Portable Flange Facing Machine
WF-1650 Model Operation Manual

For your personal safety, before use
Read the manual carefully and keep it properly !

Disclaimer: I enjoy the company of final interpretation of this information, subject to change or update without notice.

SHENZHEN KEDES MACHERY &EQUIPMENT CO.,LTD.

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Preface:

Thank you for using KEDES product, we expect our products provides enormous convenience for your business.

1. Our company own the final explanation for the product details, any changes without prior notice.
2. This information of the picture, text and data is for reference only, because the product is constantly updated in kind will be changed, the specific parameters to the actual product.

Disclaimer of liability

1. We'll not responsible for any loss cause by working on the others out of its design performance.
2. Must read the manual operation before operating, we'll not bear the loss if any Unreasonable operation.
3. Don't let the machine work more than 12 hours continuously in full load, its working time is 8 hours one day
4. (reduce the time to 4 hours one day at 30 ℃.)
5. Please use the accessories supplied by our company, Without the consent of our company, all the loss cause by unauthorized demolition and replace the accessories not belong to ours , we will not responsible for it.

Part 1 Safety And Warning

1.1 Health & Safety

This manual describes the machine's function, performance, usage and precautions. The following 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.
- Do not use the machine without connecting the air filter / lubricator, because this will damage air motor. (if you choose pneumatic driven)
- Do not attempt to alter the feeds while the machine is rotating.
- Do not operate the machine before get fully understanding of the operating procedure.
- To avoid injuring a operator as well as others close by, the following action is necessary.
- Do not Wear loose fitting clothing or jewelry, tie back long hair or wear a hat.

1.2 Safety Caution

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.

- The operator must receive safe operation training before starting his/her work.
- The operator must wear working suit and protection eye glasses.
- Before starting the machine, please check the machine voltage and gas requirement is same with the one you will use.
- Please check whether the clamping system is locked or not before starting the machine.
- 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.
- Please do not put your hand or other things near the equipment when starting it up to prevent any injury.
- The electrical wire shall be far away from high temperature, oily or sharp places.
- 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.
- 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.

- It is prohibited that the machine is used beyond its working scope, any consequences thus caused is not the responsibilities of our company.
- The machine could not be run beyond its highest cutting capability, to prevent any damage or human injury.

- Do not attempt to alter the feeds whilst the machine is rotating.
- 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.
- After the tool wear to change in time to ensure the quality of machining

- Machine blocked, change tool bits, doing measurment, make sure all power off , Pull the plug.
- After the machine jammed down, cannot be forcibly let machien working. If the motor temperature is too high just let it natural cooling, and readjust the empty schedule to start the motor.

- After machine stopped,turn off power and transmission system at free position
- Machine cant be used in strong corrosion, wind and rain, use in flammable and explosive environment

Part 2 Machine Introduction

2.1 Main Features

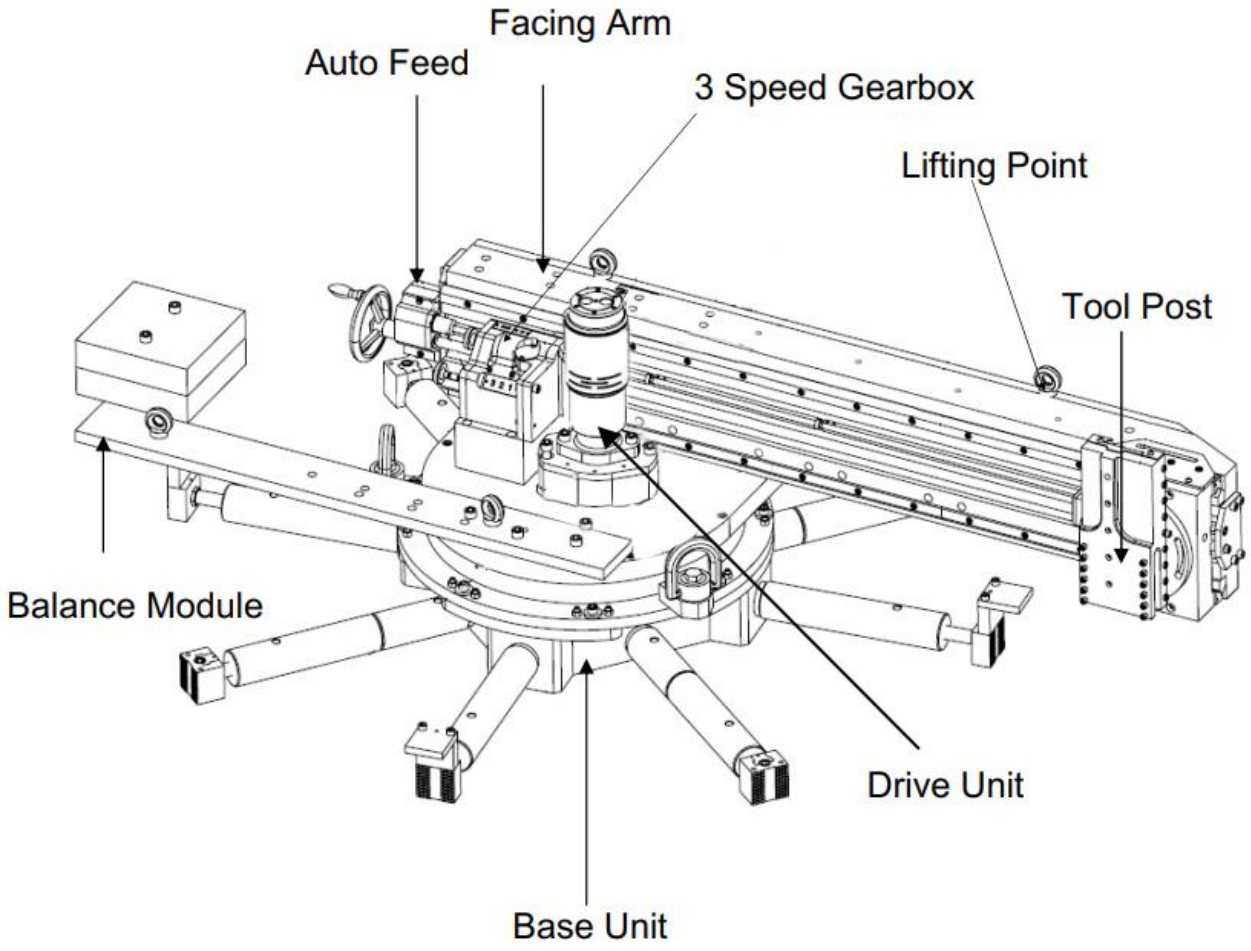
1. Inside Mounted , Small Working Radius , suitable for special narrow work place
2. Compact structure ,Light weight ,easy to carry out
3. Modular design of the whole machine, easy assembly and disassembly
4. equipped with preload braking system, intermittent cutting, high productivity
5. Horizontal, vertical, inverted, tilt etc, any direction both can processed
6. Can process flat face, water line, Continuous groove, and various forms of sealing surfaces RF, RTJ, etc.
7. Driven: Pneumatic, Electric (Servo Motor)
8. Machine widely used in cast iron, alloy structural steel, stainless steel and other metal materials. Flange sealing surface repair, flange surface repair and processing operations.

