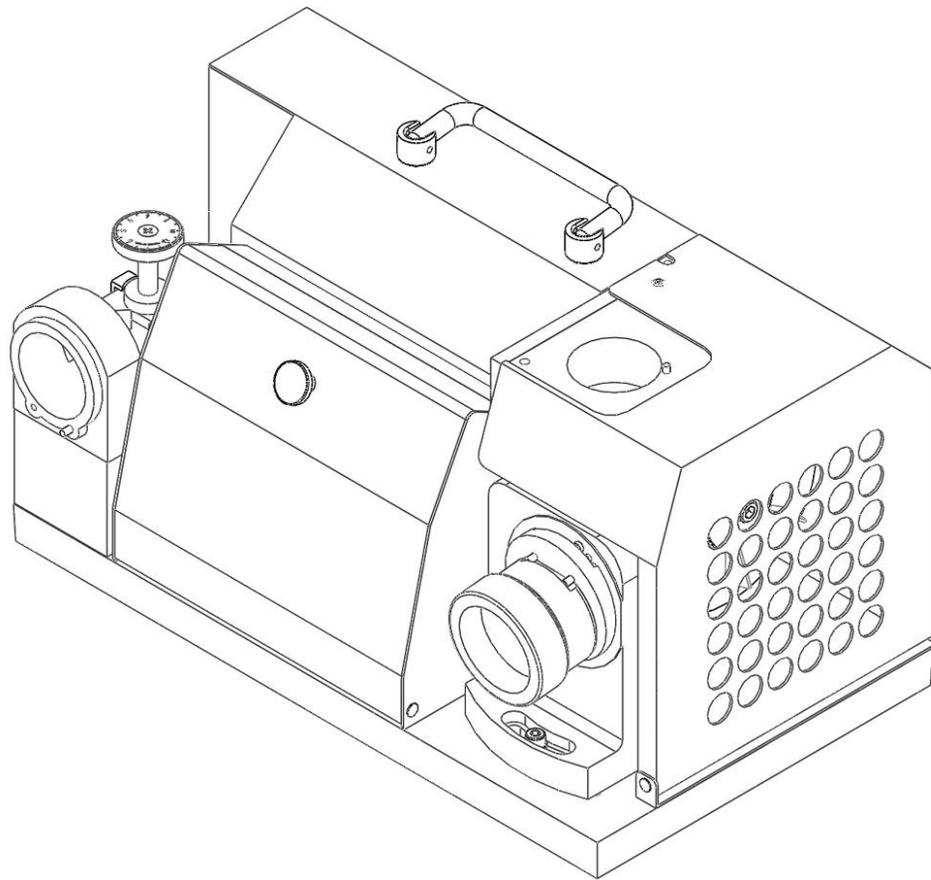


# GRINDING DRILL MACHINE

## OPERATION MANUAL



## Index :

I.	Safety Notification .....	P. 4
II.	Machine Devices Introduction.....	P. 9
III.	Machine Installation Instruction.....	P. 11
IV.	Standard Operational Steps.....	P. 13
V.	Replacement of Grinding Wheel and Machine Maintenance .....	P. 20
VI.	Problem Solving .....	P. 25
<b>VII.</b>	<b>The use of the Parallel Alignment Devise.....</b>	<b>P. 29</b>

## **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.

# I. Safety Notification :

Ground, cord-connected tools intended for use on a supply circuit having a nominal rating less than 150 volts:

When using electric tools basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury including the following. Read all these instructions before attempting to operate this product and save these instructions."

**Warning:** 

1. - Keep work area clear.
  - Cluttered areas and benches invite injuries.
  
2. - Consider work area environment
  - Do not expose tools to rain.
  - Do not use tools in damp or wet locations.
  - Keep work area well lit.
  - Do not use tools in the presence of flammable liquids or gases.
  
3. - Guard against electric shock
  - Avoid body contact with earthed or grounded surfaces (e.g. pipes; radiators, ranges, refrigerators)

4. - Keep other persons away
  - 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.
5. - Store idle tools
  - When not in use, tools should be stored in a dry locked-up place, out of reach of children.
6. - Do not force the tool
  - It will do the job better and safer at eh rate for which it was intended.
7. - Use the right tool
  - Do not force small tools to do the job of a heavy duty tools.
  - Do not use tools for purposes not intended; for example dot not use circular saws to cut tree limbs or logs.
8. - Dress properly
  - Do not wear loose clothing or jewellery, they can be caught in moving parts.
  - Non-skid footwear is recommended when working outdoors.
  - Wear protective hair covering to contain long hair.
9. - Use protective equipment - Use safety glasses.
  - Use face or dust mask if working operations create dust.

10. - Connect dust extraction equipment
  - If the tool is provided for the connection of dust extraction and collecting equipment, ensure these are connected and properly used.
  
11. - Do not abuse the cord
  - Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.
  
12. - Secure work
  - Where possible use clamps or a vice to hold the work. It is safer than using your hand.
  
13. - Do not overreach
  - Keep proper footing and balance at all times.
  
14. - Maintain Tools with care .
  - Keep cutting tools sharp and clean for better and safer performance.
  - Follow instruction for lubricating and changing accessories.
  - Inspect tools cords periodically and if damaged have them repaired by an authorized service facility.
  - Inspect extension cords periodically and replace if damaged.
  - Keep handles dry, clean and free from oil and grease.

15. - Disconnect tools
  - When not in use, before servicing and when changing accessories such as blades, bits and cutters, disconnect tools from the power supply.
  
16. - Remove adjusting keys and wrenches
  - Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
  
17. - Avoid unintentional starting
  - Ensure switch is in "off" position when plugging in.
  
18. - Use outdoor extension leads
  - When the tool is used outdoors, use only extension cords intended for outdoor use and so marked.
  
