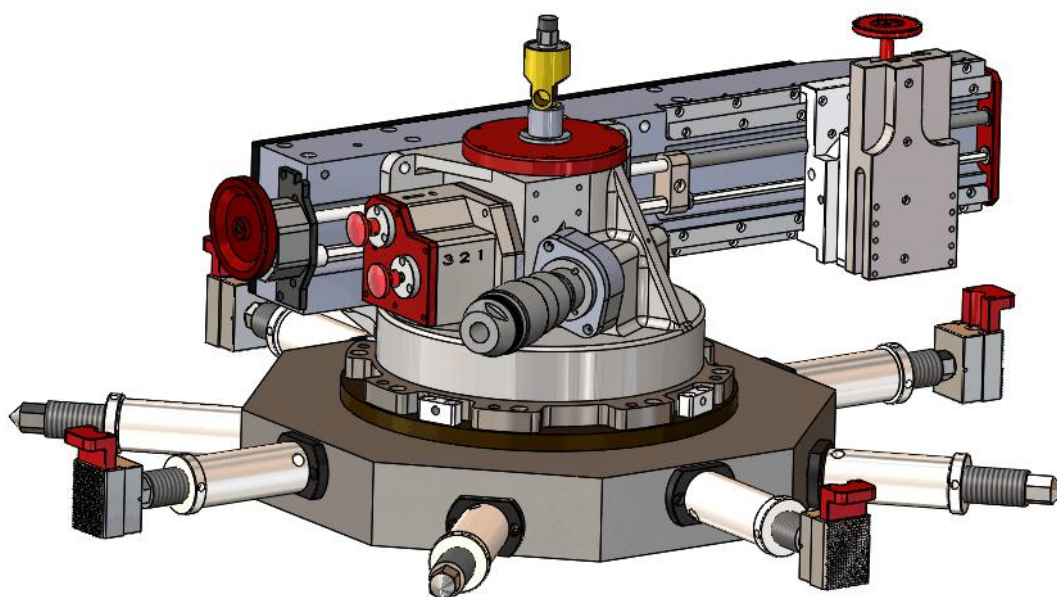


Portable Flange Facer Machine

FDG1650

OPERATING MANUAL



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Important Notice

Joysung Portable Machine Tools leads the way in promoting the safe use of portable machine tools. Safety is a joint effort. As the operator of this machine, you are expected to do your part by scrutinizing the job site and closely following the operating procedures outlined in this manual, your own company rules, and local regulations.

JOYSUNG Portable Machine Tools has made every effort to ensure that the information given in this technical leaflet and other publications relating to this machine is correct and understandable. However it is acknowledged that there may be errors or omissions in this publication.

The company reserves the right to modify its products without notification and consequently to supply machines that may not be in accordance with the descriptions and procedures within this publication.

The company also reserves the right not to provide updates, corrections or amendments to this publication but will endeavor to keep its customers up to date with all changes that may affect the machine operation or safety.

Joysung 便携式机床在推动便携式机床的安全使用方面处于领先地位。安全是一项共同的努力。作为该机器的操作员，您需要通过仔细检查作业现场并密切关注本手册中概述的操作程序，您自己的公司规则和当地法规来履行自己的职责。

JOYSUNG Portable Machine Tools 已尽最大努力确保本技术手册中提供的信息以及与本机有关的其他出版物的信息正确且易于理解。但是，承认本出版物中可能存在错误或遗漏。

公司保留在不通知的情况下修改其产品的权利，从而提供可能不符合本出版物中的描述和程序的机器。

公司还保留不对本出版物提供更新，更正或修订的权利，但将尽力使客户了解可能影响机器操作或安全的所有更改。

Health & Safety at Work Act

Thank you for using Joysung portable machine tools, this manual describes the machine's function, performance, usage and precautions. The following two points must be understood before using:

- To ensure safety, please read and understand this manual before operating this machine.
- Carry this manual for ready reference.

感谢您使用 Joysung 便携式机床，本手册介绍了机器的功能，性能，使用方法和注意事项。使用前必须了解以下两点：

- 为确保安全，请在操作本机前阅读并理解本手册。
- 携带本手册以供参考。

Operation Instruction

Please read the manual before using the machine and check the products according to packing list, be aware of safety cautions, performance of the machine and how to use it. 请在**使用本机前**阅读本手册，并根据**装箱单**检查产品，注意**安全**注意事项，机器性能及使用方法。

1. The operator must receive safe operation training before machining. 操作员**必须在加工前**接受安全操作培训。
2. The operator must wear working suit and protection eye glasses. 操作员**必须**穿着**工作服**和**防护眼镜**。
3. Before starting the machine, please check the voltage and gas requirement on the data plate is same with the one you will use. 在**启动机器之前**，请检查**铭牌上的电压和气体要求**与您将使用的**相同**。
4. Please check whether the clamping system is locked or not before starting the machine. **启动机器前**，请检查**夹紧系统**是否**锁定**。
5. You can only adjust the work piece at free position manually or at low speed, adjusting the work piece at high speed is not allowed. 您只能**手动或低速**调整工件在**自由位置**，**不允许**高速调整工件。
6. Please do not put your hand or other things near the equipment when starting it up to prevent any injury. **启动时**请勿将手或其他物品放在**设备附近**，以免**造成人身伤害**。
7. The electrical wire shall be far away from high temperature, oily or sharp places. 电线应**远离**高温，**油腻**或**尖锐**的地方。
8. When there is malfunction or abnormal sound, the power supply shall be shut down immediately through remote control and then to start checking and repairing. 发生故障或声音异常时，应立即通过**遥控器**关闭电源，然后开始**检查**和**修理**。
9. Do not let the machine operating without anyone watching. Operators can only leave after the machine stop and make sure the power supply is switched off and transmission system is in free position. 不要让任何人**观看**机器。操作员只能在**机器停止后**离开并确保**电源关闭**且**传动系统**处于**自由位置**。
10. It is prohibited that the machine is used beyond its working scope, any consequences thus caused is not the responsibilities of our company. **禁止**将机器用于其**工作范围之外**，因此造成的任何**后果**不是我们公司的**责任**。
11. The machine could not be run beyond its highest cutting capability, to prevent any damage or human injury. 机器无法超越其**最高切割能力**，以防止任何**损坏**或**人身伤害**。
12. Do not attempt to alter the feeds whilst the machine is rotating. 机器**旋转时**，请勿尝试**更改进纸**。
13. Oil stain and iron dust shall be removed after work is done. And anti-corrosive oil shall be put on the cutting arm and main axis. 工作完成后，应**去除油渍**和**铁屑**。并在**切割臂**和**主轴**上放置**防腐蚀油**。

Receiving Your Machine

Inspect the machine upon receipt 收到后检查机器

1. Inspect the machine for shipping damage 检查机器是否有运输损坏
2. Ensure you have received the parts listed on the invoice 确保您已收到清单上列出的部件

	IMPORTANT
	Contact JOYSUNG right away at +86-755 33238068 / Joysung@vip.163.com, if there are any errors or questions about this equipment.