2.2 Technical data

Minimum Facing diameter	Ø500mm
Maximum Facing diameter	Ø1650mm (Non-Standard can up to 1780mm)
Minimum Clamping diameter	Ø500mm
Maximum Clamping diameter	Ø1600mm
Power	3KW
Rotating speed	0-20RPM

Tool Post Travel	100mm
rates(Vertical)	Automatic feed
Installation form Drive	Internal mount, Level& Vertical
Machine Driven	Pneumatic / Servo Motor
Facing form	Facing & RTJ & Groove
Flatness	≤0.1mm

2.3 Machine Diagram



Part 3 Machine Operation

3.1 Machine Base Selection and Installation

1. Measure Mounting inner bore of the flange to be machined and ensure this is within the working parameters of the machine.
2. Select and install the appropriate expansion strip

Expansion strip 55mm (12 Pcs)

Expansion strip 115mm (12 Pcs)

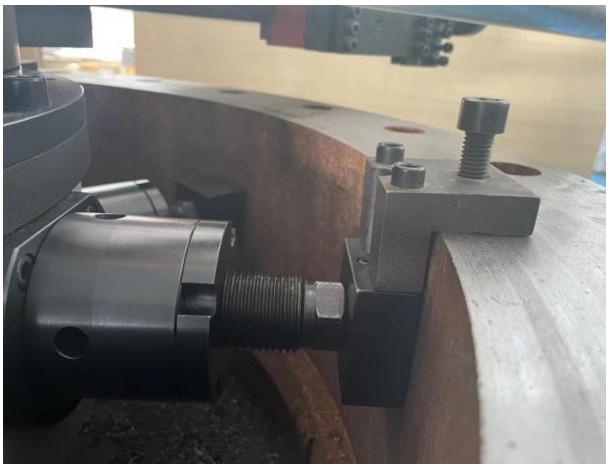
Expansion strip 230mm (8 Pcs)

Note: Expansion strips can be stacked use

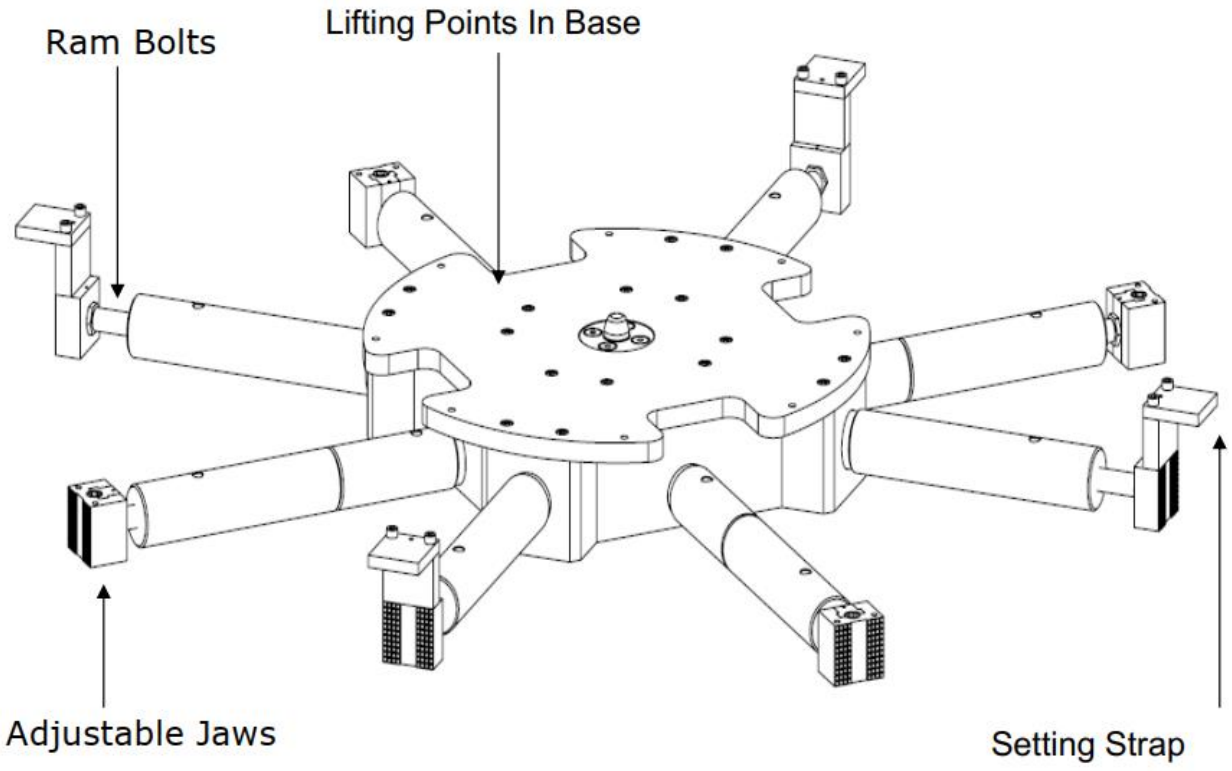
Trimmer block bolts (4 Pcs)

