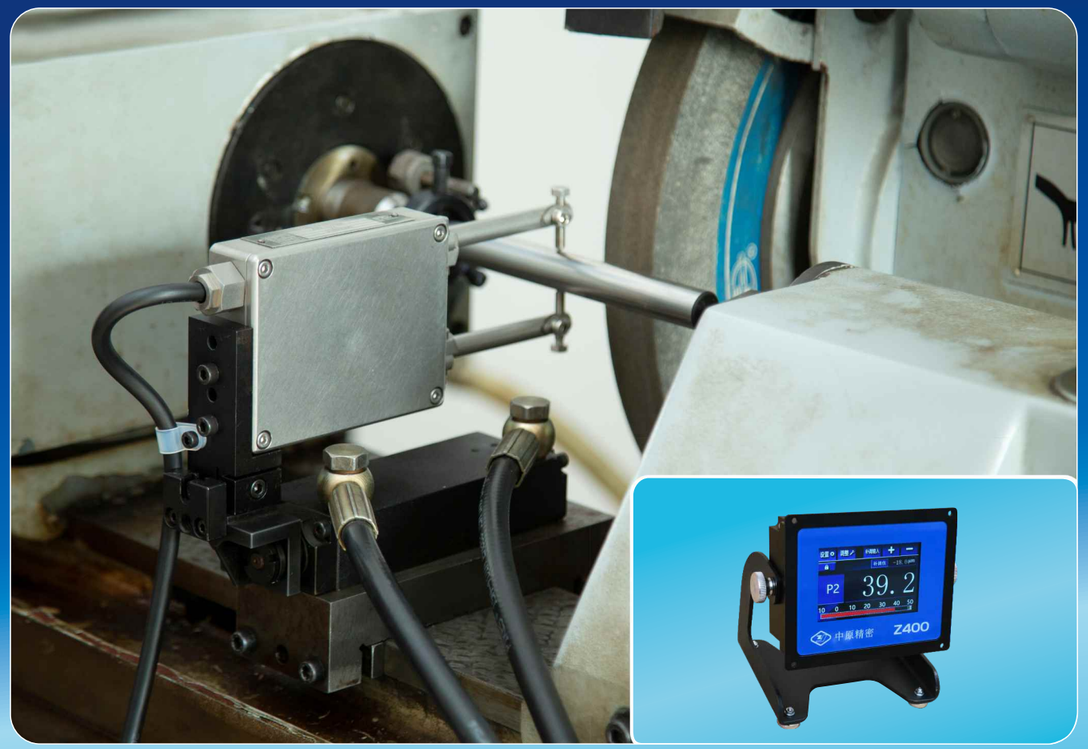

Measuring Instrument

- The Series Z Measuring Instrument
- The Series ZPLUS Measuring Instrument
- OD/ID Gage Unit
- Single Point Gage Unit
- Crankshaft Gage Unit
- Air-elec.Inverter Unit
- Back Inserted Gage Unit
- Drive Unit
- Flange Balancer Head
- Eliminating gaps/Anti-collision
- Power Monitor

We do our product as we conduct ourselves, and we believe attitude is everything and details make successes.
The team spirit and corporate is the belief of the company.

www.zyjm.com

中原精密 SANMENXIA ZHONGYUAN JINGMI CO.,LTD.

ADD:Eastern Block Weiliu Road.Industrial Park
TEL:0398-2751818
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POSTAL CODE:472000
E-mali:zyjm@zyjm.com

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2024-B

ZHONG YUAN JING MI

中原精密 SANMENXIA ZHONGYUAN JINGMI CO.,LTD.

中原精密

Quality-oriented Technology first
Customer first Improve and perfect

Company Introduction

Sanmenxia Zhongyuan Jingmi Co., Ltd. is located in the beautiful Swan City, Sanmenxia City, Henan Province.The company was established in 1995,is the professional manufacturing enterprise for in-process measuring application, based on the imported measuring instrument technique from japan, we studied the technique,innovated it and became China's brand which owned intellectual property.Currently our products have 10 series, more than 100 varieties, and widely used in the industries of machine tools, automobile, bearing, cooler, and so on. The products are widely used in industries of machine tool, automobile bearing and cold machine, and so on. With the continuous development of the enterprise, the company moved to Sanmenxia high technical zone in April 2013, covers an area of 24000 square meters, for the long-term development of enterprise.

2016 February, the company and MARPOSS signed a cooperation agreement, will make SanmenxiaZhongyuan Jingmi Co., Ltd. to be a larger manufacturing enterprise for in-process measuring application.With the cooperation, Zhongyuan will use technology, service, marketing and the local advantage, pay more attention to the quality and customers, to provide more hiah-auality and eficient service for customers at home and abroad, to meet the needs of users at different levels. We will warmly welcome all the quests and friends to visit our company!

SANMENXIA
ZHONG YUAN
JING MI CO.,LTD.

中原精密

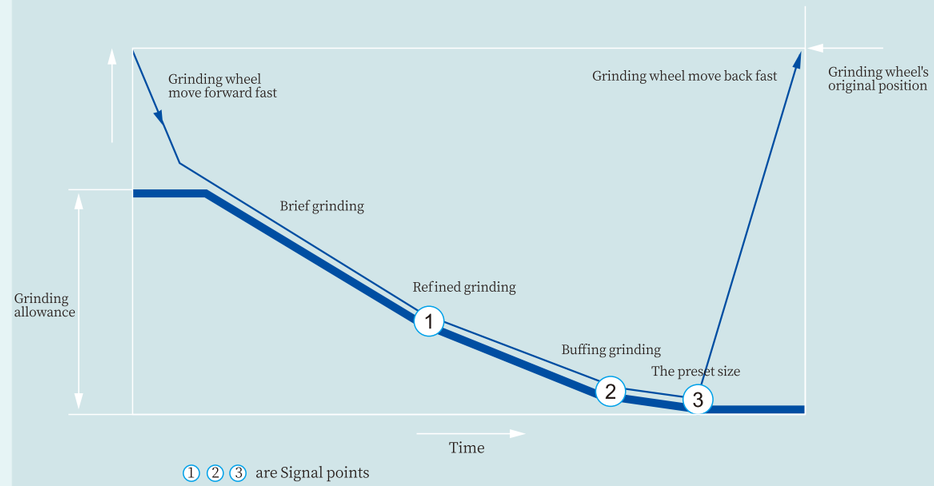
Catalogue

Catalogue

SANMENXIA
ZHONG YUAN JING MI CO.,LTD.

The grinding process controlled by gage control unit

The gage unit will measure the workpiece any time in the grinding process, and input the data to the control unit. The control unit will output the signal when the data match the preset signal point, and control the tool's moving.
Example:
In working process, after moving forward fast, the grinding wheel moved into brief grinding condition. When it comes to the second size signal point, the tool turned to buffing grinding condition from refined grinding. Then the grinding wheel reaches the third signal point, the workpiece comes to the preset size, the grinding wheel will return to the original position and get into the next round of movement.



① ② ③ are Signal points

Z400 Control Unit

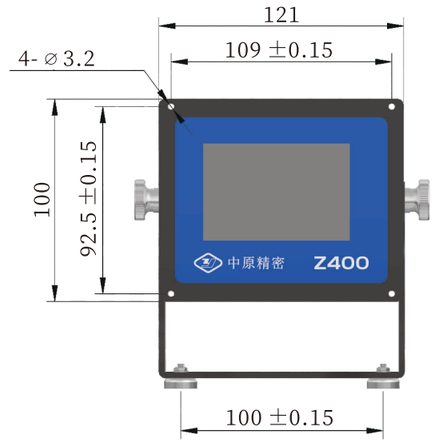
Summary

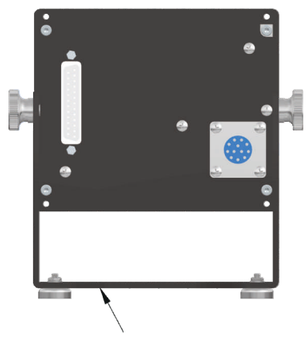
The Z400 control unit is based on the latest digital signal processing system, using the latest control technology to design an instrument for on-line monitoring and control of grinding machines.

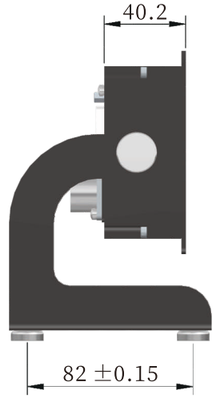
Features	Technical parameter	Performance	Application range
○Touch screen operation display	○Single project or double project	○Measurement range +1000um	○OD smooth surface
○Freestanding or embedded installation	○Differential transformer sensor input	○Power supply DC24V 0.6A	○ID smooth surface
○The interface is simple and easy to understand	○7 relay signal point output(220V, 5A)	○Power consumption <10W	○Honing
○Easy and fast operation	○5 input signal points (24V, 3mA)		○OD single keyway surface
○Exquisite appearance and small size,saving installation	○3.5" touch screen		
	○485 output(KND,Taixiong)		

Z400 Control Unit

Installation size







Adjustable screen orientation

Embedded

Slot size:116×86
Installation hole distance: 109×92.5

Z600 Control Unit

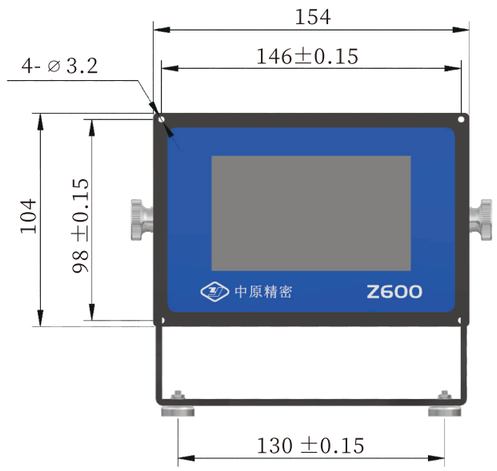
Summary

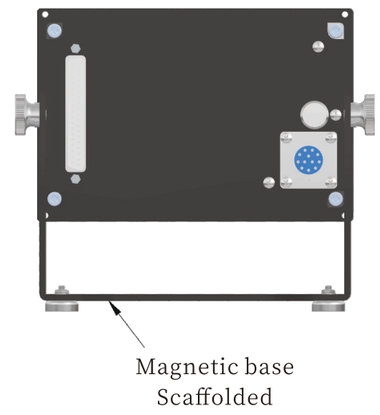
The Z600 control unit is based on the latest digital signal processing system, using the latest control technology to design an instrument for on-line monitoring and control of grinding machines.

