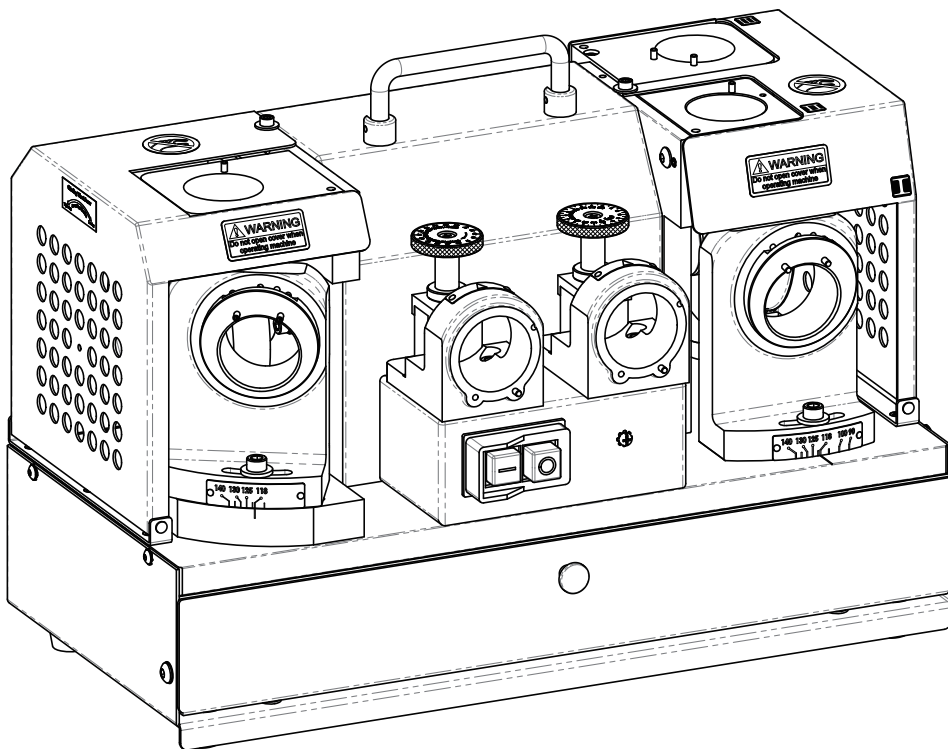


Drill Grinder

Operation Manual



Model : GS-29

RECYCLING



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

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I. Safety Instructions

All personnel working with the machine must be properly trained in its operation, and must follow strictly on the operating instructions and procedures given in this and all associated manuals. The machine may only be operated by persons who are authorized and trained.

The user of the machine must not remove, modify or obscure in any way the content or the readability of any safety label placed on or inside the machine.

The sound pressure level of this machine is less 70dB(A) with uncertainty 3dB.

The vibration total value does not exceed 2.5 m/s².

WARNING

Read all safety warnings, instructions 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.

1. Work area safety

- **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*
- **Keep children and bystanders away while operating a power tool.** *Do not let persons, especially children, not involved in the work touch the tool or the extension cord and keep them away from the work area.*

2. Electrical safety

- **Power tool plugs must match the outlet. Never modify the plug in any way.** *Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.*
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
- **Use proper extension cord.** *Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.*

- **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the 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.*

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 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, protective glasses, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.*
- **Keep guards in place, in working order.** *Safety guards must never be removed when the tool is being used.*
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** *Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.*
- **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, gloves, neckties or jewelry which may get caught in moving parts.** *Keep your hair, clothing, gloves or jewelry away from moving parts.*
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** *A careless action can cause severe injury within a fraction of a second.*
- **Use only designated clamps to hold workpiece.** *It's safer than using your hand and it frees both hands to operate tool.*

- **Never stand on tool.** *Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.*
- **Never leave tool running unattended. Turn power off.** *Don't leave tool until it comes to a complete stop.*

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 remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
- **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 and accessories. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, guards, cord 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.*
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** *Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.*
- **Do not use damaged grinding wheels.**
- **Use only grinding wheels and accessories that are recommended by the manufacturer.** *Use of unauthorized accessories may result in personal injury.*
- **The grinding wheel will not be dressed.**

- Please use the air spray gun and duster to clean all sharpened dusts from the machine after finishing the grinding job.
- **Direction of feed.** *Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.*

5. 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.*

Explanation of Labels

	<p>Indication of ground wiring</p>		<p>Do not touch</p>
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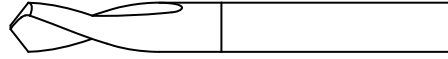
II. Intended Use

This grinding machine is suitable for grinding and sharpening HSS / carbide twist drill.

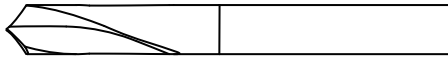
Universal Twist Drills



NC Spotting Drills 120°



NC Spotting Drills 90°



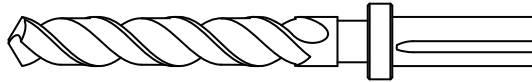
Taper Shank Twist Drills



Deep-Hole Drills



Noss Drills



SG-ES Drills (7570P)



III. Machine Installation Instruction

1. Environmental Condition

- Place the machine on a “flat” and “stable” working table.
- Operate the machine in dry environment and away from liquid.
- Make sure power plug and power cord are installed in proper location.

2. Power Supply

Make sure the local power supply is matching with the voltage specification from the product label.

