

# ZB32 CUTTER GRINDER

The ZB-32A offers an easy way to achieve drill point accuracy. The one machine which grinds conventional and many specialized drill points. Set up in a few seconds.

All specifications, dimensions and design characteristics are subject to change without notice.

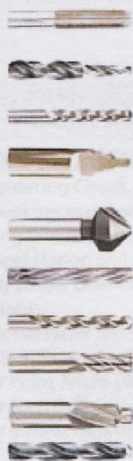
## FEATURES

- Optional Air bearing has a hard chromed spindle for long life, standard 5C collets.
- The tooth rest finger is easily adjustable by turning a knurled knob on either end of the tooth rest bracket.
- "Clearance angle collar" marks angular setting easy-swivels universally for radial relief sharpening.
- Optional Air bearing fixture is precision honed and capable of grinding to tight tolerances.
- Tools sharpened on an air bearing fixture cut smoother, the spindle floats on friction "fingersensitive" control for sharpening end mills as small as 2mm, sharpens all over-periphery, end teeth, notches, flute faces.
- Air bearing fixture is easily mounted to ZB-32A grinder.
- Cutting tool capacity- $\varnothing$ 42mm shank, 250mm flute length.

MODEL	ZB-32A
Drill Size	$\varnothing$ 1.5-- $\varnothing$ 32mm
(Straight or Taper Shank)	
Point Angle	40°~180°
Clearance Angle	0°~18°
Workhead Tilting Angle	0°~20°
Brake Motor	1/2 hp
Grinding Wheels	$\varnothing$ 180x20x $\varnothing$ 31.75mm
Dish Wheels	$\varnothing$ 165x21x $\varnothing$ 31.75mm
Net Weight	120kgs
Dimensions	820x790x740mm



## GRIND EXAMPLES



- Straight Flute And Spiral Flute Taps Can Be Chamfer Ground (3;B4;B5;B6;B7 And 8 Flute)
- Step Drill, Made From Ordinary Twist Drill, With Radially Relially Relieved Pilot
- Point Grinding And Web Thinning With One Time Set Up
- Multi-step Spade Drill, Made From Ground Stock, With Pre-machined Faces And Steps, All Diameters With Lands And Relief Ground
- Counter Sink And Counter Bore Drills (1,3 Flute)
- Core Drills And Reamers Can Be Chamfer Ground
- Split Point Self-centering And Breaks Up Chips For Deep Hole Drilling
- End Mill End Relief 2;B3;B4and 6 Flutes End Mill With Primary And Secondary Relief And Gash Grinding
- 2;B3;B4 Flute Counter Bore Drills
- Four-facet Point

## STANDARD ACCESSORIES

- 6 Jaw Self-Centering Chuck
- Grinding Wheel (recessed one side)
- "Dish" Grinding Wheel for Point Thinning
- Grinding Wheel Flange and Balancing Weights
- Two Grinding Wheel Diamond Dressers (one side dresser and one straight)
- No 1,2,3,4 Morse Taper Sleeve
- Cam No.4 for Point Angle (40° -180°)
- Cam No.6 for Step Drill
- Cam No.8 for 4 Flute Taps or Reamers Core Drill
- A.C. Brake Motor for Safety & Fast Drills Interchange
- Service/Instruction Manual
- Work Light
- Stand

## OPTIONAL



The radial relief attachment is especially designed for quick and accurate grinding of body reliefs of end mills as well as cutters and drills.

## OPTIONAL ACCESSORIES

- Flood Coolant System. (Increases wheel life and prevents burning of drill.)
- Diamond Wheels for Carbide Drills.
- C.B.N. Wheels (one side chamfer) for Point Grinding & Point Splitting.
- Wheel Balancer & Arbor
- Cam for Sheet Metal Point Drills
- Extra Grinding Wheel Flange for Cup Wheel.
- Cup Grinding Wheel
- Cam for Left Hand Drills
- Cam for Sheet Metal Point Drills
- Radial Relief Attachment

