



EARTH-CHAIN

Power that works.

DRILL GRINDER



**SG HIGH SPEED
DRILL GRINDER**



**DRILL GRINDER & END MILL
RE-SHARPENER**

EASY FAST PRECISION

Easy to operate, no experience required for grind a precise drill.

**SG HIGH SPEED
DRILL GRINDER-X TYPE**



END MILL RE-SHARPENER



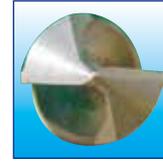
END MILL & DRILL CUTTER



10 Seconds for grind a precise drill for an expert

EDG-1226N

(ϕ 12mm- ϕ 26mm)



15pcs ER Collet



EDG-213N

(ϕ 2mm- ϕ 13mm)



CBN Wheel



12pcs ER Collet



Easy to operate, no experience required for grind a precise drill.

Model No.	EDG-213N	Model No.	EDG-1226N
Capacity	ϕ 2.5mm ~ ϕ 13mm	Capacity	ϕ 12mm ~ ϕ 26mm
Drill Angle	90° ~ 135°	Drill Angle	90° ~ 135°
Grinding Wheel	CBN#200 (For Hss Drill)	Grinding Wheel	CBN#150 (For Hss Drill)
Motor	150W	Motor	450W
Power Supply	AC110V / AC220V Single Phase (50Hz / 60Hz)	Power Supply	AC110V / AC220V Single Phase (50Hz / 60Hz)
R.P.M	5500 R.P.M.	R.P.M	4500 R.P.M.
Weight	8.5kg	Weight	26kg
Standard Accessories		Standard Accessories	
ER collets ϕ 2mm ~ ϕ 13mm(12pcs)		ER collets ϕ 12mm ~ ϕ 26mm(15pcs)	
CBN Wheel #200×1pc(For Hss drill)		CBN Wheel #150×1pc(For Hss drill)	
Hexagon Wrench 4mm×1pc 5mm×1pc		Hexagon Wrench 4mm×1pc 6mm×1pc	
Option Accessories		Option Accessories	
Order No.	Description	Order No.	Description
EDG-213N-1D	SDC Wheel #400(For Carbide drill) ϕ 2mm ~ ϕ 13mm	EDG-1226N-1D	SDC Wheel #200(For Carbide drill) ϕ 12mm ~ ϕ 26mm
EDG-213N-2D	SDC Wheel #300(For Carbide drill) ϕ 10mm ~ ϕ 13mm	EDG-1226N-1C	CBN Wheel #150(For HSS drill) ϕ 12mm ~ ϕ 26mm
EDG-213N-1C	CBN Wheel #200(For HSS drill) ϕ 2mm ~ ϕ 13mm		
EDG-213N-2C	CBN Wheel #400 (For HSS drill under ϕ 5mm)		

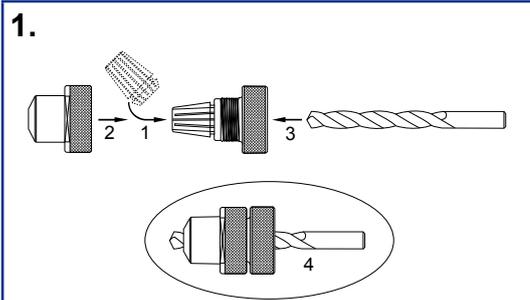
NEW Design

Collet Holder : bearing assembled (More easy & convenient for tightening)



Grinding Base : bearing assembled (More precise and stable for grinding)





1. Set up the drill to the collet holder

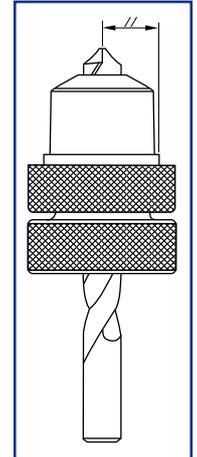
Follow up the Steps 1,2,3,4 for set up the drill to the collet holder . (without tightening) ***as shown on diagram #1