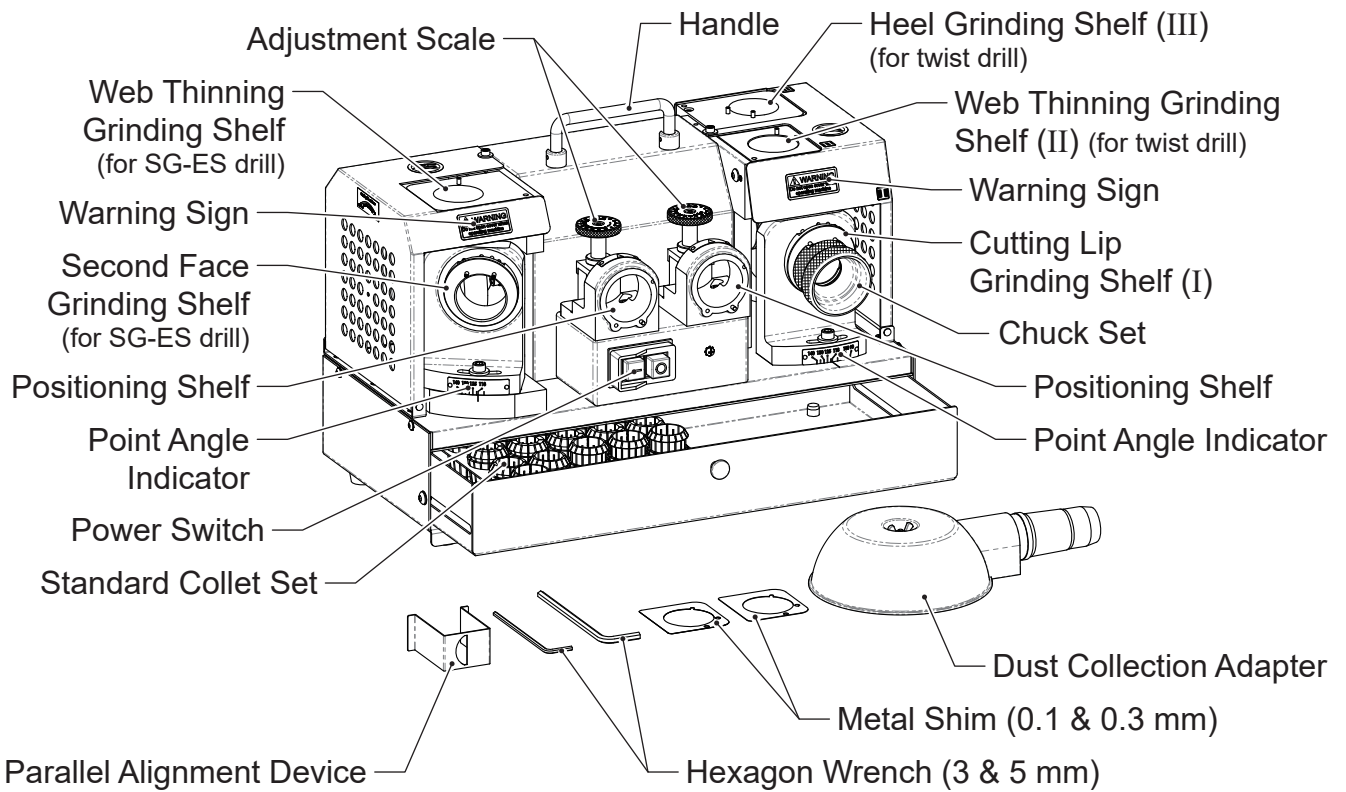
Please check the switch is in off position before plugging into socket outlet.

3. Motor Direction Test

- ① Plug the power cord into socket outlet.
- ② Check the grinding wheel protection cover is fastened by the screw.
- ③ Quickly switch on and off the machine, then check if the rotating direction of the right side grinding wheel is **counterclockwise**.
- ④ Switch on the machine again and check if any abnormal sound.

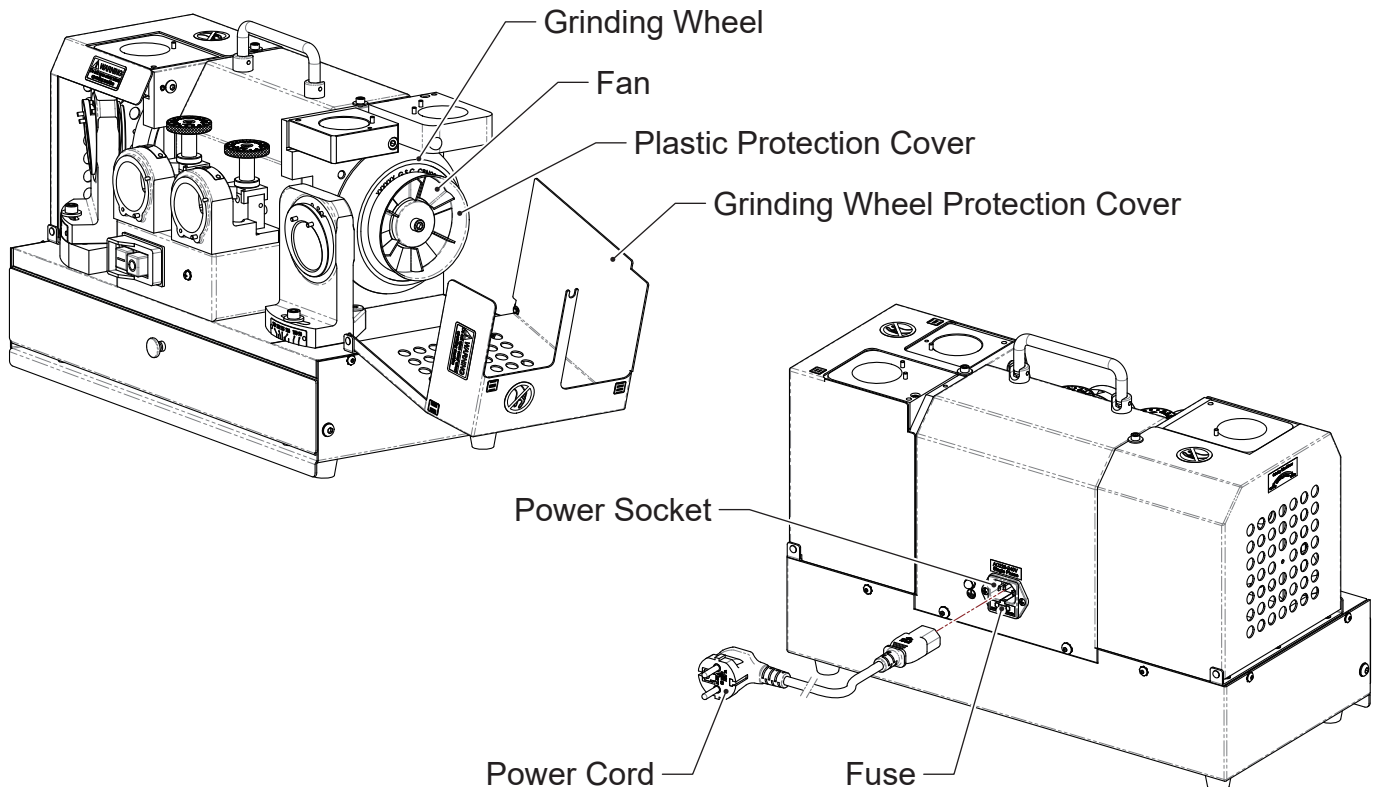
(The Machine is equipped with carbon brush DC motor. A slightly grinding sound is considered as normal condition.)

