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公司简介 Company profile

深圳市银和科技有限公司是一家具有创新和高精度测量和测试技术的专精企业。我们以最高的质量标准开发和制造，以提高客户的生产力为目标，为客户提供解决方案。

Silvercnc is a renowned manufacturer of innovative and high-precision measuring and testing technology. We develop and manufacture solutions to the highest quality standards and the aim of boosting our customers productivity.

机床测量系统 Machine tool probing system

银和科技提供整套机床在线测量方案。
无论您的机器、应用或困难，银和科技机床测量系统将改变您的生产工艺，提高您的盈利能力。

Silvercnc provide total solution of on-line measuring for machine tools. Whatever your machine, application or difficulty, there is a Silvercnc probing system that will transform your manufacturing process and increase your profitability.

机床测量产品 Product

银和科技具有完整的机床测量产品线，以全球品牌产品为标杆，学习使用消化，研发出可替换产品，通过不断实践，优化，迭代，逐步完善了机床测量产品，并大规模应用。性能已接近国际知名品牌，价格有较大优势，我们产品对标的品牌包括：

机床测头对标英国Renishaw
接触式单向对刀仪对标日本Metrol
光电式对刀仪对标德国Blum-Novotest
激光对刀仪对标德国Heidenhain

我们的使命 Our Mission

为客户提供品质最好价格最便宜的产品，为客户解决问题，为客户降低成本

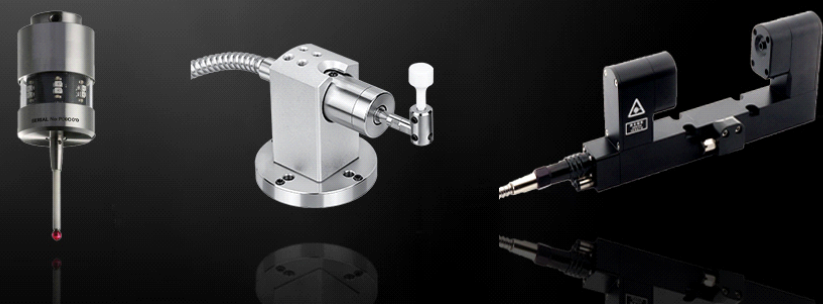
Our Misslon:We hope to help customers solve problems, help our customers find the most appropriate products, and help our customers reduce cost.

我们的价值观 Our Values

诚实守信、互利共赢,我们认为诚实守信非常重要，诚信才能保持信任。我们也注重互利共赢，只有互利共赢，生意才会长久。

Our Values:Honesty and win winWe believe that honesty is very important.Honesty can make us trust each other more. We also pay attention to win-win, Only win-win can make our relationship more lasting.

Professional Measuring Solutions Provider On Machine Tools
Raise Production Quality And Processing Efficiency
Super-High Cost Performance



目录 Content

工件检测解决方案 Workpiece measurement solutions



红外线传输 无线测头SOMP40
Infraed transmission wireless probe SOMP40



无线电传输 无线测头SRMP40
Radio wave transmission wireless probe SRMP40



有线传输测头 SLP25
Wired probe SLP25



接触式单向对刀仪-检测刀具长度及断刀
Contact tool tester - tool length and tool breaking detection



接触式五向对刀仪-检测刀长,断刀及直径
Contact tool tester - tool length and tool breaking detection



光电式单项对刀仪-检测刀具长度,无磨损
Photoelectric tool setter- measuring tool length, no wear



非接触式激光对刀仪-检测刀长,直径,轮廓
Non contact laser tool - measuring tool length, diameter and contour

刀具检测解决方案 Toll measurement solution

机床测头 Machine tools probe

人工参与制造过程的程度越高，出错的风险就越高。使用探头进行的自动过程内测量可以帮助消除风险。银和科技光学探头系统可以促进以下措施，以加强对您的生产的管理，从而增加您的利润。

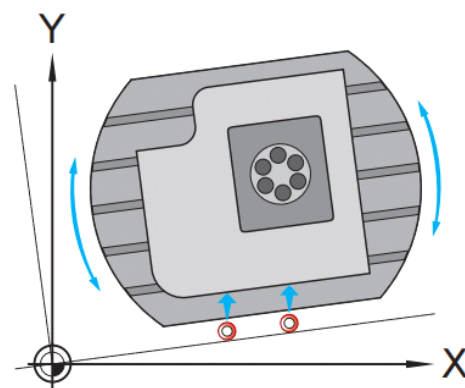
The higher the degree of human involvement in the manufacturing process, the higher the risk for error. Automated in-process measurement using touch probes can help eliminate the risk. The Silvercnc optical probe system can facilitate the following measures for enhanced management of your production leading to an increase in your profits.



使用机床测头的好处 Benefits use of the probe

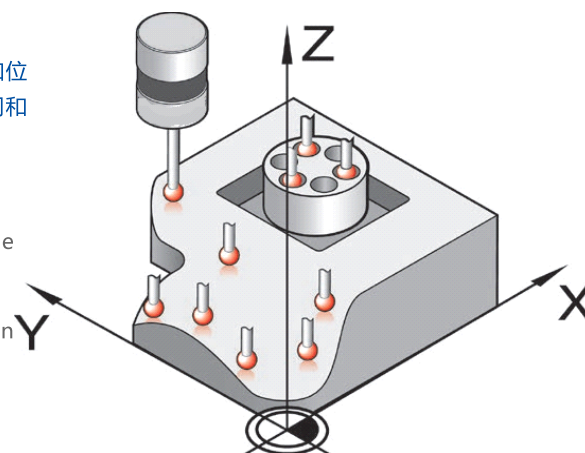
1、在产品加工之前设定工件：直接对刀具或工件的尺寸及位置进行测量、分中、寻边，自动修正坐标系并根据测量结果自动修正工件或刀具的偏置量。
可快捷找正夹具位置，减少手工调整时间，消除昂贵的夹具和手动设置错误，提高产品加工质量和减少废料。

Process setting: Reduced machine downtime, Automatic fixture, job alignment and rotary axis set-up, Manual setting errors eliminated.



2、用于在线测量产品的特征尺寸及首件检测，监控工件的尺寸和位置，自动修正偏置量。可提高工艺能力和可追溯性，减少非生产时间和报废，提高生产率。

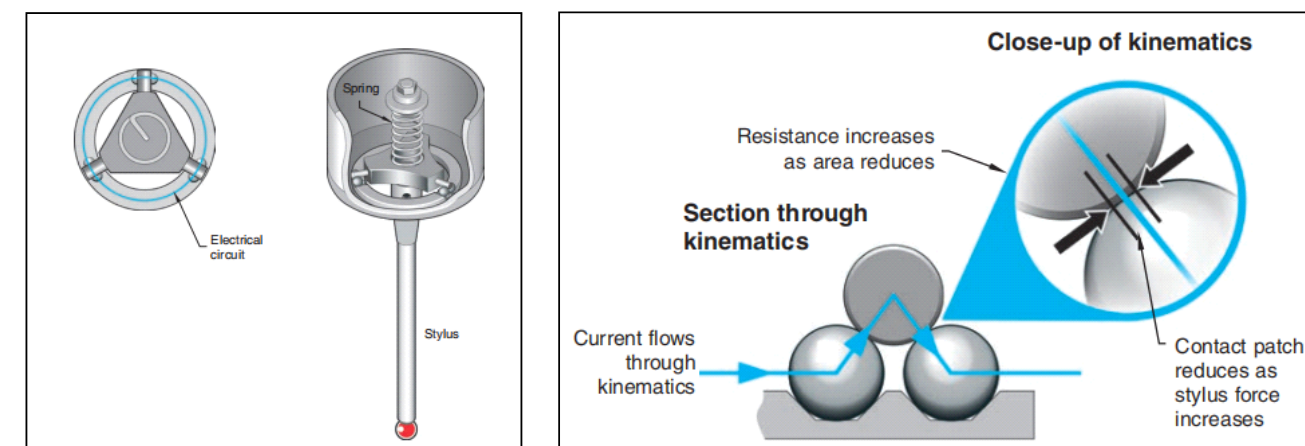
1. In-cycle part measurement with automatic offset correction
2. Increased confidence in unmanned machining
3. Adaptive machining, providing process feedback to minimise variation
4. First-off inspection with automatic offset update
5. Reduced machine downtime awaiting first-off inspection results.