3. When unpacking the machine, let the machine rest on 4 inch high blocks to prevent damaging the components. 打开机器包装时，让机器放在在 4 英寸高的木板块上，以防止损坏组件

4. The machine has been coated with a waxy preservative to prevent corrosion during shipping. Clean this substance off the machine with solvent to prevent excess accumulation of dirt. 机器上涂有蜡质防腐剂，以防止运输过程中腐蚀。用溶剂清洁机器上的这种物质，以防止过多的污垢积聚。

Labeling Guidelines

The purpose of product safety signs and labels is to increase the level of awareness to possible dangers. 产品安全标志和标签的目的是提高对可能危险的认识水平。

Safety Alert Symbols indicate **DANGER**, **WARNING** or **CAUTION**. These symbols may be used in conjunction with other symbols or pictographs. Failure to obey safety warnings can result in serious injury. Always follow safety precautions to reduce the risk of hazards and serious injury. 安全警告符号表示危险，警告或小心。这些符号可以与其他符号或象形图一起使用。不遵守安全警告可能导致严重伤害。始终遵循安全预防措施，以降低危险和严重伤害的风险

	DANGER Indicates a hazardous situation that could be fatal or cause serious injury.
	WARNING Indicates a potentially hazardous situation that could be fatal or cause serious injury.
	IMPORTANT Indicates a potentially hazardous situation that could result in minor to moderate injury, damage to the machine or interruption of an important process.
	IMPORTANT Provides critical information for the completion of a task. There is no associated hazard to people or the machine.

Warning Labels

Read and observe all warning labels. 阅读并遵守所有警告标签。

General Operation

The following procedures are provided to enable your JOYSUNG machine to be installed and function correctly and safely. 提供以下步骤以使您的 JOYSUNG 机器能够正确安全地安装和运行。

PLEASE READ THE FOLLOWING BEFORE PROCEEDING 请在进行之前阅读以下内容

1. All safety procedures must be observed prior to operating the equipment. 在操作设备之前，必须遵守所有安全规程。
2. Do not pressurize the equipment if the inlet hose or serviceability of the equipment is suspect. 如果设备的入口软管或适用性可疑，请勿对设备加压。
3. The operators must wear the correct safety equipment whilst operating this equipment. 操作此设备时，操作员必须佩戴正确的安全设备。
4. Do not attempt to machine above the specification of the machine or below the specified sizes. This will invalidate the guarantee. 请勿尝试超过机器规格或低于规定尺寸。这将使保证失效。
5. Do not attempt to machine if the locking of the machine is suspect or below that recommended. 如果机器的锁定可疑或低于推荐值，请勿尝试加工。
6. Ensure that the machine gearbox is stored in neutral and the Pneumatic motor is turned off and the valve is in the closed position. This is important before connecting the hydraulic supply to the machine. 确保机器齿轮箱处于空档并且气动马达关闭且阀门处于关闭位置。在将液压油源连接到机器之前，这一点很重要
7. Never allow another person to operate the HPU control valve whilst you are using the machine. 在使用机器时，切勿让其他人操作 HPU 控制阀。
8. Never leave the machine working unattended or leave the hydraulics pressurized whilst disconnected. 切勿让机器无人看管或在断开连接时让液压装置加压。
9. Make sure that all personnel are fully trained in both the operation of the machine and all the relevant safety aspects. 确保所有人员都经过机器操作和所有相关安全方面的全面培训。

CAUTIONS 注意事项

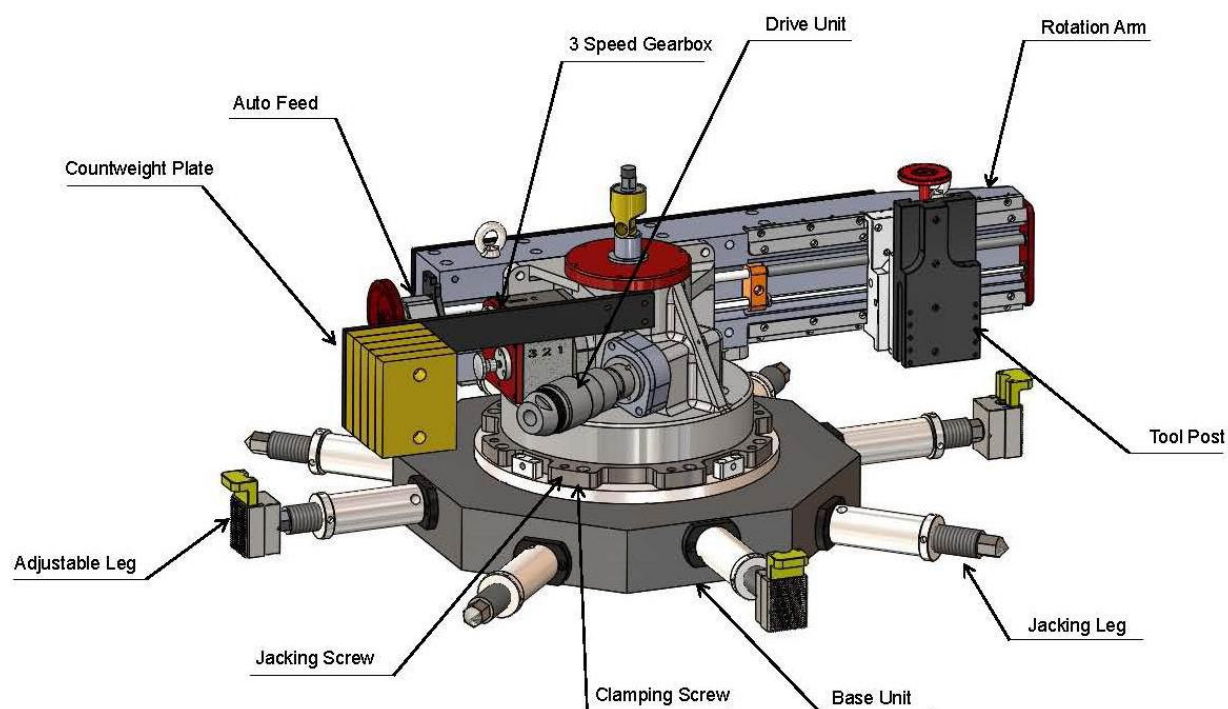
Do not attempt to alter the feeds whilst the machine is rotating

