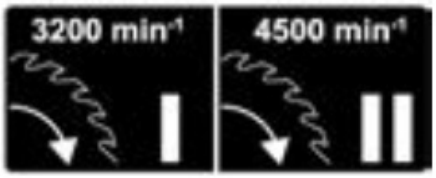
8.11 Using the laser (fig. 17)

- To switch on:
  Press the ON/OFF switch laser (33) 1x. A laser line is projected onto the material you wish to process, providing an exact guide for the cut.
- To switch off:
  Press again the ON/OFF switch laser (33).

8.12 Adjusting the laser (fig. 18)
If the laser (32) ceases to indicate the correct cutting line, you can readjust the laser. To do this, open the screws (32b) and remove the front cover (32a). Loosen the Philips head screws (D) and set the laser by moving sideways until the laser beam strikes the teeth of the saw blade (6).

After you have adjusted and tightened the laser, mount the front cover and hand-tighten the two screws (32b).

8.12 Changing the speed (fig. 17) The miter saw has 2-speed ranges:



- To operate the miter saw at a speed of 3200 rpm (metal), set the speed regulation switch (38) to position I.
- To operate the saw at a speed of 4500 min -1 rpm (wood), set the speed regulation switch (38) to position II.

Transport

- Tighten the locking handle (11) to lock the rotary table.

- Press the machine head (4) downwards and secure it with the locking bolt (23).
- Fix the saw's drag function with the locking screw for the drag guide (20) in rear position.
- Carry the equipment by the fixed saw table (15).
- When reassembling the equipment proceed as described in section 7.
- To store the cable, wrap the cable around the two cable holders (37). (Fig. 22)

Maintenance

Warning!
Prior to any adjustment, maintenance or service work disconnect the mains power plug!
General maintenance measures
Wipe chips and dust off the machine from time to time using a cloth. In order to extend the service life of the tool, oil the rotary parts once monthly. Do not oil the motor.
When cleaning the plastic do not use corrosive products.

Cleaning the moving saw blade guard safety device (5)
Always check the saw blade guard for debris before using the machine. Remove old sawdust and splinters using a brush or similar tool.

Replacing the table insert
Danger!
With a damaged table insert (10) there is a risk of small parts getting stuck between the table insert and the saw blade, blocking the saw blade.

Immediately replace damaged table inserts!

1. Remove screws at table insert. If required, turn the rotary table and incline saw head to be able to reach the screws.
2. Remove table insert.
3. Install new table insert.
4. Tighten the screws at the table insert.

Brush inspection (fig. 19)
Check the carbon brushes after the first 50 operating hours with a new machine, or when new brushes have been fitted. After carrying out the first check, repeat the check every 10 operating hours. If the carbon is worn to a length of 6 mm, or if the spring or contact wire are burned or damaged, it is necessary to replace both brushes. If the brushes are found to be usable following removal, it is possible to reinstall them.

When servicing the carbon brushes, open the two latches counterclockwise (as shown in figure 19). Then remove the carbon brushes. Replace the carbon brushes in the reverse order. Replace the carbon brushes in the reverse order.

Service information
Please note that the following parts of this product are subject to normal or natural wear and that the following parts are therefore also required for use as consumables. Wear parts*: carbon brushes saw blade, table inserts, sawdust bags * Not necessarily included in the scope of delivery!

Storage

Store the device and its accessories in a dark, dry, and frost-proof place that is inaccessible to children. The

optimum storage temperature is between 5 and 30˚C.
Store the electrical tool in its original packaging.
Cover the electrical tool in order to protect it from dust and moisture.
Store the operating manual with the electrical tool.

Electrical connection

The electrical motor installed is connected and ready for operation. The connection complies with the applicable VDE and DIN provisions. The customer‘s mains connection as well as the extension cable used must also comply with these regulations.

- The product meets the requirements of EN 610003-11 and is subject to special connection conditions. This means that the use of the product at any freely selectable connection point is not allowed.
- Given unfavorable conditions in the power supply, the product can cause the voltage to fluctuate temporarily.
- The product is intended solely for use at connection points that a) do not exceed a maximum permitted supply impedance “Z” (Zmax = 0.382 Ω), or b) have a continuous current-carrying capacity of the mains of at least 100 A per phase.
- As the user, you are required to ensure, in consultation with your electric power company if necessary, that the connection point at which you wish to operate the product meets one of the two requirements, a) or b), named above.

Important information
In the event of an overloading the motor will switch itself off. After a cool-down period (time varies) the motor can be switched back on again.

