



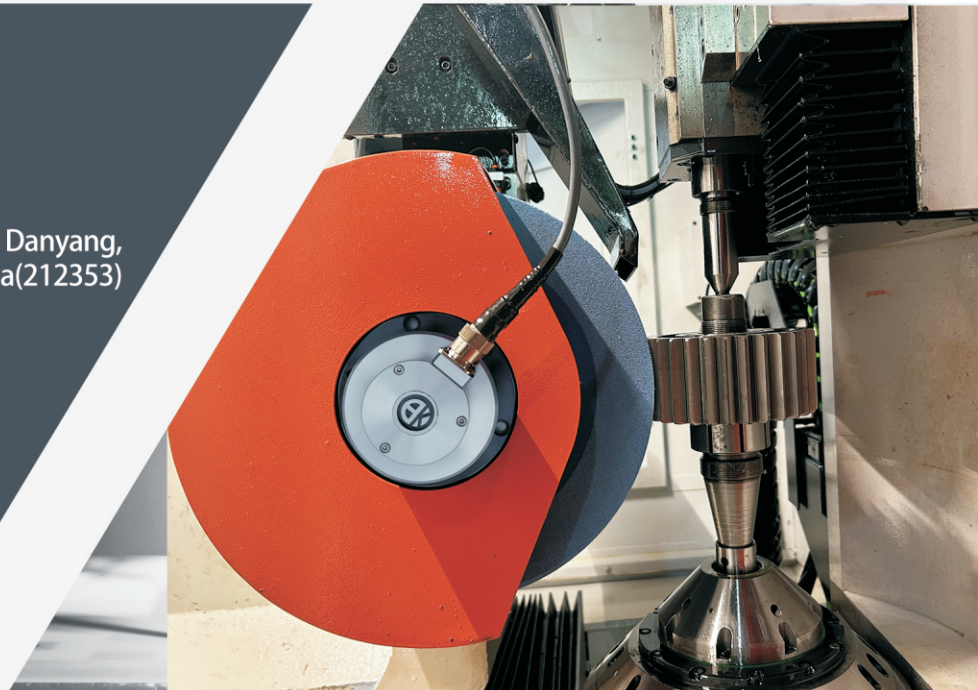
GRINDER WHEEL

DYNAMIC BALANCE SYSTEM

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KBT BALANCER GROUP

BUSINESS TEMPLETE
2023-2024

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Introduction

The grinding wheel online dynamic balancing system is a technology for dynamic balancing of grinding wheels. It can monitor the vibration and center of gravity deviation of the grinding wheel in real time, and adjust the grinding wheel through the corresponding electromechanical control system to achieve a state where the grinding wheel does not experience excessive vibration and imbalance when rotating at high speed.

The system usually consists of acceleration vibration sensor, controller, electric actuator and so on. When the grinding wheel rotates, the sensor can detect its vibration and transmit the data to the controller. The controller calculates the offset of the center of gravity of the grinding wheel and guides the electric actuator to adjust accordingly to achieve dynamic balance.

The advantages of the grinding wheel online dynamic balancing system include improving the accuracy and stability of the grinding wheel, reducing the failure rate and maintenance costs in production, and it is also conducive to improving production efficiency and product quality.

Advantage

- Improve the surface finish of parts.
- Real-time detection of grinding wheel vibration, automatic correction of grinding wheel imbalance. The system prevents the production of parts with shape defects
- Improve the working efficiency of the machine. (Auto balance time is shorter than manual balance time)
- No manual intervention is required during fully automatic balancing. (no need to manually add or remove balance weights)
- Continuously check for vibration throughout the wheel's life cycle, preventing damage to rotating parts. (preventive maintenance to ensure machine safety)
- Reduce dependence on employee technology
- Good return on investment

Application Scenario

- Automatic wheel balancing for systems with one or more spindles.
- Perform automatic balancing calculations in one plane.
- The balance limit value can be edited according to the type and size of the grinding wheel.
- Vibration monitoring and excessive imbalance alarm.



