



WEISS
MACHINE & TOOLS

OPERATION MANUAL

WBL290F



Keep Read and Understand the Operation Manual and Safety Information
Before Operated!

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NOTE

The information contained in this handbook is intended as a guide to the operation of these machines and does not form part of any contract. The data it contains has been obtained from the machine manufacturer and from other sources. Whilst every effort has been made to ensure the accuracy of these transcriptions it would be impracticable to verify each and every item. Furthermore, development of the machine may mean that the equipment supplied may differ in detail from the descriptions herein. The responsibility therefore lies with the user to satisfy himself that the equipment or process described is suitable for the purpose intended.

LIMITED WARRANTY

We Make every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follow: **ONE YEAR LIMITED WARRANTY ON ALL PRODUCTS UNLESS SPECIFIED OTHERWISE**. This Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and tear, repair or alterations outside our facilities, or to a lack of maintenance.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, the product or part must be returned to us for examination, postage prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, we will either repair or replace the product, or refund the purchase price if we cannot readily and quickly provide a repair or replacement, if you are willing to accept a refund. We will return repaired product or replacement at our expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of our's warranty, then the user must bear the cost of storing and returning the product.

The manufacturers reserve the right to change specifications at any time as they continually strive to achieve better quality equipment.

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SAFETY WARNINGS



WARNING!

Read and understand the entire instruction manual before attempting set-up or operation of this machine!

- 1. This machine is designed and intended for use by properly trained and experienced personnel only.** If you are not familiar with the proper safe use of lathes, do not use this machine until proper training and knowledge has been obtained.
- 2. Keep guards in place.** Safety guards must be kept in place and in working order.
- 3. Remove adjusting keys and wrenches.** Before turning on machine, check to see that any adjusting wrenches are removed from the tool.
- 4. Reduce the risk of unintentional starting.** Make sure switch is in the OFF position before plugging in the tool.
- 5. Do not force tool.** Always use a tool at the rate for which it was designed.
- 6. Use the right tool.** Do not force a tool or attachment to do a job for which it was not designed.
- 7. Maintain tools with care.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubrication and changing accessories.
- 8. Always disconnect the machine from the power source before adjusting or servicing.**
- 9. Check for damaged parts.** Check for alignment of moving parts, breakage of parts, mounting, and any other condition that may affect the tools operation. A guard or any part that is damaged should be repaired or replaced.
- 10. Turn power off. Never leave a machine unattended.** Do not leave a machine until it comes to a complete stop.
- 11. Keep work area clean,** Cluttered areas and bench invite accidents.
- 12. Do not use in a dangerous environment.** Do not use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
- 13. Keep children and visitors away.** All visitors should be kept a safe distance from the work area.
- 14. Make the workshop child proof.** Use padlocks, master switches, and remove starter keys.
- 15. Wear proper apparel.** Loose clothing, gloves, neckties, rings, bracelets, or other jewelry may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Do not wear any type of glove.
- 16. Always use safety glasses.** Every day glasses only have impact resistant lenses; they are not safety glasses.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Don not put hands near the cutter while the machine is operating.**
- 19. Do not perform any set-up work while machine is operating.**
- 20. Read and understand all warnings posted on the machine.**
- 21. This manual is intended to familiarize you with the technical aspects of this lathe.** It is not, nor was it intended to be a training manual.
- 22. Failure to comply with all of these warnings may result in serious injury.**
- 23. Some dust created** by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are lead from lead based paint; crystalline silica from bricks and cement and other masonry products.
- 24. Your risk from those exposures** varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specifically designed to filter our microscopic particles.

SPECIFICATIONS:

Capacities:	
Swing Over Bed	290mm
Swing Over Cross Slide	180mm
Distance Between Centers	780mm
Width of Bed	182mm
Headstock:	
Hole Through Spindle	38mm
Taper in Spindle Nose	MT5
Number of Spindle Speed	Variable
Range of Spindle Speed	80-2000 r/min
Feeding and Threading:	
Number of Metric Threads	18
Range of Metric Threads	0.2~3.5mm
Number of Imperial Threads	21
Range of Imperial Threads	8~56 T.P.I.
Range of Cross Feed	0.01~0.10mm
Range of Longitudinal Feed	0.085~0.832mm
Compound and Carriage:	
Tool Post Type	4-Way
Maximum Compound Slide Travel	75mm
Maximum Cross Slide Travel	160mm
Maximum Carriage Travel	660mm
Tailstock:	
Tailstock Spindle Travel	80mm
Taper in Tailstock Spindle	MT3
Miscellaneous:	
Brushless Motor	1.5KW
Dimension: Length	145cm
Width	70cm
Height(without stand)	68cm
Weight	260kg

CONTENTS OF TOOLBOX (Fig. 01)

- A: 1 Dead Center MT5
- B: 1 Dead Center MT3
- C: 3 External Jaw
- D: 1 Oil Gun
- E: 1 Spanner for Spindle Adjustment
- F: 1 Cross Screwdriver
- G: 1 Flat Screwdriver
- H: 1 Key for 3-Jaw Chuck
- I: 1 Tool Post Square Wrench
- J: 5 Hex Socket Wrench 3,4,5,6,8mm
- K: 3 Double End Head Wrench 8-10mm, 12-14mm, 17-19mm
- L: 1 One Sets of Change Gears



Fig. 01

UNCRATING AND CLEAN-UP

1. Finish removing the wooden crate from around the lathe
2. Check all the accessories of the machine tool according to the packing list.
3. Unbolt the lathe from the shipping crate bottom.
4. Choose a location for the lathe that is dry, has good lighting and has enough room to be able to service the lathe on all four sides.
5. With adequate lifting equipment, slowly raise the lathe off the shipping crate bottom. **Do not lift by spindle.** Make sure lathe is balanced before moving to sturdy bench or stand.
6. To avoid twisting the bed, the lathe's location must be absolutely flat and level. Bolt the lathe to the stand (if used). If using a bench, through bolt for best performance.
7. Clean all rust protected surfaces using a mild commercial solvent, kerosene or diesel fuel. Do not use paint thinner, gasoline or lacquer thinner. These will damage painted surfaces. Cover all cleaned surfaces with a light film of 20W machine oil.
8. Remove the end gear cover. Clean all components of the end gear assembly and coat all gears with a heavy, non-slinging grease.

