



WHEEL DRESSING MACHINE

ZY-X1

ZY-X3

ZY-X5

ZY-X6





***Diamond/CBN
Grinding Wheel Dressing Machine
Self-Developed, Patented Machines***

Zhengzhou Zhongyuan Superhard Tools Co., Ltd.



Our company specializes in providing diamond/CBN grinding wheel dressing machines. Our range of machines includes the CNC type ZY-X6, standard type ZY-X3, economical type ZY-X1, and sealed type ZY-X5 grinding wheel dressing machines.

These machines are designed to effectively and efficiently dress diamond/CBN grinding wheels, ensuring their optimal performance and longevity. Our machines are equipped with cutting-edge technology and are capable of achieving high precision and accuracy in the dressing process, making them an ideal choice for manufacturers of complex and high-precision components.

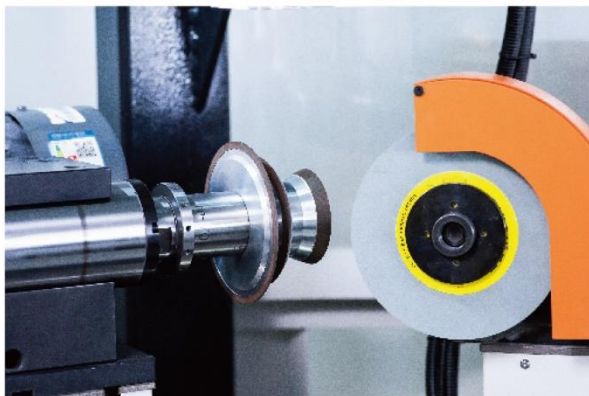
With our comprehensive range of grinding wheel dressing machines, we are committed to providing our customers with the most effective and efficient solutions for their diamond/CBN grinding wheel dressing needs.



Clean Environment



Easy To Operate



Precision Manufacturing



Professional Team

CNC GRINDING WHEEL DRESSING MACHINE ZY-X6

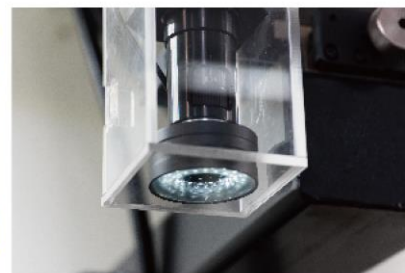
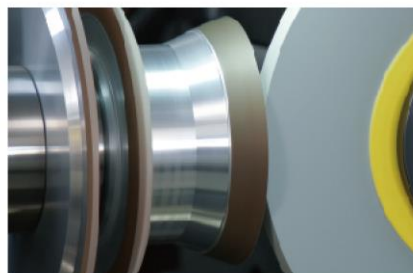
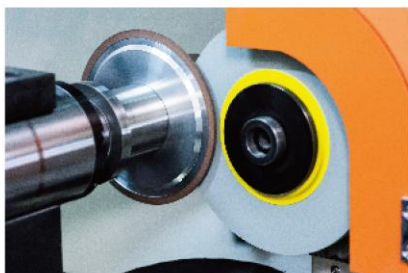


FEATURES

- Two-axis electronic handwheel control + three-axis linked CNC wheel dressing system;
- Capable of dressing the inner surface, outer periphery, outer surface, angle surface, and circular arc of grinding wheels;
- The silicon carbide grinding wheel can rotate automatically, move back and forth, feed automatically, and dress automatically;
- Optional variable magnification lens or fixed magnification lens and high-resolution camera for clear imaging and precise measurement;
- CAD drawings can be imported with one click;
- The 10mm acrylic sealing cover is safer, more environmentally friendly, and cleaner.