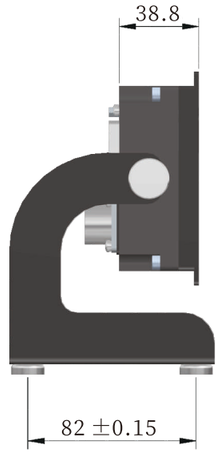
Features	Technical parameter	Performance	Application range
○Touch screen operation display	○Single project or double project	○Measurement range +1000um	○OD smooth surface
○Freestanding or embedded installation	○Differential transformer sensor input	○Power supply DC24V 0.6A	○OD interruption surface
○The interface is simple and easy to understand	○21 optocoupler signal point outputs (24V,0.5A)(definable)	○Power consumption <10W	○End face+OD
○Easy and fast operation			○ID smooth surface
○Exquisite appearance and small size, saving installation space	○6 input signal points (24V,3mA)(defineable)		○ID interruption surface
○Industrial design to adapt to harsh environments			○Honing
	○485 output		○IP/PP
	○BCD output		○Double OD
	○4.3" touch screen		
	○Multi-expression settings		
	○Multiple discontinuous measurement methods		

Z600 Control Unit

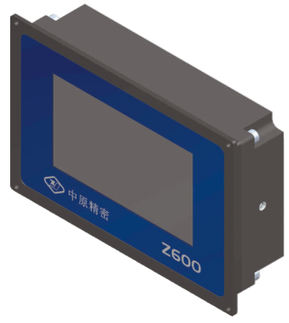
Installation size







Adjustable screen orientation

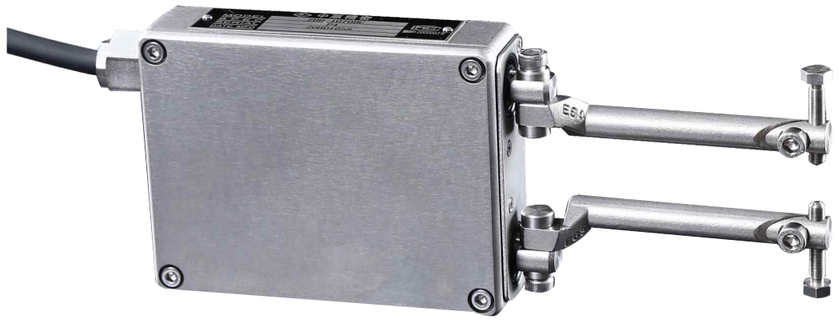


Embedded

Slot size:146×91

Installation hole distance: 146×98

ZHD OD gage unit



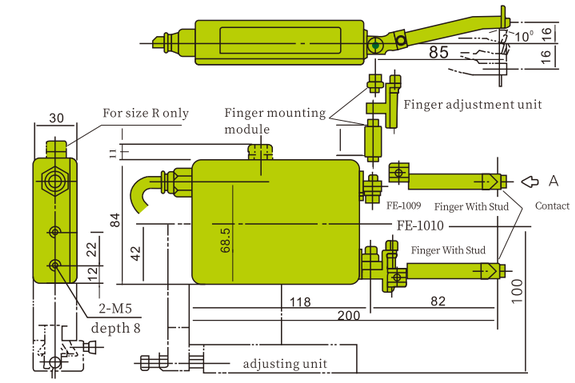
- Measuring range (mm)4.8 (finger length 82mm)
- Measuring diameter(mm):ϕ 3~ϕ 140 (based on the extension rod)
- Linear range(μm):-500~+1000
- Repeatability(μm):1μm/25t
- Measuring force(gf):100~120
- Cable length(m):4/6
- Weight (kg): 1.3
- Optional units:finger, contact,extension rod adjusting unit and so on.

- Having no slide or friction parts.It works excellently for high-precision workpieces.
- The unique L-shaped spring fulcrum ensure the gage head as a high-precision measuring instruments and also provides it with high durability and rigidity required for on-line gage.
- The modular construction of precision components makes the maintenance very easy.
- The enhanced fulcrum stiffness and lighter movable parts ensure high reliable dynamic characteristics.

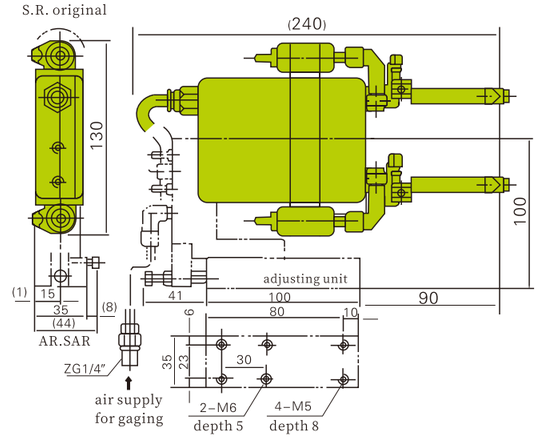
Application	Model ZHD-	Workpiece		Retraction			Single output	Dual output	Note
		Continuous	Intermittent	Non	Elec.	Air			
OD	107⍁B	□		□			□		
OD runout	115⍁B	□		□				□	
OD spline shaft	111⍁B		□	□				□	Working largest speed 80m/min (type 1111)Working largest speed 50m/min(type1112)
OD with retraction	112⍁B	□			□			□	
OD with retraction	116⍁B	□				□		□	
OD with retraction	109⍁B	□				□	□		
OD spline shaft with retraction	119⍁B		□			□		□	Working largest speed 80m/min (type1191)Working largest speed 50m/min(type1192)

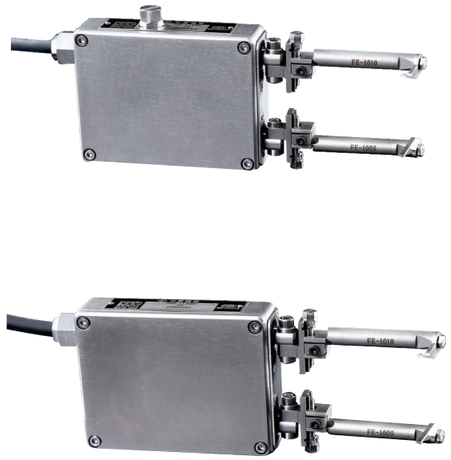
Note: ⍁ are based on the type of finger. “0" require general form, “1" require 42mm finger, "2" require 82mm finger.

ZHD ID gage unit

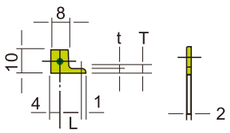


S.R. original





Contact (View A)



Unit:mm

Contacts		L	T	t
General	1031A	20	1.5	1.2
	1032	29	1.8	1.4
	1049	25	1.8	1.5
	1050	33	2.5	2
	1051	30	1.5	1.2
Groove	1015	12.5	2	1.0
	1014	14.5	2.5	2

- Measuring range (mm)4.8 (finger length 82mm)
- Measuring diameter(mm): ϕ10~ϕ120 (based on the extension rod)
- Linear range(μm):-500~+1000
- Repeatability(μm):1μm/25t
- Measuring force(gf):100~120
- Cable length (m): 4/6
- Weight (kg): 1.3
- Optional units:finger, contact,extension rod adjusting unit and so on.

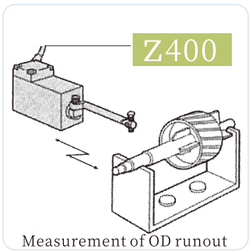
Application	Model ZHD-	Workpiece		Retraction			Single output	Dual output	Note
		Continuous	Intermittent	Non	Elec.	Air			
ID	113⍁B		□	□				□	
ID with retraction	114⍁B	□			□			□	
ID with retraction	118⍁B	□				□		□	
ID with retraction	108⍁B	□				□	□		
ID spline with retraction	120⍁B		□			□		□	Working largest speed:100m/min

Note: ⍁ are based on the type of finger. "0" require general form,"1" require 42mm finger,"2"require 82mm finger.

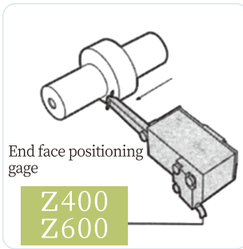
ZHS Single point gage unit

Feature

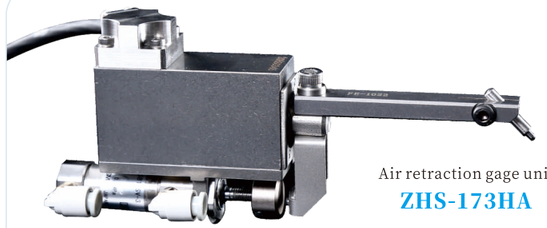
- Having no slide or friction parts. it works excellently for high-precision workpieces.
- The unique L-shaped spring fulcrum ensure the gage head as a high-precision measuring instruments and also provides it with high durability and rigidity required for on-line gage.
- The modular construction of precision components makes the maintenance very easy.
- The enhanced fulcrum stiffness and lighter movable parts ensure high reliable dynamic characteristics.
- The small size and it is easy for mounting, adjusting and using.
- Good repetition accuracy, 1μm/25 times.



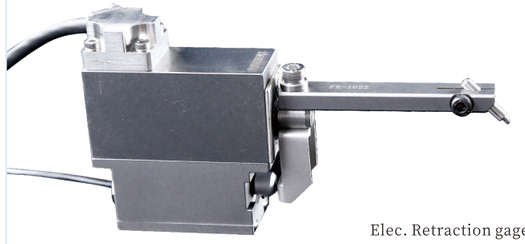
Measurement of OD runout



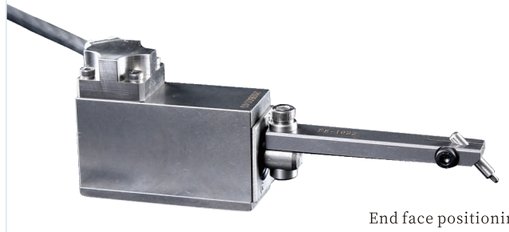
End face positioning gage



Air retraction gage unit
ZHS-173HA



Elec. Retraction gage unit
ZHS-173DC



End face positioning gage
ZHS-173FC

ZHS-173 □ – □ – □□

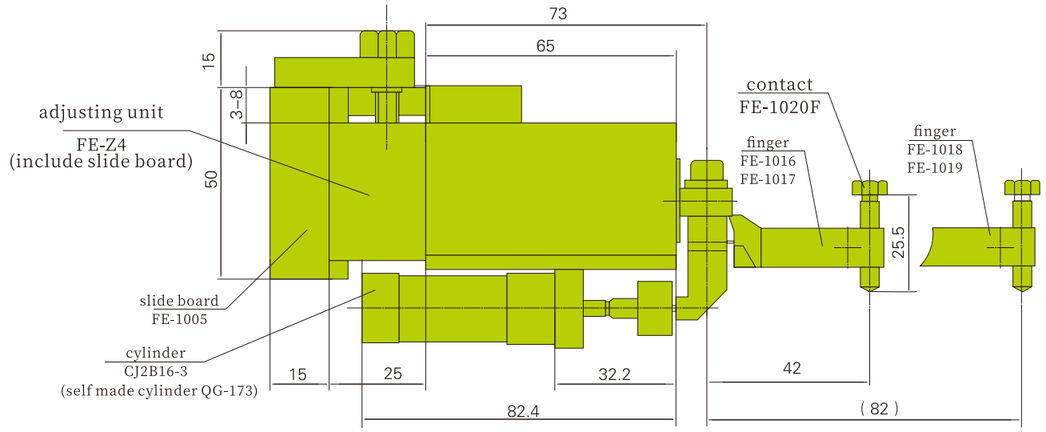
Model/Spec.

