GP-1

Drill Bit Grinder


Twist drill bits


Deep-slot drill bits

Precision, Satisfying the user's need

Peerless, Super Function, Durable

Quality Assurance, Easy Operation, Stable Quality

High Efficiency, High Quality Grinding Slip, Good Grinding Results

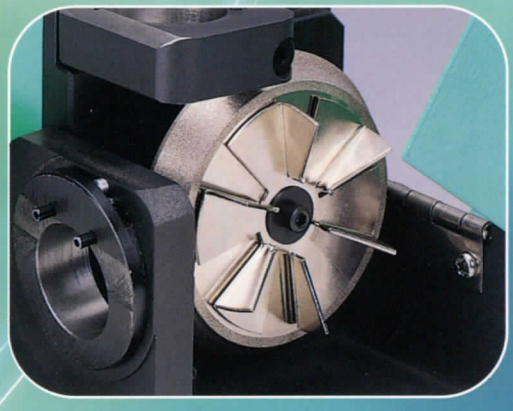
Considerable Design, Invisible Tool Box, Delicate & Friendly Use

Mobility, Portable Design

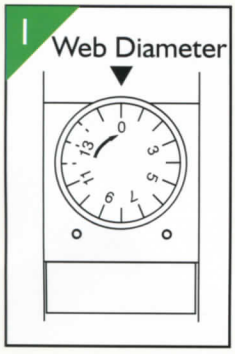
Model	GP-1
Drill Diameter	Φ2mm~ Φ13mm
Point Angle	90° ~ 140°
Power Supply	AC110V 50/60Hz AC220V (Opt.)
R.P.M of Motor	5300 R.P.M.
Grinding Wheel	CBN#200
Weight	N.W 7Kg G.W 8Kg
Machine Size	L:280mm W:133mm H:155mm
Packing Size	L:330mm W:205mm H:225mm
Type of Thinning	X Thinning
Standard Accessories	Collet X 12 pcs
	Collet Holder X 1 set
	Metal Shim 0.1mmX2 pcs / 0.3mmX1 pcs
	Hexagon Wrench 3mmX1 pcs / 4mmX1 pcs
Optional SD Grinding Wheel for Carbide Drills	

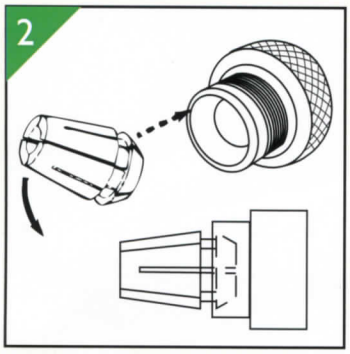
GP-1 Optional Accesories	
GP-1 / Imperial Collet Set	Φ2.5mm~ Φ12.5mm (11 pcs)
GP-1 / P-SD	SD Grinding Wheel for Carbide Drills
Portable LED light	