Tightening block bolts (4 Pcs)

Note: Staggered use (follow picture)



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



4 . Bolt the setting straps onto the fixed jaws.

5. Position the base into the flange bore. Check the centralisation by measurement and adjust Using ram bolts as necessary.

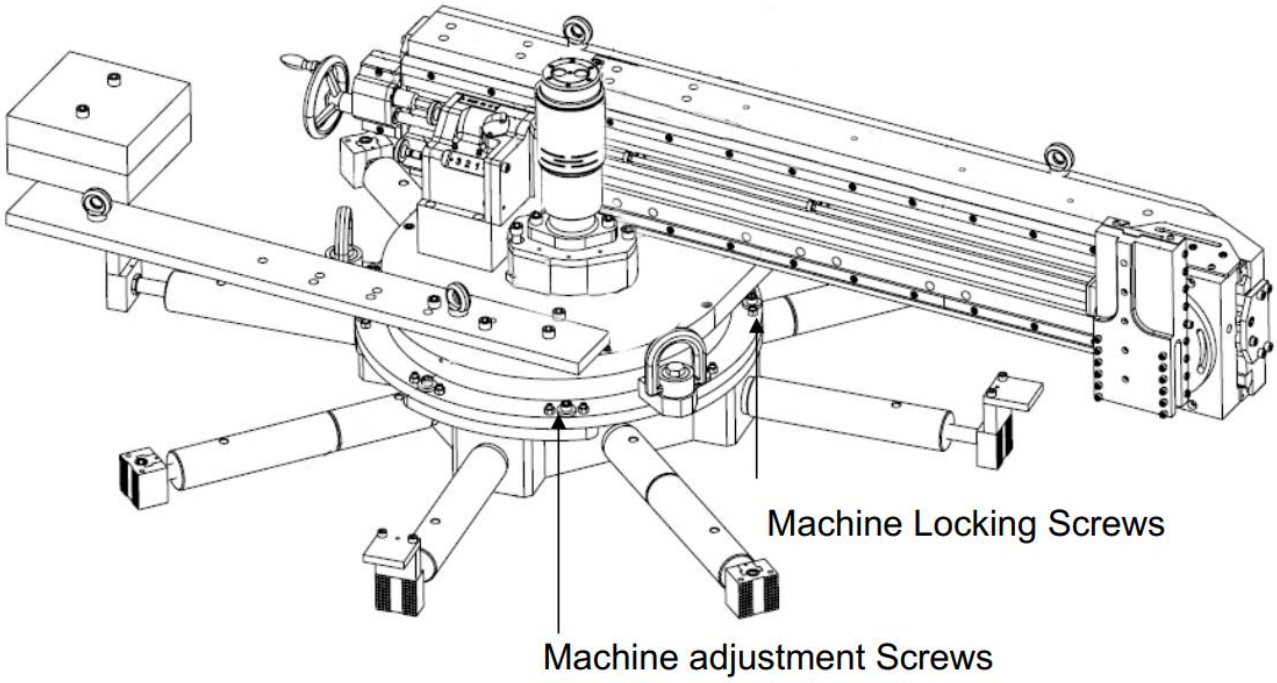
6. Adjustments can be made by tightening and loosening opposing adjustable jaws, it is recommended that the setting straps are left in place until the base unit is fully installed.

3.2 Machine Body Installation and adjustment

Machine Body Installation (It has been installed before leaving the factory)

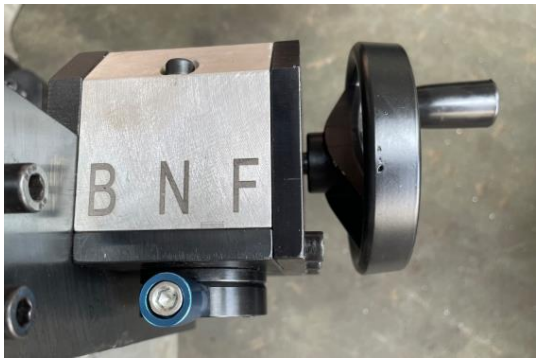
1. A central location spigot is provided for exact location of the machine, this is fixed to the centre of the machine base.
2. Ensure the tool post is fully retracted and the cutting tool has been removed.
3. Lift the machine carefully over the spigot and align bolt hole positions to avoid having to rotate the machine any great distance.
4. Lock the machine in position.
5. 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.
6. Survey the flange and, if required, the adjustable bolts can be used to adjust the machine parallel with the flange.

