求實　團結　進取

EAST STAR

濟南東星精密量儀有限公司

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UKAS MANAGEMENT　ISO 9001

EAST STAR PRECISION MEASURE

東星精密量儀



Since 1989

®

EAST STAR



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质量控制 Quality Control

EAST STAR

企業概況 BRIEF INTRODUCTION

求　實　　團　結　　進　取



济南东星精密量仪有限公司始创于 1989 年，是一家专业型的花岗石量具和机械构件的生产厂家。96 年与日本合资，使东星成功融入了国际先进的生产技术和管理理念。98 年通过 ISO9002 国际质量体系认证，2003 年升级至 ISO9001。公司总部在嘉恒商务大厦，下设章丘、济阳两个生产基地，现有员工 500 余人，产品设计和研发人员 50 人，是花岗石精密构件、矿物复合材料的研究、相关产品的设计、模具的设计与制造、产品生产加工、辅助配件的装配为一体的现代化企业。

随着东星经营理念和技术水平的不断提高，产品也在不断更新换代，建厂初期的第一代产品是花岗石精密量具和三坐标测量机配件的半成品，始于 94 年的第二代产品是为世界各地的三坐标厂家提供花岗石底座、横梁、Z 轴的完成品，第三代开始于 96 年，是线路板打孔机、切割机、激光雕刻机等设备的配件，如今主打产品是 LCD 行业和用于光学仪器产品的大型精密检测结构件。

东星锐意进取、新品层出，2002 年与日本合作，成立益星精密陶瓷，为国内大型工业精密陶瓷结构件的生产填补了空白。

2004 年公司成功研发具有划时代意义的新型材料－机械用矿物复合材料（人造花岗石），该产品是由我公司自主研发，具有完全知识产权的专利产品，填补了国内机械行业结构材料领域的一大空白。此材料可替代传统传统铸铁应用于机床床身、基座、横梁、立柱等关键部位，被广泛应用于磨床、车床、床、加工中心等机床行业，及电子、医疗、航空等领域。

“东星”－花岗石行业内一个三十年家喻户晓的品牌，从 89 年的十人团队发展成为现在的行业标杆！“没有规矩不成方圆，精益求精唯有东星”是东星人一直坚持的左右铭！

Jinan East Star Precision Measure Co. Ltd. Founded in 1989, is specialized in producing granite measuring instruments and machinery parts. Having set up a joint venture with a Japanese company in 1996, East Star was updated with the leading international technology and managing concepts. It was accredited with ISO9002 quality certification in 1998 and upgraded to ISO9001 in 2003. The company is headquartered in JIAHENG business building, with two production bases in ZHANGQIU and JIYANG, with 500 employees, including 50 professional technicians and R&D personnel; The company is a specialized granite measuring tools, mechanical components and mineral casting enterprise, including a specialized production system with material research, product design, mold design and manufacture, product production and processing, auxiliary pieces assembly as one system.

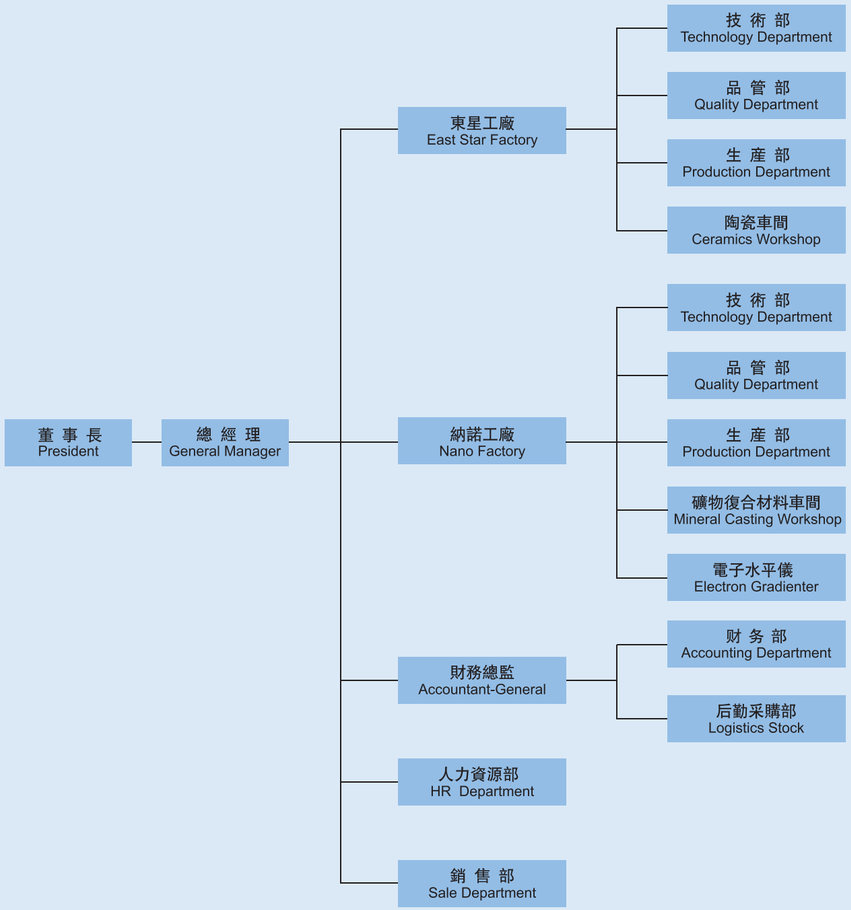
The company started from scratch and now is developing new products from time to time. Its first generation of products was the various granite precision measuring instruments and accessories for CMM. The second one was the granite base, beams, Z axis supplied to the CMM manufactures cross the world, and now its major product is the large precision machinery parts applicable to LCD and large inspecting parts for optics instruments.

The company has grown up in a steady pace and set up a JV (E STAR Precision Ceramics) in 2002 with a Japanese company, filling in a blank of domestic production of large industrial precision ceramic parts. In 2004 the company launch a new materials-mechanical mineral composite material. The product is self-developed by our company, with full intellectual property patent, fill the major blank of structural material in domestic machine tool industry. This mineral casting material can replace cast iron to be used in key parts of the machine bed, base, beams, columns, etc. and are widely used in grinders, lathes, milling machining centers and other machine tool industry, electronics, medical, aerospace and other fields. And the company set up the national standard in 2016.

EAST STAR：A well-known brand in the granite industry has developed from only ten-members team in 1989 to the current industry benchmark. “Nothing can be accomplished without norms or standards，EASTSTAR always deliver good quality, pursue the best。”

EAST STAR PRECISION MEASURE CO.,LTD.

公司結構
BRIEF STRUCTURE



精益求精　唯有東星 EAST STAR

生產車間
Processing Workshop







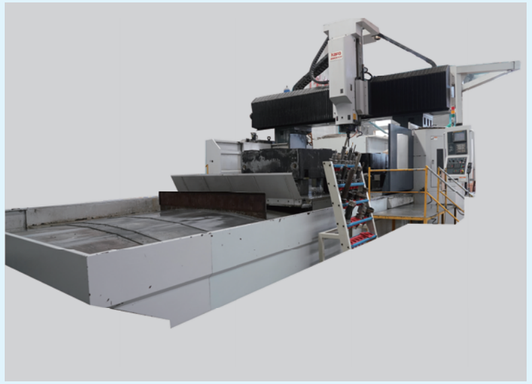






完善的生產設備

Production Facilities

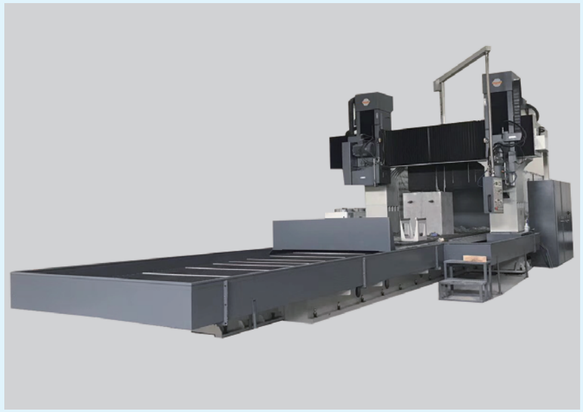






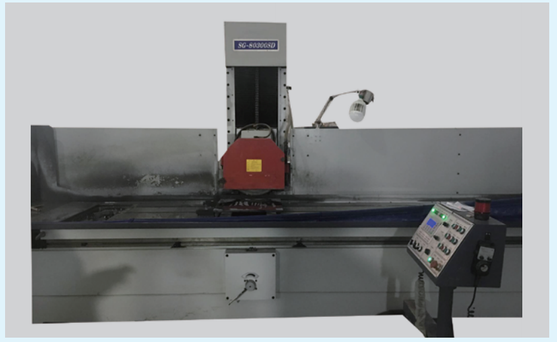


数台进口五轴龙门加工中心
Several imported large five axis CNC processing centers









进口大型六米龙门导轨磨床及平面磨床
Imported large six meters Guideway Grinder and Surface Grinder

花岗石系列產品

Granite Precision Measure　基本產品

“济南青”花岗石的物理特性：

比重：2970~3070kg/^{m3}

抗压强度：245~254MPa

弹性模量：1.27~1.47GPa

线膨胀系数：4.61x10^{-6}/ ℃

吸水率：<0.13%

肖氏硬度：>Hs70

Physical Properties of “Jinan Black” Granite

Specific Gravity:2970~3070kg/^{m3}

Compressive Strength:245~254MPa

Elastic Modulus:1.27~1.47GPa

Linear Expansion Coefficient:4.61x10^{-6} /^{c}

Water Absorptivity: <0.13%

Shore Hardness:>Hs70



精密平板

Precision Surfaceplate

γ 照射量率根据 JC518-93《天然石材产品放射性防护分类控制标准》的技术要求应小于 5.2x10^{-3} μc/kg•h 实际值 2.6x10^{-3} μc/kg•h 使用范围不限

γ irradiation rate is based on JC518-93,the inspecting results are as follows.