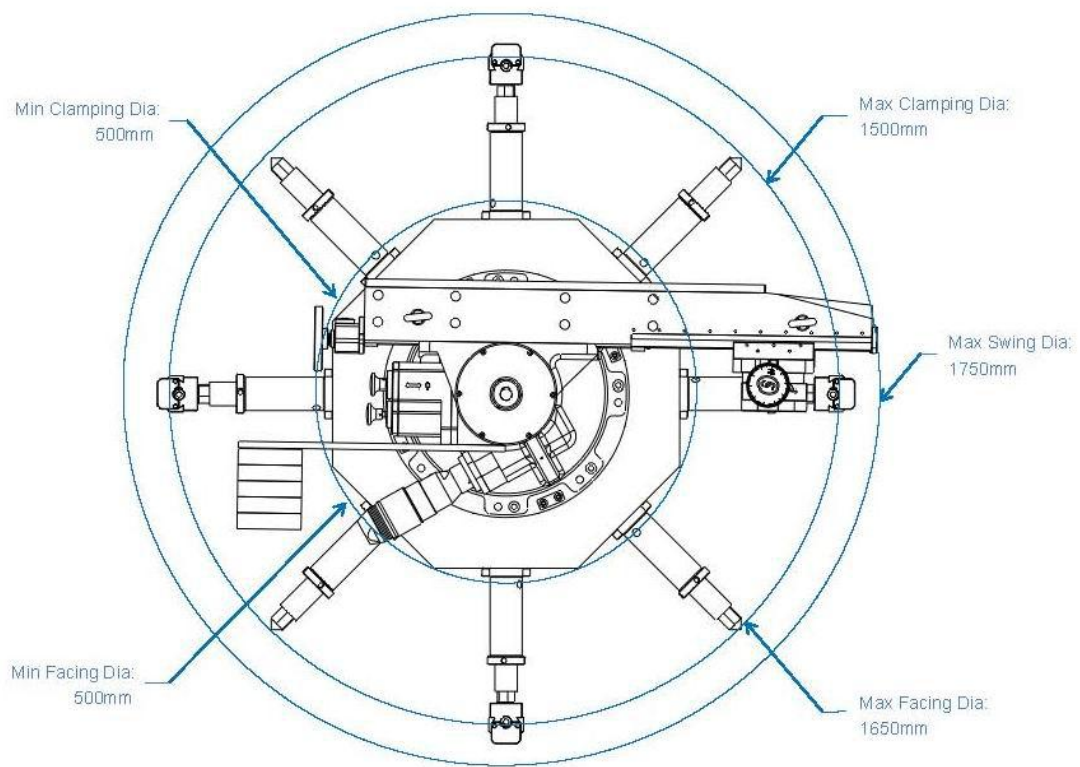
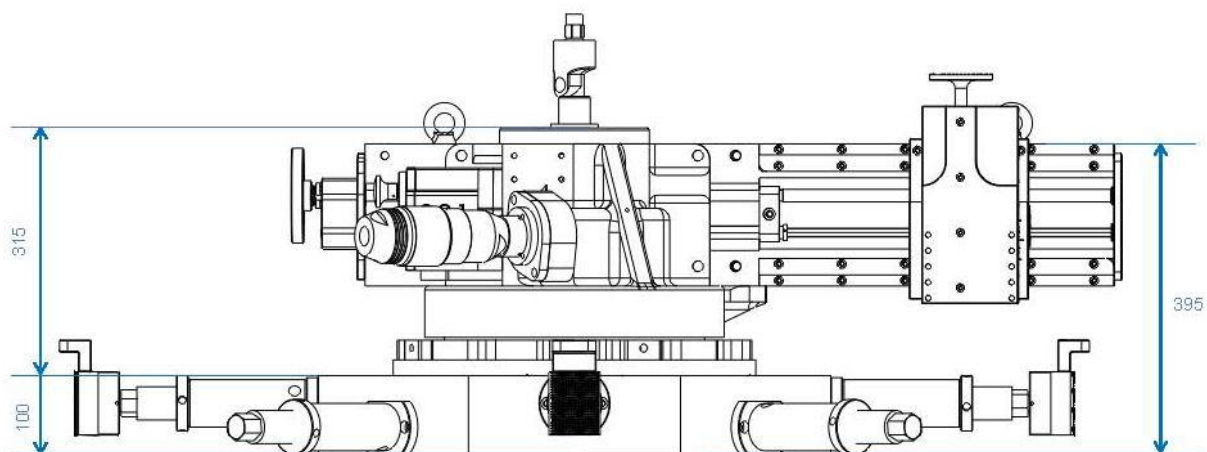
机器旋转时，请勿尝试更改进给量

Technical Details 技术参数

Facing Diameter Range 加工范围	762-2032mm (30-80")
I.D Clamp Range 安装范围	762-1804mm(30-71")
Min Swing Diameter 最小旋转半径	1610mm
Tool Post Stroke 刀架行程	50(2")
Tool Post Swivel Angle 刀架旋转角度	+ / - 30°
R.P.M 转速	0-42
Drive Power Unit- Pneumatic 动力系统-气动	4Hp(3kw)
Air Consumption / Supply Required 需要气量	2.69m³/min
Machine Weight (less base unit)机器重量	350Kg
Shipping Weight 包装重量	720Kg