7. Adjustments can be made to the fixed jaws by tapping the jaw with a soft drift if required.



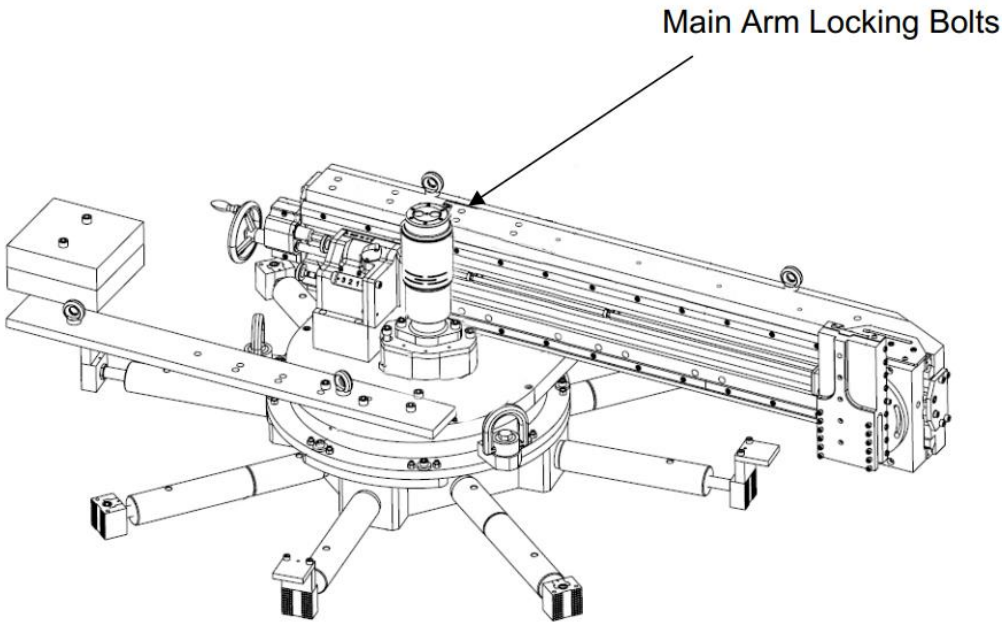
Machine Body Adjustment

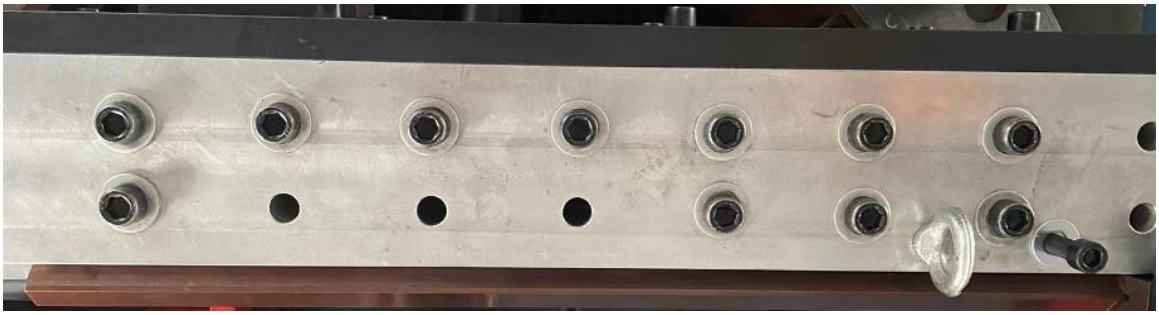
Adjust the working arm according to the work needs



Adjust the gear to "N"

Rotate the hand wheel to adjust the position of the tool holder



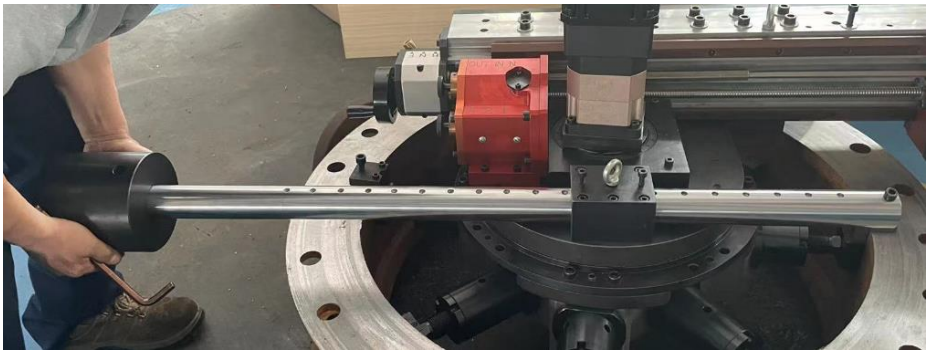


1. When it is necessary to move the surfacing arm, Loosen screws , Move the working arm horizontally
2. Loosen the arm clamp plate screws in the arm support bracket and the arm should now slide. Slide to the required position.
3. To accurately locate the arm apply finger tight pressure to the main drive – arm locking bolts and then whilst supporting the arm weight tighten the clamp screws in order from 1 – 3 and then fully tighten the drive – arm locking bolts.
4. This will ensure the arm is located correctly and is perpendicular to the rotation drive hub.

