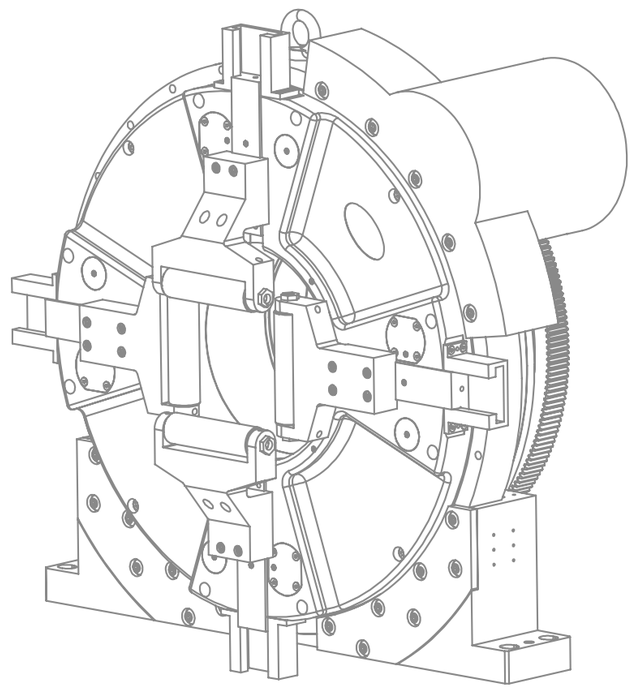
比优特®
江苏省高新技术产品

激光切割专用
四爪双动主轴夹座

SPECIAL FOR LASER CUTTING FOUR-CLAW DOUBLE-ACTING SPINDLE CLAMPER

专利技术、结构创新、安装方便
高品质、高精度、高转速

PATENT TECHNOLOGY, INNOVATIVE STRUCTURE AND CONVENIENT INSTALLATION
HIGH QUALITY, HIGH PRECISION AND HIGH ROTATING SPEED



常州比优特机械科技有限公司
CHANGZHOU BEUT MECHANICAL TECHNOLOGY CO., LTD.

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比优特®
BEUT

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ABOUT US

关于我们

常州比优特机械科技有限公司，国内知名的激光卡盘制造商及服务商，坐落于江苏常州。

自创立以来，比优特科技不断发展壮大，现有员工 180 名，其中技术人员 25 人，生产管理人员 15 人，质量管理人员 15 人。一直致力于激光切割装备部件的研发、制造、销售与服务，始终坚持发扬“诚信、创新、品质、沟通”为企业宗旨，以“优质产品、全心服务”为立业之本的团队精神。

公司研发的激光卡盘种类齐全：单轴承全行程双动卡盘、气动连杆四爪双动卡盘、全行程双动卡盘、杠杆式中空 (实）四爪双动送料卡盘、专业切管机双动卡盘等，广泛适用于激光专业切管机、激光管板一体机、等离子切割设备、焊接设备等各种管类切割加工设备。近年来公司产品已顺利通过 ISO9001 质量管理体系认证，并获得了 20 余项国家专利证书。

公司围绕“以科技为动力，以质量求发展”的经营理念，不断完善产品品质，努力为国内外的广大光纤激光切割智能设备提供高效、高品质的激光卡盘。

Located in Changzhou City, Changzhou BEUT Mechanical Technology Co., Ltd., a well-known laser chuck manufacturer and service provider in China.

Since its establishment, BEUT Technology has been developing and expanding. Now it has 180 employees, including 25 technicians, 15 line managers and 15 quality controllers. It has been committed to the research and development, manufacturing, sales and service of laser cutting equipment components, and always adheres to the corporate tenet of "integrity, innovation, quality, and communication", and the team spirit of "high-quality products and wholehearted service" as the foundation of the business.

Company research and development of laser chuck includes many types: single bearing full stroke double-acting chuck, pneumatic connecting rod four-jaw double-action chuck, full-stroke double-action chuck, leveraged hollow（solid） four-jaw double-acting feeding chuck, double-acting chuck for professional pipe cutting machine, etc. It is widely used in various tube cutting processing equipment such as laser professional pipe cutting machine, laser tube-sheet integrated machine, plasma cutting equipment, welding equipment, etc.In recent years, the company's products have successfully passed the ISO9001 quality management system certification and obtained more than 20 national patent certificates.

By adhering to business philosophy of "powered by technology, developed by quality", constantly improving product quality, and striving to provide high-efficiency and high-quality laser chucks for the vast number of fiber laser cutting intelligent equipment at home and abroad.

标准化仓储

机加工车间一

机加工车间二

三坐标检测

卧式加工中心

CORE COMPETENCE

核心竞争力

专利技术、结构创新、安装方便
高品质、高精度、高转速

Patent Technology, Innovative Structure and Convenient Installation High Quality,
High Precision and High Rotating Speed

LASER CHUCK SOLUTION
激光卡盘解决方案

■ 原点定位：
Base point positioning:

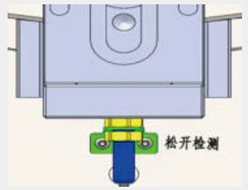
便于主机设备调整，大大缩短了主机设备的调试时间。

Be convenient for the adjustment of the main equipment and greatly shortens the debugging time of the main equipment.

■ 卡爪松开检测：
Claw release test:

极大地提高了卡盘安全运行的可靠性。

Greatly improves the reliability of chuck safe operation.



■ 全行程设计：
Full stroke design:

不需要调整卡爪，轻松装夹并居中，实现不同管径切换。大幅度节约装夹时间。夹紧力大，夹持范围广，保压时间长（8小时以上）性能稳定。

No need to adjust the claw, easy clamping and centering, to achieve switching among different pipe diameters, which greatly saving clamping time. The clamping force is large, the clamping range is wide, the holding time is long (more than 8 hours) and the performance is stable.

■ 适用范围广，加工型材多样化：
Wide range of applications, diversification of processing profiles:

可加工各种不同管径、样式材料。如：圆管、方管、矩型管、O型管、三角管各类管材及H型钢和槽钢等。

It can process all kinds of materials with different diameters and styles, such as: round pipe, square pipe, rectangular pipe, O-pipe, triangular pipe, H-beam and channel steel, etc.

■ 重复定位精度高：
High repetitive positioning accuracy:

合理可靠的结构设计，从而能轻松达到客户的高标准精度要求。

Reasonable and reliable structure design, so as to easily meet customer's high level accuracy requirements.

■ 低维护，寿命长：
Low maintenance cost, long service life:

1. 所有的滑动零件都经过硬化处理，耐磨性能好；
2. 滑动部件卡爪导向槽密封设计可靠，提高了防尘性能；
3. 滑动部件润滑设计充分；
4. 动平衡检测。

1. All sliding parts are hardened and have good wear resistance.
2. The sealing design of the guide groove of the sliding part claw is reliable, which improves the dust-proof performance.
3. The lubrication design of sliding parts is adequate.
4. Dynamic balance detection.

■ 多种配置可选：
Multiple configurations are available:

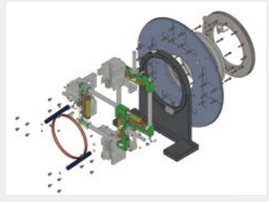
1. 中实或中空
2. 梳齿型或榫槽型卡爪
3. 杠杆戒或长卡爪
4. 卡爪或滚轮
5. 2爪、3爪、4爪、6爪或异形爪

1. Solid or hollow
2. Comb-type or mortise-groove type claws
3. Lever ring or long claw
4. Claw or roller
5. 2-claw, 3-claw, 4-claw, 6-claw or abnormal claw

■ 三维设计：
Three-dimensional design:

直观准确，快捷高效。

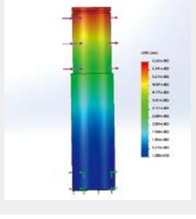
Visual, accurate, fast and efficient.

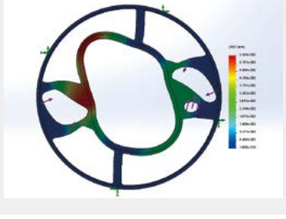


■ 采用结构有限元分析：
Structural finite element analysis is adopted:

对零件进行了不同方向的强度校核、变形量、应变及刚度计算，验证零件在各种加载和约束条件下完全满足设计要求。

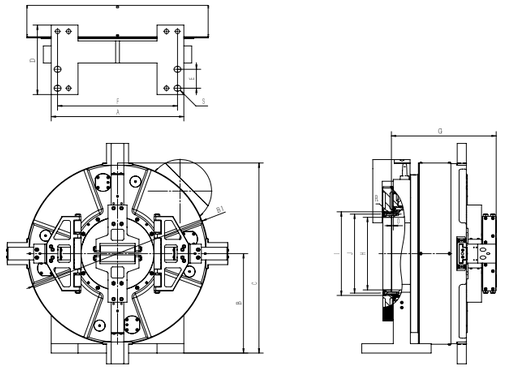
The strength checking, deformation, strain and stiffness calculation of the parts in different directions are carried out. The results show that the parts fully meet the design requirements under various loading and restraint conditions.





激光专用切管机单轴承全行程主卡盘
SINGLE BEARING FULL STROKE MAIN CHUCK OF LASER DEDICATED PIPE CUTTER

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴，中间带有能牢牢卡紧工件同时又能旋转的卡盘，通过侧面旋转进气实现快速夹紧与松开动作，断开气源，方可工作。产品底座固定好后只需要加装配套的电机与齿轮连接，同时接上压缩气源（0.2-0.9Mpa）即可实现夹紧工件、带动工件旋转。

卡盘全行程工作，无需额外调整四爪位置，可夹持全范围适用管件，提高生产效率。卡盘采用全封闭结构，稳定性及耐磨性能更为优良。内装十字交叉滚子轴承，使用寿命长，回转精度及重复定位精度较传统激光卡盘更高，且相对市场同类产品夹紧力更大。在气源压力较低的情况下，能获得较小的夹紧力，从而满足薄壁管件的加工。

该产品广泛应用于专用激光切管机等管材加工机床系统。

This product is specially designed for laser tube cutting equipment. The product itself can be used as an independent rotating spindle, and a chuck in it can firmly clamp workpiece and rotate simultaneously. The quick clamping and loosening actions can be realized by side rotation and air intake. Disconnect the air source before operation. After the product base is fixed, to clamp and rotate the workpiece, it only needs to equip with a matching motor and connect it with the gear and meanwhile connect the compressed air source (0.2-0.9Mpa).