FOUNDATION DRAWING

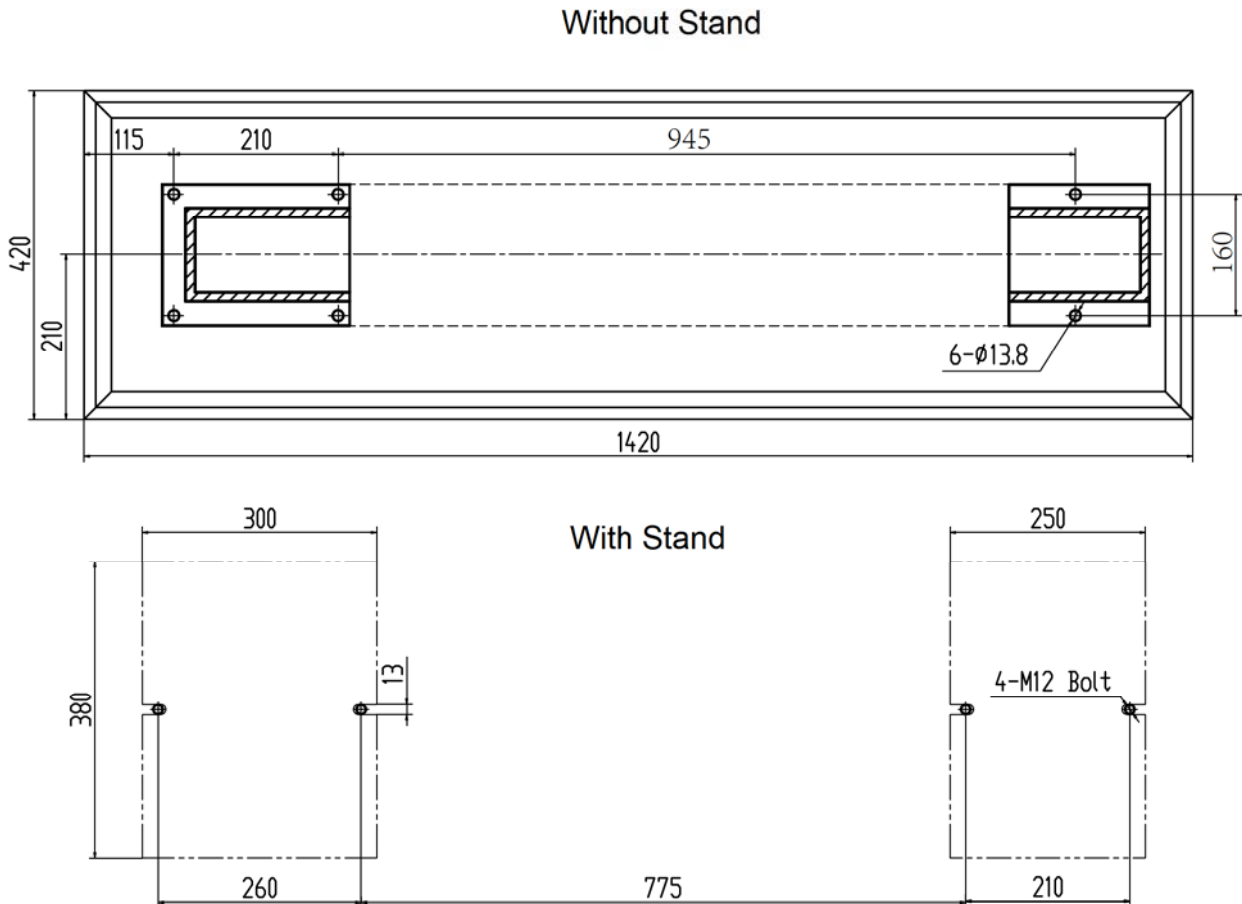


Fig. 02

GENERAL DESCRIPTION

Lathe Bed (Fig. 03)

The lathe bed is made of high-grade iron. By combining high cheeks with strong cross ribs, a bed of low vibration and rigidity is produced. It integrates the headstock and drive unit, for attaching the carriage and leadscrew. The two precision-ground V – sideways, re-enforced by heat hardening and grinding, are the accurate guide for the carriage and tailstock. The main motor is mounted to the rear of the left side of the bed.



Fig. 03

Headstock (Fig. 04)

The headstock is cast from high grade, low vibration cast iron. It is bolted to the bed with four screws. The headstock houses the main spindle with two precision taper roller bearings and the drive unit. The main spindle transmits the torque during the turning process. It also holds the workpieces and clamping devices. (e.g. 3-jaw chuck).



Fig. 04

Gear Box (Fig. 05)

The gear box is made from high quality cast iron and is mounted on the left side of the machine bed. It used to select the feeds for straight turning as well as for thread cutting. In order to achieve certain thread pitches, it is necessary to replace the change gears.

The torque of the work spindle is transmitted to the feed gear and thus to the leadscrew.



Fig. 05

Carriage (Fig. 06)

The carriage is made from high quality cast iron. The slide parts are smoothly ground. They fit the V on the bed without play. The lower sliding parts can be easily and simply adjusted. The cross slide is mounted on the carriage and moves on a dove tailed slide. Play in the cross slide may be adjusted with the gibs.

Move the cross slide with its conveniently positioned handwheel. There is a graduated collar on the handwheel.

The top slide, mounted on the cross slide, can be rotated 360°. The top slide and the cross slide travel in dove tailed slides and have gibs, adjustable nuts, and graduated collars.

A four way tool post is fitted on the top slide and allows four tools to be clamped. Loosen the center clamp handle to rotate any of the four tools into position.



Fig.06

Apron (Fig. 07)

The apron is mounted on the bed. It houses the half nut with an engaging lever for activating the automatic feed. The half nut gibs can be adjusted from the outside.

A rack, mounted on the bed, and a pinion operated by handwheel on the carriage allow for quick travel of the apron.



Fig.07

Leadscrew (Fig. 08)

The leadscrew is mounted on the front of the machine bed. It is connected to the gear box at the left for automatic feed and is supported by bearing on both ends. The two groove nuts (A, Fig. 10) on the right end are designed to take up play on the leadscrew.

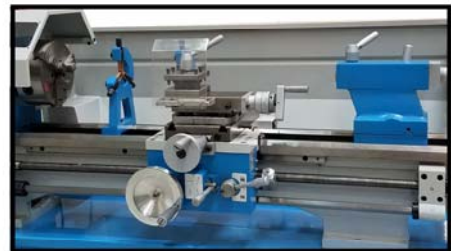


Fig. 08

Tailstock (Fig. 09)

The tailstock slides on a V way and can be clamped at any location. The tailstock has a heavy-duty spindle with a Morse taper No. 3 socket and a graduated scale. The spindle can be clamped at any location with a clamping lever. The spindle is moved with a handwheel at the end of the tailstock.

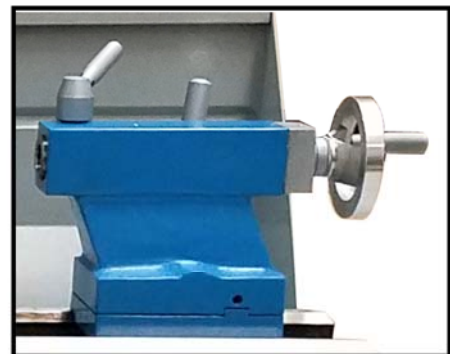


Fig. 09

NOTE:

Fit the securing screw (B, Fig. 10) at the end of the lathe bed in order to prevent the tailstock from falling off the lathe bed.

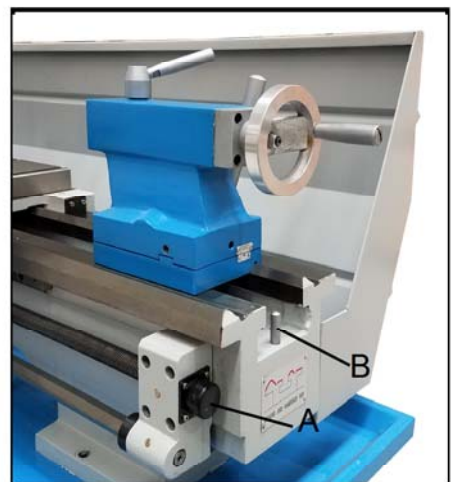


Fig. 10

CONTROLS

1.F/R Switch (A, Fig. 11)

After the machine is switched on, turn the switch to “F” position for counter-clockwise spindle rotation (forward). Turn the switch to “R” position for clockwise spindle rotation (reverse). “0” position is OFF and the spindle remains idle.

2.ON/OFF Switch(B, Fig. 11) Emergency Button (J, Fig. 11)

The machine is switched on and off with ON/OFF button. Depress to stop all machine functions. To restart, lift the cover and press ON button.

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3. Variable Speed Control Switch (C, Fig. 11)

Turn the switch clockwise to increase the spindle speed. Turn the switch counter-clockwise to decrease the spindle speed. The possible speed range is dependent from the position of the drive belt.

4. Feed Direction Selector (D, Fig. 12)

Select carriage travel direction when the chuck is rotating in the forward direction or counter-clockwise as viewed from the front of the chuck.

5. Feed Rate Selector (E, Fig. 12)

Set the desired feed or thread rates.

6. Feed/Thread Selector (F, Fig. 12)

Select the handle for shift left to thread. Select the handle for shift right to feed.