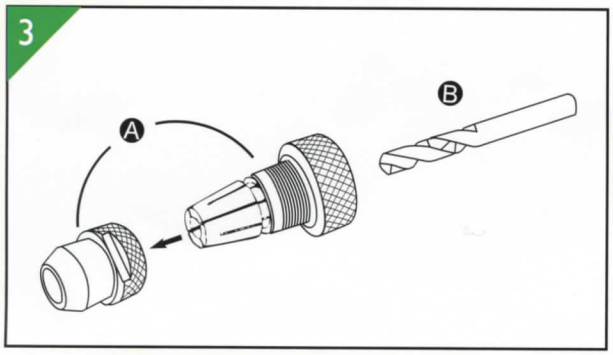

Invisible Tool Box

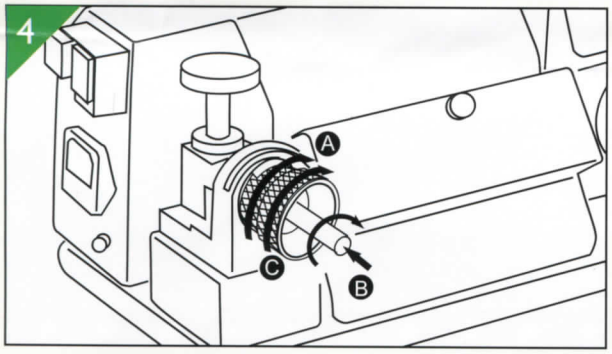

High Quality Grinding Slip

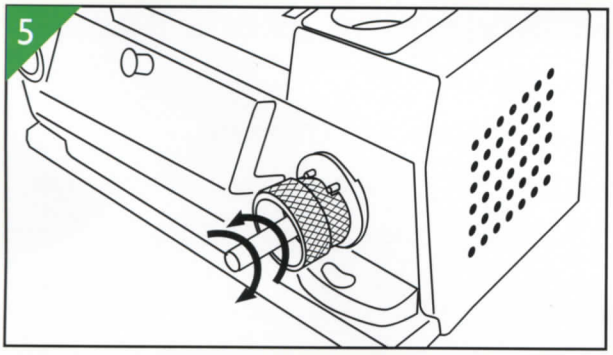
GP-1 Drill Bit Grinder

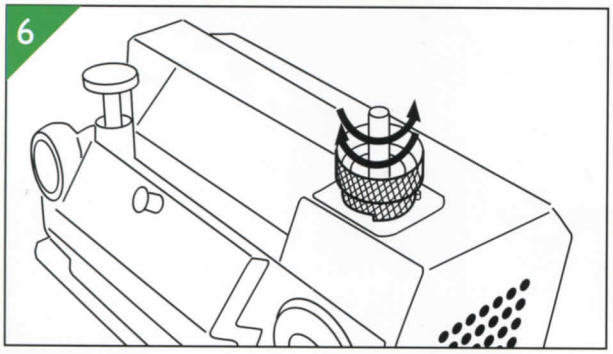












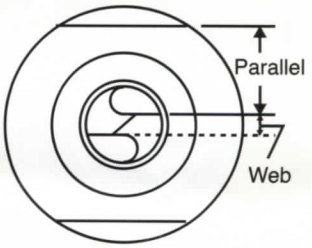
OPERATION

1.Determine the drill material, then choose the proper grinding wheel, CBN grinding wheel is the standard accessory.
(CBN for HSS material drills) (SD for carbide material drills)

2.Preset the scale of Web Adjustment Shelf ; turn it by clockwise to the end and then turn counterclockwise at zero.

3.A. Choose the proper size of collet. Put collet into collet chuck.
*Insert collet into collet chuck by 45° angle.
B.The order of setting operation: Put the collet into collet chuck and screw in a little bit by clamping nut, then insert the drill through the collet chuck and push in until the drill is out of the nut about 5mm.
*Do not fully fasten the clamping nut with collet chuck, keep the drill able to be adjusted.

4.A.Adjust the scale of Web Adjustment Shelf according to the drill diameter.
B.Insert the chuck set into the Web Adjustment Shelf. Then connect it tightly. Turn it right to the end.
C.Plug the drill to the end and turn it right to the end.
D.Turn the chuck set right to the end and tightens it.
E.Turn the chuck set a little to the left and taking it out gently.
*Make sure that the cutting lip of drill is parallel with the slot of clamping nut before grinding job started. If it is not parallel, adjust it again.



Attention! If the cutting lip is downward, must increase the scale of Web Adjustment Shelf. If it is upward, please decrease the scale of the Web Adjustment Shelf.
*When the flute length of a drill becomes shorter, the web thickness of a drill would become thicker. So, for the same diameter of drills, the shorter length of a drill, the higher scale of Web Adjustment Shelf need to be increased.

5.Turn the power switch on and wait until the motor rotation is stable (about 10 seconds) , put the chuck set into the grinding shelf. The slot of clamping nut must fit with the two pins of the grinding shelf. Insert the drill gently into grinding shelf until reach the grinding slip. Grind the drill by moving left and right until the noise stops. And then turn to the other side. Grind the drill with the same way.
*The grinding size of drill is 2mm~13mm.
*The point angle of drill is from 118° to 135°
*While grinding, don't hold the stem of the drill, it will affect the accuracy.

6.For grinding the center of drill and the web of drill, insert the chuck set into Web Thinning Shelf and move left and right until the noise stops. After that turn the chuck set to the other side and grinds it by the same way until noise stops.

*The insertion and ejection of the clamping nut set from Web Thinning Shelf, must make sure that the center part of the slot in clamping nut is fitted with the pin of Web Thinning Shelf.

7.Please clean the scraps on each grinding shelf after finishing the grinding job.