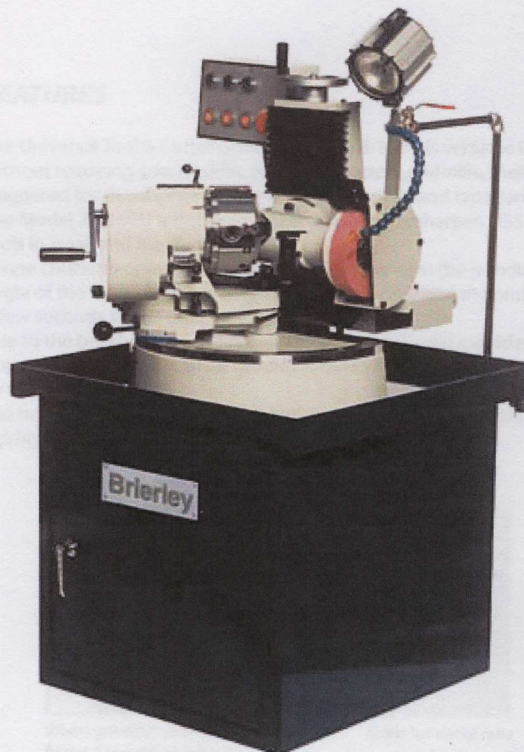
# ZB50/80 CUTTER GRINDER

**Affordable, accurate & versatile**

**Simple to operate.** Unskilled operators can quickly learn to produce perfect drill points. Set up and grinding is fast and the web can be thinned in a few seconds.

**Accurate.** Rugged construction and precision components ensure accuracy and repeatability over many years. Heavy duty compound slides and one-piece cast iron base increase rigidity and minimise vibration. The workhead incorporates precision needle roller and thrust bearings, while the main chuck spindle utilises a rotalin bearing giving less than 0.005 mm deflection. The six-jaw chuck accurately centres the drill to ensure each cutting lip is equally ground for both length and angle to develop a precision point.

**Versatile.** A wide range of points can be ground: Right-hand and left-hand drills with point angles between 40° and 180°, standard, centre drills, carbide drills, step and subland drills, taps and reamers. Also a number of NC self-centre points can be ground, including split, four-facet and spiral. Cutting lips can also be corrected.



## SPECIFICATION

MODEL	ZB-50N (DUAL CAM)	ZB80
Drill Size	(Ø2.5mm-Ø51mm) straight or taper shank (1,2,3,4,5,6 flute)	Ø4mm-Ø80mm(1,2,3,4,5,6 flute)
Point Angles	40°-180°	40°-180°
Clearance angle	0°-18°	0°-18°
Motor	½ hp single or 3 phase totally enclosed fan cooled	1 ½ hp
Grinding Wheels	Main wheel 7" x 1 ¼" x 1 ¼"	Main wheel(180mm x 50mm x 31.75mm)
	(180mm x 32mm x 31.75mm)	
	Point thinning dish wheel	Point thinning dish wheel
	6 5/8"x7/8"x1 1/4"	
	(165mm x 21mm x 31.75mm)	(165mm x 21mm x 31.75mm)
Grinding the End of End Mills	2,3,4,6,12 flute	2,3,4,6,12 flute
Net Weight	300 kgs	380 kgs
Dimensions	970mm x 910mm x 1600mm	1090mm x 1120mm x 1650mm

## STANDARD ACCESSORIES

- 6 Jaw Self-Centering Chuck.
- Grinding Wheel (recessed one side)
- "Dish" Grinding Wheel for Point Thinning.
- Grinding Wheel Flange and Balancing Weight.
- Two Grinding Wheel Diamond Dressers (one angle dresser and one straight).
- No. 1,2,3,4 Morse Taper Sleeve for ZB-50N
- No. 2,3,4,5,6 M.T Sleeve for ZB-80N
- Cam No.4 for Point Angle (40°-180°)
- Cam No.6 for Step Drill
- Cam No.8 for 4 Flute Taps or Reamers
- A.C. Motor.
- Tools for General use.
- Service/Instruction Manual.
- Work Light (12 Volts)

## OPTIONAL ACCESSORIES

- Flood Coolant System. (Increases wheel life and prevents burning of drill)
- Silicon Carbide and Diamond Wheels for Carbide Drills.
- Radial Relief Attachment. Relieves Radius of Pilot to Produce Lands. Also for Sharpening End Mills
- Wheel Balancer & Arbor
- Auto Feed Mechanism (pre-setting feeding quantity)
- Powered Workhead for Automatic Rotation & Cam Action (R.P.M 0-58 stepless)
  - Cam for Sheet metal Point Drills
  - Cam for 1 Flute Grinding
  - Cam for 3 Flute Grinding
  - Cam for 5 Flute Grinding
  - Cam for 6 Flute Grinding
- Extra Grinding Wheel Flange for Cup Wheel
- Cup Grinding Wheel
- Cam for Left Hand Drills
- Cam for Spiral Point Drills



Radial relief attachment. (options)

With this device, a flank can be formed over the cylindrical margin of the smaller diameter section of standard twist drill. Also for sharpening end mills.

