scheppach HM216SPX Slide Compound Mitre Saw Instruction Manual

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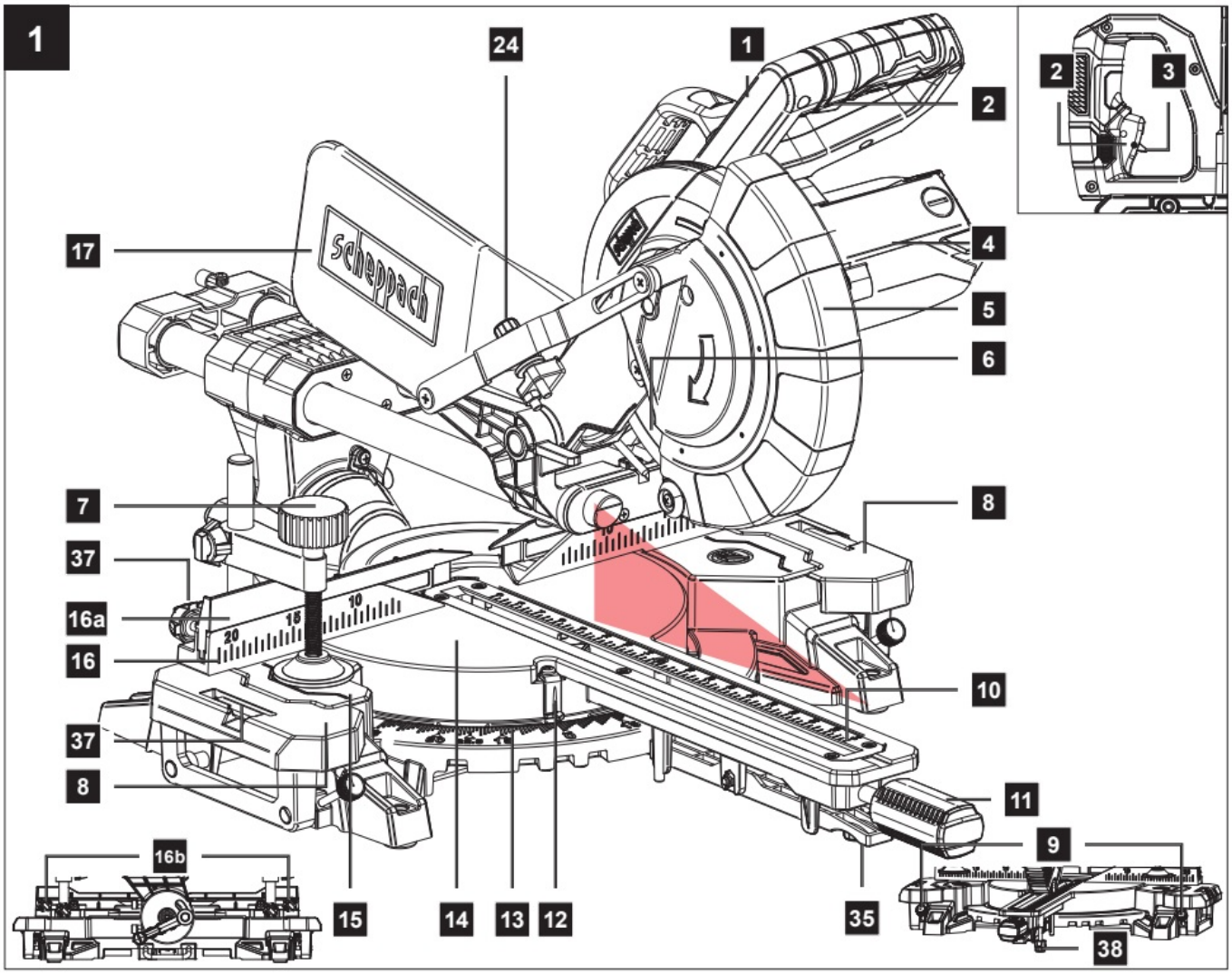
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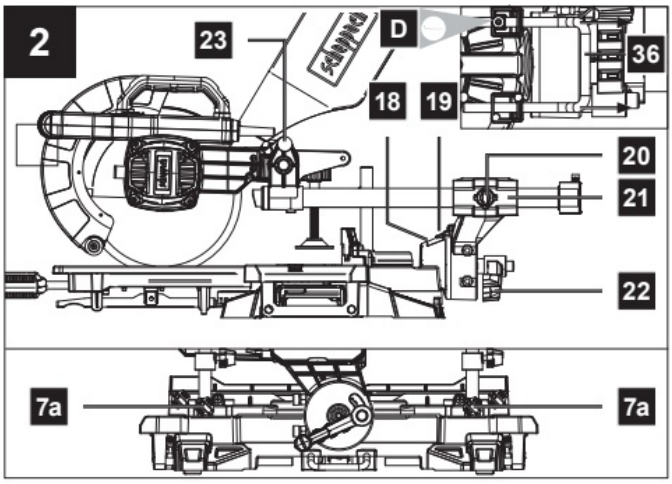
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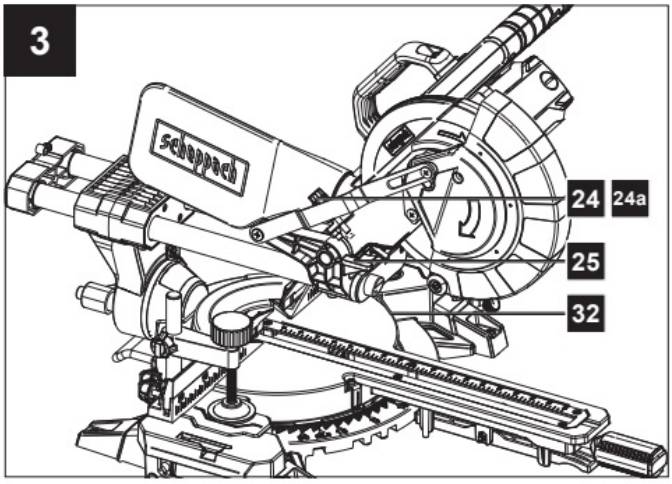
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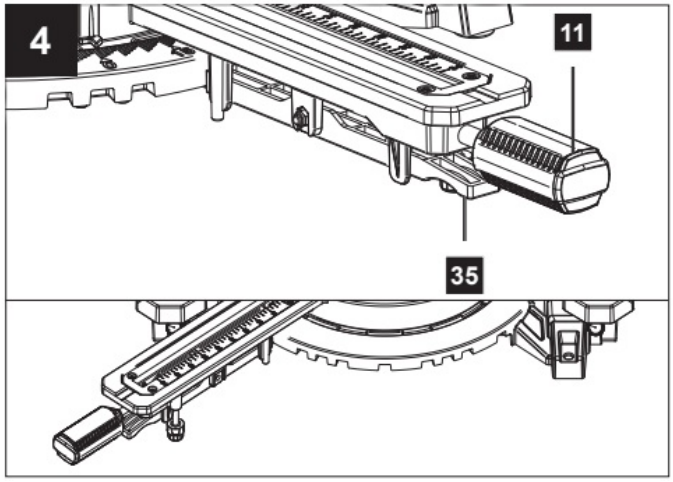
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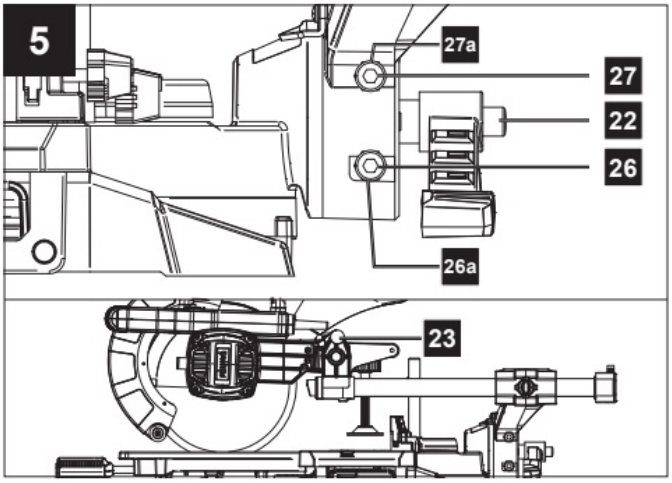