7. Compound Rest Lock

Turn two hex nuts (G, Fig. 13) clockwise to lock and counter-clockwise to unlock.

8. Compound Slide Lock

Turn hex socket cap screws (H, Fig. 13) clockwise, and tighten to lock. Turn counter-clockwise to loosen.

9. Cross Slide Lock

Turn screw (I, Fig. 13) clockwise and tighten to lock. Turn counter-clockwise and loosen to unlock.

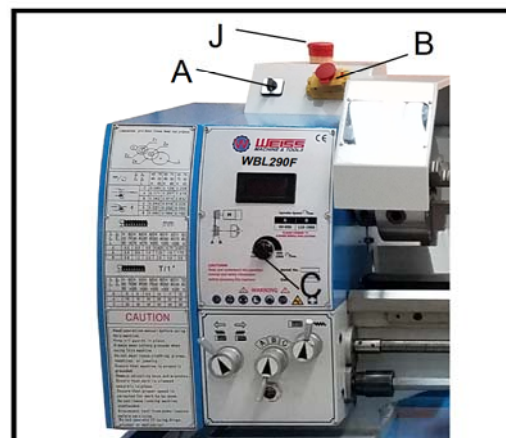


Fig. 11



Fig. 12

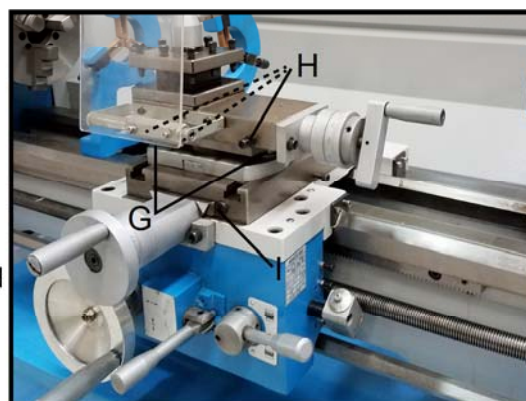


Fig. 13

9. Carriage Lock

Turn hex socket cap screw (A, Fig.14) clockwise and tighten to lock. Turn counter-clockwise and loosen to unlock.

Caution: carriage lock screw must be unlocked before engaging automatic feeds or damage to lathe may occur.

10. Longitudinal Traverse (B, Fig. 15)

Rotate hand wheel clockwise to move the apron assembly toward the tailstock (right). Rotate the hand wheel counter-clockwise to move the apron assembly toward the headstock (left).

11. Cross Traverse Handwheel (C, Fig. 15)

Clockwise rotation moves the cross slide toward the rear of the machine.

12. Half Nut Engage Lever (D, Fig. 15)

Move the lever down to engage. Move the lever up to disengage.

13. Compound Rest Traverse Lever (E, Fig. 15)

Rotate clockwise or counter-clockwise to move or position.

14. Tool Post Clamping Lever (F, Fig. 15)

Rotate counter-clockwise to loosen and clockwise to tighten. Rotate the tool post when the lever is unlocked.

15. Feed axis Selector (G, Fig. 15)

Push lever (G, Fig.15) to the left and down to engage cross feed Pull lever to the right and up to engage longitudinal feed.

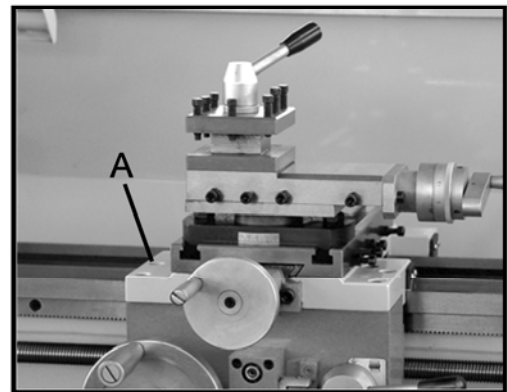


Fig. 14

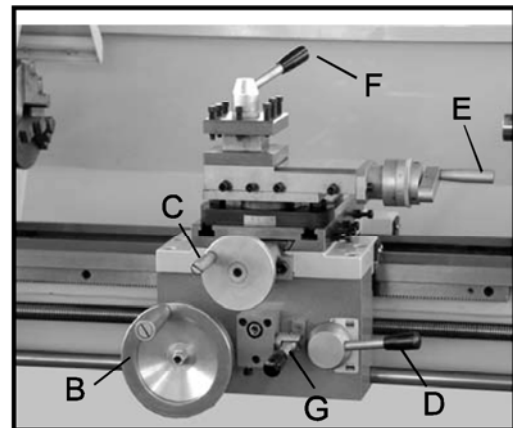


Fig. 15

16. Tailstock Clamping Lever (H, Fig. 16)

Located on the tailstock. Lift up lever to lock. Push down lever to unlock.

17. Tailstock Quill Clamping Lever (I, Fig. 16)

Rotate the lever clockwise to lock the spindle and counter-clockwise to unlock.

18. Tailstock Quill Traverse Handwheel (J, Fig. 16)

Rotate clockwise to advance the quill. Rotate counter-clockwise to retract the quill

19. Tailstock Off-set Adjustment (K, Fig. 16)

Three sets screws located on the tailstock base are used to off-set the tailstock for cutting tapers. Loosen lock screw on tailstock end. Loosen one side set screw while tightening the other until the amount of off-set is indicated on scale. Tighten lock screw.

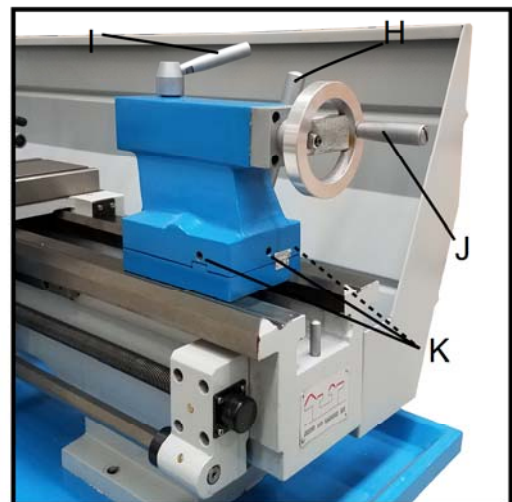


Fig. 16

OPERATION

Chuck Preparation (Three Jaw)

WARNING

Read and understand all directions for chuck preparation!

Failure to comply may cause serious injury and /or damage to the lathe!

1. Support the chuck while turning three camlocks 1/4 turn counter-clockwise with the chuck key enclosed in the tool box.
2. Carefully remove the chuck from the spindle and place on an adequate work surface.
3. Inspect the camlock studs. Make sure they have not become cracked or broken during transit. Clean all parts thoroughly with solvent. Also clean the spindle and camlocks.
4. Cover all chuck jaws and scroll inside the chuck with #2 lithium tube grease. Cover the spindle camlocks and chuck body with a light film of 20W oil.
5. Lift the chuck up to the spindle nose and press onto the spindle. Tighten in place by turning the cam locks 1/4 turn clockwise. The index mark (A, fig. 17) on the camlock should be between the two indicator arrows (B, Fig. 17). If the index mark is not between the two arrows, remove the chuck and adjust the camlock studs by either turning out one full turn (if cams will not engage) or turning in one full turn (if cams turn beyond indicator marks).
6. Install chuck and tighten in place.