Power		
	Control box input voltage	24Vdc (- 15/+20%)(IEC 1131-2)
	Voltage	120-260Vac
	Power	50 W
Display panel		
	Colorful	¼ VGA (4") TFT
Balance CPU Card		
	Number of channels	1 balance head , 1 V-sensor , 1 speed sensor
	Balance head type	Electrical wire/none touch
	Speed available	450 ~ 9000 rpm
	Sensor type	Accelerometer
	Speed sensor type	Hall speed measurement
	Unbalance display unit	μm
	Unbalance measuring range	0-50μm
	Unbalance resolution	0.01μm
Controller Size		
	Independent electric control box (including panel)	209(W)×220.8(D)×111(H)
	Embedded electric control box (no power supply)	235(W)×117(D)×83(H)
Electrical Safety		
	EN 61010- 1	Regulations for the safety of electrical equipment for measurement control and laboratory use
Electromagnetic Compatibility Immunity		
	EN 61326	radiated electromagnetic field electrostatic discharge Electromagnetic fields induced by cables radio frequency electromagnetic field Power frequency magnetic field High frequency and conducted electromagnetic field radiation Electrical fast transient/burst surge
		High frequency and conducted electromagnetic field radiation
Degree of protection		
		IP 54



One-body Controller



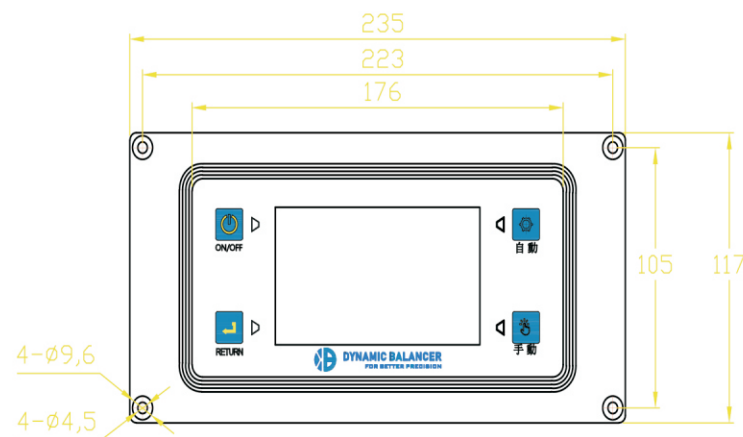
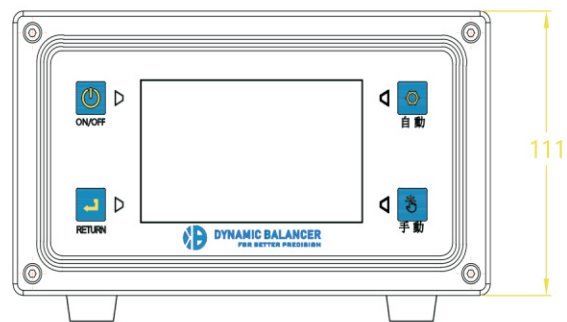
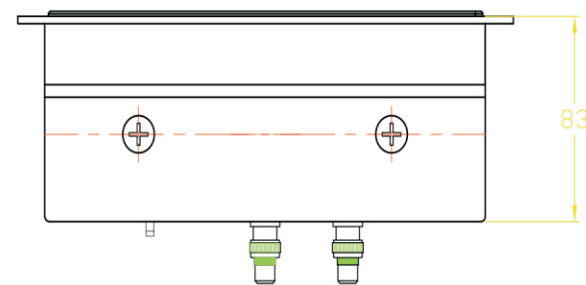
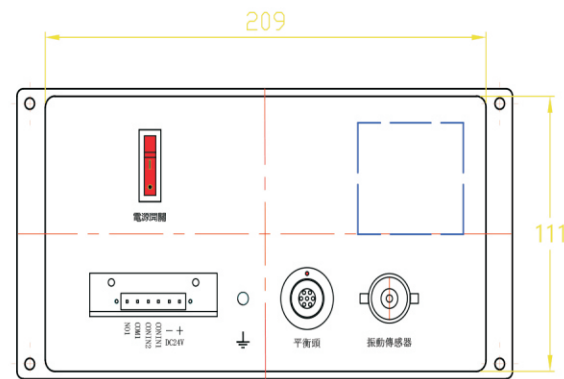
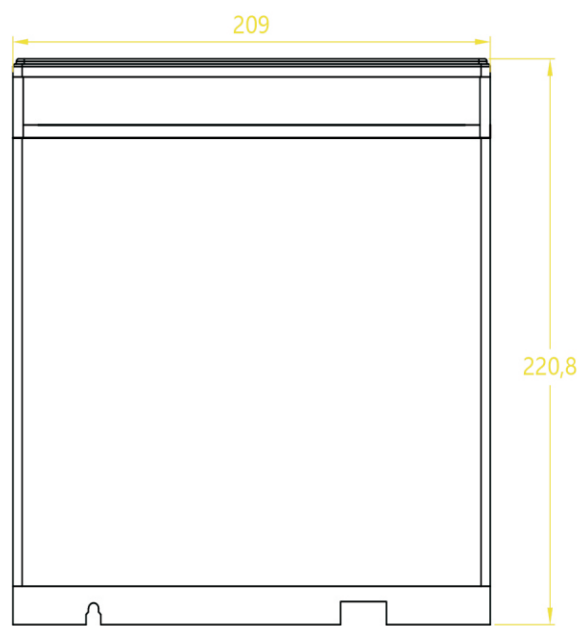
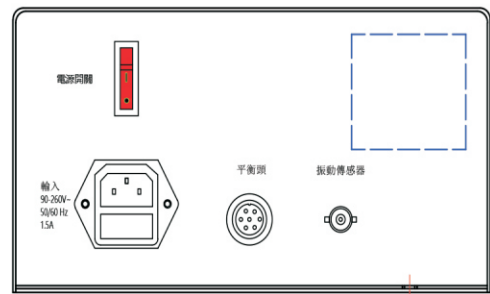
Split controller