The chuck can work in full stroke without additional adjustment of four claws. It can clamp all applicable pipe fittings and improve production efficiency. Adopting a fully closed structure, the chuck has better stability and wear resistance. With cross roller bearing, it has longer service life, higher rotary accuracy and repeated positioning accuracy than traditional laser chuck, and greater clamping force than similar products in the market. In the case of low air pressure, a smaller clamping force can be obtained, thereby satisfying the need of processing thin-walled pipe fittings.

The product is widely used in special laser pipe cutters and other pipe processing machine systems.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 $Kg.m^2$ Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
G400DB-175	162	0.8	0.2-0.9	200	ϕ8-170	260	3.2	125	190
G500DB-230	210	1.5	0.2-0.9	150	ϕ20-ϕ230	315	3.97	124	240
G800DB-360	177/355	5.0/2.5	0.25-0.9	150	ϕ5-ϕ360	425	19.5	281	473

尺寸参数 / Dimensions

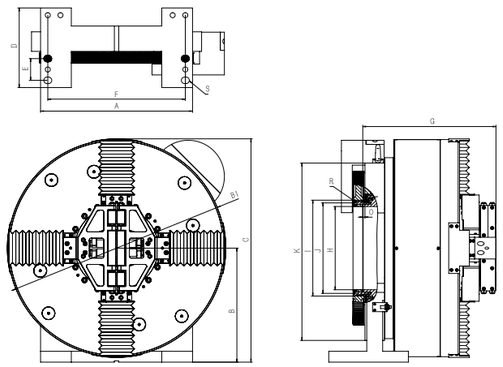
规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	O	R	S
G400DB-175	500	260	500	555	160	100	440	316	175	215	196	400	6	12-M8	18×28
G500DB-230	420	315	574	664	220	60	380	332	230	265	250	470	6	12*M8	18×22
G800DB-360	652	425	804	840	250	205	587	398	360	404	425	650	8	12*M10	18×38

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

激光专用切管机单轴承全行程主卡盘

SINGLE BEARING FULL STROKE MAIN CHUCK OF LASER DEDICATED PIPE CUTTER

参数对照示意图
Parameter Contrast Schematic Diagram



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卡盘全行程工作，无需额外调整四爪位置，可夹持全范围适用管件，提高生产效率。卡盘采用全封闭结构，稳定性及耐磨性能更为优良。内装十字交叉滚子轴承，使用寿命长，回转精度及重复定位精度较传统激光卡盘更高，且相对市场同类产品夹紧力更大。在气源压力较低的情况下，能获得较小的夹紧力，从而满足薄壁管件的加工。

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The chuck can work in full stroke without additional adjustment of four claws. It can clamp all applicable pipe fittings and improve production efficiency. Adopting a fully closed structure, the chuck has better stability and wear resistance. With cross roller bearing, it has longer service life, higher rotary accuracy and repeated positioning accuracy than traditional laser chuck, and greater clamping force than similar products in the market. In the case of low air pressure, a smaller clamping force can be obtained, thereby satisfying the need of processing thin-walled pipe fittings.

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G400DC-175	165	0.87	0.3-0.9	150	Φ8-φ173	260	3.35	116	193
G500DC-230	220	1.5	0.3-0.9	150	Φ8-φ228	315	4.18	124	245
G700DC-270	240	3.15	0.3-0.9	120	Φ15-φ265	375	10.9	215	307

尺寸参数 / Dimensions

规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	O	R	S
G400DC-175	500	260	500	510	160	100	440	333	175	220	190	400	8	12-M8	14×24
G500DC-230	420	315	600	615	220	60	380	368	230	265	250	490	6	12-M8	18×22
G700DC-270	665	375	700	725	265	220	610	380	270	330	296	558	5	12-M10	18×28

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激光专用切管机单轴承全行程主卡盘

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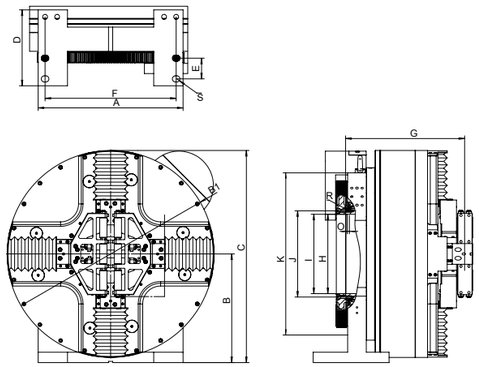

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G500D-230	200	1.5	0.2-0.9	200	φ10-φ230	315	4.6	128	245
G800D-360	312	4.1	0.2-0.9	150	φ15-φ360	425	17.69	251	369

尺寸参数 / Dimensions

规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	O	R	S
G500D-230	420	315	600	615	220	60	380	361.5	230	265	250	470	6	12-M8	18×22
G800D-360	652	425	800	825	280	235	587	405.5	360	404	425	650	8	12-M12	18×20

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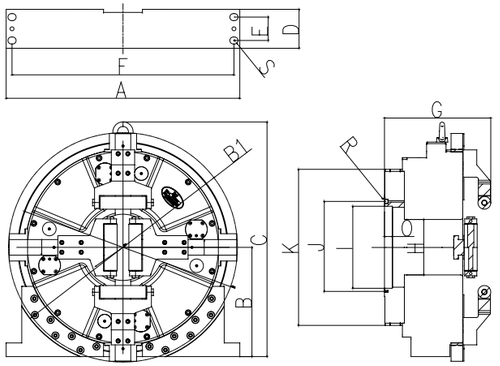
激光专用切管机全行程主卡盘

FULL-STROKE MASTER CHUCK FOR LASER SPECIAL PIPE CUTTING MACHINE

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴，中间带有能牢牢卡紧工件同时又能旋转的卡盘，通过侧面旋转进气实现快速夹紧与松开动作，断开气源，方可工作。产品底座固定好后只需要加装配套的电机与齿轮连接，同时接上压缩气源（0.1–0.9MPA）即可实现夹紧工件、带动工件旋转。

卡盘全行程工作，无需额外调整四爪位置，可夹持全范围适用管件，提高生产效率。卡盘采用全封闭结构，稳定性及耐磨性能更为优良，内装十字交叉滚子轴承，使用寿命长。回转精度及重复定位精度较传统激光卡盘更高，且相对市场同类产品夹紧力更大，在气源压力较低的情况下，能获得较小的夹紧力，从而满足薄壁管件的加工。

该产品广泛应用于专用激光切管机等管材加工机床系统。

This product is specially designed for laser pipe cutting units, the product itself can be used as an independent rotating spindle, with a chuck in the middle that can clamp a workpiece tightly and rotate at the same time, fast clamping and loosening actions can be achieved through the side rotating air intake, and the air source can be disconnected for work. After the product base is fixed, only the matching motor is added and connected with the gear, and then the compressed air source (0.1-0.9MPA) is connected to achieve clamping workpiece and driving the workpiece to rotate.

The chuck works along the full stroke, there is no need to adjust the four-jaw position, a full range of applicable pipe parts can be clamped, and the production efficiency is improved. The chuck adopts fully enclosed structure, the stability and the wear resistance are better, the service life is longer, the clamping precision is higher, the rotating precision and the repeated positioning precision are higher than a traditional laser chuck, the clamping force is bigger than the similar products in the market, and the aerodynamic pressure is lower, smaller clamping force can be obtained, so that thin-walled pipe parts can be processed.

This product is widely used in special-purpose laser pipe cutting machine and other pipe processing machine tool systems.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
G400C–170	165	2.45	0.1–0.9	150	ϕ0–ϕ170	280	3.95	128.5	210
G500C–225	200	2.77	0.1–0.9	130	ϕ0–ϕ225	315	6.1	140	240
G630C–325	312	4.86	0.1–0.9	60	ϕ10–ϕ322	385	17.4	248	380

尺寸参数 / Dimensions

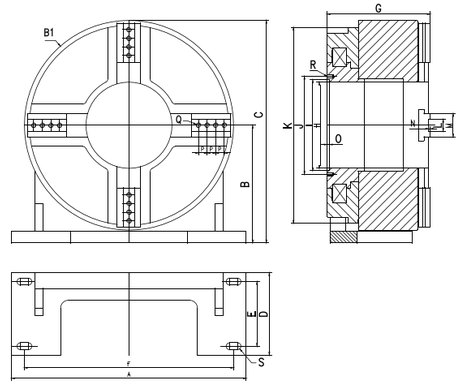
规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	O	R	S
G400C–170	600	280	590	602	100	60	570	273	170	235	250	400	10	8–M8	18×21
G500C–225	670	315	694	672	100	60	640	273	225	235	250	400	10	8–M8	18×21
G630C–325	730	385	740	807	160	110	670	341	325	335	350	500	9	9–M10	18×21

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

激光专用切管机主卡盘

MAIN CHUCK OF LASER PIPE CUTTER

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴，中间带有能牢牢卡紧工件同时又能旋转的卡盘。内置两只独立气缸、单向阀、逆止阀，具有长时间的保压功能（8 小时以上），通过侧面旋转进气实现快速夹紧与松开动作，断开气源，方可工作。产品底座固定好后只需要加装配套的电机与齿轮连接，同时接上压缩气源（0.25–1.0MPa）即可实现夹紧工件、带动工件旋转。主要用于夹紧工件、旋转。

因切割设备加工的零件长度较长，一般作为激光切割头部位的主卡盘与和其配套的尾部卡盘成对安装在设备上使用。

该产品结构稳定，能承受较大的径向力、轴向力和倾覆力。旋转平稳，精度高，噪音小。重量轻，转动惯量小，能大幅提高切割效率，节约能源。

该产品为四爪双动力自动两两定心结构，可装夹圆形、方形、长方形、椭圆形等中心轴对称的零件。

This product is specially designed for laser pipe cutter. The product itself can be used as an independent spindle with a chuck in the middle which can firmly clamp the workpiece and rotate at the same time. With the built-in two independent cylinders, one-way valve and check valve, it has a long-term pressure-holding function (more than 8 hours), rapid clamping and loosening action can be achieved through the side rotation of air inlet, and disconnect the air source to start work. After the product base is fixed, connect the matched motor with the gear, and connect the compressed air source (0.4-0.9MPa) to realize clamping and driving the workpiece to rotate. It is mainly used for workpiece clamping and rotating.