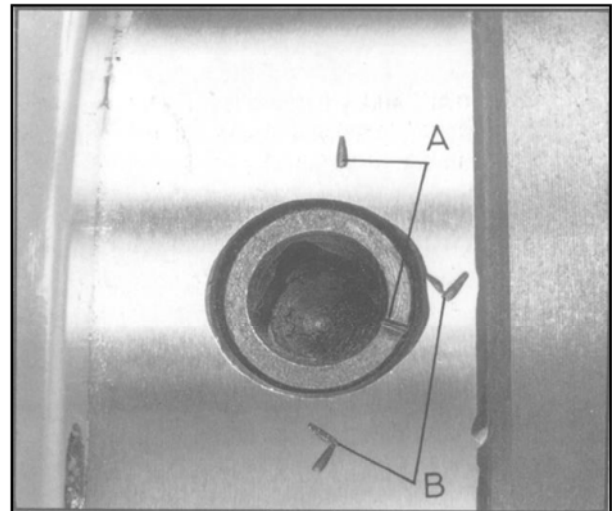


Fig. 17

Tool Set-Up

Clamp the turning tool into the toolholder.

The tool must be clamped firmly. When turning, the tool has a tendency to bend under the cutting force generated during the chip formation. For best results, tool overhang should be kept to a minimum of 3/8" or less.

The cutting angle is correct when the cutting edge is in line with the center axis of the work piece. The correct height of the tool can be achieved by comparing the tool point with the point of the center mounted in the tailstock. If necessary, use steel spacer shims under the tool to get the required height. (Fig. 18)

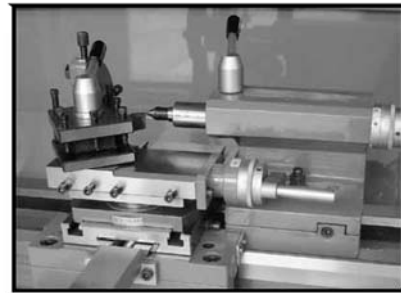


Fig. 18

Change H/L Speed

1. Open the lock of the cover (B, Fig.19) and rotated the protective cover.
2. To selection A or B according to your requirement by belt. A is low speed, B is high speed.



Fig. 19

Caution: we suggestion our customers to select low speed position to work, it is could provides stronger torque for working!

Belt Adjusted

Loosen the two nuts (C,D Fig. 20) to remove the plate of mounting motor and position!

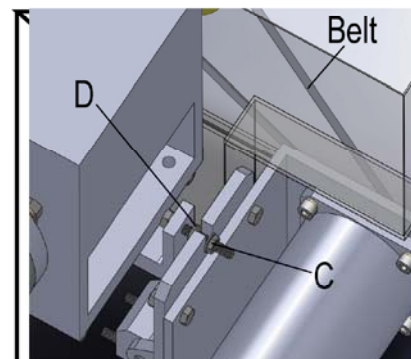


Fig. 20

Manual Turning

Apron travel, cross travel, and top slide handwheel can be operated for longitudinal or cross feeding. (Fig.21)

Longitudinal Turning with Auto-Feed

1. Set the selector knob (A, Fig.22) to select the feed direction and feed speed.
2. Use the table (B, Fig.22) on the lathe for selecting the feed speed or the thread pitch. Adjust the change gear if the required feed or thread pitch cannot be obtained with the installed gear set.

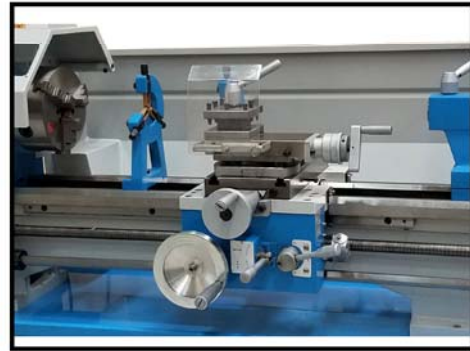


Fig. 21

Change Gears Replacement

1. Disconnect the machine from the power source.
2. Unscrew the two fastening screws and remove the protective cover.
3. Loosen the locking screw (C, Fig.23) on the quadrant.
4. Swing the quadrant (D, Fig.23) to the right.
5. Unscrew the bolt (E, Fig.23) from the leadscrew or the square bolts (F, Fig.23) from the quadrant bolts in order to remove the change gears from the front.
6. Install the gear couples according to the thread and feed table (Fig.24) and screw the gearwheels onto the quadrant again.
7. Swing the quadrant to the left until the gearwheels have engaged again.
8. Readjust gear backlash by inserting a normal sheet of paper as an adjusting or distance aid between the gearwheels.
9. Immobilize the quadrant with the locking screw.
10. Install the protective cover of the headstock and reconnect the machine to the power supply.

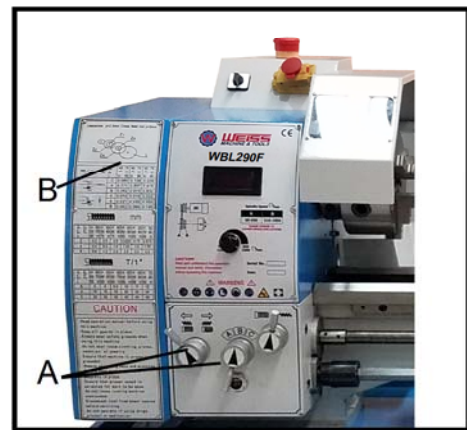


Fig. 22

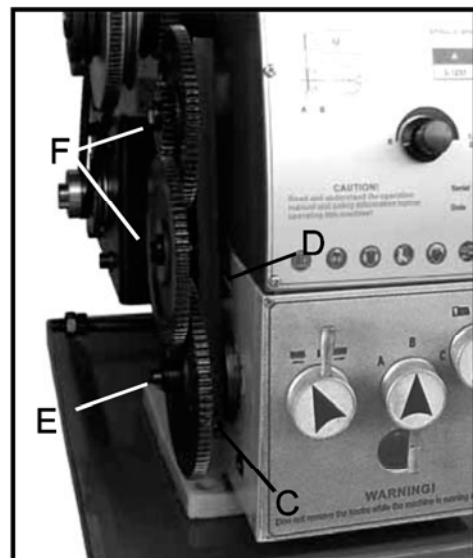
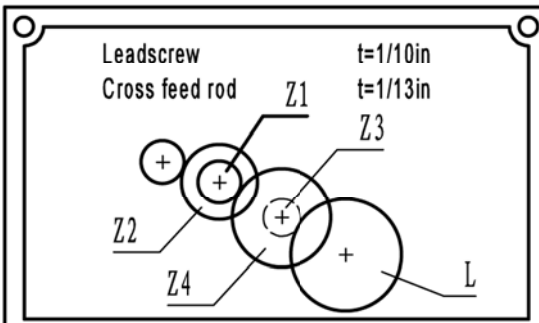


Fig. 23



IN / ϕ	Z ₁	Z ₂	45	75	45	75	45	75
	Z ₄	Z ₃	80	20	80	30	70	30
	L		H	85	H	85	H	60
	C		0.0033		0.0050		0.0080	
	A		0.0066		0.0100		0.0160	
	B		0.0132		0.0200		0.0320	
	C		0.0004		0.0006		0.0010	
	A		0.0008		0.0012		0.0020	
	B		0.0016		0.0024		0.0040	



Z ₁	Z ₂	H	60	H	60	H	60	H	60	H	50	H	50
Z ₄	Z ₃	20	75	30	80	50	80	50	80	60	80	70	80
L		80	H	75	H	75	H	60	H	60	H	60	H
C		0.2		0.3		0.5		0.625		0.75		0.875	
A		0.4		0.6		1.0		1.25		1.5		1.75	
B		0.8		1.2		2.0		2.5		3.0		3.5	



Z ₁	Z ₂	H	60	H	50	H	60	H	60	H	60	H	70	H	50
Z ₄	Z ₃	60	70	60	85	50	75	45	50	50	80	45	60	45	85
L		65	H	60	H	60	H	85	H	65	H	85	H	70	H
B		8		9		9.5		10		11		12		14	
A		16		18		19		20		22		24		28	
C		32		36		38		40		44		48		56	

CAUTION

- .Read operation manual before using this machine.
- .Keep all guards in place.
- .Always wear safety glasses when using this machine.
- .Do not wear loose clothing, gloves, neckties. or jewelry.
- .Ensure that machine is properly grounded.
- .Remove adjusting keys and wrenches.
- .Ensure that work is clamped securely in place.
- .Ensure that proper speed is selected for work to be done.
- .Do not leave running machine unattended.
- .Disconnect tool from power source before servicing.
- .Do not operate if using drugs, alcohol or medication.