2. Set up the diameter of drill

- ① Turn right the scale annulus to be "0" position.
 - ② Adjust the scale to meet the diameter of the drill.
- ***as shown on diagram #2

3. Set up the drill to the grinding position

Insert the collet holder with drill and turn right, then tight the drill by collet holder for set up the grinding position. ***as shown on diagram #3
Attn : The scale annulus maybe not exact for the drill diameter, because of used drill or different model of drill any how, please always check the center edge of drill must be parallel with the gap of "Collet Holder" ***as shown on the right diagram.



4. Grind the drill tip

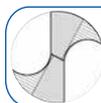
- ① Turn on the power of the grinder.
 - ② Insert the collet holder with drill and push to the grinding wheel slowly, then move left and right repeatedly to sharpen the drill until the grinding sound disappeared.
 - ③ Take out the collet holder with drill and change to the other side to grind again in same way as above mentioned.
- ***as shown on diagram #4

5. Center Point Grinding Base adjusting

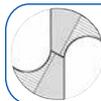
Adjust the center point grinding base to the suitable position. Turn right for bigger, turn left for smaller. ***as shown on diagram #5

6 . Grind the center point of drill

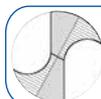
- ① Insert the collet holder with drill and push to the grinding wheel slowly, then move left and right repeatedly to grind the center point of drill until the grinding sound disappeared .
 - ② Take out the collet holder with drill and change to the other side to grind again in same way as above mentioned.
- ***as shown on diagram #6



The center point suitable for hard steels . . .etc hard materials.



The center point suitable for general materials such as iron, general steel and brass . . . etc.



The center point suitable for soft materials such as copper, aluminum, plastic . . . etc.

***Please clean the grinding chip often for avoid the chip scrape to the grinding base and keep usage life.

This machine is guaranteed for one year under normal operating (expendable parts and wheels are exceptions)

Easy to operate, no experience required for grind a precise drill.



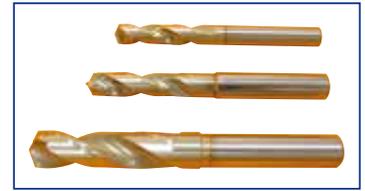
Setting (drill) base

EDSG-313

(ϕ 3mm - ϕ 13mm)



Finished



SG High Speed Drill



11pcs ER Collet



Titanium Coated Drill



CBN Wheel



Model No.	EDSG-313	Motor	200W
Capacity	ϕ 3mm ~ ϕ 13mm	R.P.M.	4500 R.P.M.
Drill Angle	135°	Weight	12.8 kg
Power Supply	AC110V / AC220V Single Phase 50Hz/60Hz	Grinding Wheel	CBN#250
Standard Accessories			
ER collets ϕ 3mm ~ ϕ 13mm (11pcs)			
CBN Wheel#250×1pc and #400×1pc(For Hss drill)			
Hexagon Wrench 4mm×1 pc, 5mm×1 pc			
Order No	Description		
EDSG-313-1C	CBN Wheel#250 (For Hss drill) ϕ 6mm ~ ϕ 13mm		
EDSG-313-2C	CBN Wheel#400 (For Hss drill) ϕ 3mm ~ ϕ 6mm		