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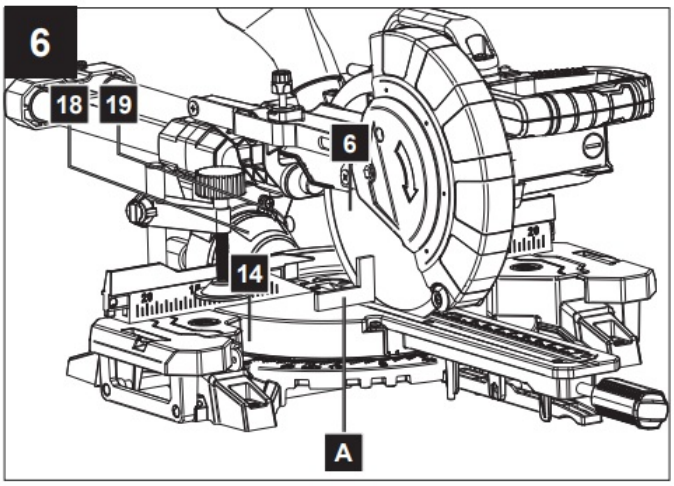
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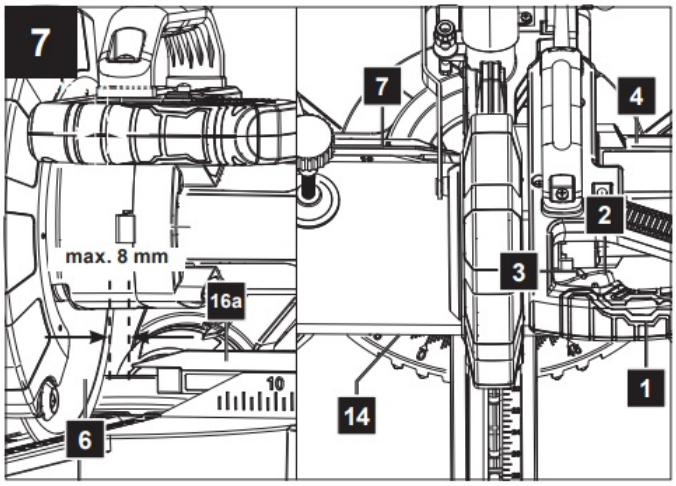
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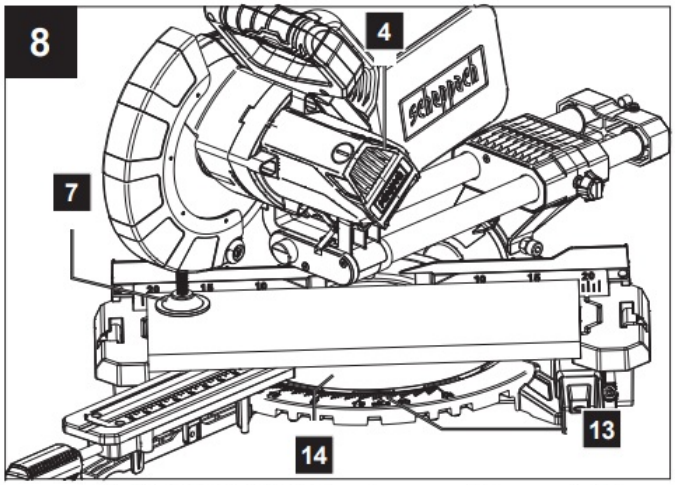
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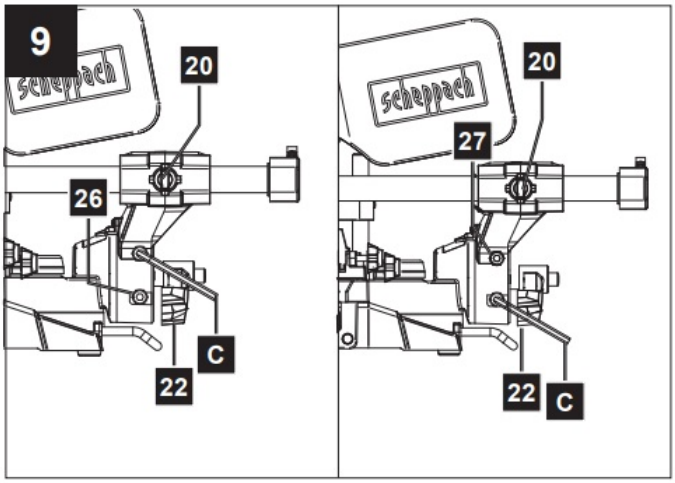
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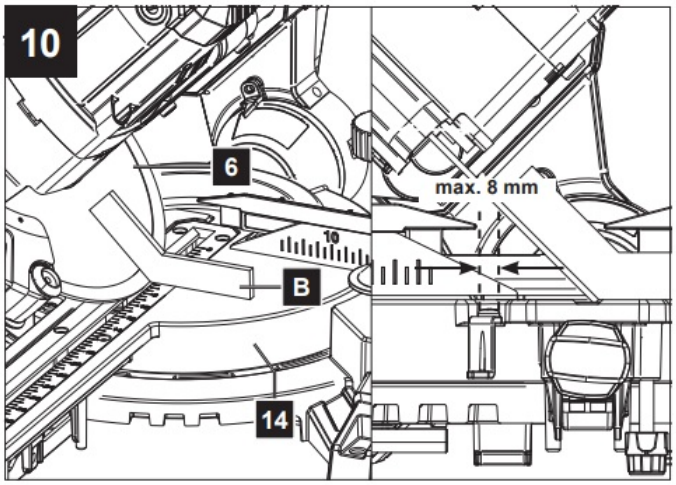
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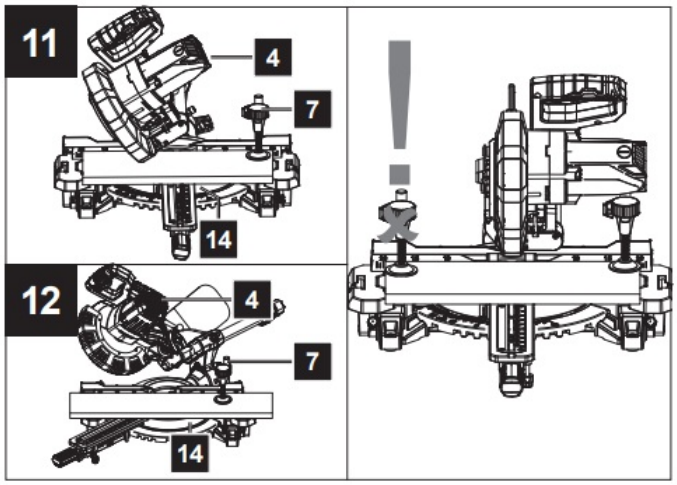