- Cable length 6m
- Gage finger is lifted from the free state “P”-Display minus to plus “N”-Display plus to minus
- D for damping
- FC: non retraction (no cylinder)
- HC: Air retraction (self-made cylinder)
- HA: Air retraction (SMC cylinder)
- DC: Elec. retraction

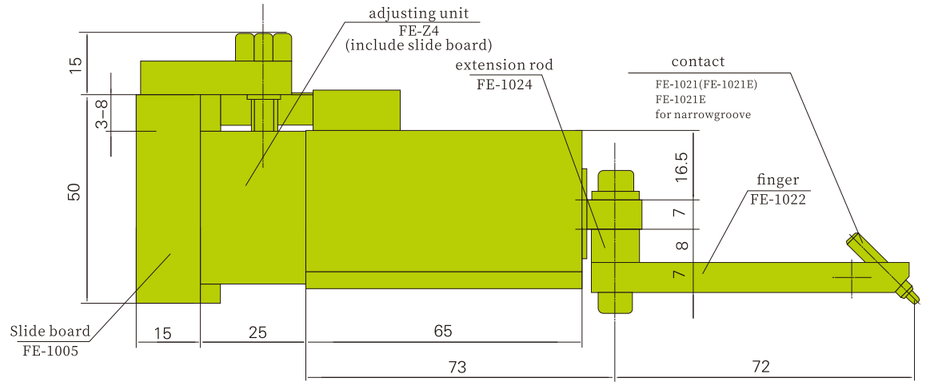
Standard configuration

	Finger length	Measuring force			Pre-stroke	Retraction stroke
		Down	Horizon	Up		
Head for thickness and runout	42mm	1.75N(175gf)	1.5N(150gf)	1.4N(140gf)	450-500μm	max 4.5mm
Head for thickness and runout	82mm	1.15N(115gf)	0.9N(90gf)	0.7N(70gf)	730-810μm	max 7.2mm
End face positioning gage	72mm	1.25N(125gf)	1.0N(100gf)	0.8N(80gf)	660-730 μm	max 6.5mm

Appearance and connecting size

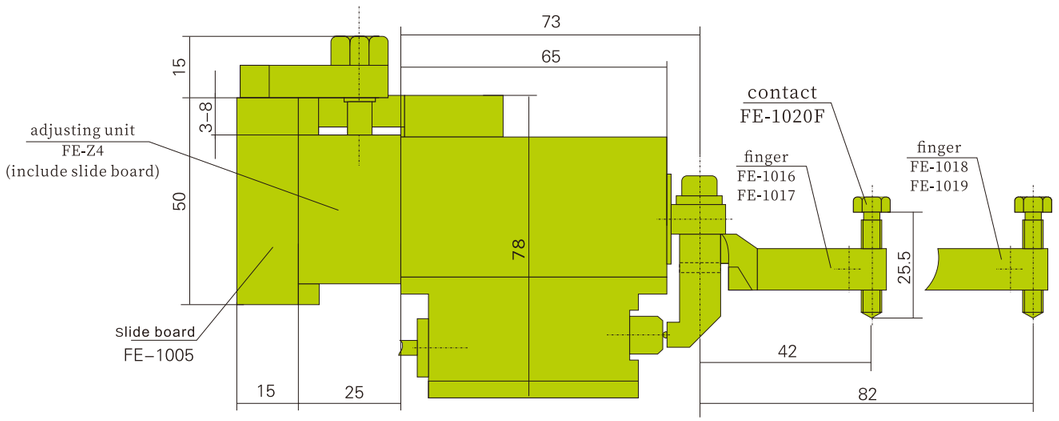


Typical example of air retraction gage unit ZHS-173 HA (with self- made cylinder the type is ZHS-173HC)

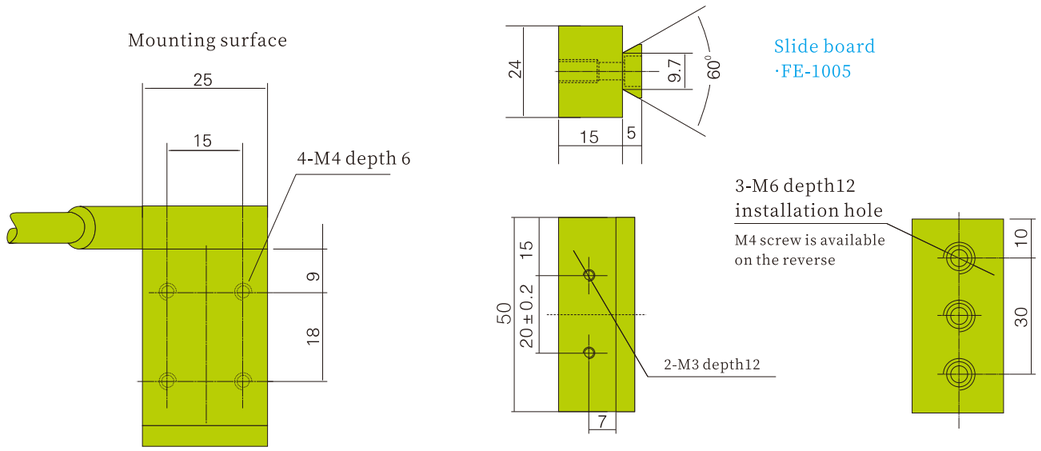


Typical example of End face positioning gage unit ZHS-173FC

Appearance and connecting size



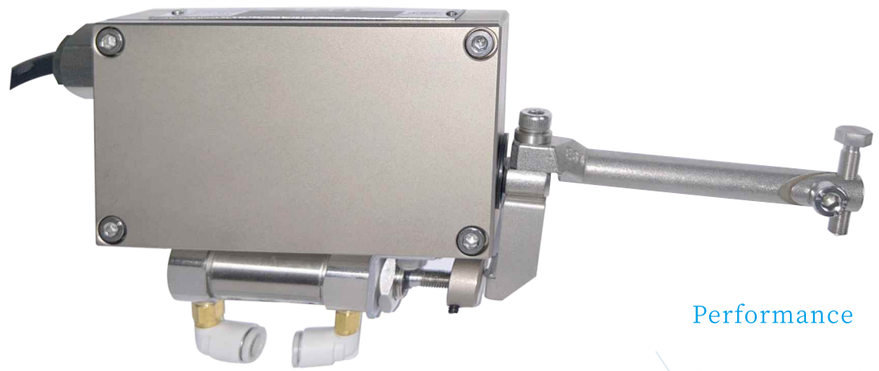
Typical example of elec.retraction gage unit ZHS -173DC



Drawing of mounting surface and slide board

ZHS Air retraction with large rertraction range gage unit

It is used in railway gaging of deep groove bearing. Air retraction controlled by the dual effect cylinder.The retraction range could reach 12.5 mm.lt can be matched to Z400 and Z600.

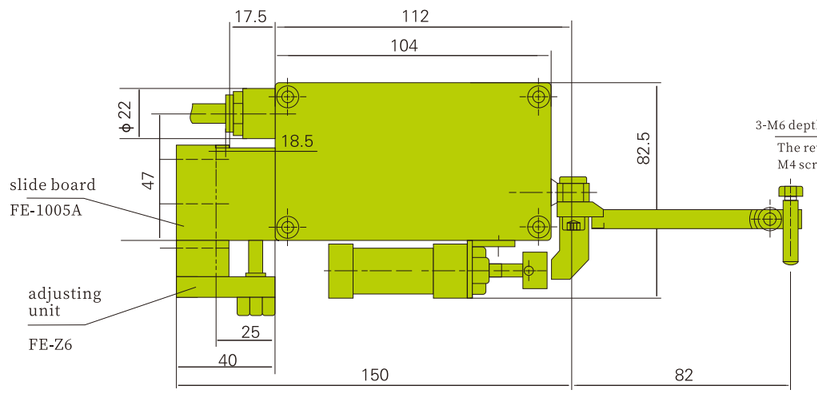


ZHS-178

Performance

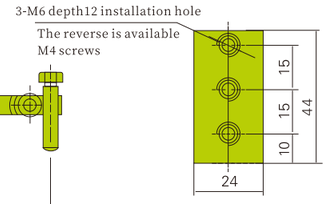
- Standard finger length:82mm
- Using field :ID/OD
- Pressure:0.3~0.5 Mpa
- Pre-stroke:0.8 mm
- Measuring force:80~100 gf
- Retraction stroke:12.5mm
- Repeatability:1μm/25t

Overall dimension



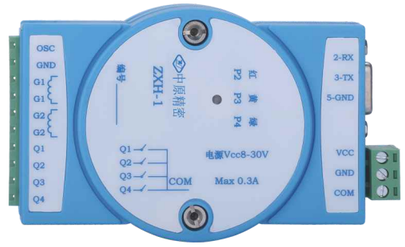
FE-1005A slide plate

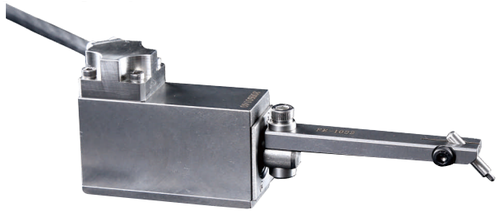
Mounting surface



ZHS-173-ZXH-N6 Triggered measuring device

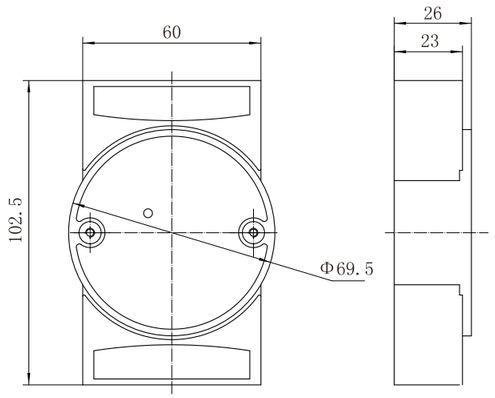
The new control module, combined with the standard differential transformer-type measuring device,is used in CNC grinders and machining centers. For positioning tool inspection, workpiece alignment and measurement. Reduce scrap rate, save processing and setting time, and improve product quality.





