

**Original instruction**

**GENERAL SAFETY INSTRUCTIONS**

**⚠ WARNING! Read all instructions.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" all of the warnings listed below refers to your mains-operated power tool.

**SAVE THESE INSTRUCTIONS.**

**1) WORK AREA**

- Keep work area clean and well lit. Cluttered and dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gas or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

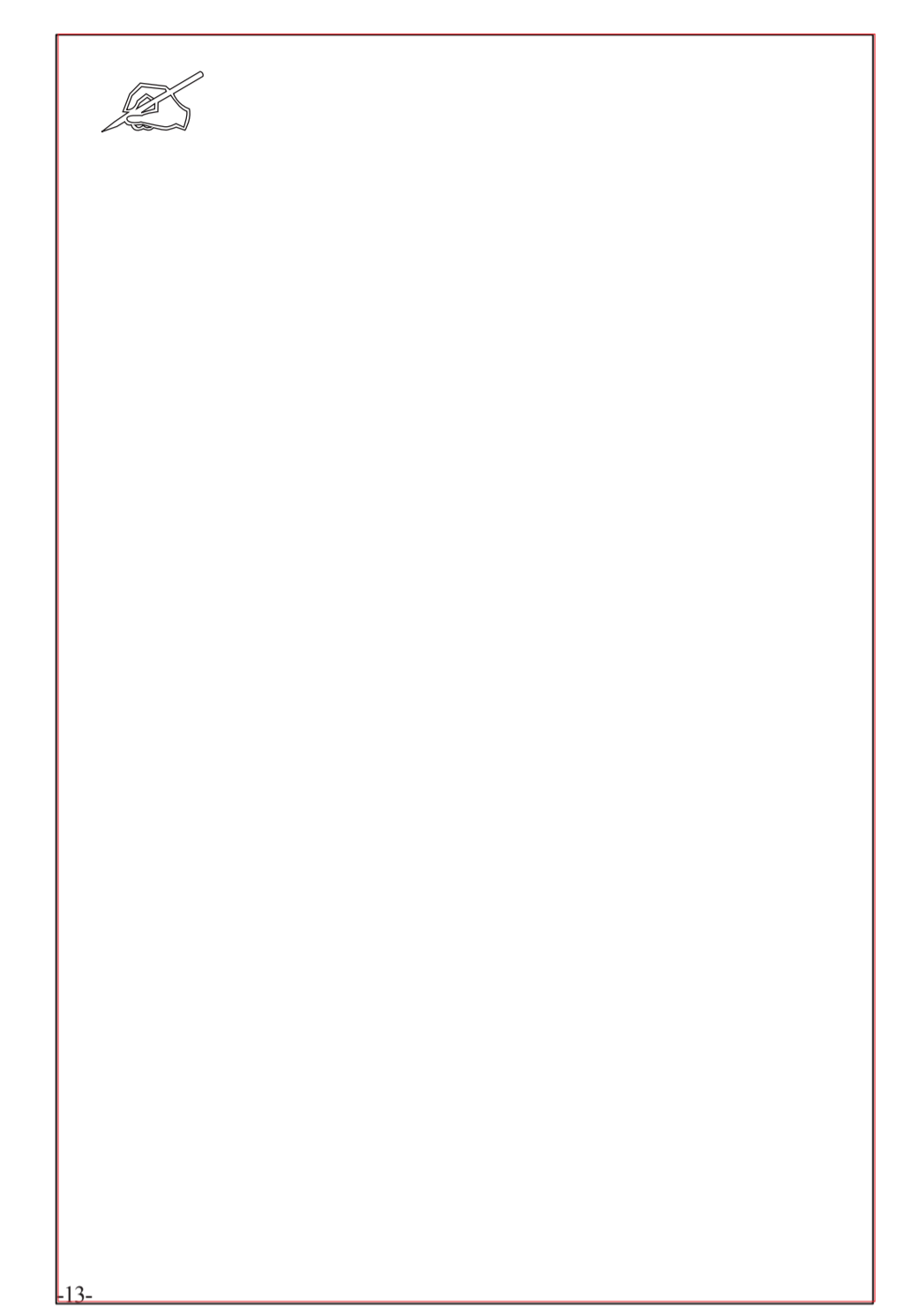
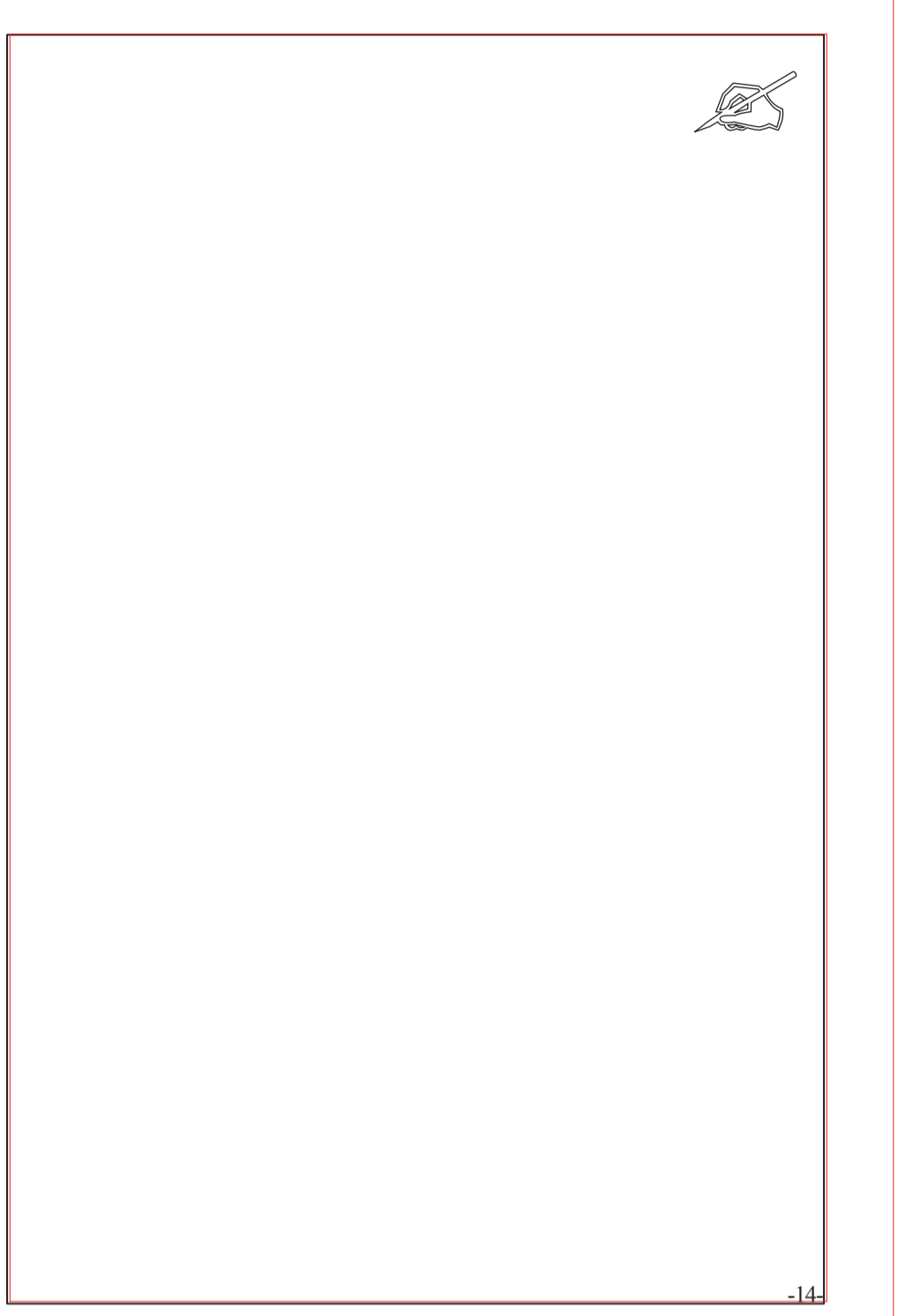
**2) ELECTRICAL SAFETY**

- Power tool plugs must match the outlet. Never modify the plugs in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool.
- Keep cord away from heat, oil, sharp edges or moving parts.
- If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

**3) PERSONAL SAFETY**

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A tired or distracted operator is more likely to be injured.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery packs, picking up or carrying the tool. Carrying power tools with your finger on the switch or engaging power tools that have the switch on invite accidents.
- 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.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
- If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust related hazards.