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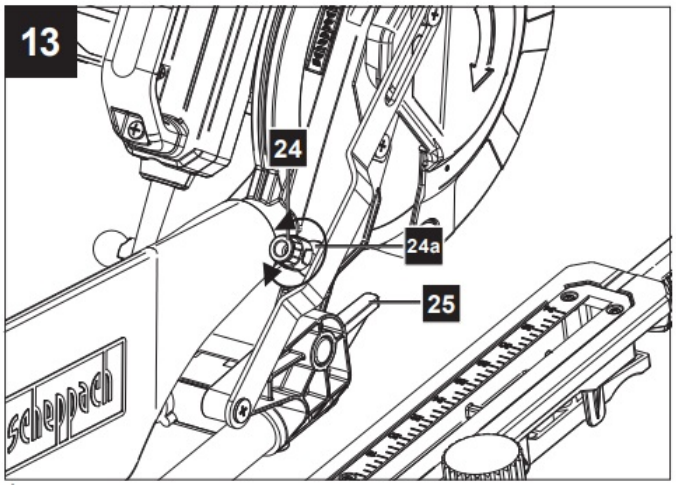
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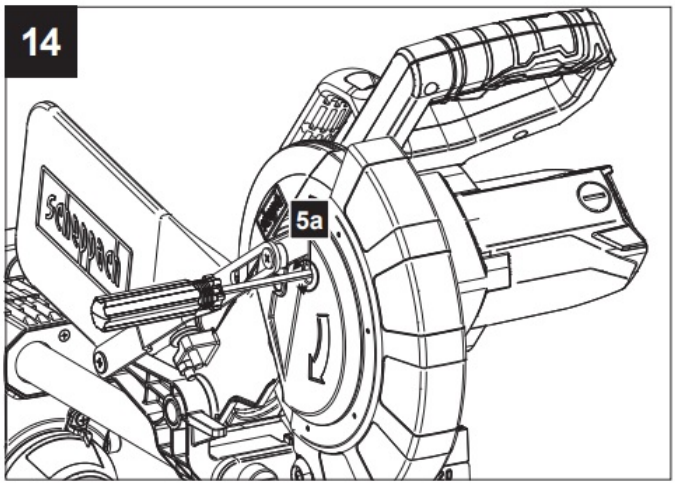
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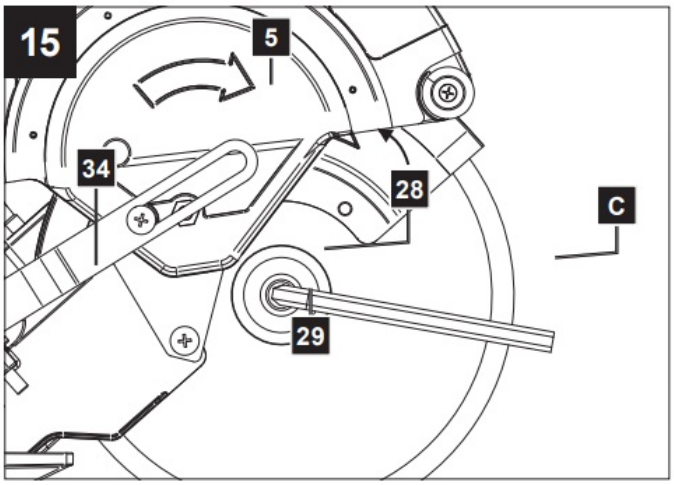
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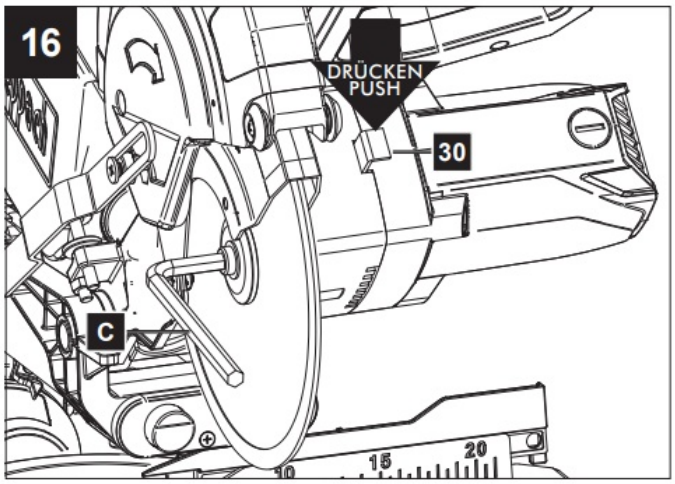
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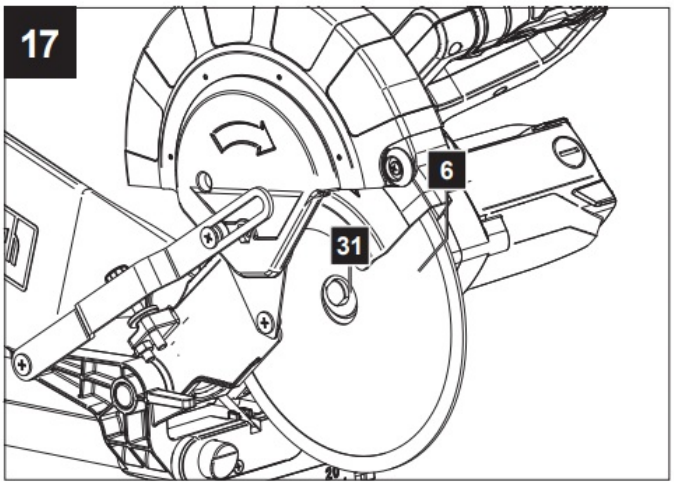
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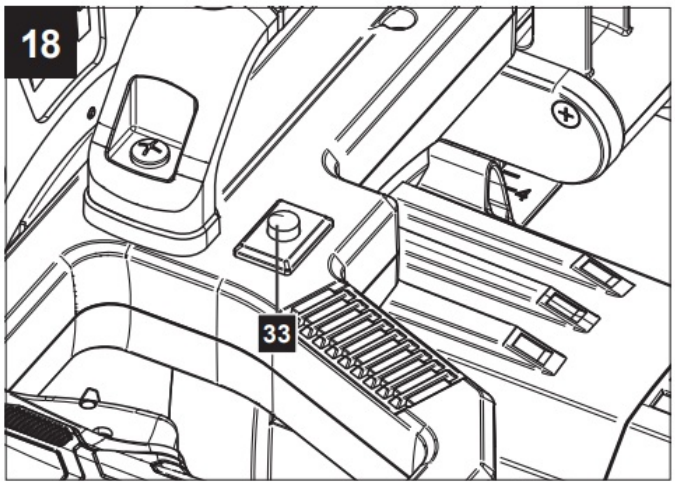