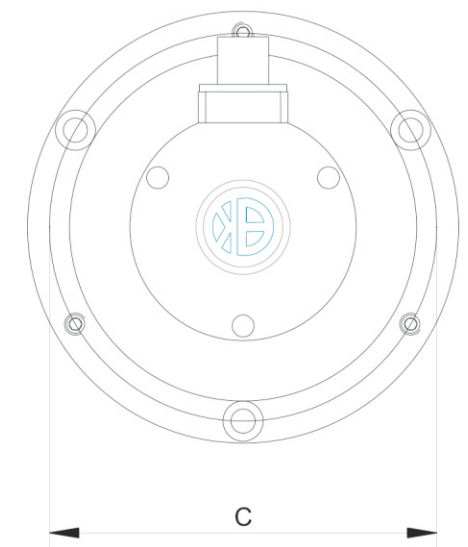
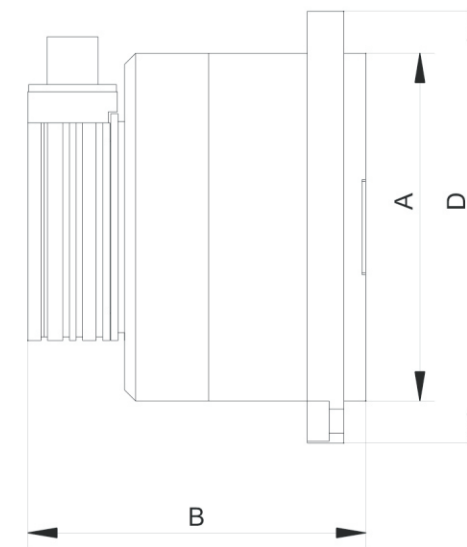
External Balance Head