Straight Turning (Fig. 25)

In the straight turning operation, the tool feeds parallel to the axis of rotation of the workpiece. The feed can be either manual by turning the handwheel on the lathe saddle or the top slide, or by activating the automatic feed. The crossfeed for the depth of cut is achieved using the cross slide.

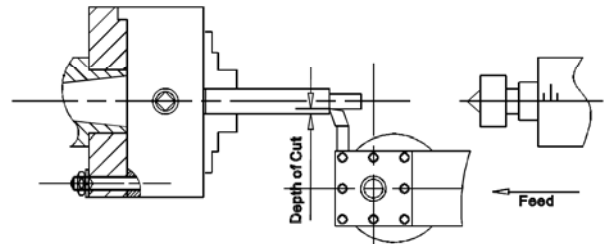


Fig. 25

Facing and Recesses (Fig. 26)

In the facing operation, the tool feeds perpendicular to the axis of rotation of the workpiece. The feed is made manually with the cross slide handwheel. The crossfeed for cut depth is made with the top slide or lathe saddle.

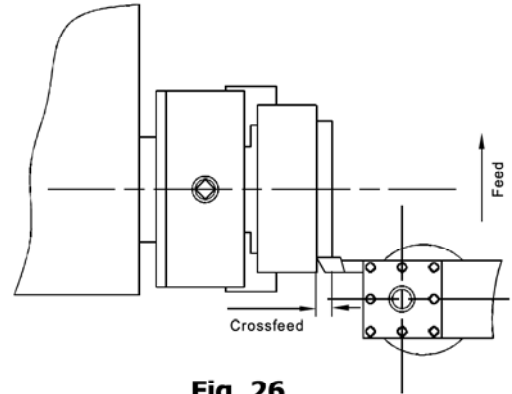
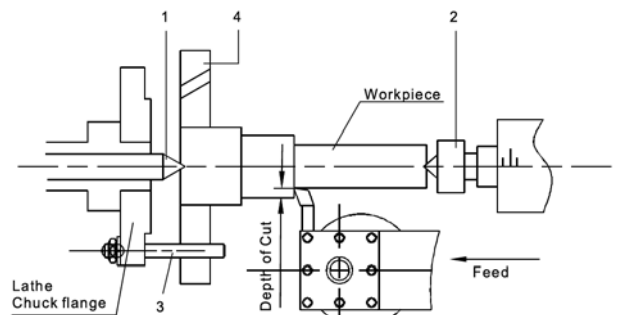


Fig. 26

Turning Between Centers (Fig. 27)

For turning between centers, it is necessary to remove the chuck from the spindle. Fit the M.T.5 center into the spindle nose and the M.T. 3 center into the tailstock. Mount the workpiece fitted with the driver dog between the centers. The driver is driven by a catch or face plate.



- 1.Fixed Centre 60°
- 2.Living Centre 60°
- 3.Dog Drive Pin
- 4.Dog Plate

Fig. 27

Note: Always use a small amount of grease on the tailstock center to prevent center tip form overheating.

Taper Turning Using Tailstock Off-Set

Work to a side angle of 5 can be turned by off-setting the tailstock. The angle depends on the length of the workpiece.

To off-set the tailstock, loosen locking lever (A, Fig.28) Unscrew the set screw (B, Fig.28) on right end of the tailstock. Loosen the front adjusting screw(C, Fig.28) and take up the same amount by tightening the rear adjusting screw (D, Fig.28) until the desired taper has been reached. The desired cross-adjustment can be read off the scale. (E, Fig.28). First retighten the set screw (B, Fig.28) and then the two (front and rear) adjusting screw to lock the tailstock in position. Retighten the locking lever (A, Fig.28) of the tailstock. The workpiece must be held between to centers and driven by a face plate and driver dog.

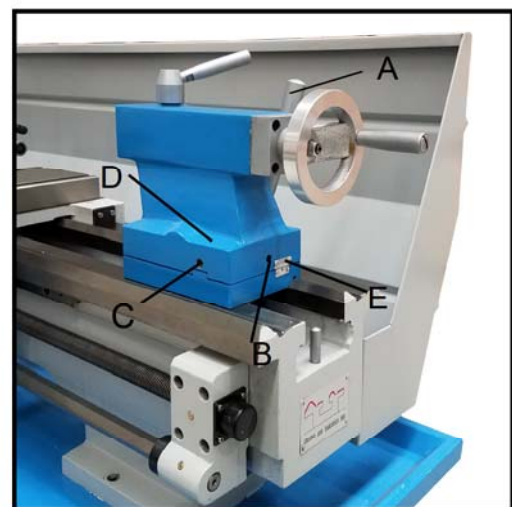


Fig. 28

After taper turning, the tailstock should be returned to its original position according to the zero position on the scale of tailstock. (E, Fig.28)

Taper Turning by Setting the Top Slide

By angling the top slide, tapers may be turned manually with the top slide. (Fig. 29)

Rotate the top slide to the required angle. A graduated scale permits accurate adjustment of the top slide. The crossfeed is performed with the cross slide. This method can only be used for short tapers.

Thread Cutting

Set the machine up to the desired thread pitch (according to the threading chart, Fig.24). Start the machine and engage the half nut. When the tool reaches the part, it will cut the initial threading pass. When the tool reaches the end of the cut, stop the machine by turning the motor off and at the same time back the tool out of the part so that it clears the thread. Do not disengage the half nut lever. Reverse the motor direction to allow the cutting tool to traverse back to the starting point. Repeat these steps until you have obtained the desired results.

NOTES

Example: Male Thread

- The workpiece diameter must have been turned to the diameter of the desired thread.
- The workpiece requires a chamfer at the beginning of the thread and an undercut at the thread runout.
- The speed must be as low as possible.
- The change gears must have been installed according to the required pitch.
- The thread cutting tool must be exactly the same shape as the thread, must be absolutely rectangular and clamped so that it coincides exactly with the turning center.
- The thread is produced in various cutting steps so that the cutting tool has to be turned out of the thread completely (with the cross slide) at the end of each cutting step.
- The tool is withdrawn with the leadscrew nut engaged by inverting the change-over switch.
- Stop the machine and feed the thread cutting tool in low cut depths using the cross slide.
- Before each passage, place the top slide approximately 0.2 to 0.3mm to the left and right alternately in order to cut the thread free. This way, the thread cutting tools cuts only on one thread flank with each passage. Keep cutting the thread free until you have almost reached the full depth of thread.

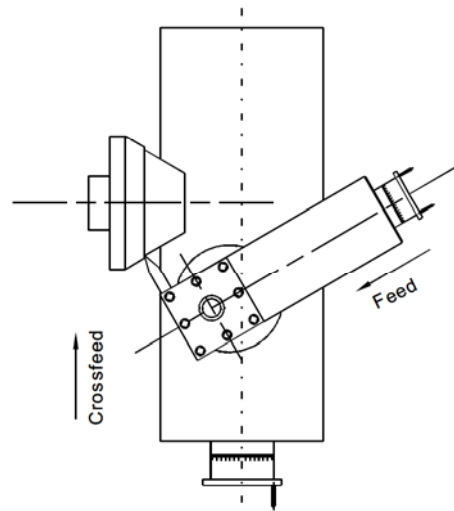


Fig. 29

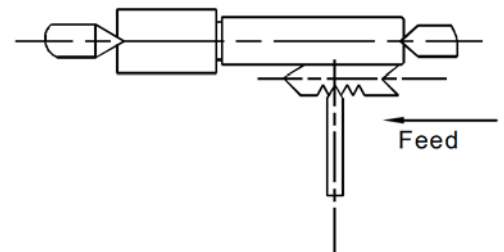


Fig. 30

LATHE ACCESSORIES

Three Jaw Universal Lathe Chuck

Using this universal chuck, round, triangular, square, hexagonal octagonal, and twelve-cornered stock may be clamped. (Fig.31)

Note: new lathes have very tight fitting jaws. This is necessary to ensure accurate clamping and long service life. With repeated opening and closing, the jaw adjust automatically and their operation becomes progressively smoother.