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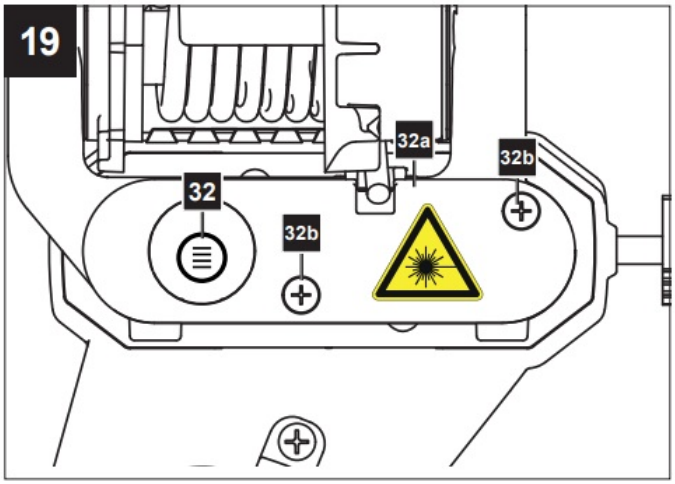
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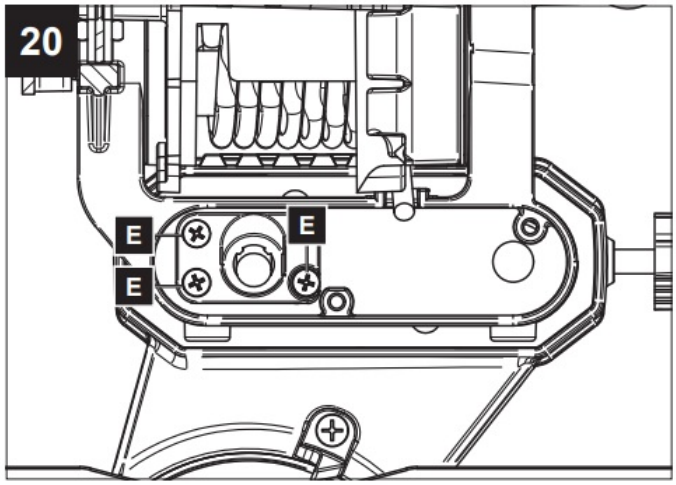
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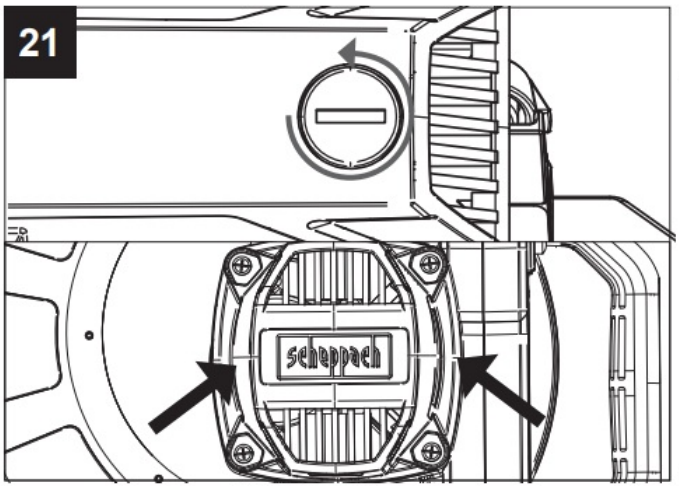
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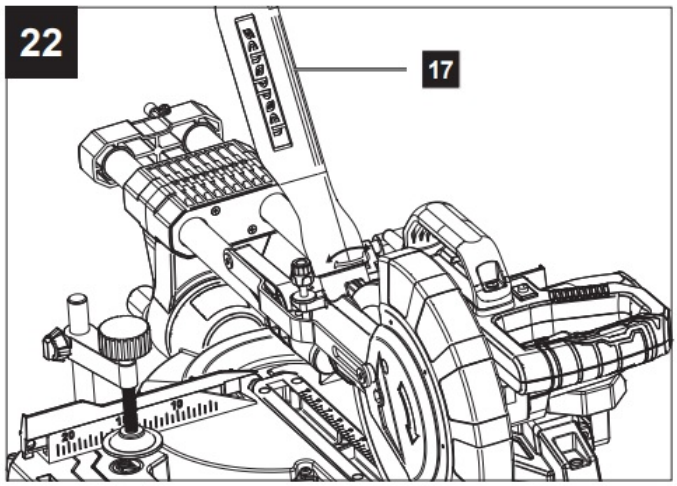
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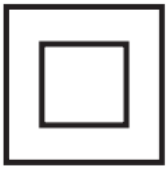
Explanation of the symbols on the equipment