Remark: 1.For grinding the (long drill) deep hole drill, increase the scale of Web Adjustment Shelf.
2.The high spiral drill bit: Based on the size and specification, increase the adjustments on the scale (Diameterx2).

2009.09

ER16 Collet Adapter

Operation Manual

(for 3mm-7mm collets use)

GP TOOL GRINDTEC PRECISE CO., LTD.
No.16, Lane 221.Ren Hua Rd
Ta-Li City, Taichung, Taiwan.
Tel: +886 4 2491 0443
Fax: +886 4 2491 1583
Website: www.gptools.net
E-mail: sales@gptools.net

1. Necessary accessories

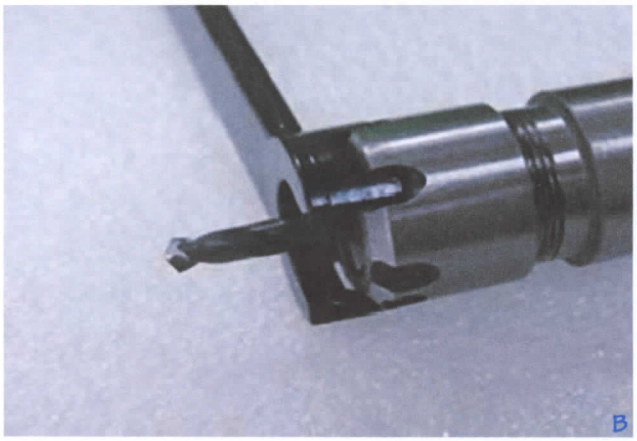
1.3mm~7mm collets/each
2.Wrench
3.ST22 adaptor
4.ER32-22mm collet
(In the collet box of machine)

2. Install the collet

1.Pick up the adaptor tap (A)

2.Embed the collet into the groove of tap by 45° degree (B&C)

3.Check the collet could be embedded correctly (D)



3. Insert the drill

1.Assemble the adaptor set (A)

2.Insert the drill into the adaptor set.

3.Use the wrench and tighten adaptor set, and make sure the drill doesn't fall down but you could still adjust the drill (B)

4.Using vernier caliper to make sure the drill protrude out from adaptor set around 12 ~14mm. Use the wrench to adaptor set again until it is tighten enough. (C)

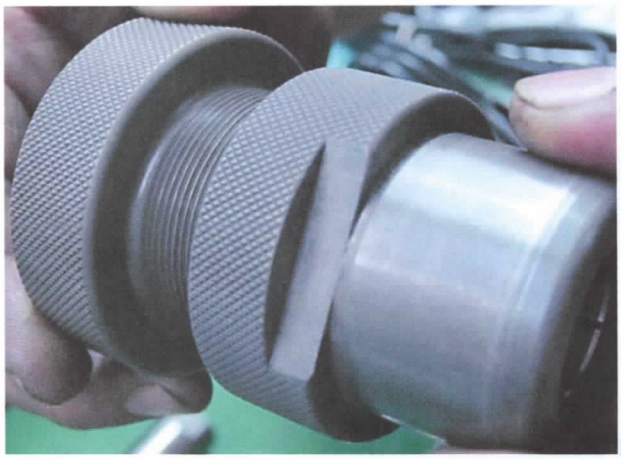

A

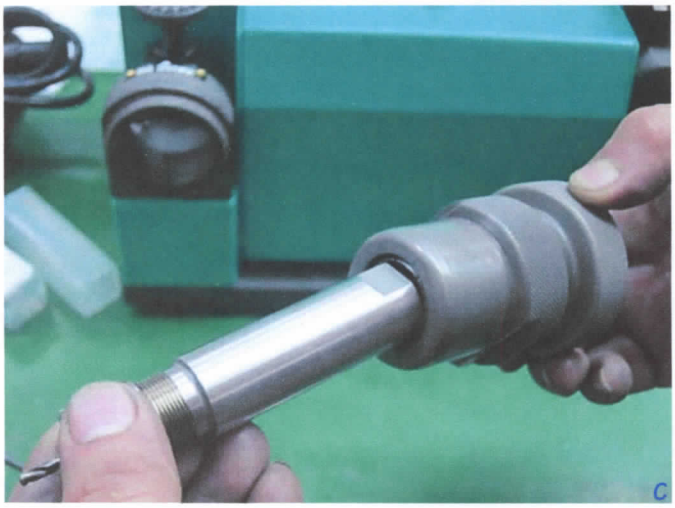
4.Assemble ER32 chuck set

1.Embed the 22mm collet into the groove of collet holder by 45° degree. **(restricted)** (A)