Note:

There are two types of jaws: Internal and external jaws. Please note that the number of jaws fit with the number inside the chuck's groove. Do not mix them together. When you are going to mount them, please mount them in ascending order 1-2-3, when you are going to take them out, be sure to take them out in descending order 3-2-1, one by one. After you finished this procedure, rotate the jaws to the smallest diameter and check that the three jaws are well fitted.

Four Jaw Independent Lathe Chuck

This special chuck has four independently adjustable chuck jaws. These permit the holding of asymmetrical pieces and enable the accurate set-up of cylindrical pieces. (Fig.32)

Drill Chuck (Optional)

Use the drill chuck to hold centering drills and twist drills in the tailstock. (A, Fig.33)

Morse Taper Arbor (Optional)

An arbor is necessary for mounting the drill chuck in the tailstock. It has a No. 3 Morse taper. (B, Fig.33)

Live Center (Optional)

The live center is mounted in ball bearings. Its use is highly recommended for turning at speeds in excess of 600r/min (Fig. 34)

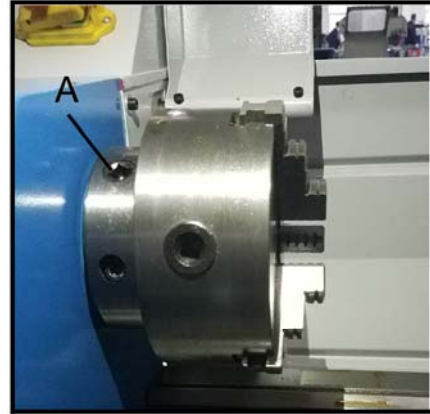


Fig. 31



Fig. 32

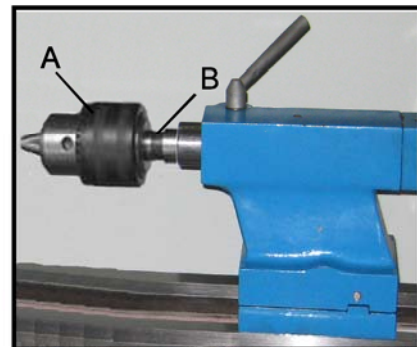


Fig. 33



Fig. 34

Steady Rest

The steady rest serves as a support for shafts on the free tailstock end. For many operations the tailstock can not be used as it obstructs the turning tool or drilling tool, and therefore, must be removed from the machine. The steady rest, which function as an end support, ensures chatter-free operation. The steady rest is mounted on the bedways and is secured from below with a locking plate. The sliding fingers require continuous lubrication at the contact points to prevent premature wear. (Fig.35)

Setting the Steady Rest

1. Loosen three hex nuts. (A, Fig.36)
2. Loosen knurled screw (B, Fig.36) and open the sliding fingers. (C, Fig.36) until the steady rest can be moved with its finger around the workpiece. Secure the steady rest in position.
3. Tighten knurled screws so that fingers are snug but not tight against the workpiece. Tighten three nuts (A, Fig.36). Lubricate the sliding points with machine oil.
4. When, after prolonged operation, the jaw show wear, the tips of the fingers may be filed or remilled.

Follow Rest

The follow rest is mounted on the saddle and follow the movement of the turning tool. Only two sliding fingers are required. The place of the third finger is taken by the turning tool. The follow rest is used for turning operations on long, slender workpieces. It prevents flexing of the workpiece under pressure from the turning tool. (Fig.37)

Set the fingers snug to the workpiece but not overly tight. Lubricate the fingers during operation to prevent premature wear.

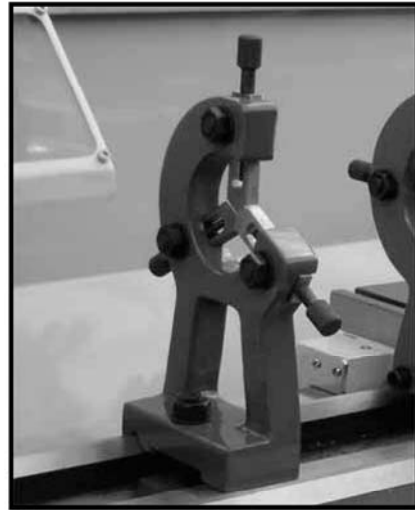


Fig. 35

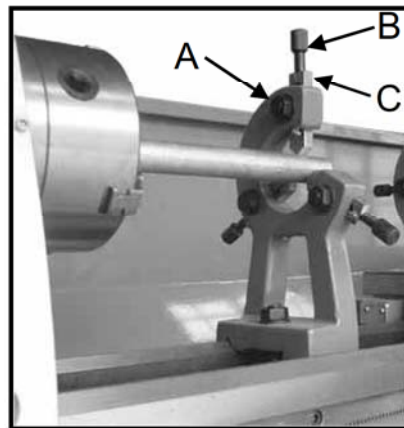


Fig. 36



Fig. 37

ADJUSTMENT

After a period time, wear in some of the moving components may need to be adjust

Main Spindle Bearings

The main spindle bearings are adjusted at the factory. If end play becomes evident after considerable use, the bearings may be adjusted.

Loosen two hex socket cap screws (A, Fig.38) in the slotted nut (B, Fig.38) on the back of the spindle. Tighten slotted nut until all end play is taken up. The spindle should still revolve freely. Tighten two hex socket cap screws (A, Fig.38).

Caution: excessive tightening or preloading will damage the bearings.

Adjustment of Cross Slide

The cross slide is fitted with a taper gib (C, Fig.39) and can be adjusted with two adjustmentscrews (D, Fig.39) (E, Fig.39) Loosen the screw E and tighten the screw D until slide moves freely without play.

Adjustment of Top Slide

The top slide is fitted with a gib strip(F, Fig.40) and can be adjusted with screws (G, Fig. 40) fitted with lock nuts. (H, Fig. 40) Loosen the lock nuts and tighten the set screws until slide moves freely without play. Tighten lock nuts to retain adjustment.

Adjustment of Half Nut Guide

Loosen the nut (I, Fig.41) on the right side bottom of the apron and adjust the control screws (J, Fig.41) until both half nuts move freely without play. Tighten the nut.

