

Original operating instructions
Angle grinder

Einhell[®]

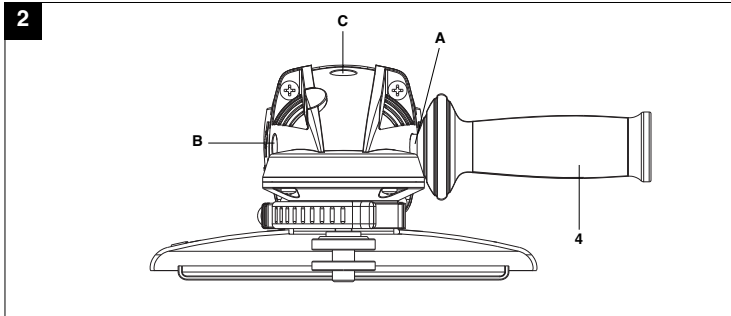
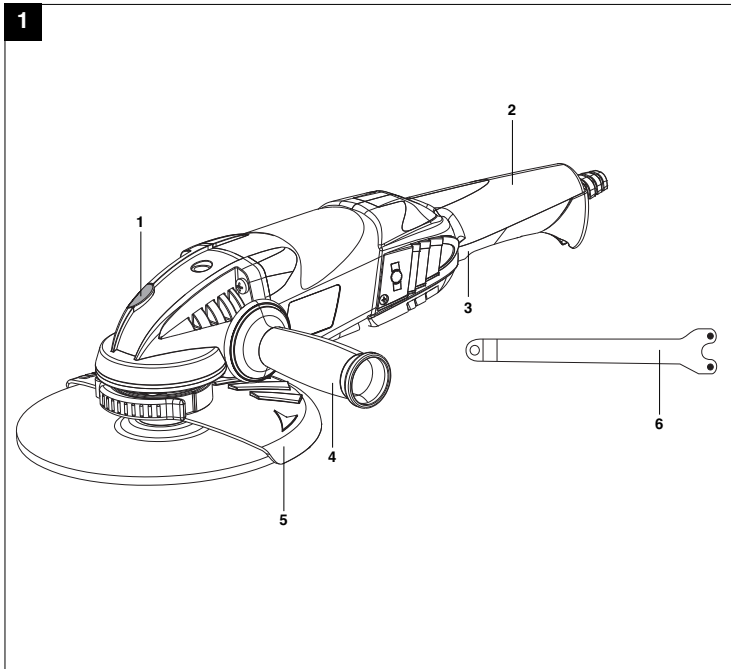
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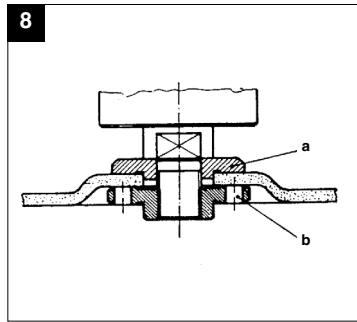
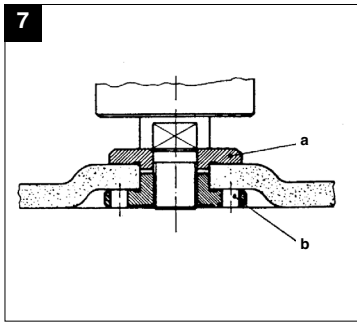
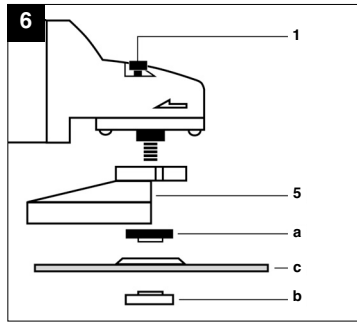
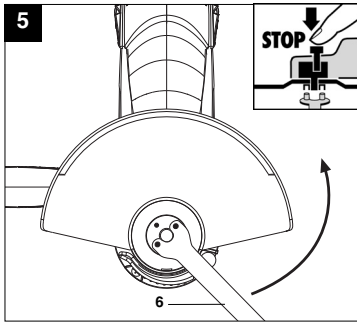
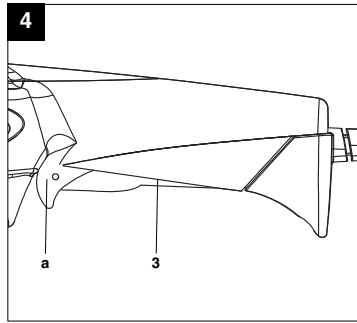
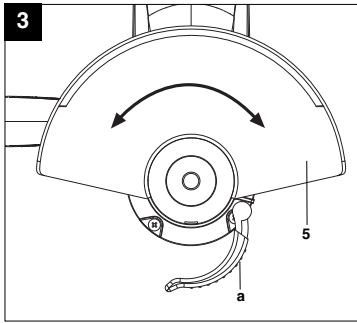
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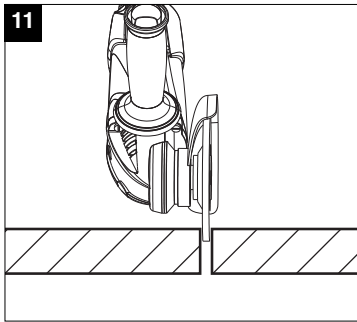
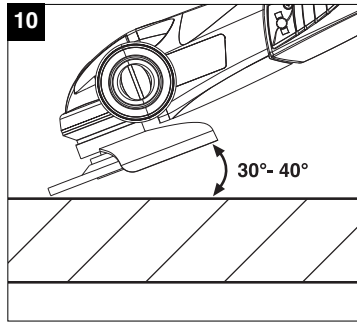
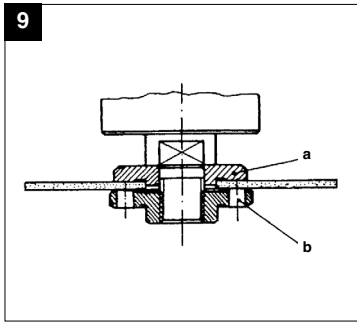
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RT-AG **230**