19. - Stay alert
  - Watch what you are doing, use common sense and do not operate the tool when you are tired.
  
20. - Check damaged parts
  - Before further use of tool, it should be carefully checked to determine that it will operate properly and perform its intended function.

- Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation.
- A guard or other part that is damaged should be properly repaired or replaced by an authorized service centre unless otherwise indicated in this instruction manual.
- Have defective switches replaced by an authorized service centre.
- Do not use the tools if the switch does not turn it on and off.

21. - Warning

- The use of any accessory or attachment other than one recommended in this instruction manual may present a risk of personal injury.

22. - Have your tool repaired by a qualified person .

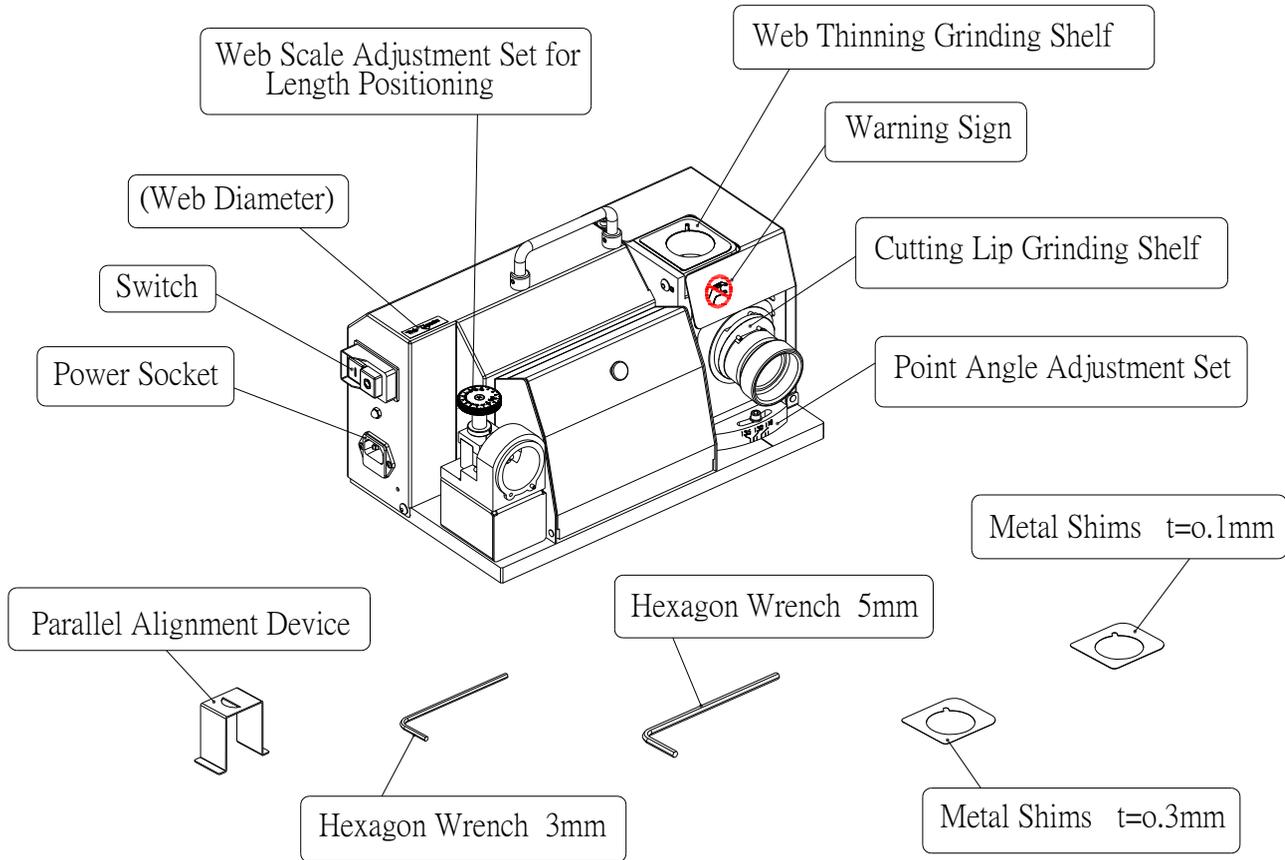
- This electric tool complies with the relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.