Technical requirement:5.2x^{-3} μc/kg•h

Inspecing data:2.6x10^{-3} μc/kg•h

This product belongs to item A,the using scope is unconstrained.

CVA234 系列

东星牌花岗石平板精度参照各先进国家标准，平面度公差依：

JB/T7975-1999 标准

000 级 =1 x（1+d/1000）μm

00 级 =2 x（1+d/1000）μm

0 级 =4 x（1+d/1000）μm

1 级 =8 x（1+d/1000）μm

（d 为对角线 mm）

（测量温度一般在 20±2℃）

CVA234 Series

EAST STAR black granite surface plate precision please refer advanced leading countries standard faltness tolerance

According to(（JB/T7975-1999）standard

grade 000=1 x（1+d/1000）μm

grade 00=2 x（1+d/1000）μm

grade 0=4 x（1+d/1000）μm

grade 1=8 x（1+d/1000）μm

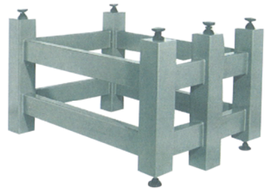
（d is diagonal mm）

（measuring temperature 20±2℃）



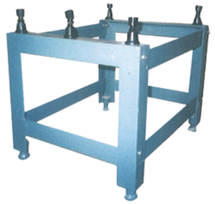
精密平板

Precision Surfaceplate



平板支架 Welded Supports

CVA241-A



平板支架 Welded Supports

CVA241-B

花岗石平板精度表 Inspection surfaceplate Precision

定货序号 Order No	规格 Dimension（mm）	重量 Weight（kg）	对角线（d）Length of Diagonal（mm）	精度 000（μm）	精度 00（μm）	精度 0（μm）	精度 1（μm）
				grade 000（μm）	grade 00（μm）	grade 0（μm）	grade 1（μm）
CVA234001	300x200x50	9	360	1.5	3	5.5	11
CVA234002	300x300x70	19	424	1.5	3	5.5	11
CVA234003	400x250x70	21	472	1.5	3	6	12
CVA234004	400x400x100	48	568	2	3.5	6.5	13
CVA234005	630x400x100	76	764	2	3.5	7	14
CVA234006	630x630x130	155	891	2	4	8	16
CVA234007	800x500x130	156	943	2	4	8	16
CVA234008	1000x630x150	284	1182	2.5	4.5	9	18
CVA234009	1000x750x150	338	1250	2.5	4.5	9	18
CVA234010	1000x1000x150	450	1411	2.5	5	10	20
CVA234011	1200x800x150	432	1442	2.5	5	10	20
CVA234012	1600x1000x200	960	1887	3	6	12	24
CVA234013	2000x1000x250	1500	2136	3.5	6.5	13	26
CVA234014	2000x1600x300	2880	2561	3.5	7	14	28
CVA234015	2500x1600x300	3600	2968	4	8	16	32
CVA234016	3000x2000x400	9000	3605	4.5	9	18	36
CVA234017	4000x2500x500	15350	4717	6	11.5	23	46

- 欢迎查询其他规格，最大可加工至 8000mm 长，3000mm 宽。
- 我们也接受在平板上工作各种相关加工，如钻孔、 镶 T 型槽、燕尾槽等。（依提供图示，另行洽询）

- W elcome your enquiry for other specifications. The largest size for production 8000mm length,3000mm width.
- We also accept T slot and dovetail slot etc. On granite plate. （estimate according to drawing）

平板支架

CVA241-A 整体系列

所有支撑定盘架用三点支撑，尺寸在 600x600mm 以上增设两个辅助支点。

制造尺寸从 600x450mm 到 3000x6000mm 皆可。

定盘架用角钢或 U 型钢制造，欢迎洽询。

（安装平板请参考资料手册）

Granite M-T Series CVA241-A

All welded supports are supported by three main suppors and

Add on two accessproial supports for size over 600x600mm

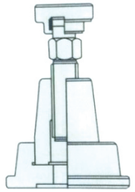
Exist in all dimensions for granite plates form 600x450mm to 3000x6000mm

Welded supports are made of reesses or angle steel.welcome enquiry

（Installing granite plate please refer to information brochure）

平板支架 Welded Supports

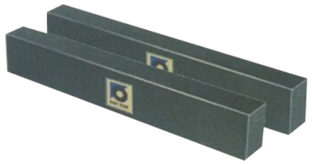
CVA241-B 可拼装系列



用于平板调平的专用千斤顶 Jack

花岗石系列產品

Granite Precision Measure　基本產品



平行规 Paralells

CVA237 系列

可代替等高块，用于测量零件的平行度。一般为成对供应，如需单件订货另行洽询。

CVA237 Series

For inspecting the parallelism of workpieces also for replacing the working blocks at the same height when required.Generally supply by pair.If need single, please Adv.when order.

平行规精度 Paralells Precision

定货序号 Order No	规格 Dimension（mm）	工作面的平直度 Flatness and beeline of the measuring（μm）		两工作面间的平行度 Parallelism between two measuring surfaces（μm）		工作面与侧面的垂直度 Perpendicularity between measuring surface and side surfaces（μm）		每对平行规的等高度 Height difference of the paralells within a matched pair（μm）	
		精度 00 grade 00	精度 0 grade 0	精度 00 grade 00	精度 0 grade 0	精度 00 grade 00	精度 0 grade 0	精度 00 grade 00	精度 0 grade 0
CVA237001	100x63x16	1.5	3	1.5	3	5	10	1.5	3
CVA237002	160x40x25	1.5	3	1.5	3	5	10	1.5	3
CVA237003	250x40x25	2	4	2	4	10	20	2	4
CVA237004	400x63x40	4	8	4	8	15	30	4	8
CVA237005	630x100x63	6	12	6	12	20	40	6	12



平尺 Straight Rules

JB/T7978-1999

CVA238 系列

用于直线度和平面度测量应用

CVA238 Series

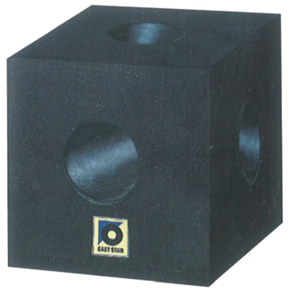
For inspecting the straightness and flatness

平尺精度 Straight Rules Precision

定货序号 Order No	规格 Dimension（mm）	工作面直线度公差 Beeline tolerance of working surface（μm）		上下工作面平行度公差 Parallelism tolerance between the upper and lower measuring surfaces（μm）		侧面与工作面垂直度 Perpendicularity between side & measuring surface（μm）grade	
		grade 00	grade 0	grade 00	grade 0	grade 00	grade 0
CVA238001	400x60x25	1.6	1.6	2.4	3.9	8	13
CVA238002	630x100x35	2.1	3.5	3.2	5.3	10.5	18
CVA238003	1000x160x50	3.0	5.0	4.5	7.5	15	25
CVA238004	1600x250x80	4.4	7.4	6.6	11.1	22	37
CVA238005	2000x300x100	5.4	9.0	8.1	13.5	27	45

• 目前只供应两工作面规格，如需四工作面，欢迎洽询

Currently we only supply 2 work sides specification,if need to make for 4 worksides welcome your enquiry.



方箱 Cubes



方尺 Square Rules

JB/T10027-1999

CVA239 系列

用于垂直度、平行度检查，并可 90℃绝对测量基准。

CVA237 Series

On inspection of perpendicularity and parallelism as well as absolute 90℃ measuring base.

方箱精度等级 Cubes Precision

定货序号 Order No	规格 Dimension（mm）	精度等级 Grade					
		平行度 Parallelism of working surface		平面度 Flatness of working surface		垂直度 Perpendicularity of working surface	
		0	00	0	00	0	00
CVA239-1	50x50x50	0.002	0.001	0.002	0.001	0.001	0.0005
CVA239-2	100x100x100	0.002	0.001	0.002	0.001	0.002	0.001
CVA239-3	150x150x150	0.003	0.0015	0.002	0.001	0.003	0.0015
CVA239-4	200x200x200	0.004	0.002	0.003	0.0015	0.004	0.002
CVA239-5	300x300x300	0.006	0.003	0.003	0.0015	0.006	0.003
CVA239-6	400x400x400	0.008	0.004	0.004	0.002	0.008	0.004
CVA239-7	500x500x500	0.010	0.005	0.005	0.0025	0.010	0.005
CVA239-8	600x600x600	0.012	0.006	0.006	0.003	0.012	0.006
CVA239-9	700x700x700	0.014	0.007	0.007	0.0035	0.014	0.007
CVA239-10	800x800x800	0.016	0.008	0.008	0.004	0.016	0.008