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"Caution - Read the operating instructions to reduce the risk of injury"



Wear ear-muffs.
The impact of noise can cause damage to hearing.



Wear a breathing mask.
Dust which is injurious to health can be generated when working on wood and other materials.
Never use the device to work on any materials containing asbestos!



Wear safety goggles.
Sparks generated during working or splinters, chips and dust emitted by the device can cause loss of sight.



This safety guard is designed for sanding/grinding.



This safety guard is designed for cutting and grinding/sanding. (not included in items supplied)

GB**⚠ Important!**

When using equipment, a few safety precautions must be observed to avoid injuries and damage. Please read the complete operating manual with due care. Keep this manual in a safe place, so that the information is available at all times. If you give the equipment to any other person, give them these operating instructions as well.

We accept no liability for damage or accidents which arise due to non-observance of these instructions and the safety information.

1. Safety information

Please refer to the booklet included in delivery for the safety instructions.

⚠ CAUTION!

Read all safety regulations and instructions.

Any errors made in following the safety regulations and instructions may result in an electric shock, fire and/or serious injury.

Keep all safety regulations and instructions in a safe place for future use.

2. Layout (Fig. 1)

1. Spindle lock
2. Handle
3. ON/OFF switch
4. Additional handle
5. Guard
6. Flange nut wrench

3. Proper use


The angle grinder is designed for grinding metal and stone when using the appropriate grinding wheel and guard.

Caution! To cut metal and stone the grinder/sander may only be used when the guard (available as an accessory) is mounted.

The machine 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.

Please note that our equipment has not been designed for use in commercial, trade or industrial applications. Our warranty will be voided if the machine is used in commercial, trade or industrial businesses or for equivalent purposes.

4. Technical data

Mains voltage:	230 V ~ 50 Hz
Power input:	2300 W
Idling speed:	6,500 rpm
Max. wheel diameter:	230 mm
Mounting spindle thread:	M14
Protection class:	II / 
Weight:	5.8 kg

Sound and vibration

Sound and vibration values were measured in accordance with EN 60745.

L_{pA} sound pressure level	96 dB(A)
K_{pA} uncertainty	3 dB
L_{WA} sound power level	112 dB(A)
K_{WA} uncertainty	3 dB

Wear ear-muffs.

The impact of noise can cause damage to hearing.

Total vibration values (vector sum of three directions) determined in accordance with EN 60745.

Surface sanding/grinding

Vibration emission value $a_n = 3.1 \text{ m/s}^2$

K uncertainty = 1.5 m/s^2

⚠ Important!

