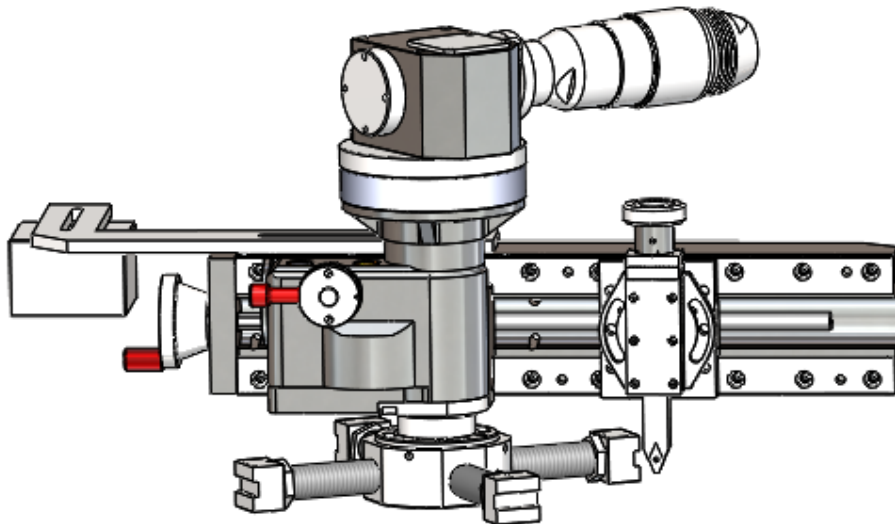




# Portable Flange Facer

TTFF24

OPERATING MANUAL



# CONTENTS

<b>Machines Details</b>		
1	Important Notice & Health & Safety	3-4
2	Operation Instruction	5
3	Receiving Your Machine	6
4	Labelling Guidelines & Warning Labels	7-8
5	Machine Features	9
<b>Operation</b>		
1	TTFF24 Features	10
2	Trouble Shooting Chart	11-12
3	Changing Facing Arms	13
4	RTJ & Lens ring groove settings	14
5	Striker Boring Feed Setting	15
6	Tool post Setting	16
7	Facing Direction	17
8	Balancing	18
9	Machine Base Setting	19
10	Machine Setting	20
11	General Operation	21
12	Cautions	22

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## Important Notice

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TRITORC 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.

TRITORC 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.

## **Health & Safety at Work Act**

Thank you for using TRITORC 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.
- Do not use the machine without connecting the air filter / lubricator, because this will damage air motor.
- 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.

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## 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.

1. The operator must receive safe operation training before starting his/her work.
2. The operator must wear working suit and protection eye glasses.
3. Before starting the machine, please check the voltage and gas requirement on the data plate is same with the one you will use.
4. Please check whether the clamping system is locked or not before starting the machine.
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.
6. Please do not put your hand or other things near the equipment when starting it up to prevent any injury.
7. The electrical wire shall be far away from high temperature, oily or sharp places.
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.
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.
10. It is prohibited that the machine is used beyond its working scope, any consequences thus caused is not the responsibilities of our company.
11. The machine could not be run beyond its highest cutting capability, to prevent any damage or human injury.
12. Do not attempt to alter the feeds whilst the machine is rotating.
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.

## Receiving Your Machine

### Inspect the machine upon receipt / invoice

1. Inspect the machine for shipping damage
2. Ensure you have received the parts listed on the invoice


	<b>IMPORTANT</b>
	<p>Contact TRITORC right away at +86-755 33238068 / sales@tritorc.com</p> <p>if there are any errors or questions about this equipment.</p>


3. When unpacking the machine, let the machine rest on 4-inch-high blocks to prevent damaging the components.
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.


## Labeling Guidelines


The purpose of product safety signs and labels is to increase the level of awareness to possible dangers.

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.