方尺精度等级 Square Rules Precision

定货序号 Order No	规格 Dimension（mm）	精度等级 Grade													
		000	00	0	000	00	0	000	00	0	000	00	0	000	0
		相邻两测量面间的垂直度 Perpendicularity between the two measuring surfaces（μm）			测量面的平面度的直线度 Flatness and beeline of the measuring surface（μm）			相对测量面的平行度 Parallelism between relative measuring surface（μm）			两侧面对测面的垂直度 Perpendicularity between side surface & measuring surfaces（μm）			两侧面平行度 Parlldlism of the two side surface（μm）	
CVA239001	100x100x20	0.7	1.5	3.0	0.4	0.7	1.4	0.8	1.5	3.0	8	15	30	18	72
CVA239002	160x160x25	0.8	1.8	3.5	0.4	0.8	1.6	0.8	1.8	3.5	9	18	35	21	81
CVA239003	200x200x25	0.9	2.0	4.0	0.4	0.9	1.8	1.0	2.0	4.0	10	20	40	24	96
CVA239004	250x250x30	1.1	2.2	4.5	0.5	1.0	2.0	1.1	2.2	4.5	11	22	45	27	108
CVA239005	300x300x30	1.3	2.6	5.2	0.6	1.1	2.3	1.3	2.6	5.5	13	26	52	31	124
CVA239006	400x400x40	1.5	3.0	6.0	0.6	1.3	2.6	1.5	3.0	6.0	15	30	60	36	144
CVA239007	500x500x50	1.8	3.5	7.0	0.8	1.5	3.0	1.8	3.5	7.0	18	35	70	42	168
CVA239008	630x630x60	2.1	4.2	8.3	0.9	1.8	3.5	2.1	4.2	8.3	21	42	83	50	199

注：测量面的平面度和直线度的误差不许凸，在各测量相交处 2.5mm 范围内不检测。

花岗石系列產品

Granite Precision Measure　基本產品



直角尺 Squares

GB6092-85
CVA235 系列

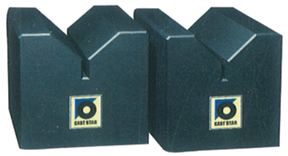
用于零件、工作母机主轴及各种直角度之测量。
250 × 160mm 以上又圆孔加工、减轻重量、好取用。

GB6092-85
CVA235 Series

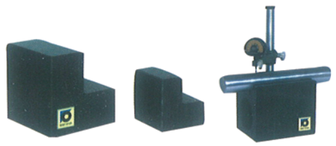
For inspecting machine spindle and else squareness of work-pieces.
Have round hound holes for size over 250 × 160mm to reduce weight so to take easily.

直角尺精度 Squares Precicsion

定货序号 Order No	规格 Dimension（mm）	测量面与基准面垂直度 Perpendicularity between measuring and standard surface（μm）		测量平面度或直线度 Flatness and beeline of the measuring surface（μm）		基面平面度或直线度 Flatness and beeline of the standard surface（μm）	
		精度 00 grade 00	精度 0 grade 0	精度 00 grade 00	精度 0 grade 0	精度 00 grade 00	精度 0 grade 0
CVA235001	100x63x16	2	4	1	1	1	1
CVA235002	160x100x20	2	4	1	2	1	1
CVA235003	250x160x25	2.5	5	1	2	1	2
CVA235004	400x250x40	3.5	7	1	2.5	1	2
CVA235005	630x400x63	4.5	9	1.5	3	1	2.5
CVA235006	1000x630x80	6	12	2.5	5	1.5	3



V 形塊尺 V-blocks



L 形垫塊 L-blocks

JB/T8047-95
CVA236 系列

用于回转类零件的同轴度、同心度、对柚度、跳动量的测量。

JB/T8047-95
CVA236 Series

For inspecting the coaxallity cylindricity symmetry and shifting of revolution parts.

V 形块精度 V-block Precision

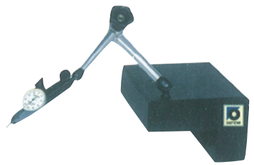
定货序号 Order No	规格 Dimension（mm）	工作面平面度 Flatness of working surface（μm）		V 型槽对底面的平行度 Parallelism between V slot & bottom surface（μm）		V 型槽对侧面的平行度 Parallelism between V lost & side surface（μm）		V 型槽对两侧面的对称度 Symmetry between V slot & two sides surface（μm）		V 型槽对端面的垂直度 Perpendicularity between V slot & two sides surface（μm）		V 型槽侧面对底面的垂直度 Perpendicularity between side surface & end surface（μm）		每套 V 形架 V 型槽对底面的高度差 Height difference of the Vslot within amatched pair（μm）	
		0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1
CVA235001	63x63x90°	1.5	3	4	8	4	8	8	16	8	8	4	8	5	10
CVA235002	100x100x90°	2	4	4	8	4	8	8	16	8	8	4	8	5	10
CVA235003	160x160x90°	2.5	5	5	10	5	10	10	20	10	10	5	10	6	12

一般为成对供应。如需单件，订货另行洽询。
开口 V 端为 60°、90°、120°。

Generally supply by pair.If need single pc. Please adv. when order.
Opening 60°,90°,120° for "V" edge please Adv.



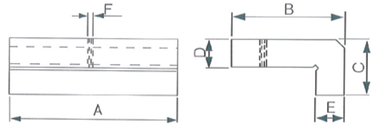
表座 Measuring Instruments
CVA240-A



表座 Measuring Instruments
CVA240-B



表座 Measuring Instruments
CVA240-C



长 A(mm)	宽 B(mm)	高 C(mm)	螺孔 F
150	80	80	M8
300	80	80	M8
400	80	80	M8

CVA240 系列

配合量块用百分表、干分表、电子测头对零件或成品进行相对测量之尺寸检验。

Granite-M-T Series CVA240

For inspecting relative dimensions of working-pieces in cooperative use with dial indicator or electronic probes,add gauge blocks.

CVA240-F 系列

CVA240-F Series

定货序号 Order No	规格 Dimension（mm）	测量范围 Measuring Range（mm）	平面度 Flatness（μm）
CVA24001	150x150	0-100	2
CVA24002	200x150	0-250	2
CVA24003	300x200	0-250	2
CVA24004	400x250	0-350	2

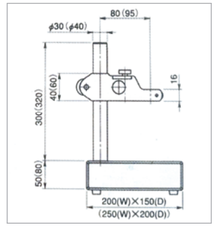
不附量表，如需要，订购时请告知。Less indicator,if need please adv.when order.



表座 Measuring Instruments
CVA240-E



表座 Measuring Instruments
CVA240-F



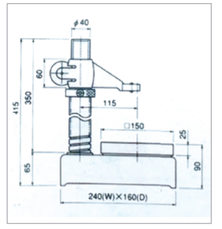
表座 Measuring Instruments



表座 Measuring Instruments
CVA240-G



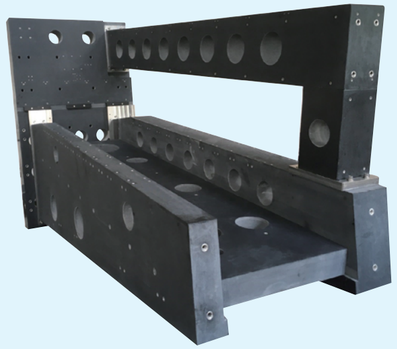
表座 Measuring Instruments
CVA240-F

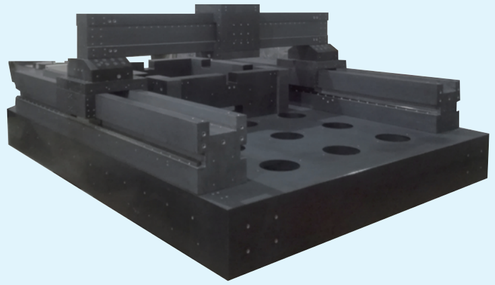


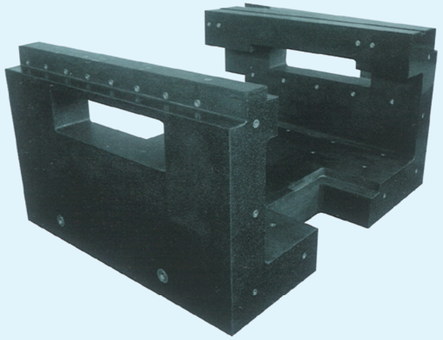
表座 Measuring Instruments

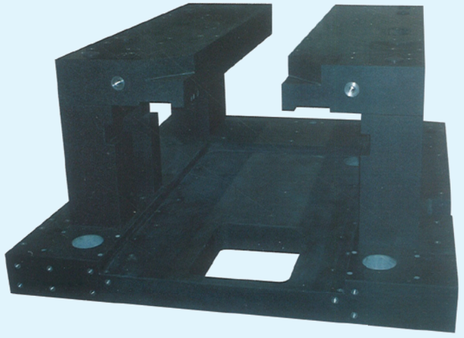
花崗石系列產品

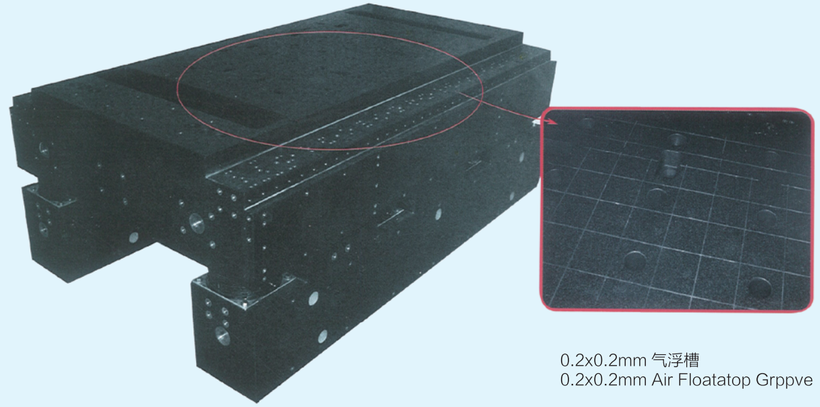
Granite Machinery Component Base Series　花崗石機械構件及工作臺系列