Trigger position

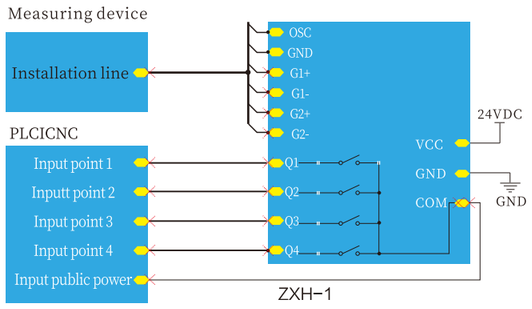
Position (relative zero)	Signal point	Indicator
100μm	Q1	
40μm	Q2	red
10μm	Q3	yellow
0μm	Q4	green



Technical Parameters

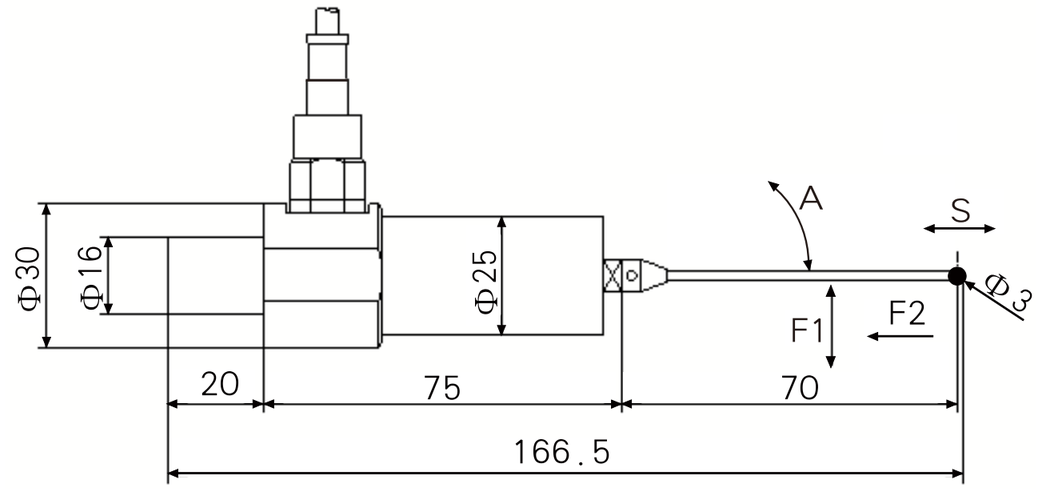
Power supply	8-30V DC
Input power	<4W
Signal output type	Relay contact 300mA(24VDC)
Display method	LED double color
Signal form	Normally open
ZXH-1 size	126*70*40 (body)
ZXH-1 weight	130g (body)
Installation	35mm rail

Electrical connection diagram



E-DT-172 Trigger measuring device

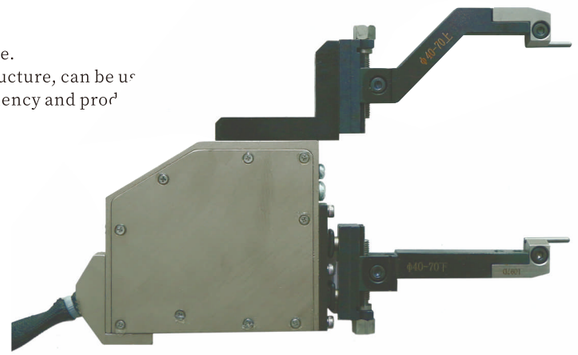
Size/Type	E-DT-172
Technical parameters	E-DT-172 Probe shank radial cables connection oil resistant
Size	Body Diameter ΦD: Φ25mm
	Connection shank diameter ΦD1:Φ16mm
	Length L 166.5mm
Weight	230g
Standard finger	Length L1:70mm(length can be customized)
	Connection thread:M4
	Ball diameter ΦD2: Φ3±0.0025mm
Measuring direction	±X、±Y、+Z directions
Reset surveying rod accuracy	1μm
Surveying rod overtravel	XY plane A: ±12°
	Z+direction S: 5mm(max)
Trigger force (factory setting)	XY plane F1: 0.4N(40gf)min
	0.8 N(80gf)max
	Z-F2: 5.2N(520gf)
Seal grade	IP68



QZ-LN3 Thin type crank shaft gage unit

Feature and application

QZ-LN3 is the perfect unit for crank shaft grinding gage.
It is designed perfectly, and with super thin (9mm) structure, can be us
types of crank shaft . And it will also promote the efficiency and prod

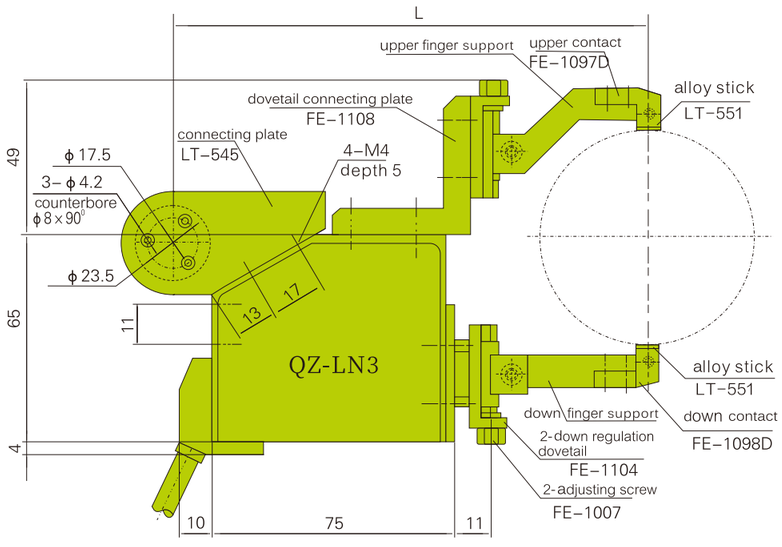


Performance

- Linear range: -400~+400μm
- Linear error: 1%
- Measuring force:180gf
- Repeatability:1μm/25 t

Overall dimension

QZ-LN3



Note:When in mounting you can choose the connect board on the drawing or the 4-M4 setscrew.

The list of choosing Gage range

project / Number	Center distancel	Upper finger support	Down finger support	Measuring range
1	160	LT-567	LT-568	ϕ35–ϕ65
2	160	LT-569	LT-570	ϕ65–ϕ100

Note : if the center distance is not on the list, you need order the upper and down finger connect board

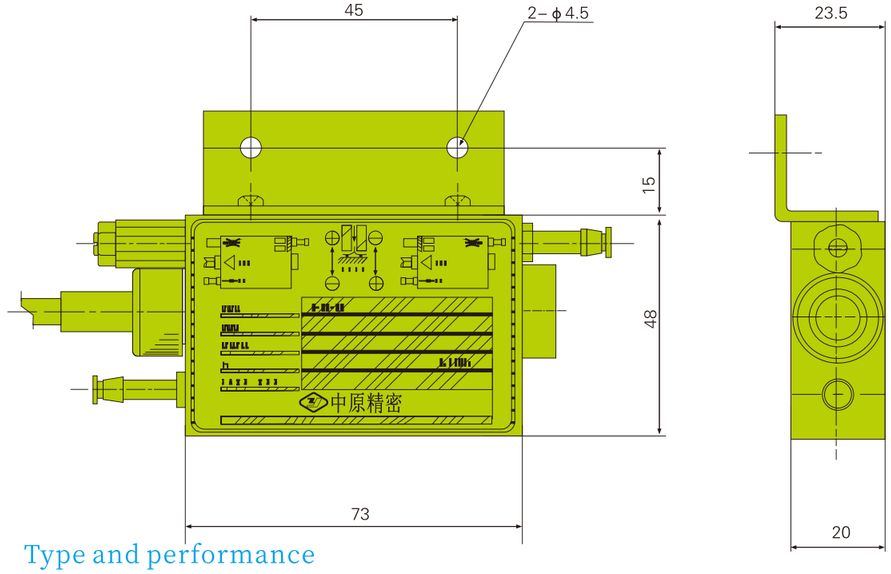
ZHS Air-elec.inverter unit

Function

The Air-elec. Inverter unit is the unit that using a nozzle to compress the air and exchange the smal size changing to the electronic signal. The pneumatic gage unit is easily to operate and durable,and the electronic gage unit can react fast, and they can output diferent kinds of signals. This unit can be connected to Z400 and Z600, widely used in honing and post-process gaging.

ZHS-AH-1551

Overall dimension



Type and performance

Type	Linear range	Linear error	Stability	Repeatability
ZHS-AH-1551	100μ m	±0.7	1.0 μ m/4h	1.0 μ m
ZHS-AH-310	30 μ m	±0.5	1.0 μ m/4h	1.0 μ m

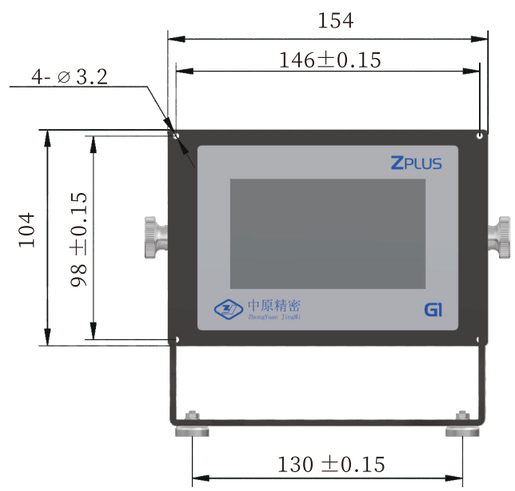
Summary

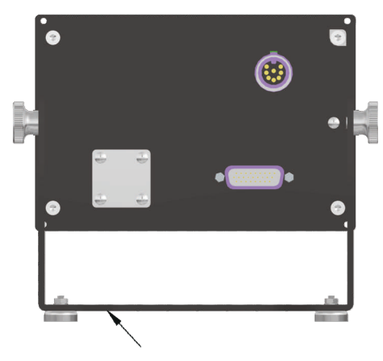
The ZPLUS G1/G2 controller unit is based on latest digital signal processing system, using the latest control technology to an instrument for on-line monitoring and control of gringding machines.

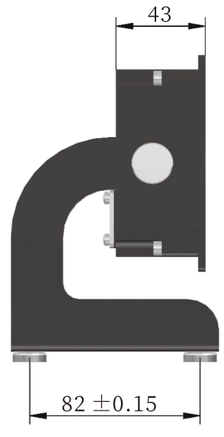
Features	Technical parameter	Performance	Application range
○Touch screen operation display	○Single project or double project	○Measurement range ±1000μm	○ID/OD smooth surface(G1)
○Freestanding or embedded installation	○Differential transformer sensor input	○Power supply 24 VDC (-15% / +20%) 5% ripple voltage	○ID/OD interruption surface(G1)
○Friendly man-machine interface	○I/O signal ▮24 VDC optical ▮Input signal current 5mA ▮Output signal curren 100mA	○Power consumption 8W	○Thickness measurement(G1)
○Easy and fast operation			○Back insert reciprocating ID measurement(G1)
○Exquisite appearance and small size, saving installation space			○End face+OD(G2)
○Industrial design to adapt to harsh environment	○4.3" touch screen		○Double OD smooth surface(G2)
	○Multi-expression settings		
	○Multiple discontinuous mea surement methods		

Note: G1 represents a single measurement project; G2 represents a dual measurement project.

Installation size







Adjustable screen orientation

Embedded
Slot size:146×91
Installation hole distance: 146×98

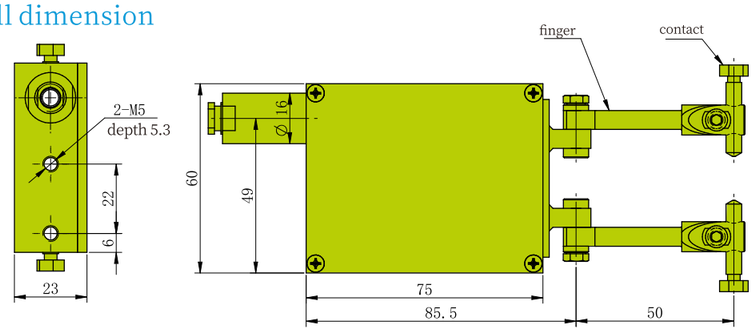
ZPMD OD gage unit

- Measuring range(mm):One side≥0.5 (finger length 50mm)
- Measuring diameter(mm):φ3~φ90(based on the extension rod)
- Linear range(μm):-100~+500
- Repeatability(μm):0.25μm/50t
- Measuring force(gf):150±15
- Cable length(m):4/6
- Optional units: extension rod,contact and so on.