The vibration value changes according to the area of application of the electric tool and may exceed the specified value in exceptional circumstances.

Keep the noise emissions and vibrations to a minimum.

- Only use appliances which are in perfect working order.
- Service and clean the appliance regularly.
- Adapt your working style to suit the appliance.
- Do not overload the appliance.
- Have the appliance serviced whenever necessary.
- Switch the appliance off when it is not in use.
- Wear protective gloves.

5. Before starting the equipment

Before you connect the equipment to the mains supply make sure that the data on the rating plate are identical to the mains data.

5.1 Fitting the additional handle (Fig. 2)

- The angle grinder must not be used without the additional handle (4).
- The additional handle can be secured in any of three positions (A, B, C).

Tool side	Suitable for
Left (position A / as shown)	Right-handed users
Right (position B)	Left-handed users
Top (position C)	Using cutting wheels

5.2 Setting the guard (Fig. 3)

- Switch off the tool. Pull the power plug.
- Adjust the guard (5) to protect your hands so that the material being ground is directed away from your body.
- The position of the guard (5) can be adjusted to any specific working conditions. Undo the clamp handle (a) and turn the cover (5) into the required position.
- Ensure that the guard (5) correctly covers the gear wheel casing.
- Secure the clamp handle (a) again.
- Ensure that the guard (5) is secure.

⚠ **Take care that the safety device is secure.**

⚠ **Never use the angle grinder without the guard.**

5.3 TEST RUN FOR NEW GRINDING WHEELS

Allow the right-angle grinder to run in idle for at least 1 minute with the grinding or cutting wheel fitted in place. Vibrating wheels are to be replaced immediately.

6. Operation**6.1 SWITCH (Fig. 4)**

- The ON/OFF switch (3) has a locking switch (a) to prevent the tool being started by accident.
- To start the equipment push the locking switch (a) forwards, then press the ON/OFF switch (3).

⚠ **Wait until the machine has reached its top speed. You can then position the angle grinder on the workpiece and machine it.**

6.2 Changing the grinding wheels (Fig. 5)

Use the face spanner (6) supplied to change the grinding wheels.

Pull out the power plug.

- Simple wheel change by spindle lock:
- Press the spindle lock and allow the grinding wheel to latch in place.
- Open the flange nut with the face spanner. (Fig. 5)
- Change the grinding or cutting wheel and tighten the flange nut with the face spanner.

⚠ Important!

**Only ever press the spindle lock when the motor and grinding spindle are at a standstill!
You must keep the spindle lock pressed while you change the wheel!**

For grinding or cutting wheels up to approx. 3 mm thick, screw on the flange nut with the flat side facing the grinding or cutting wheel.

6.3 Flange arrangements when using grinding wheels and cutting wheels (Fig. 6-9)

- Flange arrangement when using a depressed-centre or straight grinding wheel (Fig. 7)
 - a) Clamping flange
 - b) Flange nut
- Flange arrangement when using a depressed-centre cutting wheel (Fig. 8)
 - a) Clamping flange
 - b) Flange nut
- Flange arrangement when using a straight cutting wheel (Fig. 9)
 - a) Clamping flange
 - b) Flange nut

GB**6.4 MOTOR**

It is vital for the motor to be well ventilated during operation. Be sure, therefore, to keep the ventilation holes clean at all times.

6.5 GRINDING WHEELS

- Never use a grinding or cutting wheel bigger than the specified diameter.
- Before using a grinding or cutting wheel, check its rated speed.
- The wheel's rated speed must be higher than the idle speed of the right-angle grinder.
- Use only grinding and cutting wheels that are approved for a minimum speed of 6,500 rpm and a peripheral speed of 80 m/sec.
- Check the direction of rotation when you use diamond cutting wheels. The directional arrow on the diamond cutting wheel must point in the direction in which the tool rotates.

6.6 OPERATING MODES**6.6.1 Rough grinding (Fig. 10)**

⚠ Caution: Use the safety device for sanding/grinding (included in items supplied).

For the best rough grinding results, hold the grinding wheel at an angle of between 30° and 40° to the workpiece surface and guide back and forth over the workpiece in steady movements.

6.6.2 Cutting (Fig. 11)

⚠ Caution: Use the safety device for abrasive cutting (available as accessory, see 8.4)

When you use the right-angle grinder for cutting purposes, avoid tilting it in the cutting plane. The cutting wheel must have a clean cutting edge. A diamond cutting wheel is best used to cut hard stone.