Core drills, or taps and reamers etc, of 2,3,4 and 6 flutes can be taper point-ground.



Grinding Conventional point drill

Grinding Counter-Sink drills (1,3,5 flute)



The shoulder of a stepped drills may be ground

On these machines; Grinding the end of end mills, cutters is Standard Equipment



Grinding The smaller-diameter section, of step drills



SELF-CENTERING POINT Extends drill life improves hole quality reduces thrust



# ZB160 CUTTER GRINDER

## FEATURES

The Universal Tool & Cutter Grinder Model ZB-160U is versatile in operation without requiring special skills. All milling cutters, endmills, shell endmills, staggered tooth cutters, rough endmills, step drills and taps can be ground. The Model ZB-160U is designed to fabricate and sharpen HSS and carbide tools in small and medium quantities.

In one chucking operation, the machine can perform the grinding of the rake angle of the flute, clearance angle on the periphery and the end of the tool. A few seconds set up time for helix angle.

Due to the backlash free operation, spiral toothed, solid carbide or carbide tipped milling cutters can be ground with high accuracy thus far only achieved by CNC grinders.

The heavy duty compound slides and one piece cast-iron base provide extra rigidity and minimize vibration.



When grinding with the support finger, the control roller is lifted and the work spindle is free in both axial and radial directions.



Scale for radial relief

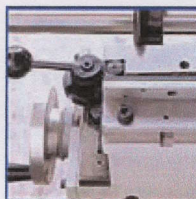


Rotary grinding head built into the machine base. Minimal travel required for the grinding process. Pivot point directly over the centre of rotary table. The grinding head can be easily set up for grinding the flutes, periphery, front rakes, cutting angles and relief angles.



## SPECIFICATION

Tool Diameter	Ø2-Ø200mm
Spiral Length with Workhead Spindle	160mm
Longitudinal Travel of Workhead	280mm
Cross Travel of Workhead	130mm
Rapid Cross move with Hand Lever	18mm
Vertical Movement of Wheel Head	230mm
Tilting Angle of Wheel Head	±0°30'
Workhead Spindle	ISO40
Spiral Flute & Axial Relief Grinding	
Infinitely Variable, Left & Right Hand	
Helix Angle	0°~90°
Grinding Wheel Diameter	Max.150mm Grinding wheel Bore 31.75mm
Grinding Motor	0.75Kw
Grinding Wheel Direction	Clockwise or anti-clockwise
Grinding Spindle Speeds	6300, 3800, 2600 R.P.M.
Net Weight	540 kgs
Dimensions	1480mm x 1120mm x 1640mm



Taper grinding arrangement



Grinding the flute rake angle



Rapid cross movement with hand lever.



Grinding the clearance angles on the face

## STANDARD EQUIPMENT

- Taper Grinding Attachment
- One Grinding Wheel Hub
- One Indexing Plate 24 Divisions
- One Finger Support
- One Set of Operating Tools
- One Operating Instruction Manual



Fast and easy spiral set up variable from 0°~90° left or right hand

# METEOR DRILL GRINDERS



13 X

## FEATURES

Easy to operate, Unskilled workers can learn to sharpen the drills quickly. Economical price, grinding fast and high accuracy. Diamond grinding wheel. Low maintenance, good grinding result. Motor is electronic and powerful, frequency stably, extra motor life.

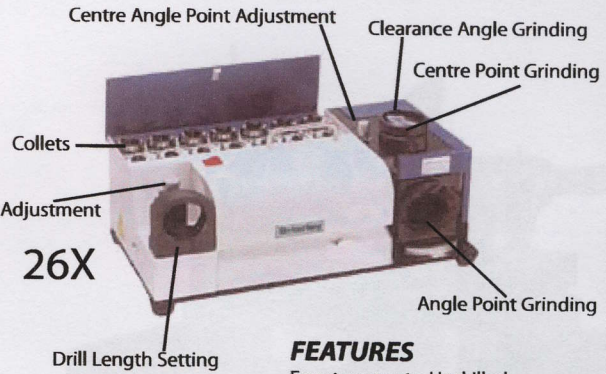
## SPECIFICATIONS

### 13X

Drill Size	Dia.3 ~ Dia.13mm
Point Angle	118° ~ 135°
Power Supply	Single phase 110v AC 220v
Motor	¼ hp 180w
R.P.M. of motor	5,300rpm
Diamond Grinding Wheel	CBN#200
Weight	N/W:9.5kgs, G/W:10kgs
Packing dimensions	L x W x H:31 x 17 x 19cm

## STANDARD ACCESSORIES

Collet: Dia.3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13mm Collet holder set Hexagon wrench 4mm



26X

## FEATURES

Easy to operate, Unskilled workers can learn to sharpen the drills quickly. Economical price, grinding fast and high accuracy. Diamond grinding wheel. Low maintenance, good grinding result. Motor is electronic and powerful, frequency stably, extra motor life.