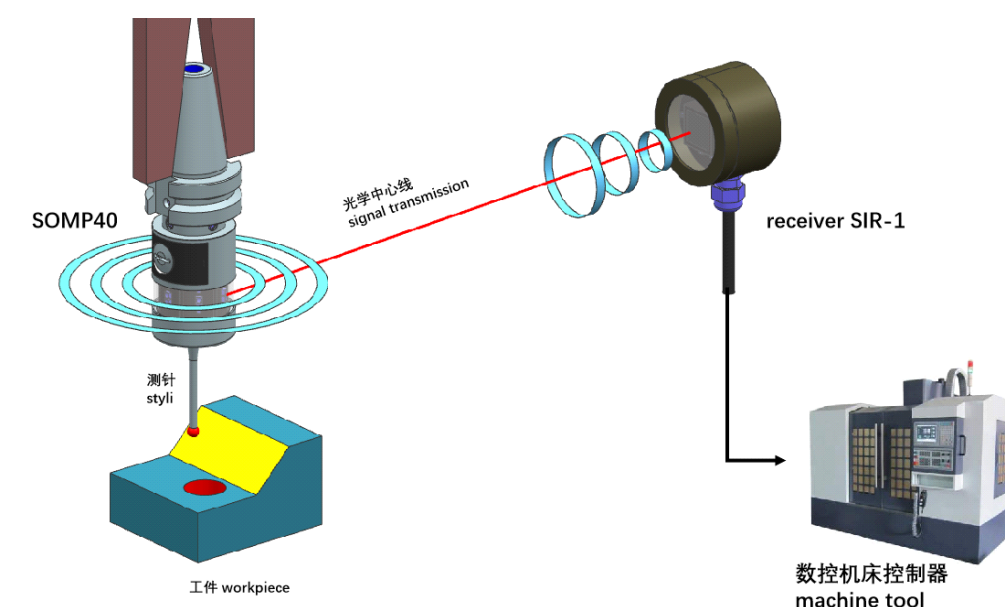
测头的工作原理 Basic of silvercnc touch probe

测头原理见下图：在测头内部有三根等距杆安装在六个碳化钨球上，提供六个接触点。
当测针接触工件前，等距杆和球处理接触状态，在弹簧的作用力下，通过的球和杆之间的电流没有变化。当测针接触到工件时，通过触笔的力将球和棒分开，接触块之间的电阻增大，电流发生变化。当达到一个定义的阈值时，将触发探针发出触发信号。
可重复的电触发和机械复位机构是这一过程的关键，也是可靠测量的基础。

Principle of the probe is the same as renishaw brand, Three equally spaced rods rest on six tungsten carbide balls to provide six points of contact.
Under load of the spring, contact patches are created between the balls and the rods through which the electrical current flows. Upon making contact with (touching) a workpiece, the force translated through the stylus moves the balls and rods apart thus reducing the size of the contact patches and increasing their electrical resistance.
When a defined threshold is reached the probe is triggered.
Repeatable electrical triggering and mechanical reseating of the mechanism are critical to this process and fundamental to reliable metrology.



典型的测头系统 Typical touch probe measurement system

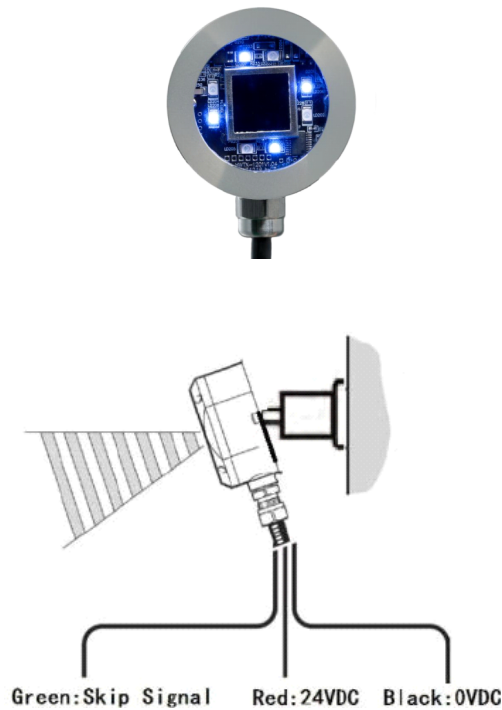


测头接收器 Probe receiver

- 测头接收器是本公司全新设计研发的测量产品，具有以下优点：
- 1. 结构紧凑，适用性广。接收器直径仅 有52MM，产品安装更加方便。
 - 2. 采用万向调节机构，方便对准测头方向，比传统机构更加灵活。
 - 3. 采用强力磁铁安装于机床金属件，免去拆装螺丝的麻烦。
 - 4. 采用正反电源保护设计，避免因接线错误导致的问题。
 - 5. 采用4芯安装方式，大大简化安装难度和风险。

The probe receiver is a newly designed and developed product, which has the following advantages:

- 1. Compact structure and wide applicability. The diameter of the receiver is only 52mm, installation more convenient.
- 2. The universal adjustment mechanism is adopted to facilitate the alignment of the probe direction, which is more flexible than the traditional mechanism.
- 3. The strong magnet is installed on the metal parts of the machine tool to avoid the trouble of disassembly and assembly of screws.
- 4. Adopt positive and negative power protection design to avoid problems caused by wrong wiring.
- 5. The 4-core installation mode is adopted to simple the installation difficulty and risk greatly .



测头刀柄 tool holder of probe

测头通过刀柄被直接连接到机床主轴中， 当不执行测量程序时可方便的储存在刀库里。各种型号的刀柄与测头一起交付。这里列出了一个完整的选择，非标刀柄可根据要求提供。

常见的刀柄包括：

The probe is directly connected to the machine tool spindle through the tool holder. When the measurement program is not executed, it can be conveniently stored in the tool magazine. Various types of tool handles are delivered with the probe. A complete selection is listed here, non-standard tool holder can be provided on request.Common tool holder include:

ISO10,ISO20
BT30,BT40,BT50
HSK-E25,HSK-E32,HSK-E40,HSK-A40,HSK-A50.



测针 Styli

银和科技提供各种球头直径和触针长度的探针。所有探针均通过M4螺纹连接至触头。从直径为4mm的球头开始，额定断点保护触摸探针免受操作员错误造成的机械损坏。标准测针为2*50红宝石针，随探头一起交付，其他型号测针，请查看详细列表。

Silvercnc offers probe styli with various ball-tip diameters and stylus lengths. All styli are attached to the touch probes with an M4 thread. Starting from a ball-tip diameter of 4 mm, a rated breaking point protects the touch probe from mechanical damage caused by operator error. The following styli are included in delivery with the TS touch probes.



硬件与宏程序 hardware and marco program

硬件 hardware

一套标准的测头包含如下附件,在安装调试后不用额外购买其它配件就可以正常使用，清单如下：

A standard touch probe contains the following accessories, which can be used after installation and debugging without the need to purchase additional accessories, list:

名称/Model	数量/Quantity	规格/Specification
测头/probe	1 piece	standard
接收器/reciver	1 piece	standard
测针/styli	1 piece	stankared is $\phi 2 * 50$ flat stylus
电池/battery	2 piece	SaFT 14250
刀柄/tool holder	1 piece	BT30 and Bt40
拉钉pull stud	1 piece	match with tool holder
磁性安装座/Magnetic base	1 piece	standard
扳手/spanner	1 piece	standard

宏程序 marco program

我们的程序基本上与renishaw通用，测量尺寸不需要额外的软件，只需要提供需要的宏程序模板。如果你有使用Renishaw, blum和marposs测头的经验，你也可以直接使用他们的程序，只需要改变几个参数。测头可成功安装的数控控制系统有:三菱、FANUC、兄弟、西门子、heidenhain、FAG、Haas、Mazak、牧野、DMG、斗山等。

our programs are basically universal with renishaw ,to measure 2D dimensions, no additional software is required, only marco needed

Macro program templates can be provided. If have experience in using Renishaw , blum and marposs probes, you can also use their programs directly. Because the , just need to change a few parameters.