FDG1650 Flange Facer Machine





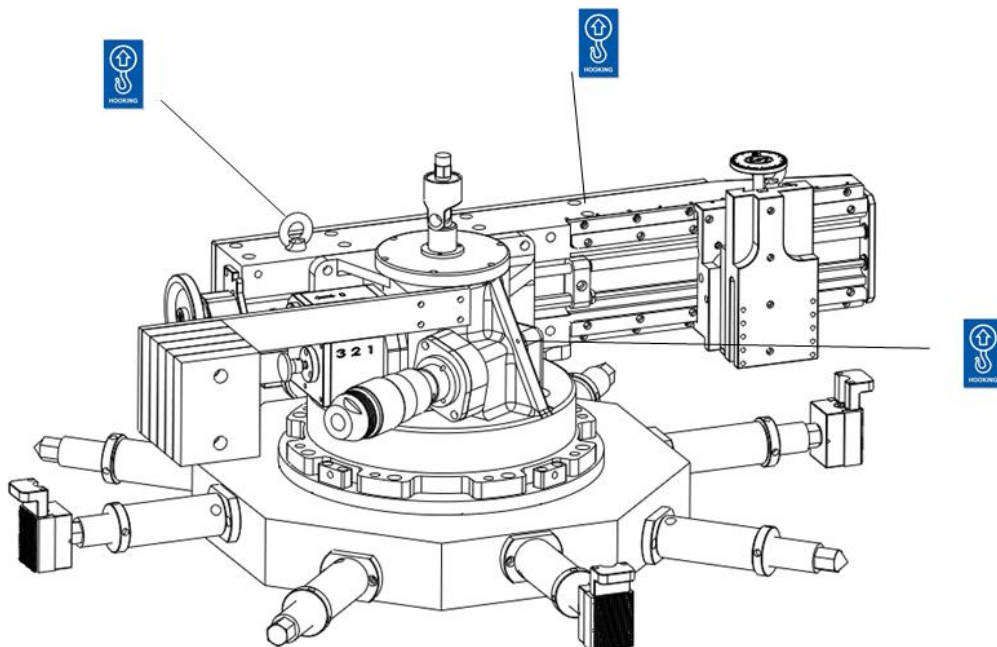
Lifting and Rigging

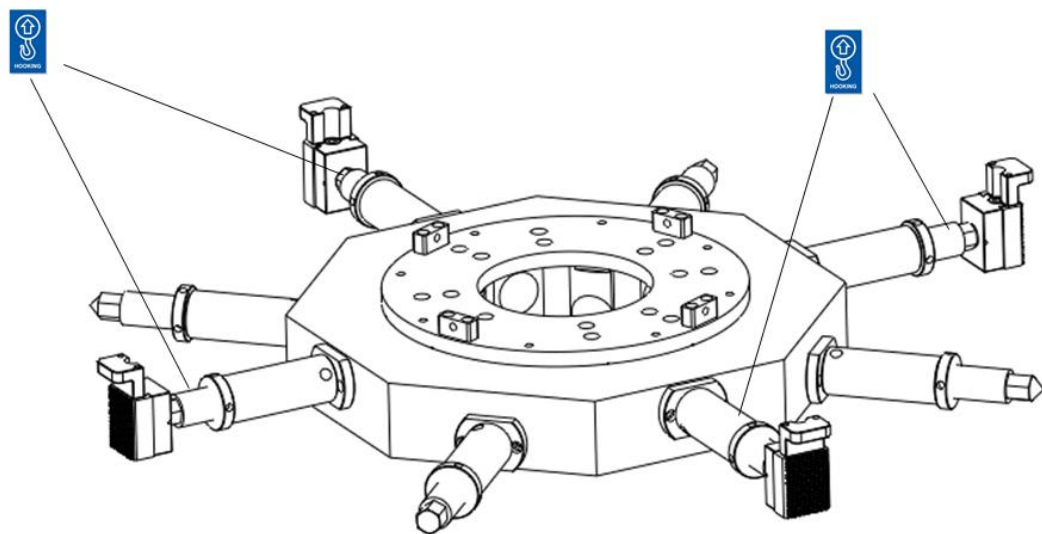
	DANGER
	The FDG1650 Flange Facer Machine can weigh up to approximately 610 kg when fully assembled in the ID configuration. To prevent serious injury to yourself and others, always follow the operating procedures outlined in this manual, your own company rules, and local regulations for heavy lifting. Make sure that the counterweight and turning arm are secure before lifting or rigging this equipment. When lifting vertically, the machine will rotate to the center of mass (to the lowest point) and could swing or rotate uncontrollably!

Always follow all required regulations regarding lifting and rigging of heavy equipment.

	CAUTION
	Falling or uncontrolled swinging of machinery can cause serious injury or be fatal to the operator and bystanders. ONLY Lift the machine by the lifting eyes. DO NOT LIFT THE ASSEMBLED MACHINE BY THE COUNTERWEIGHT OR THE TURNING ARM!

FDG2000 Flange Facer Machine Lifting Point:



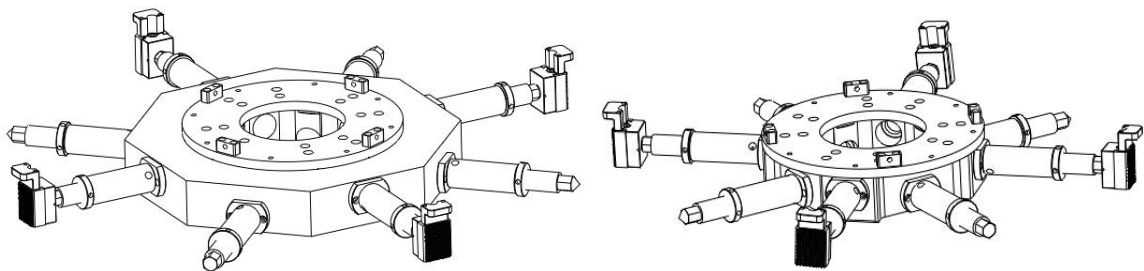


Base assembly installation

1. Measure the inside diameter of the flange to be machined and ensure this is within the working parameters of the machine. 测量要加工的法兰的内径，并确保其在机器的工作参数范围内。



2. 我们提供了二套安装底座，根据测量的法兰内径数据，选择合适的安装底座和安装支腿。



3. From the pages showing the recommended base size and parts combination select the required components. Screw the base components into the correct base until they measure equally 6mm (0.25") below the inside diameter from step 1. 从显示建议的基本尺寸和零件组合的页面中，选择所需的组件。将撑脚组件拧入正确的基座，直到它们在步骤 1 的内径以下均匀测量 6 毫米（0.25 英寸）。



4. Install setup fingers. 安装微调机构



5. Bolt the setting straps onto the fixed jaws. 将吊装带固定在吊环或支腿上。

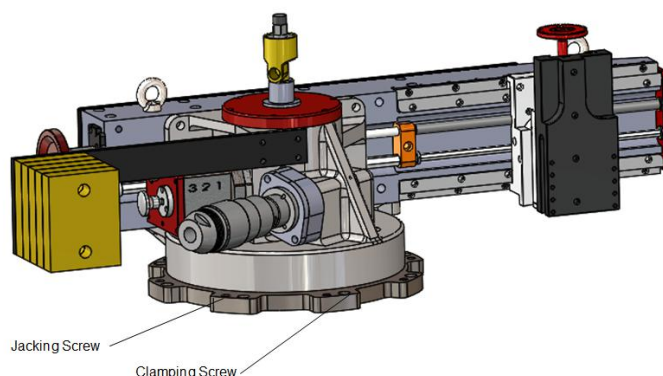
6. Position the base into the flange bore. Check the centralisation by measurement and adjust Using fingers as necessary. 将底座放入法兰孔中。通过测量检查集中并根据需要调整使用微调装置。

7. Adjustments can be made by tightening and loosening opposing adjustable jaws, it is recommended that the setting straps are left in place until the base unit is fully installed. 可以通过拧紧和松开相对的可调节钳口进行调整，建议将吊装带留在原位，直到底座完全安装完毕。

8. Lift the machine carefully over the spigot and align bolt hole positions to avoid having to rotate the machine any great distance. 小心地将机器抬到轴颈上并对准螺栓孔位置，以避免旋转机器任何距离。

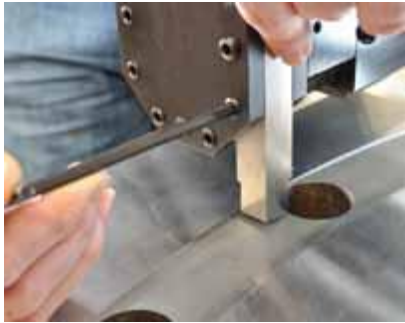
9. Lock the machine in position. 将机器锁定到位。

10. Lock Jacking Screw and Clamping Screw. 锁定顶起螺钉和夹紧螺钉



11. A magnetic base clock is provided in the tool kit to aid radial adjustment of the machine. This can be placed on the tool post and positioned onto the work piece 工具箱中提供磁性基座时钟，以帮助径向调整机器。这可以放置在工具柱上并定位在工件上

12. Make micro adjustment with fasten screw on the center adjustment block. 使用中心调节块上的紧固螺丝进行微调。
13. Survey the flange and, if required, the Jacking screw & clamping screw can be used to adjust the machine parallel with the flange. 检查法兰，如果需要，可使用顶起螺钉和夹紧螺钉来调整机器与法兰平行。
14. Adjustments can be made to the fixed jaws by tapping the jaw with a soft drift if required. 如果需要，可以通过轻柔的摆动敲击钳口，对固定钳口进行调整。
15. Install tool bit. Connect to power. 安装刀具，并连接动力系统。