	Before commissioning, read and observe the operating instructions and safety instructions!
	Wear ear-muffs!
	Wear a breathing mask!
	Wear safety goggles!
	Important! Risk of injury. Never reach into the running saw blade!
	Important! Laser radiation
	Protection Class II (double shielded)

Contents

1. 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 the non-compliance of the electric regulations and VDE regulations 0100, DIN 57113 /

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, profession- ally and economically, how to avoid danger, costly repairs, reduce downtimes and how to increase reliability and service life of the machine.

In addition to the safety regulations in the operating instructions, you have to meet the applicable regul tions that apply for 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 ma- chine 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.

2. Device description (fig. 1-22)

1. Handle
2. ON/OFF switch
3. Lock switch
4. Machine head
5. Moving saw blade guard Locking screw
6. Saw blade
7. Clamping device Star-grip screw
8. Workpiece support
9. Set screw for workpiece support

10. Table insert
11. Handle / Set screw for rotary table
12. Pointer
13. Scale
14. Rotary table
15. Fixed saw table
16. Stop rail
    16a. Movable stop rail
    16b. Set screw
17. Sawdust bag
18. Angle screw
19. Angle indicator
20. Set screw for drag guide
21. Drag guide
22. Set screw
23. Locking bolt
24. Screw for cutting depth limiting
    24a. Knurled nut for cutting depth limiting
25. Stop for cutting depth limiting
26. Adjusting screw (90°) Lock nut (90°)
27. Adjusting screw (45°) Lock nut (45°)
28. Flange screw
29. Outer flange
30. Saw shaft lock
31. Inner flange
32. Laser
    32a. Laser housing cover 32b. Phillips screw
33. ON/OFF switch laser
34. Guide bracket
35. Latched position lever
36. Tilt protection
37. Length stop
38. Adjustment screw

A.) 90° stop angle (not supplied)
B.) 45° stop angle (not supplied)
C.) Allen key, 6 mm
D.) Allen key, 3 mm
E.) Phillips head screw (Laser)

3. Scope of delivery

- Crosscut, drag and mitre saw
- 2 x Clamping device (7)
- 2 x Workpiece support (8) (preassembled)

- Sawdust bag (17)
- Allen key 6 mm (C)
- Allen key 3 mm (D)
- Operating manual

4. Intended use

The crosscut, drag and mitre saw is designed to crosscut wood and plastic respective of the machine's size. The saw is not designed for cutting firewood.

Warning!
Do not use the saw to cut materials other than those specified described in manual.

Warning!
The supplied saw blade is only intended for the saw- ing of wood! Do not use this blade for the sawing of 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 cut- ting-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 in- formed about the equipment's potential hazards.

It is also imperative to observe the accident prevention regulations in force in your area. The same applies for 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:

- 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 de- signed 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.

5. 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

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

2. Electrical safety

- **Power tool plugs must match the 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 ground- ed surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or
- **Do not expose power tools to rain or wet con-** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the Never use the cord for carrying, pulling or unplugging the pow- er 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 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 reduc- es the risk of electric

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 med-** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal
- **Prevent unintentional 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.
- **Remove any adjusting key or wrench before turning the power tool** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power

tool in unexpected

- **Dress properly. Do not wear loose clothing or Keep your hair and clothing away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, en- sure these are connected and properly used.** Use of dust collection can reduce dust-related
- **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 sec-

4. Power tool use and care

- **Do not force the power tool.** Use the correct power tool for your The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that can- not be controlled with the switch is dangerous and must be
- **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 accident
- **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** Power tools are dangerous in the hands of untrained users.
- **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 dam- aged, have the power tool repaired before** Many accidents are caused by poorly maintained power tools.
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to
- **Use the power tool, accessories and tool bits 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.
- **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

5. Service

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

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.

1. **Use clamps to support the workpiece when- ever 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.