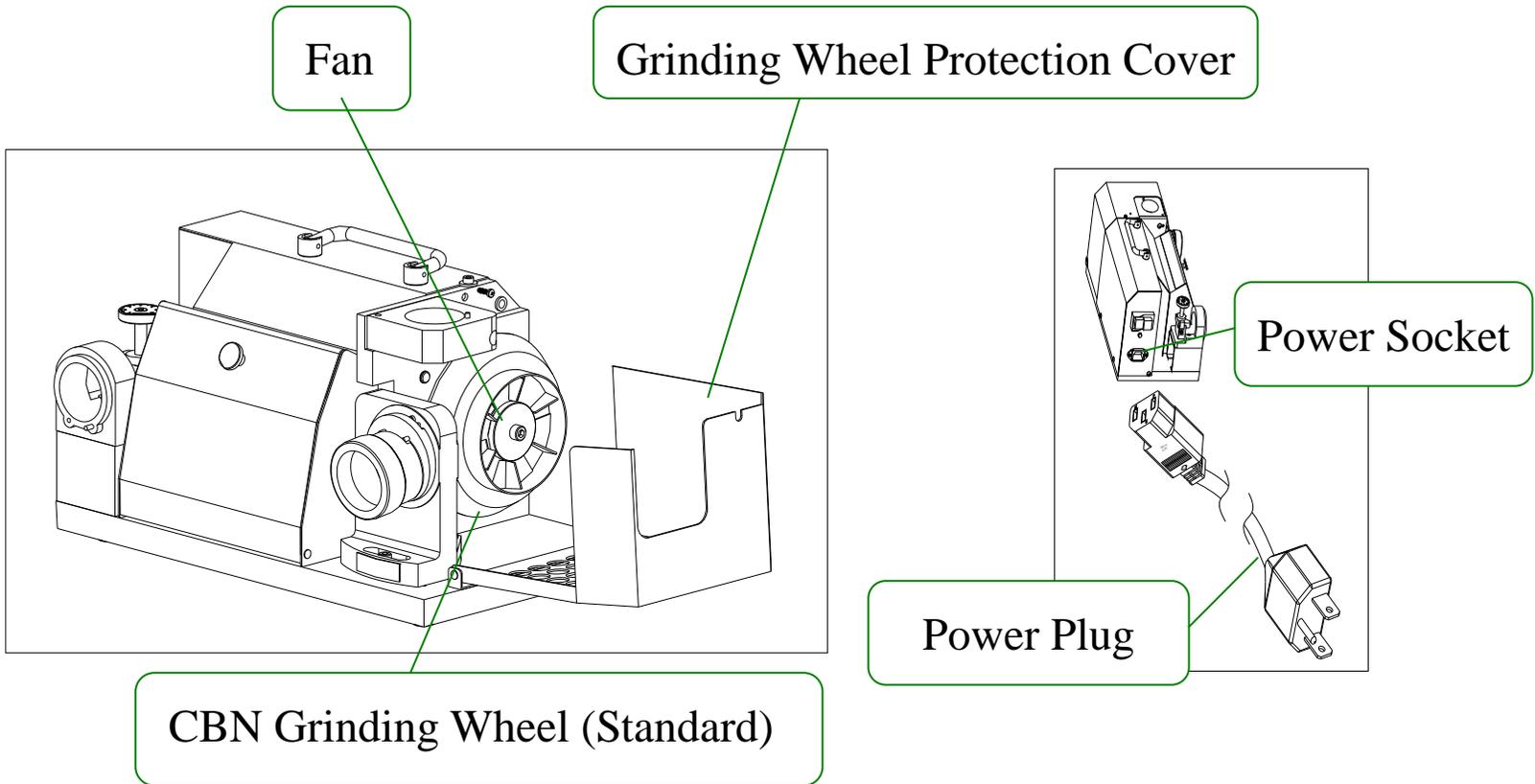
23. - Please use the air spray gun to move away the metal just which remains in side the grinding wheel protection over after finishing the grinding job. 24.-Please take a duster to clean the adjustment shelf and two grinding 'shelf after finishing grinding job.

A- weighted sound pressure level:

$$L_{p,eq} = 66.24 \text{ dB(A)} \quad L_{p,eq} = 66.8 \text{ dB(A)}$$

## II. Machine Device Introduction :





**Standard Diameter:**  $\varnothing 8\text{mm} \sim \varnothing 22\text{mm}$

**Plus optional accessories Diameter:**  $\varnothing 3\text{mm} \sim \varnothing 25.4\text{mm}$

### **III . Machine Installation Instruction**

#### **A. Environment Selection :**

1. Please place the machine on the “flat” working table high at 1m.
2. Dry Environment, away from any liquid.
3. Make sure the socket and power line are installed in proper location.

#### **B. Power Supply :**

Make sure the power supply is 220V or 110V according to your region.

Please check the switch is in off position before plug into socket set

## Motor Rotary Testing :

1. Plug the power line into power socket
2. Check the grinding wheel protection cover is fastened by the screw
3. Turn the switch on and quickly turn off the switch to check the grinding wheel rotary – counter clockwise
4. Turn on the switch and listen the machine running

( Machine equipped with DC Current Carbon Motor, Slightly grinding sound is normal )

## IV. Standard Operational Steps :

### 1. Determine the drill material to choose grinding wheel :

- HSS material drill use CBN grinding wheel
- Carbide / Tungsten material use SDC grinding wheel

### 2. Choosing the Proper Collet :

- According to the drill diameter and choose the same size of collet. Eg: 5mm drill, use 5mm collet ; 5.5mm drills, use 6mm collet.