Chuck Components

Use the following table as a guide when setting up your single plane chuck to fit the ID of your work piece. 在设置安装底座时，以符合工件内径，请使用下表作为指导。

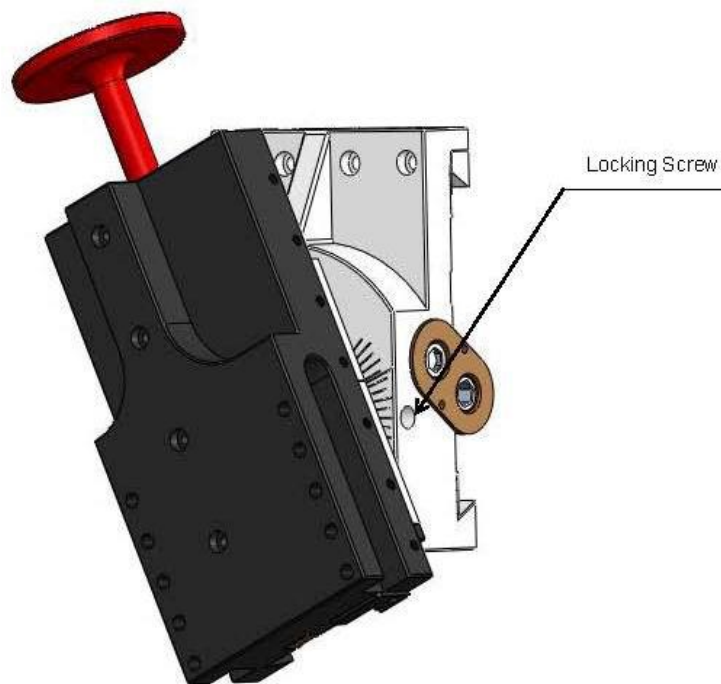
Mounting Base	Max ID
500 to 680mm	

Tool Post

1. Install the tool provided in either of the tool slots and tighten – over tightening of the screws could result in thread or tool post damage. 安装任一工具槽中提供的工具并拧紧 - 过度拧紧螺钉可能导致螺纹或工具柱损坏。
2. The angle of the tool post may be altered – loosen the screws as indicated and the tool post will swivel. Tighten the screws to lock at the required angle. 可以改变刀架的角度 - 如图所示松开螺钉，刀架将旋转。 拧紧螺钉，以所需角度锁定。
3. The tool post will feed approximately 2mm (0.078”) per revolution. Accurate depths of cut setting is achieved by placing the magnetic clock on the tool post zero the dial on the flange face and then add depth of cut. 刀架每转将进给约 2 毫米（0.078 英寸）。 通过将磁性时钟放置在法兰面上的刻度盘零点上，然后增加切割深度，可以实现精确的切割深度设置。

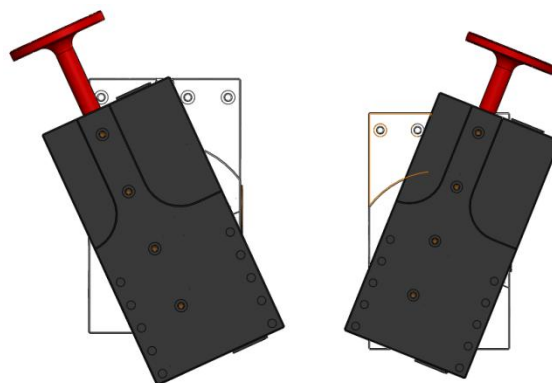
	CATION
	When facing ensure the carriage slide lock is removed. When boring ensure the lock is tightened to maintain a fixed carriage position.

1. It has scales on the cutting tool, range every 0.02mm. 它在切削工具上有刻度, 每 0.02mm 范围。

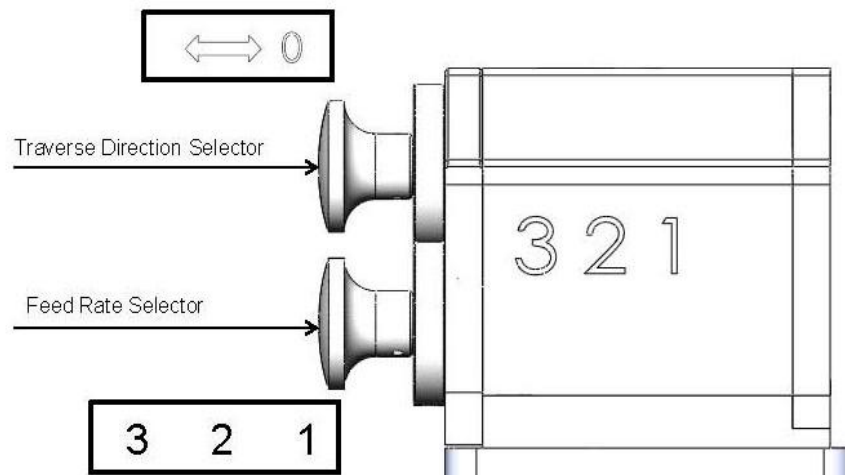


2. Please loosen the bolts before rotating. When it comes an angle, please tighten the bolts before machining.

2. 旋转前请松开螺栓。 当它出现角度时, 请先拧紧螺栓



Facing Feed Gear Selection



In		Out	
Gear	mm/rev	Gear	mm/rev
1	0.128	1	0.151
2	0.251	2	0.292
3	0.591	3	0.691

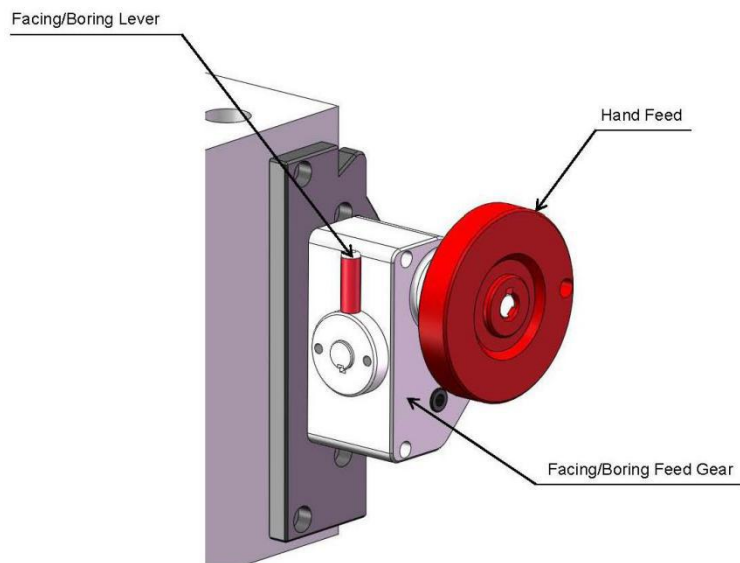
Selecting Feed rate 选择进给速率

1. Check feed rate table. 检查进给速率表
2. Select required feed and push or pull feed selector to required position. 选择所需的进给并将进给选择器推或拉到所需位置