2. **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
3. **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** 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 towards the operator.
4. **Never cross your hand over the intended line of cutting either in front or behind the saw** 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.
5. **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
6. **Inspect your workpiece before cutting. If the workpiece is bowed or warped, clamp it with the outside bowed face toward the fence. Al- ways make certain that there is no gap be- tween 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 There should be no nails or foreign objects in the workpiece.
7. **Do not use the saw until the table is clear of all tools, wood scraps, etc., except for the work-** Small debris or loose pieces of wood or other objects that contact the revolving blade can be thrown with high speed.
8. **Cut only one workpiece at a** Stacked multiple workpieces cannot be adequately clamped or braced and may bind on the blade or shift dur- ing cutting.
9. **Ensure the mitre saw is mounted or placed on a level, firm work surface before use.** A level and firm work surface reduces the risk of the mitre saw becoming
10. **Plan your work. Every time you change the bevel or mitre angle setting, make sure the adjustable fence is set correctly to support the workpiece and will not interfere with the blade or the guarding** 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.
11. **Provide adequate support such as table ex- tensions, saw horses, for a workpiece that is wider or longer than the table top.** Workpieces longer or wider than the mitre saw table can tip if not securely supported. If the cut-off piece or workpiece tips, it can lift the lower guard or be thrown by the spinning blade.
12. **Do not use another person as a substitute for a table extension or as additional** Un- stable 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.
13. **The cut-off piece must not be jammed or pressed by any means against the spinning saw** If confined, i.e. using length stops, the cut-off piece could get wedged against the blade and thrown violently.
14. **Always use a clamp or a fixture designed to properly support round material such as rods or** Rods have a tendency to roll while be- ing cut, causing the blade to "bite" and pull the work with your hand into the blade.
15. **Let the blade reach full speed before contact- ing the** This will reduce the risk of the workpiece being thrown.
16. **If the workpiece or blade becomes jammed, turn the mitre saw off. Wait for all moving parts to stop and disconnect the plug from the power source and/or remove the battery Then work to free the jammed material.** Continued sawing with a jammed workpiece could cause loss of control or damage to the mitre saw.
17. **After finishing the cut, release the switch, hold the saw head down and wait for the blade to stop before**

removing the cut-off Reach- ing with your hand near the coasting blade is dangerous.

18. **Hold the handle firmly when making an incomplete cut or when releasing the switch before the saw head is completely in the down posy** 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
2. Do not use any insertion tools with cracks. Sort out cracked insertion tools. Repairs are not per-
3. Do not use saw blades made of high speed
4. Check the condition of the saw blades before us- ing the crosscut, drag and mitre saw.
5. Make sure that a suitable saw blade for the material to be cut is
6. Only use saw blades recommended by the man 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 crosscut, drag and mitre saw and which are suitable for the material to be cut.
9. Observe the saw blade direction of
10. Only insertion the saw blade if you have mastered their use.
11. Observe the maximum 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 reducing 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
15. Make sure that fixed reducer rings are parallel to each other.
16. Handle insertion tool with caution. They are ide- ally stored in the originally package or special 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, make sure that the insertion tool meets the technical requirements of this electric tool and is properly
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 of the saw teeth.
25. When sawing plastic, avoid melting of the

Use the appropriate saw blades for this purpose. Replace damaged or worn saw blades immediately.

When the saw blade overheats, stop the ma- chine. Allow the saw blade to cool down before using the machine again.

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

- Do not look directly into the laser beam with unprotected
- Never look into the path of the
- Never point the laser beam towards reflecting sur- faces and persons or animals. Even a laser beam with a low output can cause damage to the
- Caution – methods other than those specified here can result in dangerous radiation exposure.
- Never open the laser module. Unexpected expo- sure 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 authorised representative.

Residual risks

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

- Health hazard due to electrical power, with the use of improper electrical connection
- Furthermore, despite all precautions having been met, some non-obvious residual risks may still re-
- Residual risks can be minimised if the „Safety information“ and the „Proper use“ are observed along with the whole of the operating
- Do not load the machine unnecessarily: excessive pressure when sawing will quickly damage the saw blade, which results in reduced output of the ma- chine in the processing and in cut
- 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 in an
- Use the tool that is recommended in this 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 ma- chine prior to any

Warning!

This electric tool generates an electromagnetic field during operation. This field can impair active or pas- sive medical implants under certain conditions. In or- der 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.

6. Technical data

AC motor…….. .. 220 – 240 V~ 50 Hz
Power S1……. 1700 Watt
Operating mode…….. S6 25%* 2000W
Idle speed n …….. 4800 min-1
Carbide saw blade…….. ø 210 x ø 30 x 2,6 mm
Number of teeth…… 24
Maximum tooth width of saw blade……. 3 mm
Swivel range…… .. -45° / 0°/ +45°
Mitre cut…… 0° to 45° to the left
Saw width at 90°……. 340 x 65 mm
Saw width at 45°……. 240 x 65 mm
Saw width at 2 x 45° (double mitre cut))…….. 240 x 38 mm
Protection class…… II /⊡
Weight…….. ca. 12,15 kg
Laser class…….. 2
Wavelength of laser…….. 650 nm
Laser output…… < 1 mW

- S6, continuous operation periodic duty. Identical duty cycles with a period at load followed by a peri- od at no load. Running time 10 minutes; duty cycle is 25% of the running time.

The work piece 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.

Sound pressure level LpA……. 96,5 dB(A)
Uncertainty KpA……. 3 dB
Sound power level LWA…… 109,5 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 standardised 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
- Try to keep emissions as low as possible, for ex- ample 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).

7. Before starting the equipment

- Open the packaging and remove the device carefully.
- Remove the packaging material as well as the pack- aging 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 swal- lowing and suffocation!

- The equipment must be set up where it can stand Secure the machine on a workbench, base frame or similar. Insert 4 screws (not included in the scope of delivery) into the holes on the fixed saw table (15). Tighten up the screws.
- Loosen the tilt protection (36) pre-installed at the bottom of the saw, completely pull it out and secure it with an Allen key (D).
- Adjust the adjusting screw (38) to the level of the table top to avoid wobbling of the
- 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
- When working with wood that has been processed before, watch out for foreign bodies such as nails or screws,
- Before you press the ON/OFF switch check that the saw blade is fitted correctly. Moving parts must run
- Before you connect the equipment to the power supply make sure the data on the rating plate are identical to the mains

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
- When folding the saw upwards into the starting position, the saw blade guard must cover the saw blade

8. Attachment

8.1 Attaching the crosscut, drag and mitre saw (fig. 1/2/4)

- In order to adjust the rotary table (14), loosen the handle (11) approximately 2 turns and pull up the latched position lever (35) with your index
- Turn the rotary table (14) and pointer (12) to the de- sired angle measurement on the scale (13) and use the handle (11) to secure it.
- Press the machine head (4) down lightly. The saw is unlocked from the lower position by at the same time, pulling out and turning the locking pin (23) from the engine
- Turn the locking bolt (23) 90 degrees to secure it in the unlocked

- Swing the machine head (4)
- 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). For 0°- 45° mitre cuts, the clamping device (7) must only be mounted on the right side (see 11-12).
- It is possible to tilt the machine head (4) a 45° to the left by loosening the set screw (22).
- Workpiece supports (8) must always be secured and used during Set the desired table size by loosening the set screw (9). Then tighten the set screw (9) again.