IV. Machine Devices Introduction



For Twist Drill diameter: $\Phi 12.0$ mm - $\Phi 26.0$ mm

For SG-ES Drill diameter: $\Phi 12.0$ mm - $\Phi 26.0$ mm



V. Dust Collection Adapter Assembly Steps

1. Thread the hex nut onto the suitable position of the threaded rod, align the end of the threaded rod containing the hex nut to the tapped hole of grinding wheel cover, and turn the threaded rod clockwise to thread the rod into the grinding wheel cover and tighten lightly. (Fig. 5-1)

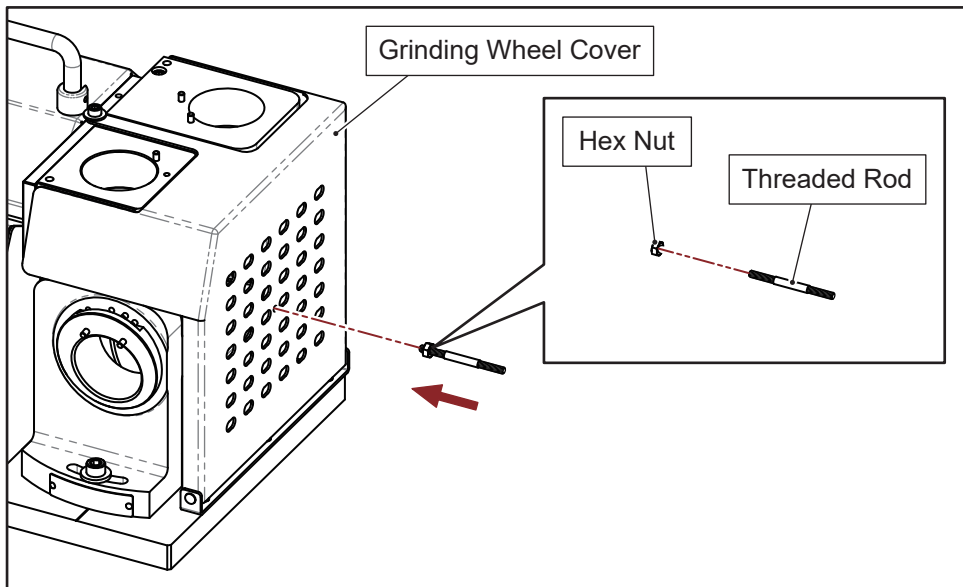


Fig. 5-1

2. Align the hole in the center of the dust collection adapter to threaded rod. Push the dust collection adapter to the end. (Fig. 5-2)
3. Assemble the washer and wing nut and tighten the wing nut to secure the dust collection adapter. (Fig. 5-3)

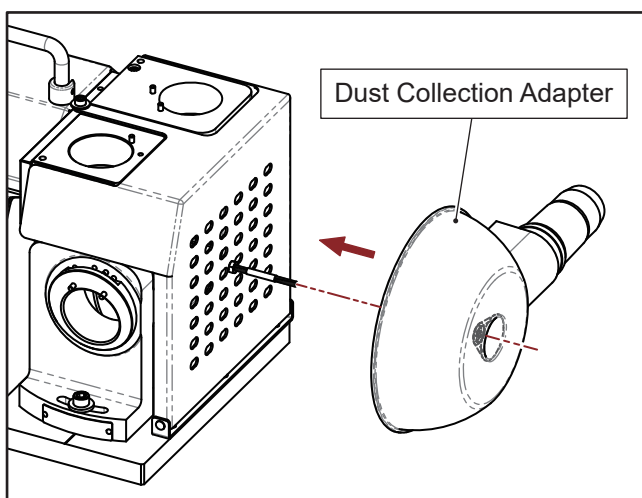


Fig. 5-2

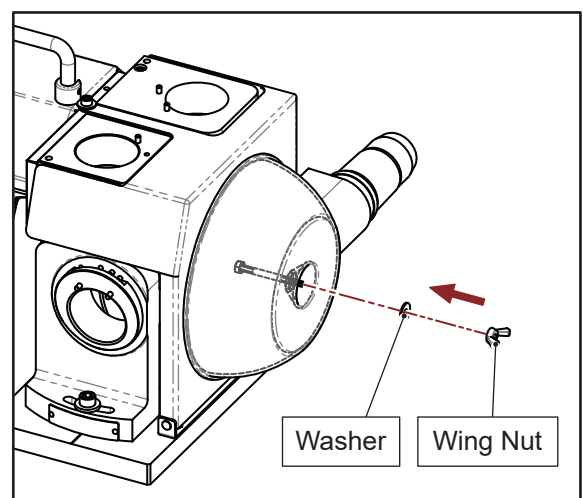


Fig. 5-3

VI. Choose of Grinding Wheel & Collet

1. Please unplug the power cord before changing grinding wheel.
2. Choose the proper grinding wheel according to the material of the drill.
 - HSS drill use CBN grinding wheel (Standard).
 - Carbide drill use SD grinding wheel (Optional).
3. Choose the proper collet according to the drill diameter.
E.g. 12.0 mm drill, use 12 mm collet ; 12.1 - 13.0 mm drills, use 13 mm collet.