Because of the long length of the parts processed by the cutter, the main chuck used as the head position of laser cutting and the tail chuck matched with it are usually installed in pairs on the equipment.

The product is stable in structure and can withstand large radial force, axial force and overturning force. It has smooth rotation, high accuracy and low noise. The light weight and small rotational inertia can greatly improve cutting efficiency and save energy.

The product is a four-claw dual-power automatic two-two-center structure, which can clamp the circular, square, rectangular, elliptical and other centrally axisymmetric parts.

The product center is hollow structure, in order to keep the using environment clean and sanitary, the series of products can install the dust extraction device on the back, and are recommended for installation in the pipe cutter.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
G800B–400	210	9.7	0.25–1.0	120	ϕ20–ϕ390	450	40.4	426	601
G900B–440	215	9.7	0.25–1.0	120	ϕ20–ϕ440	480	55.4	454	642
G1000B–520	240	15.7	0.25–1.0	120	ϕ30–ϕ500	560	118.4	728	972
G1200B–630	240	16.46	0.25–1.0	100	ϕ50–ϕ610	660	272	1257	1373

尺寸参数 / Dimensions

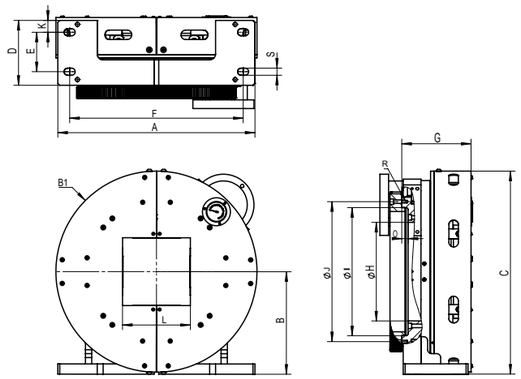
规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
G800B–400	680	450	800	877	266	220	614	330	400	428	472	680	30	60	80	8	25	M12	M10	18
G900B–440	680	480	880	925	296	250	620	332	440	454	478	680	30	60	80	8	25	M12	M10	18
G1000B–520	900	560	1030	1090	320	275	835	356	520	540	565	800	40	75	100	9	24	M12	M10	18
G1200B–630	1000	660	1200	1296	400	350	925	467	630	650	675	900	40	80	100	9	25	M12	M10	22

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

管板一体机简易气动双动卡盘（方形孔）

SIMPLE PNEUMATIC DOUBLE-ACTING CHUNK FOR TUBE-SHEET INTEGRATED MACHINES(SQUARE OPENING)

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴，中间带有能牢牢卡紧工件同时又能旋转的卡盘，通过侧面旋转进气实现快速夹紧与松开动作，断开气源，方可工作。

该产品采用气缸直接输出，机械效率较高，能量损失小，输出夹紧力大，夹持力稳定。由于采用气缸直接夹紧工件，气缸工作行程就是卡盘工作行程，夹持范围广。采用气缸直接输出，输出力与气压为线性比例，容易实现软件控制。卡盘结构简单，元器件数量少，重量轻，故障率低，性能稳定，转动惯量小，低能耗。卡盘轴向尺寸小，实现零尾料的成本更低。

该产品设计为方形中孔，相比圆孔卡盘，增大了方管规格尺寸，扩大了使用范围。

The product is specially designed for laser tube cutting equipment. The product itself can be used as an independent rotating spindle, with a chuck that can firmly clamp the workpiece while rotating. Fast clamping and loosening actions can be achieved through the side rotating air intake, and the air source has to be disconnected to work.

The product outputs by using a cylinder directly, the mechanical efficiency is high, the energy loss is small, the output clamping force is large, and the clamping force is stable. Because the cylinder is used to clamp the workpiece directly, the working stroke of the cylinder is the working stroke of the chuck, and the clamping range is wide. The cylinder is used for outputting directly, the output force and the air pressure are in linear proportion, which makes it easy to achieve software control. The chuck has a simple structure, few elements and components, light weight, low failure rate, stable performance, small moment of inertia and low energy consumption. The axial dimension of the chuck is small, and the cost for achieving zero tailings is lower.

The product is designed as a square middle hole. Compared with a round hole chuck, the size of square tube is increased and the scope of use is expanded.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
G400F-170	154	1.2	0.25-0.9	200	ϕ16-ϕ170	260	1.72	89	144
G600F-230	220	1.7	0.25-0.9	200	ϕ10-ϕ230	350	4.5	141	219
G800F-360	180	4.5	0.25-0.9	150	ϕ5-ϕ360	420	17.19	303	452

尺寸参数 / Dimensions

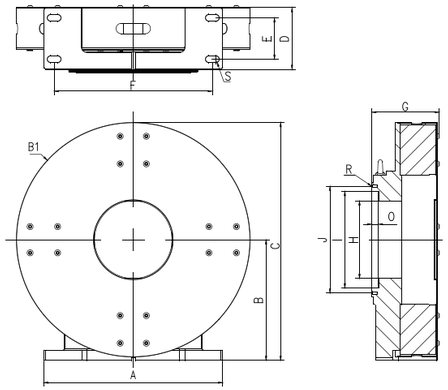
规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	K	L	O	R	S
G400F-170	500	260	510	515	164.5	100	440	175.5	250	325	355	30	170	16	12-M8	18
G600F-230	520	350	680	690	191	120	460	194.5	330	376	402	29.5	230	20	12-M8	18
G800F-360	680	420	820	840	205	150	620	257	510	523	539	25	360	9	16-M8	18

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

管板一体机简易气动双动卡盘

SIMPLE PNEUMATIC DOUBLE-ACTING CHUNK FOR TUBE-SHEET INTEGRATED MACHINES

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴，中间带有能牢牢卡紧工件同时又能旋转的卡盘，通过侧面旋转进气实现快速夹紧与松开动作，断开气源，方可工作。

该产品采用气缸直接输出，机械效率较高，能量损失小，输出夹紧力大，夹持力稳定。由于采用气缸直接夹紧工件，气缸工作行程就是卡盘工作行程，夹持范围广。采用气缸直接输出，输出力与气压为线性比例，容易实现软件控制。卡盘结构简单，元器件数量少，重量轻，故障率低，性能稳定，转动惯量小，低能耗。卡盘轴向尺寸小，实现零尾料的成本更低。

This product is specially designed for laser pipe cutting units, the product itself can be used as an independent rotating spindle, with a chuck in the middle that can clamp a workpiece tightly and rotate at the same time, fast clamping and loosening actions can be achieved through the side rotating air intake, and the air source can be disconnected for work.

The product uses the cylinder direct output, the mechanical efficiency is high, the energy loss is small, the output clamping force is big, the clamping force is stable. Because the cylinder is used to clamp the workpiece directly, the working stroke of the cylinder is the working stroke of the chuck, and the clamping range is wide. The cylinder direct output is adopted, the output force and the air pressure are linear proportion, and software control can be easily achieved. The chuck has a simple structure, few components, light weight, low failure rate, stable performance, small moment of inertia and low energy consumption. The axial dimension of the chuck is small, and the cost for realizing the zero tailing is lower.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
G360-110	110	0.8	0.25-0.9	200	ϕ3-ϕ110	230	1.44	66	116
G400-165	140	1.2	0.25-0.9	200	ϕ20-ϕ160	260	1.26	78	111
G600-225	220	1.7	0.25-0.9	200	ϕ0-ϕ220	350	6.5	129	177
G800-355	180	4.5	0.25-0.9	150	ϕ20-ϕ350	420	18.2	210	315

尺寸参数 / Dimensions

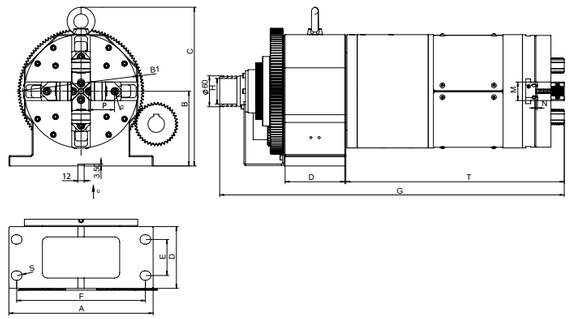
规格 Specifications	A	B	B1	C	D	E	F	G	H	I	J	O	R	S
G360-110	320	230	435	447.5	220	196	270	197.5	110	122	140	9	12-M8	14
G400-165	500	260	510	515	160	100	440	171	165	240	270	16	12-M8	18
G600-225	520	350	680	690	179	120	460	185	225	280	245	20	12-M8	18
G800-355	680	420	800	820	200	150	620	247.5	355	368	384	9	16-M8	18

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

杠杆式中空四爪双动送料卡盘（全通孔）

ROD-TYPE HOLLOW FOUR-JAW DOUBLE-ACTING FEEDING CHUCK (FULL THROUGH HOLE)

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴中间带有能牢牢卡紧工件同时又能旋转的卡盘。通过尾部配套的回转器实现旋转进气从而达到快速夹紧与松开动作，工作时气源为持续供气原理。

该产品夹紧力大，夹持稳定；调整方便，效率高；刚度比长卡爪高，精度可长期保持，不会出现卡爪弯曲变形影响回转精度的现象；卡爪设计长度短，最大夹紧力情况下不会出现长卡爪喇叭口而打滑，夹持不稳的现象；卡盘结构简单，重量轻，转动惯量小，能耗低。

该产品中心为贯通结构，为了使环境的干净卫生，该系列的产品可在背面加装抽尘装置。

The product is specially designed for laser tube cutting equipment. The product itself can be used as an independent rotating spindle with a chuck that can firmly clamp the workpiece while rotating. Rotary air intake is achieved through the rotator equipped at the end to achieve fast clamping and loosening actions. The air source supplies air continuously during work.

The clamping force of the product is large, the clamping is stable; the adjustment is convenient, the efficiency is high; the rigidity is higher than a long clamping claw, the precision can be maintained for a long time, and there is no phenomenon that the bending deformation of the clamping claw affects the rotary precision; the design length of the clamping claw is short, and the phenomenon that slippery is caused and the clamping is unstable because of a long clamping claw horn does not appear at the condition of the maximum clamping force; the chuck has a simple structure, light weight, small moment of inertia and low energy consumption.