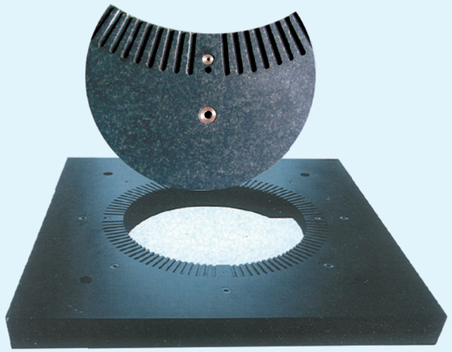




0.2x0.2mm 气浮槽
0.2x0.2mm Air Floatatop Grppve

Φ0.2 气浮孔
Φ0.2Air Floatation Hole





精 密 陶 瓷

Precision Ceramic Products

陶瓷产品性能介绍

仅说明一下陶瓷测量仪器的有关情况。

就热膨胀系数和比重、长期变化、杨氏弹性率、硬度、固有振动数进行比较（把氧化铝的值作为 1），与不锈钢和斑零岩（花岗石）进行比较的结果如下：

⊙热膨胀系数是不锈钢的二分之一，温度变化小。

⊙比重和花岗石大体相同，但可做中空加工；因此单位体积的重量比花岗石小，特别是做机械构件时有利于启动和停止。

⊙稳定性好

⊙弹性是不锈钢的 1.5 倍以上，因刚性很高更适合精密加工；另外具有对割伤后形成凹状，不会破坏整体精度的特性。

⊙硬度高是陶瓷的最大特点，耐磨损程度比花岗石高 5 倍。

⊙固有振动数与材料的弹性和比重由密切关系，共振频率高，使用旋转范围变广，而且也容易防震，以上有点恰好适合计量仪器和机械配件更高精度的要求，从功能方面看适合以下要求；

◎精度高是测量仪器的基本性能，在不断寻求该性能之际，只有陶瓷具有变化小、比重低、刚性高、坚硬耐磨等优点。

◎提高测量速度和要求高效率，利用刚性高，比重低的材料就非常有效。

◎从合理化、稳定性角度考虑，无需维护也是重要性能。由于陶瓷耐腐蚀、不生锈并且非常耐磨损，所以陶瓷是高精度测量仪器和高精度机械配件的唯一有效材料。

Brief Introduction on Ceramic Measuring Instruments

This is a comparison between the stainless and marble.

The main indexes ,such as coefficient of thermal expansion,specific gravity,secular variation,young’s modulus,hardness,instinctive vibration frequency are all shown in relation to the alumina value of 1.we have got following results:

● It is in the thermal expansion coefficient,about1/2 of the stainless steel,and stable in temperature changes.

● It is almost same as marble in specific gravity,but it would be hollow.Owing to the hollow ,the gravity of unit volume of the marble is lighter than volume granite.So it is easier to start and start and stop for using as the machinery component.

● It can be said very stable in secular variation by our company after a 5-year inspection and examination.

● Because it’s extension modulus is 1/2 of the stainless steel,it is better to be critically processed.In addition,the whole precision will not be destroyed with the pressing-mark.

● It is considered as the best material because of its hardness and wearable capacity（5 times higher than granite’s）

● The instinctive vibration frequency has the close relation with extension modulus and specific gravity of the materials.It is high in the vibration frequency,extensive in used-eddy range and betters in shockproof.All those can satisfy with the requirement of the higher precision of the measure tools and machinery component.It can satisfy with the following requirements seen from the function:

○ It is most important for a measuring tool to get a higher precision standard.And now, much more attention is being focused to the new material-ceramic,and it can be seen as the modern material because of its advanced performance,such as thermal expansion,secular variation,hardness,rigidity,wearable capability,etc.

○ It will guarantee a fast measuring speed and a high-efficiency,depending on its own rigidity and specific gravity.

○ Considered its rationality and stability,it neet not the special maintenance.It is anti-rust, corrosion resistance and wearable resistance so it is believed as an ideal material for the high precision measuring tool and machinery component.

陶瓷特性一览表 Property of Ceramics

材料 Material	氧化铝 Alumina								氧化锆 Zirconia		堇青石 Cordierite	氧化钛 TiO_2	碳化硅素 Silicon Cartide
成分 Component	AL_2O_3	AL_2O_3	AL_2O_3	AL_2O_3	AL_2O_3	AL_2O_3	AL_2O_3	AL_2O_3	ZrO_2	ZrO_2	$2MgO\ 2Al_2O_3\ 5SiO_2$	TiO_2	SiC
含量 Content %	99.7	99	97	92	90		98.8	87					
产品编号 Order number	AL191	AL190	AL170	AL920	AL900	AL413	RU588	AC270	ZR113	ZR316	CD319	ta133	Tk114
外表颜色 Surface color	象牙色 ivory	白色 white	白色 white	白色 white	黑褐色 black brown	黑紫色 purple	红宝石色 ruby	暗灰色 gray	淡黄色 canary	淡黄色 canary	茶色 brown	淡黄色 canary	黑色 black
主要商品 Main products	气动滑板 air slide board	机械用零件 mechanical parts	机械用零件 mechanical parts	敷金属基片 metallized substrate		静电卡盘 electrostatic water chuck	粘合毛细管 bonding capillary	气动滑板 air slide board		光通信用套圈 ferrule for optical communications	加热器 heater		
体积比重 Bulk density	3.9	3.9	3.8	3.6	3.8	3.8	3.99	3.4	6.4	3.6	2.4	3.8	3.1
吸水率 Water absorption %	0	0	0	0	0	0	0	0	0	0	0	0	0

机械特性 Mechanical Property

维氏硬度 ※ Vicker's hardness	GPa [Kgf/mm^2]	17.7 [1,800]	17.2 [1,800]	15.7 [1,600]	13.7 [1,400]	12.7 [1,300]	14.1 [1,440]	20.9 [2,136]	10.8 [1,100]	13.7 [1,400]	13.7 [1,400]	6.9 [700]	9.0 [920]	24.5 [2,500]
压缩强度 Compressive strength	MPa [Kgf/cm^2]	3.240 [33.000]	3.240 [33.000]	3.240 [33.000]	2.260 [23.000]				1.960 [20.000]					3.300 [34.000]
弯曲强度 Flexural strength	MPa [Kgf/cm^2]	373 [3,800]	363 [3,700]	343 [3,500]	324 [3,300]	314 [3,200]	290 [2,960]	290 [2,960]	314 [3,200]	932 [9,500]	930 [9,480]	98 [1,000]	186 [1,900]	490 [5,000]
杨氏弹性率 Youg's modulus	GPa [$X10^3Kgf/cm^2$]	373 [3,8]	382 [3,9]	353 [3,6]	284 [2,9]		265 [2.7]	265 [2.7]	235 [2.4]	206 [2.1]	206 [2.1]	108 [1.1]		402 [4.1]
泊松比（横的应变与纵的应变之比） Posisson's ratui		0.24		0.24						0.3	0.31			

热特性 Thermal Property

细膨胀系数 Coefficient of linear thermal expansion	25℃ -500℃ (10-6/℃)	7	7	8	8	7	7		7	11	11	3	11	
	25℃ -800℃ (10-6/℃)	8	8	8	8	8	8		8	11		3	12	4
热传导率 Thermal conductivity	W/m.k (25℃ Ccal cm.sec.)	33.5 [0.08]	25.1 [0.06]	20.9 [0.05]	16.7 [0.04]		10.6 [0.03]	29.4 [0.07]	16.7 [0.04]	2.9 [0.007]	3.3 [0.008]	1.7 [0.004]	[0.41]	171.6
比热 Specific heat	J/kg℃ cal/g℃	795 [0.19]	795 [0.19]	795 [0.19]	795 [0.19]		740 [0.18]		795 [0.19]		460 [0.11]			670 [0.16]

电特性 Electrical Property

绝缘破坏强度 Dieletric strength	KV/MM		12.0	10.0			10		7.5					
介电常数 Dielectric constant	25℃ 1MHz	10.2	9.9	9.5	8.8	8.9	9		8.3					
介电损耗因数 Dissipation faction	25℃ 1MHz（10^{-4}）		1	5	6		30		80					
体积电阻率 Volume resistivity	25℃（Ω.cm）	$>10^{14}$	$>10^{14}$	$>10^{14}$	$>10^{14}$		$>10^{11}$	$>10^{10}$	$>10^{14}$	10^{12}	10^{12}	10^{14}		10^{2-5}
	200℃（Ω.cm）	$>10^{14}$	$>10^{12}$	$>10^{10}$	$>10^{12}$		10^{8}		10^{11}	10^{7}	10^{7}	10^{10}		
	500℃（Ω.cm）		10^{8}	10^{7}	10^{8}				0^{7}			0^{7}		

※ 维氏硬度 Load 4.9N

Vider's hardness [Load 500g]