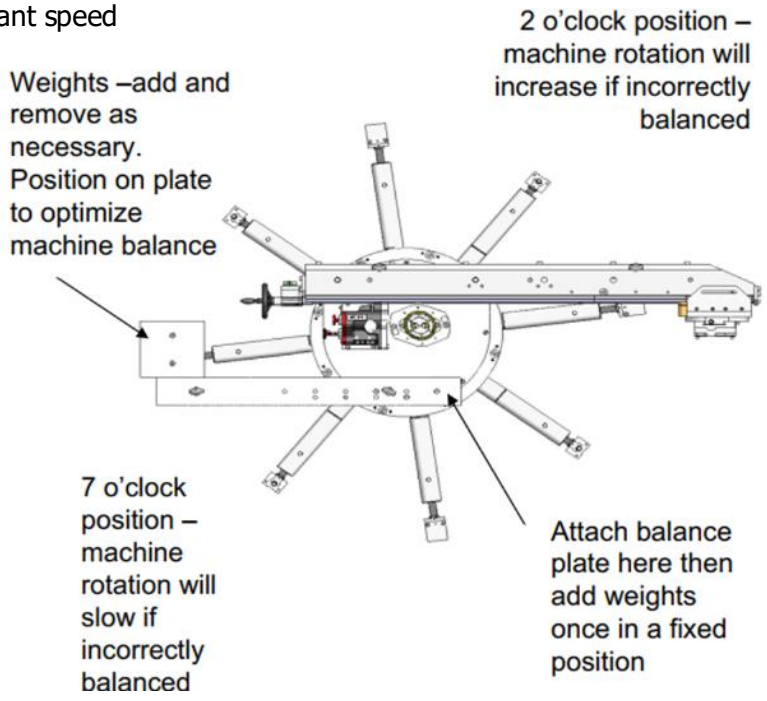
3.3 Counterweight balance block

Adjust the Counterweight balance block position according to the work needs

Loosen screws , Move the Counterweight balance block horizontally



1. There are no restrictions on the installation position of the machine, but the machine must be in a balanced state before running the machine
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.
3. Run the machine and observe whether the machine speed is consistent in each position. If it is difficult to rotate at one end, it is necessary to fine-tune the position of the balance plate, and fix the nut
4. For a more precise balance, it is recommended to remove the motor and manually rotate the machine until the machine rotates at a constant speed



(Pay particular attention to 7 o'clock and the 2 o'clock positions (assuming the highest point to be 12 o'clock) as this will be where the weight transfer will be greatest.)

NOTE: Operating the machine in an unbalanced state will increase the load on the drive components and reduce the life of the machine.

3.4 Install Machine Driven

If you choose pneumatic driven

Please equip with an air compressor with an air storage tank to ensure the air supply, otherwise the machine will stop working

In addition, please be equipped with an air filter (because the air contains moisture, it is easy to cause the gears in the air motor to rust)

	**Note:** Before and after each use, please add professional air tool oil to maintain the air motor.

If choose servo motor driven

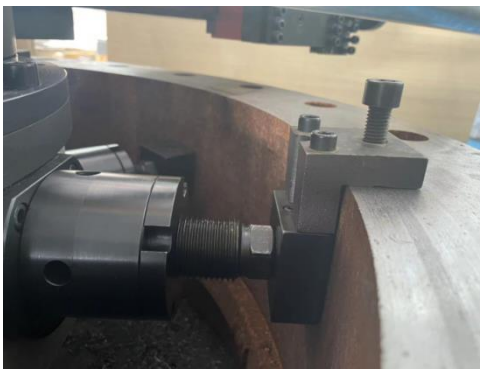
our servo motor Voltage is 1PH 220V 50Hz

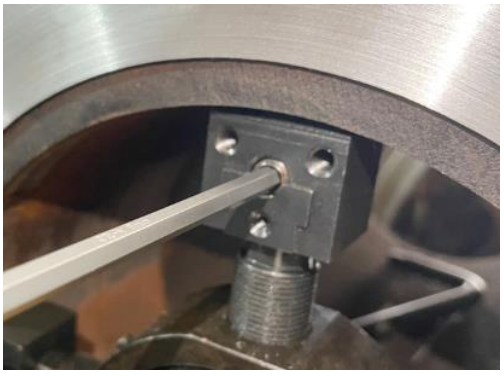
Note: Adjust the feed amount appropriately according to the different processing materials.

⚠	**Note:** Before turning on and off power, you need to adjust the speed to 0

3.5 Machine Install

By adjusting, make machine and flange in same level.

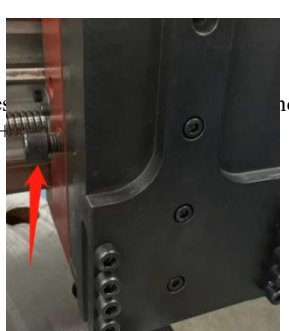


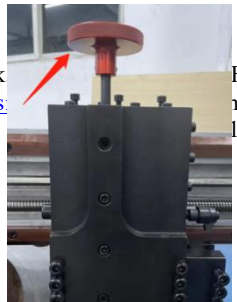


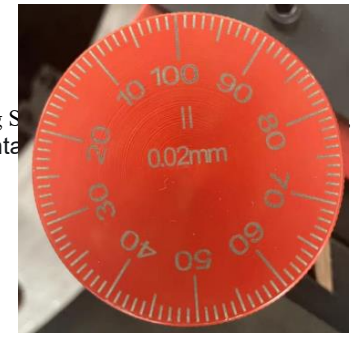
Use a meter to correct the center , horizontal , vertical. (Adjust the spinner block)

3.6 Tool Post Setting

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.