**4) POWER TOOL USE AND CARE**



- 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.
- 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.
- Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- 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.
- Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- 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.
- Service: 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.

**Safety Warnings Common for Grinding Operations:**

- This power tool is intended to function as a grinder tool. 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.
- Operations such as sanding, wire brushing, polishing or cutting-off are not recommended to be performed with this power tool. Operations for which the power tool was not designed may create a hazard and cause personal injury.
- Do not use accessories which are not specifically designed and recommended by the tool manufacturer. Just because the accessory can be attached to your power tool, it does not assure safe operation.
- The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool. Accessories running faster than their rated speed can break and fly apart.
- The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool. Incorrectly sized accessories cannot be adequately guarded or controlled.
- The arbour size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool. Accessories with arbor holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.
- Do not use a damaged accessory. Before each use inspect the accessory, such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or crusted wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. Damaged accessories will normally break apart during this test and be capable of snapping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.

- Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment. Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.
- Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord. Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.
- Position the cord clear of the spinning accessory. If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.
- Never lay the power tool down until the accessory has come to a complete stop. The spinning accessory may grab the surface and pull the power tool out of your control.
- Do not run the power tool while carrying it at your side. Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.
- Regularly clean the power tool air vents. The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.
- Do not operate the power tool near flammable materials. Sparks could ignite these materials.
- Do not use accessories that require liquid coolants. Using water or other liquid coolants may result in electrocution or shock.

**Kickback and Related Warnings**

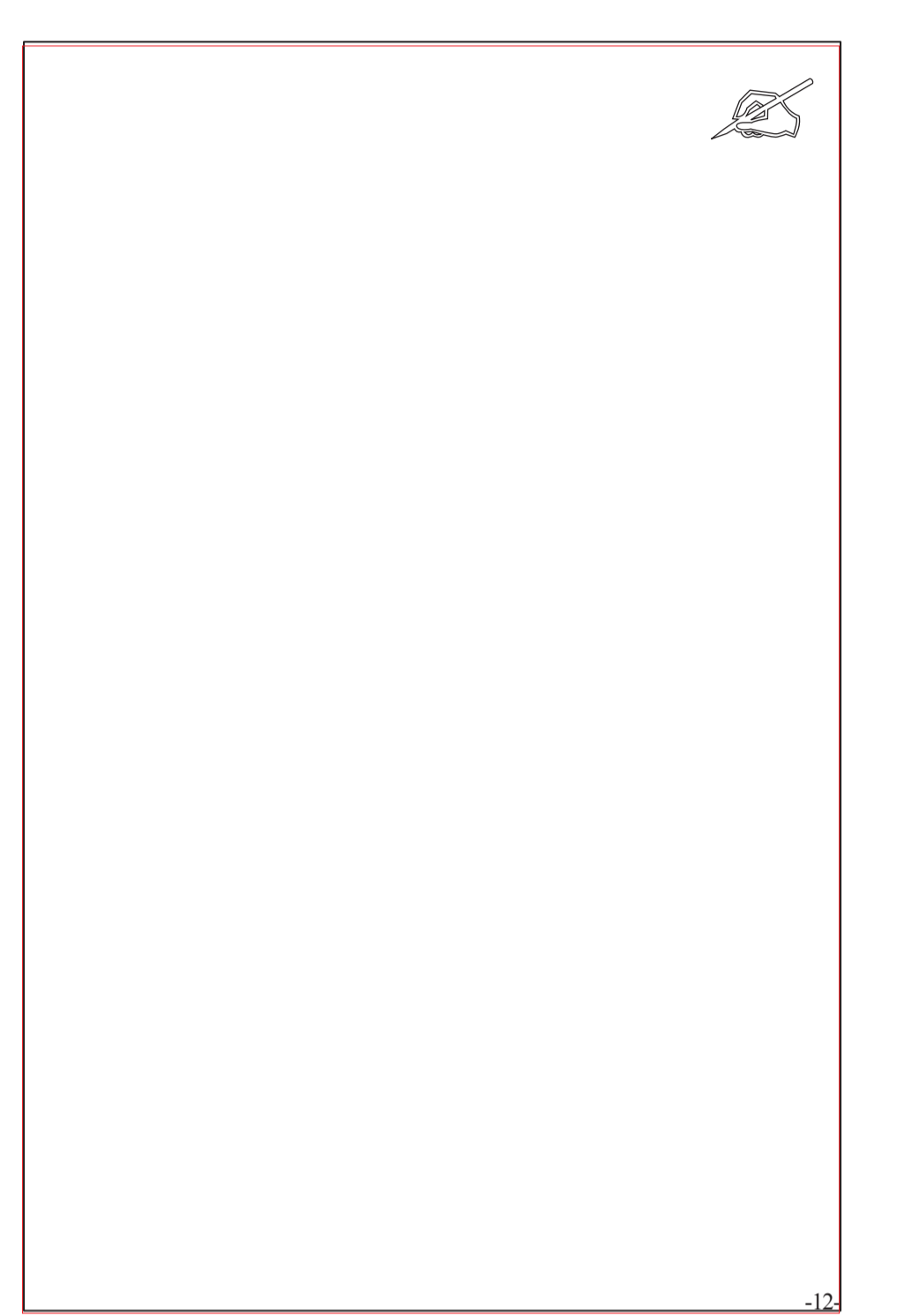
Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