Selecting Feed direction 选择进纸方向

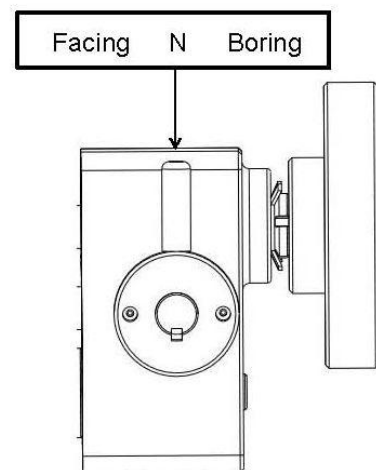
1. Check required direction IN will traverse the tool towards center – OUT will traverse the tool away from center. 检查所需的方向 IN 将使刀具朝向中心移动 - OUT 将使刀具远离中心。
2. Select required direction and push or pull feed selector to required position. 选择所需方向，然后将进纸选择器推到或拉到所需位置
3. The direction lever can be rotated to engage feed rate and direction gears and will not rotate when both are fully engaged. 方向杆可以旋转以接合进给速度和方向齿轮，并且当两者完全啮合时不会旋转

Facing/Boring Feed Gear Selection



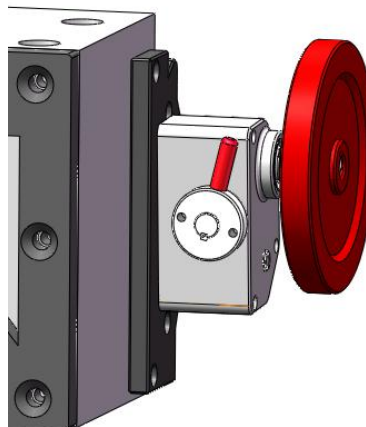
For **FACING** push lever towards the rotation arm whilst rotating the hand wheel located on the opposite end.

For **BORING** push lever away from the rotation arm whilst rotating the tool post feed t-bar.



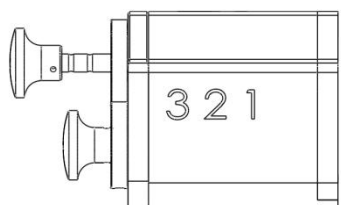
Boring Feed Gear Selection

when it comes to boring machine,
push the lever to **BORING**



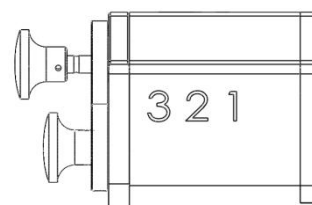
1. Tool Post Down

Pull Traverse direction selector away the Feed Gearbox



2. Tool Post Up

Pull Traverse direction selector in the middle.

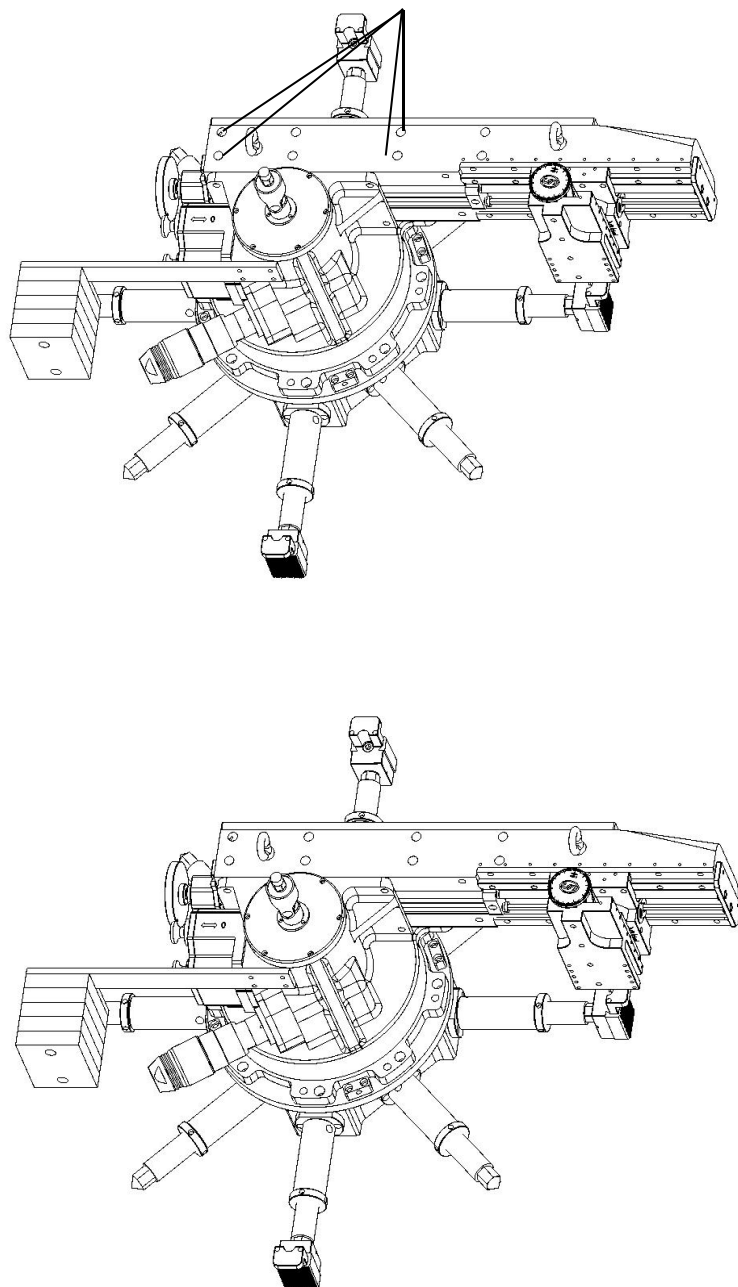


Boring Feed Rate

UP		DOWN	
Gear	mm/rev	Gear	mm/rev
1	0.027	1	0.032
2	0.053	2	0.062
3	0.126	3	0.147