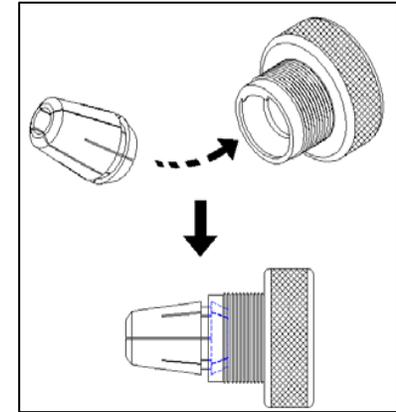


Diagram : 4-1

### 3. Make sure there are no dust or scraps inside the collet

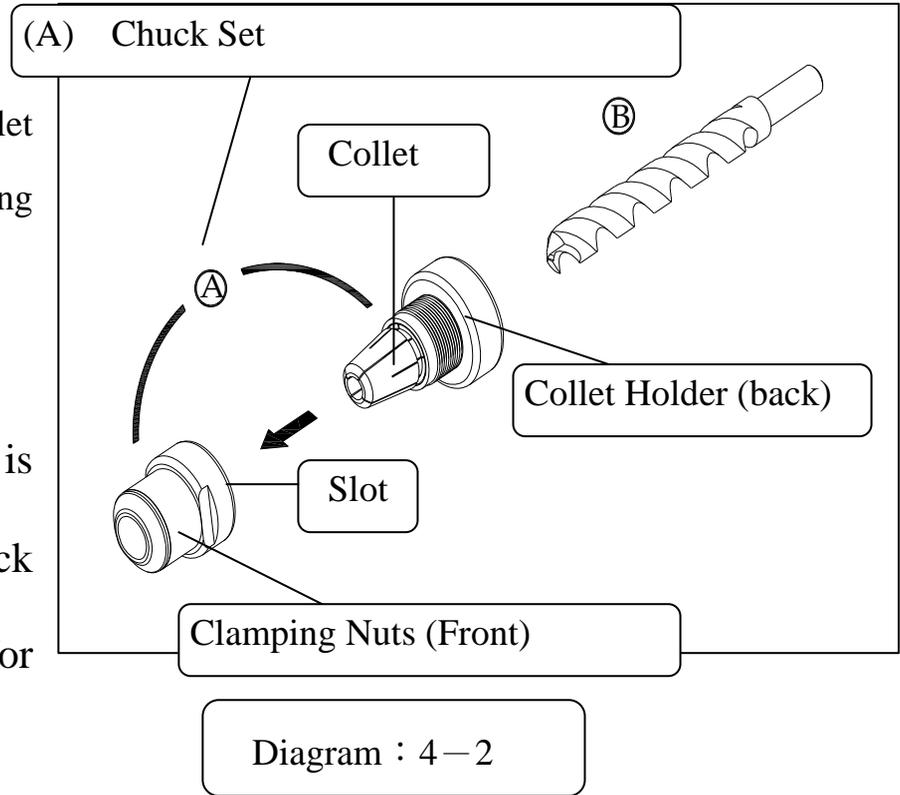
and the collet holder.

### 4. Insert the collet into collet holder by 45° degree : (Diagram 4-1)

### 5. Assembling Steps:

【(B) Drill ; (A) Insert collet into collet holder and assemble them with the clamping nut】 ◦ (Diagram 4-2)

※ Fasten the chuck set until the drill is grabbed by the holder, do not fasten Chuck Set too tightly, please leave some space for the later adjustment.



## 6. Web Diameter Scale Adjustment :

- ①. Set at Zero : 1. Turn the Web Diameter to the end by clockwise. 2. Then set the Web Diameter to “zero”.
- ②. Adjustment : Adjust the Web Diameter scale according to the drill diameter.

Eg : 10mm drill, set at 10

Eg : 10.6mm drill, set at 11

Eg : 10.2mm drill, set at 11

【If the length of a drill is shorter than original

length after re-sharpening many times, the web scale should be increased until the cutting edge is parallel with slot of clamping nut.】

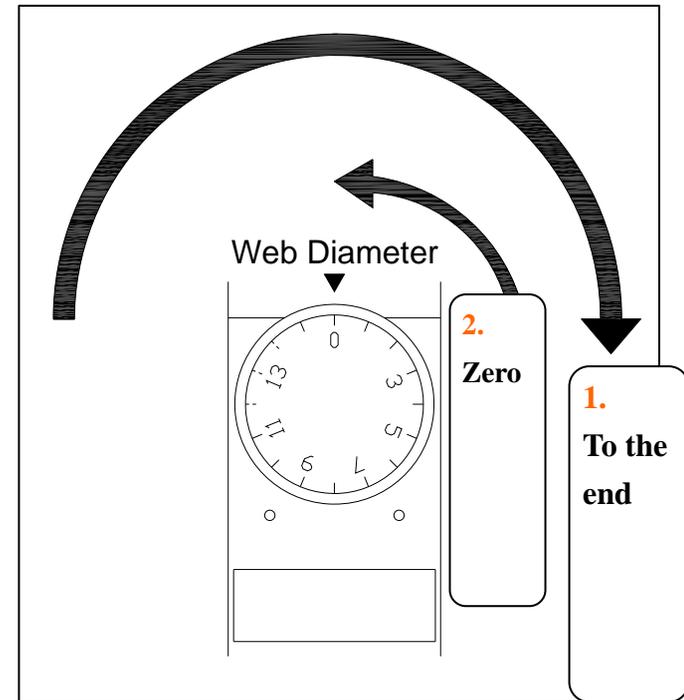


Diagram : 4-3

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

※ For grinding, **Deep Hole Drills** increase the adjustments on the Web Diameter scale (Diameter x 2).

Eg: Deep Hole Drill, diameter at 10mm, the Web Diameter scale should adjust above 20.

## 7. Drill Positioning :

- A. Inserting the chuck set fitly into the adjustment shelf and turn it clockwise to the end.
- B. Push the drill to the end and turn slowly the drill by clockwise until it is blocked by the position block.
- C. Tighten the clamping nut and the chuck by clockwise
- D. Take the chuck set out by turn it counter clockwise

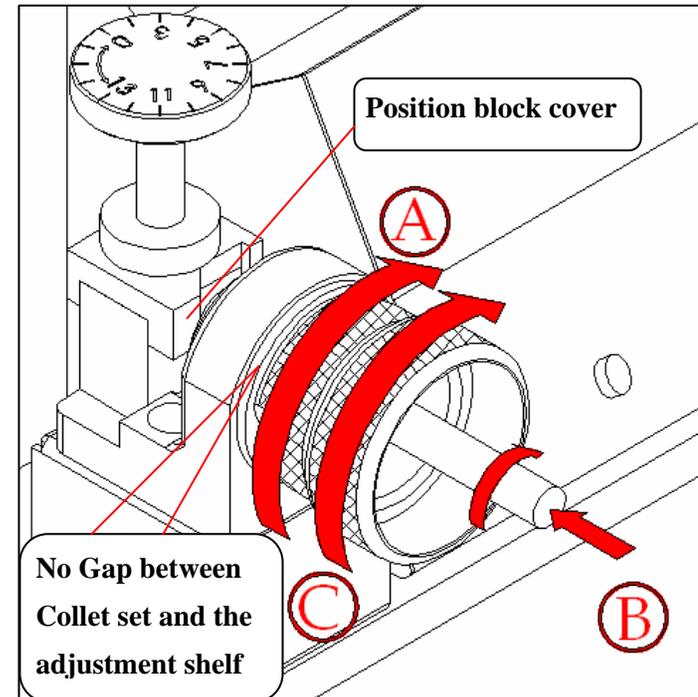


Diagram : 4-4

Always keep the parallelism before starting the grinding procedure.