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

- Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up. The operator can control torque reactions or kickback forces, if proper precautions are taken.
- Never place your hand near the rotating accessory. Accessory may kickback over your hand.
- Do not position your body in the area where power tool will move if kickback occurs. Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.
- Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory. Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause kickback.
- Do not attach a saw chain woodcutting blade or toothed saw blade. Such blades create frequent kickback and loss of control.

**IMPORTANT: Hold power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.



**⚠ WARNING**

The vibration emission level given in this information sheet has been measured in accordance with a standardized test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

Dear Customer,

Thank you for buying a KEN power tool. Should you have any questions, vagueness or second thoughts about our products, we recommend you to contact our experts in Sales and Service Departments, who will advise you and help you find the right answers to the set questions. Please contact our local distributors or dealers directly.

We declare under our sole responsibility that the product described under "Technical Data" fulfills all the relevant provisions of the directives 2006/42/EC and the following harmonized standards documents have been used: EN 60745-1, EN 60745-2-3.

Winnenden, 2012-06-06

*Rainer Kumpf*  
 Rainer Kumpf  
 Director Product Development  
 Shanghai KEN Tools CO., Ltd.  
 No.5 Xinrong Rd., Xinqiao Town, Songjiang District, Shanghai China

**SYMBOL**

V ~Volts  Double insulation  Please read the instructions carefully before starting the machine.

Hz ~Hertz  Wear eye protection  Waste electrical products should not be disposed of with household waste.

W ~Watts  Wear ear protection  Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

Safety alert  Alternating Current  No load Speed  CE conformity  min/Revolutions or reciprocations per minute

**SAFETY**

- Only use our recommended sanding wheel and the specially designed safety guard for the wheels. It will be dangerous if could not protect your safety if using other sanding wheels which aren't designed for power tools.
- The safety guard must be stably fixed onto the tool and adjusted into the best position, only expose the minimum part of the wheel in front of the operator. The safety guard will protect the operator from being hurt by the exploded sanding wheels or incidentally touching the wheels.
- Only use the wheels limited to our recommended usages. For example, never grind or cut by the side part of the cutting wheel. The pressures applied on the side part of the wheel may make it damage.
- Always choose the undamaged flanges with correct specifications and shapes for your wheels. The proper flanges can reduce the risk of wheel breakage. The flanges for cutting wheel might be different from the flanges for grinding wheels.
- Do not use the left worn wheel from the big size power tools. The wheel for big size power tools is not suitable for the small size power tools and may be broken during high-speed operation. Ensure the wheel you use is complete without any damage. There should be no breakage by hammering the wheel lightly with a wooden hammer. The valid date for the wheel should not exceed one year unless it passes the running test and approves OK.

**OPERATION**

Observe correct mains voltage: The voltage of the power source must agree with the voltage specified on the nameplate of the machine.