Feature

- Small space structure, about 45% smaller than ZHD series on the body, saving space.
- Having no slide or friction parts,it works excellently for high-precision workpieces.
- The unique cross leaf spring fulcrum ensure the gage head as a high-precision measruing instruments and also provides it with high durability and riditity required for on-line gage.
- The modular construction of precision components makes the maintenance very easy.
- The enhanced fulcrum stiffness and lighter movable parts and ensure high reliable dynamic characteristics.

Overall dimension

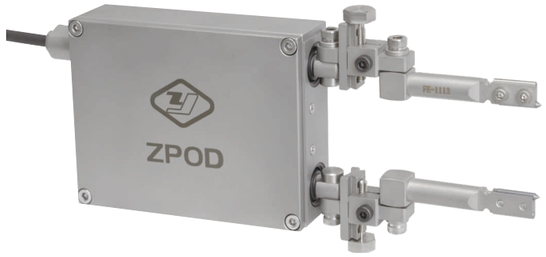


Application	Model	Finger model	Connecting plate	Extension rod	Gage range	Note
OD	ZPMD	FE-1101	M1X-25	FE-1130	Φ3~Φ8	use contact FE-1077
				-	Φ8~Φ24	
				FE-1129	Φ24~Φ46	
				FE-1130	Φ46~Φ68	
				FE-1131	Φ68~Φ90	

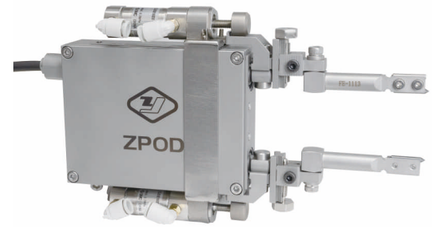
Gage unit	Finger model	Cylinder connecting plate	Hydro-cylinder mode	H	Gage range
ZPMD	FE-1101	DU-1071	ZHC-08D1	125(138)	Φ8~Φ60(Center hight 125) Φ3~Φ86(Center hight 138)
ZPMD	FE-1101	DU-1071C	ZHC-08D1	149	Φ3~Φ90
ZPMD	FE-1101	DU-1069	ZHC-08D1-P	95(105)	Φ3~Φ90
ZPMD	FE-1101	DU-1071	ZHC-08T-L	101(114)	Φ3~Φ80(Center hight 101) Φ3~Φ90(Center hight 114)
ZPMD	FE-1101	DU-1071C	ZHC-08T-L	125	Φ3~Φ90

Note: When measuring Φ3~Φ8 workpiece, it is necessary to equip contact (FE-1077) and extension rod(FE-1130).

ZPOD OD gage unit



- Measuring range(mm):1.5 (finger length 82mm)
- Measuring diameter(mm):φ3~φ140(based on the extension rod)
- Linear range(μm):-100~+400
- Repeatability(μm):0.25μm/50t
- Measuring force(gf):110~130
- Cable length(m):4/6
- Optional units: finger,contact,extension rod,adjusting unit and so on.

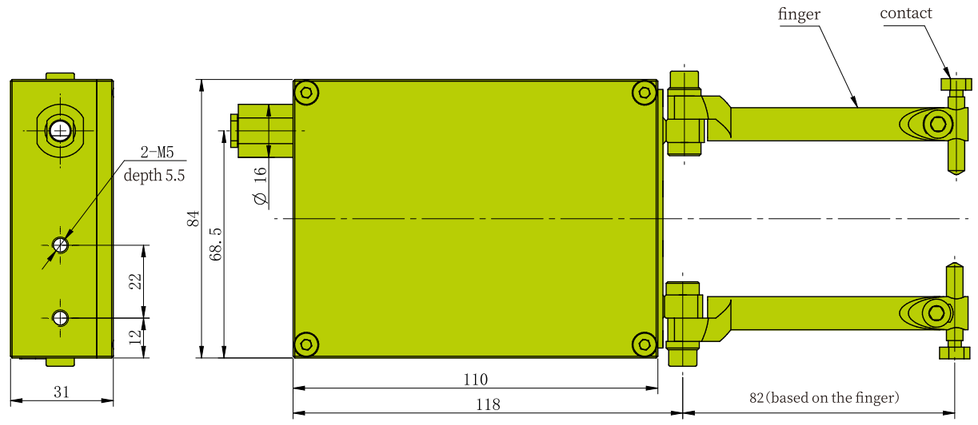


ZPOD Air retraction

Feature

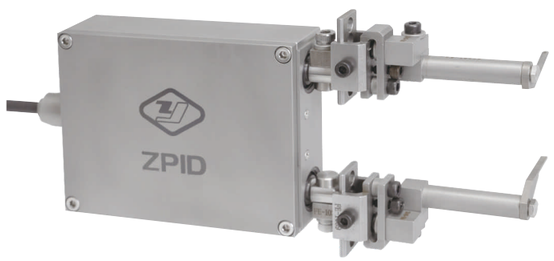
- The new lever mechanism, the unit structure is simplified and more reliable.
- The Simple structure and modular construction of precision components makes the maintenance very easy.
- The new structural elastomer, replacing the L-spring elastomer, ensure the high durability.
- The sensor is more stable,no slide or friction parts, make the measurement is more accurate.

Overall dimension



Application	Model	Workpiece	Retraction	Output	Retraction stroke
OD	ZPOD	Continuous	None	Dual output	-
OD	ZPOD	Intermittent	Air retraction	Dual output	1.2mm

ZPID ID gage unit

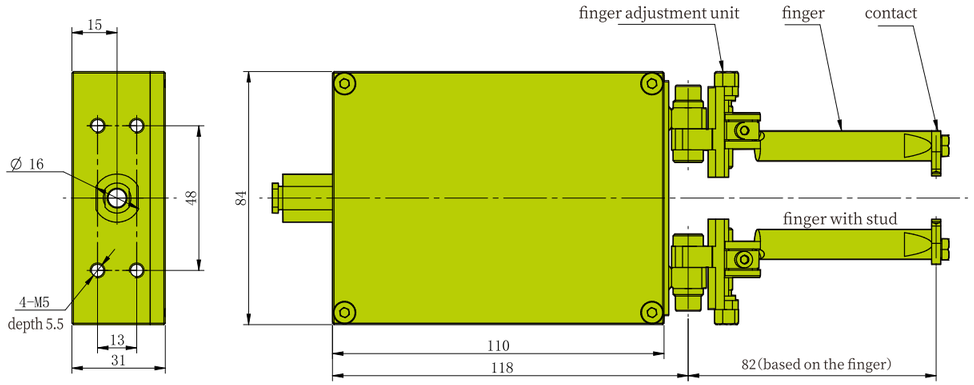


- Measuring range(mm):One side≥0.5 (finger length 82mm)
- Measuring diameter(mm):φ10~φ140(based on the extension rod)
- Linear range(μm):-100~+400
- Repeatability(μm):0.25μm/50t
- Measuring force(gf):180~200
- Cable length(m):4/6
- Optional units: finger,contact,extension rod,adjusting unit and so on.

Feature

- The sensor is more stable and the measurement is more accurate.
- The new structural elastomer, replacing the L-spring elastomer, ensure the high durability.
- As a tensioning mechanism, the winding coil replaces the electromagnet, simplifies the structure, and is more reliable.
- The electric retraction voltage is from 110V to 24V, no separate power supply, which is safer and more convenient to use.

Overall dimension



The size of the round hole in the middle of the connecting plate ≥φ18

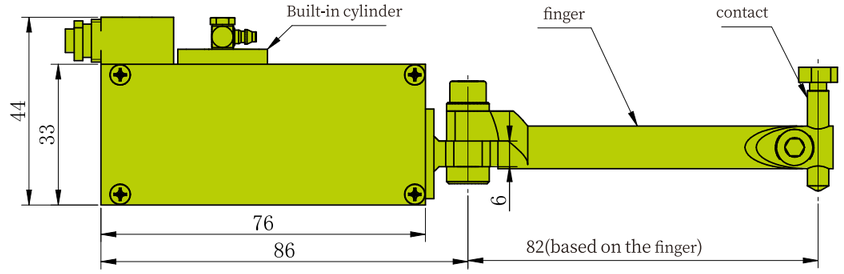
Application	Model	Workpiece	Retraction	Output	Note
ID with retraction	ZPID	Continuous	Elec.	Dual output	

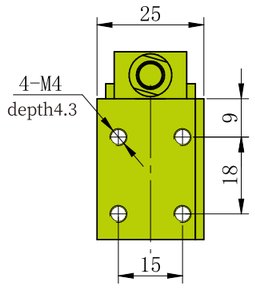
ZPSG Single point gage unit

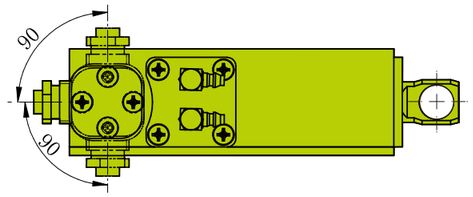
Feature

- High repetition accuracy,0.25μm/50t.
- It can be used to measure the OD,ID and width of continuous/discontinuous surfaces.
- The tensioning mechanism is double air cylinder type, it is miniaturized, convenient and reliable to use.
- The cross spring fulcrum, no sliding wear parts, to achieve high precision.
- The air retraction mechanism is placed inside the device, the body of the unit is reduced, which is convenient for combination use and installation of small space structure.

Overall dimension







The cable can be adjusted in three directions

Gage unit	Finger length	Measuring force(Up)	Pre-stroke	Retraction stroke	Retraction	Air pressure
ZPSG	82mm	90gf	-730~-810μm	3.5mm	Built-in air	0.2-0.3MPa

ZPHF Back inserted gage unit

Function

The ZPHF series is a high-precision back inserted gage unit used for the measurement of inner holes of bearing-type parts during machining. The ZPHF-32 and ZPHF-25 devices have different external dimensions to accommodate different spindle hole diameters on machine tools. Both devices can operate in static and reciprocating modes and are compatible with the ZPLUS G1 control instrument.