VII. Chuck Set Assembly Steps

1. Make sure there are no dust or scraps inside the clamping nut, collet and collet holder.
2. Put the collet into collet holder by 45° angle. (Fig. 7-1)
3. Screw in a little bit by clamping nut, then insert the drill through the collet holder until the drill tip is about 15 mm out of the clamping nut (Fig. 7-2), slightly screw the chuck set to tighten the drill a little bit.
 - ✘ Do not fully tighten the chuck set, make sure the drill can still be adjusted.

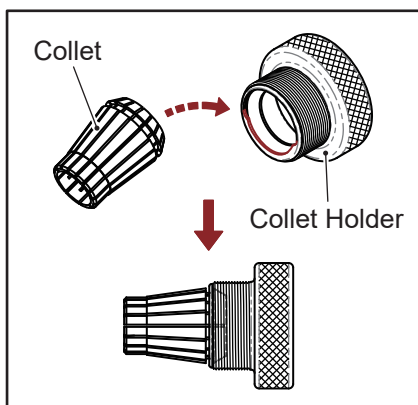


Fig. 7-1

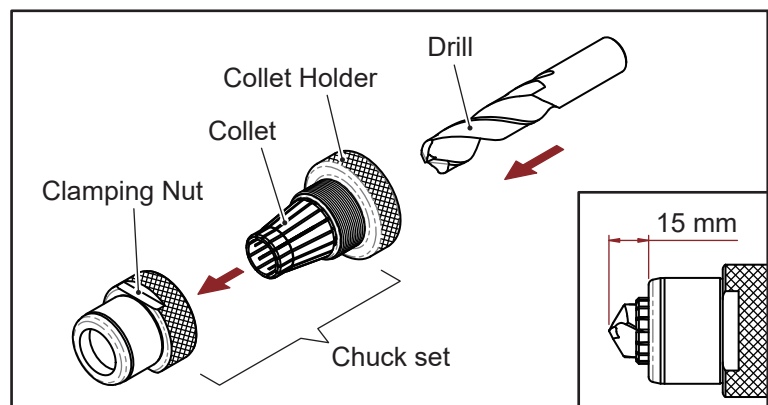


Fig. 7-2

VIII. The use of the Positioning Shelf

1. Preset the scale of the positioning shelf.

- Right Positioning Shelf : $\Phi 12.0$ mm - $\Phi 26.0$ mm (Fig. 8-1)

- ① Turn it by clockwise to the end.
- ② Turn it by counterclockwise at "0".

- Left Positioning Shelf : The scale adjust over "26" (Fig. 8-2)

- ① Turn it by clockwise to the end.
- ② Turn it by counterclockwise at "26".

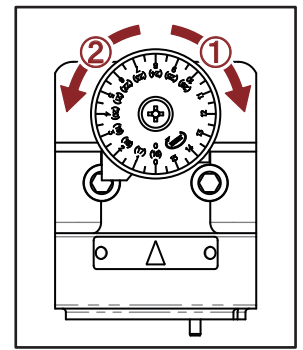


Fig. 8-1

2. Adjust the scale according to the drill diameter.

E.g. 12.1 - 13.0 mm drills, set at 13; 13.1 - 14.0 mm drills, set at 14.

✘ For grinding **High Spiral Drill Bit**, please increase the scale more than its diameter.

✘ For grinding **Deep Hole Drills**, the scale is adjusted to 2 times of the drill diameter.

E.g. The diameter at 15 mm, the scale should adjust above 30.

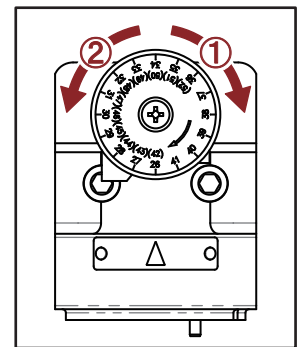


Fig. 8-2

3. Drill positioning (Fig. 8-3) :

- ① Align the slot of the clamping nut to the pin on the positioning shelf, insert the chuck set into the positioning shelf and fit them with no gaps, then turn the chuck set clockwise until it stops by the pin.
- ② Push the drill to the end and slowly turn it clockwise until the drill's cutting edge touches the position block.
- ③ Turn the collet holder clockwise and tighten the chuck set to secure the drill.

4. Gently turn the chuck set counterclockwise and take it out, make sure the drill's cutting edge is parallel to the slot of the clamping nut (Fig. 8-4).

✘ The cutting edge can be angled towards the slot of the clamping nut but no more than 5° (Fig. 8-5), but the cutting edge cannot be angled away from the slot of the clamping nut.