Many kinds of CNC controler system can installed successfully include: Mitsubishi, FANUC, brothers, Siemens, heidenhain, FAG, Haas, Mazak, Makino, DMG, Doosan and so on

优势 advantages

完美的机械结构设计 Perfect mechanical structure design

银和科技测头头采用了成熟的技术-运动电阻原理，可以稳定的工作很长时间
Silvercnc touch probe use a proven technology -kinematic resistive principle that can stably operate for long time.

稳定的信号传输 Reliable signal transmission

银和科技测头采用优化后的光通信技术，确保信号传输稳定，响应速度快，且不丢失信号。
Silvercnc use coded signals optimized optical communication technology, to sure that the signal transmission is stable, response speed fast, and don't lose signals.

电池寿命长 Long battery life

探头采用多阈值功耗控制技术，大大降低了产品功耗，并通过优化芯片设计和电路设计，进一步提高了电池寿命。
The probe adopts the multi-threshold power consumption control technology, which greatly reduces the product power consumption, and by optimizing the chip design and circuit design, improves the battery life further.

CNC探头
CNC Probes-Dop40

优势advantages

- 双通道，远程通道切换，行业第一
Optical 2-channel, remote channel switching, industry first
- 低功耗，电池寿命1年以上，行业领先<1/100000丢失信号的概率
Low power consumption with battery life over 1 year , leading the industry <1/100000 lost signal probability
- Ip68保护水平
IP68 protection level



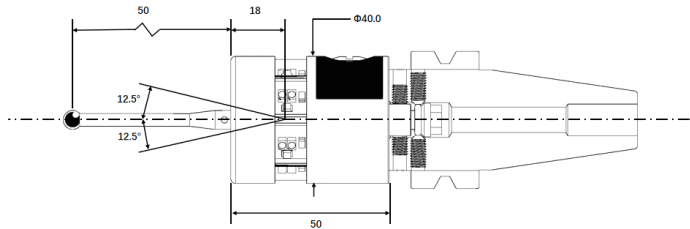
参数 Parameter

Model	SOMP40		SRMP40	
重复定位精度（使用50mm标准长度以600mm/MIN速度测试Unidirectional repeatability Unidirectional repeatabilityUse standard 50mm probe at 600mm/min speed	1um (2 σ)		1um (2 σ)	
探测方向 Sense directions	± X, ± Y, +Z		± X, ± Y, +Z	
触发力 Stylus trigger forceUse standard 50mm probe	XY plane0.4 – 0.8N	Z direction4.0N	XY plane0.4 – 0.8N	Z direction4.0N
触发行程保护 Trigger protection trip	XY plane+/-15°	Z direction6.35mm	XY plane+/-15°	Z direction6.35mm
信号传输方法 Signal transmission method	光学传输 Optical transmission		无线电传输 Radio transmission	
信号范围 Operating range	5m		15m	
触发寿命 Trigger life	>10 Million times		>10 Million times	
触发角度 Transmission angle	沿着探测轴360° 360 ° along the probe axis		沿着探测轴360° 360 ° along the probe axis	
触发方式 Transmission on/off style	智能开关 smart switch		智能开关 smart switch	
重量 Weight without shank (including batteries)	280g		280g	
电池类型 type of battery	2个锂电池14250 2x lithium battery 14250		2个锂电池14250 2x lithium battery 14250	
电池寿命 battery life	标准 Standby	>600 days	标准 Standby	>600 days
	使用5% 5% use	>540 days	使用5% 5% use	>540 days
	持续使用 continue use	>360 days	持续使用 continue use	>360 days
密封防护 Sealing	Ip68		Ip68	
操作温度 Operating temperature	0–60℃		0–60℃	

尺寸 Dimensions

Stylus over trovel linit

Stylus lergth	± X±Y	+Z
50mm	13.5mm	6.35mm
100mm	24.0mm	6.35mm

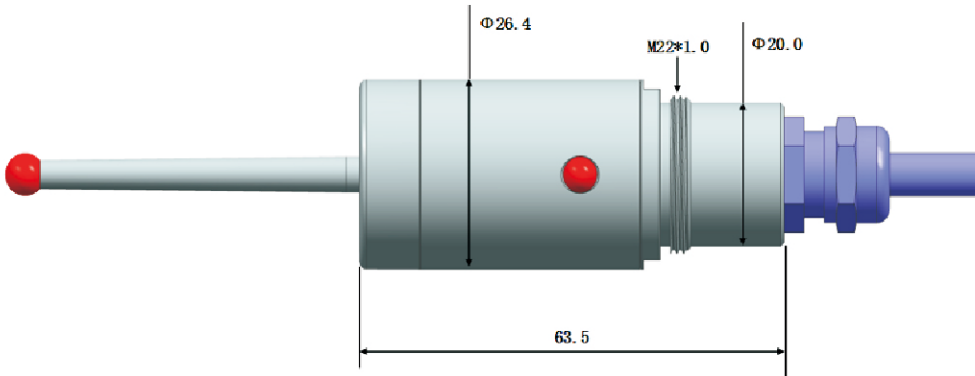


测头 CNC probes-DLP25

参数 Parameter

型号 Model	SLP25	
重复定位精度（使用50mm标准长度以600mm/MIN速度测试Unidirectional repeatability Unidirectional repeatabilityUse standard 50mm probe at 600mm/min speed	1um (2σ)	
探测方向 Sense directions	±X,±Y,+Z	
触发力 Stylus trigger forceUse standard 50mm probe	XY plane0.4 - 0.8N	Z direction4.0N
触发行程保护 Trigger protection trip	XY plane+/-15°	Z direction6.35mm
信号传输方法 Signal transmission method	线缆 Hard wired	
触发寿命 Trigger life	>1000万次 >10 Million	
信号传输方式 Transmission on/off style	智能开关 smart switch	
重量 Weight without shank (including batteries)	80g	
线缆 Hard wire	四芯，5米防油 5m, oil resistance, 4 core	
密封防护 Sealing	IP68	
操作温度 Operating temperature	0-60℃	

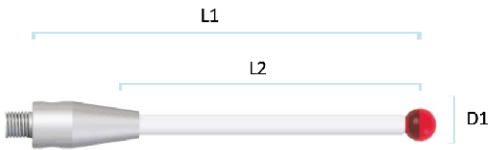
尺寸 Dimensions



高性价比探针
High Cost Performance Stylus



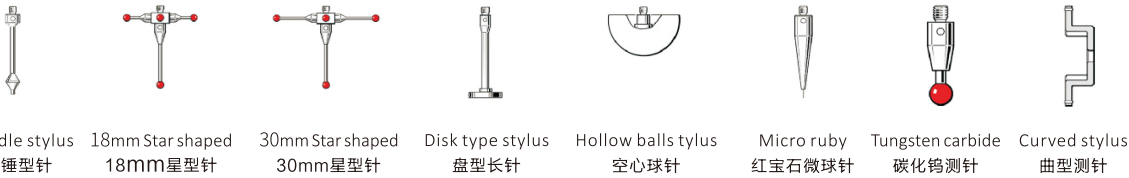
L1 : Total length 总长
L2 : Effective length 有效长度
D1: pointed end Diam 尖端直径



尖端材料 pointed end material	钨钢 Tungsten steel	钨钢 Tungsten steel	红宝石 Ruby	钨钢 Tungsten steel	红宝石 Ruby	陶瓷 Ceramic	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	陶瓷 Ceramic	红宝石 Ruby	陶瓷 Ceramic
pointed end Diam D1/mm	0.5	1.0	1.0	2.0	2.0	7.4	2.0	3.0	3.0	4.0	5.0	5.0	6.0	6.0	7.4	6.0
测杆材料 styli material	钨钢 Tungsten steel	钨钢 Tungsten steel	钨钢 Tungsten steel	钨钢 Tungsten steel	陶瓷 Ceramic	陶瓷 Ceramic	钨钢 Tungsten steel	陶瓷 Ceramic	钨钢 Tungsten steel	陶瓷 Ceramic	钨钢 Tungsten steel	陶瓷 Ceramic	钨钢 Tungsten steel	陶瓷 Ceramic	陶瓷 Ceramic	陶瓷 Ceramic
总长 Total leng th L1/mm	10.0	20.0	20.0	20.0	30.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	100.0	100.0
有效长度 Effective length L2/ mm	5.0	10.0	10.0	10.0	10.0	30.0	40.0	40.0	40.0	40.0	35.0	35.0	35.0	35.0	50.0	85.0