Note :When taking the chuck set out, please make sure the cutting edge of the drill is parallel with the slot of clamping nut, if it is not parallel, please re-adjust it.

 You could also choose to use the parallel alignment device to check the parallelism. ( See page 29. for the use of Parallel Devise)

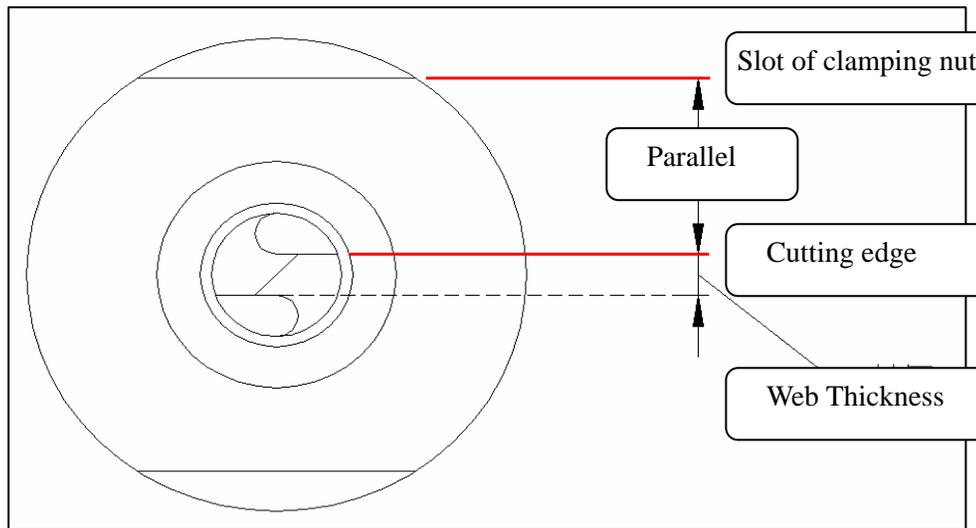


Diagram : 4-5

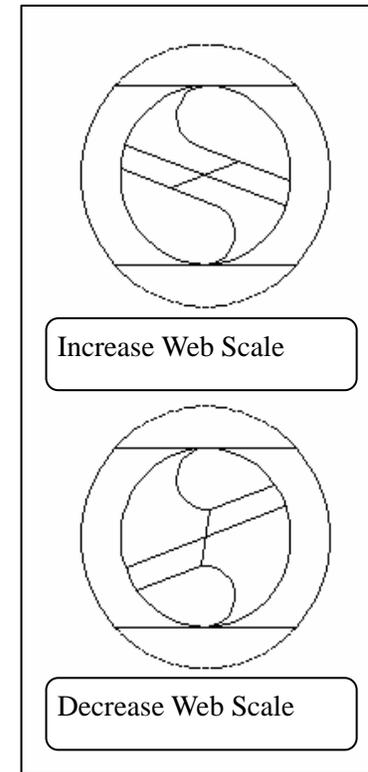


Diagram : 4-6

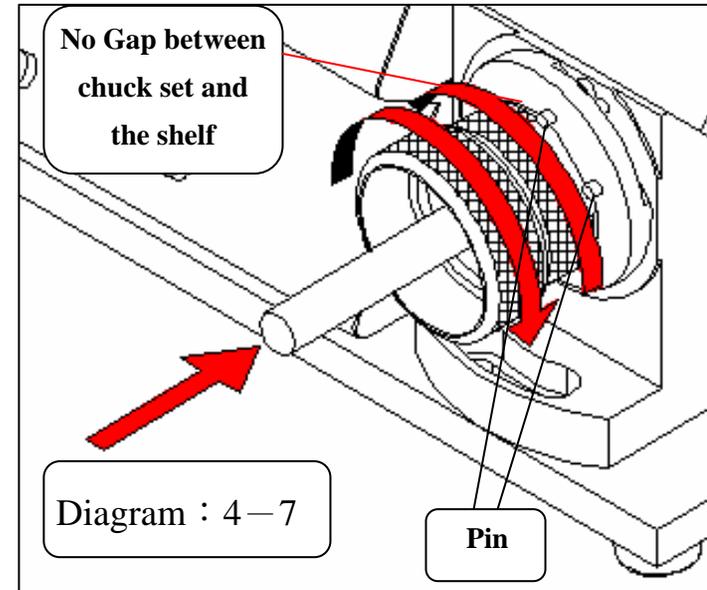
## 8. Grinding Cutting edge : (Point Angle)

Turn on the switch, when the motor rotation is stable (about 10 seconds), put the chuck set into the grinding shelf (on the bottom of right hand side) – Make Sure connect closely

The slot of the fixed clamping nut must be fitted with the two pins on the grinding shelf.

Grind the drill by moving left and right until the noise stops.

Turn to the other side and grind the drill by the same way. (Diagram 4-7)



※ Point Angle is available for adjustment. (90°~140°)



While grinding, please do not hold the drill shank, it may influence the drill position and caused the missing of accuracy.

## 9. Web / Center Thinning :

Insert gently the chuck set into web thinning shelf until reach the grinding slip, then grind the drill by moving left and right until the noise stops. Take out the chuck set, turn the chuck set to the other side and grind by the same way.