精 密 陶 瓷

Precision Ceramic Products

工程陶瓷 Engineering Ceramics Think Ceramics

			氮化硅（Si_3N_4）			氮化硅（SiC）		氧化锆（ZrO_2）			氧化铝（Al_2O_3）
			SN-220	SN-220M	SN-733	SC-211	SC-221	Z-201N	Z-701N	Z-703	A-479
外表比重 density			3.2	3.2	3.2	3.2	3.0	3.2	6.05	5.5	3.8
吸水率 water absorption		%	0	0	0	0	0	0	0	0	0
维氏硬度 vicker's hardness	load500g	kg/mm^2	Hra91	Hra92	Hra92	Hra94	Hra94	1250	1300	1350	1650
弯曲强度 fiexural strength	R.T	kg/mm^2	60	69	100	55	50	※ 100	※ 140	※ 200	※ 31
4 支点弯曲强度 4 supportpoints fiexural strength	800	kg/mm^2	61	69	75			※ 42	※ 70	※ 90	※ 28
3 支点弯曲强度 3 supportpoints fiexural strength	1000	kg/mm^2	52	61	70	48	50	※ 28	※ 42	※ 42	※ 18
JIS-R1601	1200	kg/mm^2	33	40		40	50	※ 17	※ 21		
	1300	kg/mm^2	12								
断裂韧性 k10 压痕法 Fracture toughness K10 indentation	1400	kg/mm^2				36	50				
		$MPam^{2/2}$	5.7	5.9	7.0	5.6	3.4	6.7	5.9	6.9	
杨氏弹性 young's modulus	R.T	（$x10^4$）Kg/mm^2	3.0	3.0	3.1	4.4	3.8	2.1	2.2	2.6	3.5
泊松比 poisson's ratio	R.T		0.28	0.28	0.27	0.16	0.16	0.31	0.31	0.3	0.25
线膨胀系数 coefficient of linear thermal expansion	4-400	（$x10^6$）/℃	2.6	2.6	2.5	4.0	3.9	10.5	11.5	9.6	7.1
			3.2	3.1	3.0	4.4	4.4	11.0	11.8	10.3	7.9
热传导率 thermal conductivity	R.T	cal/cm.sec.℃	0.04	0.06	0.07	0.15	0.17	0.009	0.009	0.014	0.06
		W/m.K	17	25	29	63	71	4	4	6	25
比热 specific heat	R.T	cal/g.c	0.16	0.16		0.15	0.16	0.12	0.12	0.12	0.19
耐热冲击温度 temperature	R.T	℃	550	670		400	350	300	350	300	200
（投入水中）体积固有电阻 vloume resistivity	R.T	Ω.cm	$>10^{14}$	$>10^{14}$		8×10^{14}	10^3	2×10^{12}	3×10^{12}		$>10^{14}$

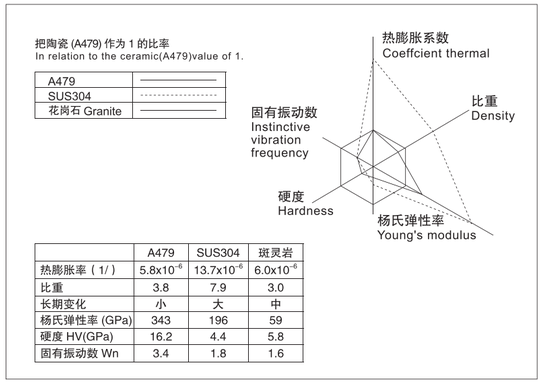
系列特性一览表 Properties Ceramic Materials

项目 \ 材料	氧化铝 Alumina Al_2O_3			氧化锆 Zirconi ZrO_2	莫来石 Mullite $3Al_2O_3$	氮化硅 Silicon Nitride Si_3N_4			塞隆 Sialon Composite SiAlon	导电性陶瓷 Si_3N_4(main)	碳化硅 Silicon Cartide SiC	铸铁 Cast Iron (FC25)	碳素钢 Carton Steel	石材 Stone	不锈钢 Stain
产品编号 Order number	SA610	SA010	SA812	SZ809	$2SiO_2$	SSO12	SN810	SN901	SI011	SE711	SC901	—	—	—	—
比重 Density	3.5	3.6	3.9	6.0	SM011	3.19	3.2	3.2	3.22	3.9	3.15	7.8	8.0	3.0	—
吸水率 Water absoption	0	0	0	0	3.1	0	0	0	0	0	0	—	—	0.03-3.0	—
维氏硬度（荷重 500d 克）Hardness HV(500 load)	1300	1400	1800	1200	—	1800	1600	1800	1600	1800	—	820		590-1000	—
弯曲强度 Bending Strength kgf/cm^2	3000	3500	4000	13000	1150	8000	8000	9000	8000	6500	5500	4000	3500	300-500	—
杨氏弹性率 Young's modulus	2.7	3.1	3.5	2.2	3500	3.0	3.0	3.1	3.3	3.0	3.3	1.1	2.0	0.3-0.9	—
破坏韧性 Fracture toughness	3.0	3.0	3.2	8.0	2.2	4.5	4.5	5.0	5	5.0	4.0	—	—	—	—
$MPa.m^{1/2}$	0.24	0.19	0.23	—	2.5	0.18	0.16	0.16	0.17	—	0.14	—	—	—	—
比热 Specific heat	0.033	0.04	0.055	0.008	—	0.07	0.05	0.05	0.06	—	0.20	0.11	0.06	0.003	0.04
Cal/g.℃	4.7 ※	7.4	7.8	10.5	0.015	3.7	3.1	3.2	3	3.2	4.0	11	12	8	18
热传导率 Thermal conductivity	$>10^{14}$	$>10^{14}$	$>10^{14}$	—	5.0	—	$>10^{14}$	—	—	7×10^{-4}	—	—	—	—	—
Cal/cm.ses.℃	◎	◎	◎	○	$>10^{14}$	○	○	○	○	○	○	—	—	△	—
热膨胀系数 Coeffcient thermal 10^{-6}/℃															
体积固有电阻 Electricas resistivify Ω.cm															
耐化学性 Chemical resistance															
特长 Specific properties	高强度 Heavy hardness 耐磨损 Wear resistance 耐腐蚀 Corrosion resistance			高韧性 High toughness 高强度 High hardness 耐磨损 Wear resistance	耐蠕变性 Creep hesistance 高温强度 High temperature in strength	耐热碰撞冲击性 Thermal shock resistance 高强度 High hardness 耐磨损 Wear resistance			耐磨损 Wear resistance 高强度 Heavy hardness	导电性 Electrically conductiveness 高强度 Heavy hardness 耐磨损 Wear resistance 可放电加工 EDM-Prossible	高温强度 High temperature in strength 高温热 High temperature in conductivity 传导率 Thermal conductivity 高硬度 Heavy hardness				
备注 Other	可制作大型														
	氧化物 Oxide					氮化物 Nitride				碳化物 Carbide					

◎优秀 Best　○良 Better　测量温度范围 20-40℃　Temperature in measurement 20-40℃

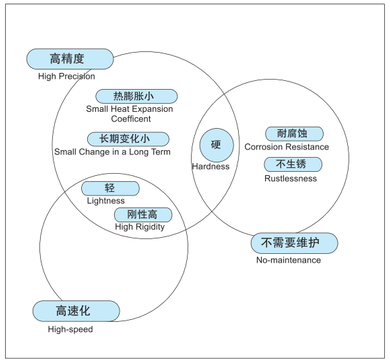
物理指标 Physical Index

陶瓷的材料特性 Properties Ceramic Materials

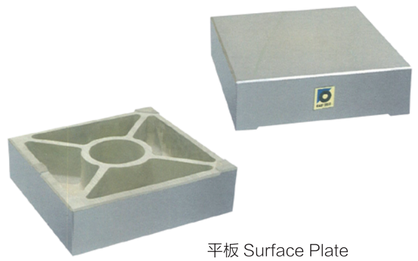


	A479	SUS304	斑灵岩
热膨胀率（1/）	$5.8x10^{-6}$	$13.7x10^{-6}$	$6.0x10^{-6}$
比重	3.8	7.9	3.0
长期变化	小	大	中
杨氏弹性率 (GPa)	343	196	59
硬度 HV(GPa)	16.2	4.4	5.8
固有振动数 Wn	3.4	1.8	1.6

陶瓷制品测量仪器的优越性 Superiority of Ceramic Measuring Instruments



陶瓷量具 Ceramic Measuring Instruments



平板 Surface Plate

Ceramic234

高精度陶瓷平板 High precision Ceramic Surface Plate

■形状・尺寸

型号 Type	尺寸（mm）Dimension			平面度（μm）Parrallelism			大概重量 Approx weight（kg）
	L	W	H	AAA 级	AA 级	A 级	
KJ-4-3-※	450	300	90	2	3	6	20
KJ-4-4-※	600	450	90	2	4	8	45
KJ-4-6-※	630	630	150	3	5	9	90
KJ-4-8-※	800	500	150	3	5	9	120
KJ-4-9-※	1000	630	150	4	6	8	185
KJ-4-10-※	1000	1000	150	4	6	9	280

精 密 陶 瓷

Precision Ceramic Products



直角尺 Squares

CM235 系列

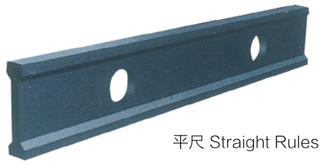
用于零件、工作母机主轴及各种直角度之测量。
250 × 160mm 以上有圆孔加工、减轻重量，好取用。

CM235 Series

For inspecting machine spindle and else squareness of work-pieces,Have round hole for size over 250 × 160mm to reduce weight so to take easily.

直角尺精度 Squares Precision

定货序号 Order No	规格 Dimension（mm）	测量面与基准面垂直度 Perpendicularity between measuring and standard surface（μm）		测量平面度和直线度 Flatness and beeline of the measuring surface（μm）		基面平面度和直线度 Flatness and beeline of the standard surface（μm）	
		精度 00 Grade 00	精度 0 Grade 0	精度 00 Grade 00	精度 0 Grade 0	精度 00 Grade 00	精度 0 Grade 0
CM235001	100x63x16	2	4	1	1	1	1
CM235002	160x100x20	2	4	1	2	1	1
CM235003	250x160x25	2.5	5	1	2	1	2
CM235004	400x250x40	3.5	7	1	2.5	1	2
CM235005	630x400x63	4.5	9	1.5	3	1	2.5
CM235006	1000x630x80	6	12	2.5	5	1.5	3



平尺 Straight Rules

CM238 系列

用于直线度、平面度测量应用。

CM238 Series

For inspecting the straightness and flathess.