尖端材料 pointed end material	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	红宝石 Ruby	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre
pointed end Diam D1/mm	4.0	5.0	6.0	4.0	6.0	6.0	6.0	6.0	3.0	3.0	3.0	6.0	3.0	6.0	6.0	6.0
测杆材料 styli material	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre	碳纤维 carbon fibre
总长 Total leng th L1/mm	30.0	30.0	30.0	50.0	50.0	100.0	150.0	200.0	40.0	50.0	70.0	80.0	90.0	100.0	150.0	200.0
有效长度 Effective length L2/ mm	25.0	25.0	25.0	40.0	40.0	85.0	135.0	185.0	40.0	50.0	70.0	80.0	90.0	100.0	150.0	200.0



Spindle stylus 18mm Star shaped 30mm Star shaped Disk type stylus Hollow balls tylus Micro ruby Tungsten carbide Curved stylus
纺锤型针 18mm星型针 30mm星型针 盘型长针 空心球针 红宝石微球针 碳化钨测针 曲型测针

机床对刀仪 Machine tool tool setter

加工中以刀具设置解决方案 Tool setting solutions for machining centres

在加工前，在数控加工中心上准确设置刀具的长度和直径，可减少废料，提高生产率。银和科技研发设计了一系列对刀仪，提供接触式和非接触式刀具测量和破损刀具检测方案。

Reduce scrap and increase productivity by accurately setting the length and diameter of cutting tools on CNC machining centres prior to machining. Silvercnc has designed a range of tool setters, offering both contact and non-contact tool measurement and broken tool detection.

使用对刀仪的好处 Benefits of automated tool setting

使用环规和手动输入偏移数据需要时间，并且容易产生操作错误。对刀仪易于安装在加工中心和数控车削中心，实现自动化操作，具有以下优点:

- 1、显著节省时间，减少机器停机时间。
- 2、刀具长度和直径测量准确。
- 3、自动计算和校正刀具偏移量。
- 4、消除手动设置错误。
- 5、循环刀具破损检测减少报废。

Using slip gauges and entering offset data manually takes time and is prone to operator error. Tool setting probes are easily installed on machining centres and CNC turning centres, allowing automated operation with the following benefits:

- 1.Significant time savings with reduced machine downtime
- 2.Accurate tool length and diameter measurement
- 3.Automatic tool offset calculation and correction
- 4.Elimination of manual setting errors
- 5.In-cycle tool breakage detection
- 6.Reduced scrap

银和科技对刀仪型号规格 Silvercnc Tool Setter Models

接触式对刀仪 Contact tool setters	适合的机床 Machine model	信号传输方式 Signal transmission	刀具设置 tool setting	最小测量直径 Minimum tool detection	重复精度 Repeatability (2σ)
M-P11/P21-10	Small CNC Machining Centers	Hard-wired	only tool length	Ø1.0 mm	1.0 μm
M26D	Small – large	Hard-wired	only tool length	Ø1.0 mm	1.0 μm
M-T24E-20/40/60	large	Hard-wired	only tool length	Ø1.0 mm	1.0 μm
S5TS-L	Small – large	Hard-wired	tool length and diameter	Ø1.0 mm	1.0 μm
S5TS-R	Small – large	Radio	tool length and diameter	Ø1.0 mm	1.0 μm
SPTS20	Small – large	Hard-wired	only tool length	Ø1.0 mm	1.0 μm
非接触式对刀仪 Non-Contact tool setters	适合的机床 Machine model	信号传输方式 Signal transmission	刀具设置 tool setting	最小测量直径 Minimum tool detection	重复精度 Repeatability (2σ)
SNC86	Small – large	laser	tool length and diameter	Ø0.03 mm	±1.0 μm

概括 Summary

银和科技M系列对刀仪是一款触点开关式对刀仪，通过精密触点开关的开闭，传递触发信号

除了预先设定刀具长度外，还可以使用对刀仪来检测刀具的磨损和破坏并纠正热变形

缩短了刀具的测量时间，提高了机床的运行时间，节省人力，防止不合格品

Silvercnc M series is a contact switch type tool setters ,The trigger signal is transmitted through the opening and closing of the precision contact switch
In addition to presetting tool length, tool setters can be used to detect wear and breakage and correct thermal distortion.
Shorten the measuring time of tools and improve the running time of machine tools,Save manpower and prevent unqualified products.



特点 Features

- 1) 直接接触刀具尖端输出信号，因此可避免误检测，可靠性高。
- 2) 内置开关为接触式，精度高(重复精度1μm)且无差。
- 3) 无需使用放大器，因此不会因传感部的自身散热及温度特性而造成温度偏差。
- 4) 防尘防水结构，在冷却液、铁屑飞扬的条件下仍具有很好的耐久性。
- 5) 超行程时可发报警信号。(不含P11)

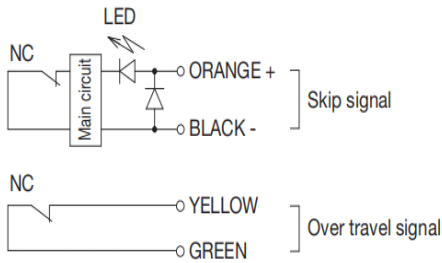
- 1.As the signal is output by directly contacting the leading edge of the tool, it does not cause false positives and has high reliability.
- 2. The internal switch is of the contact type with high precision (repeatability: 1 μm), and is free of movement differential.
- 3.Since there is no need of an amplifier, there is no temperature drift caused by self-generation and temperature characteristic of the sensor unit.
- 4.Dustproof and waterproof structure has superior durability even under harsh conditions caused by the presence of coolant and cuttings.
- 5.Outputs over-travel warning signal .

产品选型 product selection

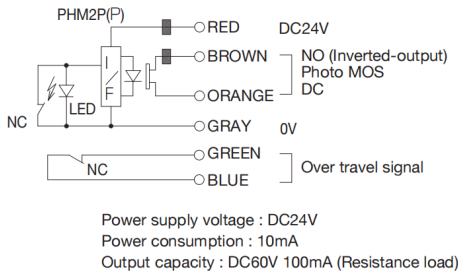
Product model	M-P11-10	M-P21-10	M26D-20	M-T24E-20/40/60
接触面直径/Contact diameter	Ø10mm	Ø10mm	Ø20mm	Ø20/40/60mm
行程/Stroke	3mm	3mm	5mm	12mm
轴承/Bearing	Metal bearing	Metal bearing	Metal bearing	Linear bearing
超程信号Over travel signal	Not Equipped	Equipped	Equipped	Equipped
机器/Machine	Small CNC Machining Centers	Small CNC Machining Centers	Small CNC Machining Centers	CNC Machining Centers
形状/Shape	Flat Type	Flat Type	Cylindrical Type	Cylindrical Type