❗ Please make sure the center part of clamping nut slot aligns to the pin, when putting in or taking out the chuck set.

※ There are 0.1mm shim and 0.3mm shim for adjusting the size of web thickness.

Align the middle of slot with the Pin on the shelf.

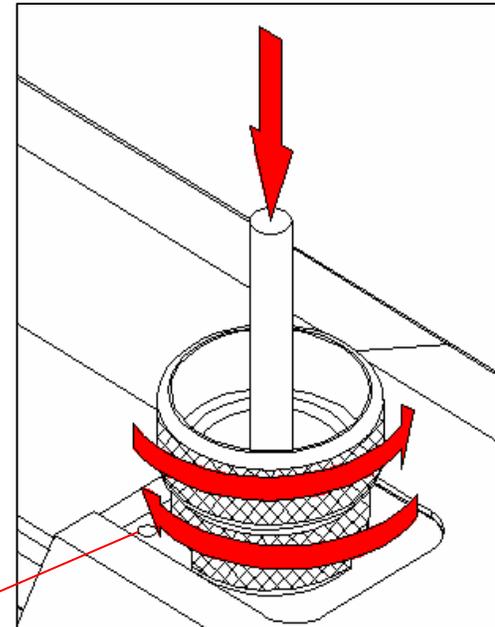


Diagram : 4-8

## V. Replacement of Grinding Wheel and Machine Maintenance :

### Replacement of Grinding Wheel :



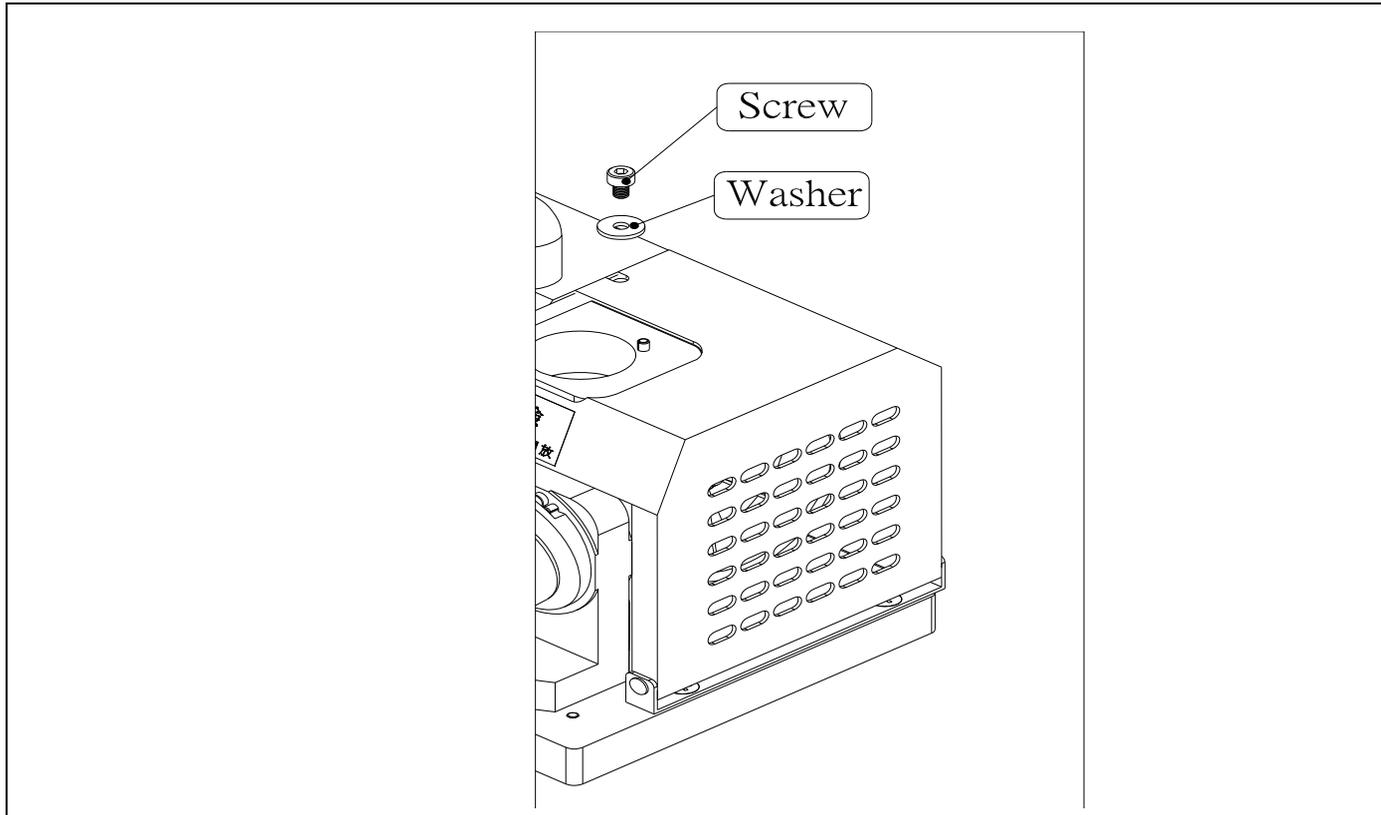
Please unplug the power supply line before conducting replacement action.

