



User's Manual

Drill Sharpening Instructions

Applicable Models :

DS213	CS216
DS216	CS220
DS220	



INSTRUCTIONS - Drill Sharpening

MACHINE PARTS



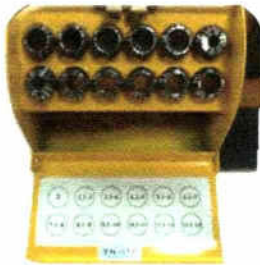


INSTRUCTIONS - Collets and Chuck Set

MACHINE ACCESSORIES



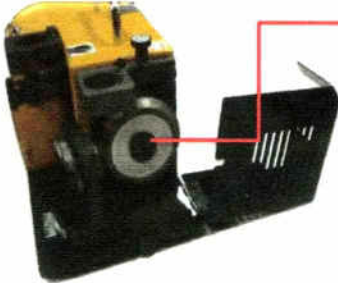
- 1). Chuck Set :**
Double sided ER-20 Chuck Set for holding ER-20 Collets
Double sided ER-25 Chuck Set for holding ER-25 Collets
Double sided ER-40 Chuck Set for holding ER-40 Collets
★ Ni-treatment gives better shelf life



- 2). Collet Set :**
ER-20/ER-25/ER-40 Collets for clamping drills
ER-20 x 12pcs = 2/3/4/5/6/7/8/9/10/11/12/13mm
ER-25 x 7pcs = 14/15/16/17/18/19/20mm
ER-40 x 20pcs
= 13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32mm
★ Optional decimal collets aren available



- Note :**
Example :
6.2mm drill ; decimal collet 6.5mm is suggested



- 3). Grinding Wheel :**
★ Optional CBN wheel and SD wheel
SD#140/200 for Carbide drills
CBN#140/200 for HSS drills
★ Choose Original wheel makes longer shelf life



CBN Wheel

SD Wheel

- 5). Extension Holders :**
To extend the length of short drills



- 4). Allen Keys :**
For remove grinding wheel and to adjust web angle of Sharpen Port





INSTRUCTIONS - Drills: Timing

STEP 1

1). Check the drill size and drill material, measure the grinding wheel is correct. Changing wheel is necessary.



2). Unscrew the collet chuck completely, select the collet size for your drill and insert collet into chuck at 45° angle.

3). With collet inserted, screw collet chuck back together but do not tighten up.



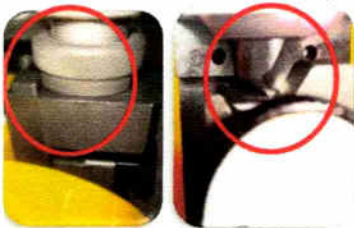
4). Slide drill into collet chuck so that the cutting end sticks out about ¼" and slightly tighten chuck to hold drill but leave it loose enough to move drill with fingers.

5). Set the Web Diameter by turning knob clockwise to the end. Then turn counterclockwise to the size of the drill to be sharpened.



6). Insert chuck into the Setting Port, make sure a flat spot on the chuck is aligned with the top left corner so chuck sits all the way down.

7). Turn chuck clockwise as far as allowed. Push drill down as far as allowed then turn drill clockwise as far as allowed.



8). Tighten chuck completely then turn it counterclockwise a little before removing from the hole. Make sure that the cutting lip of drill is parallel with the flat spot on chuck.

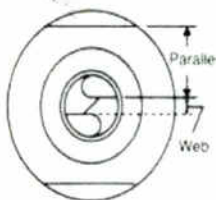
☐ if the cutting lip is upward

→ Please "Decrease" the number of adjustment knob and redo instructions : 6), 7), 8)

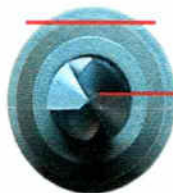
☐ if the cutting lip is downward

→ Please "Increase" the number of adjustment knob and redo instructions : 6), 7), 8)

Figure



Just Fine



Too much



Too less



Ready for sharpening

Decrease and redo

Increase and redo

Note :

When the flute length of the drill becomes shorter the web thickness will increase and you will need to increase the adjustment knob to compensate.



INSTRUCTIONS - Drills

STEP 2 - SHARPENING (Sharpen Port)

- 1). Adjust Web Angle to be the same as re-sharpened drill. If required, from 90 to 140 degrees.
(118 degrees is standard angle)



- 2). Turn on machine and wait for grinding wheel to achieve stable speed. Gently insert the chuck into front shelf lining up the flat spot with the shoulder of hole.

- 3). Grind the drill by rotating the chuck clockwise and counterclockwise, back and forth and as far as allowed until the grinding noise stops. Remove chuck, rotate it 180 degrees, and reinsert now lining up the chuck's other flat spot with the shoulder of hole. Repeat grinding procedure until noise stops.

Note :

Please hold the "Chuck head" for all the sharpening procedures specifically in doing rotating action.

STEP 3 - SHARPENING (Split Point Shelf)

- 1). To grind the split point of drills set the Web Thinning knob on top of unit by turning it clockwise to the end. Then turn counterclockwise, from 0 (smallest) to 10 (largest), to select depth of split point.
(Number 0 is standard setting for all kind of drill)

Note :

Smaller split point offer less resistance when cutting but are less durable ;
larger split points are more durable but have more cutting resistance)

- 2). Once Web Thinning knob is set insert the chuck into the Split Point Shelf lining up the flat spot with the pins. Rotate clockwise and counterclockwise, back and forth and as far as allowed until the grinding noise stops. Remove chuck from shelf, rotate it 180 degrees, and reinsert now lining up the chuck's other flat spot with the pins. Repeat grinding procedure until noise stops.