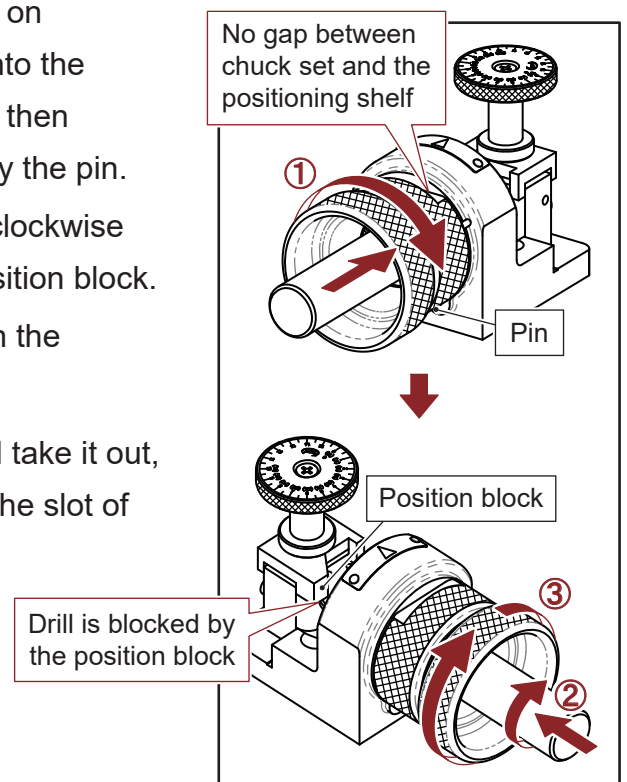


Fig. 8-3

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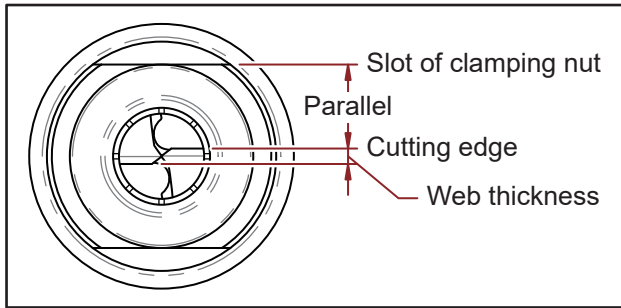


Fig. 8-4

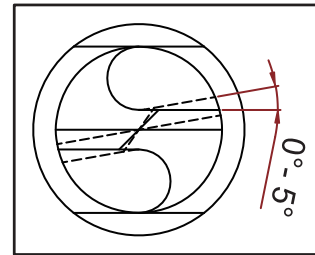


Fig. 8-5

- ✘ If the drill's cutting edge is not parallel to the slot of the clamping nut, adjust the scale and reposition the drill. (Fig. 8-6)

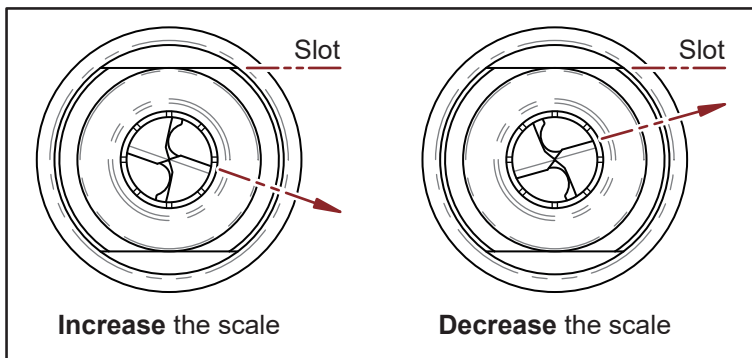


Fig. 8-6

- ✘ The drill's web thickness is thicker than original after re-sharpening many times, the scale should be increased until the cutting edge is parallel to the slot.
- ✘ You could also choose to use the parallel alignment device to check the parallelism. (See chapter "XI. The use of the Parallel Alignment Device")
- ✘ Make sure the positioning result is correct before starting the grinding procedure.

IX. Twist Drill Grinding

※ Verify the drill's point angle and adjust the angle of the cutting lip grinding shelf (I) to the same before grinding procedure. (Angle adjustment available is 90° - 140°)

Turn the power switch on and wait about 10 seconds until the motor rotation is stable.

※ Do not hold the drill shank while grinding, it may affect the grinding accuracy.

1. Cutting Lip Grinding (Fig. 9-1)

- ① Insert the chuck set into the cutting lip grinding shelf (I), align the slot of clamping-nut to the two pins on the grinding shelf, push the chuck set gently and turn it clockwise and counterclockwise until the grinding noise stops.
- ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

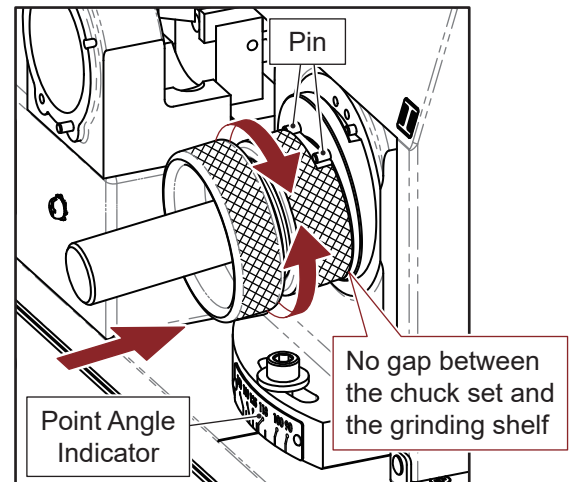


Fig. 9-1

2. Web Thinning (Fig. 9-2)

- ※ When inserting or taking out the chuck set, the center part of the clamping nut slot should align to the pin on the grinding shelf.
- ① Insert the chuck set into the web thinning grinding shelf (II), push the chuck set gently and turn it clockwise and counterclockwise until the grinding noise stops.
 - ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

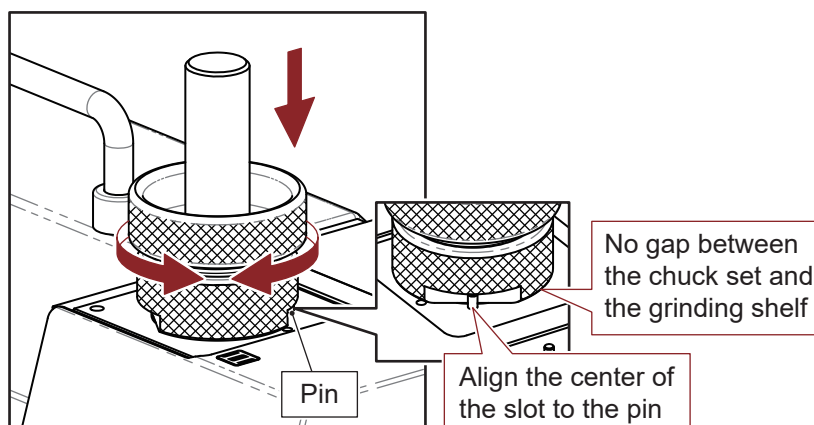


Fig. 9-2

※ There are 0.1 mm shim and 0.3 mm shim for adjusting the size of web thickness. (See chapter "XII. The use of Metal Shims")