### 26X

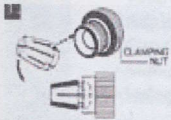
Drill Size	12 ~ 26mm
Point Angle	100° ~ 135°
Power Supply	Single phase 220v
Motor	¼ hp 180w
R.P.M. of Motor	5300rpm
Diamond Grinding Wheel	CBN #200
Weight	N/W:23kgs, G/W:24kgs
Packing Dimensions	L 46 x W 24 x H 22cm

## STANDARD ACCESSORIES

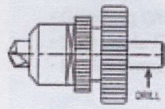
Collet: 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26 Collet holder set / Hexagon wrench 4mm

## DRILL GRINDING PROCEDURE

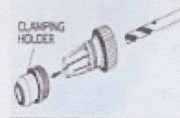
### A. HOW TO HOLD A DRILL BIT IN COLLET AND HOLDER



Collet must be assembled into the clamping nut at a 45° angle.



Holder Unit



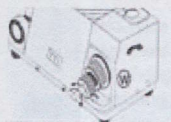
1. Insert the drill into the collet
2. Put the clamping nut into the clamping holder

### B. HOW TO SET THE HOLDER UNIT AT THE CHECKING STOCK



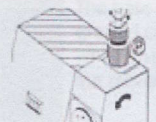
1. Find the drill diameter
  2. Set the indicator of scale number is same as drill diameter.
  3. Put the holder unit into the checking stock. The slot of clamping unit will match into the pin of checking stock.
  4. Turn holder unit to right.
  5. Push the drill to touch the checking stock and turn the drill to right. Then tighten the clamping nut to the drill.
- NOTE: Make sure that the web blade of drill is parallel with the slot of clamping holder.
6. After having taken out the holder unit

### C. HOW TO GRIND THE WEB OF DRILL



1. Turn on the power
2. Put the holder unit into the (W) grinder stock. The slot match with the pin and let the drill reach the diamond wheel carefully.
3. Grind the drill by moving left and right to sharpen until the grinding noise disappears.
4. Take the holder unit to the other side to grind the other side web, blade. Grind the drill as in No.3.

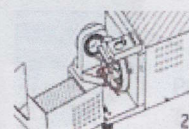
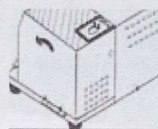
### D. HOW TO GRIND THE CENTER POINT OF DRILL



1. Turn on the power.
  2. Put the holder unit into the (P) grinder stock and match the slot with the pin.
  3. Move the left and right way to sharpen.
  4. Turn 180° of holder unit to grinding the other sides with the same way.
- NOTE: under Ø3 drill not need to grind the center point.

### E. HOW TO CHANGE THE DIAMOND WHEEL

1. Take out the diamond wheel cover.
2. Turn out the screw on the centre of diamond wheel



# CUTTERMASTER TOOL & CUTTER GRINDER

*This machine can grind:-  
drills, end mills, slot drills, ball end mills, turning  
tools, side surface cutters, taps, reamers, and  
lathe tool inserts.*

Model	TC2
Air Bearing Stroke	250mm
Swing over Table	245mm
Cutting Tool Capacity	50mm Shank, 225mm O.D. 250mm Length
Table Feed Graduations	0.02mm
T' Slot Size	12mm
Swivel Adjustment of Table	15°
Longitudinal Travel	150mm
Cross Travel- Wheel Table	75mm
Max Motor Assembly Travel across Table	150mm
Maximum Wheel Size	125 x 50 x 31.75mm (cup)
Tilt Adjustment of Wheelhead	+30° -5°
Speed of Wheel	3450rpm
Motor	1/3hp
Weight	106kgs
Dimensions(LxWxH)	535 x 500 x 535mm



## STANDARD ACCESSORIES

- Stand
- 4,6,10,12,16mm 5C Collets
- Toolbit Grinding Attachment
- MT3 Centre
- Tooth Rest
- Adjusting Tools
- Cup Grinding Wheel
- Manual and Parts List
- Halogen Lamp