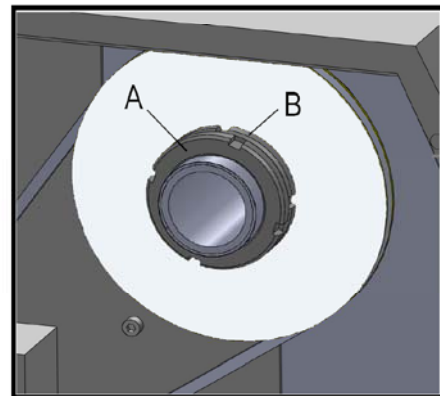


Fig. 38

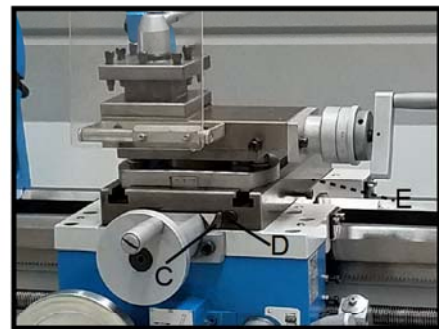


Fig. 39

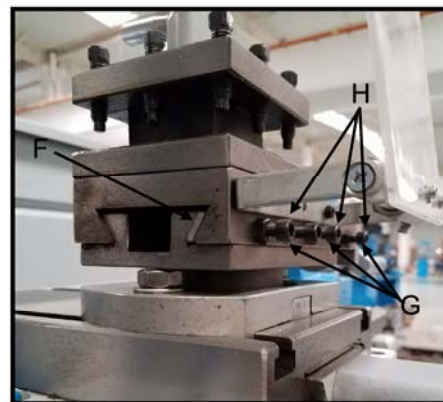


Fig. 40

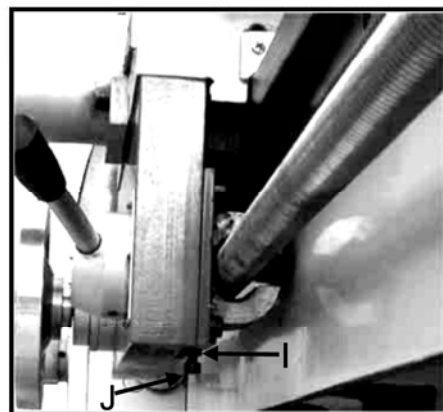


Fig. 41

LUBRICATION

CAUTION!

**Lathe must be serviced at all lubrication points and all reservoirs filled to operating level before the lathe is placed into service!
Failure to comply may cause serious damage!**

NOTES:

Lubricate all slideways lightly before every use. Lubricate the change gears and the leadscrew slightly with a lithium-based grease.

1. Gearbox

Oil Must be up to indicator mark in oil sight glass(A, Fig.42). Top off with Mobilgear 627 or equivalent. Fill by pulling plug (B, Fig. 42). To drain, remove drain plug on the right side of headstock(C, Fig.43). Drain oil completely and refill after the first three months of operation. Then, change oil in the headstock annually.

2. Change Gear

Lubricate two oil ports (D, Fig.43) on the gear shafts with 20W machine oil once daily.

3. Carriage

Lubricate Four oil ports (E, Fig. 44) with 20W machine oil once daily.

4. Cross Slide

Lubricate two oil ports (F, Fig. 44) with 20W machine oil once daily.

5. Apron

Lubricate two oil ports (G, Fig. 45) with 20W machine oil once daily.



Fig. 42

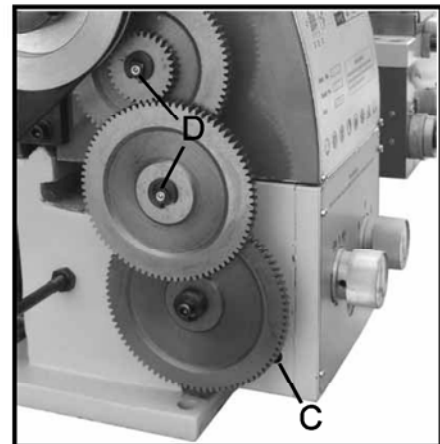


Fig. 43

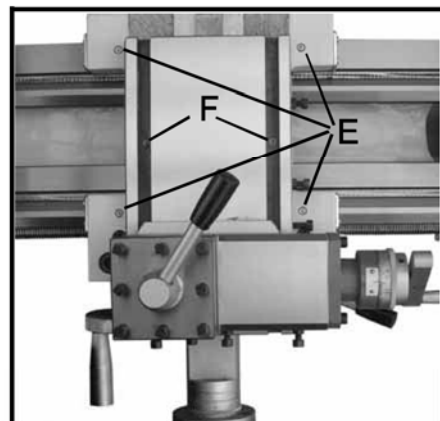


Fig. 44

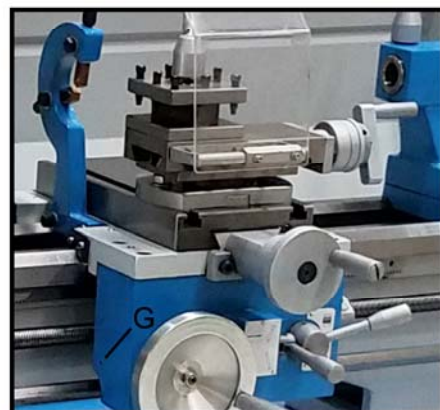


Fig. 45

6. Leadscrew

Lubricate the oil port (A, Fig. 46) with 20W machine oil once daily.

7. Tailstock

Lubricate two oil ports (B, Fig. 46) with 20W machine oil once daily.

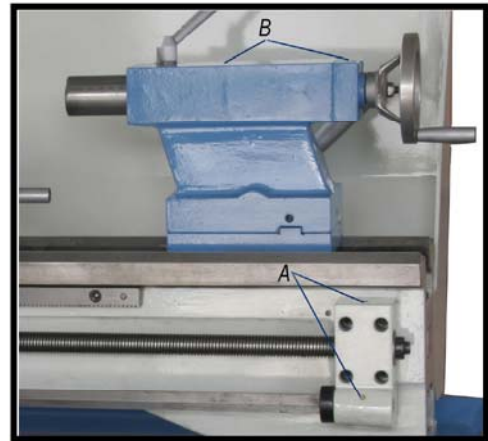


Fig. 46

ELECTRICAL CONNECTIONS

⚠ WARNING!

Connection of the lathe and all other electrical work may only be carried out by an authorized electrician!

Failure to comply may cause serious injury and damage to the machinery and property!

WM290F Variable Speed Lathe is rated at **1.5KW/1Ph/110V** only. Confirm power available at the lathe's location is the same rating as the lathe. Using the wiring diagram (Fig.47) for connecting the lathe to the mains supply.

Make sure the lathe is properly grounded.

The following is wiring diagram of the lathe: (Fig.47)

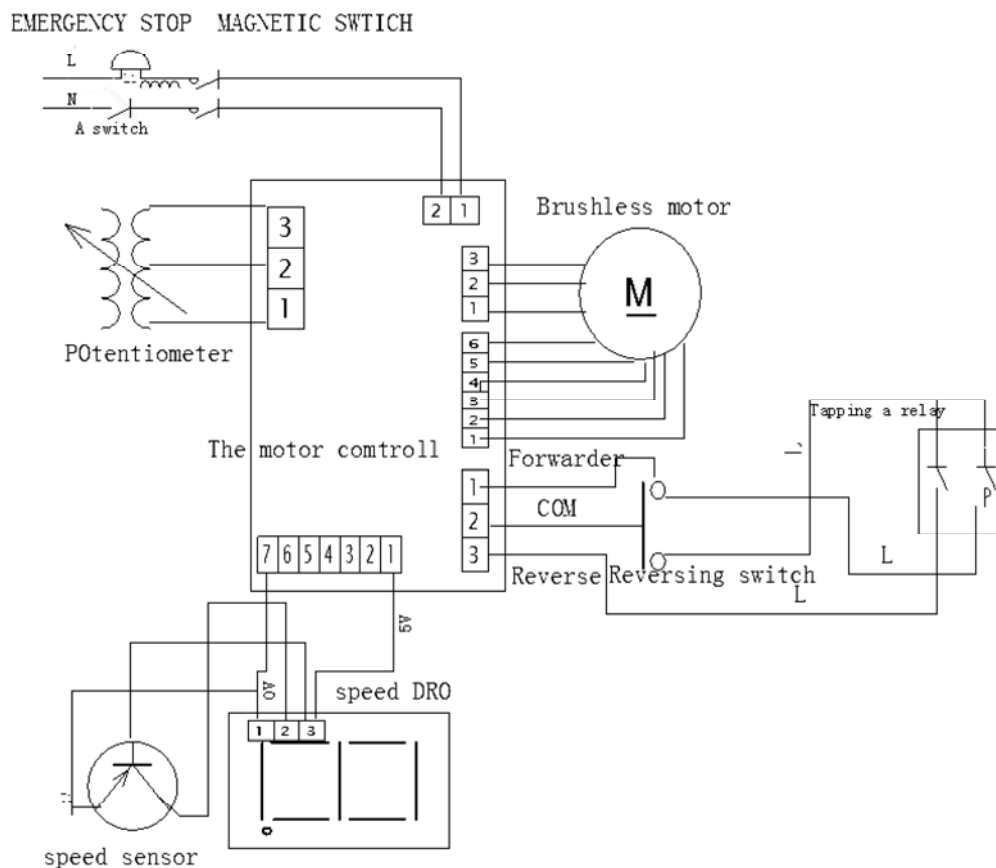


Fig.47

MAINTENANCE

Keep the maintenance of the machine tool during the operation to guarantee the accuracy and service life of the machine tool.