	<div style="background-color: red; color: black; text-align: center; padding: 5px;"><b>DANGER</b></div> <div style="padding: 5px;">Indicates a hazardous situation that could be fatal or cause serious injury.</div>
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	<div style="background-color: yellow; color: black; text-align: center; padding: 5px;"><b>WARNING</b></div> <div style="padding: 5px;">Indicates a potentially hazardous situation that could be fatal or cause serious injury.</div>
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	<div style="background-color: yellow; color: black; text-align: center; padding: 5px;"><b>IMPORTANT</b></div> <div style="padding: 5px;">Indicates a potentially hazardous situation that could result in minor to moderate injury, damage to the machine or interruption of an important process.</div>
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	<div style="background-color: blue; color: white; text-align: center; padding: 5px;"><b>IMPORTANT</b></div> <div style="padding: 5px;">Provides critical information for the completion of a task. There is no associated hazard to people or the machine.</div>
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## Warning Labels

Read and observe all warning labels.

## Machine General Introduction

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### About this Manual

This manual contains all the necessary instructions for the service and maintenance of the TRITORC Circular Milling Machine.

### About the Flange Facing Machine

This is a highly configurable machine with many options and accessories.

The machine consists primarily of a rotary unit with mounted base and extension. A turning arm is mounted on the rotary unit.

The machine is easily mounted into place by chucking bolts in the inner diameter of the working surface. The machine can easily be leveled and centered into place.

The operator should adjust carbide tips blades to make sure that the turning arm cut small for precision and roughness.

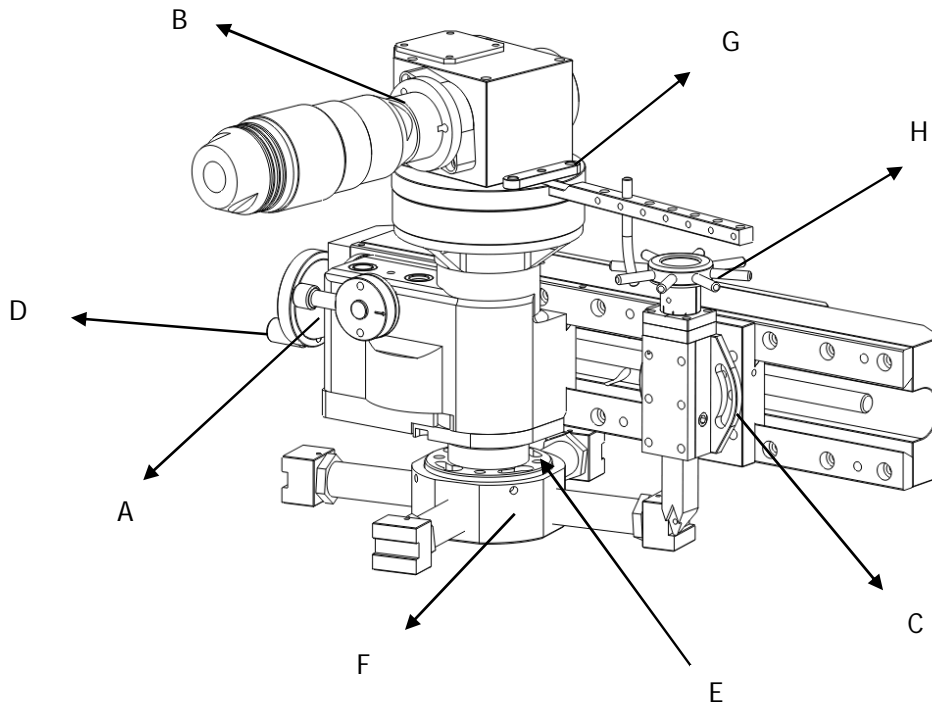
**Adjustable Turning** – The turning arm can be adjusted for the desired swing clearance and machining range. The optional counterweight is recommended, but not required for horizontal machining applications.

**Chucking Design** – Tubular rigid chucking system with level in place capable adjusting feet designed for simple and speedy setup.