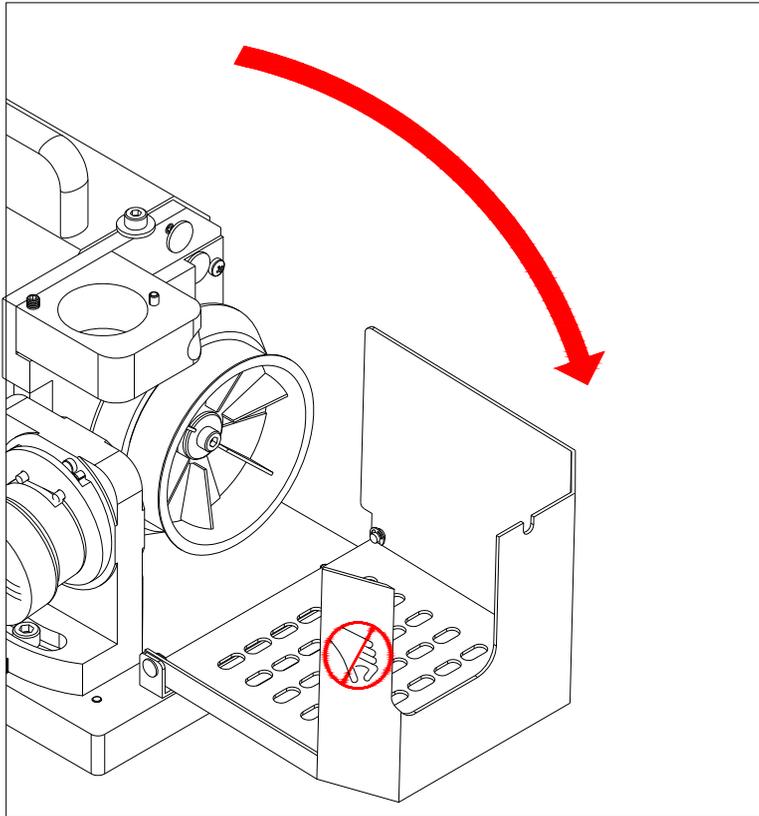
- Loosening the screw on the grinding wheel cover, then using hexagon wrench to loosen the screw on the fan by counter clockwise and take the fan and grinding wheel out.
- Use wiper to clean the scraps on flange and washer before replacing new grinding wheel.
- Assembling the grinding wheel, fan, washer with screw.

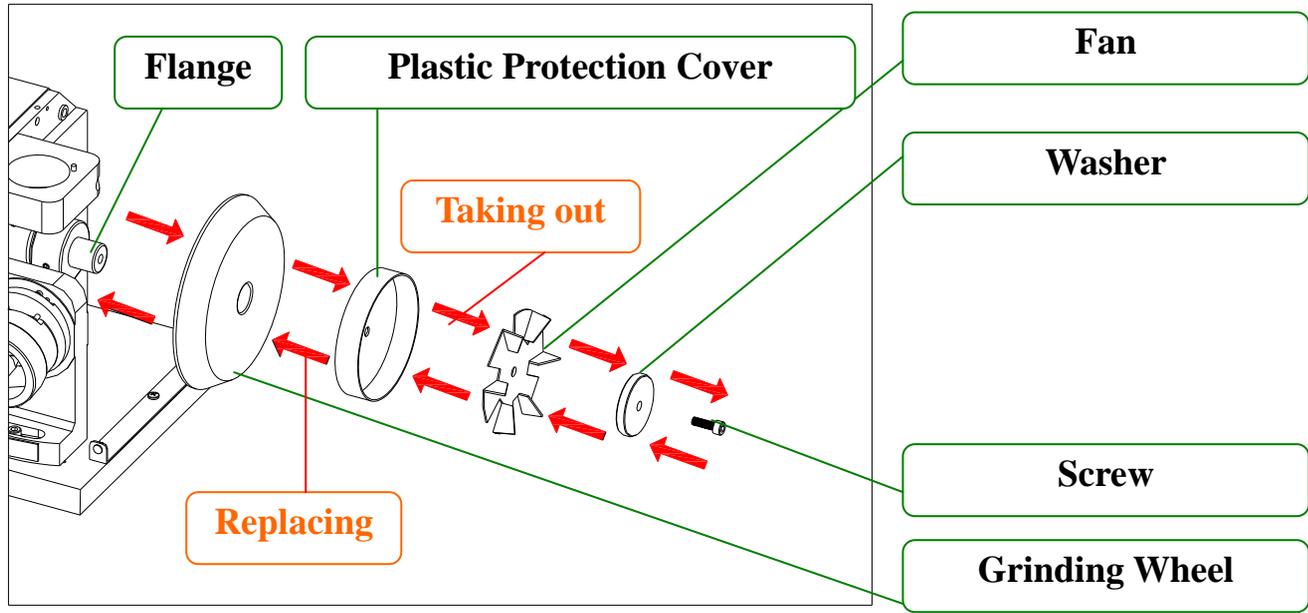
When fastening the screw, do not over push; tighten it until the fan can't be moved only.

## Machine Maintenance :

Using air spread gun to clean the iron ash / scraps and then use the wiper to clean it after grinding.







## VI. Problem Solving :

Cutting edge / lip can not be parallel with the slot of clamping nut

### Solution

Check the cutting edge of the drill to see whether scraps / iron ash existed – clean the drill

Check the scale on web diameter (Diagram 4-3)

Must turn the web scale to the end by clockwise first and set the web scale at Zero

Check the diameter of a drill and adjust the web diameter according to drill diameter. (Page. 13)

Check the position block on web adjustment set, if it is damaged, replace a new one. (Diagram 4.4)

When adjusting the length position, make sure the chuck set is tightly connect to the shelf without gap.  
(Diagram 4.4)

## Standard Positioning

### Tolerance – upward to 10°

Before starting the grinding procedure, please check the cutting edge is parallel with the slot of clamping nut –

The cutting edge can be upward from 0° ~ 10° but no more than 10°

Please note: It is unacceptable, if the cutting edge is downward with the slot of clamping nut.