平尺精度 Straight Rules Precision

定货序号 Order No	规格 Dimension（mm）	工作面直线度公差 Beeline tolerance of working surface（μm）		上下工作面平行度公差 Parallelism tolerance between the upper and lower measuring surfaces（μm）		侧面与工作面垂直度 Perpendicularity between side & measuring surface（μm）	
		grade 00	grade 0	grade 00	grade 0	grade 00	grade 0
CM238001	400x60x25	1.6	1.6	2.4	3.9	8	13
CM238002	630x100x35	2.1	3.5	3.2	5.3	10.5	18
CM238003	1000x160x50	3.0	5.0	4.5	7.5	15	25



方尺 Square Rules

CM239 系列

用于垂直度、平行度检查，并可作为 90℃ 绝对测量基准。

CM239 Series

On inspection of verticality and parallelism as well as absolute 90 ℃ measuring base.

陶瓷方尺精度等级 Ceramic Squares Rules Precision Grades

定货序号 Order No	规格 Dimension（mm）	精密等级 Grade													
		000	00	0	000	00	0	000	00	0	000	00	0	000	0
		相邻两测量面间的垂直度 Perpendicularity between the two measuring srfaces（μm）			测量面的平面度的直线度 Flatness and beeline of the measuring surfaces（μm）			相对测量面的平行度 Parallelism between relative measuring surface（μm）			两侧面对测面的垂直度 Perpendicularity between side surface & measuring surfaces（μm）			两侧面的平行度 Parlldlism of the two side surface（μm）	
CM239001	100x100x20	0.7	1.5	3.0	0.4	0.7	1.4	0.8	1.5	3.0	8	15	30	18	72
CM239002	160x160x25	0.8	1.8	3.5	0.4	0.8	1.6	0.8	1.8	3.5	9	18	35	21	81
CM239003	200x200x25	0.9	2.0	4.0	0.4	0.9	1.8	1.0	2.0	4.0	10	20	40	24	96
CM239004	250x250x30	1.1	2.2	4.5	0.5	1.0	2.0	1.1	2.2	4.5	11	22	45	27	108
CM239005	300x300x30	1.3	2.6	5.2	0.6	1.1	2.3	1.3	2.6	5.5	13	26	52	31	124
CM239006	400x400x40	1.5	3.0	6.0	0.6	1.3	2.6	1.5	3.0	6.0	15	30	60	36	144
CM239007	500x500x50	1.8	3.5	7.0	0.8	1.5	3.0	1.8	3.5	7.0	18	35	70	42	168
CM239008	630x630x60	2.1	4.2	8.3	0.9	1.8	3.5	2.1	4.2	8.3	21	42	83	50	199

注：测量面的平面度和直线度的误差不许凸，在各测量相交处 2.5mm 范围内不检测。

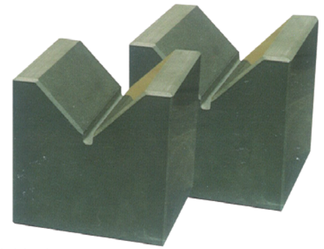
陶瓷量具 Ceramic Measuring Instruments

CM236 系列

用于回转类零件的同轴度、同心度、对称度、跳动量的测量。

CM236 Series

For inspecting the coaxality cylindricity symmetry and shifting of revolution parts



V 形块 V-block

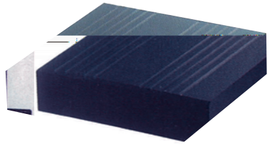
陶瓷 V 形块精度 V-block precision

定货序号 Order No	规格 Dimension（mm）	工作面平面度 Flatness of working surface（μm）		V 型槽对底面的平行度 Parallelism between V slot & bottom surface（μm）		V 型槽对侧面的平行度 Parallelism between V lost & side surface（μm）		V 型槽对两侧面的对称度 Symmetry between V slot & two sides surface（μm）		V 型槽对端面垂直度 Perpendicularity between V slot & two sides surface（μm）		V 型槽侧面对底面的垂直度 Perpendicularity between side surface & end surface Perpendicularit（μm）		每套 V 形架 V 型槽对底面的高度差 Height difference of the V slot within amatched pair（μm）	
		0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1	0 级 Grade 0	1 级 Grade 1
CVA236001	63x63x90°	1.5	3	4	8	4	8	8	16	8	8	4	8	5	10
CVA236002	100x100x90°	2	4	4	8	4	8	8	16	8	8	4	8	5	10
CVA236003	160x160x90°	2.5	5	5	10	5	10	10	20	10	10	5	10	6	12

一般为成对供应。如需单件，订货时另行洽询。开口 V 端为 60°、90°、120°
Generally supply by pair.If need sigle pc.please adv.when order.Opening 60°、90°、120° for “V” edge please Adv.

精 密 陶 瓷

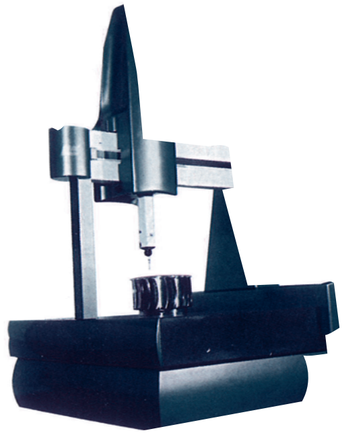
Precision Ceramic Products



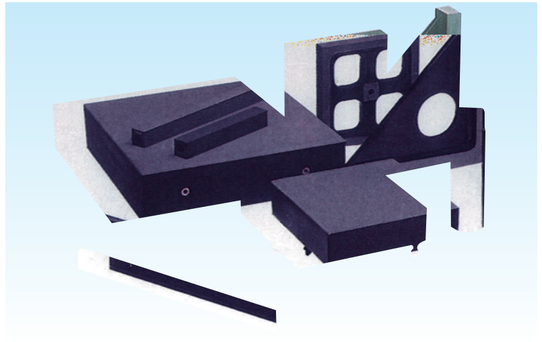
垫块 Block



垫块 Block



陶瓷在三坐标上的应用 The application of ceramic on the CMM



精密量具 Precision measuring instruments



各种陶瓷配件 Various ceramic fittings

礦物復合材料

Mineral Casting（人造花崗石）

目前我公司此项产品已通过专利申请，申请号为：PCT/CN2005/001306

一：性能和优点

1: 震动阻尼
★在进行设备安装调试过程中减少了步骤和时间；
★在光学感应器检测时能够更快的获得理想的影像；
★为快速浏览、扫描、检测提供好的稳定性；
★降低了高速加工过程中产生的震动从而提高了工件的加工精度。

2: 设计制造灵活
★模具可以同以下产品完美的结合在一起：
螺丝或嵌件；
开槽销孔或定位销孔；
梯形槽 / 凹槽；
导管、电线、通孔。
★同花岗石、金属、陶瓷合成曲面或基准面，用于特殊区域安装线性导轨等。

3: 降低成本
★可省去第二次精加工和机加工成本；
★尽可能减少昂贵的结构材料的用量；
★整合复新的零件，多元化的结构减少系统零件的数目和装配时间。

4: 耐热性
★与金属铸件相比能将低膨胀系数；
★耐热梯度最小。

First:Feature benifits

First:vibration damping
▲ Reduces steps and settle time in pick and place application;
▲ Improves image acquisition speed during optical inspection;
▲ Provides excellent stability for step and scan applications;
▲ Reduces the vibration to improve the machining precision during the high-speed machining process.
Second:design flexbility
▲ Molds can be precast with
thread/tapped inserts;
dowel pins/holes;
trapezoid slot/recessed pockets;
Conduits/wires/through holes.
▲ Granite or metallic or ceramic reference surfaces and mounting pads,using for the special ared to install the linear slide way.
Third:cost effective
▲ Eliminates seconday finishing and machining operations cost;
▲ Minimizes using of the more expensive structural material;
▲ Integrates multiple components to reduce system part counts and assembly time.
Fourth:thermal stability
▲ Lower thermal expansion coefficient than metallic castings;
▲ Composite material minimizes thermal gradients.

二：物理特性指标 Second:Physical property indexes

指标名称 index name	
密度 density	2.63g/cm^3
抗压强度 compressive strength	110-113 MPa
抗拉强度 tensile strength	17-17.2 MPa
抗弯强度 flexural strength	31.4 MPa
弹性模量 elasticity modulus	37.56 x 10^3 MPa
泊松比 poisson's ratio	0.26 u
热膨胀系数 thermal expansion	1.31 x 10^{-6}mm/mm℃ $^{-1}$
导热系数 thermal conductivity	0.238 J.m^{-1}.s^{-1}.℃ $^{-1}$
比热 specific votume	0.262Cal/g℃

纳诺人造花岗石
同天然花岗石、钢进行摩擦系数和磨耗量的比较
Comparison between friction coefficient and friction loss of Non-Metallic polymer,natural granite and steel.