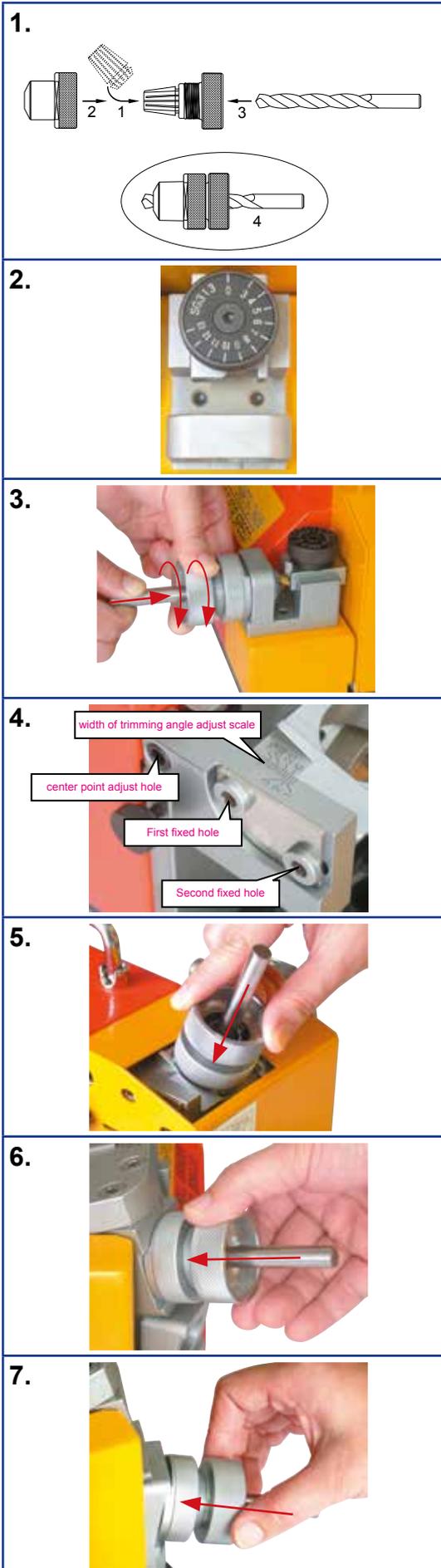
NEW Design

Collet Holder : bearing assembled (More easy & convenient for tightening)



This machine is guaranteed for one year under normal operating (expendable parts and wheels are exceptions)

OPERATIONS



1. Set up the drill to the collet holder

Follow up the steps 1,2,3,4 for set up the drill to the collet holder. (without tightening) *****as shown on diagram #1**

2. Set up the diameter of drill

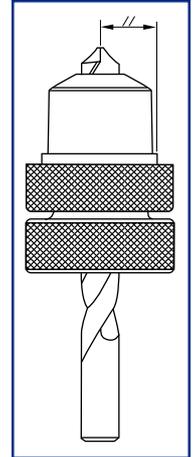
- ① Turn right the scale annulus to be "0" position
- ② Adjust the scale to meet the diameter of the drill.

*****as shown on diagram #2**

3. Set up the drill to the grinding position

Insert the collet holder with drill and turn right, then tighten the drill by collet holder for set up the grinding position. *****as shown on diagram #3**

Attn : The scale annulus maybe not exact for the drill diameter, because of used drill or different model of drill. Any how, please always make sure the center edge of drill must be parallel with the gap of "Collet Holder" *****as shown on the right diagram**



4. Adjust the center point of drill and width of trimming angle

- ① Confirm the drill diameter first and check the suggested trimming angle (See trimming angle table at right side). Loosen the second fixed hole, then loosen the first fixed hole. Set the scale to the required diameter (scale gauge measuring same as caliper's). Reverse steps to tighten the fixed holes to grind.
- ② Adjust the center point to the suitable position. Turn right for bigger, turn left for smaller.

*****as shown on diagram #4**

5. Grind the center point of drill

- ① Insert the collet holder with drill and push to the grinding wheel slightly to grind the center point of drill until the grinding sound disappeared.
- ② Take out the collet holder with drill and change to the other side to grind again in same way as above mentioned.

Note: The machine is adjusted before dispatched. Don't adjust unless essential.

TYPE	Trimming angle(mm)
3mm	0.50
4mm	0.50
5mm	0.75
6mm	1.00
7mm	1.25
8mm	1.50
9mm	2.00
10mm	2.00
11mm	2.25
12mm	2.50
13mm	2.50

Trimming angle table

6. Grind the secondary clearance angle of drill

- ① Insert the collet holder with drill to the secondary clearance angle grinding port and push to the grinding wheel slowly to grind the secondary clearance angle of drill until the grinding sound disappeared.
- ② Take out the collet holder with drill and change to the other side to grind again in same way as above mentioned.