**Modular Design** – Allows many of the machine components to be removed to facilitate easier setup and storage.

**ID Mount** – This machine can be mounted on the inside of the work piece using chucking bolts on the inner surface.

## TTFF24 FEATURES



A- Direction Lever(Facing –IN (Coarse)/OUT(fine)

B- Air Inlet(must be filtered/lubricated air)

C- Tool post swivel locking screws

D- Lead screw hand feed

E- Machine Locking Bolts

F- Base fine adjusting screws

G- Kick Feed Setting slot

H- Tool post Feed Knob

## TROUBLE SHOOTING CHART

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 Tritorc technical staff.

FAULT	POSSIBLE REASON	ACTION TO TAKE
MACHINE WILL NOT POTATE WHEN AIR SUPPLY IS ON	1.Check machine rotation by hand	Contact technical staff
	2.Air supply not available	Check air supply
	3.Faulty drive motor	Check drive motor-contact technical staff
	4.Faulty air valve	Check operation
	5.Incorrect are supply	Check air volume
MACHINE WILL NOT TRAVERSE	1.Feed selector is not correctly engaged.	Check gear engaged see the gear selection procedures in this manual
	2.Direction lever is not correctly engaged	
	3. Facing /Boring lever is not correctly engaged	
POOR SURFACE FINISH ON FLANGE	1.Tool tip worn	Replace /regrind tip
	2. Machine not correctly clamped in flange	Check and tighten all mounting bolts and base legs
	3.Depth of cut too deep	Reduce depth of cut
	4.Tool loose	Tighten tools.
	5.Toolpost/swivel loose	Check swivel screws are tight
	6.Surfacing arm clamps loose	Re-tighten clamps-see surface arm procedures
	7.Carriage damping system incorrectly adjusted	Adjust damping system
	8.Toolpost gib strip incorrectly adjusted	Adjust tool post gib strip
	9.Worn Linear guides	Check and contact technical stuff
	10.Incorrect balancing	Check the balance