Internal Balance Head

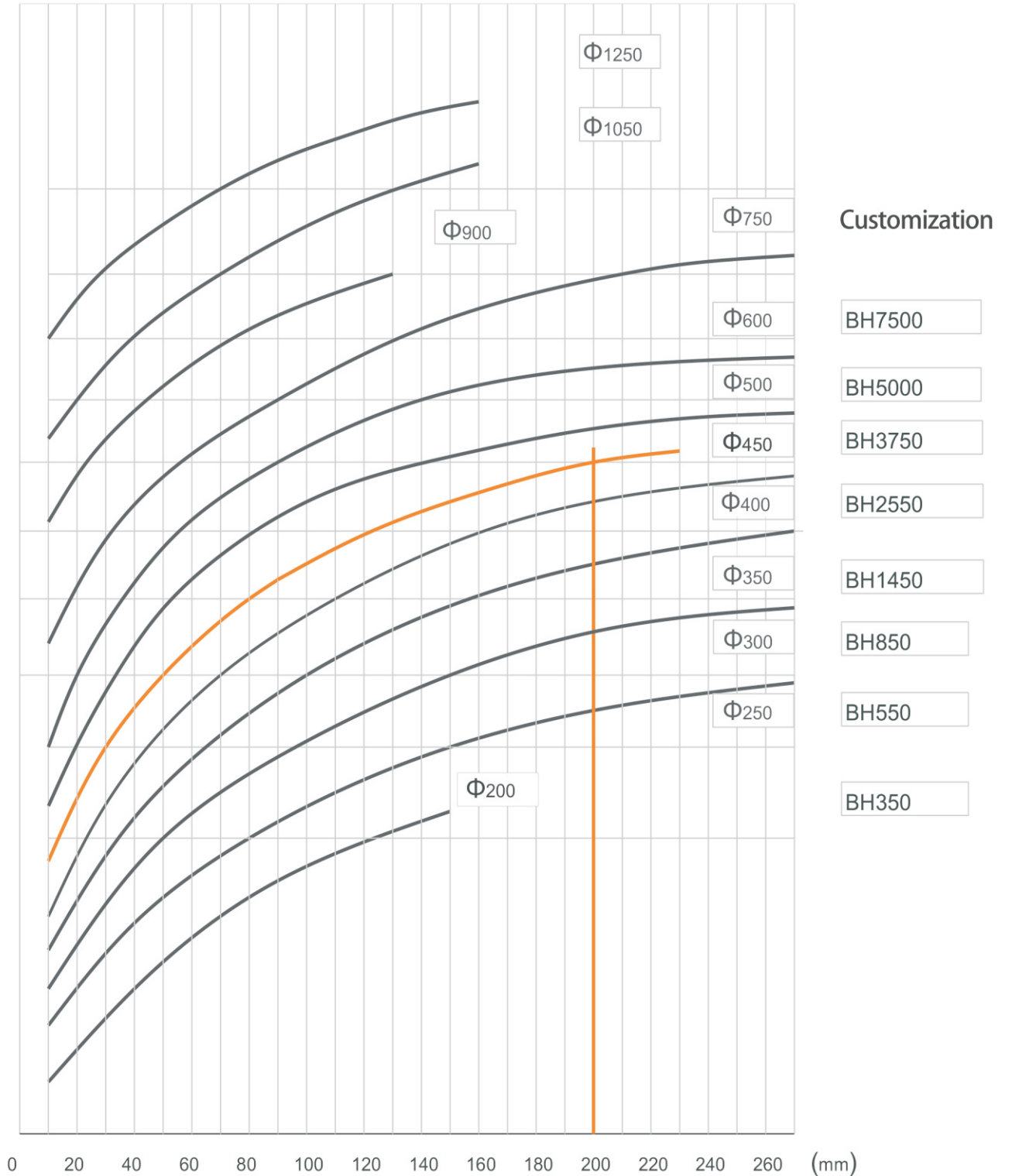