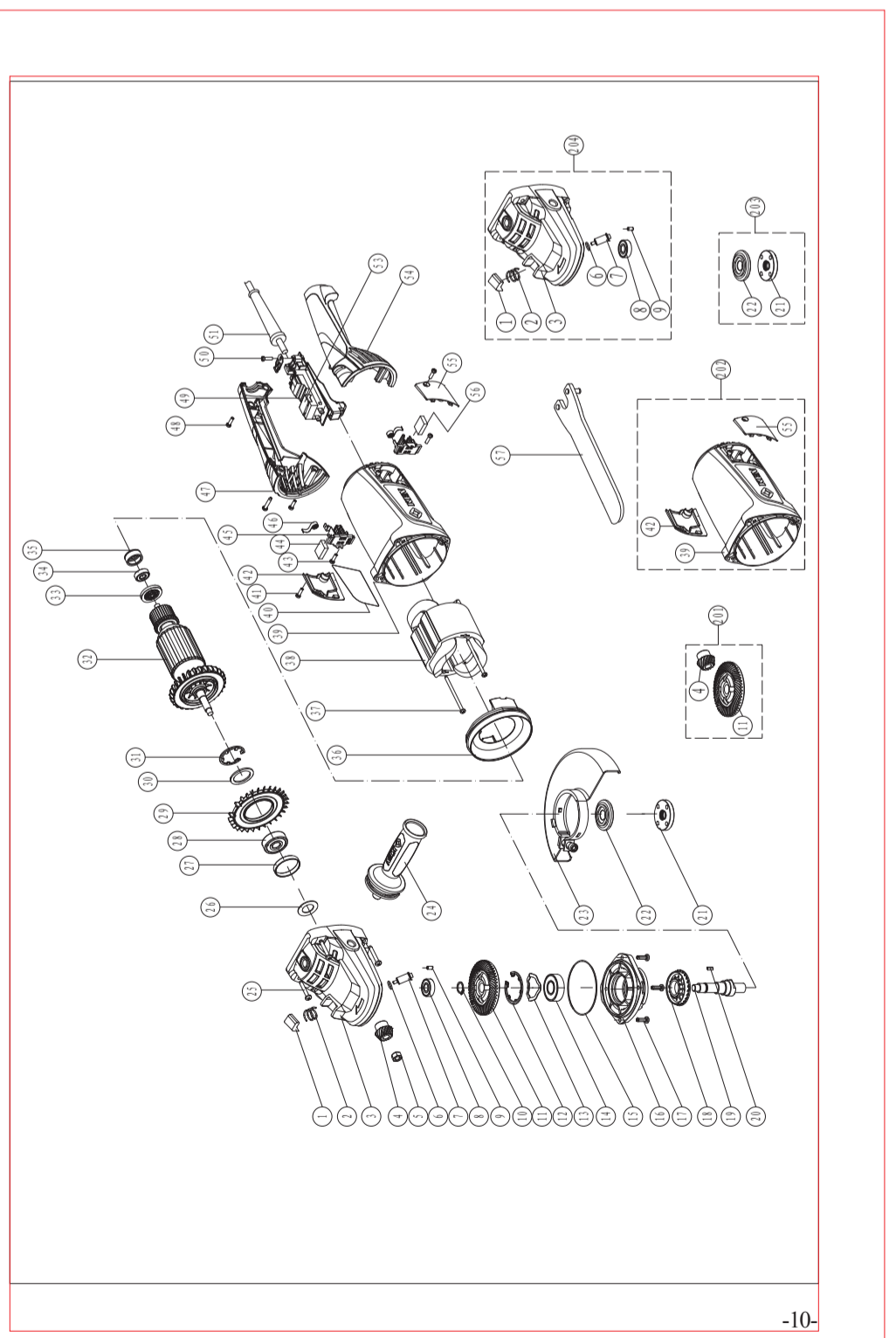
**◆ Subsidiary Handle**

Please use subsidiary handle in order to do work safely and conveniently. Subsidiary handle can be assembled on the both sides of the tool body (Picture One).

**◆ Protective Shield of the Emery Wheel**

Please aim the covers end of the emery wheel shield to the slot mouth of the front cover, and then rotate the shield body to 180 degree (Picture Two).