Applications

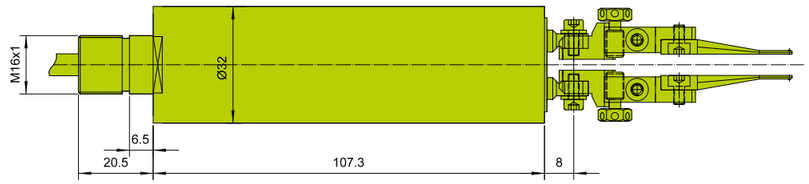
	ZPHF-32	ZPHF-25
Pre-stroke	-60~-90μm	-60~-90μm
Measuring force	90~120gf	90~120gf
Repeatability	0.5 μm/25t	0.5μm/25t
Measuring range	φ3~φ22	φ2.5~φ21
Cable length	3m+0.5m transition line (standard configuration)	
Optional configuration	Rod components、gauges、others	

- The space structure of the two devices is different, and the ZPHF-25 space structure is small, which is reduced by about 53% compared with ZPHF-32, and is more suitable for installation and use of small space structure. At the same time, smaller measurements can be achieved.
- No wearing parts, no sliding wear parts in the internal mechanism of the unit, so high durability is guaranteed.
- Due to the use of high-precision sensors and unique elastomers, high rigidity and precision have been achieved.

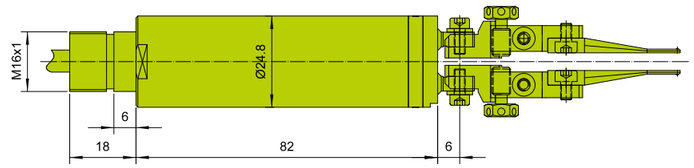
Application	Model	Adjustment unit	Connecting sleeve	Note
Small hole ID	ZPHF-25/32	SH-Z4	RF-04A/11	

ZPHF Back inserted gage unit

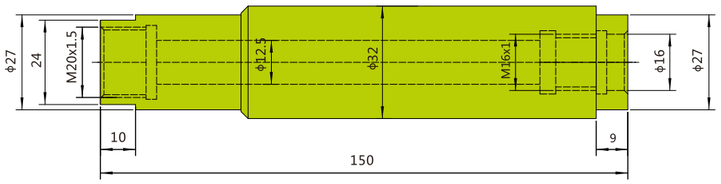
Overall dimension



ZPHF-32



ZPHF-25



Schematic diagram of device connection sleeve

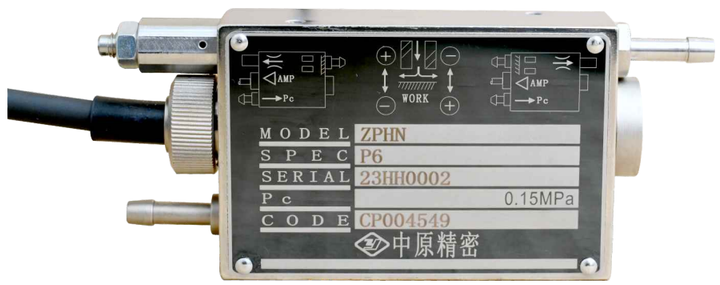
Measuring range

Type	ZPHF-32	ZPHF-25
Contact A(SH-1025)	-	φ2.5~φ5
Contact B(SH-1033)	φ3~φ6.5	φ3~φ5.5
Contact C(SH-1021N1/1021N1A)	φ4~φ10	φ3~φ9
Contact D(SH-1021N2/1021N2A)	φ10~φ16	φ9~φ15
Contact E(SH-1021N3)	φ16~φ22	φ15~φ21

ZPHN Air-elec inverter unit

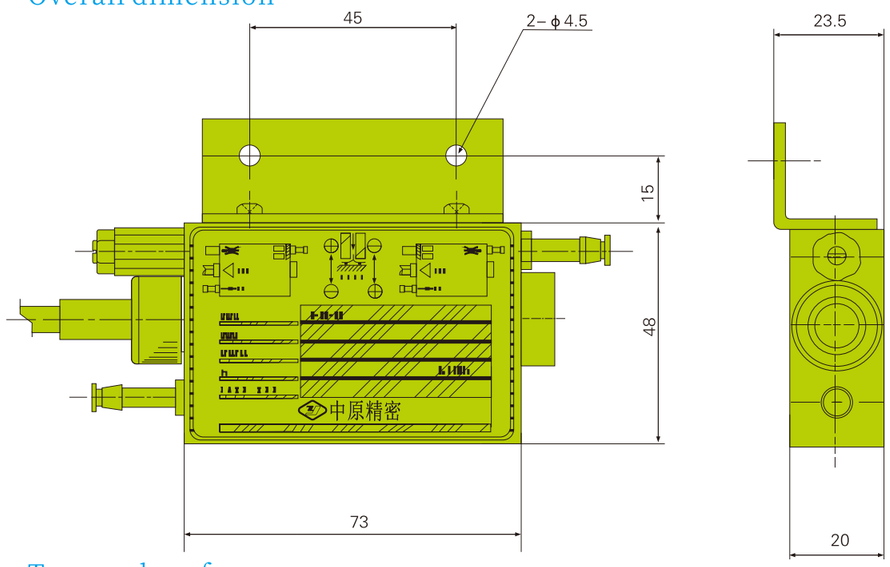
Function

The Air-elec. inverter unit is the unit that using a nozzle to compress the air and exchange the small size changing to the electronic signal. The pneumatic gage unit is easily to operate and durable and the electronic gage unit can react fast, and they can output different kinds of signals. This unit can be connected to ZPLUS G1,widely used in honing and post-process gaging.



ZPHN

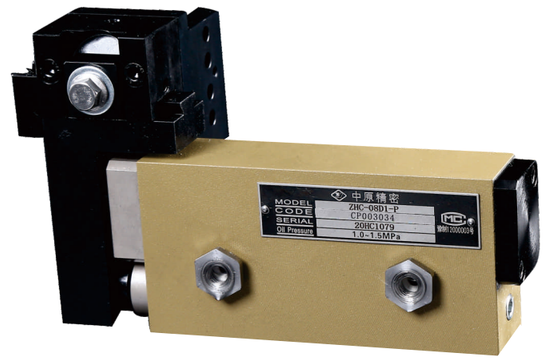
Overall dimension



Type and performance

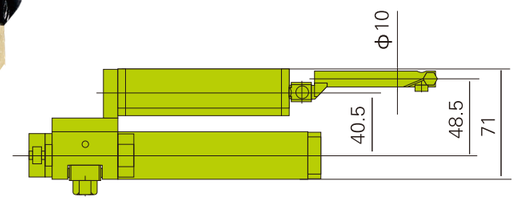
Type	Linear range	Linear error	Stability	Repeatability
ZPHN	100μm	±0.7	1.0 μm/4h	0.5 μm

Drive unit+OD gage unit external view

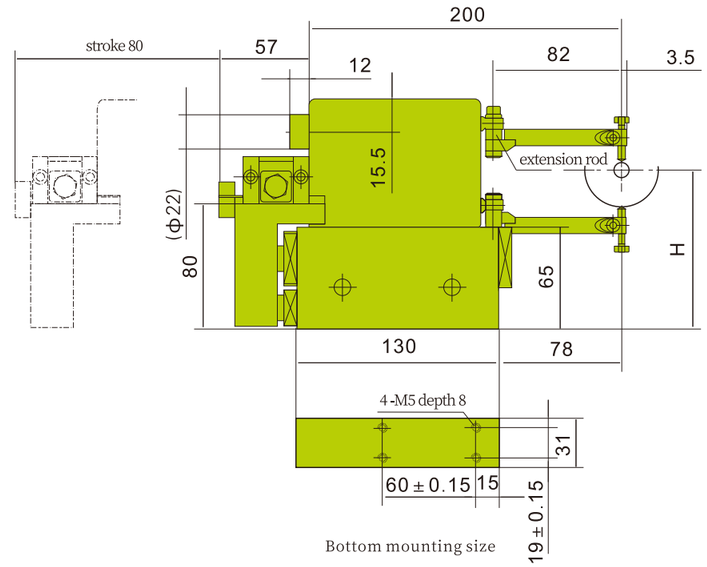


Feature and application

Connect to OD gage unit, hydraulic pressure is supplied by the hydraulic system.



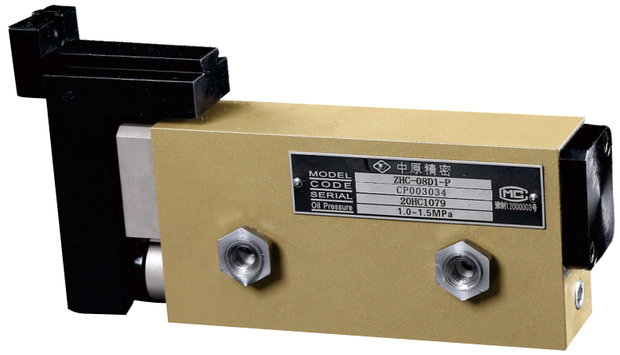
The assemblying drawing of OD gaging unit and side hung hydro-cylinder



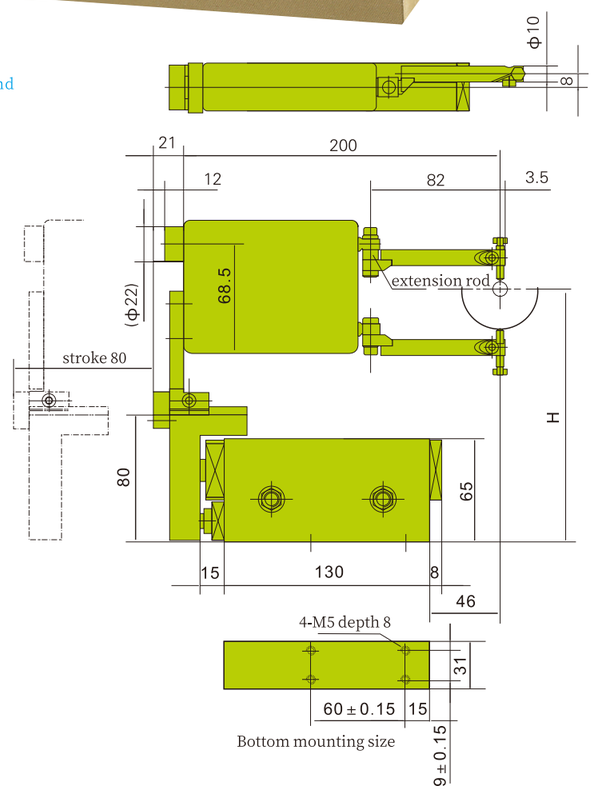
Bottom mounting size

Gage unit	Finger model	Connecting plate	Hydro-cylinder model	H
ZHD-1072BC	FE-1018/1019	1069	ZHC-08D1-P	95(105)
ZHD-1072BC	FE-1018/1019	1087	ZHC-08D1-P	70(80)
ZHD-1072BC	FE-1018/1019	1090	ZHC-08D1-P	115(125)
ZHD-1072BC	FE-1018/1019	1096	ZHC-08D1-P	130(140)