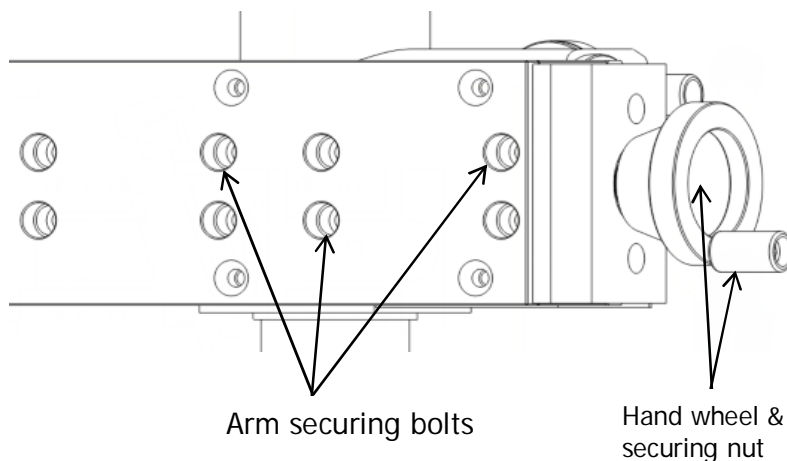
## Changing Facing Arms

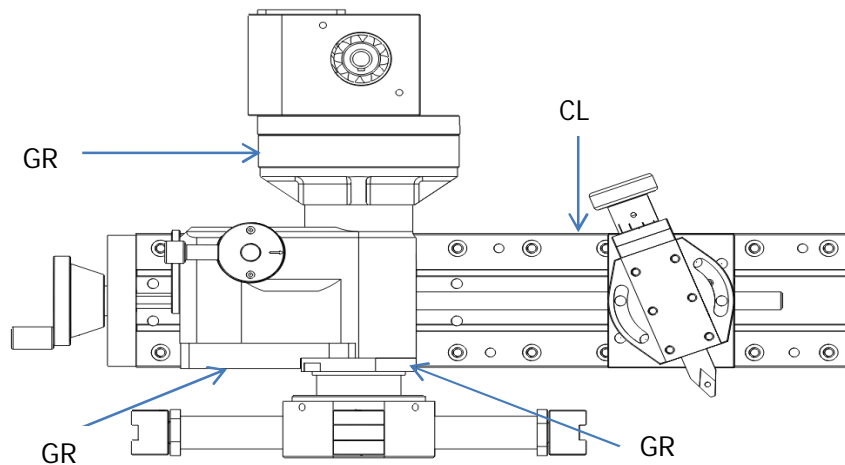
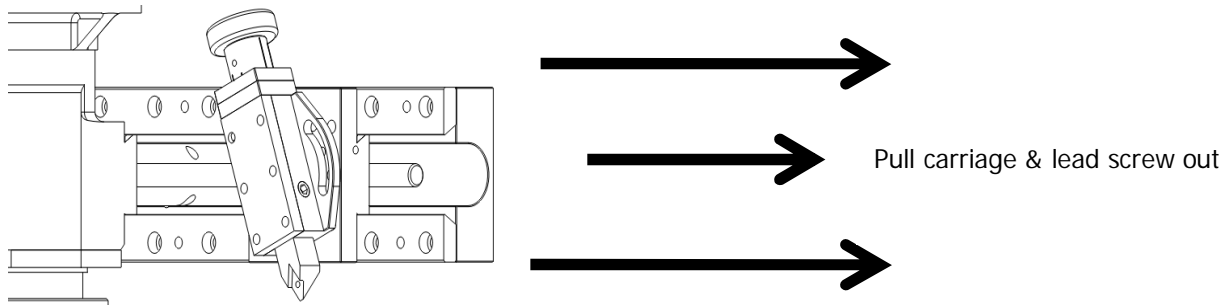
There are different lengths of facing arm available for the TTFF24 internal flange acer. The arms are completely interchangeable, but are usually supplied complete. What follows are instructions on how to change them should the need arise.

1. Before removing the arm any tool posts and /or balance arms will need to be removed.
2. Unscrew and remove the M8 nut and hand wheel from the end of the arm.
3. Pull the tool post carriage, including the lead screw out and away from the arm to disengage the lead screw from the drive gear within the main body of the machine. Take care not to damage the lead screw or misplace the gib strip at this stage.
4. Support the arm using chocks or lifting equipment to prevent the arm falling under it's own weight when the securing bolts are released.
5. Release four M6 bolts in the back of the arm and lift the arm assembly away.

Replacement or exchange for different length arm is a direct reversal of the above with the following points to note.

When installing the lead screw into the drive gear the outer hexagon drive will require aligning with the internal hexagon in the drive gear by rotating the lead screw a small amount.