Tighten the fastening screw (Picture Three).



**PARTS LIST ANGLE GRINDER**

No.	Code	Name	Remark	No.	Code	Name	Remark
1	317037	Self-Locking		36	321066	Windshield	
2	151002	Seat Locking Pin (New)		37	221053	Crosshead Head Tapping Screw	ST5-75
3	162157	Gearbox		38	441272	Stator	
4	137071	Small Gear	91808	39	313241	Chassis	
	137073	Small Gear	9123S	40	549741	Nameplate	
5	263011	Nut	M8-1	41	221008	Crosshead Head Tapping Screw	ST4-14
6	333116	O Circle		42	433066	Right Brush Cover	
7	145024	Self-Locking Pin		43	221008	Crosshead Head Tapping Screw	ST4-14
8	211028	6000-RZ Bearings		44	431075B	Brush Commensator	
9	334003	Rubber Column		45	434044	Brush Holder	
10	252005	Shaft Ring 14		46	153017	Coil spring	
11	137070	Big Gear	91808	47	314256	Right Handle	
	137072	Big Gear	9123S	48	221102	Crosshead Head Tapping Screw	ST4.2-20
12	251009	Ring For Handle 40		49	445021G	Switch	
13	243008	Wave Washer	φ 39	50	222002	Trigger Spring	ST4-16
14	211094	6203-LLU Bearings		51	332048	Cable Sheath	
15	333108	O Circle		53	443014	Capacitance	
16	161079	The Front Cover		54	314255	Left Handle	
17	221106	Screw	M5-17	55	433067	Left Brush Cover	
18	319069	Dust-proof Cover		56	431080B	Brush Commensator (optional)	
19	133166	Output Shaft		57	623655	Wrench	
20	276004	Flat Key	4x4-12		713852	Wrench	91808
21	139045	Upper Plate		201	713902	Gear Assembly	9123S
22	139032	Under Plate		202	712198	Chassis Components	
23	112052	Grinding Wheel	91808	203	713853	Platen Assembly	
24	112056	Grinding Wheel	9123S	204	713854	Gearbox Assembly	
25	713490	Deputy Handle					
26	221101	Screw	ST4.8-37				
26	114192	Bearing Gasket					
27	337037	Resistor					
28	211093	6301-LLU Bearings					
29	319055	Dust-proof Ring					
30	114071	Bearing Gasket	φ 22				
31	251008	Ring For Hole					
32	442273	Resistor					
33	319056	Creepage Ring					
34	211018	608-V1 Bearing					
35	331039	Bearing Bushings					

**◆ Assemble or Disassemble the Emery Wheel**

Equip the downward pressure plate on the output axis, and then equip the emery wheel on the downward pressure plate, screw the upper pressure plate on the output axis (Picture Four).

Press the self-locking button, use the special wrench to screw the upper pressure plate tightly (Picture Five).