产品名称 Product name	M-P11-10	M-P21-10	M26D-20	M-T24E-20/40/60
接触面直径 Contact diameter	Ø5mm	Ø10mm	Ø20mm	Ø20/40/60mm
表面处理 Surface finishing	4S镜面研磨 Grinding 4s	4S镜面研磨 Grinding 4s	4S镜面研磨 Grinding 4s	4S镜面研磨 Grinding 4s
接触面材料 Contact material	硬质合金 Tungsten carbide	硬质合金 Tungsten carbide	硬质合金 Tungsten carbide	硬质合金 Tungsten carbide
触点形式 Contact structure	常闭 NC (Normally closed)	常闭 NC (Normally closed)	常闭 NC (Normally closed)	常闭 NO (Normally open)
预行程 Pretravel	0	0	0	0.5mm
行程 Stroke	3mm	5mm	5mm	12mm
重复精度 Repeatability	推荐速度50 – 200mm/min 0.001(Recommended operating speed of 50 - 200mm/min)	推荐速度50 – 200mm/min 0.001(Recommended operating speed of 50 - 200mm/min)	推荐速度50 – 200mm/min 0.001(Recommended operating speed of 50 - 200mm/min)	推荐速度50 – 200mm/min 0.001(Recommended operating speed of 50 - 200mm/min)
触点寿命 Contact life time	300万次 3 million	300万次 3 million	300万次 3 million	300万次 3 million
保护结构 Protective structure	IP67	IP67	IP67	IP67
触发力 Contact force	垂直安装 1.5N (Installation position: Vertical)	垂直安装 1.5N (Installation position: Vertical)	垂直安装 1.5N (Installation position: Vertical)	垂直安装 2.5N (Installation position: Vertical)
线缆 Cable	φ 5/ 2cores耐油，标准3米(长度可定制) Oil resistant, standard 3 m (length can be customized)φ5/ 2cores	4cores耐油，标准3米(长度可定制) Oil resistant, standard 3 m (length can be customized)4cores	φ 4.8/ 6 cores耐油，标准3米(长度可定制) Oil resistant, standard 5 m (length can be customized)φ4.8/ 6 cores	φ 4.8/ 6 cores耐油，标准3米(长度可定制) Oil resistant, standard 5 m (length can be customized)φ4.8/ 6 cores
LED灯 LED lamp	NONE	NONE	LED On默认开/操作:关 Default : LED OFF / Operating : LED ON	LED On默认开/操作:关 Default : LED OFF / Operating : LED ON
超程信号(内置微开关) Over travel signal (built-in microswitch)				
输出模式 Output mode	NONE	NC正常关闭 (信号中断时紧急停止) NC normally closed (an emergency stop when the signal broken)	NC正常关闭 (信号中断时紧急停止) NC normally closed (an emergency stop when the signal broken)	NC正常关闭 (信号中断时紧急停止) NC normally closed (an emergency stop when the signal broken)
触点负载 Contact rating	NONE	DC24V 20ma 电阻负载 DC24V 20 mA resistive load	DC24V 20ma 电阻负载 DC24V 20 mA resistive load	DC24V 20ma 电阻负载 DC24V 20 mA resistive load