The center of the product is a through structure. In order to make the environment clean and hygienic, the product of this series can be equipped with a dust extraction device on the back.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
W160T-23	57	1.6	0.3-1.0	400	ϕ10-ϕ165	120	0.08	24	43
W220T-40	70	2.4	0.3-1.0	400	ϕ10-ϕ225	145	0.23	43	81
W300T-50	108	3.6	0.3-1.0	400	ϕ10-ϕ320	182.5	1.05	100	168

尺寸参数 / Dimensions

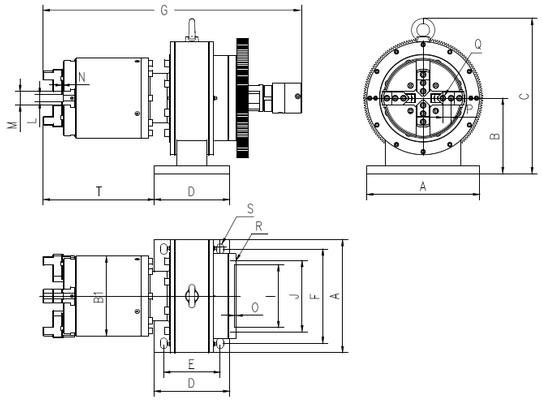
规格 Specifications	A	B	B1	C	D	E	F	H	M	N	P	Q	S	T	G
W160T-23	200	120	164	258	106	70	185	23	30	3	12.5	M6	18	397	628
W220T-40	280	145	224	308	120	70	250	40	36	3	25	M8	18	424	669
W300T-50	320	182.5	304	386	150	70	290	50	45	2	30	M8	18	521.5	802

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

杠杆式中实四爪双动送料卡盘

LEVER TYPE MEDIUM-SOLID FOUR-JAW DOUBLE-ACTING FEEDING CHUCK

参数对照示意图
Parameter Contrast Schematic Diagram



该产品是专为激光切管设备而配套，产品自身可作为独立旋转主轴中间带有能牢牢卡紧工件同时又能旋转的卡盘。通过尾部配套的回转器实现旋转进气从而达到快速夹紧与松开动作，工作时气源为持续供气原理。

该产品夹紧力大，夹持稳定；调整方便，效率高；刚度比长卡爪高，精度可长期保持，不会出现卡爪弯曲变形影响回转精度的现象；卡爪设计长度短，最大夹紧力情况下不会出现长卡爪喇叭口而打滑，夹持不稳的现象；卡盘结构简单，重量轻，转动惯量小，能耗低。

This product is specially designed for laser pipe cutting units. The product itself can be used as an independent rotating spindle, with a chuck in the middle that can clamp a workpiece tightly and rotate at the same time. Rotating air intake is achieved by the rear-mounted rotator so as to achieve fast clamping and loosening actions. The gas source is the principle of continuous air supply when the chuck works.

The clamping force of the product is large, the clamping force is stable, the adjustment is convenient, the efficiency is high, the rigidity is higher than the long clamping claw, the precision can be maintained for a long time, and there is no phenomenon that the bending deformation of the clamping claw affects the rotary precision; the design length of the clamping claw is short, and the maximum clamping force does not cause the phenomenon that the long clamping claw horn, which causes slippery, does not occur, and the clamping is unstable; the chuck is simple in structure, light in weight, small in rotational inertia and low in energy consumption.

性能参数 / Performance Parameters

型号 Model	爪行程 / 直径 mm Claw stroke/ diameter	最大夹紧力 KN Maximum clamping force	许用压力 MPa Allowable pressure	极限转速 r/min Limit speed	夹紧范围 mm Clamping range	中心高 mm Central height	转动惯量 Kg.m² Rotational inertia	转动部分重量 Kg Rotating part weight	整机重量 Kg Whole unit weight
W110J	20	3.2	0.3-1.0	500	ϕ4-ϕ100	110	0.3	19.8	30
W165J	33	4.3	0.3-1.0	500	ϕ10-ϕ165	175	0.3	69	95
W220J	70	4.4	0.3-1.0	500	ϕ10-ϕ210	200	0.7	102	140
W300J	86	9.8	0.3-1.0	500	ϕ10-ϕ314	250	2.2	145	175

尺寸参数 / Dimensions

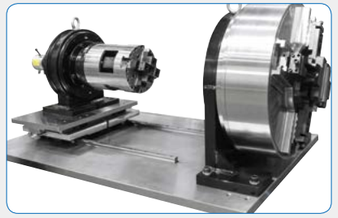
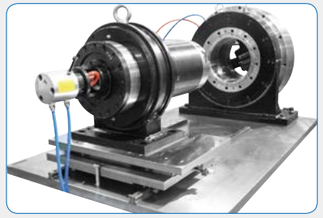
规格 Specifications	A	B	B1	C	D	E	F	I	J	L	M	N	O	P	Q	R	S	T	G
W110J	200	110	102	237	110	85	165	84	106	10	18	2	3	17	M4	8-M6	11	352	611
W165J	300	175	154	377	180	140	250	140	180	18	30	3	5	13	M6	8-M10	18	325	690
W220J	300	200	204	417	200	150	250	160	198	20	36	4	5	22	M8	8-M10	18	420.5	813.5
W300J	440	250	300	475	250	200	380	190	220	/	/	/	/	/	/	12-M10	18	464	962

注：以上数据为标准参数，如有更改不另行通知，也可以根据客户特殊要求设计。
Note: above numbers are standard parameters. We can also design products according to clients' special requirements.

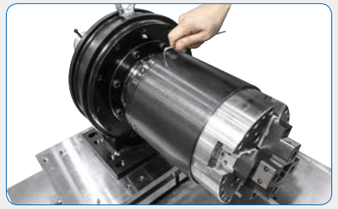
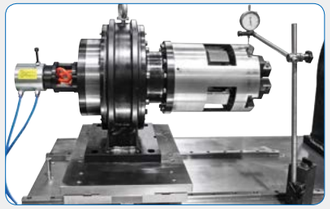
激光切管卡盘精度安装调试说明（一）

本安装说明部分都是围绕着如何将两个卡盘的中心（旋转轴线）调整在要求范围内而编制的，让设备满足用户的加工要求，希望每个设备厂家都能按此安装步骤严格操作，同时也希望每个客户在安装过程中多与我们沟通安装细节问题以便我们及时改进，谢谢！

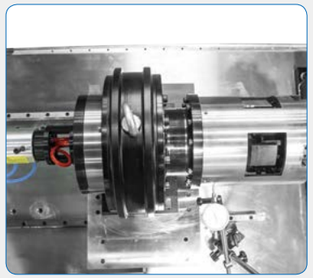
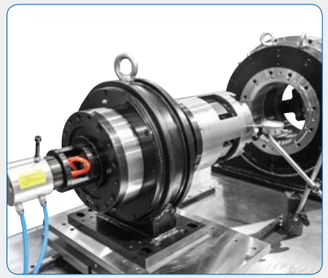
1. 将两个产品按设计要求固定在对应的工作台面上，如图所示，左边卡盘命名“尾卡”，右边卡盘命名“主卡”。

2. 旋紧尾卡安装固定螺钉，拆除尾卡的防尘罩壳，如图所示，测量尾卡头部旋转部位的上母线。磁性表座固定在机床床身上面（不是固定在尾卡的安装台面上），表针指向如图所示位置，左右移动整个安装台面，测量上母线数值在 0.05mm 以内即可，如超出要求范围，可采取卡盘安装底平面两点垫铜皮的方法来调整到要求范围。

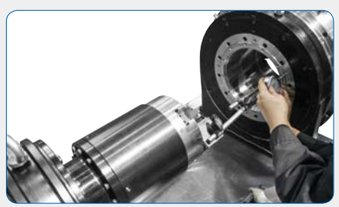



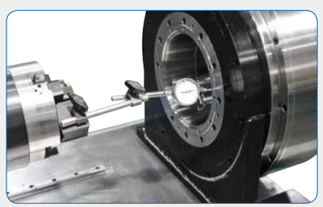
3. 测量尾卡头部旋转部位的侧母线，磁性表座固定在机床床身上面（不是固定在尾卡的安装台面上），表针指向如图所示位置，左右移动整个安装台面，测量侧母线数值在 0.05mm 以内即可，如超出要求范围，可采取微微转动卡盘安装基座的方法来调整到要求范围。调整好后请按第 2 条步骤重复检查上母线精度是否达标，如有超差请再做调整，最终保证尾卡上母线、侧母线的误差值在 0.05mm 以内即可。

4. 以尾卡中心为基准（尾卡的旋转中心），测量主卡背面基准平面相对于尾卡旋转中心的垂直度。

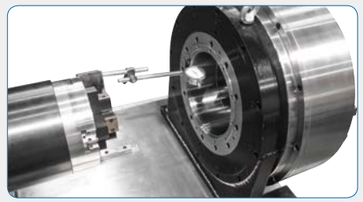
测量调整方法：磁性表座固定在尾卡的端面上，百分表针指向如图所示位置（主卡基准外平面），慢慢转动尾卡一圈，同时观察百分表的指针读数，所测横向竖向最大范围内的四点值差在 0.05mm 以内即可。如横向两点数值超差，可采取微微转动主卡的安装基座的方法来调整到要求范围。如竖向（上下）两点数值超差，可采取卡盘安装底平面两点垫铜皮的方法来调整到要求范围。这个步骤请反复多调几次，最终保证误差值在 0.05mm 以内即可。





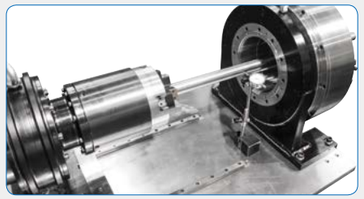
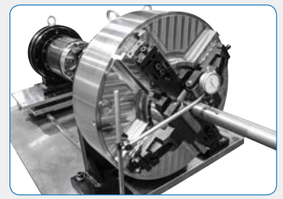
5.以尾卡中心为基准（尾卡的旋转中心），测量主卡旋转中心与尾卡旋转中心的同轴度，即两卡盘中心等高。