**◆ Switching on/off**

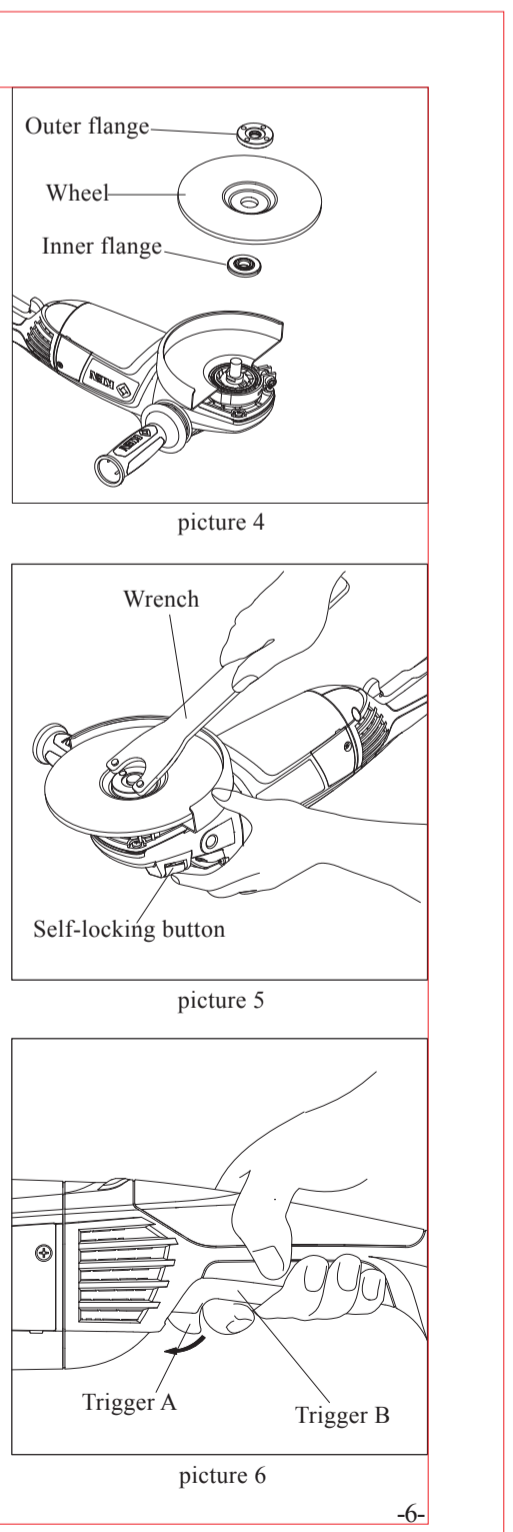
※ Please make sure the machine is shut off and the switch can be freely reset before connected to power.

**For tool with lock-on switch**

To start tool, hold trigger B. Release Trigger B to stop. For continuous operation, hold Trigger B and push Trigger A. To stop tool in hold position, press trigger and release.

**For tool with lock-off switch**

To start tool, push trigger A and then hold trigger B. Release trigger B to stop.



**◆ Effective and Safe Grinding and Cutting Methods**

◆ Please use the correct part of the emery wheel, otherwise it is easy to be damaged.

◆ The users can get satisfied effects if the users give 1/2 strength compared with the own weight of the tool. Over strength is easy to make the tool engine and emery wheel damaged because of overload.

◆ Generally speaking, please keep the grinding and cutting part of the emery wheel and disc in the scope of 15 to 30 degree with the surface of processing object.

◆ When you use new emery wheel, please don't move the tool toward B direction, otherwise, the processing object is easy to cut-off. When the margin angle of the emery wheel turns round, the tool can be moved toward 2 directions of A and B (Picture Seven).

**◆ Replace the Electric Brush**

The tool has set the electric brush limited position equipment especially, please replace the electric brush if there is high sparks or the rotation stops during the running. Please use screwdriver to screw the lid of the electric brush and take out the wearing electric brush and install the new ones, and please use hands to try and confirm it can slide freely in the slot, and then install and screw the lid of the electric brush. Please replace two brushes at the same time, and use the specified "KEN" brand electric brush (Picture Eight).

**◆ PRACTICAL TIPS**

◆ Please use the cylindrical shape emery wheel which linear velocity is higher than the speed stipulated on the name plate of the body, and use correct grinding and cutting face to do the processing. Don't use the upside face and side face of the emery wheel.