⚠ It is prohibited to use the machine on asbestos materials!

⚠ Never use a cutting wheel for rough grinding.

7. Replacing the power cable

If the power cable for this equipment is damaged, it must be replaced by the manufacturer or its after-sales service or similarly trained personnel to avoid danger.

8. Cleaning, maintenance and ordering of spare parts

Always pull out the mains power plug before starting any cleaning work.

8.1 Cleaning

- Keep all safety devices, air vents and the motor housing free of dirt and dust as far as possible. Wipe the equipment with a clean cloth or blow it with compressed air at low pressure.
- We recommend that you clean the device immediately each time you have finished using it.
- Clean the equipment regularly with a moist cloth and some soft soap. Do not use cleaning agents or solvents; these could attack the plastic parts of the equipment. Ensure that no water can seep into the device.

8.2 Carbon brushes

In case of excessive sparking, have the carbon brushes checked only by a qualified electrician. Important! The carbon brushes should not be replaced by anyone but a qualified electrician.

8.3 Maintenance

There are no parts inside the equipment which require additional maintenance.

8.4 Ordering replacement parts

Please quote the following data when ordering replacement parts:

- Type of machine
- Article number of the machine
- Identification number of the machine
- Replacement part number of the part required

For our latest prices, information and order details please go to www.isc-gmbh.info

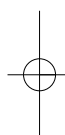
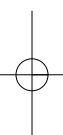
Safety guard for cutting (Art. No.: 44.500.21)



9. Disposal and recycling

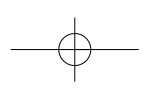
The unit is supplied in packaging to prevent its being damaged in transit. This packaging is raw material and can therefore be reused or can be returned to the raw material system.

The unit 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.



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GUARANTEE CERTIFICATE

Dear Customer,

All of our products undergo strict quality checks to ensure that they reach you in perfect condition. In the unlikely event that your device develops a fault, please contact our service department at the address shown on this guarantee card. Of course, if you would prefer to call us then we are also happy to offer our assistance under the service number printed below. Please note the following terms under which guarantee claims can be made:

1. These guarantee terms cover additional guarantee rights and do not affect your statutory warranty rights. We do not charge you for this guarantee.
2. Our guarantee only covers problems caused by material or manufacturing defects, and it is restricted to the rectification of these defects or replacement of the device. Please note that our devices have not been designed for use in commercial, trade or industrial applications. Consequently, the guarantee is invalidated if the equipment is used in commercial, trade or industrial applications or for other equivalent activities. The following are also excluded from our guarantee: compensation for transport damage, damage caused by failure to comply with the installation/assembly instructions or damage caused by unprofessional installation, failure to comply with the operating instructions (e.g. connection to the wrong mains voltage or current type), misuse or inappropriate use (such as overloading of the device or use of non-approved tools or accessories), failure to comply with the maintenance and safety regulations, ingress of foreign bodies into the device (e.g. sand, stones or dust), effects of force or external influences (e.g. damage caused by the device being dropped) and normal wear resulting from proper operation of the device. This applies in particular to rechargeable batteries for which we nevertheless issue a guarantee period of 12 months.

The guarantee is rendered null and void if any attempt is made to tamper with the device.
3. The guarantee is valid for a period of 2 years starting from the purchase date of the device. Guarantee claims should be submitted before the end of the guarantee period within two weeks of the defect being noticed. No guarantee claims will be accepted after the end of the guarantee period. The original guarantee period remains applicable to the device even if repairs are carried out or parts are replaced. In such cases, the work performed or parts fitted will not result in an extension of the guarantee period, and no new guarantee will become active for the work performed or parts fitted. This also applies when an on-site service is used.
4. In order to assert your guarantee claim, please send your defective device postage-free to the address shown below. Please enclose either the original or a copy of your sales receipt or another dated proof of purchase. Please keep your sales receipt in a safe place, as it is your proof of purchase. It would help us if you could describe the nature of the problem in as much detail as possible. If the defect is covered by our guarantee then your device will either be repaired immediately and returned to you, or we will send you a new device.

Of course, we are also happy offer a chargeable repair service for any defects which are not covered by the scope of this guarantee or for units which are no longer covered. To take advantage of this service, please send the device to our service address.

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