测量调整方法：磁性表座固定在尾卡的端面上，百分表针指向如图所示位置（主卡基准孔内壁），慢慢转动尾卡一圈，同时观察表的指针读数，所测横向竖向最大范围内的四点值差在0.05mm以内即可。如横向两点数值超差，可采取横向微微移动主卡的安装基座的方法来调整到要求范围。如竖向（上下）两点数值超差，可采取卡盘安装底平面四点垫铜皮的方法来调整到要求范围。这个步骤请反复多调几次，最终保证误差值在0.05mm以内即可。调整好后请按第4条步骤重复检查精度是否达标，如有超差请再做调整，最终保证在0.05mm以内即可。



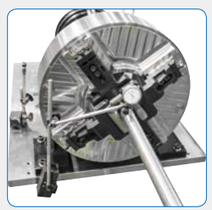
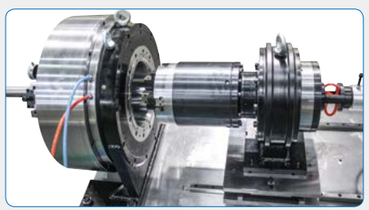
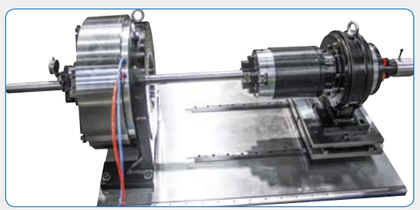
6. 卡盘定心精度的检测与调整。

请将两卡盘的距离调整在 500mm−1000mm 之间，且夹持同一根芯棒，芯棒长 1500mm−2000mm 直径在 30−50mm。磁性表座固定在机床床身上面，百分表指针指向如图示位置（距离卡爪 30mm 左右位置的芯棒外圆处），转动卡盘及芯棒。百分表分别测量距离卡爪 30mm 左右位置的芯棒跳动在 0.1mm 左右即为合格（一般来讲卡盘出厂前所配卡爪夹持精度均已调整到位，特殊定制或其它特殊情况的需用户自己调整卡爪精度）。如超差则通过调整相应卡爪的位置使之达到精度要求。

7. 整体精度的检查。

请将两卡盘的距离调整在 500mm−1000mm 之间，且夹持同一根芯棒。磁性表座固定在机床床身上面，百分表指针指向如图示位置（距离主卡盘卡爪 30mm 左右位置的芯棒外圆处），前后移动尾卡，使尾卡与主卡之间的距离在 −100mm（尾卡可以移动至主卡中心孔里面）至 1000mm 左右，观察百分表指针数值差在 0.05mm 左右即为合格，同样方法将百分表指针指向芯棒侧面外圆，观察百分表指针数值在 0.05mm 左右即整体安装合格。如有超差则请仔细检查以上几个步骤细节是否有遗漏或某个精度超差，直至达标为止。

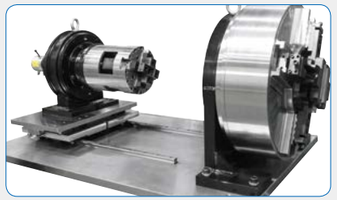
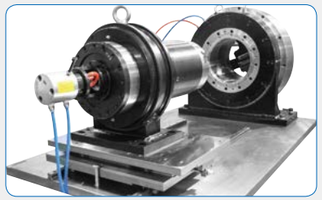




8. 以上步骤请用户详细阅读后再进行安装调试设备，此安装说明是我公司结合大部分设备厂家的安装调试的经验而制定的，希望我们的设备厂家能认真按此说明操作，再次感谢您使用我公司的产品。

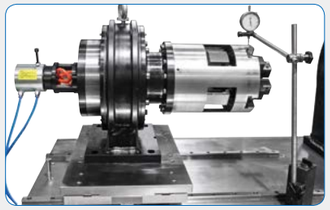
INSTALLATION AND ADJUSTMENT OF LASER PIPE CUTTING CHUCK ACCURACY (1)

The installation instructions are compiled for the purpose of adjusting and keeping the center (rotation axis) of two chucks within the required range, so that the equipment can meet the processing requirements of users. We hope that each equipment manufacturer can operate strictly according to this installation procedure. We also appreciate customers' communicating with us about the installation details, so that we can make improvement in time. Thank you.

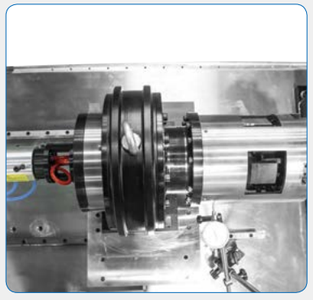
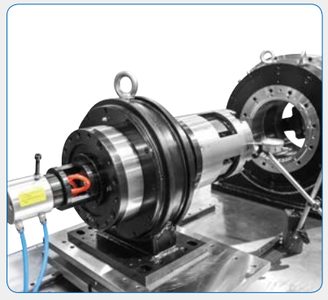
1. Fix two products on the worktable according to the design requirements. As shown in the figure, the left chuck is named 'tail chuck' and the right chuck is named 'main chuck'.

2. Screw down the fixing screws of the tail chuck and remove the dust cover on the tail chuck. As shown in the figure, measure the upper bus bar at the head rotating part of tail chuck. The magnetic base is fixed on the machine (not on the mounting table of tail chuck), with the pointer pointing to the position shown in the figure. Move the entire mounting table to the left and right, measure and ensure that the upper bus bar value is below 0.05mm. Upper bus bar value exceeding the required scope can be adjusted by inserting copper sheet at two points on the bottom mounting surface of chuck.

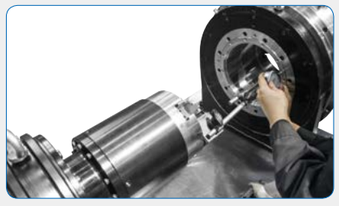


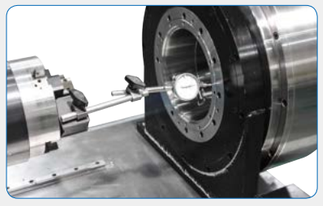
3. Measure the side bus bar at the head rotating part of tail chuck. The magnetic base is fixed on the machine (not on the mounting table of tail chuck), with the pointer pointing to the position shown in the figure. Move the entire mounting table to the left and right, measure and ensure that the side bus bar value is below 0.05mm. If the side bus bar value is out of the scope, it can be adjusted to the required scope by slightly rotating the mounting base of main chuck. After adjustment, check again if the bus bar accuracy meets standard in steps shown in Article 2. If the value is still out of the scope, repeat the adjustment till the error value of upper bus bar and side bus bar of tail chuck is below 0.05mm.

4. With the center of tail chuck as the benchmark (the rotation center of tail chuck), measure the verticality of the reference plane on the back of the main chuck relative to the rotation center of tail chuck.

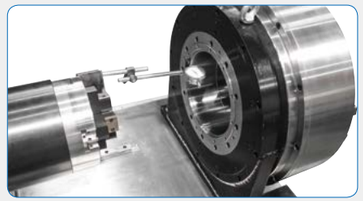
Measurement and adjustment method: the magnetic base is fixed on the end face of the tail chuck, with the pointer of dial indicator pointing to the position shown in the figure (reference plane of the main chuck). Slowly turn the tail chuck for one circle and observe the pointer reading of the dial indicator. The difference of the four points within the maximum transverse and vertical range measured shall be within 0.05mm. Error between two lateral points exceeding the required scope, if any, may be adjusted by slightly rotating the mounting base of the main chuck. Error between two vertical (up and down) points exceeding the required scope, if any, may be adjusted by inserting copper sheet at two points on the bottom mounting surface of chuck. Repeat the step several times till the error value is within 0.05mm.





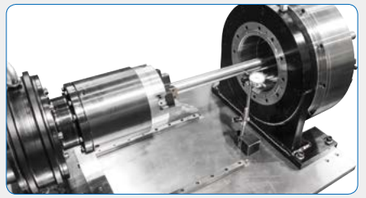
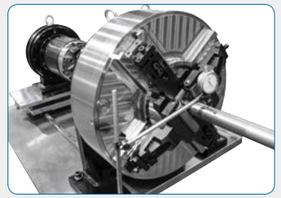
5. With the center of tail chuck as the benchmark (the rotation center of tail chuck), measure the coaxiality between the rotation center of main chuck and the rotation center of tail chuck, that is, the center of two chucks shall be of equal height.

Measurement and adjustment method: the magnetic base is fixed on the end face of the tail chuck, with the pointer of dial indicator pointing to the position shown in the figure (inner wall of basic hole in main chuck). Slowly turn the tail chuck for one circle and observe the pointer reading of the dial indicator. The difference of the four points within the maximum transverse and vertical range measured shall be within 0.05mm. Error between two lateral points exceeding the required scope, if any, may be adjusted by slightly and transversely moving the mounting base of the main chuck. Error between two vertical (up and down) points exceeding the required scope, if any, can be adjusted by inserting copper sheet at four points on the bottom mounting surface of chuck. Repeat the step several times till the error value is within 0.05mm. After adjustment, check again if the accuracy meets standard in steps shown in Article 4. If the value is still out of the scope, repeat the adjustment till the error value is below 0.05mm.



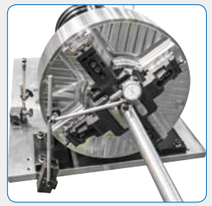
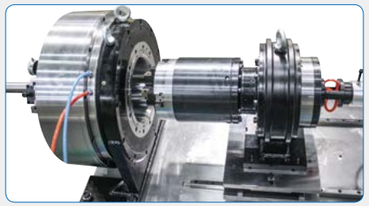
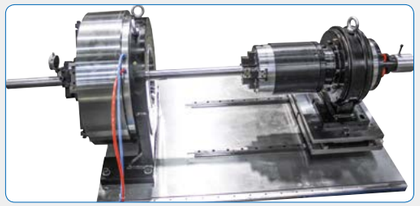
6. Measurement and adjustment of chuck centering accuracy.