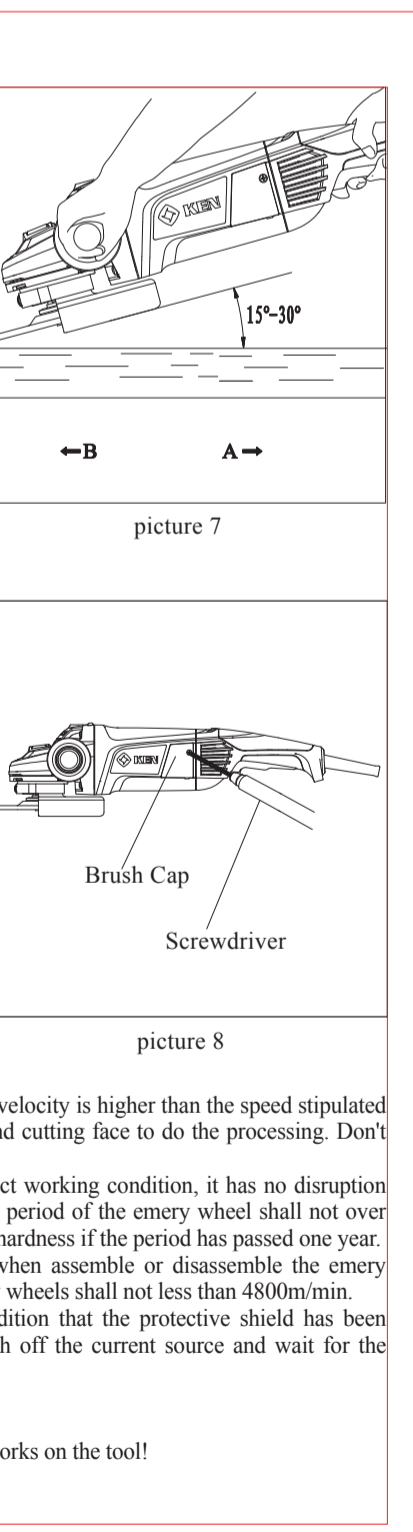
◆ The using emery wheel must be in complete and perfect working condition, it has no dispersion sound if beat it slightly with wooden mallet, the reserving period of the emery wheel shall not over one year, it only can be used after making tests of turn and hardness if the period has passed one year.

◆ Don't insert the electric source plug into the socket when assemble or disassemble the emery wheel. The maximum circumference speed of all the emery wheels shall not less than 4800m/min.

◆ Prohibit doing grinding and cutting work on the condition that the protective shield has been dismantled. When putting away the tool, please do switch off the current source and wait for the emery wheel completely stops.

**◆ MAINTENANCE AND CARE**

◆ Unplug the tool from the socket before performing any works on the tool!



◆ Tool requires no special maintenance, but after some time you must control the parts that are submitted to wear-and-tear under normal operating conditions. This includes the control and replacement of carbon brushes and grease in reducing gear housing. Take the tool to an authorized service centre.

◆ Keep the tool and supply cord clean. Keep ventilation slots clean and open. Wipe the surface of the tool with a soft cloth!

◆ It is not allowed to use household cleaning agents that contain petrol, trichloroethylene, ammonia and chlorides. These substances corrode and damage plastic parts of the tool.

◆ Excessive sparking generally indicates the presence of dirt in the motor or abnormal wear on the carbons.

◆ In case of electric or mechanical failure, send the tool to a KEN authorized service centre for repair.

**◆ SERVICING AND REPAIRS**

If servicing is required, contact one of our listed service centers. It is not allowed and dangerous to perform any individual work on the tool.

◆ Have the tool repaired by authorized persons.

◆ Any repairs of the tool in unauthorized service centers is performed at own responsibility.

◆ The owner of the tool is responsible for all works on the tool that were not performed in authorized service center, and therefore he loses the claim for guarantee.

**◆ WASTE DISPOSAL AND ENVIRONMENT PROTECTION**

The machine, accessories and packing should be sorted for environmental-friendly recycling. Only for EC countries:

◆ Do not dispose of power tools into household waste!

According the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national grid, power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

**◆ TECHNICAL DATA**

Type	9180S	SIM-SH85-180	9123S	SIM-SH04-230
Size of Emery Wheel	180-6-22.2(mm)		230-6-22.2(mm)	
Maximum Using Circumference Speed of the Emery Wheel	> 80m/s		> 80m/s	
Current Source	220-240V ~ 50/60Hz		220-240V ~ 50/60Hz	
Rated Input Power	2450W		2450W	
Rated Speed	8500/min		6500/min	
Weight	4.9kg		4.9kg	
Soft Starter				
Standard Spare Parts	Special Wrench IPC Wheel Protection Cover IPC Auxiliary Handle IPC		Carbon Brush IPC Operating Manual IPC After-sales Service Card IPC	

**Angle Grinder**

**KEN**

**9180S S1M-SH05-180**

**9123S S1M-SH04-230**

**original instructions**

**◆ KEN**  
 KEN Holding Co., Ltd.  
 5th Floor, No. 5, Xinrong Rd., Xinqiao Town, Songjiang District, Shanghai China  
 http://www.kenpowertools.com

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