GR=Grease

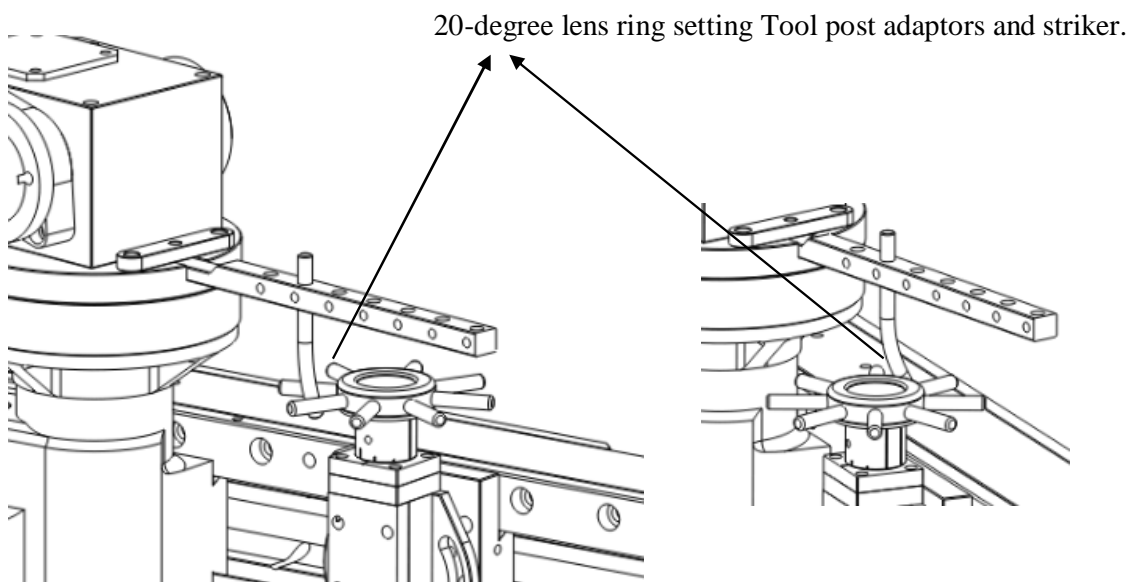
CL= Clean/important to keep clean

## LUBRICATION/ MAINTENANCE CHART

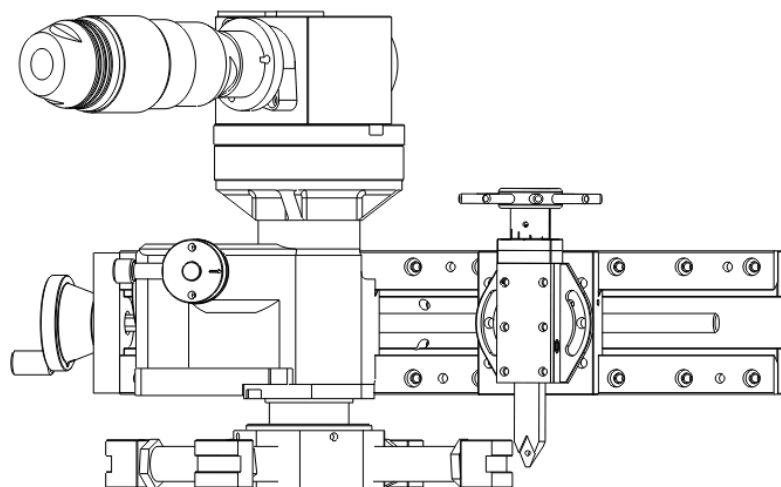
PERIOD	ACTION	LEBRICATION
AFTER USE	Clean rails, carriage feed screw, tool post, tool post feed screw and machine in general	Lightly oil or spray with WD40 or equivalent Check air filter/lubricator
Weekly	Grease gearbox nipple 2 strokes max. Grease linear bearing 2 strokes max	Silk Olene G39 semi-fluid Elf TL or equivalent
Quarterly	Remove motor-2 off M6 Screws grease main gear and check for adjustment Grease drive gear	Silk Olene G39 Elf TL or equivalent
Quarterly	Check Carriage operation adjust as necessary. Check leadscrew 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 motor.	
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## RTJ & Lens ring groove settings



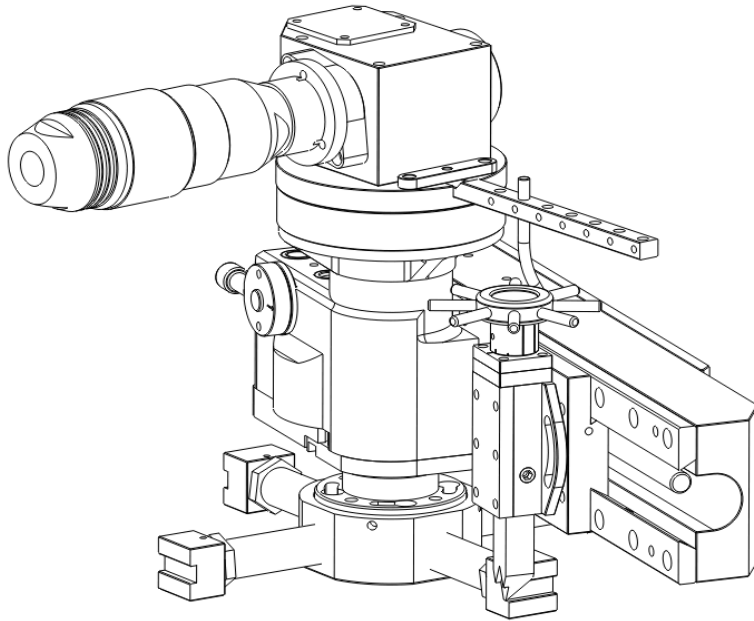
## RTJ ring groove setting (Tool post adaptors and striker)