实验材料 Experiment material	磨耗量 Friction Loss	摩擦系数 Friction Coefficient
人造花岗石 Non-Metallic polymer	1.15	0.47
济南青花岗石 "jinan Black"Granite	2.32	0.8
20 号钢 20#steel	3.12	0.85

礦物復合材料

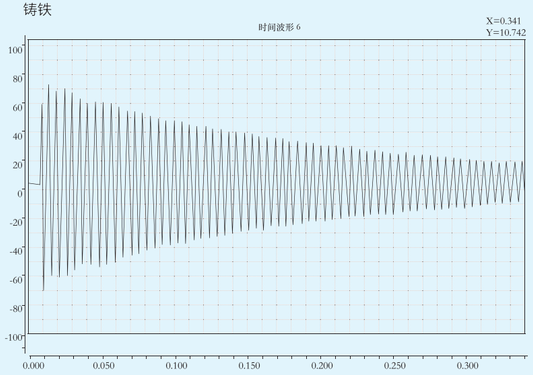
Mineral Casting（人造花崗石）

目前我公司此项产品已通过专利申请，申请号为：PCT/CN2005/001306

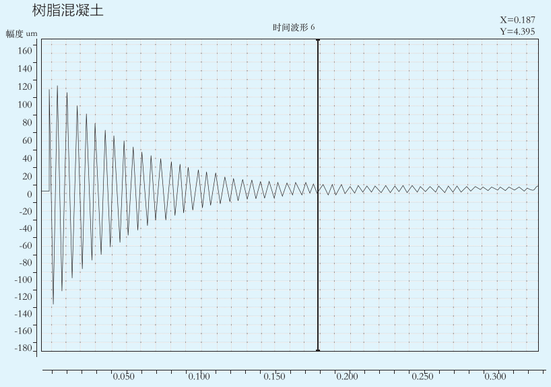
三：树脂混泥土的震动性及工程数据

就 1.5in.x1.5in.x9in. 巴压强的铸件材料样本，在 70 化氏温度条件下对其振动阻尼能力进行测试。结果如右图所示：树脂混泥土削减振动的能力比氧化铝快 45 倍；比铸铁和钢快 10 倍；比花岗岩快 4 倍。

铸铁



树脂混凝土



Third:Vibration and engineering Data

Cast materials in the form of 1.5in.x1.5in.x9in.bar specimens,were evaluated for their vibration damping capabilities at 60 ° F.The graphs show:it dampens vibration 45 times faster than aluminum,10 times more quickly than cast iron or steel and over 4 times more rapidly than granite.

目前生产规模：现可提供 10000x5000x2500 规格的机床床身。

The recent production ability:supplying the biggest dimension of the lathe-bed:10000x5000x2500.

四：钢结构填充人造花岗石

采用钢板焊接结构的机械部件，填充人造花岗石后大大降低震动系数，特别适合那些既要降低震动系数又要保持原结构不变的成型产品。

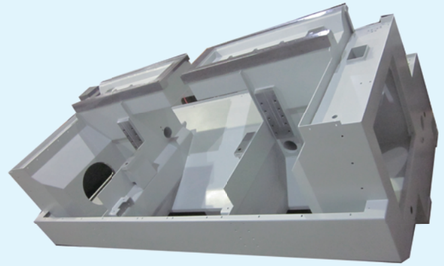
Forth:pouring man-made granite into the steel structure

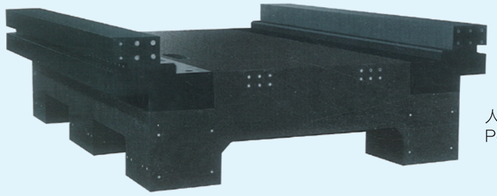
It can reduce vibration to pour man-made.granite into the steel structure. It especially fits to the molding products.Not only does it reduce the vibration,but also keep the vibration,but also keep the original structure.

实际应用

Application Examples

钢板焊接与人造石的组合产品
The combination of steel plate welding and mineral casting material

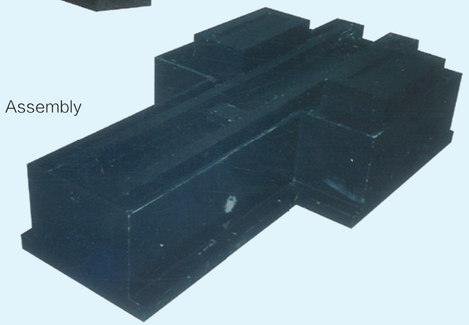




天然花岗石
Natural Granite

人造石
Polymer Concrete

天然花岗石与人造石组合产品
Natural Granite-Polymer Concrete Assembly



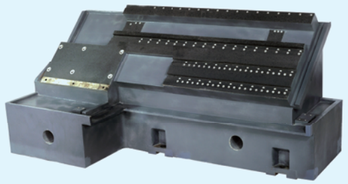
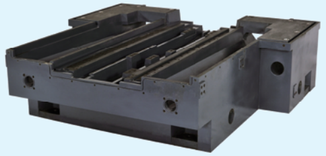
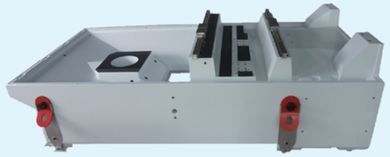
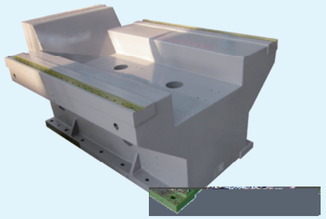
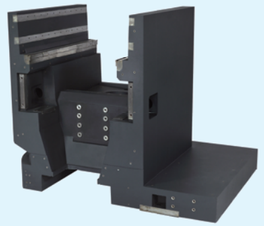
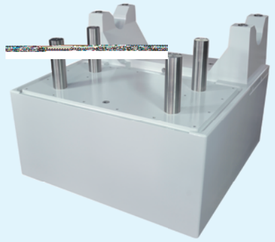
礦物復合材料

Mineral Casting（人造花崗石）

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实际应用

Application Examples

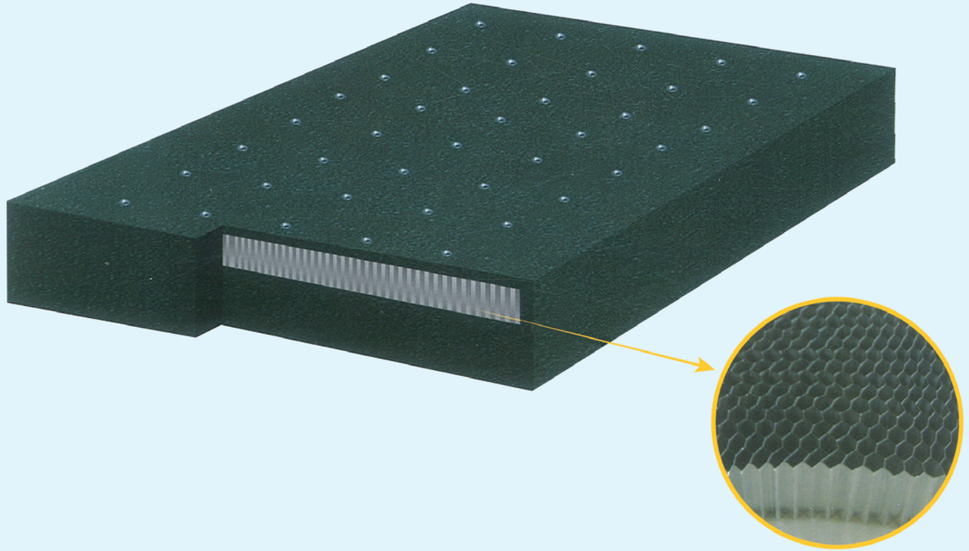
光學平板

Optic Plate

采用比不锈钢阻尼系数高 10 倍的专利产品——人造花岗石作为结构材料，可进一步提高产品的防震性，提高工作面的强度。工作面与结构间采用蜂窝铝支撑。工作面经人工研磨平面度达到 JB4987-85 0 级，平面高度。按客户要求配置相应的孔（螺纹孔）。

规格从 300X300mm 到 8000X3000mm

Using patent product which damping is 10 times of stainless steel-Artificial Granite-as raw material,can lift the ability of vibrate-proof,improve intensity of working surface.The alveolate aluminum is used to support between the working surface and structure.The precision of working surface can obtain “JB4987-85 0” and on the surface holes can be drilled as the customer’s requirement. Dimension :300X300mm 到 8000X3000mm



電 子 水 平 儀

Electron Gradienter

东星“纳诺”电子水平仪是东星公司在国际国内同类产品的基础上自主研发的新型便携式数字精密测量仪器，采用最新超低功耗单片微机芯片，具有美观大方、性能稳定、精度高、速度快、读数清晰直观、使用便捷等特点，适用于加工现场及实验室等精密测量。

The new-style digital precision portable instrument was independent researchful by JINAN EASTSTAR based on the same kinds domestic and international products.It takes new and low power consumption single chip with nice-looking,steady capability,high-precision,and super-speed merits and so on.And it is very good to read the date clearly.It is applicable in the laboratory and working spot.

一. 用途:

可用于平面度检测、角度检测、直线检测、平行检测等，也可用于机械设备的安装调试。

Purpose

To test the flatness,straightness,angle and so on.It’s also use for installing and adjusting the machine facility.

二. 主要特点:

大数字屏背光显示，薄膜轻触按键，取消了机械调整，数字调零快速准确，使用各型 AA（五号）电池，电池电量不足自动显示，可外接 3-5.5V 整流电源使用，并有电池自动充电等型号。

具有与计算机有线（无线）数据通讯的功能。

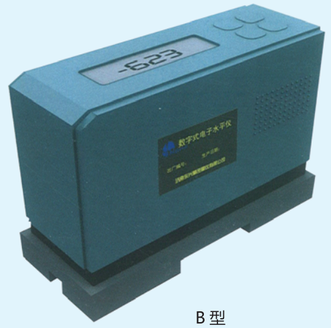
Main characteristic

The big digital with backlight,the film button,adjust “0” datum mark quickly and accurately,and cancel the machine adjust.It uses either AA battery （No.5）.It will point out automatically,if the battery power isn’t enough. You can connect 3-5.5V rectifier power source and the battery will be charge at same time.

It can save and inquiry 100 measuring data.And it can connecl computer with wire or wireless,calculate straightness and other functions （If you need special function,you can advise,when you order）.