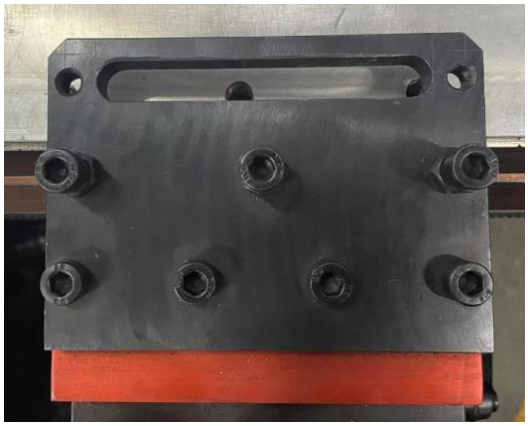




2. The angle of the tool post may be altered – loosen the 2 off screws as indicated and the tool post will swivel. Tighten the 2 off screws to lock at the required angle.

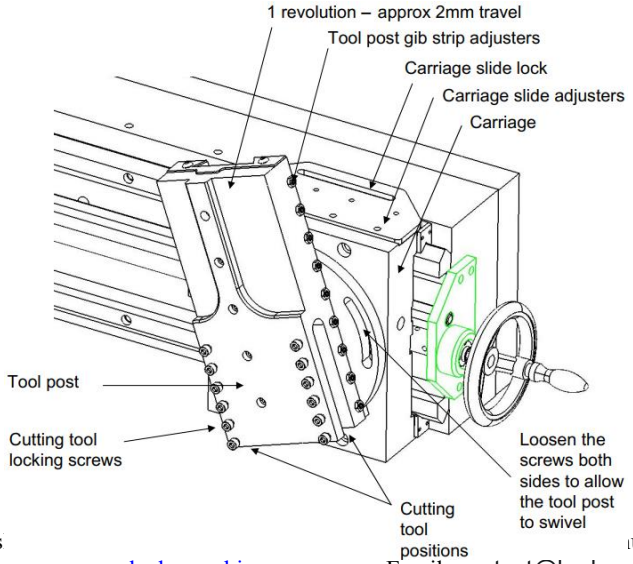
3. The tool post will feed approximately 2mm per revolution. Accurate depth of cut setting is achieved by placing the magnetic clock on the tool post zero the dial on the flange face and then add depth of cut.

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

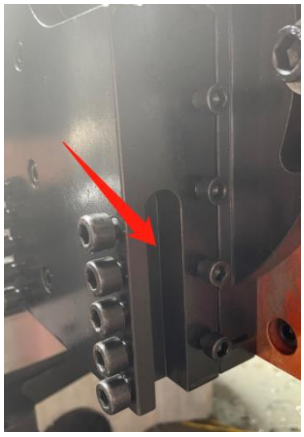


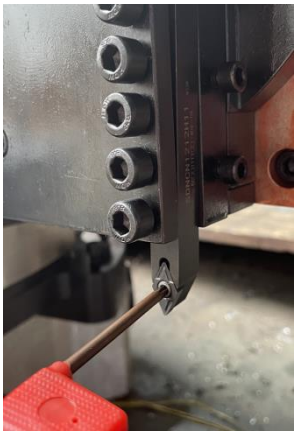
Adjust the feed amount according to the different materials to be processed

Rotate the hand wheel to adjust the feed rate (2mm/circle)



Note : Before the machine runs, it is necessary to set the feed amount in advance.





The blades are dull, replace them regularly

	**Note:** ● When performing flat facing processing, remove the "slide lock bolt" and lock the " tool holder lock handle" ● When performing boring processing, install and lock the "slide plate locking bolt", and loosen the " tool holder locking handle"

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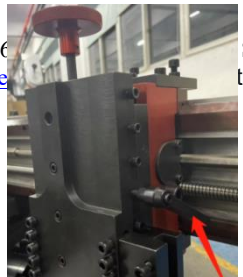
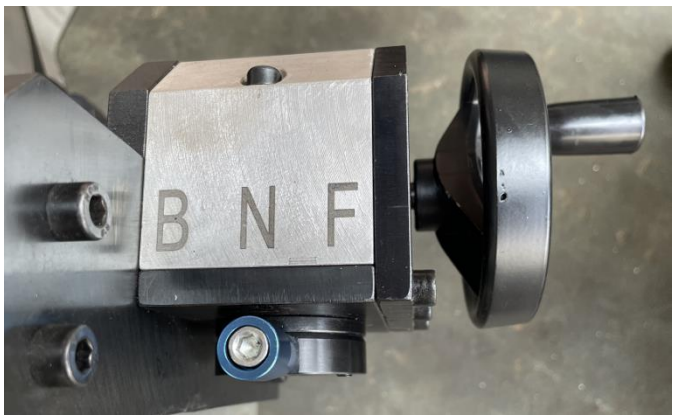