Damaged electrical connection cable. The insulation on electrical connection cables is often damaged. This may have the following causes:

- Passage points, where connection cables are passed through windows or doors.
- Kinks where the connection cable has been improperly fastened or routed.
- Places where the connection cables have been cut due to being driven over.
- Insulation damage due to being ripped out of the wall outlet.
- Cracks due to the insulation ageing.

Such damaged electrical connection cables must not be used and are life-threatening due to the insulation damage. Check the electrical connection cables for damage regularly. Make sure that the connection cable does not hang on the power network during the inspection. Electrical connection cables must comply with the applicable VDE and DIN provisions. Only use connection cables with the marking „H05VV-F“. The printing of the type designation on the connection cable is mandatory.

AC motor:

- The mains voltage must be 220 – 240 V~.
- Extension cables up to 25 m long must have a cross-section of 1.5 mm 2

Connections and repairs of electrical equipment may only be carried out by an electrician.

Please provide the following information in the event of any inquiries:

- Type of current for the motor
- Machine data-type plate

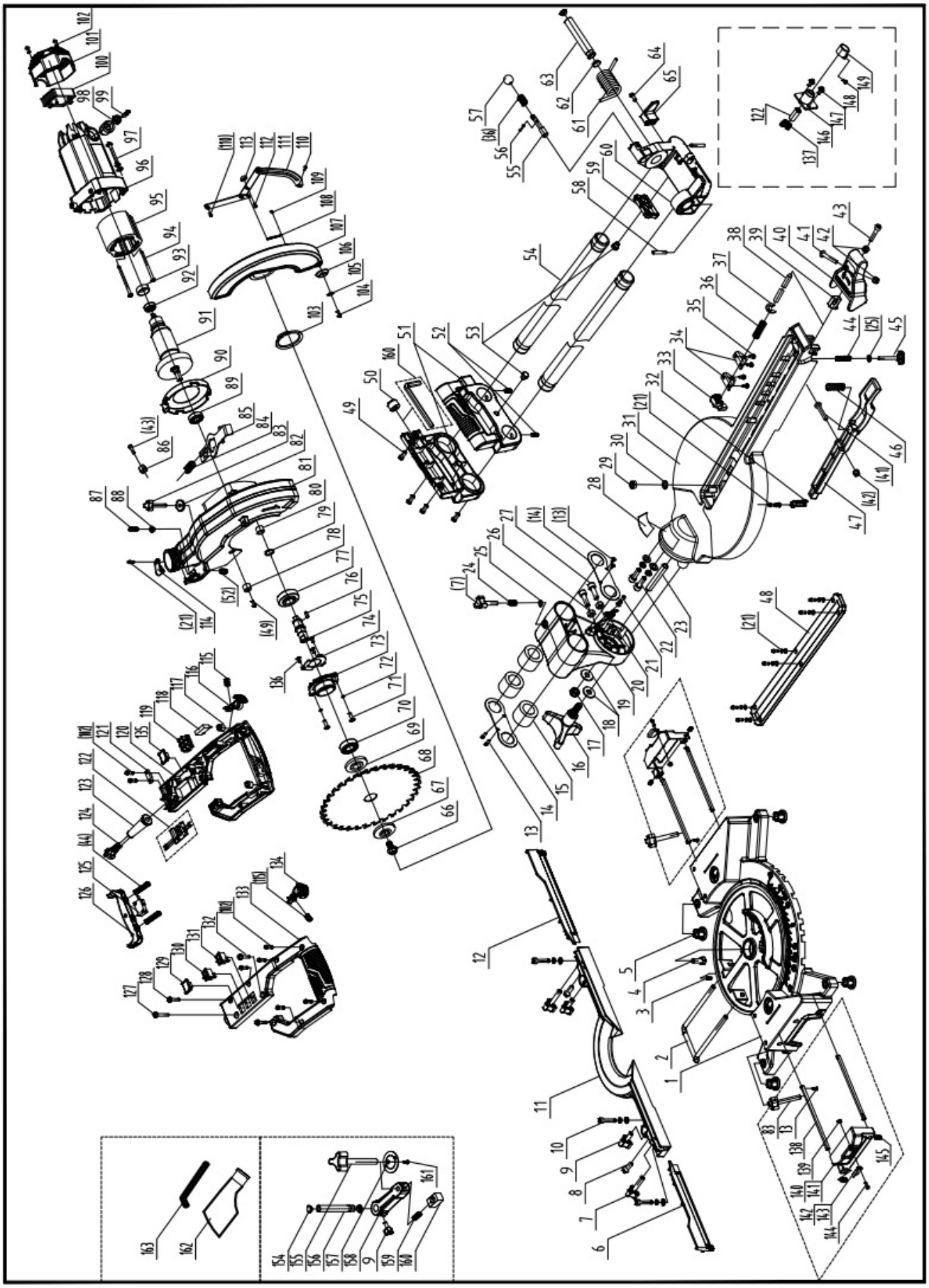
Disposal and recycling

The equipment is supplied in packaging to prevent it from being damaged in transit. The raw materials in this packaging can be reused or recycled. The equipment and its accessories are made of various types of material, such as metal and plastic. Defective components must be disposed of as special waste. Ask your dealer or your local council!

Old devices must not be disposed of with household waste!
This symbol indicates that this product must not be disposed of together with domestic waste in compliance with the Directive (2012/19/EU) pertaining to waste electrical and electronic equipment (WEEE). This product must be disposed of at a designated collection point. This can occur, for example, by handing it in at an authorized collecting point for the recycling of waste electrical and electronic equipment. Improper handling of waste equipment may have negative consequences for the environment and human health due to potentially hazardous substances that are often contained in electrical and electronic equipment. By properly disposing of this product, you are also contributing to the effective use of natural resources. You can obtain information on collection points for waste equipment from your municipal administration, public waste disposal authority, an authorized body for the disposal of waste electrical and electronic equipment, or your waste disposal company.

Troubleshooting

Fault	Possible cause	Remedy
The motor does not wo rk	Motor, cable, or plug defec tive, the mains The circuit breaker switched off	Arrange for the inspection of the machine by a specialist. Never repair the motor yourself. Danger! Check fuses and replace them as necessary