A 型



B 型

三. 主要技术指标 Main Technical Index

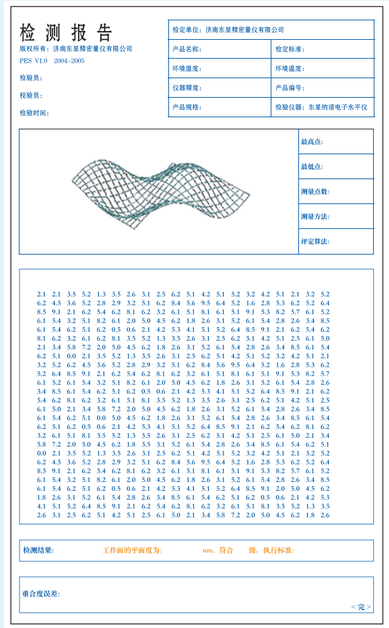
	A 型	B 型
视值范围 survey scope	1 档 -1999-1999 2 档 -1999-1999	1 档 -1999-1999 2 档 -1999-1999
测量范围 measuring scope	≤ ±500 个数位	≤ ±500 个数位
分度值 dividing value	1/2 档 0.001/0.005	1/2 档 0.005/0.01
示值误差 the tolerance of show value	≤ ±（1+A/50）A 为显示值的绝对值	≤ ±（1+A/50）A 为显示值的绝对值
零位漂移 the datum mark excursion	4 小时内不超过 4 个数 not over 6 digitals within 4	4 小时内不超过 4 个数
稳定时间 stable time	≤ 5 秒	≤ 5 秒
横向倾斜度 transverse gradient	≤ ±10	≤ ±10
调零范围 balancing scope	≤ ±500（数）	≤ ±500（数）
仪器检测条件 inspection condition	20±2℃ 0.5℃/h	20±2℃ 0.5℃/h
电源 power source	AA（5 号）电池 2 节	AA（5 号）电池 2 节
功耗 power consumption	<25MW，连续工作 80 小时左右	<25MW，连续工作 80 小时左右
外型尺寸 outsize	150x45x120（mm）	150x45x120（mm）

四. 软件 Software

公司配件用于平板、平尺、角尺、方尺数据处理专用程序。对开以上产品检验的原始数据的处理精度评判提供了可靠便捷的手段；并根据客户要求设定生产企业名称；出具彩色报告。

Our company has special program to deal with the data which is use for granite plates, straight rules and squares.It offers credible and convenient way to judge the original inspecting data.And you can print out the color test report with the enterprise name.





氣浮導軌

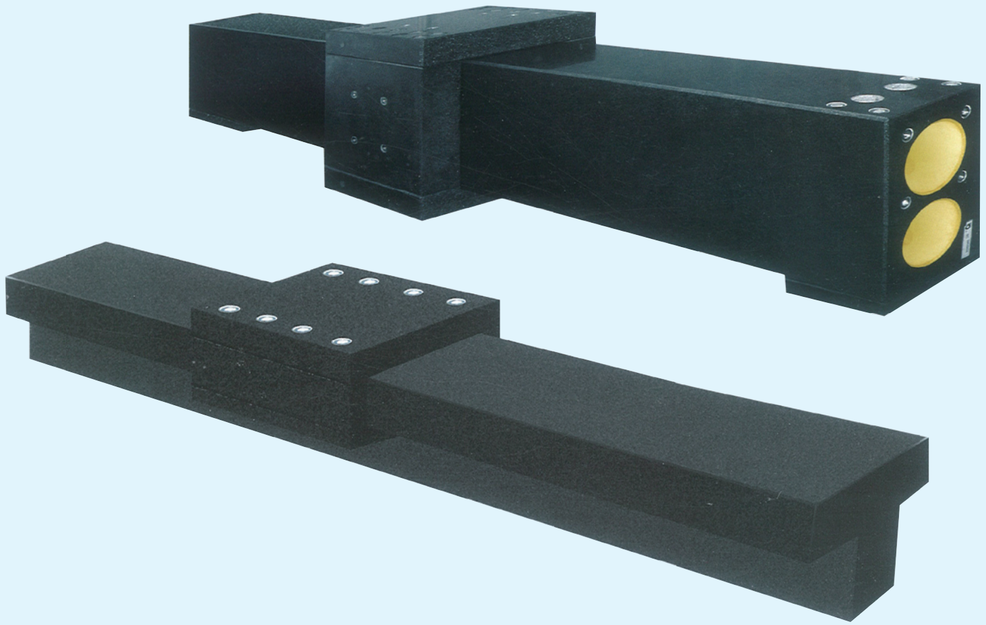
Air Slideway

气浮导轨

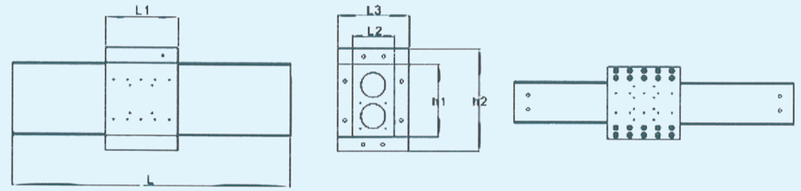
高精度气浮导轨作为运动机械的一部分，通常与伺服驱动，传感器组成闭環系统，实现位移的高精度，高分辨率。

AIR SLIDEWAY

As a part of moving machine,the high precision air slideway is usually used together with the servo drive and sensor to build up a closed loop system to realize the high precision and high resolution factor of the displacement.



全封闭气浮导轨

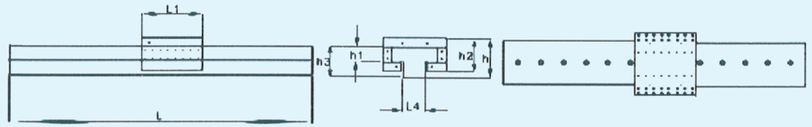


主要参数

导轨总长 L(mm)	导轨截面尺寸 L2 x h1(mm)	滑套外形尺寸 L1 x L3 x h2(mm)	直线度 /100mm （μm）	全程直线度 （μm）	放置形式	载荷
250~800	70 x 70	200 x 135 x 135	0.05~0.3	0.1~3	卧或立	轻载
250~1000	90 x 90	200 x 170 x 170	0.05~0.3	0.1~2.5	卧或立	轻载
300~1000	100 x150	260 x 200 x 250	0.05~0.3	0.1~2	卧或立	轻载
250~1200	120 x 200	300 x 240 x 320	0.05~0.3	0.1~2	卧或立	轻载
350~1400	150 x 250	300 x 270 x 370	0.05~0.3	0.1~2	卧或立	轻载
350~1600	180 x 300	300 x 300 x 420	0.05~0.3	0.1~2	卧或立	轻载
400~1800	200 x 350	350 x 340 x 490	0.05~0.3	0.1~2	卧或立	轻载
450~1800	240 x 350	400 x 380 x 490	0.05~0.3	0.1~2	卧或立	轻载
450~2000	300 x 400	400 x 460 x 560	0.05~0.3	0.1~2	卧或立	轻载

附注：载荷与气压大小有关

兰封闭气浮导轨



主要参数

导轨总长 L(mm)	导轨截面尺寸 L2 x L4 x h1x h3(mm)	滑套外形尺寸 L1 x L3 x h2 x h(mm)	直线度 /100mm （μm）	全程直线度 （μm）	放置形式	载荷
400~2500	140 x 60 x 100 x 200	300 x 250 x 210 x 260	0.1~0.5	0.3~3	卧式	中等载荷
500~4000	300 x 150 x 100 x 220	400 x 420 x 220 x 260	0.1~0.5	0.3~3	卧式	中等载荷
500~5000	400 x 250 x 150 x 270	400 x 520 x 290 x 330	0.1~0.5	0.3~4	卧式	中等载荷
550~6000	450 x 300 x 150 x 270	450 x 610 x 300 x 350	0.1~0.5	0.3~5	卧式	中等载荷

附注：载荷与气压大小有关

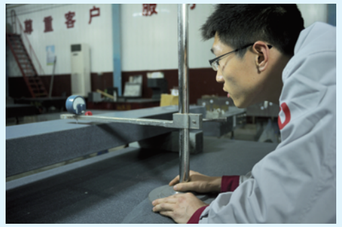
質 量 控 制

Quality Control

01 严谨的工作态度和专业能力 Rigorous working attitude and professional ability

东星的质检员平均工作时间超过 10 年，各个都是身怀绝技

The quality inspector of EASTSTAR has an average working time of more than 10 years.





02 先进的测量设备 Advanced measuring equipment

激光干涉仪，三坐标，电子水平仪等高精度检测仪器配套

Laser interferometer, CMM, electronic level and other high precision testing instruments.







03 实时的在线质量监测 Real-time online quality monitoring

对于超高精度产品具备实时的在线检测能力，使产品在机床上就可以执行三坐标检测提高加工效率。

For ultra-high precision products with real-time online detection capability, the product can perform CMM detection on the machine to improve machining efficiency.





六大质量控制优势

Six advantages of quality control

04 加工环境的严格控制 Strict control of the processing environment

为确保高精度，对加工环境的温度湿度进行严格控制，确保温度常年 21 摄氏度，湿度 60%。

In order to ensure high precision, the temperature and humidity of the processing environment are strictly controlled to ensure that the temperature is 21 degrees Celsius and the humidity is 60%.



05 自有实验室提供数据的分析支持 Our own laboratory provides data analysis support

对材料严格取样分析，从源头控制材料质量，确保客户的产品达到最佳。

Strictly sampling and analyzing materials, controlling material quality from source and ensuring give the best products to customers.





06 质量的过程控制 Process control

对产品加工过程的严格跟踪监控，通过条形码和过程控制卡对产品进行追溯从而确保过程质量和产品进度跟踪。

Follow up and monitor the process of product, trace products through bar code and process control card, so as to ensure process quality and product progress tracking.