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## Striker Boring Feed Setting

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The Striker mechanism is located into the main top cap and locked in by the two screws as shown.

The striker can be positioned either side of the tool post star wheel to enable the tool post to be fed down or up.

The star wheel is a direct replacement for the standard tool post feed knob. It is essential however to ensure the drive pin is correctly seated into the feed knob slot.

The tool post can be angled and so can the striker bar to accommodate this.

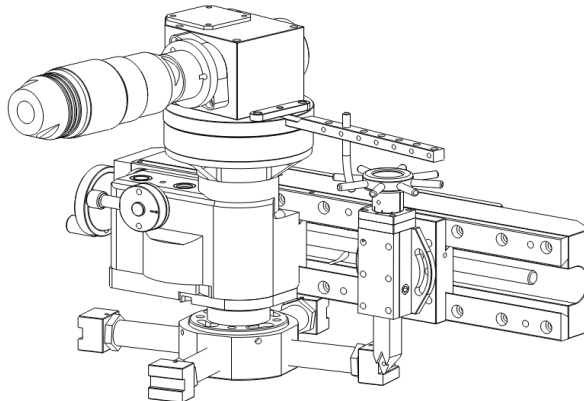
The star wheel can be left mounted onto the tool post depending on preference.

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## Tool post Setting

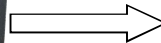
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The tool post can be axially operated at any angle. To set the angle loosen the 2 off locking screws (1 off either side of the tool post) swivel to the required angle and then tighten.



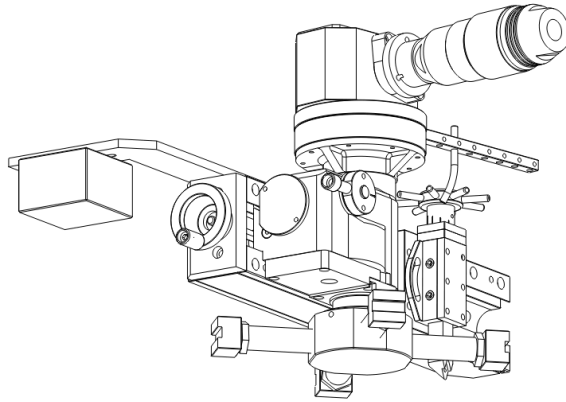
### **IMPORTANT**

When using the tool post in facing mode it is advisable to lock the tool into the tool post.



The machine is supplied with extra tools to assist in tight access situations, “V” Grooves and boring applications.