3.7 Tool holder Symbol Description and feed direction setting

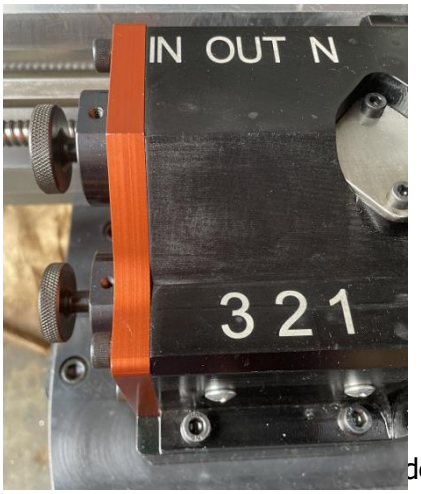


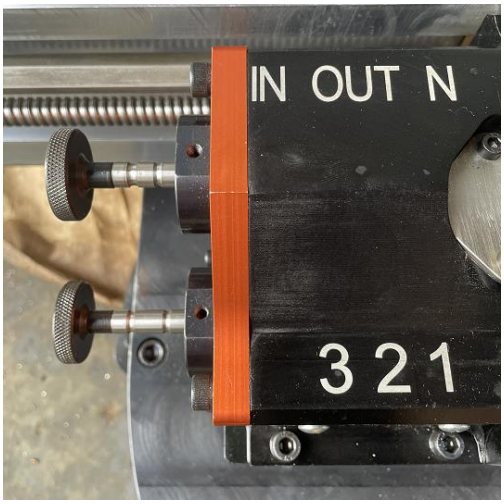
"B" gears means Boring

"N" gears means no load rotation

"F" gears means Facing

	**Note:** when An exception occurs when the gear is changed, Please operate the gear and the handle wheel at the same time so that the gears are tightly engaged.

Adjust 

der by Pull 

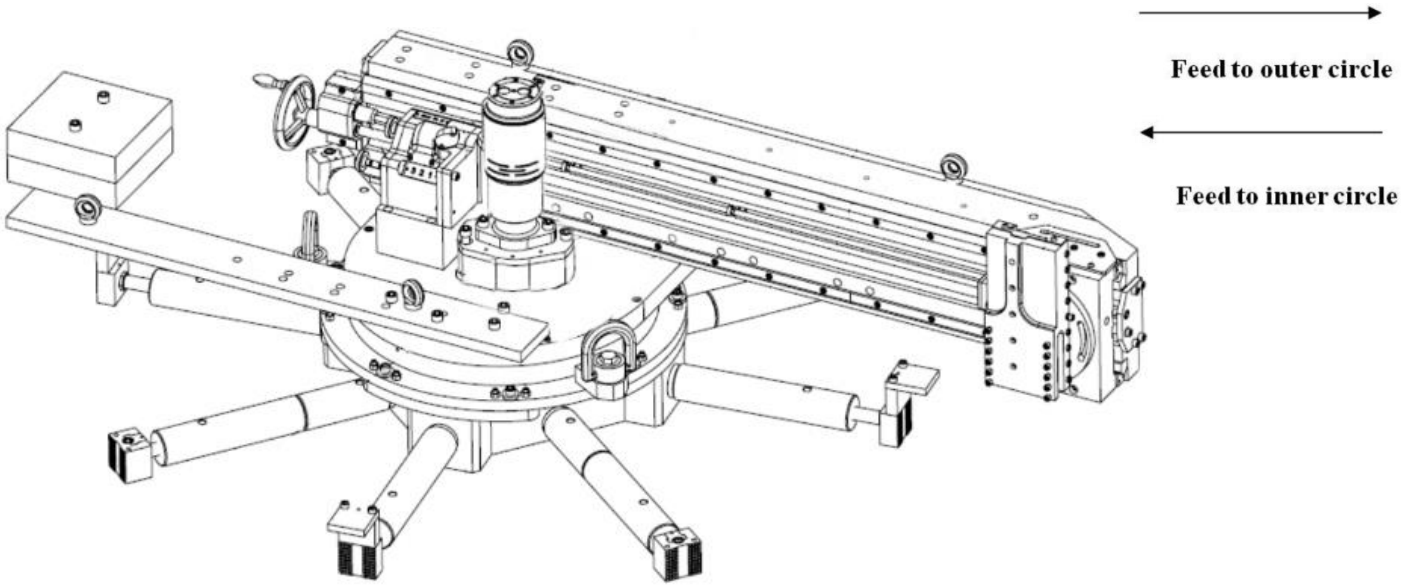
Symbol Description

"IN" is the forward gear, which means Feed to inner circle.

"OUT" is the backward gear, which means Feed to outer circle.

"N" is the neutral position, which means no load rotation.

["3" "2" "1"] Adjust feed speed. ("1" means the smoothest ; "3" means the roughest)



[Flat Facing Processing]

Step 1:

["B" "N" "F"] , switch to **"N"** gear ; ["IN" "OUT" "N"] , switch to **"N"** gear

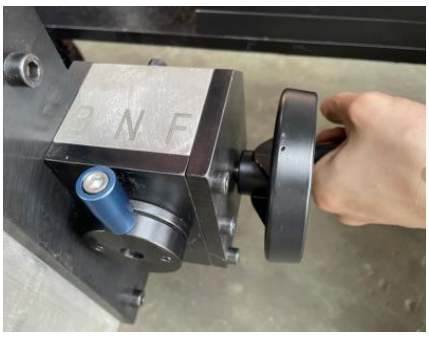
Step 2:

Remove the "slide lock bolt" , Rotate the hand wheel to move the tool holder to the position to be processed.

Step 3:

["B" "N" "F"] , switch to **"F"** gear

Note : When in gear, turn the hand wheel to make sure the gear is in place.



Step 4:

lock the " tool holder lock handle".