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3. Heel Grinding (Fig. 9-3)

- ① Insert the chuck set into the heel grinding shelf (III), align the slot of clamping nut to the two pins on the grinding shelf, push the chuck set gently until the grinding noise stops.
- ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

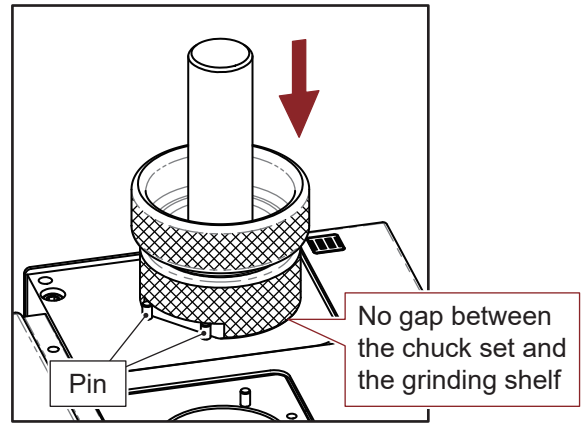
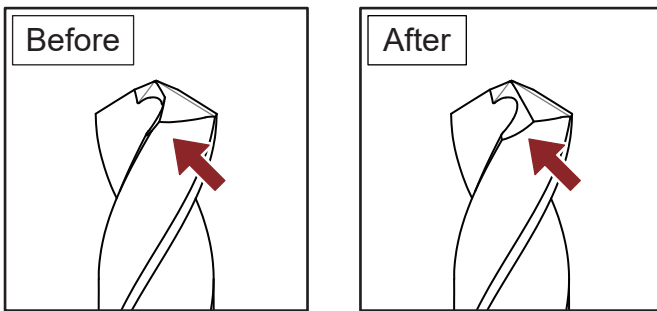


Fig. 9-3

X. SG-ES Drill Grinding

- ✘ Verify the drill's point angle and adjust the angle of the cutting lip grinding shelf (I) and second face grinding shelf to the same before grinding procedure. (Angle adjustment available is $118^\circ - 140^\circ$)

Turn the power switch on and wait about 10 seconds until the motor rotation is stable.

- ✘ Do not hold the drill shank while grinding, it may affect the grinding accuracy.

1. Cutting Lip Grinding (Fig. 10-1)

- ① Insert the chuck set into the cutting lip grinding shelf (I), align the slot of clamping-nut to the two pins on the grinding shelf, push the chuck set gently and turn it clockwise and counterclockwise until the grinding noise stops.
- ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

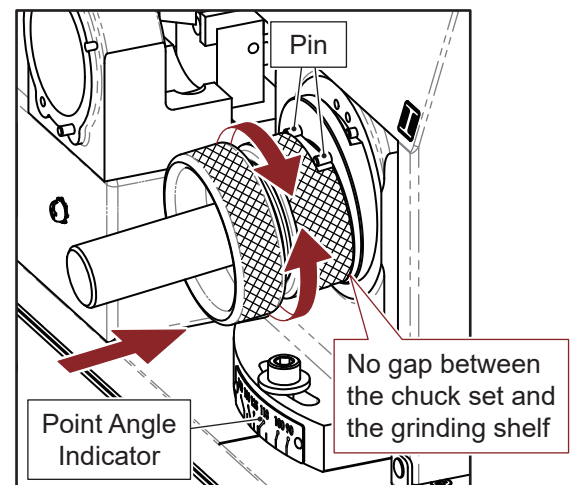


Fig. 10-1

2. Web Thinning (Fig. 10-2)

- ✘ When inserting or taking out the chuck set, the center part of the clamping nut slot should align to the pin on the grinding shelf.
- ① Insert the chuck set into the left side web thinning grinding shelf, push the chuck set gently and turn it clockwise and counterclockwise until the grinding noise stops.
 - ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

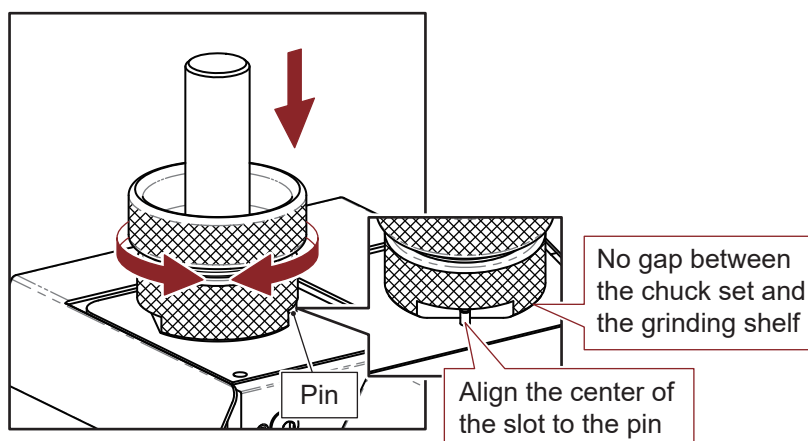


Fig. 10-2

- ✘ There are 0.1 mm shim and 0.3 mm shim for adjusting the size of web thickness. (See chapter "XII. The use of Metal Shims")

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3. Second Face Grinding (Fig. 10-3)

- ① Insert the chuck set into the second face grinding shelf, align the slot of clamping-nut to the two pins on the grinding shelf, push the chuck set gently until the grinding noise stops.
- ② Take the chuck set out, turn it to the other side and grind the drill in the same way.