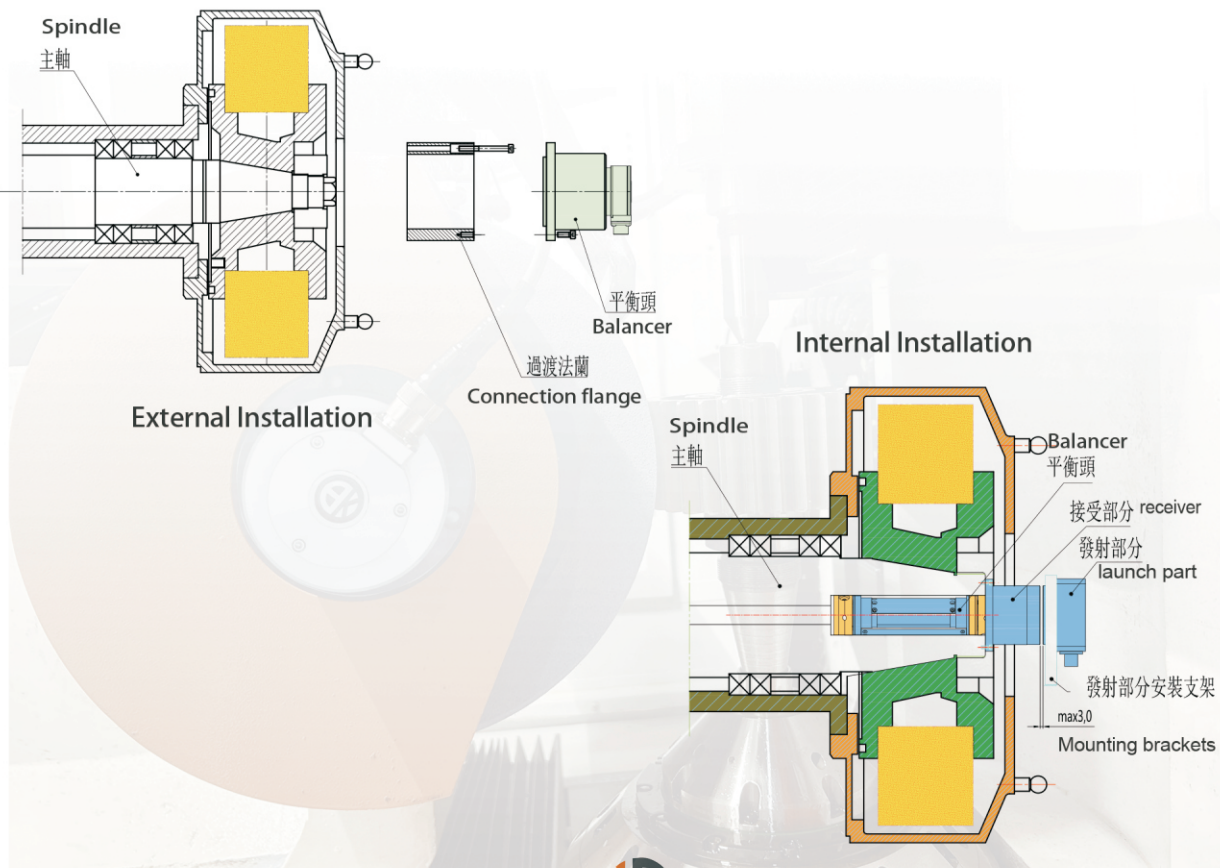