Step 5:

Adjust the feed direction according to the processing requirements. ["IN" or "OUT"]

Step 6:

Adjust the feed speed according to the processing requirements. ["3" or "2" or "1"]

Flat Facing Processing Feed Speed		
Feed Direction Position	Gear position	Feed Speed（mm/r）
IN	1	0.128 mm/r
IN	2	0.191mm/r
IN	3	0.383mm/r
OUT	1	0.164 mm/r
OUT	2	0.246mm/r
OUT	3	0.492mm/r

Step 7:

Turn on the power (pneumatic or servo motor), machine automatic working

Note： If the drive mode is servo motor (electric), the rotation speed can be adjusted.

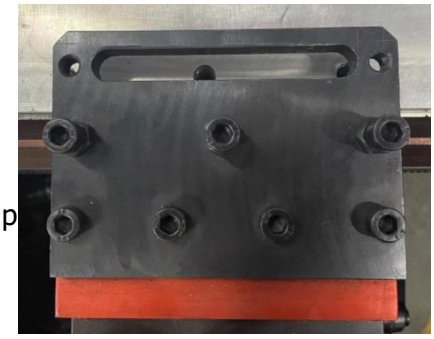
[Boring Processing]

Step 1:

["B" "N" "F"] , switch to **"N"** gear ; ["IN" "OUT" "N"] , switch to **"N"** gear

Step 2:

loosen the "slide plate locking bolt" , Rotate the hand wheel to move the tool holder to the position to be processed, then install and lock the "slide plate locking bolt



Step 3:

["B" "N" "F"] , switch to **"B"** gear

Note : When in gear, turn the hand wheel to make sure the gear is in p

Step 4:

loosen the "tool holder locking handle"

Step 5:

Adjust the feed direction according to the processing requirements. ["IN" or "OUT"]

Step 6:

Adjust the feed speed according to the processing requirements. ["3" or "2" or "1"]

Boring Processing Feed Speed		
Feed Direction Position	Gear position	Feed Speed（mm/r）
IN	1	0.09 mm/r
IN	2	0.138mm/r
IN	3	0.277mm/r
OUT	1	0.119 mm/r
OUT	2	0.178mm/r
OUT	3	0.356mm/r

Step 7:

Turn on the power (pneumatic or servo motor), machine automatic working

Note： If the drive mode is servo motor (electric), the rotation speed can be adjusted.

	**Note:** The direction lever can be rotated to engage feed rate and direction gears and will not rotate when both are fully engaged.

Part 4 Lubrication And Cleaning

Period	Task	Lubricant
After each use	1. Clean all components and lightly oil	SAE 10 oil or WD40
	2. Check all components are present and stored correctly	
	3. Check tools and regrind or reorder inserts	
	4. Check and adjust gib strip and carriage	Reference corrective maintenance section
	5.add professional air tool oil to maintain the air motor. (pneumatic motor)	

Weekly under use	1. Grease main hub bearings – 5 shots	00 EP Lithium semi fluid grease
	2. Grease gearbox – 2 shots	00 EP Lithium semi fluid grease
	3. Grease tool post rack	00 EP Lithium semi fluid grease
	4. Lightly oil slide ways	SAE 10 oil
	5. Clean and oil base components	SAE 10 oil
Quarterly	Remove motor off Screws grease main gear and check for adjustment Grease drive gear	
Quarterly	Check Carriage operation adjust as necessary. Check lead screw backlash-check tool post backlash.	
Storage	If the machine is to be stored for any length of time clean thoroughly and spray WD40 into the pneumatic motor .	

Part 5 Trouble Repair And Maintenance

The following chart is supplied to enable the operator to locate possible faults arising from the operation of the machine. If any faults persist or are out of the scope of this chart please contact KEDES Machine technical staff.

FAULT	POSSIBLE REASON	ACTION TO TAKE
MACHINE WILL NOT ROTATE	1.Air supply not available	Check air supply
	2.Faulty drive motor	Check drive motor-contact technical staff

WHEN AIR SUPPLY IS ON	3.Faulty air valve	Check operation
	4. Air supply is below the minimum required to operate the machine	Check air volume
	5.Damage to drive gear train	Remove motor and check free rotation
MACHINE WILL NOT TRAVERSE	1. The feed selector is not correctly positioned and the facing feed gears are not engaged	Check position
	2. The direction selector is in neutral or not correctly engaged – if both gears are engaged this should not rotate	Check position and ensure there is no rotation
	3. Drive key problem	Remove and check gearbox assembly operation
	4. Carriage has been run off the lead screw	Check lead screw nut and screw are engaged
POOR SURFACE FINISH ON FLANGE	1. Machine out of balance	Check balance
	2. Machine base incorrectly installed	Check installation
	3. Machine installation bolts not tightened	Check bolts
	4. Turning tool not ground correctly or worn	Check tool & replace
	5. Depth of cut too deep	Reduce depth of cut
	6. To much play in tool post gib strip or carriage	Adjust tool post & carriage
	7. Too much play in main drive bearings	Adjust drive dampener's
	8. Worn drive motor	Check motor
	9. Poorly adjusted surfacing arm	Check and adjust
	10. General poor machine condition	Refer to KEDES

Part 6 Warranty Card

WARRANTY CARD

Company name			
Address			
Contact person		**Phone number**	
Model No.			
Series No.		**Production date**	
Warranty period	**12 months**		

Inspector:

Company seal:

Warranty Rules:

1. Warranty period start from the date shipped on board, 12 month free warranty.

2. Over warranty period, spare parts charge at cost price.

3. Within warranty period, the following conditions are not included in guarantee:

a) Improper operations not following the operation manual

b) Damage by self-maintain

c) Damage by force majeure or transport

d) Can not present this certificate