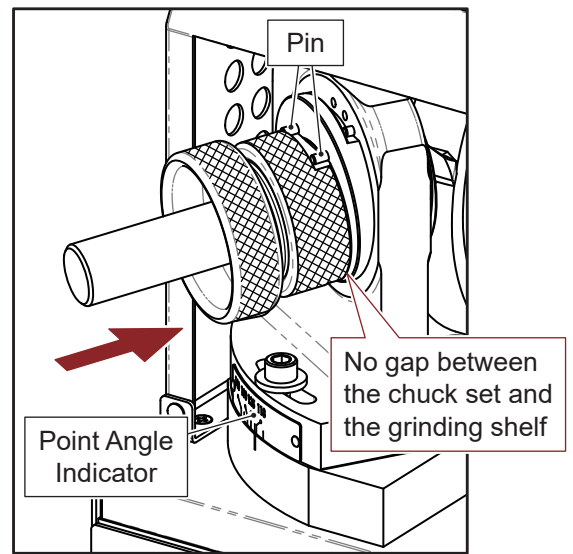
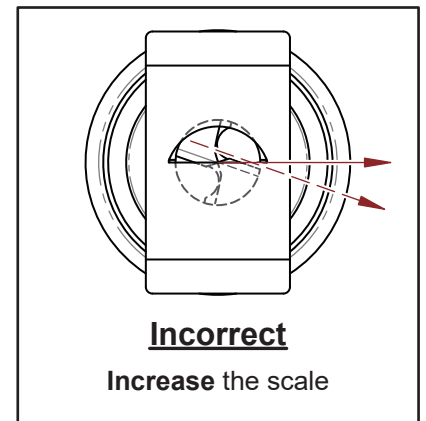
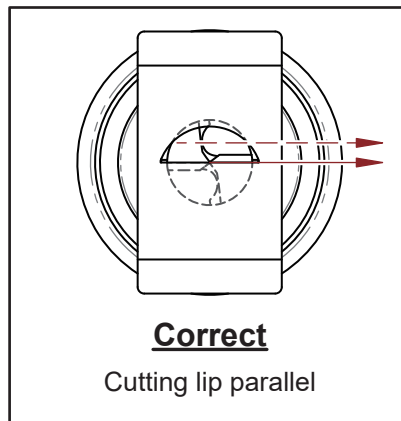
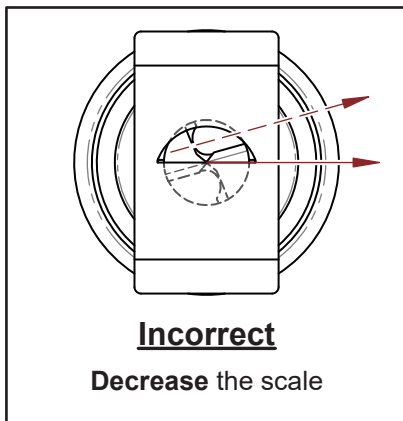
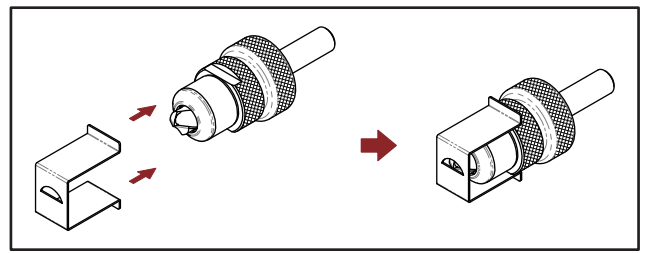


Fig. 10-3

XI. The use of the Parallel Alignment Device

Align the parallel device with the two slots of the clamping nut, then connect them as shown in the picture on the right.

Verify the parallelism of the drill's cutting lip with the flat figure of the hole on the parallel device.



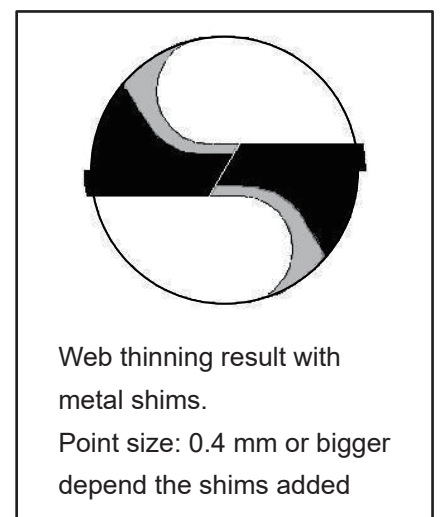
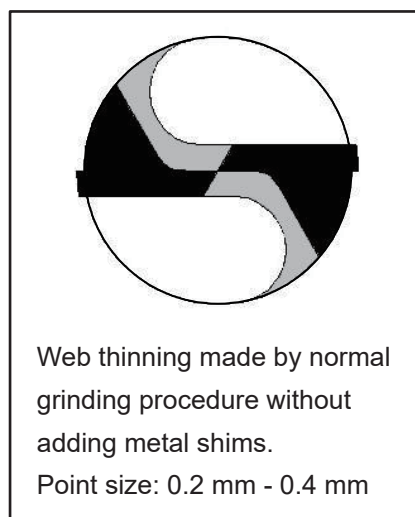
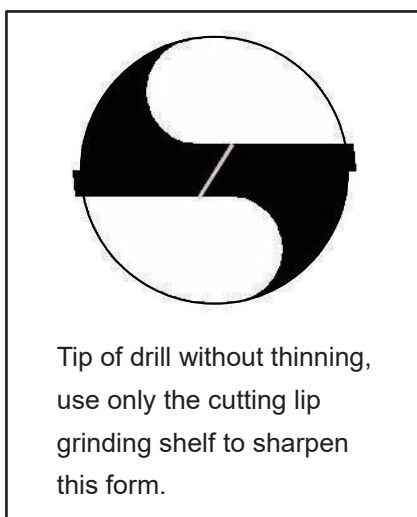
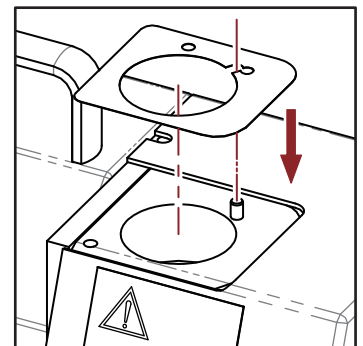
XII. The use of Metal Shims

There are 3 pieces metal shims as standard accessories.