2.Assemble the front collet holder with collet holder together. (B)

3.Insert the adaptor into the 22mm collet and tighten with collet holder set together.(C&D)

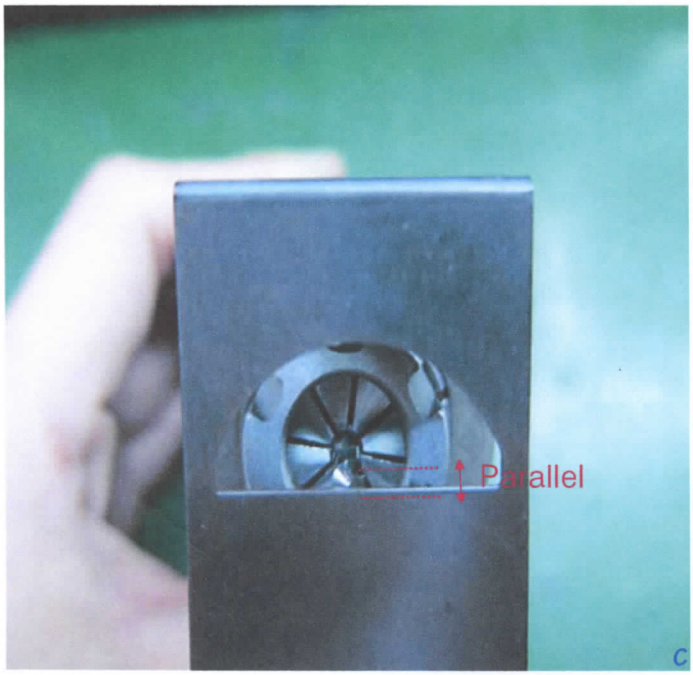

B


C


D

A


B



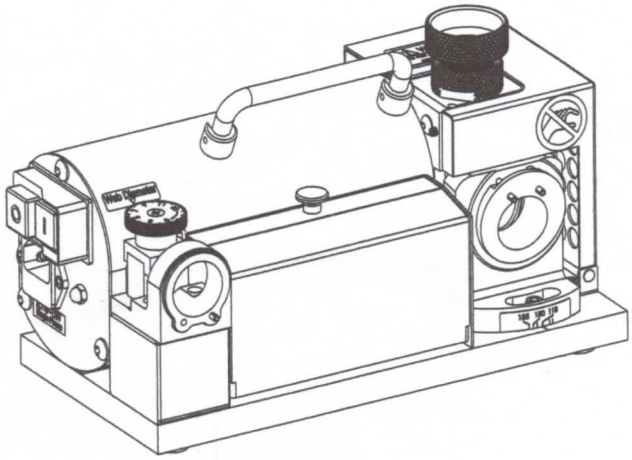
C

5.Drill positioning

1.Setting Web Diameter according to the drill diameter (For example: 3mm drill diameter set to 3mm) (A&B)

2.Make sure the cutting edge is parallel with parallel measuring device.
If it's parallel, going next grinding procedures. If not, please kindly adjust the web diameter to re-positioning. (C)

Operation Manual



Model :GP-01&21

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 once, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

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

Warning:

"WARNING ! 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."

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 property 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 and 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 safely 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:	Lp,eq= 66.24 dB(A)
	Lp,eq= 66.8 dB(A)

Warning:

1. KEEP GUARDS IN PLACE and In working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from 1001 before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON"T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON"T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.
9. USE PROPER EXTENSION CORD. Make sure your extension cord Is In good.
10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, lings, bracelets, or other jewelry which may get caught in moving parts, Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

    Exception: The reference to gloves may be omitted from the instructions for a grinder.
11. ALWAYS USE SAFETY GLASSES. Also use lace or dust mask ~ cutting operation Is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safely glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. DON"T OVERREACH. Keep proper footing and balance at all times.
14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow Instructions for lubricating and changing accessories.
15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use 01 improper accessories may cause risk 01 injury to persons.
18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged 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.

20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or culler only.