8.2 Sawdust bag (fig. 1/22)

The saw is equipped with a debris bag (17) for saw- dust and chips.
Squeeze the wings of the metal ring on the dust bag (17) together and slide it over the discharge port near the engine. The debris bag (17) can be emptied by means of a zipper at the bottom.

8.2.1 Connection to an external dust extractor

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

8.3 Precision adjustment of the stop for crosscut 90° (fig. 1/2/5/6)

Tools required:

- Allen key 6 mm
- Open-ended spanner SW13 (not included in the scope of delivery)
- **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°.
- Tighten the lock nut (26a)
- Subsequently check the position of the angle Indi- If necessary loosen the pointer (19) using a Phillips screwdriver, set to position 0° on the angle scale (18) and re-tighten the retaining screw.

8.4 Precision adjustment of the stop for mitre cut 45° (fig. 1/2/5/9/10)

Tools required:

- Allen key 6 mm
- Open-ended spanner SW13 (not included in the scope of delivery)
- **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°

  Attention!

For bevel cuts (inclined saw head), the moveable stop rail (16a) must be fixed in the outer position. (**Left side**).

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) out-put.
- The moveable stop rails (16a) must be locked so that the distance between the stop rails (16a) and the saw blade (6) is at least 8
- The moveable stop rail (28) must be fixed in the inner (**Right side**).
- 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 screw (27) until the angle between the saw blade (6) and the rotary table (14) is precisely 45°.
- Tighten the lock nut (27a)
- Subsequently check the position of the angle endif necessary, loosen the pointer (19) using a Phillips screwdriver, set to position 45° on the angle scale (18) and re-tighten the retaining screw.

9. Operation

9.1 Using the laser (fig. 18)

- **To switch on:** Press the ON/OFF switch laser (33) 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).

9.2 Limiting the cutting depth (cutting grooves) (fig. 3/13)

WARNING
Risk of kickback! When cutting grooves, it is particularly important that no lateral pressure is exerted on the saw blade. Otherwise, the saw head might suddenly kick back! Use a clamping device when cutting grooves. Avoid lateral pressure on the saw head.

- 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

9.3 Serial cutting

For repeated cuts of the same length, the length stop

(37) can be opened. You can use the length stop (37) on the right and on the left.

- Fold up the length stop (37).
- Loosen the set screw for workpiece support (9).
- Pull out the workpiece support (8).
- Set the required dimension between saw blade and length stop (37).
- Re-tighten the set screw for workpiece support (9).
- Perform cutting as described in sections 4 to 10.7.

9.4 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 ma- chine 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) in-
- The moveable stop rails (16a) must be locked so that the distance between the stop rails (16a) and the saw blade (6) is no more than 8
- Before making the cut, check that the stop rails (16a) and the saw blade (6) cannot collide.
- Re-tighten the set screw (16b).
- Move the machine head (4) to its upper
- 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 stop 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
- Release the lock switch (3) and press the ON/OFF switch (2) to start the
- **With the drag guide (21) fixed in place (21):**: 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 work
- **With the drag guide (21) not fixed in place (21):** 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 work
- 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; in- stead allow the machine head to move upwards slowly whilst applying light counter pressure.

9.5 Crosscut 90° and turntable 0° – 45° (fig. 1/7/8)

The crosscut, drag and mitre saw can be used to make crosscuts of 0° -45° to the left and 0° -45° to the right in relation to the stop rail.

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 rails (16a) must be locked so that the distance between the stop rails (16a) and the saw blade (6) is at least 8

- Before making the cut, check that the stop rails (16a) and the saw blade (6) cannot
- Secure the set screw (16b)
- Loosen the handle (11) if it is tightened. Pull the indexed position lever (35) upwards with the pointer Adjust the rotary table (14) to the desired angle using the handle (11).
- 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 handle (11) to secure the rotary table(14).
- Cut as described under section 4.

9.6 Mitre cut 0°- 45° and turntable 0° (fig. 1/2/11)

The crosscut, drag and mitre saw can be used to make mitre cuts of 0° – 45° in relation to the work face.
Attention!

For bevel cuts (inclined saw head), the moveable stop rail (16a) must be fixed in the outer position. (**Left side**).

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) out-
- The moveable stop rails (16a) must be locked so that the distance between the stop rails (16a) and the saw blade (6) is at least 8
- The moveable stop rail (28) must be fixed in the inner (**Right side**).
- Before making a cut, check that the stop rail (16a) and the saw blade (6) cannot collide.
- Secure the set screw (16b)
- Move the machine head (4) to the top
- Fix the rotary table (14) in the 0°
- Loosen the set screw (22). 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 4.

9.7 Mitre cut 0°- 45° and turntable 0°- 45° (fig. 1/2/4/12)

The crosscut, drag and mitre saw can be used to make mitre cuts to the left of 0°- 45° in relation to the work face and, at the same time, 0° – 45° to the left or 0° – 45° to the right in relation to the stop rail (double mitre cut).

Attention!

For bevel cuts (inclined saw head), the moveable stop rail (16a) must be fixed in the outer position. (**Left side**).

- Open the set screw (16b) for the moveable stop rail (16a) and push the moveable stop rail (16a) out-
- The moveable stop rails (16a) must be locked so that the distance between the stop rails (16a) and the saw blade (6) is at least 8
- Before making a cut, check that the stop rails (16a) and the saw blade (6) cannot collide.
- Re-tighten the set screw (16b).
- Move the machine head (4) to its upper
- Release the rotary table (14) by loosening the handle (11).
- Using the handle (11), set the rotary table (14) to the desired angle (refer also to point 10.5 in this regard).
- Re-tighten the handle (11) 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 10.6).
- Re-tighten the set screw (22).
- Cut as described under section 4.

10. Maintenance

Warning! Prior to any adjustment, maintenance or service work disconnect the mains power plug!

10.1 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.

10.2 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.

10.3 Replacing the table insert Danger!

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

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

10.4 Brush inspection

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 counter clockwise (as shown in Figure 21). Then remove the carbon brushes.
Replace the carbon brushes in the reverse order.

10.5 Changing the saw blade (fig. 1/2/14-17)

Remove the power plug! Important!

Wear safety gloves when changing the saw blade. Risk of injury!