TECHNICAL PARAMETER

Spindle for grinding wheel to be dressed	Standard BT40 interface spindle, customer interface spindle optional
Outer diameter of grinding wheel to be dressed	30-300mm
Dressing methods	Dry dressing, mist dressing, and wet dressing
Dust collection device and grinding fluid filtration system	Optional
Power supply voltage	Three-phase 380V/50HZ
Total power	3KVA
Maximum diameter of grinding wheel to be dressed	Φ300mm (customizable beyond)
Minimum diameter of grinding wheel to be dressed	Φ30mm (customizable beyond)
Maximum width of grinding wheel to be dressed	40mm (customizable beyond)
Rotational speed of grinding wheel to be dressed	50-1000rpm (stepless speed regulation)
Left-right movement distance of grinding wheel to be dressed on X-axis	135mm (can drag the base of the grinding wheel spindle to increase the stroke to 300)
Left-right movement distance of grinding wheel to be dressed on Y-axis	100mm
Diameter of dressing wheel (silicon carbide)	Φ200mm (or Φ250mm) *10*Φ31.75mm
Rotational speed of dressing wheel (silicon carbide)	Max 2800rpm (stepless speed regulation)
Oscillation frequency of dressing wheel (silicon carbide)	0-50HZ (stepless speed regulation)
Oscillation length of dressing wheel (silicon carbide)	0-50mm (adjustable)
Grating scale (angle scale, magnetic scale) resolution	0.001mm/0.01°
CCD and lens	Standard ordinary lens, optional high-resolution camera, variable or fixed magnification high-definition lens
Upper light source	LED lamp
Backlight	Adopting large-diameter backlight technology
Computer host, high-definition LCD display	1 set
Computer measurement system	1 set
Magnification	Optional
Measurement function	The real image can be magnified synchronously with the CAD drawing for comparison of contour lines
Data display	The position grating scale reading of the grinding wheel being dressed can be displayed on the measurement software



STANDARD GRINDING WHEEL DRESSING MACHINE ZY-X3

The ZY-X3 standard grinding wheel dressing machine utilizes the principle of the difference in rotational speed between the grinding wheel being dressed and the dressing grinding wheel to achieve the shaping of the former. The machine is capable of providing simple and efficient dressing for diamond wheels, CBN wheels, and groups of multiple wheels, allowing for dressing of flat surfaces, angles, arcs, and shaped wheels. The machine is easy to operate and provides high precision.



FEATURES

- Adopt Taiwan-made precision linear slide rail and ball screw, and add a digital display scale (optional) , so that when the corrected grinding wheel is corrected, the positioning accuracy, width and arc size can be adjusted and measured at any time .
- The rotating A-axis adopts high-precision tapered roller bearings produced in Japan to achieve the rotation accuracy and stability.
- CCD photography device, with 15 to 120 times magnification and 17 "LCD display, can measure and check the arc, angle and size of the grinding wheel in the work.
- CCD and optical size device provides easy-to-use settings and measurement of the width and position of the grinding wheel and inspection during or after dressing. The measurement accuracy can reach 0.005-0.01 mm.

Components For Diamond Grinding Wheel Spindle (Wheel Being Dressed)

Diamond Grinding Wheel Spindle Interface	Selected according to customer requirements
Maximum Diameter of Diamond Grinding Wheel	Φ420mm
Minimum Diameter of Diamond Grinding Wheel	Φ20mm
Maximum Thickness of Diamond Grinding Wheel	20mm
Dressing Wheel Hole Diameter	Φ31.75mm
Diamond Grinding Wheel Spindle Speed	50-1000rpm (stepless speed regulation)
X Working Stroke of Diamond Grinding Wheel Spindle Cross Slide	135mm
Additional Manual Stroke of X-axis Diamond Grinding Wheel Spindle Cross Slide	150mm
Y Working Stroke of Diamond Grinding Wheel Spindle Cross Slide	135mm
Additional Manual Stroke of Y-axis Diamond Grinding Wheel Spindle Cross Slide	150mm
X, Y Cross Slide Grating Resolution	0.001mm
Radius of Curvature that can be Dressed by Diamond Grinding Wheel	R0.1-30mm

Components for Silicon Carbide Grinding Wheel Spindle (Dressing Wheel)

Dimensions of Dressing Wheel (SIC)	Φ180*10*Φ31.75mm
Speed of Dressing Wheel	250-2500rpm (infinitely variable speed)
Swing frequency of Dressing Wheel (left and right)	0-50/min (adjustable)
Swing distance of Dressing Wheel (left and right)	0-45/mm (adjustable)
Total Power	2.0KW
Power of motor for silicon carbide grinding wheel	0.75KW
Power of motor for diamond grinding wheel being dressed	0.75KW
Power of the motor for reciprocating swing	25W

ECONOMICAL GRINDING WHEEL DRESSING MACHINE ZY-X1



The ZY-X1 grinding wheel dressing machine utilizes the principle of the difference in rotational speed between the grinding wheel being dressed and the dressing grinding wheel to achieve the shaping of the former. This equipment is designed to reduce costs for our customers, and the expensive lens component has been removed. ZY-X1 provides high precision and consistency for the dressing of the grinding wheel's outer circumference, flatness, and angles.

FEATURES

- Economical price;
- It can provide high-precision trimming of angles, outer circle, and flat surface to meet customers' basic needs.