- ③ Adjust the end gash to the suitable position. Turn right for smaller, turn left for bigger.

*****as shown on diagram #6**



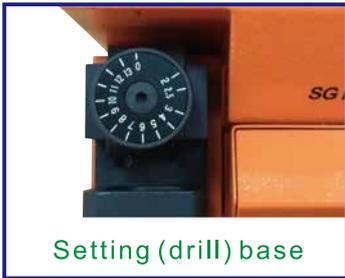
7. Grind the end gash of drill

- ① Insert the collet holder with drill to the end gash grinding port and push to the grinding wheel slowly to grind the end gash until the grinding sound disappeared.
- ② Take out the collet holder with drill and change to the other side to grind again in same way as above mentioned.

*****as shown on diagram #7**

Note: ① Please always clean the grinding dust with pressurized air after grinding and wipe with dry cloth. Then wipe antirust oil to extend the usage life.

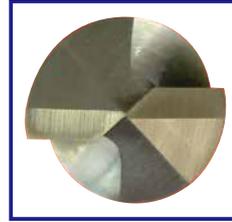
② Do not keep the motor running continuously for over 1 hour.



Setting (drill) base

ESG-213X

(ϕ 2mm- ϕ 13mm)



SG High Speed Drill

Use NC Spotting Drill
(for deep hole only).



12 pcs ER Collet



CBN Wheel



Easy to operate, no experience required for grind a precise drill.

Model No.	ESG-213X	Motor	150W
Capacity	ϕ 2mm ~ ϕ 13mm	R.P.M.	5500 R.P.M.
Drill Angle	135°	Weight	11.25 kg
Power Supply	AC110V / AC220V Single Phase 50Hz/60Hz	Grinding Wheel	
Standard Accessories			
ER collets ϕ 2.5mm ~ ϕ 13mm (12pcs)			
CBN Wheel#200×1pc and #400×1pc			
Option Accessories			
Order No	Description		
ESG-213X-2D	SDC Wheel #400(For Carbide drill)		

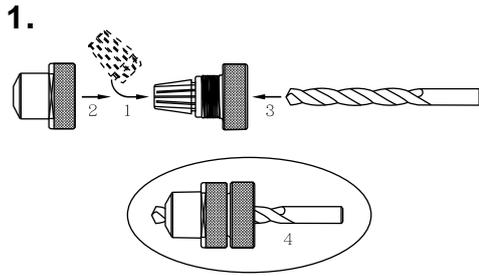
NEW Design

Collet Holder : bearing assembled (More easy & convenient for tightening)



This machine is guaranteed for one year under normal operating
(expendable parts and wheels are exceptions)

OPERATIONS



1. Set up the drill to the collet holder

Follow up the steps 1,2,3,4 for set up the drill to the collet holder. (Without tightening) ***as shown on diagram #1

2. Set up the diameter of drill

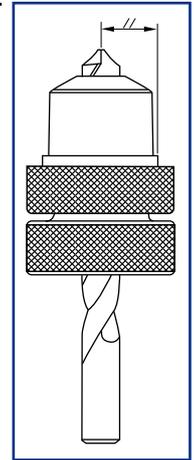
① Turn right the scale annulus to be "0" position
 ② Adjust the scale to meet the diameter of the drill.
 ***as shown on diagram #2



3. Set up the drill to the grinding position

Insert the collet holder with drill and turn right, then tighten the drill by collet holder for set up the grinding position. ***as shown on diagram #3

Attn : The scale annulus maybe not exact for the drill diameter, because of used drill or different model of drill. Any how, please always make sure the center edge of drill must be parallel with the gap of "Collet Holder". ***as shown on the right diagram



4. Grind the end gash of drill

Insert the collet holder with drill to the end gash grinding port and push to the grinding wheel slowly, then move left and right for de-burring to grind the end gash until the grinding sound disappeared. Take out the collet holder with drill and change to the other side (turn 180 degree) to grind again in same way as above mentioned. ***as shown on diagram #4



5. Grind the center point of drill

Insert the collet holder with drill and push to the grinding wheel slightly, then move left and right for de-burring to grind the center point of drill until the grinding sound disappeared. Take out the collet holder with drill and change to the other side (turn 180 degree) to grind again in same way as above mentioned.