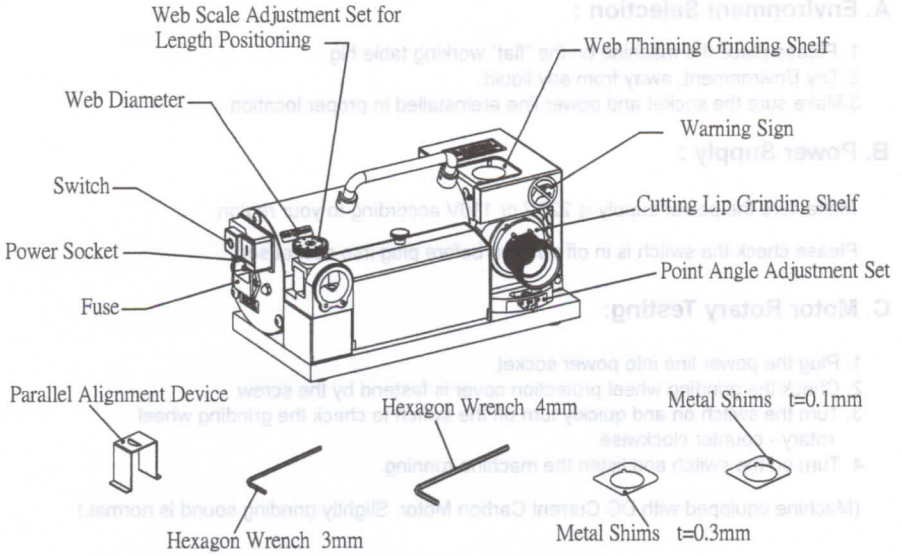
21. NEVER LEAVE TOOL RUNNING UNATIENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

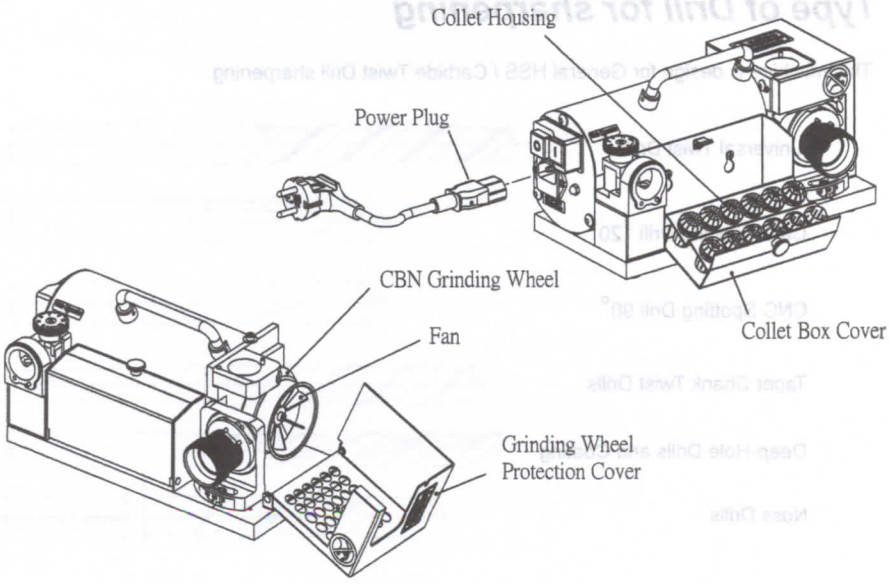
INDOOR USED!!!

WARNING: DO NOT EXPOSE TO RAIN OR USE IN DAMP LOCATIONS and
AVERTISSEMENT: NE PAS EXPOSER A LA PLUIE ET NE PAS UTILISER DANS LES EMPLACEMENTS HUMIDES

Index

Devices and components name of the Drill Regrinding Machine





Machine Installation Instruction

A. Environment Selection :

1. Please place the machine on the "flat" working table hig.
2. Dry Environment, away from any liquid.
3. Make sure the socket and power line areinstalled 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.