电路图 Circuit diagram



M-P21-10

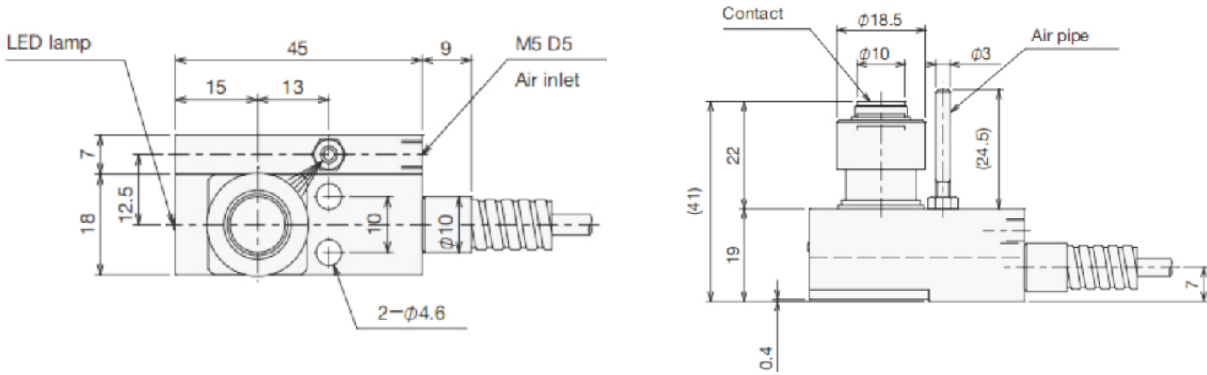


M26D

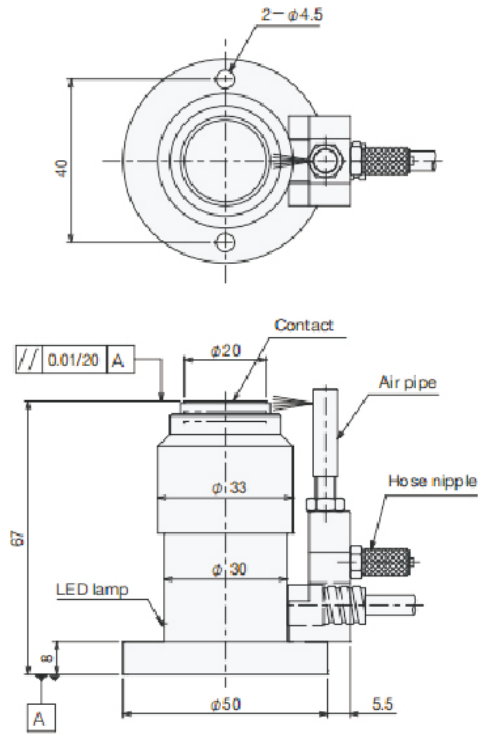
M-T24E-20/40/60

尺寸 Dimensions

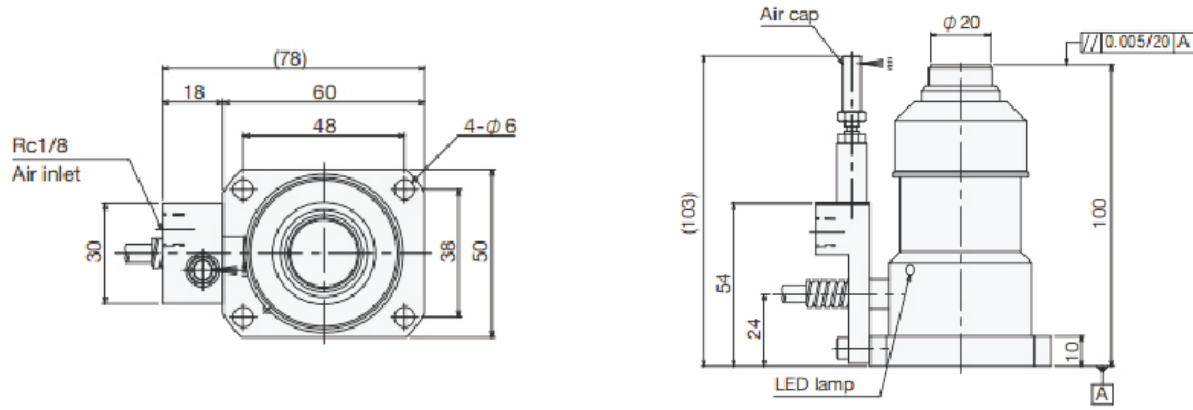
M-P21-10



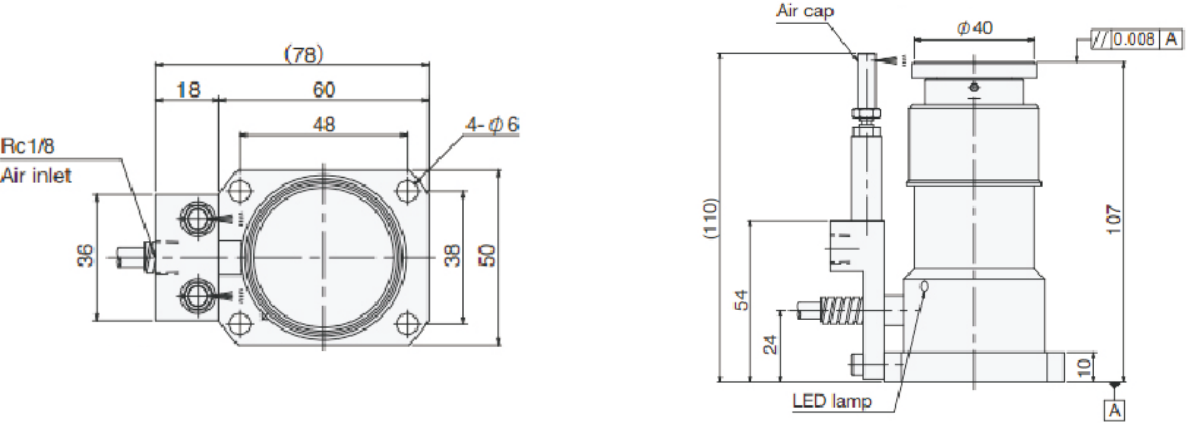
M26D-20



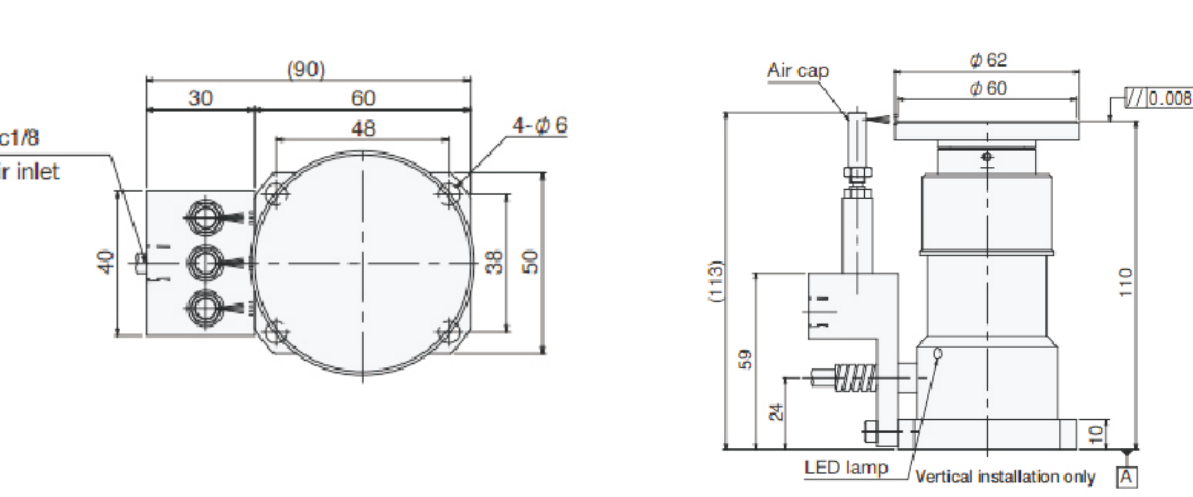
M-T24E-20



M-T24E-40



M-T24E-60

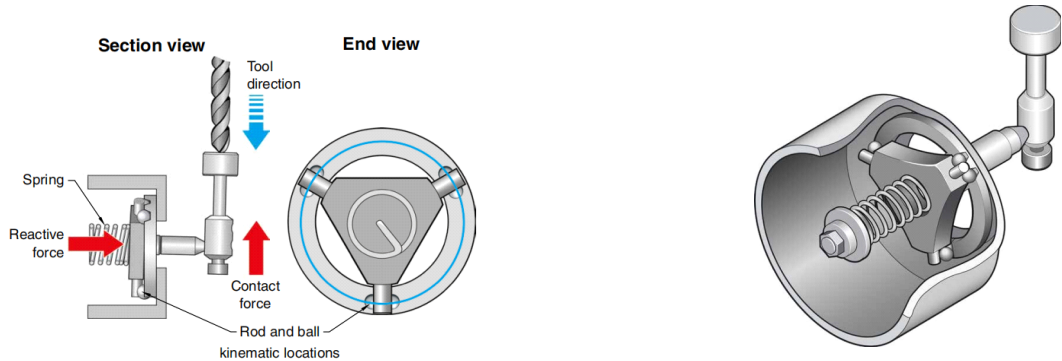


接触式触发对刀仪 Touch trigger tool setter

机械式三维触发对刀仪
mechanical structure of the 3D touch trigger tool setter

此型号刀仪采用了运动阻力原理(与renishaw相同)，可以稳定运行很长时间。经过40多年的验证，这种设计一直是大多数机器制造商和终端用户的主要选择，稳定可靠，重复精度可以做到0.001mm。可检测刀具长度,半径,损坏，这种技术应用于银和科技的探头和对刀仪。

The tool setter use a proven technology -kinematic resistive principle(the same as renishaw) that can stably operate for long time.
Proven over four decades, this design has been the main choice for the majority of machine builders and end users to ensure accuracy and reliability.
The ability of the probe mechanism to reseal after triggering to within 1.00 μm is fundamental for repeatability and good metrology.
From simple length and radius checking to broken tool detection, this technology is available in silvercnc touch probe and contact tool setters.



对刀仪的好处 Tool setter benefit

- 除了测量刀具长度、破损和破损刀具检测外，它还可以检测刀具直径
- 在行驶过程中会发出报警信号，防止发生损坏事故。
- 1μm【0.001】重复性精度提高了加工精度。
- 缩短测量时间，提高机床运行效率
- 自动操作，节省劳动力，防止不合格产品的出现
- 适用于日本、台湾、韩国、中国、德国的雕刻机及各种控制机械。如发那科、新技术、宝源、西门子、法格、三菱等
- In addition to measuring tool length, breakage and broken tool detection, it can also detect tool diameter
- Alarm signal will occur in the course of travel and damage accident will be prevented.
- 1μm (0.001) repeatability precision improves the processing precision.
- Shorten the measuring time, improve the efficiency of the operation of the machine tool
- Automatic operation, save labor, prevent the emergence of substandard products
- Applicable to the Engraving machine and all kinds of control machinery in Japan, Taiwan, South Korea, China, Germany. Such as fanuc, SYNTEC, Baoyuan, Siemens, FAGOR, Mitsubishi, etc.

S5TS 对刀仪特点 S5TS Tool Setter Feature

- 刀具长度和刀具直径的双功能测量
- 重复定位精度<1um
- 超级IP68级保护，双重保护结构
- 1000万接触寿命
- 适用于各种数控机床

Double function measurement of tool length and tool diameter
Repeat positioning accuracy <1um
Super IP68 level protection, double protection structure
10 million contact life
It is suitable for all kinds of CNC machine tools

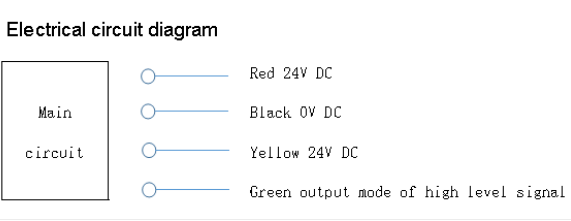
规格 specification

型号/model	S5TS-L	S5TS-R
信号输出/output	NO(Normally open)	NO(Normally open)
探测方向/Sense directions	±X,±Y,+Z	±X,±Y,+Z
预行程/Pretravel	0	0
行程/travel	XY +/-15°, Z-6.35mm	XY +/-15°, Z-6.35mm
重复精度/Repeatability	<1um	<1um
触发寿命/Trigger life	>10million	>10million
防护等级Protect structure	Ip68	Ip68
触发力/contact force	XY0.4N~0.8N,Z-4.0N	XY0.4N~0.8N,Z-4.0N
信号传输方式/Signal transmission	Cable	Radio
接触材料/Contact material	Tungsten carbide	Tungsten carbide
表面处理Surface finishing	Grinding 4s	Grinding 4s
触点负载/Rated voltage and current	DC24V 20mA	DC24V 20mA
电缆/Cable	Oilresistant,standard3m(length can becustomized)Minimum radius R7	Oilresistant,standard3m(length can becustomized)Minimum radius R7
LED灯/LED lamp	Default: LED OFF/Operating: LED ON	Default: LED OFF/Operating: LED ON

对刀仪电路图 Wiring diagram of tool setting

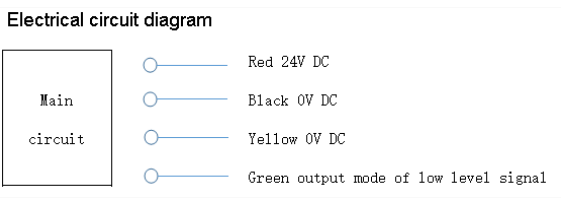
A输出模式为高电平信号时

A output mode of high level signal:

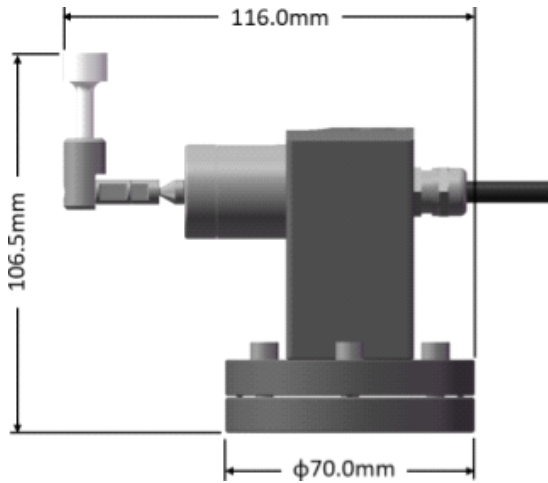


A输出模式为高电平信号时

B.output mode of low level signal:



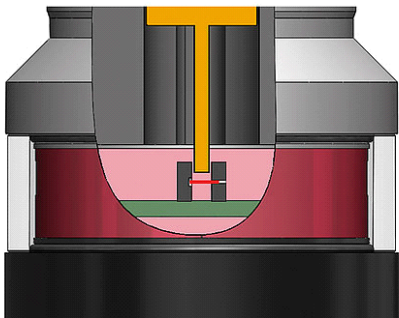
尺寸 Dimensions



光电信号触发对刀仪 optoelectronic signal trigger tool setter

DTS系列对刀仪由光电开关、高硬度耐磨触点、信号传输接口组成。光电开关是数控系统的关键部件，当传感器光束中断时，发出触发信号，通过接口装置传送到数控系统，实现刀具长度的识别、计算、补偿和存取。

The DTS series tool setter composed by a photoelectric switch,a contact with high hardness and wear resistance, a signal transmission interface. photoelectric switch is key parts, When the sensor beam is interrupted, a trigger signal will be sent out and transmitted to the NC system through the interface device to identify, calculate, compensate and access the tool length.