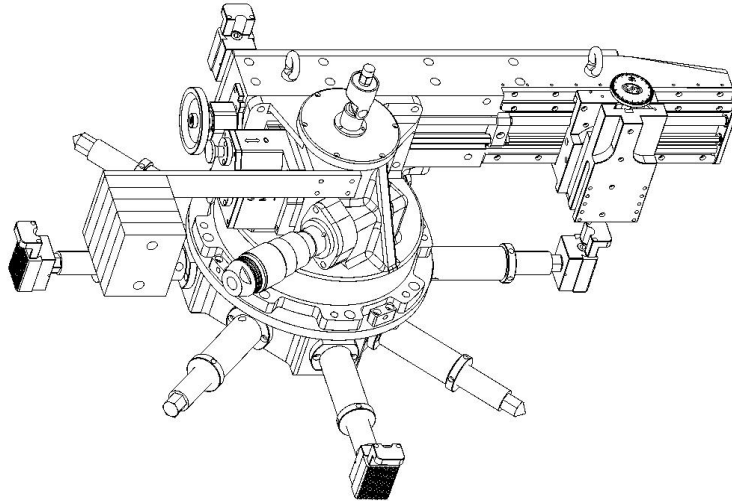
Rotation Arm Setting 刀臂的安装与调整

Rotation Arm Clamping Screw



1. When it is necessary to move the rotation arm, loosen the main drive to arm clamping screw. 当需要移动旋转臂时，将主驱动器松开到臂夹紧螺钉。
2. Slide the rotation arm to the required position. 将旋转臂滑动到所需位置。
3. To accurately locate the arm apply finger tight pressure to the main drive – arm clamping screw and then whilst supporting the arm weight tighten the clamp screws in order from 1 – 3 and then fully tighten the drive – arm clamping screw. This will ensure the arm is located correctly and is perpendicular to the rotation drive hub. 要准确定位手臂，请将手指紧压力施加到主驱动器 - 臂夹紧螺钉上，然后在支撑臂重物的同时按顺序从 1 - 3 拧紧夹紧螺钉，然后完全拧紧驱动臂夹紧螺钉。

Machine Balancing 平衡块的安装



1. When machining in any angular position other than horizontal it is necessary to balance the machine. Attach the balance plate to the machine. Failure to balance the machine correctly will increase load on the drive components. 在水平以外的任何角度位置加工时，必须平衡机器。将平衡板安装到机器上。未能正确平衡机器会增加驱动器组件的负载。

2. To obtain balanced rotation add or remove weights and move their position on the plate to obtain smooth rotation. There should be no increase or decrease in rotational speed. Pay particular attention to 7 o'clock and 2 o'clock positions as this will be where the weight shift will be greatest. 获得平衡旋转添加或移除重物并移动它们在板上的位置以获得平稳旋转。转速不应增加或减少。特别注意 7 点钟和 2 点位置，因为这将是重量变化最大的地方

3. For more accurate balancing the motor can be removed and the machine swung by hand until it rotates at an even pace with no evidence of speed increase. 为了更精确的平衡，可以拆下电机并用手摇动机器，直到它以均匀的速度旋转，没有速度增加的迹象。

	WARNING When machining in any angular position other than horizontal, it is necessary to balance the machine.
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2. Maintenance - Corrective 维护 - 纠正

2.0 Facing arm 刀臂

1. Remove the main arm bolts. Slacken off the adjuster screws in the arm support unit which clamps the surfacing arm perpendicular to the hub and remove clamping plate. 拆下主臂螺栓。松开调节螺丝臂支撑单元，垂直夹紧表面臂轮毂和拆卸夹板。

2. Arm should then slide backwards to release 然后，手臂应向后滑动以释放

3. Insert 2 x M16 eye bolts into arm, remove arm using vertical lift The procedure for installation is the reverse of the removal ensuring that the PTO box (ref mm2000i-8) fits into the gearbox opening and it is in mesh with the output gear in the gearbox. 将 2 x M16 吊环螺栓插入手臂，使用垂直提升装置卸下手臂安装程序与拆卸相反，确保安装

PTO 箱（参考 mm2000i-8）安装在变速箱开口处并与之啮合变速箱中的输出齿轮。

To check the correct installation - lift in the surfacing arm should be no more than 0.15mm (0.005"). 要检查正确的安装 - 表面处的升力应该不再是超过 0.15 毫米（0.005 “）

2.1 Tool post gib strip 工具桩楔条

1. Slacken lock nuts on the gib strip adjusters and slacken grub screws. 松紧带上的松紧锁紧螺母和松紧的平头螺钉。

2. Working from one end adjust grub screws only when there is sufficient location on the slide way to prevent over tightening. To adjust tighten fully then back off one quarter of a turn and tighten the lock nut. 从一端工作仅在有螺丝时调整平头螺钉滑道上的足够位置，以防止过度紧固。至调整完全拧紧，然后退回四分之一圈并拧紧锁紧螺母

3. Check the tool post movement along its stroke to ensure free sliding movement and no sideways movement. 检查刀架沿其行程的移动，以确保自由滑动运动，没有侧身运动。

2. Maintenance - Corrective

2.2 Slide way Carriage滑道滑道

1. Slacken lock nuts on the gib strip adjusters and slacken grub screws. 松紧带上的松紧锁紧螺母和松紧的平头螺钉

2. Working with the hand wheel ensure the carriage will slide whilst tightening the grub screws and then use the lock nuts to fix the adjustment. 使用手轮确保滑架同时滑动拧紧平头螺钉然后用锁紧螺母固定调整。

To check the correct installation – there should be no free play in the carriage 要检查正确的安装

- 车厢中应该没有任何免费游戏

slide assembly.

2.维护 - 纠正

2.2 滑道滑道（参考 mm2000i-2）

1.松紧带上的松紧锁紧螺母和松紧的平头螺钉。

2.使用手轮确保滑架同时滑动拧紧平头螺钉然后用锁紧螺母固定调整。

要检查正确的安装 - 车厢中应该没有任何免费游戏

滑动组件。

Maintenance

Recommended lubricants

Lubricant	Brand	Where used
Gear grease	UNOBA EP #2	Gearbox gears, thrust bearings
Light oil	WD-40	Unpainted surfaces
Cutting oil	UNOCAL KOOLKUT	Tool bits, work piece
Lubricating oil	Almo 525	Lubricator oil cup

Feed Screw maintenance 进给螺丝维护

Lightly oil the assembly every time it is used. 每次使用时轻轻给组件加油。

Mounting Base Unit maintenance 安装基座单元维护

The base unit needs no maintenance. Adjustment leg with light oil before every use. 基本单元无需维护。
每次使用前用轻油调节腿。

Main body assembly maintenance 主体组装维护

The main body bear is sealed and lubricated for the life of the machine. Grease the bull gear every 100 hours by removing the counterweight plate and inserting grease into the hole with a flexible-hose grease gun. 主体轴在机器的使用寿命期间密封和润滑。 通过卸下配重板并用柔性软管注油枪将油脂插入孔中，每100小时润滑一次大齿轮

Gearbox assembly maintenance 变速箱总成维护

Every 100 hours, remove the gearbox assembly from the main body and generously grease all parts.