Size

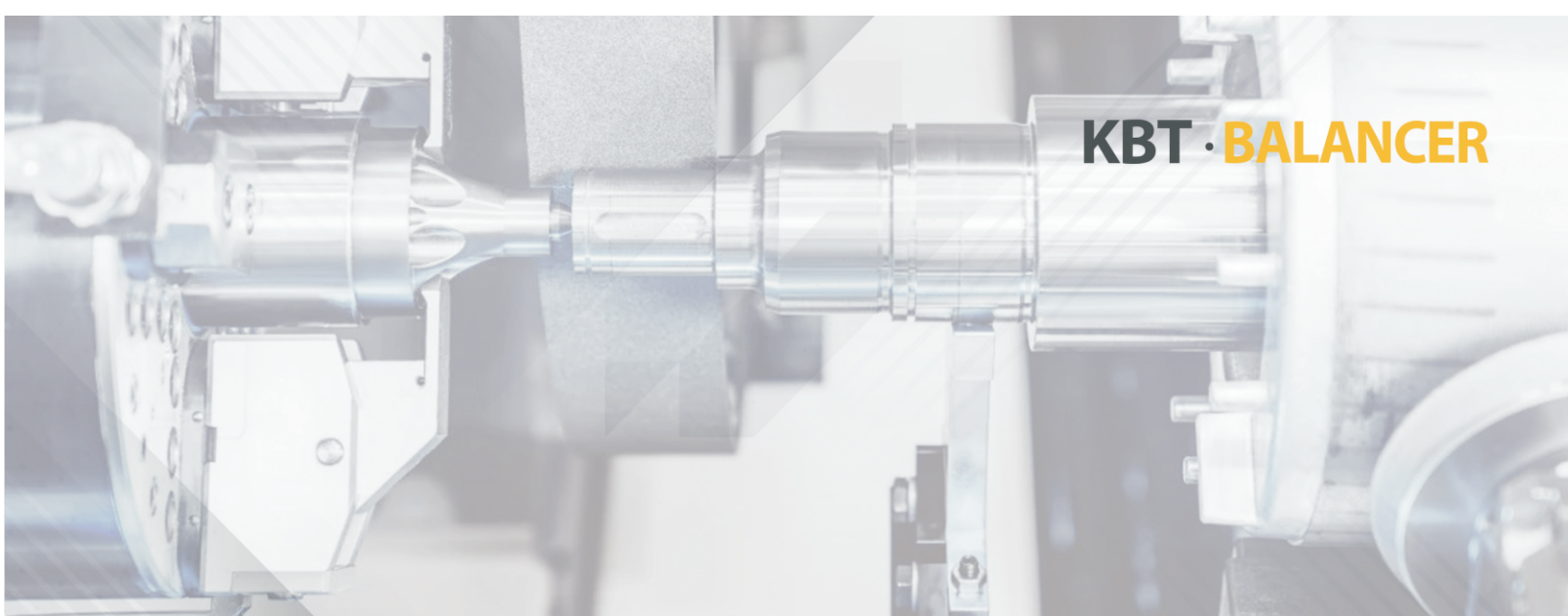


Model	Balance capacity (g.cm)	A(mm)	B(mm)	C(mm)	D (mm)
BH-350	350	95	92.5	106	118
BH-550	550				
BH-850	850				
BH-1450	1450	106	92.5	117	129
BH-2550	2550				
BH-3750	3750	124	92.5	135	147
BH-5000	5000				
BH-7500	7500				

Grinding wheel Diameter (mm)	Grinding wheel Thickness (mm)	Line speed 30m/s (rpm)	Line speed 45m/s (rpm)	Line speed 60m/s (rpm)
150		BH-350 (4000)	BH-350 (5730)	BH-350 (7650)
200		BH-550 (2900)	BH-550 (4300)	BH-550 (5730)
300		BH-550(1920)	BH-550 (2870)	BH-550 (3820)
400	0-100	BH-850(1500)	BH-850(2150)	BH-850 (2860)
	100-200	BH-1450 (1500)	BH-1450(2150)	BH-1450 (2860)
500	0-40	BH-850(1150)	BH-850 (1720)	BH-850 (2290)
	40-75	BH-1450 (1150)	BH-1450(1720)	BH-1450 (2290)
600	75-200	BH-2550 (1150)	BH-2550 (1720)	BH-2550 (2290)
	0-40	BH-1450(950)	BH-1450 (1450)	BH-1450 (1910)
750	40-75	BH-2550 (950)	BH-2550 (1450)	BH-2550 (1910)
	75-200	BH-3750(950)	BH-5000 (1450)	BH-5000 (1910)
900	0-40	BH-2550 (765)	BH-2550 (1145)	BH-2550 (1530)
	40-75	BH-3750 (765)	BH-3750 (1145)	BH-3750 (1530)
900	75-200	BH-5000 (765)	BH-7500 (1145)	BH-7500 (1530)
	0-40	BH-5000 (635)	BH-5000 (950)	BH-S000 (1270)
	40-75	BH-7500 (635)	BH-7500 (950)	BH-7500 (1270)



Example: As shown in the staggered position of the yellow part in the above figure, it shows that the grinding wheel with a diameter of 450mm and a thickness of 200mm should choose the balance. The capacity is about 3750g.cm. Of course, this also needs to be judged comprehensively according to the material and line speed. Therefore, please take the initiative when choosing a model. Contact us, we will review the selection according to the parameters you provide, thank you! Because the built-in balance head needs to be matched with the main shaft of the equipment, there is no standard size table provided.