***as shown on diagram #5
 Adjust the center point : Adjust "+" for bigger
 Adjust "-" for smaller.



6. Grind the secondary clearance angle of drill

Insert the collet holder with drill to the secondary clearance angle grinding port and push to the grinding wheel slowly to grind the secondary clearance angle of drill until the grinding. Take out the collet holder with drill and change to the other side (turn 180 degree) to grind again in same way as above mentioned. ***as shown on diagram #6

Adjust the end gash : Adjust "+" for bigger
 Adjust "-" for smaller





EMG-1325

(ϕ 12mm- ϕ 25mm)



EMG-413

(ϕ 4mm- ϕ 13mm)



2pcs SDC Wheels included (For carbide End Mill only.)

END MILL RE-SHARPENER (Easy Fast Precision) EMG Series

Model NO.	EMG-413	EMG-1325
Capacity	φ 4mm - φ 13mm	φ 12mm - φ 25mm
Drill Angle	 6°  20°  30°	
Grinding Wheel	SDC Wheel #300 for φ 4mm—φ 5mm	CBN #150x1PC
	SDC Wheel #300/#120 for φ 6mm—φ 13mm	SDC #150x1PC
Motor	3/4 HP 450W	1000W
R.P.M.	6000 R.P.M.	4300 R.P.M.
Power Supply	AC110V or AC220V Single Phase	
Weight	17 KGS	31 KGS



Standard Accessories

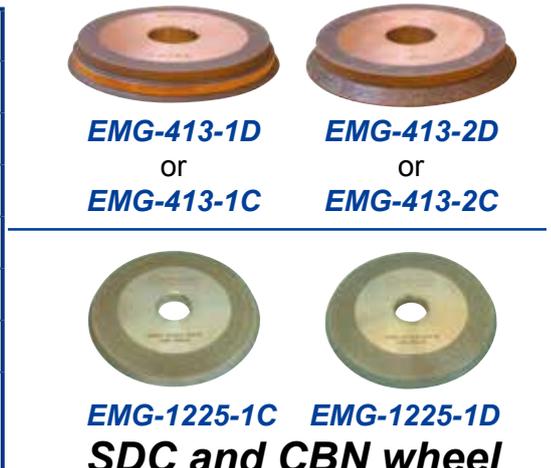
Model NO.	EMG-413	EMG-1325
ER collets	φ 4mm - φ 13mm × 10pcs	φ 12mm - φ 25mm × 6pcs
SDC Wheel	#300 × 1pcs (φ 4mm—φ 5mm)	CBN #150x1PC
SDC Wheel	#300 #120 × 1pcs (φ 6mm—φ 13mm)	SDC #150x1PC
Collet Holder	1pc (for 2 and 4 flutes End Mill)	1pc (for 2 and 4 flutes End Mill)
Collet Holder	1pc (for 3 flutes End Mill)	1pc (for 3 flutes End Mill)
Hexagon Wrench	4mm × 1pc	4mm × 1pc