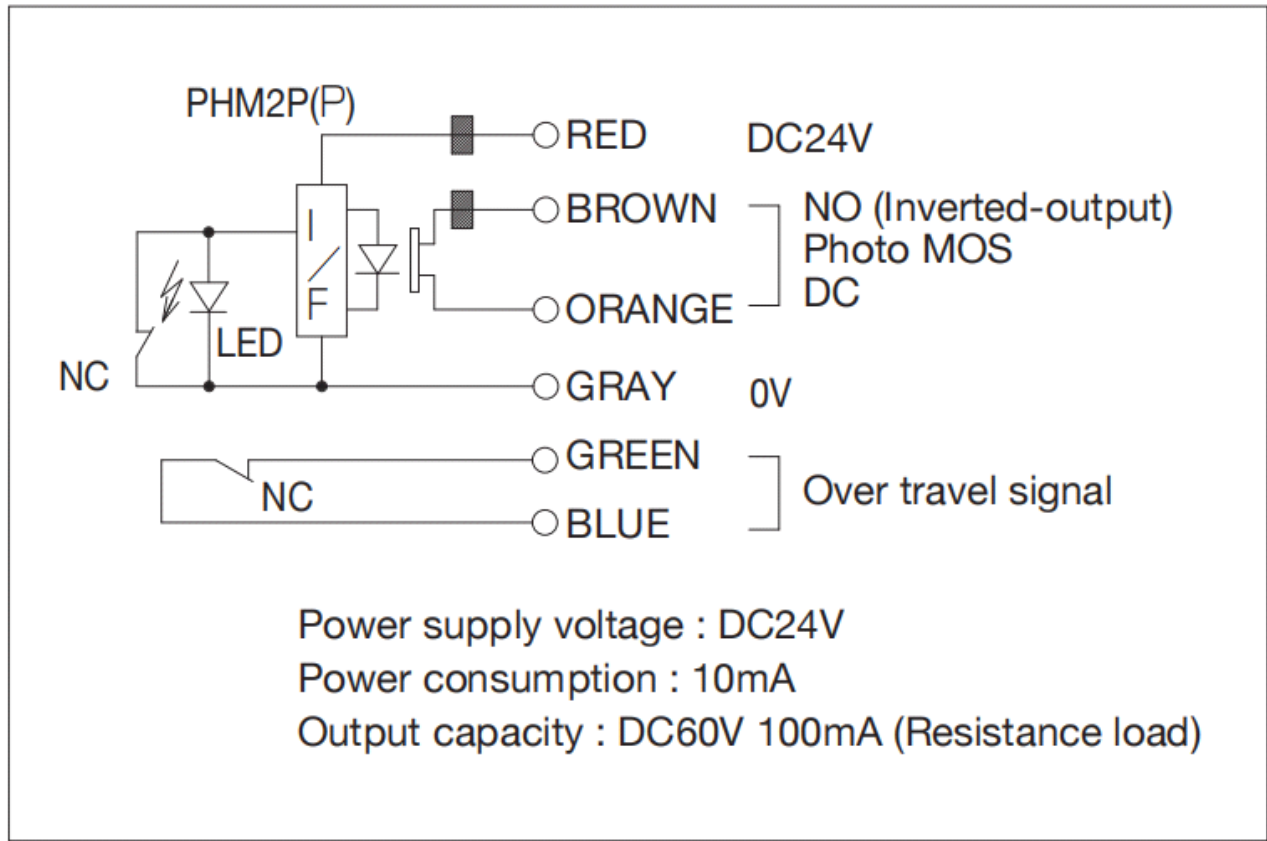


光电式对刀仪的优势 Advantage of optoelectroinc tool setter

- 与传统的工具设置器相比，能够实现更高的测量速度
- $\leq 0.5\mu m(2\sigma)$
- 无磨损，长期稳定

Enables much higher measuring speeds than with conventional tool setter
High precision($<0.5\mu m(2\sigma)$) and stable signal
Wear-free with long-term stability

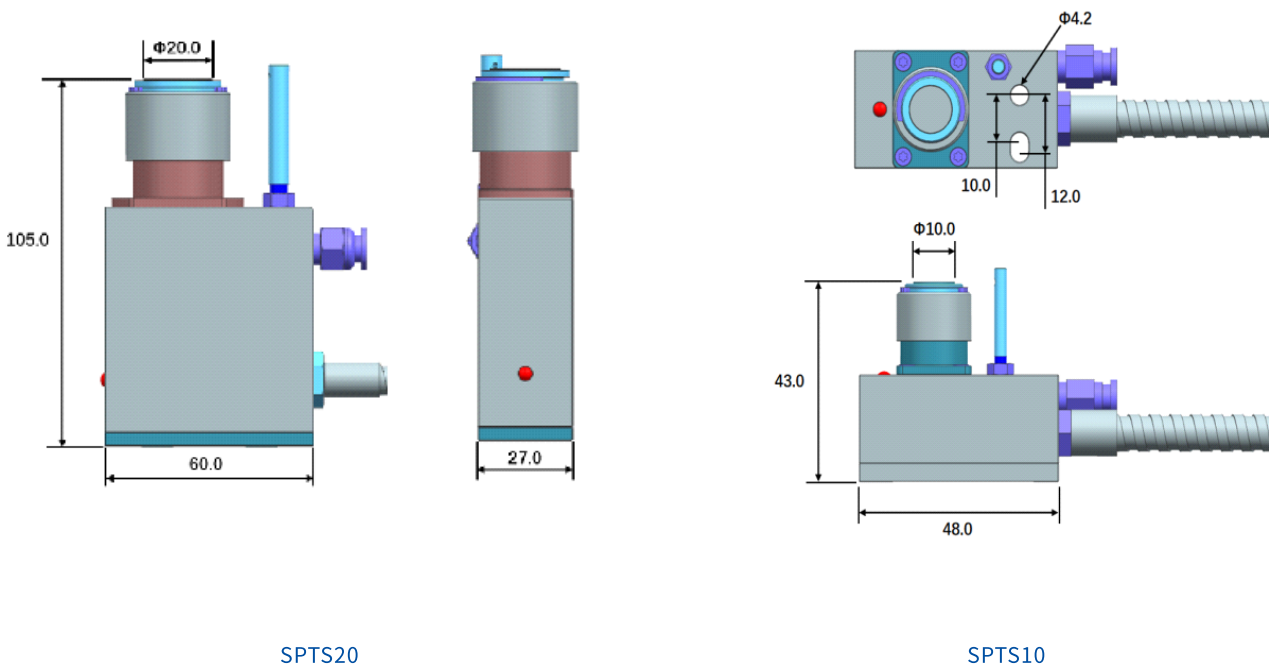
电路图 Circuit diagram



型号与规格 Model and specifications

产品型号Product	SPTS20	SPTS10
信号输出/output	NO(Normally open)	NO(Normally open)
探测方向/Sense directions	$\pm X, \pm Y, +Z$	$\pm X, \pm Y, +Z$
预行程/Pretravel	0	0
行程/travel	XY $\pm 15^\circ$, Z-6.35mm	XY $\pm 15^\circ$, Z-6.35mm
重复精度/Repeatability	$<1\mu m$	$<1\mu m$
触发寿命/Trigger life	$>10\text{million}$	$>10\text{million}$
防护等级Protect structure	Ip68	Ip68
触发力/contact force	XY0.4N~0.8N,Z-4.0N	XY0.4N~0.8N,Z-4.0N
信号传输方式/Signal transmission	Cable	Radio
接触材料/Contact material	Tungsten carbide	Tungsten carbide
表面处理Surface finishing	Grinding 4s	Grinding 4s
触点负载/Rated voltage and current	DC24V 20mA	DC24V 20mA
电缆/Cable	Oilresistant,standard3m(length can becustomized)Minimum radius R7	Oilresistant,standard3m(length can becustomized)Minimum radius R7
LED灯/LED lamp	Default: LED OFF/Operating: LED ON	Default: LED OFF/Operating: LED ON