Gearbox parts need not be disassembled for servicing. 每隔100小时，将齿轮箱组件从主体上拆下，并为所有部件涂抹润滑脂。 不需要拆卸变速箱部件进行维修。

Cutting Tool assembly maintenance 刀具组装维护

Lightly oil the cutting tool every time the flange facer is used.每次使用法兰面板时，轻轻给切削工具加油。

Air motor assembly and pneumatic condition unit

To extend the useful life of the air motor: 延长气动马达的使用寿命:

1. Route the air supply through a lubricator and air filter. 通过润滑器和空气过滤器引导气源
2. Use nonrestrictive air lines and fittings. Check the air system periodically to be sure the air pressure is 90 psi (620 KPa). 使用非限制性空气管路和配件。定期检查空气系统, 确保气压为 90 psi (620 KPa)
3. Adjust the air motor speed by slowly turning the air control valve. 缓慢转动空气控制阀, 调节气动马达的速度

	CATION Do not control motor speed by adjusting airline pressure. Damage to the motor can result.
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4. Fill the lubricator oil cup with air oil before using the machine. Use high-quality oil with rust inhibitors and emulsifiers such as Almo 525. The lubricator should oil the air at a rate of 2-4 drops of oil per minute. 在使用机器之前, 在润滑器油杯中注入空气油。使用含有防锈剂和乳化剂的高品质油, 如 Almo 525. 润滑剂应以每分钟 2-4 滴油的速度对空气进行润滑。

5. Drain the air filter before and after using the machine. 使用机器前后排空空气过滤器。

	CATION Using air that is not filtered and lubricated can damage the motor. When operating the machine, route the incoming air through the air filter and lubricator.
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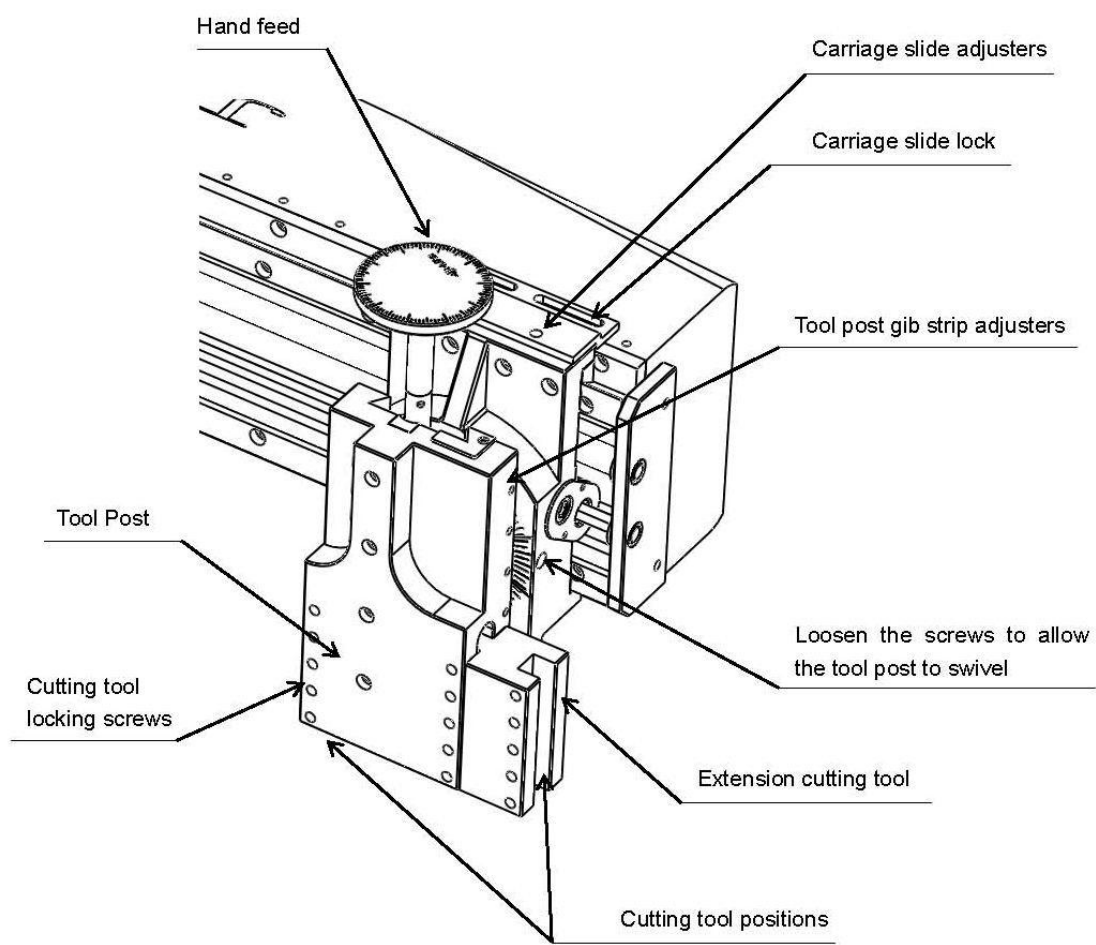
Fault Diagnosis

Symptom	Possible cause	Action
The machine will not rotate	1. Air supply not available 没有空气供应	Check supply
	2. Air supply is below the minimum required to operate the machine 空气供应低于操作机器所需的最低限度	Check supply
	3. Drive motor faulty 驱动电机故障	Remove motor and check operation
	4. Damage to drive gear train 驱动齿轮系损坏	Remove motor and check free rotation
The machine does not traverse 机器不会移动	1. The feed selector is not correctly positioned and the facing feed gears are not engaged 进给选择器未正确定位且相对的进给齿轮未啮合	Check position
	2. The direction selector is in neutral or not correctly engaged –if both gears are engaged this should not rotate 方向选择器处于空档或未正确啮合 - 如果两个齿轮啮合，则不应旋转	Check position and ensure there is no rotation
	3. Drive key problem 驱动钥匙问题	Remove and check gearbox assembly operation
	4. Carriage has been run off the lead screw 导轨已从导螺杆上卸下	Check lead screw nut and screw are engaged
Poor surface finish on the flange 法兰表面光洁度差	1. Machine out of balance 机器失去平衡	Check balance
	2. Machine base incorrectly installed 机器底座安装不正确	Check installation
	3. Machine installation bolts not tightened 机器安装螺栓未拧紧	Check bolts
	4. Turning tool not ground correctly or worn 车刀未正确磨削或磨损	Check tool & replace
	5. Depth of cut too deep 切割深度太深	Reduce depth of cut
	6. Too much play in tool post gib strip or carriage 多用于工具后围板条或车架	Adjust tool post & carriage
	7. Too much play in main drive bearings 主传动轴承的游隙过大	Adjust drive dampener's

	8. Worn drive motor 磨损的驱动电机	Check motor
	9. Poorly adjusted surfacing arm 调整不良的浮动臂	Check and adjust
	10. General poor machine condition	Refer to DTH

1. Maintenance –General

Period	Task	Lubricant
After each use	1. Clean all components and lightly oil 清洁所有组件和轻微油	SAE 10 oil or WD40
	2. Check all components are present and stored correctly 检查所有组件是否存在并正确存储	
	3. Check tools and regrind or reorder inserts 检查工具并重新订购或重新订购插页	
	4. Check and adjust gib strip and carriage 检查并调整夹板和托架	Reference corrective maintenance section
Weekly under use	1. Grease main hub bearings-5 shots Grease 主轮毂轴承 - 5 枪	00 EP Lithium semifluid grease
	2. Grease gearbox-2 shots Grease 变速箱-2 枪	00 EP Lithium semifluid grease
	3. Grease tool post rack Grease 工具岗位架	00 EP Lithium semifluid grease
	4. Lightly oil slide ways 轻油滑道	SAE 10 oil
	5. Clean and oil base components 清洁和油基组件	SAE 10 oil



Notes		



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