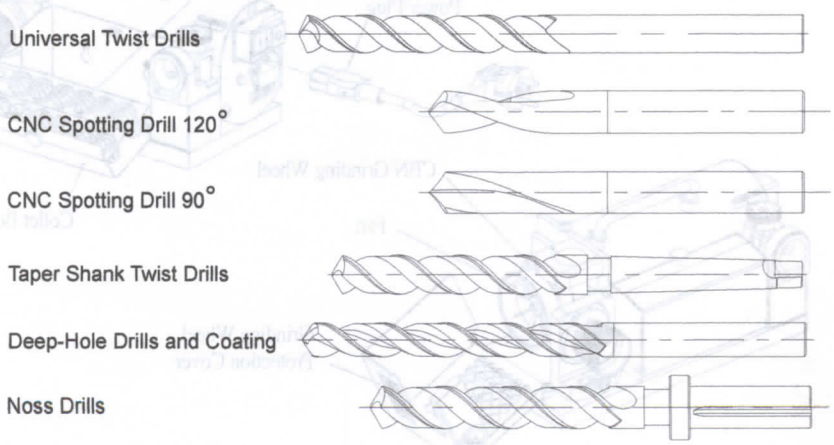
C. Motor Rotary Testing:

1. Plug the power line into power socket.
2. Check the grinding wheel protection cover is fastend 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.)

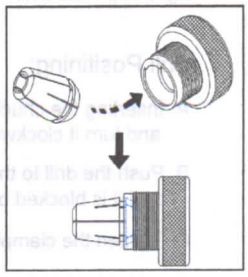
Type of Drill for sharpening

This machine is design for General HSS / Carbide Twist Drill sharpening.



Standard Operational Steps

1. Determine the drill material to choose grinding wheel :



(Diagram:4-1)

- HSS material drill use CBN grinding wheel (Standard).
- 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.

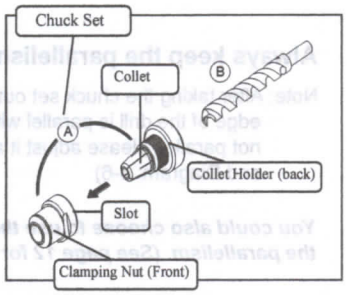
3. Make sure there are no dusts or scraps inside the collet and the collet holder.

4. insert the collet into collet holder by 45° as illustrated:(Diagram:4-1)

5. Assembling Steps:

Drill (B) Insert collet into collet holder and assemble them with the clamping nut. as illustrated: (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 positioning adjustment of the drill.*



(Diagram:4-2)

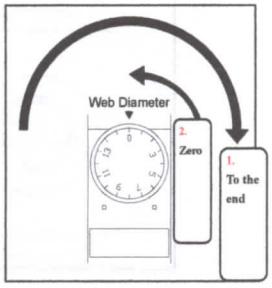
6. Web Diameter Scale Adjustment :

(1) Set at Zero: Turn the Web Diameter dial to the end by clockwise and set the Web Diameter to "0" as illustrated: (Diagram:4-3)

(2) Adjustment: Adjust the Web Diameter scale according to the drill diameter.

Eg: 5mm drill , set at 5
Eg: 5.6mm drill, set at 6
Eg: 5.2mm drill, set at 6

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 edgn is parallel with slot of clamping nut.



(Diagram:4-3)

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

※ For grinding Deep Hole Drills increase the adjustments on the Web Diameter scale (Diameter x 2)
Eg: Deep Hole Drill , diameter at 5mm, the Web Diameter scale should adjust above 10.

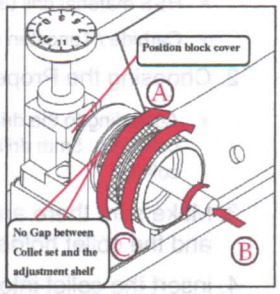
7. Drill Positining:

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 postition block.

C. Tighten the clamping nut and the chuck by clockwise.

D. Take the chuck set out by turn it counter clockwise.
See illustrated: (Diagram:4-4)

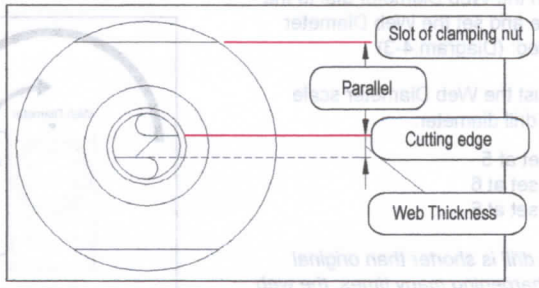


(Diagram:4-4)

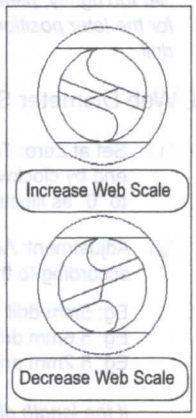
Always keep the parallelism before starting the grinding procedure.