Sensor Installation



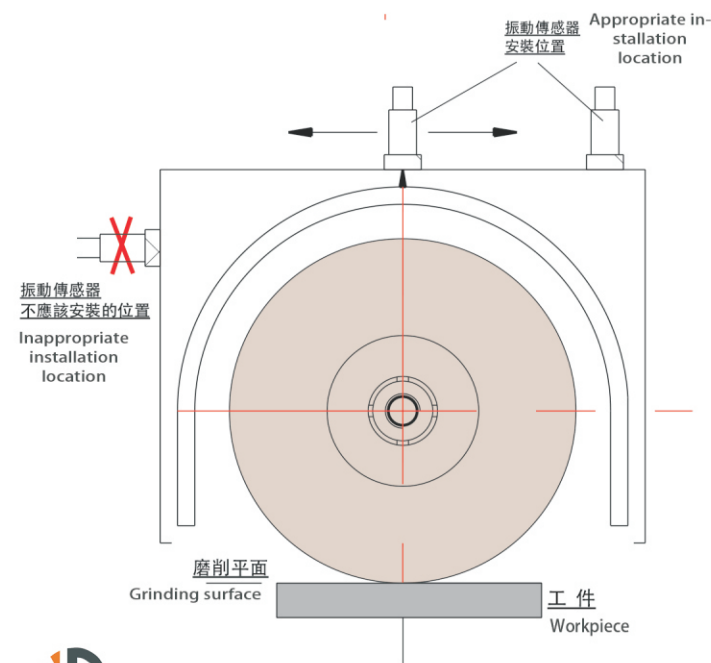
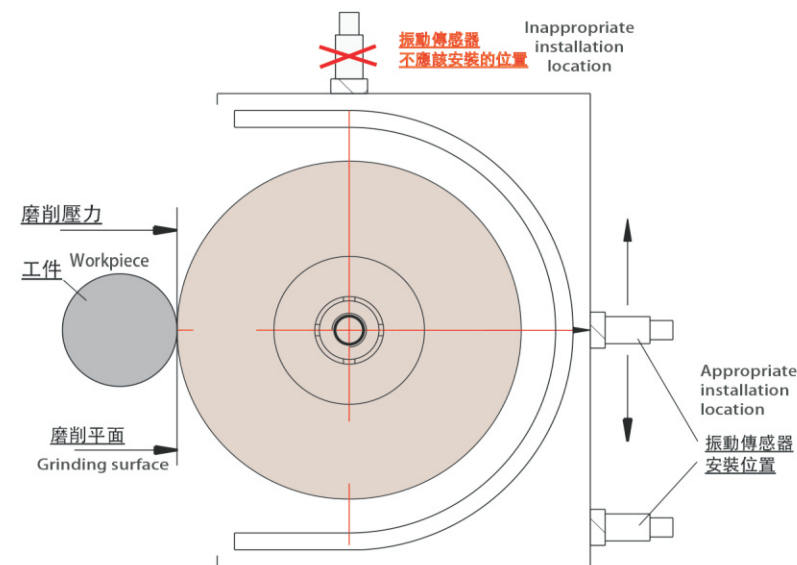
Acceleration sensor cable



Balancer Cable



Vibration Acceleration Sensor



A vibration acceleration sensor is a device that measures vibration or shock, and detects the vibration state of a machine or structure by converting acceleration into an electrical signal. The sensor can detect parameters such as vibration amplitude, frequency and acceleration, and is one of the important core components in this system. It needs to be installed in the correct position to measure the vibration value more accurately, so as to obtain a better balance effect.



Connecting terminal of sensor and main controller



Balance head connection terminal

The shielded connection cable is a professional cable product designed to provide excellent signal transmission and protection. The connecting cable has a shielding layer inside, which can prevent external electromagnetic interference from affecting signal transmission. In addition, it is oil- and abrasion-resistant, making it suitable for use in harsh environments. Due to the particularity of the cables, please do not use ordinary cables to replace the special cables customized by our company without permission, otherwise signal interference is likely to cause unbalanced conditions.

In addition, the standard length of the cable is 8m. If your equipment requires a longer cable, please inform our sales staff when ordering, so as to avoid inconvenience caused by re-customization in the later stage!

The cable length should not exceed 15 meters. Because too long cables may cause attenuation of signal transmission and affect the speed and accuracy of balancing.