Drive unit+OD gage unit external view

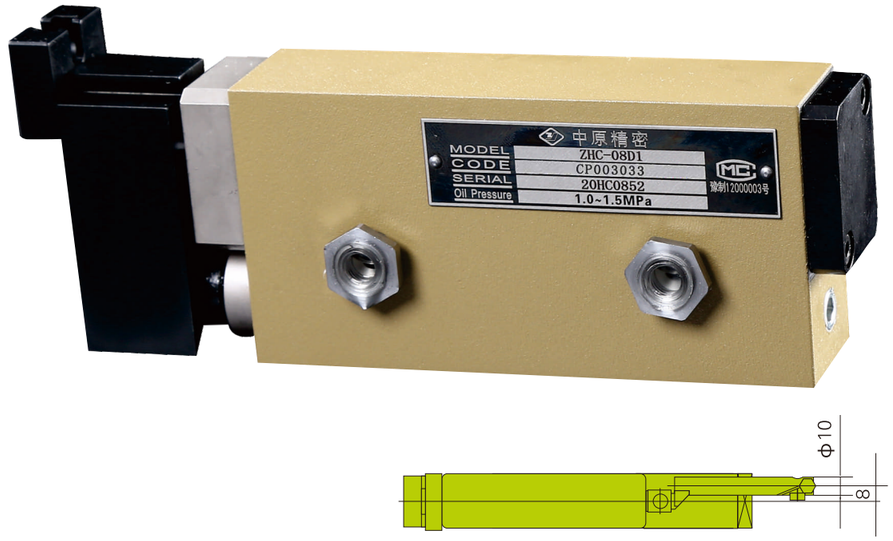


The external view of OD gaging unit and side hung hydro-cylinder

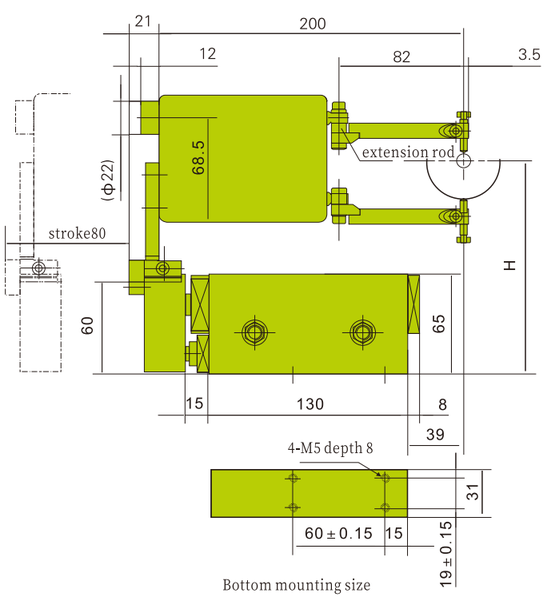


Gage unit	Finger model	Connecting plate	Hydro-cylinder model	H	Gage range
ZHD-1072BC	FE-1018/1019	1071	ZHC-08D1-P	145(158)	φ8-φ94(center height 145) φ8-φ120(center height 158)
ZHD-1072BC	FE-1018/1019	1071C	ZHC-08D1-P	169	φ8-φ138

Drive unit+OD gage unit external view



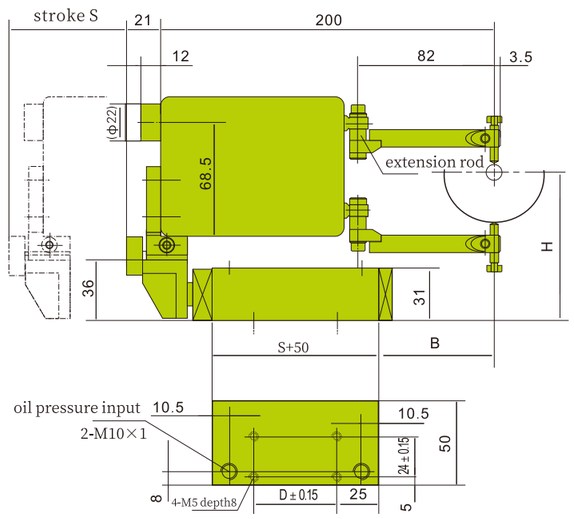
The external view of OD gaging unit and vertical hydro-cylinder



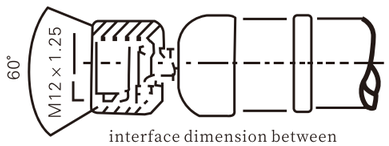
Gage unit	Finger model	Connecting plate	Hydro-cylinder model	H	Gage range
ZHD-1072BC	FE-1018/1019	1071	ZHC-08D1	125(138)	φ8-φ 55(center height 125) φ8-φ 80(center height 138)
ZHD-1072BC	FE-1018/1019	1071C	ZHC-08D1	149	φ8-φ102

Drive unit+OD gage unit external view

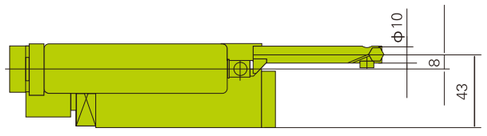
The external view of OD gaging unit and horizontal hydro-cylinder



Bottom mounting size



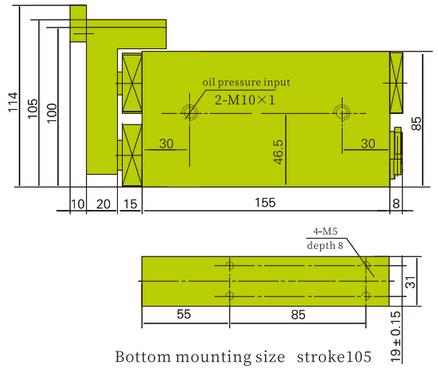
interface dimension between
oil pipe and machine tool
6.3×2000 YT36-1



Gage unit	Finger model	Connecting plate	Hydro-cylinder model	S	H	B	D	Gage range
ZHD-1072BC	FE-1018/1019	1071	ZHC-05T-L	50	101(114)	69	50	φ8-φ80(center height 101) φ 8-φ 105(center height 114)
ZHD-1072BC	FE-1018/1019	1071	ZHC-08T-L	80	101(114)	39	80	
ZHD-1072BC	FE-1018/1019	1071C	ZHC-05T-L	50	125	69	50	φ8-φ125
ZHD-1072BC	FE-1018/1019	1071C	ZHC-08T-L	80	125	39	80	
ZHD-1072BC	FE-1018/1019	1073	ZHC-05T-L	50	92	69	50	φ8-φ64
ZHD-1072BC	FE-1018/1019	1073	ZHC-08T-L	80	92	39	80	

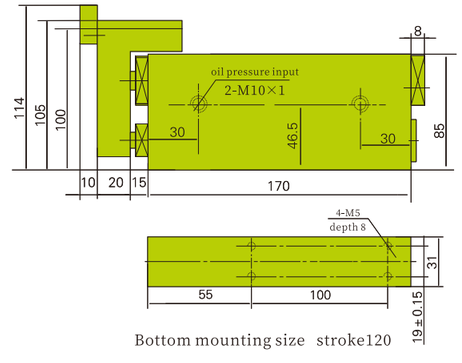
Drive unit of large stroke external view

ZHC-105A-H



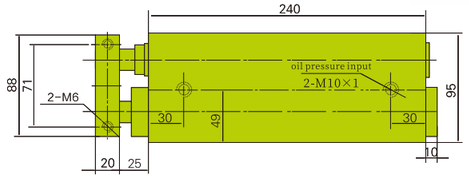
Bottom mounting size stroke105

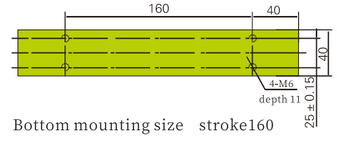
ZHC-120



Bottom mounting size stroke120

ZHC-16B





Bottom mounting size stroke160

ZPLUS B Control Unit

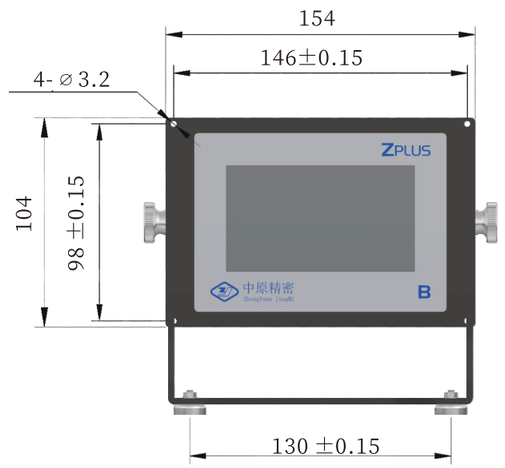
Summary

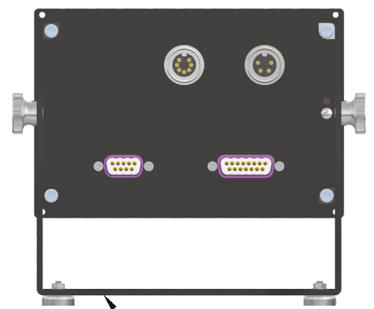
The ZPLUS B controller unit is based on latest digital signal processing system, using the latest control technology to an instrument for on-line monitoring and control of gringding machines grinding wheel balance.

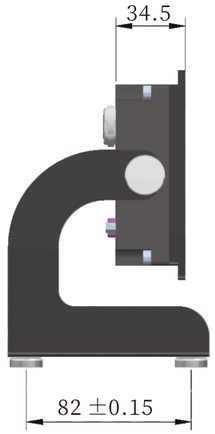
Features	Technical parameter	Performance	Application range
○ Touch screen operation display	○I/O signal ▮ 24 VDC optical ▮ Input signal current 5mA ▮ Output signal curren 100mA	○ Power supply 24 VDC (-15% / +20%) 5% ripple voltage	○Balance of grinding wheel
○ Freestanding or embedded installation			
○ Friendly man-machine interface		○ Power consumption 8W	
○ Easy and fast operation	○4.3" touch screen		
○ Exquisite appearance and small size, saving installation space			
○ Industrial design to adapt to harsh environment			

ZPLUS B Control Unit

Installation size







Adjustable screen orientation

Embedded

Slot size:146×91
Installation hole distance: 146×98

Balancer head PHY-1A/2A

Flange balancing head PHY-1A/2A

The flange balancing head is easy to install on the grinding wheel and is the ideal grinding machine on-line grinding wheel balancing device. Balance capacity 400gcm-6000gcm.

Flange balancing head with retractable contact

The contacts that transmit power to the balancing head are usually open and closed only during the balancing cycle, thus achieving a desired service life.