- Swing the machine head (4) upwards and lock with the locking bolt (23).
- Loosen the retaining screw (5a) of the cover using a Phillips

WARNING!

Do not fully remove this screw.

- Fold the saw blade guard (5) upwards until the saw blade guard (5) is above the flange screw (28).
- With one hand insert the Allen key (C) in the flange screw (28).
- Hold the Allen key (C) and slowly close the saw blade guard (5) until it touches the Allen key (C).
- Firmly press the saw shaft lock (30) and slowly rotate the flange screw (28) in clockwise direction. The saw shaft lock (30) engages after no more than one
- 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 out downwards.
- Carefully clean the flange screw (28), outer flange (29) and inner flange (31).
- Fit and fasten the new saw blade (6) in reverse or Fold the saw blade guard (5) downwards until the saw blade guard (5) engages in the locking screw (5a).
- Re-tighten the locking screw (5a).
- **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 safe- ty devices are in good working
- **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.

10.6 Adjusting the laser (fig. 19-20)

If the laser (32) ceases to indicate the correct cutting line, you can readjust the laser. To do so, open the screws (32b) and remove the front cover (32a). Loos- en the Phillips head screws (E). Set the laser by moving sideways until the laser beam strikes the teeth of the saw blade (6).

After adjusting and tightening the laser, mount the front cover by tightening both screws (32b) by hand. The machine must be connected to the mains in order to adjust the laser.

Attention!

Never press the ON/OFF switch (2) when adjusting the laser. Danger of injury!

10.7 Service information

Please note that the following parts of this product are subject to normal or natural wear and that the follow- ing parts are therefore also required for use as consumables.

Wear parts*: carbon brushes, saw blade, table insert (art. no. 5901215010), saw dust bag

- Not necessarily included in the scope of delivery!

11. Transport

- Tighten the handle (11) to lock the rotary
- Press the machine head (4) downwards and secure with the locking bolt (23).
- Fix the saw's drag function with the locking screw for drag guide (20) in rear
- Carry the equipment by the fixed saw table (15).
- When reassembling the equipment proceed as de- scribed under section 8 and

12. 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.

13. 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 ex- tension cable used must also comply with these regulations.

- The product meets the requirements of EN 61000- 3-11 and is subject to special connection This means that use of the product at any freely selectable connection point is not allowed.
- Given unfavourable conditions in the power supply the product can cause the voltage to fluctuate temporarily.
- The product is intended solely for use at connection points where the following prerequisites apply:
    1. A maximum permitted supply impedance “Z” (Zmax = 339 Ω) must not be exceeded.
    2. A continuous current-carrying capacity of the

mains of at least 100 A per phase must be given.

- As the user, you are required to ensure that the connection point at which you wish to operate the product meets one of the two requirements, a) or b), mentioned above. As necessary, consult your electric power

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
- 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 of the same designation.

The printing of the type designation on the connection cable is mandatory.

If the power cord of this device is damaged, it must be replaced by a special power cord, which is available from the manufacturer or its service department.

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 mm2.

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

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

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

14. 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 house- hold 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 authorised 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 authorised body for the disposal of waste electrical and electronic equipment or your waste disposal company.

15. Troubleshooting

Fault	Possible cause	Remedy
Motor does not work	Motor, cable or plug defective, fuses burnt	Arrange for inspection of the machine by a specialist. Never repair the motor yourself. Danger! Check fuses and replace as necessary
The motor starts up slowly and does not reach operating speed.	Voltage too low, coils damaged, capacitor burnt	Have an electrician check the voltage. Arrange for inspection of the motor by a specialist. Arrange for replacement of the capacitor by a specialist
Motor makes excessive noise	Coils damaged, motor defective	Arrange for inspection of the motor by a specialist
The engine does not reach 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 eas ily.	Overloading of the motor, insufficient co ol- ing of the motor	Avoid overloading the motor while cutting, re move dust from the motor in order to ensure optimal cooling of the motor
Saw cut is rough or wavy	Saw blade dull, tooth shape not appropri ate for the material thickness	Re-sharpen saw blade and/or use suitable sa w blade
Workpiece pulls awa y and/or splinters	Excessive cutting pressure and/or saw b lade not suitable 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 / *Brand*: **SCHEPPACH**
Art.-Bezeichnung / *Article name:* **KAPP-ZUGSÄGE - HM216SPX**
SLIDE COMPOUND MITRE SAW - HM216SPX
SCIE À ONGLETS RADIALES - HM216SPX
Art.-Nr. / *Art. no.:* **5901221901**

	2014/29/EU		2004/22/EC		89/686/EC_96/58/EC		2000/14/EC_2005/88/EC
	2014/35/EU		2014/68/EU		90/396/EC		**Annex V**
X	2014/30/EU	X	2011/65/EU*				**Annex VI** Noise: measured L_{WA} = xx dB(A); guaranteed L_{WA} = xx dB(A) P = xx KW; L/Ø = cm Notified Body: Notified Body No.:

X	2006/42/EC	
	Annex IV Notified Body: Notified Body No.: Certificate No.:	

	2010/26/EC
	Emission. No:

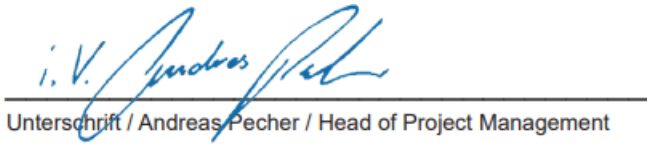
Standard references:
EN 62841-1:2015, EN 62841-3-9:2015/A11:2017,
EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-11:2000

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration described above fulfils 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.

Ichenhausen, den 18.01.2020



First CE: 2019
Subject to change without notice
Documents registar: Sebastian Katzer
Günzburger Str. 69, D-89335 Ichenhausen

Apparent defects must be notified within 8 days from the receipt of the goods. Otherwise, the buyers rights of claim due to such defects are invalidated. We guarantee for our machines in case of proper treatment for the time of the statutory warranty period from delivery in such a way that we replace 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 sale or the reduction of purchase price as well as any other claims for damages shall be excluded.

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Documents / Resources

	scheppach HM216SPX Slide Compound Mitre Saw [pdf] Instruction Manual HM216SPX, Slide Compound Mitre Saw

References

- scheppach | scheppach