Adjust the distance between two chucks between 500mm and 1000mm, and clamp the same mandrel. The mandrel shall be 1500-2000mm long and have a diameter of 30-50mm. The magnetic base is fixed on the machine, with the pointer pointing to the position shown in the figure (at the outer circle of mandrel about 30mm away from the claw). Rotate the chuck and mandrel. The dial indicator respectively measures the mandrel runout at the position about 30mm away from the claw and the mandrel runout of about 0.1mm is acceptable (in general, the clamping accuracy of claw has been adjusted before delivery of chuck. Users need to adjust the claw accuracy in case of customized product or other special circumstances). If the value is out of the specified scope, adjust the position of corresponding claw to meet the accuracy requirements.

7. Check the overall accuracy.

Adjust the distance between two chucks between 500mm and 1000mm, and clamp the same mandrel. The magnetic base is fixed on the machine, with the pointer pointing to the position shown in the figure (at the outer circle of mandrel about 30mm away from the main chuck claw). Move the tail chuck back and forth, so that the distance between the tail chuck and the main chuck is - 100 mm to 1000mm or so (the tail chuck can be moved to the center hole of the main chuck). The value difference of the dial indicator pointer of about 0.05 mm is acceptable. In the same way, point the dial indicator pointer to the outer circle of the mandrel side, and the overall installation is qualified if the indicator value of dial indicator is about 0.05 mm. If the value difference is still out of the scope, carefully check the details of the above steps and confirm if there is any omission or if an accuracy item is out of the scope.

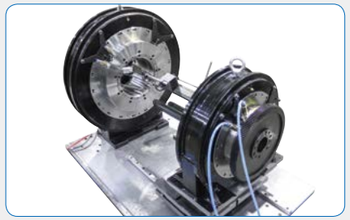
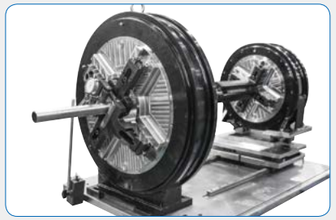




8. Please read the above steps carefully before installing and debugging the equipment. This installation instruction is compiled based on the installation and debugging experience of most equipment manufacturers. Please follow the instructions carefully. Thank you again for choosing our products.

激光切管卡盘精度安装调试说明（二）

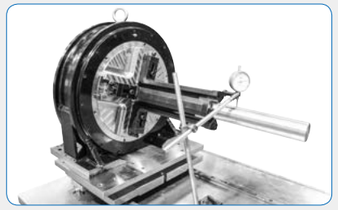
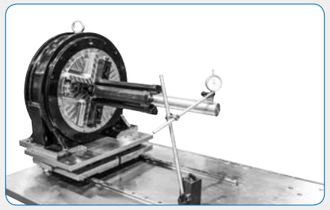
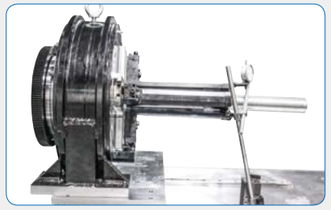
本安装说明部分都是围绕着如何将两个卡盘的中心（旋转轴线）调整在要求范围内而编制的，让设备满足用户的加工要求，希望每个设备厂家都能按此安装步骤严格操作，同时也希望每个客户在安装过程中多与我们沟通安装细节问题以便我们及时改进，谢谢！

1. 将两个产品按设计要求固定在对应的工作台面上，如图所示，左边卡盘命名“主卡”，右边卡盘命名“尾卡”。

2. 旋紧尾卡安装固定螺钉，如图所示，尾卡头部爪头夹紧一空心芯棒（芯棒请客户提前准备好且芯棒不宜太重，太重了影响后步工作），芯棒长 200mm-300mm 直径在 30-50mm。磁性表座固定在机床床身上面（不是固定在尾卡的安装台面上），表针指向如图所示位置，手动旋转尾卡，测量芯棒近端、远端跳动在 0.1 左右即可，如超差则通过调整相应卡爪的位置使之达到精度要求。

注：也可在卡盘中心塞一根与尾卡中心孔配合大小的长芯棒测量，芯棒长 1000mm-2000mm。

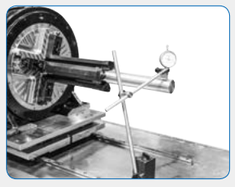
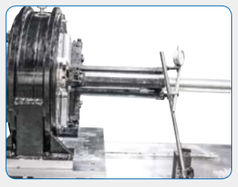




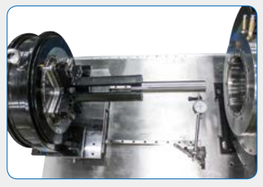
3. 测量芯棒上母线、侧母线

测量芯棒的上母线（即尾卡中心上母线），磁性表座固定在机床床身上面（不是固定在尾卡的安装台面上），表针指向如图所示位置，左右移动整个安装台面，测量上母线数值在 0.05mm 以内即可，如超出要求范围，可采取卡盘安装底平面两点垫铜皮的方法来调整到要求范围。

测量芯棒的侧母线（即尾卡中心侧母线），磁性表座固定在机床床身上面（不是固定在尾卡的安装台面上），表针指向如图所示位置，左右移动整个安装台面，测量侧母线数值在 0.05mm 以内即可，如超出要求范围，可采取微微转动卡盘安装基座的方法来调整到要求范围。调整好后请重复检查上母线精度是否达标，如有超差请再做调整，最终保证上母线、侧母线的误差值在 0.05mm 以内即可。

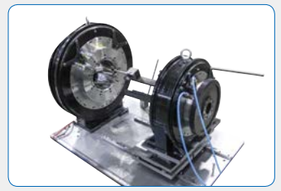
注：也可在卡盘中心塞一根与尾卡中心孔配合大小的长芯棒测量，芯棒长 1000mm-2000mm。



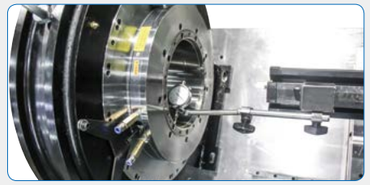
4. 以尾卡中心为基准（尾卡的旋转中心），测量主卡背面基准平面相对于尾卡旋转中心的垂直度。

测量调整方法：磁性表座固定在尾卡的端面上，百分表针指向如图所示位置（主卡基准外平面），慢慢转动尾卡一圈，同时观察百分表的指针读数，所测横向竖向最大范围内的四点值差在 0.05mm 以内即可。如横向两点数值超差，可采取微微转动主卡的安装基座的方法来调整到要求范围。如竖向（上下）两点数值超差，可采取卡盘安装底平面两点垫铜皮的方法来调整到要求范围。这个步骤请反复多调几次，最终保证误差值在 0.05mm 以内即可。



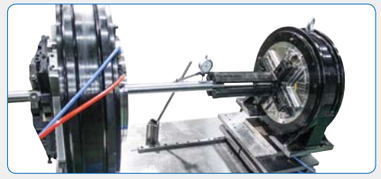
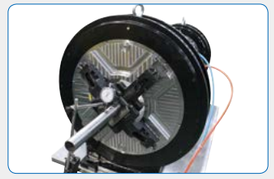
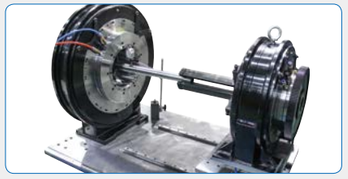
5. 以尾卡中心为基准（尾卡的旋转中心），测量主卡旋转中心与尾卡旋转中心的同轴度，即两卡盘中心等高。

测量调整方法：磁性表座固定在尾卡的端面上，百分表针指向如图所示位置（主卡基准孔内壁），慢慢转动尾卡一圈，同时观察表的指针读数，所测横向竖向最大范围内的四点值差在 0.05mm 以内即可。如横向两点数值超差，可采取横向微微移动主卡的安装基座的方法来调整到要求范围。如竖向（上下）两点数值超差，可采取卡盘安装底平面四点垫铜皮的方法来调整到要求范围。这个步骤请反复多调几次，最终保证误差值在 0.05mm 以内即可。调整好后请按第 4 条步骤重复检查精度是否达标，如有超差请再做调整，最终保证在 0.05mm 以内即可。



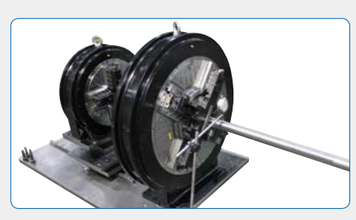
6. 卡盘定心精度的检测与调整。

请将两卡盘的距离调整在 500mm-1000mm 之间，且夹持同一根芯棒，芯棒长 1500mm-2000mm 直径在 30-50mm。磁性表座固定在机床床身上面，百分表指针指向如图示位置（距离卡爪 30mm 左右位置的芯棒外圆处），转动卡盘及芯棒。百分表分别测量距离卡爪 30mm 左右位置的芯棒跳动在 0.1mm 左右即为合格（一般来讲卡盘出厂前所配卡爪夹持精度均已调整到位，特殊定制或加长爪或其它特殊情况的需用户自己调整卡爪精度）。如超差则通过调整相应卡爪的位置使之达到精度要求。

7. 整体精度的检查。

请将两卡盘的距离调整在 500mm-1000mm 之间，且夹持同一根芯棒。磁性表座固定在机床床身上面，百分表指针指向如图示位置（距离主卡盘卡爪 30mm 左右位置的芯棒外圆处），前后移动尾卡，使尾卡与主卡之间的距离在 -100mm（尾卡可以移动至主卡中心孔里面）至 1000mm 左右，观察百分表指针数值差在 0.05mm 左右即为合格，同样方法将百分表指针指向芯棒侧面外圆，观察百分表指针数值在 0.05mm 左右即整体安装合格。如有超差则请仔细检查以上几个步骤细节是否有遗漏或某个精度超差，直至达标为止。

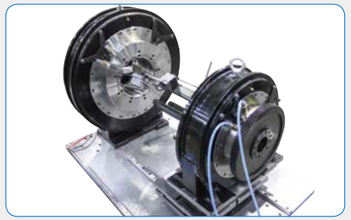
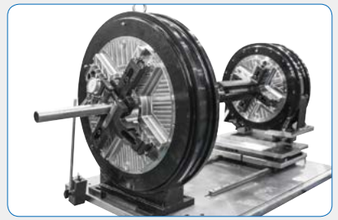


8. 以上步骤请用户详细阅读后再进行安装调试设备，此安装说明是我公司结合大部分设备厂家的安装调试的经验而制定的，希望我们的设备厂家能认真按此说明操作，再次感谢您使用我公司的产品。

INSTALLATION AND ADJUSTMENT OF LASER PIPE CUTTING CHUCK ACCURACY (2)

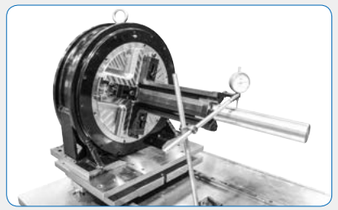
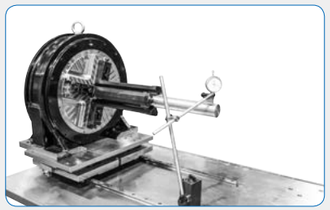
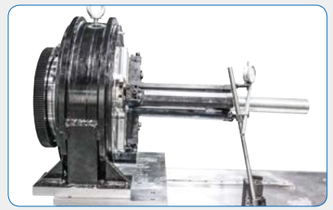
The installation instructions are compiled for the purpose of adjusting and keeping the center (rotation axis) of two chucks within the required range, so that the equipment can meet the processing requirements of users. We hope that each equipment manufacturer can operate strictly according to this installation procedure. We also appreciate customers' communicating with us about the installation details, so that we can make improvement in time. Thank you.