对刀仪尺寸 Tool setter dimession



激光对刀仪 Laser control tool setter

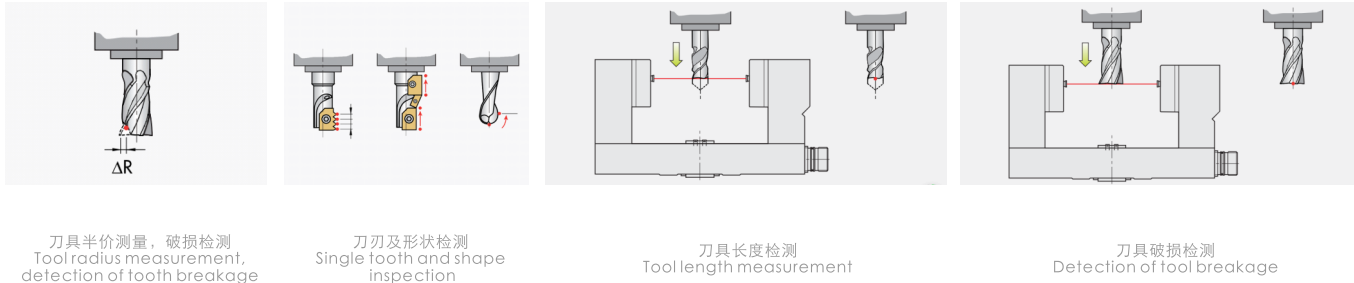
原理描述 Description

- 1、激光对刀仪在工作时有一条对射光束，当工具进入光束会导致在接收器处收到的激光减少，从而产生触发信号。根据触发的位置，就可确定出刀具尺寸的信息，还可以精确确定刀具几何形状。它还可用于检测破损刀具，将刀具快速移动到与激光束相交的位置，如果光线仍能传递给接收器，刀具尖端一定是损坏
- 2、非接触式激光束能快速、可靠、无碰撞危险地检查非常小的工具。即使是高硬度脆性切削材料也可以通过该激光刀具设置仪器系统进行测量。
- 3、由于刀具是在额定速度下测量的，因此刀具、主轴和刀架的误差都被检测到，可以直接进行修正。

- 1.The passage of a tool into the beam causes a reduction in laser light seen at the receiver, from which a trigger signal is generated. This latches the machine position at that instant, providing the information to determine a tool's dimension. With approaches from several directions, tool geometry can also be accurately determined. These systems can also be used to detect broken tools, by rapidly moving the tool into a position where it should intersect the laser beam, if light reaches the receiver, the tool tip must be missing.
- 2.The non-contact laser beam can check very small tools quickly, reliably and without collision risk. Even the latest high hardness brittle cutting materials can be measured with this laser tool setting instrument system.
- 3.Because the tool is measured at the rated speed, the errors of tool, spindle and tool holder are all detected and can be corrected directly.

激光对刀仪的功能 Laser Measuring Function

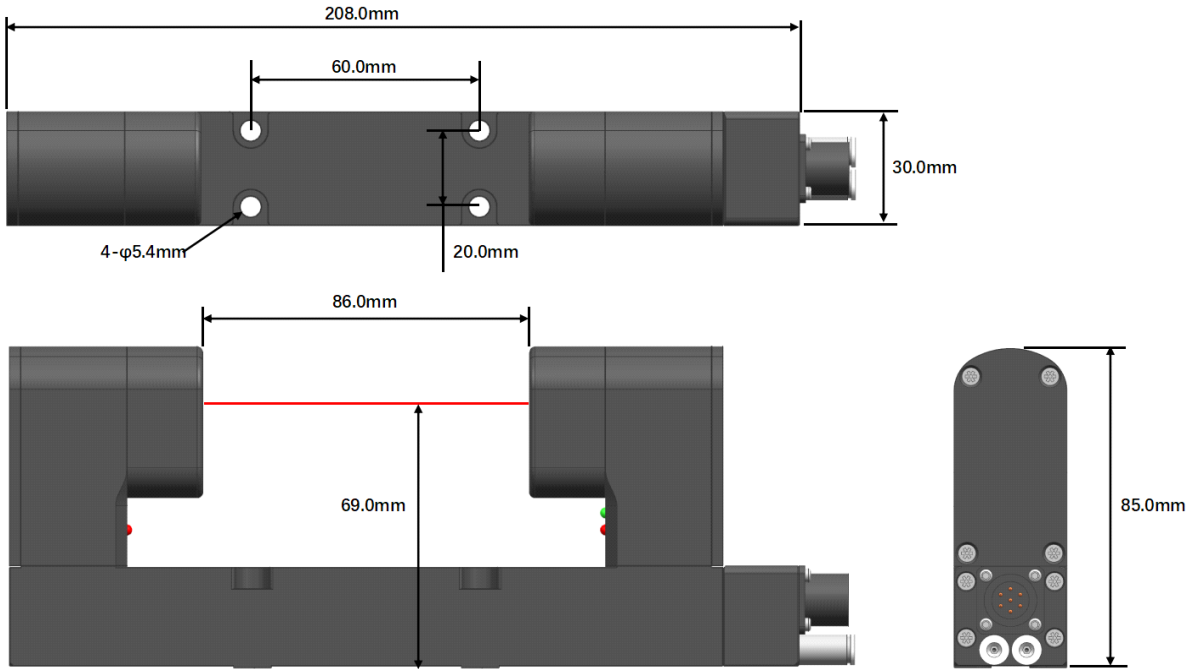
- 1、刀具长度测量
- 2、测量刀具半径并检测刀具破损
- 3、快速断刀检测报警
- 4、单边检查和形状检查
- 5、防滴漏功能
- 6、机床温度补偿功能
1. Tool length measurement
2. Measure the tool radius and detect the tool breakage
3. Quick tool breaking detection alarm
4. Single edge inspection and shape inspection
5. Anti drip function
6. Machine tool temperature compensation function



参数 parameters

主要应用/Principal application	High-precision, high-speed non-contact tool setting and tool breakage detection on all sizes of vertical and horizontal machining centres,multi-tasking machines and gantry machining centres
光束调整/Laser beam alignment	The unit is supplied with an adjustable mounting plate on the underside
激光类型/Laser type	Power <1mW, wavelength 680nm
电缆/Cable(to interface)	Hard-wired systems: cable on the end of the unit
防护/Sealing	IPX8
最高重复精度/repeatability	±0.1 μm 2σ
常规精度/typical Repeatability	±1 μm (2σ)
最小测量直径/minimum tool or feature size	Ø0.1 mm or larger
最大测量刀具直径max tool or feature size	86 mm
断刀检测最小直径 minimum tool for breakage detection	Ø0.1 mm or larger
电源/power	100 mA @ 24 V
储存温度Storage temperature	No voltage solid state relay (SSR). Each relay may be normally open. Current (Max.) 50 mA, voltage (Max.) ±50 V
LED灯/LED lamp	~10 °C-50 °C
工作温度范围Operating temperature	5 °C-50 °C
工作寿命/Life	Tested to > 1 million on/off cycles
气源要求/pneumatic supply	4 mm Air pipe, 6.0 bar (87.02 psi) maximum 3 bar(43psi) min.
电缆规格/Cable	Ø6.0*8m (0.24 in) , two twisted pairs, two individual cores plus screen, each core 18 × 0.1 mm insulated
安装/Mounting	M10 (3/8 in)

尺寸 Dimissions



测头与对刀仪应用 Touch probe and tool setter application