- 2 pieces of 0.1 mm metal shims.
- 1 piece of 0.3 mm metal shim.

Align the hole of the shim to the pin on the web thinning grinding shelf then put it on as shown in the picture on the right.

Adding one shim of 0.1 mm will expand 0.2 mm of the point size, adding 0.3 mm shim will expand 0.6 mm of the point size and so on.



XIII. Machine Maintenance and Clean

1. Replacement of Grinding Wheel

✘ Do not exchange our grinding wheel with other grinding wheel from other supplier!

① Unplug the power cord and make sure the power is off.

② Confirm the screw direction on the grinding wheel cover before changing the grinding wheel. (Fig. 13-1)

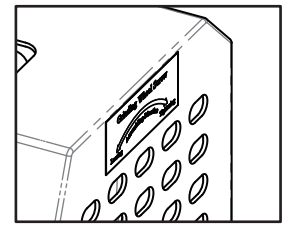


Fig. 13-1

③ Loosen the screw from the grinding wheel cover to open the cover. (Fig. 13-2)

④ Loosen the screw from the grinding wheel to take off the grinding wheel. (Fig. 13-3)

⑤ Use clean cloth to clean the flange and the contact surface of the grinding wheel.

⑥ Replace the new grinding wheel and fasten the screw. (Fig. 13-3)

✘ Tighten the wheel screw until the fan can't be moved separately, do not over tighten.

⑦ Close the grinding wheel cover and secure with screw.

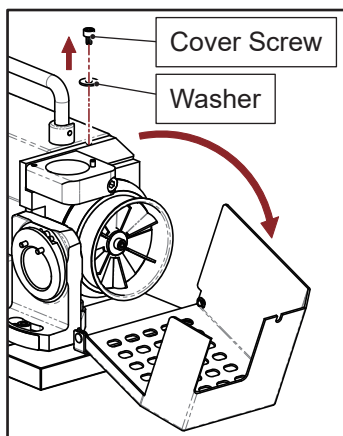


Fig. 13-2

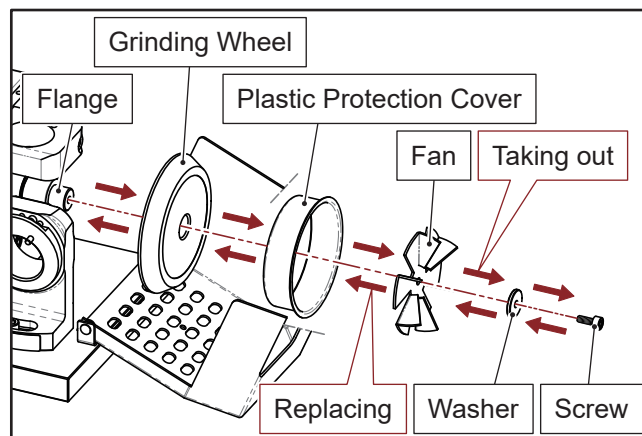


Fig. 13-3

2. Cleaning

① Unplug the power cord and make sure the power is off.

② Disassemble the chuck set after use.

③ Use the air press gun to clean the scraps and dust out of all grinding shelves and all the accessories. (Fig. 13-4, Fig. 13-5)

✘ Please wear protection glass while using the air press gun.

④ Use clean cloth to clean each contact port and all the accessories, then put them back in order.

(Fig. 13-4, Fig. 13-5)

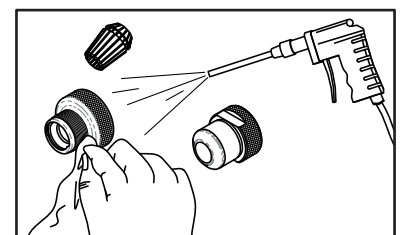


Fig. 13-4

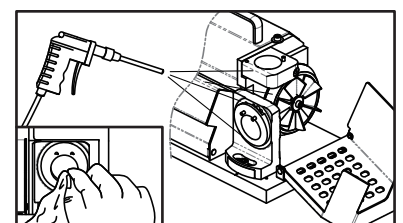


Fig. 13-5

XIV. Troubleshooting

1. Drill is positioned but incorrect result.
 - Check the drill's cutting edge is clean without scraps / iron ash.
 - Check the scale of the positioning shelf.
 - ✘ Preset the scale of the positioning shelf first and then adjust the scale.
 - Check the contact surface of positioning shelf is clean without scraps.
 - Check the position block is clean without scraps / iron ash.
 - Check the position block, if it is damaged, please contact your agent for replacement.
2. Positioning result is correct but failed accuracy after grinding.
 - ✘ If encountered any of the following problems, please reposition the drill and regrind.
 - ① Problem with grinding shelf :
 - Check the angle of the cutting lip grinding shelf / second face grinding shelf.
 - ✘ After adjusting the angle, must fasten the set screw of the grinding shelf.
 - Check the contact surface of grinding shelf is clean without scraps / iron ash.
 - ② Problem with drill :
 - Check the margin of the drill, if it is damaged should be cut off.
 - If the drill is deformed or has unequal land, may affects the grinding accuracy.
 - ③ Problem with accessories :
 - Check the cleanliness of chuck set (collet / collet holder / clamping nuts).
 - Check the grinding wheel, if it is damaged, please contact your agent for replacement.
 - While changing grinding wheel, the flange and the center hole of grinding wheel should be kept clean.
 - ④ Problem with drill grinding :
 - Do not apply too much pressure to grinding shelf.
 - Make sure to fully turn to the end when turning the chuck set clockwise and counterclockwise.
 - For web thinning, when inserting or taking out the chuck set, the center part of the clamping nut slot should align to the pin on the grinding shelf.
3. In case of product or component damage, switch off the machine and disconnect the power cord. Contact your local authorized supplier for repair or replacement.