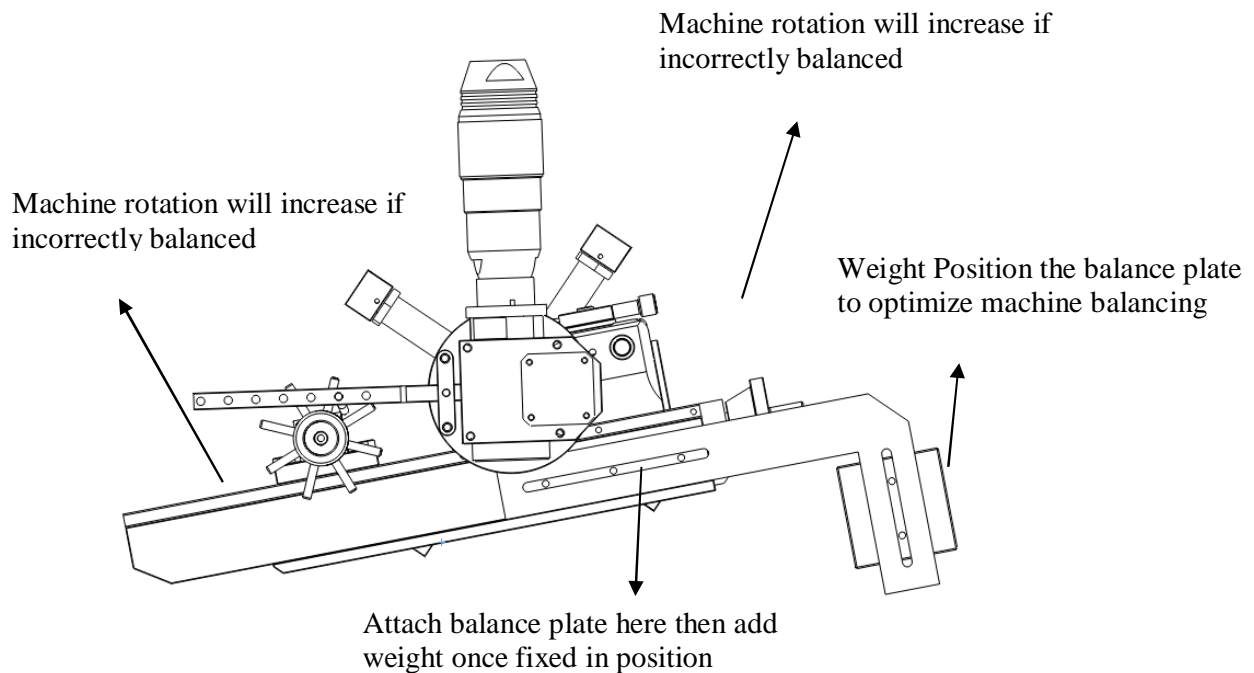
## Facing Direction



To select the correct direction, the direction feed lever is placed towards the F (Fine out) or towards the C (Coarse in) whilst rotating the Hand Feed Hexagon.

<b>Gear Selector Position</b>	<b>Leadscrew Pitch Options</b>	<b>Feed Rate Mm/rev</b>	<b>Feed rate Grooves/inches</b>
FINE	1.75mm (Standard)	0.199	128
COARSE		0.795	32
FINE	1.25mm (Standard)	0.142	179
COARSE		0.568	45
FINE	1.00mm (Optional)	0.114	224
COARSE		0.455	56

## Balancing



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 the load on the drive components.

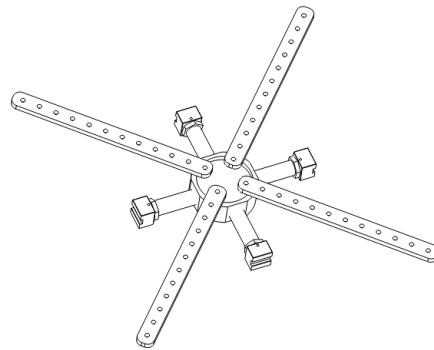
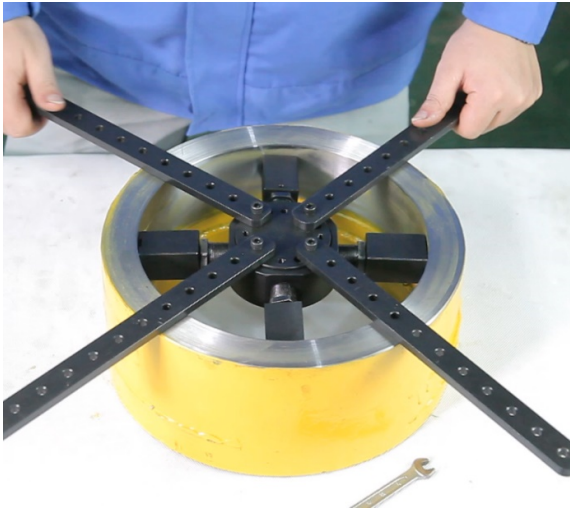
To obtain a balanced rotation, add the counter-weight and move its position on the balance plate to obtain a smooth rotation. There should be no increase or decrease in rotational speed. Pay particular attention to 7 o'clock and the 2 o'clock positions (assuming the highest point to be 12 o'clock) as this will be where the weight transfer will be greatest.