Note: After 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 adjust it again.(see illustrated: Diagram:4-5 and Diagram: 4-6)

You could also choose to use the parallel alignment device to check the parallelism. (See page 12 for the use of Parallel Devise)



(Diagram:4-5)



(Diagram:4-6)

Standard Operational Steps

8. Cutting Lip Grinding: (Point Angle)

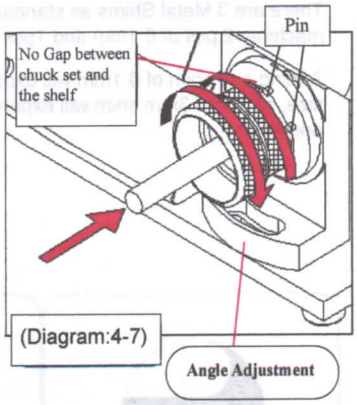
Turn on the switch, when the motor rotation is stable (about 10 seconds), put the chuck set into the grinding shelf and connected them closely.

Please verify the Point Angle of the Drill before starting the grinding procedure.

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 moise stops.

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



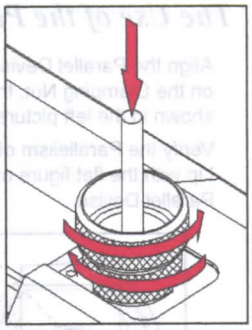
(Diagram:4-7)

※ Point Angle is available for adjustment.
118°～135° or 90°~140° depends on the Models.

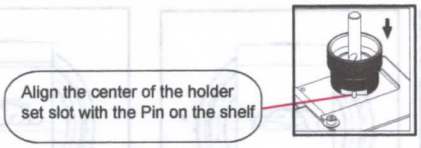
While grinding, please do not hold the drill shank, it may influence the drill position and caused the missing of accuracy.

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 chuck set, turn the chuck set to the other side and grind by the same way.
(See as illustrated : Diagram 4-8)


(Diagram:4-8)

Please Make sure the center part of clamming nut slot aligns to the pin, when putting in or taking out the chuck set. (Diagram:4-8-1)



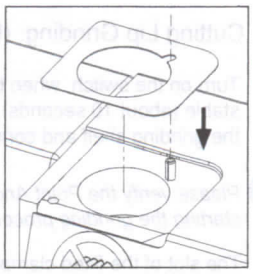
(Diagram:4-8-1)

※ *There are 0.1mm shim and 0.3mm shim for adjusting the size of web thickness.*
Please refer the use of Metal shims on page 12.

The Use of Metal Shims

There are 3 Metal Shims as standard accessories in the machine. 2 pcs of 0.1mm and 1pcs of 0.3mm.

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



Tip of drill without thinning, use only the Cutting Lip Grinding Shelf to sharpen this form.l

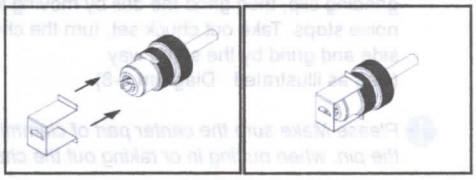
Web Thinning made by normal grinding procedure without adding metal shims.
Point size: 0.2mm - 0.4mm

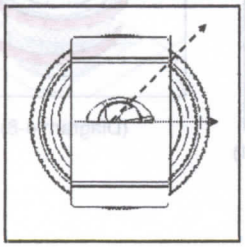
Web thinning result with metal shims.
Point size: 0.4mm or bigger depend on the shims added.

The Use of the Parallel Alignment Devise

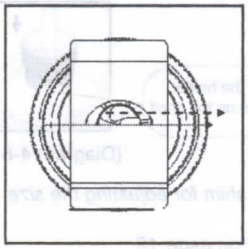
Align the Parallel Devise with the two slots of on the Clamping Nut, then connect them as shown in the left picture.

Verify the Parallelism of the Drill's Cutting Lip with the flat figure of the hole on the Parallel Devise .