PHY-1A-FL2000

PHY-2A-FL6000

Vibration sensor

The main function overview

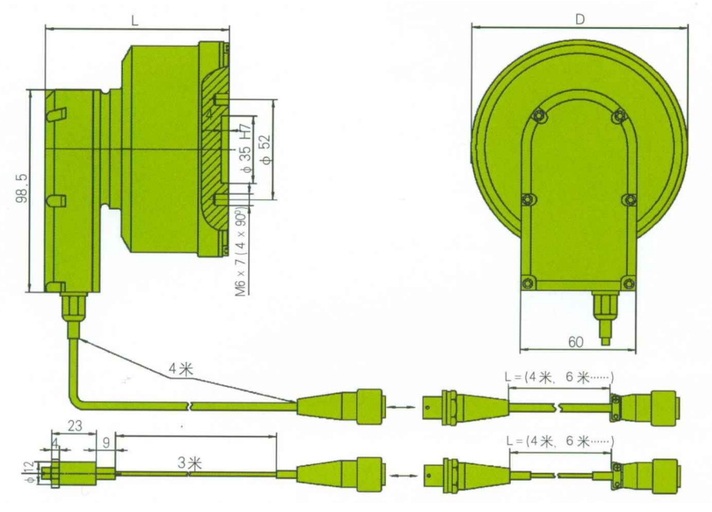
- Auto-balancing: After establishing connection, the controller will automatically balancethe grinding wheel according to the pre-set requirement and control the machine tool'smovement according to the electric signal.
- Manual balancing: The balancing system and the electric control of the machine tool system are respectively in separated systems and there is no need to establish any electrical connections.
- One-button manual balancing: In the state of manual operation, when press the button.the main control chip will automatically finish balancing acts. Also the operator can choose to press control keys of each electrical machine to do balancing.
- Balancing heads' speed protection(factory setting): if the grinding wheel's speed may go beyond the range of the maximum speed the balancing heads allow, set the maximum andwhen the grinding wheel's speed is out of the set value, warning message will be shown warning signal will be sent to the operator and the machine tool's movement will be controlled when the electric connection between balancing heads and machine tool had been established.Setting range:300~8000r/min.
- Programmable filteration:On special occasions happened in actual debugging, set the fileriationto shield the needless amplitude or vibration crest.
- Signa linput and output: Used to connect with machine tools.The output form can be switched.

Balancer head PHY-1A/2A

Balancing head control unit

ZPLUS B

Size ang length of connecting lines of balancing head



List for balancing heads types

Model	balancing capacity(gcm)	Rotation speed limits(rpm)	L	φD
FL400	400	4000	108	112
FL600	600	4000	108	112
FL900	900	4000	108	112
FL1300	1300	4000	108	112
FL2000	2000	3000	108	112
FL3000	3000	3000	108.5	132
FL4500	4500	2000	108.5	132
FL6000	6000	1800	108.5	132

ZPLUS A Control Unit

Summary

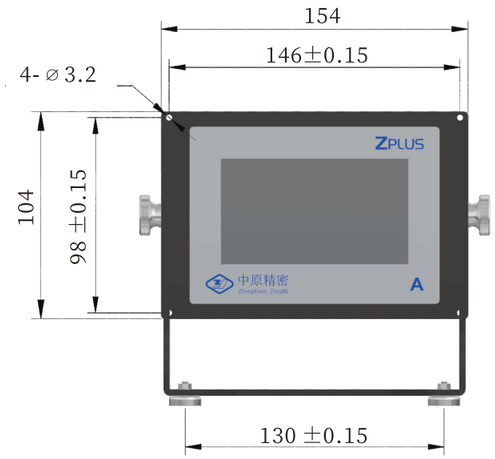
The ZPLUS A controller is an instrument designed using advanced control technology based on a new generation digital signal processing system, which utilizes signals received by acoustic emission sensors (piezoelectric sensors) for online monitoring and control of grinding machine processing status.

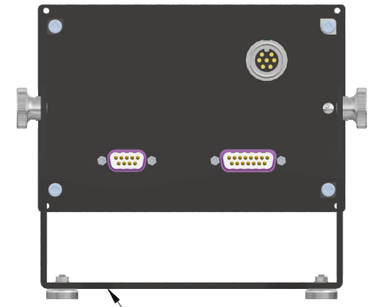
Acoustic emission sensor

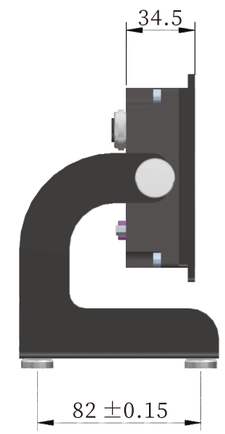
Features	Technical parameter	Performance	Application range
○ Touch screen operation display	○Number of sensors: 1	○ Power supply 24 VDC (-15% / +20%) 5% ripple voltage	○Eliminating gaps
○ Freestanding or embedded installation	○Number of programming: 2		○Avoid crash
○ Friendly man-machine interface	○I/O signal ▮24 VDC optical ▮Input signal current 5mA ▮Output signal curren 100mA	○ Power consumption 8W	○Inspection of grinding wheel position
○ Easy and fast operation			○Continuity inspection during grinding wheel dressing
○ Exquisite appearance and small size, saving installation space			
○ Industrial design to adapt to harsh environment	○4.3" touch screen		

ZPLUS A Control Unit

Installation size







Adjustable screen orientation

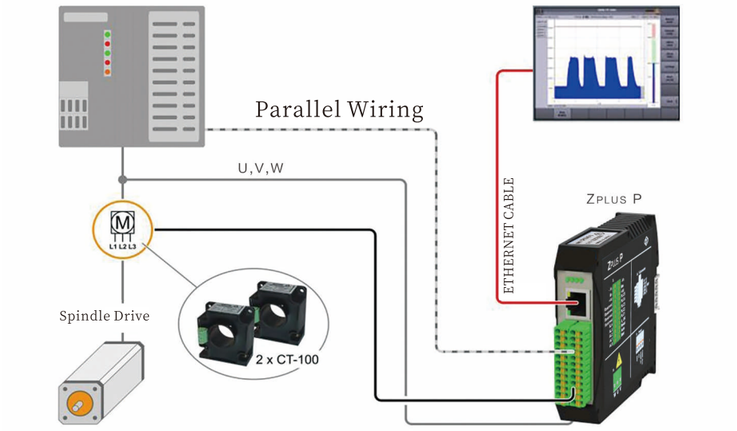
Embedded

Slot size:146×91
Installation hole distance: 146×98

Summary

ZPLUS P is a tool monitoring and measuring instrument used to measure effective power. It can monitor the effective power consumed by the spindle during cutting and detect the following process abnormalities:

- ○ Eliminating gaps/ Anti-collision
- ○ Broken knife
- ○ Lack of knife
- ○ Overload
- ○ Tool wear



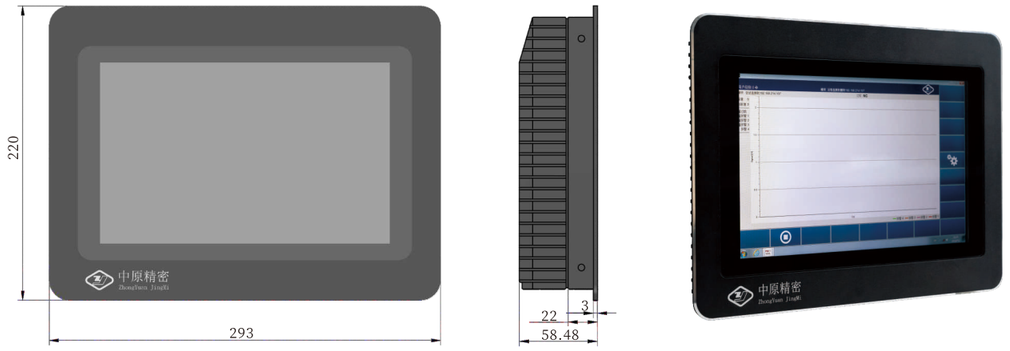
Zplus P connection diagram

Properties	Due to its hardware I/O interface in dependent of the NC type	Discrete wiring of Zplus P and PLC
	Managing 3 different processes	Montoring strategy staticBenefit
Benefit	Acceleration of production thanks to continuous process information	Process control (machine, tool, workpiece and documentation)
	Process comparison function for process analysis	Reduction of idle times

ZPLUS P Display (optional)

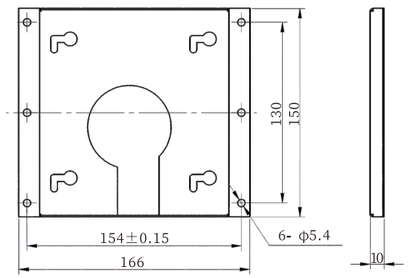
Display specification

The display is based on the 10.1 "all-in-one industrial display and can be operated by touch screen. After connecting with the monitoring module, it is easy to debug and intuitively check its working status.



Installation mode

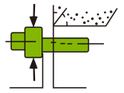
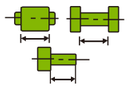
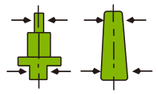
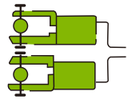
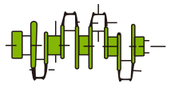
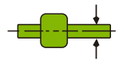
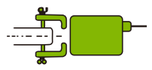
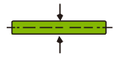
Scaffolding installation. The monitor is securely attached via a wall mount (the mount is supplied).



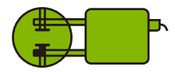
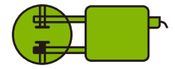
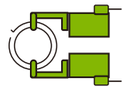
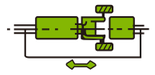
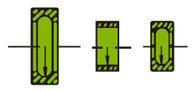
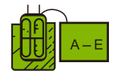
Bracket mounting hole size 6-φ5.4

Embedded installation. By opening holes in place, the display is embedded and secured by four clasps on the back.
Slot size:275mmx204mm

Examples of matches between measuring device and the control unit

NO.	Maching method	Workpiece profile and measuring item	Applicable gage head		Applicable Control Unit
1	Cylindrical grinding machine			Continuous OD ZHD-1070BC ZHD-1200BC ZHD-1090BC ZPMD ZPOD	Z400 Z600 ZPLUS G1
2				Spline shaft ZHD-1110BC ZHD-1190BC ZPOD	Z400 Z600 ZPLUS G1
3				Continuous OD +end face positioning ZHD-1070BC ZHD-173FC ZPSG+ZPMD	Z600 ZPLUS G2
4				Width measurement ZHD-1070BC ZHD-1140BC ZHS-173HA×2 ZPSG	Z600 ZPLUS G1
5				Conbined measurement of OD ZHD-1070BC×2 ZPMD×2	Z600 ZPLUS G2
6	Crankshaft ginding machine			Crank shaft measurement QZ-LN3	Z400 Z600
7	Centerless grinding machine			Cut in grinding ZHD-1120BC ZHD-1160BC	Z400 Z600
8				Through grinding ZHS-173FC-D	Z400 Z600
9	Internal grinding machine			Plug in front ZHD-1130BC ZPID	Z600 ZPLUS G1

Examples of matches between measuring device and the control unit

NO.	Maching method	Workpiece profile and measuring item	Applicable gage head		Applicable Control Unit
10	Internal circular grinding machine			Continuous ID ZHD-1140BC ZHD-1180BC ZPID	Z400 Z600 ZPLUS G1
11				Interruption ID ZHD-1200BC ZPID	Z600 ZPLUS G1
12				Deep groove ZHS-173x2 ZHS-178x2 ZPSGx2	Z400 Z600 ZPLUS G1
13				Back insertion ZHF-32/25 ZPHF-32/25	Z500H ZPLUS G1
14				Single-point type ZHS-173-D	Z400 Z600
15	Honing machine			Penumatic non-rotating type ZHS-AH ZPHN	Z400 Z600 ZPLUS G1
16				Penumatic rotating type ZHS-AH ZPHN	Z400 Z600 ZPLUS G1