The motor starts up slo wly and does not reach operating speed.	Voltage too low, coils dama ged, capacitor burnt	Contact the utility provider to check the voltage. Arrange for the inspection of the motor by a specialist. Arrange for replacement of the capacitor by a specialist
Motor makes excessive noise	Coils damaged, motor defe ctive	Arrange for the inspection of the motor by a specialist
The motor does not re ach its full power.	Circuits in the network are overloaded (lamps, other motors, etc.)	Do not use any other equipment or motors on the same circuit
Motor overheats easily.	Overloading of the motor, i nsufficient cooling of the m otor	Avoid overloading the motor while cutting, remove dust f rom the motor in order to ensure optimal cooling of the motor
Saw cut is rough or wa vy	Saw blade dull, tooth shap e not appropriate for the m aterial thickness	Re-sharpen saw blade and/or use a suitable saw blade
Workpiece pulls away and/or splinters	Excessive cutting pressure and/or saw blade not suita ble for use	Insert suitable saw blade



CE – Declaration of Conformity

hereby declares the following conformity under the EU Directive and standards for the following article

Marke SCHEPPACH

Article name: SLIDING CROSS CUT MITRE SAW – HM110MP
Art.-№ 5901220901
2000/14/EC_2005/88/EC
Annex V
Annex VI
Noise: measured LWA = xx dB(A); guaranteed LWA = xx dB(A)
P = xx KW; L/Ø = cm
Notified Body:
Notified Body No.:
2010/26/EC
Emission. No:

Standard references:

EN 62841-1;
This declaration of conformity is issued under the sole responsibility of the manufacturer.
The object of the declaration described above fulfills the regulations of the directive 2011/65/EU of the European Parliament and Council from 8th June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Technical Director

Ichenhausen, den 26.05.2020
Subject to change without notice

Warranty

Apparent defects must be notified within 8 days from the receipt of the goods. Otherwise, the thebuyerís rights of claim due to such defects are invalidated. We guarantee our machines in case of proper treatment for the time of the statutory warranty period from delivery in such a way that we place any machine part free of charge which provably becomes unusable due to faulty material or defects of fabrication within such period of time. With respect to parts not manufactured by us, we only warrant insofar as we are entitled to warranty claims against the upstream suppliers. The costs for the installation of the new parts shall be borne by the buyer. The cancellation of the sale or the reduction of the purchase price as well as any other claims for damages shall be excluded.

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+(49)-08223-4002-58

Documents / Resources

	scheppach HM110MP Sliding Mitre Saw [pdf] User Manual HM110MP Sliding Mitre Saw, HM110MP, Sliding Mitre Saw, Mitre Saw, Saw

References

- scheppach | scheppach