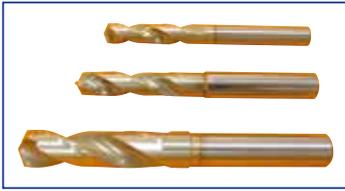
Option Accessories

Model NO.	Description
EMG-413-1D	SDC Wheel #300 (for φ 4mm—φ 5mm)
EMG-413-2D	SDC Wheel #300/#120 (for φ 6mm—φ 13mm)
EMG-413-1C	CBN Wheel #300 (for φ 4mm—φ 5mm)
EMG-413-2C	CBN Wheel #300/#120 (for φ 6mm—φ 13mm)
EMG-1225-1D	SDC Wheel #150 (for φ 12mm—φ 25mm)
EMG-1225-1C	CBN Wheel #150 (for φ 12mm—φ 25mm)

***SDC Wheel for carbide End Mill.
***CBN Wheel for HSS End Mill.



For CBN Wheel



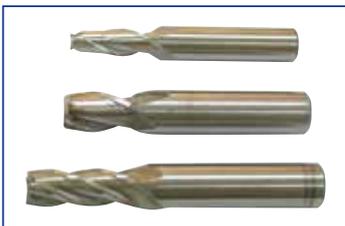
SG High Speed Drill



Titanium Coated Drill



Straight Shank Drill



HSS End Mill

ECO-316
 (ϕ 3mm - ϕ 16mm)

For SDC Wheel



Carbide End Mill



Easy to operate, no experience required for cutting a precise tool.

Model No.	ECO-316	Motor	600W
Capacity	ϕ 3mm ~ ϕ 16mm	R.P.M.	6000 R.P.M.
Power Supply	AC110V/AC220V Single Phase 50Hz/60Hz	Weight	13 kg
		Grinding Wheel	SDC#100
Standard Accessories			
SDC Wheel #100×1pc 、 Handle ×1pc			
Hexagon Wrench 4mm×1pc 10mm×1pc 、 Power Cord×1pc 、 Fuse×2pcs			
Option Accessories			
Order No	Description		
ECO-316-1C	CBN Wheel #100 (For HSS drill) ϕ 3mm ~ ϕ 16mm		
ECO-316-1D	SDC Wheel #100 (For Carbide drill) ϕ 3mm ~ ϕ 16mm		

SDC & CBN Wheel



ECO-316-1C



ECO-316-1D



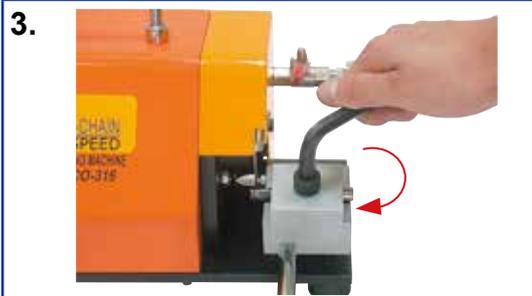
1. Install the power cord on the cutter.
2. Put the machine on a hard, level surface, then install the handle on the base.

***as shown on diagram #1



3. Lock the valve connector, then insert the pressurized blast connector into the air pressurized cooling system.

***as shown on diagram #2



4. Select the proper wheel and diameter of end mill drill ϕ 3mm~ ϕ 16mm, put the end mill (drill) horizontally into the groove from right to left. Adjust the proper length for cut and tighten the base with ϕ 10mm Allen Key.

Note: Make sure the end mill (drill) is locatched in V-groove.

***as shown on diagram #3



5. Switch on the machine.
6. Switch on the cooling system.

Note: The usage life will be decreased if don't switch on the cooling system.

***as shown on diagram #4



7. Hold and raise the handle to cut off the end mill (drill).

***as shown on diagram #5

- 7-1. Touch the wheel with a slight push motion.

- 7-2. Be sure with very slight push motion during cutting process, don't be fast or slow at will.

- 7-3. To avoid the material fly away, be sure with very slight push motion while the end mill (drill) is going to be cut off.



8. Switch off the machine.
9. Switch off the cooling system.

10. Loosen the base with 10mm Allen Key, then take out the end mill (drill)

***as shown on diagram #6

11. Be sure to do every cleaning and maintenance well to maintain the usage life.

Note: Please switch off the machine while replacing the wheel to ensure the security!