## OPTIONAL ACCESSORIES

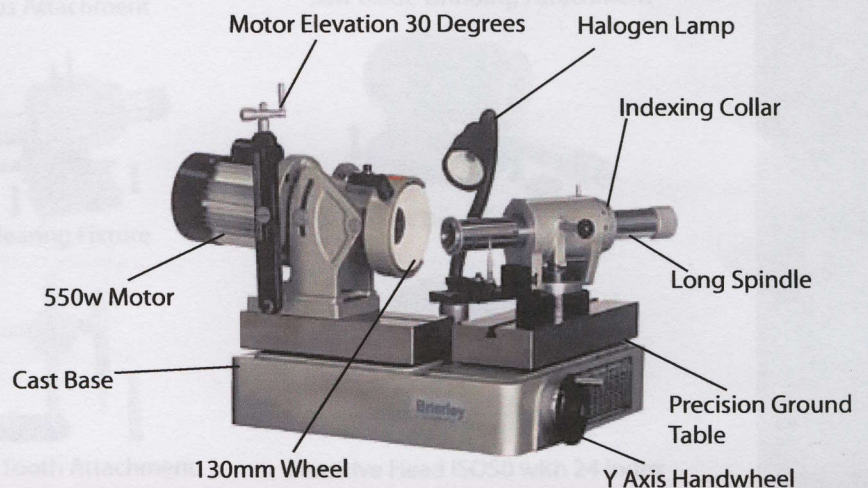
- Diamond Wheel 100mm
- Drill Grinding Attachment
- Diamond Dresser
- 5c Collet Attachment
- 5c Collets
- Grinding Wheel 150mm
- Saw Blade Grinding Attachment
- Radius Attachment

## FEATURES

- Precision Ground Cast Iron Tables
- Air Bearing Spindle rotates 360°
- Spindle accepts Standard 5C Collets
- Built in Halogen Lamp
- Tapered Grinding
- Zero Setting Dials
- Forwards Reverse Switchgear

A superbly engineered Tool and Cutter Grinder, the Cuttermaster is able to grind drills, end mills, slot drills, ball end mills, turning tools, side surface cutters, taps, reamers and lathe tool inserts. To provide the accuracy expected of a machine of this type the spindle has an air bearing fitted as standard. Its motor assembly has the facility to tilt giving positive and negative cutting angles. Grinding the side and face of end mills can be performed in one operation without removing the cutter saving operator setup time, and the machine is supplied with a clearance chart for end mill cutters from 3/16" - 3".

The base of machine is made from precision ground cast iron providing a rigid structure from which the grinding can function correctly and turn out repeated high quality work.



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# UNI-TOOL GRINDER



## FEATURES

Designed for Grinding:- milling cutters, tool bits, drills, end mills, taps, slot drills, side & face cutters and circular saw blade



## OPTIONAL ACCESSORIES

- Diamond Wheel 100mm
- Drill Grind att (3-18mm)
- 5c Collet Fixture
- 5c Collet
- Diamond Dresser
- Disc Wheel 150mm
- Drill & Tap Grinding Fixture
- Radius Attachment
- Work Light
- Plain Tooth Rest
- Universal Tooth Rest
- Sensitive Work Rest
- 4" 3-Jaw Chuck
- Indexing Discs

## STANDARD ACCESSORIES

- Cup Wheel,
- Tool Bit Grinding Attachment
- Coolant
- 3MT Centre
- Cutter Arbor
- Face Mill Holder
- Tooth Rest
- Adjusting Tool
- Instruction Manual & Parts List

Distance Between Centres	405mm
Swing Over Table	215mm
Swivel Adjustment Table	15°
Longitudinal Travel	450mm
Cross Travel	150mm
Vertical Adjustment	150mm
Swivel Adjustment of Wheel	360°
Swivel Adjustment of Headstock	360°
Tilt of Headstock (above/below)	30°
Diameter of Wheel	130mm
Speed of Wheel	3000rpm
Motor	3000rpm
Weight	220Kgs
Dimensions (LxWxH)	864x765x1295mm



Universal Grinding Attachment 3-32mm



Radius Attachment



Saw Blade Grinding Attachment



Tool & Work Holder



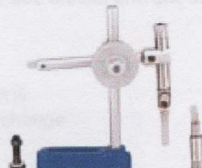
Air Bearing Fixture



Drill & Tap Grinding Fixture



Tailstocks



Universal Tooth Attachment



Sensitive Head ISO50 with 24 Index

BRIERLEY