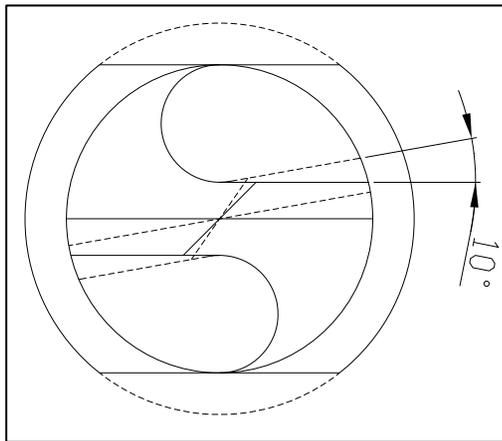


Diagram : 6—1

## Positioning is parallel but failed accuracy after grinding

### Problem - Solving

1. Check the condition of position block. (Diagram 4-4)  
Please contact with your agent for replacement.

2. While operating, check chuck set is tightly connect to any of the grinding shelf without gap (Diagram 4-7)

3. Check the drill is fastened tightly by chuck set (Page: 15)

4. Check the point angle of the drill complies with the point angle adjustment set.  
E.g.: 135° drill ,the point angle adjustment set should be adjusted to 135° (Page: 17)

**Re-sharpening**

**Note: Please re-adjust the web scale and re-grinding the drill again for point 2, 3, 4**

## Unequal Flank / Land of a drill after grinding

### Checklist

Check the clearance of chuck set ( collet / collet holder / clamping nuts)

Check the drill , \**Helix* of a drill has burr or damaged, the part should be cut off

Check the drill; it can not be used when the drill is deformed.

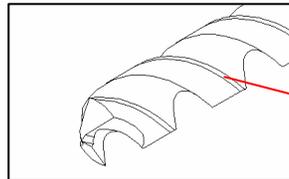
While grinding, do not apply too much pushing force to the shelf.

Check the screw of point angle adjustment set is fastened enough

Check the *contact face* of grinding shelf and chuck set that is clean without scraps.

Check the margin of the drill, damaged margin should be cut off

While grinding, make sure to fully turn the chuck set to the right and left.



Helix

## Problem with Chisel / Web Thinning

### Check List

※ For grinding the web thickness of a drill, when inserting or taking out the chuck set from web thinning shelf, make sure the pin is in the middle of the slot. Page:18

While changing grinding wheel, the flange and the center hole of grinding wheel should be kept clean.

Make Sure the flank of a drill is sharpened completely, uncompleted grinding will cause problem for chisel

While grinding, turn the chuck set to right and left to the end on the grinding shelf.

Check the clearance of chuck set

Check the clearance of web thinning shelf

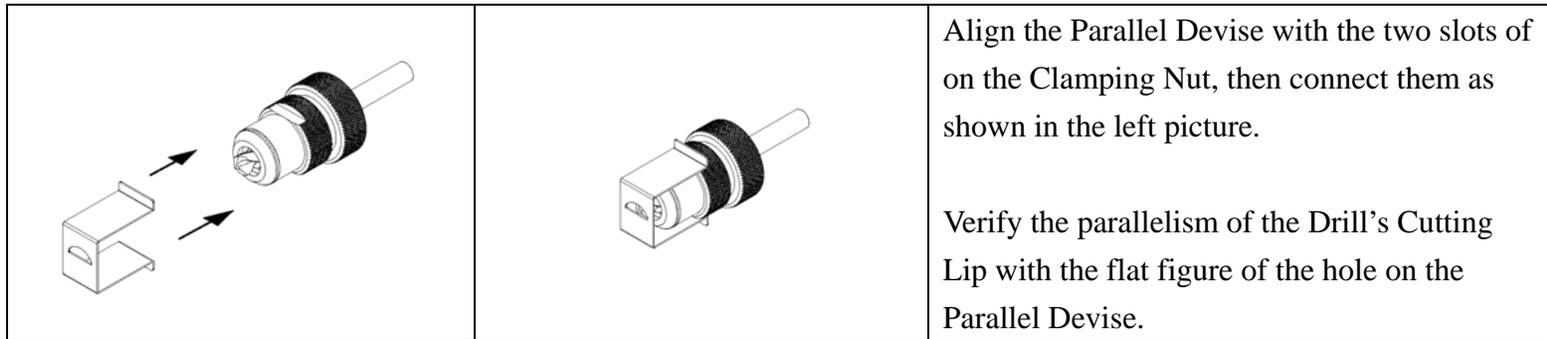
While grinding, do not use too over forcing power to push.

Check the condition of drill, if drill is deformed, it can't be used

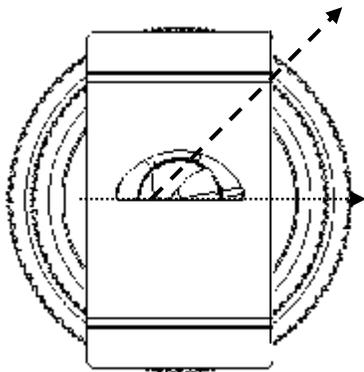
Check the drill , Helix of a drill has burr or damaged, the part should be cut off

Check the helix of the drill, two parts of helix should be equal. If it is not, the drill can not be used.

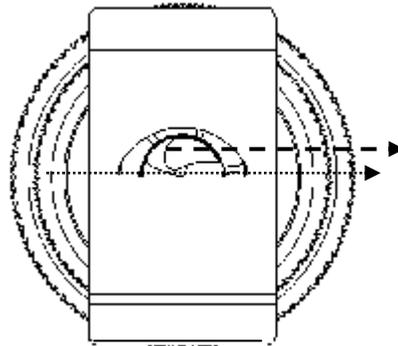
## VII. The use of the Parallel Alignment Device



Incorrect = Please decrease scale



Correct = Cutting lip parallel



Incorrect = Please increase scale