Components For Diamond Grinding Wheel Spindle (Wheel Being Dressed)

Diamond Grinding Wheel Spindle Interface	BT40 interface spindle or according to customer requirements
Maximum Diameter of Diamond Grinding Wheel	Φ420mm
Minimum Diameter of Diamond Grinding Wheel	Φ20mm
Maximum Thickness of Diamond Grinding Wheel	20mm
Dressing Wheel Hole Diameter	Φ31.75mm
Diamond Grinding Wheel Spindle Speed	50-1000rpm (stepless speed regulation)
X Working Stroke of Diamond Grinding Wheel Spindle Cross Slide	135mm
Additional Manual Stroke of X-axis Diamond Grinding Wheel Spindle Cross Slide	150mm
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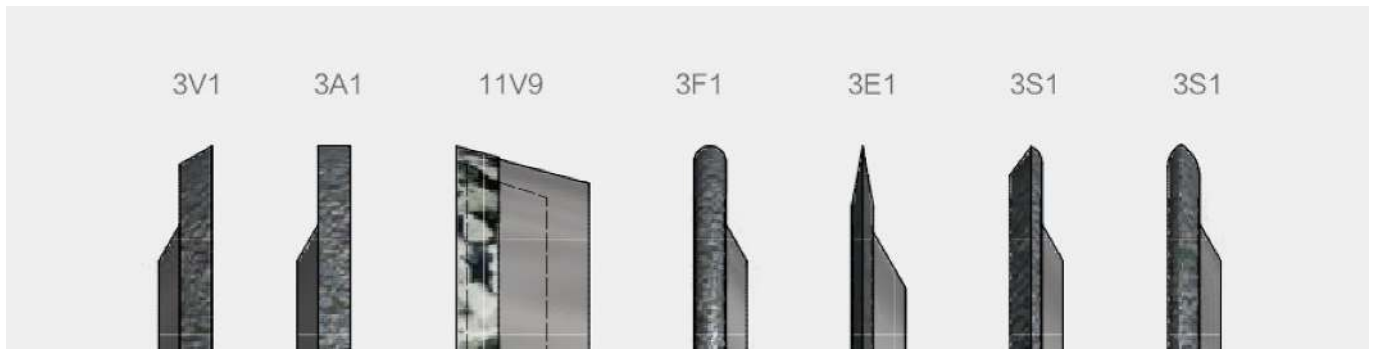
SEALED GRINDING WHEEL DRESSING MACHINE ZY-X5

The ZY-X5 wheel dressing machine is a newly developed machine based on the ZY-X3, designed to meet the workshop environment requirements and respond to environmental protection policies with a fully sealed design. This machine provides simple and efficient dressing for diamond wheels, CBN wheels, and wheel sets composed of multiple wheels. It can dress flat surfaces, angles, arcs, and profiled wheels. The operation of the machine is simple, and it offers high precision. The machine can achieve both water mist cooling and natural cooling, without causing environmental pollution.



Other parameters are consistent with ZY-X3, please refer to ZY-X3.

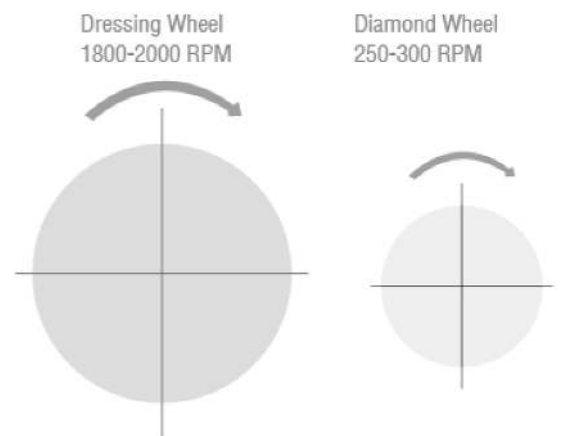
Examples of Wheel Shapes That Can Be Dressed



ADJUSTMENT OF GRINDING WHEEL SPEED WHEN USING DRESSING MACHINE

Based on our experience, we recommend a linear speed ratio of 20:5 between the dressing wheel and the diamond/CBN wheel being dressed. Therefore, the speed should be adjusted according to the diameter, as shown in the table below.

Diameter	Speed of Diamond/CBN Wheel to be Dressed(rpm)	Speed of Dressing Wheel(rpm)
50	1150	7640
75	760	5090
100	570	3820
125	460	3060
150	380	2550
200	290	1910
250	230	1530
300	190	1270



Selection of grinding wheel grit size

Grit size of diamond/CBN wheel being dressed	Bonding agent for dressing grinding wheels	Grit size of dressing grinding wheels
-80	GC WA	30-46
100-200	GC WA	46-80
200-325	GC WA	80-120
325-1000	GC	120-220
1000-	GC	220-800

**Thanks For Reading
And Look Forward To
Working With You!**