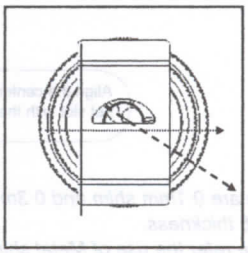




Incorrect - Please decrease scale



Correct - Cutting lip parallel



Incorrect - Please increase scale

Replacement of Grinding Wheel and Machine Maintenance

Replacement of Grinding Wheel:

Please unplug the power supply line before conducting replacement action.

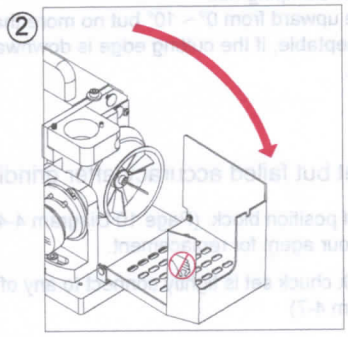
- Loosing the screw on the grinding wheel cover, then using hexagon wrench to loose the screw on the fan by counter clockwise and take the fan and grinding wheel out.
- Use wiper to clean the scraps on flange and washer before replacing new grinding wheel.
- assembling the grinding wheel, fan, washer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

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

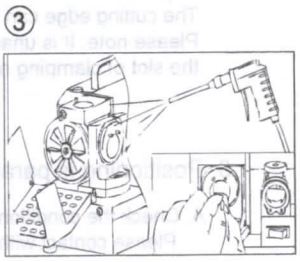
Machine maintenance:

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

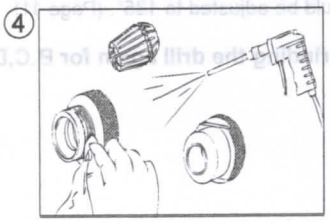
(Diagram:4-9)



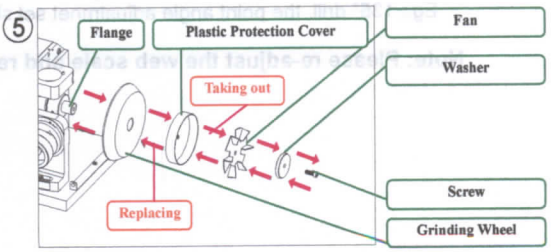
(Diagram:4-10)



(Diagram:4-11)



(Diagram:4-12)



(Diagram:4-13)

Trouble Shooting

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

   A. Check the cutting edge of the drill to see whether scraps / iron ash existed - clean the drill.

   B. Check the scale on the web diameter. (Page 9 Diagram 4-3)
   Must trun the web scale to the end by clockwise first and set the web scale at "0".

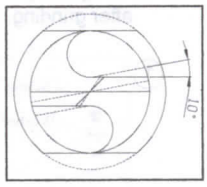
   C. Check the diameter of a drill and adjust the web diameter according to drill diameter. (Page 9)

   D. Check the position block on the web adjustment set, if it is damaged, replace a new one. (Page 10)

   E. When adjusting the length position, make sure the chuck set is tightly connect to the shelf without gap. (Page 10 Diagram 4-4)

2. 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)

3. Positioning is parallet but failed accuracy after grinding.

   A. Check the condition of position block. (Page 10 Diagram 4-4)
   Please contact with your agent for replacement.

   B. While operating, check chuck set is tightly connect to any of the frinding shelf without gap. (Page 11 Diagram 4-7)

   C. Check the drill is fastened tightly by chuck set. (Page 10)

   D. Check the point angle of the drill complies with the point angle adjustment set.
   Eg.: 135° drill, the point angle adjustmnet set should be adjusted to 135°. (Page 11)

   Note: Please re-adjust the web scale and re-grinding the drill again for B,C,D.

Trouble Shooting

4. Unequal Flank / Land of a drill after grinding.

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

B. Check the drill, **Helix** of a drill has burr or damaged, the parts should be cut off.

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

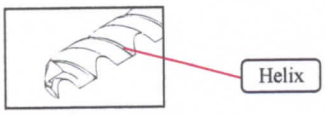
D. While grinding ,do not apply too much pushing force to the shelf.

E. Check the screw of point angle adjustment set is fastened enough.

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

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

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



5. Problem with Chisel / Web Thinning.

Check List

A. 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 11 Diagram:4-8)

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

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

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

E. Check the clearance of chuck set.

F. Check the clearance of web thinning shelf.

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

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

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