1.Fix two products on the worktable according to the design requirements. As shown in the figure, the left chuck is named 'main chuck' and the right chuck is named 'tail chuck'.

2.Screw down the fixing screws of the tail chuck. As shown in the figure, a hollow mandrel is clamped by the claw in the front of the tail chuck (Prepare a mandrel which is not too heavy in advance. Too heavy mandrel may affect the subsequent operations). The mandrel shall be 200-300mm long and have a diameter of 30-50mm.The magnetic base is fixed on the machine (not on the mounting table of tail chuck), with the pointer pointing to the position shown in the figure. Rotate the tail chuck manually, measure and ensure that the near end and far end runout of the mandrel is about 0.1. If the value is out of the specified scope, adjust the position of corresponding claw to meet the accuracy requirements.

Note: Measurement can also be conducted by inserting a long mandrel of size matching the center hole of tail chuck into the chuck center, and the mandrel shall be 1000-2000mm long.

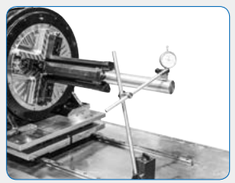
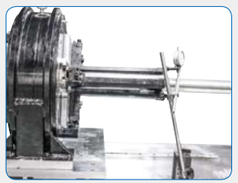




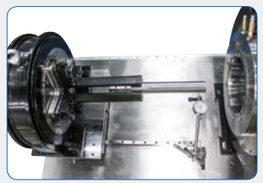
3. Measure the upper bus bar and side bus bar of mandrel

Measure the upper bus bar of mandrel (namely the central upper bus bar of mandrel). The magnetic base is fixed on the machine (not on the mounting table of tail chuck), with the pointer pointing to the position shown in the figure. Move the entire mounting table to the left and right, measure and ensure that the upper bus bar value is below 0.05mm. Upper bus bar value exceeding the required scope can be adjusted by inserting copper sheet at two points on the bottom mounting surface of chuck.

Measure the side bus bar of mandrel (namely the central side bus bar of mandrel). The magnetic base is fixed on the machine (not on the mounting table of tail chuck), with the pointer pointing to the position shown in the figure. Move the entire mounting table to the left and right, measure and ensure that the side bus bar value is below 0.05mm. Side bus bar value out of the scope can be adjusted by slightly rotating the mounting base of chuck. After adjustment, check again if the bus bar accuracy meets standard. If the value is still out of the scope, repeat the adjustment till the error value of upper bus bar and side bus bar of tail chuck is below 0.05mm.

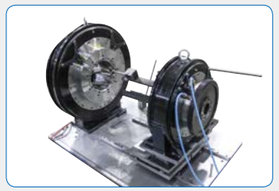
Note: Measurement can also be conducted by inserting a long mandrel of size matching the center hole of tail chuck into the chuck center, and the mandrel shall be 1000-2000mm long.



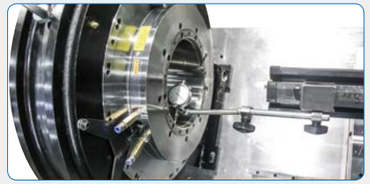
4.With the center of tail chuck as the benchmark (the rotation center of tail chuck), measure the verticality of the reference plane on the back of the main chuck relative to the rotation center of tail chuck.

Measurement and adjustment method: the magnetic base is fixed on the end face of the tail chuck, with the pointer of dial indicator pointing to the position shown in the figure (reference plane of the main chuck). Slowly turn the tail chuck for one circle and observe the pointer reading of the dial indicator. The difference of the four points within the maximum transverse and vertical range measured shall be within 0.05mm. Error between two lateral points exceeding the required scope, if any, may be adjusted by slightly rotating the mounting base of the main chuck. Error between two vertical (up and down) points exceeding the required scope, if any, may be adjusted by inserting copper sheet at two points on the bottom mounting surface of chuck. Repeat the step several times till the error value is within 0.05mm.



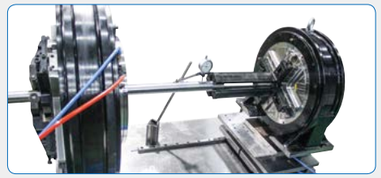
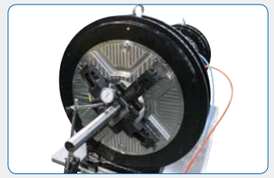
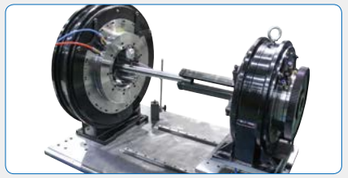
5.With the center of tail chuck as the benchmark (the rotation center of tail chuck), measure the coaxiality between the rotation center of main chuck and the rotation center of tail chuck, that is, the center of two chucks shall be of equal height.

Measurement and adjustment method: the magnetic base is fixed on the end face of the tail chuck, with the pointer of dial indicator pointing to the position shown in the figure (inner wall of basic hole in main chuck). Slowly turn the tail chuck for one circle and observe the pointer reading of the dial indicator. The difference of the four points within the maximum transverse and vertical range measured shall be within 0.05mm. Error between two lateral points exceeding the required scope, if any, may be adjusted by slightly and transversely moving the mounting base of the main chuck. Error between two vertical (up and down) points exceeding the required scope, if any, can be adjusted by inserting copper sheet at four points on the bottom mounting surface of chuck. Repeat the step several times till the error value is within 0.05mm. After adjustment, check again if the accuracy meets standard in steps shown in Article 4. If the value is still out of the scope, repeat the adjustment till the error value is below 0.05mm.



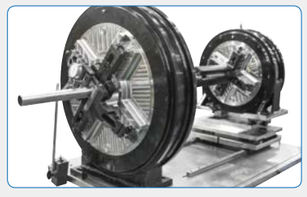
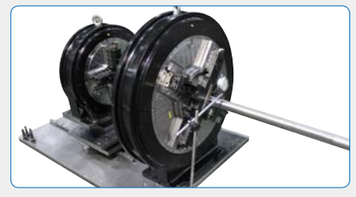
6.Measurement and adjustment of chuck centering accuracy.

Adjust the distance between two chucks between 500mm and 1000mm, and clamp the same mandrel. The mandrel shall be 1500-2000mm long and have a diameter of 30-50mm. The magnetic base is fixed on the machine, with the pointer pointing to the position shown in the figure (at the outer circle of mandrel about 30mm away from the claw). Rotate the chuck and mandrel. The dial indicator respectively measures the mandrel runout at the position about 30mm away from the claw and the mandrel runout of about 0.1mm is acceptable (in general, the clamping accuracy of claw has been adjusted before delivery of chuck. Users need to adjust the claw accuracy in case of customized product, extended claw or other special circumstances). If the value is out of the specified scope, adjust the position of corresponding claw to meet the accuracy requirements.

7.Check the overall accuracy.

Adjust the distance between two chucks between 500mm and 1000mm, and clamp the same mandrel. The magnetic base is fixed on the machine, with the pointer pointing to the position shown in the figure (at the outer circle of mandrel about 30mm away from the main chuck claw). Move the tail chuck back and forth, so that the distance between the tail chuck and the main chuck is - 100 mm to 1000mm or so (the tail chuck can be moved to the center hole of the main chuck). The value difference of the dial indicator pointer of about 0.05 mm is acceptable. In the same way, point the dial indicator pointer to the outer circle of the mandrel side, and the overall installation is qualified if the indicator value of dial indicator is about 0.05 mm. If the value difference is still out of the scope, carefully check the details of the above steps and confirm if there is any omission or if an accuracy item is out of the scope.

8.Please read the above steps carefully before installing and debugging the equipment. This installation instruction is compiled based on the installation and debugging experience of most equipment manufacturers. Please follow the instructions carefully. Thank you again for choosing our products.