- 3). Check your drill.





INSTRUCTIONS - Drills

ADVANCED GRINDING SKILL - Sharpen Port

Operation Features :

Modify / Re-sharpen drill bit degree from 90 to 140 degree

Category Figure



90°



118°



130°-135°



140°

Materials (Softer)
Cooper Aluminum Zinc Structural steel Carbon steel Grey iron casting
Suggested Application
General Purpose Light Metal Works Non-Metal Works

Materials (Harder)
Alloy steel Prehardened steel Mold steel Hardened and tempered steel High hardness steel Ductile iron Stainless steel SUS 3XX, 4XX series
Suggested Application
General Purpose Heavy Metal Works



Applicable Model :

- | | | |
|--------|--------|---------|
| YN-01A | YN-05A | YN-01AD |
| YN-01B | YN-05H | YN-01AS |
| YN-01H | YN-05D | YN-01A+ |
| YN-01E | | YN-01BD |
| YN-09A | | YN-01BS |
| | | YN-01B+ |



INSTRUCTIONS - Drills

ADVANCED GRINDING SKILL - Split Point Port

Operation Features :

Modify / Re-sharpen drill head appearance, optional 4 types to suit your application

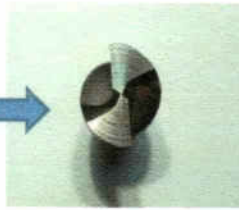
X type

★ Feature :
Effective for drilling thick material

★ Application :
General Purpose
Deep Drilling under 100mm ↓



Fit hole no.2 with PIN



X type drill bit shape

XR type

★ Feature :
Been used on wider range of materials
and gives longer service life

★ Application :
General Purpose
Stainless Steel ... etc. Metal works



Fit hole no.1 & 2 with PIN

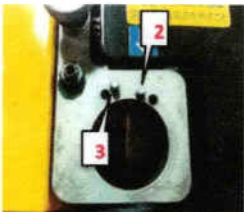


XR type drill bit shape

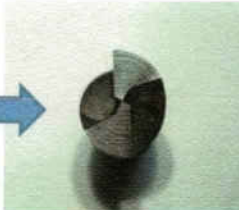
S type

★ Feature :
The most common type for generally used
on all kind of industrial

★ Application :
Metal works such like Steel, Cast iron ... etc.
Non-Metal woks



Fit hole no.2 & 3 with PIN

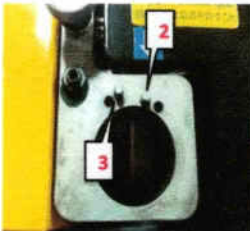


S type drill bit shape

N type

★ Feature : Effective for drilling thick material especially in heavy duty application

★ Application : Deep drilling over 100mm-200mm ↑



Fit hole no.2 & 3 with PIN



Adjust the knob to rise up sharpen port



N type drill bit shape



INSTRUCTIONS - Drills

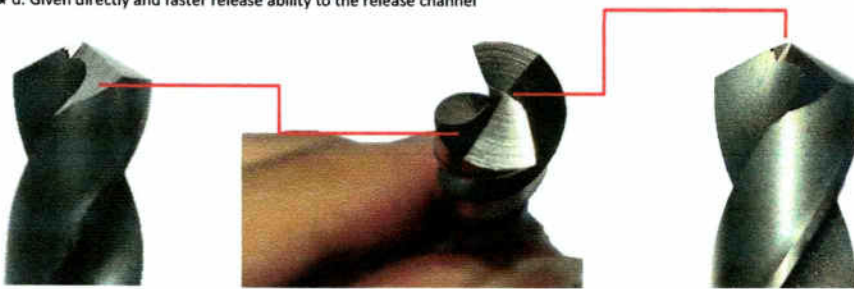
ADVANCED GRINDING SKILL - Relief Angle

Operation Features :

Create / Re-sharpen relief to the drill in order to increase working efficiency

Advantages

- * a. More easier to operate drill bit on their working jobs
- * b. Decreasing the machine workload while it is operating
- * c. Saving plenty electricity wastages and working hours
- * d. Given directly and faster release ability to the release channel



Comparison



Original / Before Modify or Re-sharpening
The released swarf is not good enough



After Modifying or Re-sharpening drill bit
The released residual is continuously **PERFECT**
giving **EXCELLENT** performance



Applicable Model :
YN-01AD YN-01BD
YN-01AS YN-01BS
YN-01A+ YN-01B+



INSTRUCTIONS - Drills

REPLACING GRINDING WHEEL

1.) For replacing wheel will need Allen key x 2pcs in your tooling bag attached.



2.) Measure the model number and material of grinding wheel is correct.

Note :

Model number and material is marked on the wheel top, it is easy to be identified.

(CBN wheel for HSS drills ; SD wheel for Carbide drills)

(Using original wheel will give the machine longer shelf life)



3.) Loose the knob on the cover case, and then open the cover case.

Look on the spindle there are 3 holes, please insert smaller diameter Allen key to the middle position hole, then insert bigger diameter Allen key to the hex-screw on the grinding wheel.



4.) Use "Leverage" method, keep the smaller diameter Allen key staying ; and by turning bigger Allen key on the hex-screw counterclockwise to release the hex-screw, gasket and grinding wheel from the spindle.



5.) Put on a new grinding wheel, collect gasket and hex-screw, re-place parts back and reverse the procedure as per instruction.