For more accurate balancing, the motor can be removed and the machine rotated by hand until it rotates at an even pace with no evidence of speed increase.

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## Machine Base Setting

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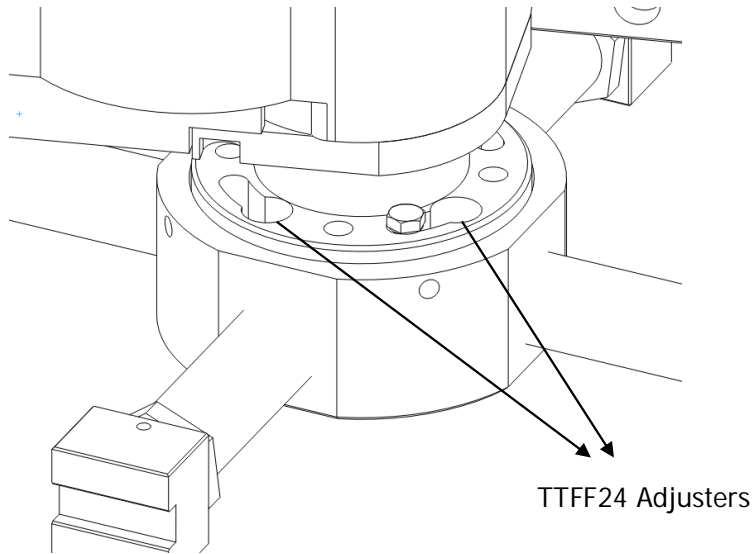


### Base assembly installation

1. Measure Mounting bore of the flange to be machined and ensure this is within the working parameters of the machine.
2. Select the required components from the table on the next paged. To use the table, include all parts marked with a tick that are in the same row as the diameter range of the flange to be machined.
3. Screw the base components into the correct base until they measure equally 6mm (0.25") below the bore mounting dimension
4. Bolt the setting straps onto the base ensuring that they overlap the bore dimension by at least 25 mm (1.0")
5. Position the base into the flange bore and screw out the jacking bolts necessary.
6. Adjustments can be made tightening and loosening opposing jacking bolts.
7. When using the TTFF24 Collect Base, place a socket on the hex nut and tighten to extend the three jaws until they are secure against the mounting bore.

## Machine Setting

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The machine is equipped with fine setting adjusters in ti's mounting flange that can be set with a D.T.I to obtain exact flatness if required. To adjust loosen the 4 off mounting bolts and screw down the adjusting grub screws with a cut-down Allen key until the correct reading is obtained. Tighten the mounting bolts and check the readings and adjust as necessary.

## **General Operation**

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The following procedures are provided to enable your Tritorc to be installed and function correctly and safely.

### **PLEASE READ THE FOLLOWING BEFORE PROCEEDING**

1. All safety procedures must be observed prior to operating the equipment.
2. Do not pressurize the equipment if the inlet hose or serviceability of the equipment is suspect.
3. The operators must wear safety glasses whilst operating this equipment.
4. Do not attempt to machine above the specification of the machine or below the specified sizes. This will invalidate the guarantee.
5. Ensure that the machine gearbox is stored in neutral and the air supply valve is in the closed position. This is important before connecting the air supply to the machine.
6. Never allow another person to operate the air control valve whilst you are using the machine.
7. Never leave the machine working unattended or leave the airline pressurized whilst disconnected.
8. Make sure that all personnel are fully trained in both the operation of the machine and all the relevant safety aspects.

## **CAUTIONS**

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1. Do not use the machine without connecting the air filter/lubricator. This will invalidate the motor manufacturer guarantee.
2. Do not attempt to alter this feeds whist the machine is rotating.





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