DIRECTIONS FOR USE
使用说明

■ 用途及特点：

全系列激光切割双动力四爪主轴夹座的研制是综合我公司生产的前置气动卡盘和其它有关气动产品的特点，在多次的去劣存优后进行研究设计而成。具有结构简单、安装方便、适用性强、清洁耐用、夹持可靠、精度持久等特点。可为企业提高作业效率、降低制造成本、减轻员工的劳动强度。本产品适用于专业切管机、管板一体机等夹持各管件零件，最适宜各类圆管、方管、矩形管，椭圆管的切割加工，卡爪稍加改造便可切割各类形状的管材。

■ 使用要求：

1、日常工作之前，操作者应认真检查卡爪的紧固螺钉是否紧固，气源压力是否正常，请使用清洁、稳定的压缩空气，气压控制在0.4～0.9MPa范围内，需要选用承受压力大于1.6MPa的气管连接到产品上，气管应远离热源和明火，否则将会对使用产生影响，给安全生产带来隐患。

2、卡盘在使用过程中应对各处滑动面、摩擦面进行加油润滑和保养工作，严格按照各加油点的提示进行加油保养，定期在三联件的油罐内加油，并控制滴油的速度。

3、当卡盘的卡爪或滚轮需要调整时应在滑块上安装螺母座，利用螺栓进行微调，直至符合使用要求，调整完成后进行试装夹，滑块动作应灵活自如后才能进入工作状态。

4、不可随意改造卡盘，不当的改造会损坏卡盘导致无法正常使用。

5、卡盘长时间不用时，不能将工件继续夹持在上面，防止卡盘变形影响精度。

6、每周做2-3次活动部位的清洁工作，每60天做一次卡盘的保养，并检查零件的磨损情况，必要时更换零部件。

7、连接电器控制部分时注意电磁阀线圈电压，接入合适电压的电源。以免损毁电器装置。

■ 注意事项：

1、用户在遵守产品运输、保管、安装、调整、保养和使用规则的条件下，如发现产品因制造质量问题不能正常工作时或在开箱时发现因包装质量不良而发生损坏，附件与装箱单不符，短缺零件等情况，从收货日起一月内，请与我公司质量部联系，发来信息时请注明产品型号、规格、编号和出厂日期。

2、产品应在0℃～40℃的环境内安装和使用。

3、产品的安装使用，要求用户严格按说明书的规定进行，如有疑问或改进意见，请函告我公司质量部。

■ 安全使用要求：

1、卡盘储存地应采取有效的防雨、防潮的措施，并且通风良好。
2、包装不得堆叠，定期检查包装状态。
3、详细阅读安装说明后，再进入安装程序。
4、卡盘运转时禁止按动夹紧、松开按钮，必要时加装防护罩。
5、安装和拆卸卡盘时请关闭电源与气源。
6、卡盘在使用过程中转速不得超过规定的极限转速。
7、非专业人员不得擅自拆卸卡盘主要结构件。
8、气管安装处禁止明火、热源等设施靠近。

Usage and features:

The development of whole series laser cutting double-power four-claw spindle holder is to integrate the features of front-mounted pneumatic chuck produced by our company and other related pneumatic products for improvements for many times. It has the features such as simple structure, convenient installation, strong applicability, clean and durable, reliable clamping, durable precision, and etc, to improve operation efficiency, reduce manufacturing cost and reduce the labor intensity of workers for the enterprise. This product is suitable for clamping various pipe fittings for the professional pipe cutters and tube-plate machine, and is most suitable for the cutting processing of all kinds of round tubes, square tubes, rectangular tubes and oval tubes, just making slight modification of the claws to cut steel tubes of all shapes.

Use requirements:

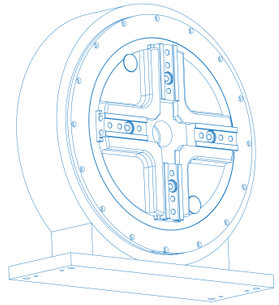
1. Before daily work, the operator shall carefully check whether the fastening screws of the claw are fixed or not, and the air pressure is normal or not. Please use the clean and stable compressed air, with air pressure controlled in the range of 0.4~0.9MPa. The air pipes bearing the pressure greater than 1.6MPa shall be selected to connect to the products, and the air pipes shall stay away from heat and open flame, otherwise they will be affected and bring hidden troubles to safe production.
2. During the use process of the chuck, the sliding surface and friction surface everywhere shall be lubricated and maintained in strict accordance with the hints at every oil lubricating point; take regular oil filling in the oil tank of the FRL (flinders resistant line) and control the oil drip speed.
3. When the claw or roller of the chuck needs to be adjusted, install nut seat on the sliding block, and make fine adjustment through adjusting the bolts till meeting the using requirements, take trial installation of clamp after the completion of adjustment, the sliding block can only enter into the working state after flexible action.
4. Do not modify the chuck at will, as the improper modification might damage the chuck and unable to keep normal use.
5. During long periods of non-use of the chuck, do not leave the work piece clamped on it, to prevent deformation which may influence the precision of the chuck.
6. Take cleaning work on the moving parts for 2-3 times a week and chuck maintenance once every 60 days, and check the wearing situation of the components, replace the components if necessary.
7. Pay attention to the coil voltage of the solenoid valve while connecting to the electrical control part and connect to the power supply of appropriate voltage, in order to avoid damage of electrical devices.

Notes:

1. While complying with the product transportation, storage, installation, adjustment, maintenance, and use rules, if the problems, such as the products can't work normally because of manufacturing quality problem, or damages are found when unpacking due to poor packing quality, or attachments are not in conformity with the packing list, or the shortage and missing of spare parts, and etc. are found, please contact with the quality department of our company within one month from the date of receiving the goods, and please indicate the product type, specification, number and date of production when sending the information.
2. The products shall be installed and used under the environment of 0℃ to 40℃.
3. The installation and use of the products shall strictly comply with the provisions in the instructions, and if you have any questions or improvement suggestions, please inform the quality department of our company.

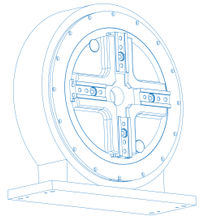
Safe operation requirements:

1. The storage place for chuck shall take effective waterproof and moisture-proof measures, and shall be well ventilated.
2. The packages shall not be stacked, and regularly check the packing condition.
3. Enter into the installation program after carefully reading the installation instructions.
4. It is forbidden to press the clamping and loosening button during the running of the chuck, add the shield when necessary.
5. Please shut off the power and air source when installing and dismantling the chuck.
6. The rotate speed of the chuck shall not exceed the specified limit speed in the using process.
7. Non-professional personnel shall not remove the main structural parts of the chuck without authorization.
8. The open flame, heat source and other facilities are prohibited to be close to the installation place of the air pipe.



COMMON FAULTS AND TROUBLE-SHOOTING
常见故障及处理措施

故障现象	故障原因	处理措施、解决办法
卡爪无动作	气源未打开或电源未打开	检查气源及电源开关
	气源压力不足	调节气源压力
	内部气控单向阀损坏或异常	更换单向阀
	电磁阀损坏	更换电磁阀
夹不紧工件	气源压力不足	调节气源压力至所需压力
	单向阀损坏或异常	更换单向阀
	内部气路系统问题，内部进气不畅	检查内部气路系统（密封圈、接头处）
	滑块活动阻力大、缺油、零件拉伤	拆开检查，滑动面定期按标识加油保养
	气缸磨损严重导致漏气严重	更换气缸
	卡爪行程不够	调整卡爪行程
	工件壁厚太薄	改变卡爪形状
夹紧工件松不开	单向阀损坏或异常	更换单向阀
	内部气路系统问题，内部进气不畅	检查内部气路系统（密封圈、接头处）
	气缸磨损严重导致漏气严重	更换气缸
动作不畅、卡阻、爬行	气源压力不足	调节气源压力至所需压力
	气缸内部活塞或密封圈磨损导致漏气	更换气缸
	活动部件阻力大、缺油、摩擦面拉伤	拆开检查，定期按标识加润滑油、保养
	内部气路系统有问题，气管折弯、破裂等	检查内部气路系统（气管接头、密封圈）
	滑块出有脏物导致摩擦面拉伤	拆开检查，摩擦面定期加油保养
两组卡爪行程不一	运动部位内部有异物卡住	拆开检查
	滑块摩擦面严重拉伤	修理或更换滑块，加注润滑油
	滑块处有异物卡住导致动作受阻	拆开检查、及时清理、注润滑油
工件跳动太大	轴承磨损	更换轴承
	卡爪调整不到位	按要求调整卡爪
	轴承间隙太大	调整轴承间隙
运转过程中有震动、异响	轴承磨损	更换轴承
	轴承间隙过小	调整轴承间隙
	齿轮径向跳动超差	按要求调整径向跳动
	齿轮磨损或啮合精度超差	更换齿轮或调整啮合精度



COMMON FAULTS AND TROUBLE-SHOOTING

Symptom	Possible cause	Measures and Solutions
No action of claw	Air source is not on or power supply is not on	Check the air source and power switch
	Insufficient air supply pressure	Adjust the air source pressure
	Internal pneumatic control check valve is damaged or abnormal	Replace the check valve
	Damaged solenoid valve	Replace the solenoid valve
Workpiece is not clamped tightly	Insufficient air supply pressure	Adjust the air source pressure to the required value
	Check valve is damaged or abnormal	Replace the check valve
	Failure of internal air system, internal air intake is not smooth	Check the internal air system (sealing ring and joint)
	Too large movement resistance of sliding block, lack of oil, parts are damaged	Take apart for inspection. The sliding surface shall be lubricated and maintained regularly according to the identification plate on product
	Serious air leakage due to serious wear of cylinder	Replace the cylinder
	Insufficient claw travel	Adjust claw travel
	Too thin wall thickness of workpiece	Change claw shape
Clamped workpiece cannot be released	Check valve is damaged or abnormal	Replace the check valve
	Failure of internal air system, internal air intake is not smooth	Check the internal air system (sealing ring and joint)
	Serious air leakage due to serious wear of cylinder	Replace the cylinder
Movement not smooth, jamming crawl	Insufficient air supply pressure	Adjust the air source pressure to the required value
	Air leakage caused by wear of piston or sealing ring inside the cylinder	Replace the cylinder
	Too large movement resistance of moving parts, lack of oil, friction surface is damaged	Take apart for inspection. The friction surface shall be lubricated and maintained regularly according to the identification plate on product
	Failure of internal air system, air pipe is bent and cracked etc.	Check the internal air system (air pipe joint and sealing ring)
	Dirt on the sliding block causes damage to the friction surface	Take apart for inspection. The friction surface shall be lubricated and maintained regularly
Inconsistent stroke of two sets of claws	Foreign body stuck in the moving part	Take apart for inspection.
	The friction surface of sliding block is seriously damaged	Repair or replace the sliding block and add lubricating oil
	Foreign body stuck at the slide block, blocking the movement	Take apart for inspection, clean up and inject lubricating oil in time
Too much runout of workpiece	Worn bearing	Replace the bearing
	Improper claw adjustment	Adjust the claws as required
	Too large bearing clearance	Adjust the bearing clearance
Vibration and abnormal sound during operation	Worn bearing	Replace the bearing
	Too small bearing clearance	Adjust the bearing clearance
	Radial runout of gear out of the scope	Adjust radial runout as required
	Gear wear or meshing accuracy out of the scope	Replace the gear or adjust the meshing accuracy