1. In order to retain the machine's precision and functionality, it is essential to treat it with care, keep it clean and grease and lubricate it regularly. Only through good care, you can be sure that the working quality of the machine will remain constant.

NOTES:

Disconnect the machine plug from the mains supply whenever you carry out cleaning, maintenance or repair work!

Oil, grease and cleaning agents are pollutants and must not be disposed of through the drains or in normal refuse. Dispose of those agents in accordance with current legal requirements on the environment. Cleaning rags impregnated with oil, grease and cleaning agents are easily inflammable. Collect cleaning rags or cleaning wool in a suitable closed vessel and dispose of them in an environmentally sound way – do not put them with normal refuse!

2. Lubrication all slideways lightly before every use. The change gears and the leadscrew must also be lightly lubricated with lithium base grease.
3. During the operation, the chips which falls onto the sliding surface should be cleaned timely, and the inspection should be often made to prevent chips falling into the position between the machine tool saddle and lathe bed guide way. Asphalt felt should be cleaned at certain time.

NOTES:

Do not remove the chips with your bare hands. There is a risk of cuts due to sharp-edged chips. Never use flammable solvents or cleaning agents or agents that generate noxious fumes! Protect electrical components such as motors, switches, switch boxes, etc., against humidity when cleaning.

4. After the operation every day, eliminate all the chips and clean different part of the machine tool and apply machine tool oil to prevent rusting.
5. In order to maintain the machining accuracy, take care of the center, the surface of the machine tool for the chuck and the guide way and avoid mechanical damage and the wear due to improper guide.
6. If the damage is found, the maintenance should be done immediately.

NOTES:

Repair work may only be carried out by qualified personnel with the corresponding mechanical and electrical knowledge.

TROUBLESHOOTING

Problem	Possible Reason	Elimination
Surface of workpiece too rough	Tool blunt Tool springs Feed too high Radius at the tool tip too small	Resharpen tool Clamp tool with less overhang Reduce feed Increase radius
Workpiece becomes coned	Centers are not aligned (tailstock has offset) Top slide not aligned well (cutting with the top slide)	Adjust tailstock to the center Align top slide well
Lathe is chattering	Feed too high Slack in main bearing	Reduce feed Adjust the main bearing
Center runs hot	Workpiece has expanded	Loosen tailstock center
Tool has a short edge life	Cutting speed too high Crossfeed too high Insufficient cooling	Reduce cutting speed Lower crossfeed(finishing allowance should not exceed 0.5mm) More coolant
Flank wear too high	Clearance angle too small Tool tip not adjusted to center high	Increase clearance angle Correct height adjustment of the tool
Cutting edge breaks off	Wedge angle too small (heat build-up) Grinding crack due to wrong cooling Excessive slack in the spindle bearing Arrangement (vibrations)	Increase wedge angle Cool uniformly Adjust the slack in the spindle bearing arrangement
Cut thread is wrong	Tool is clamped incorrectly or has been started grinding the wrong way Wrong pitch Wrong diameter	Adjust too to the center Grind angle correctly Adjust the right pitch Turn the workpiece to the correct diameter
Spindle does not activate	Emergency stop switch activated	Unlock emergency stop switch



WEISS
MACHINE & TOOLS

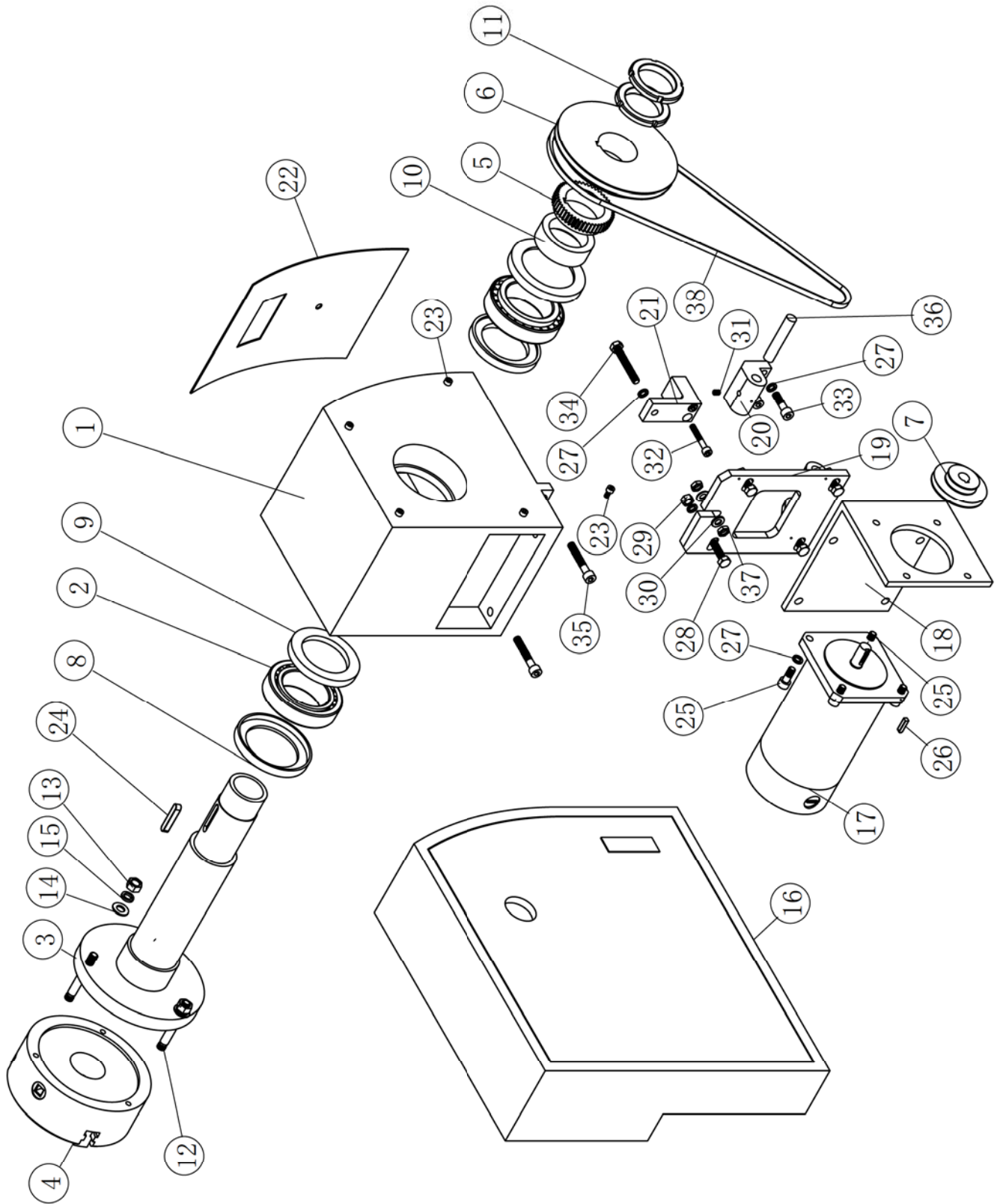
OPERATION MANUAL

WBL290F



Keep Read and Understand the Operation Manual and Safety Information
Before Operated!

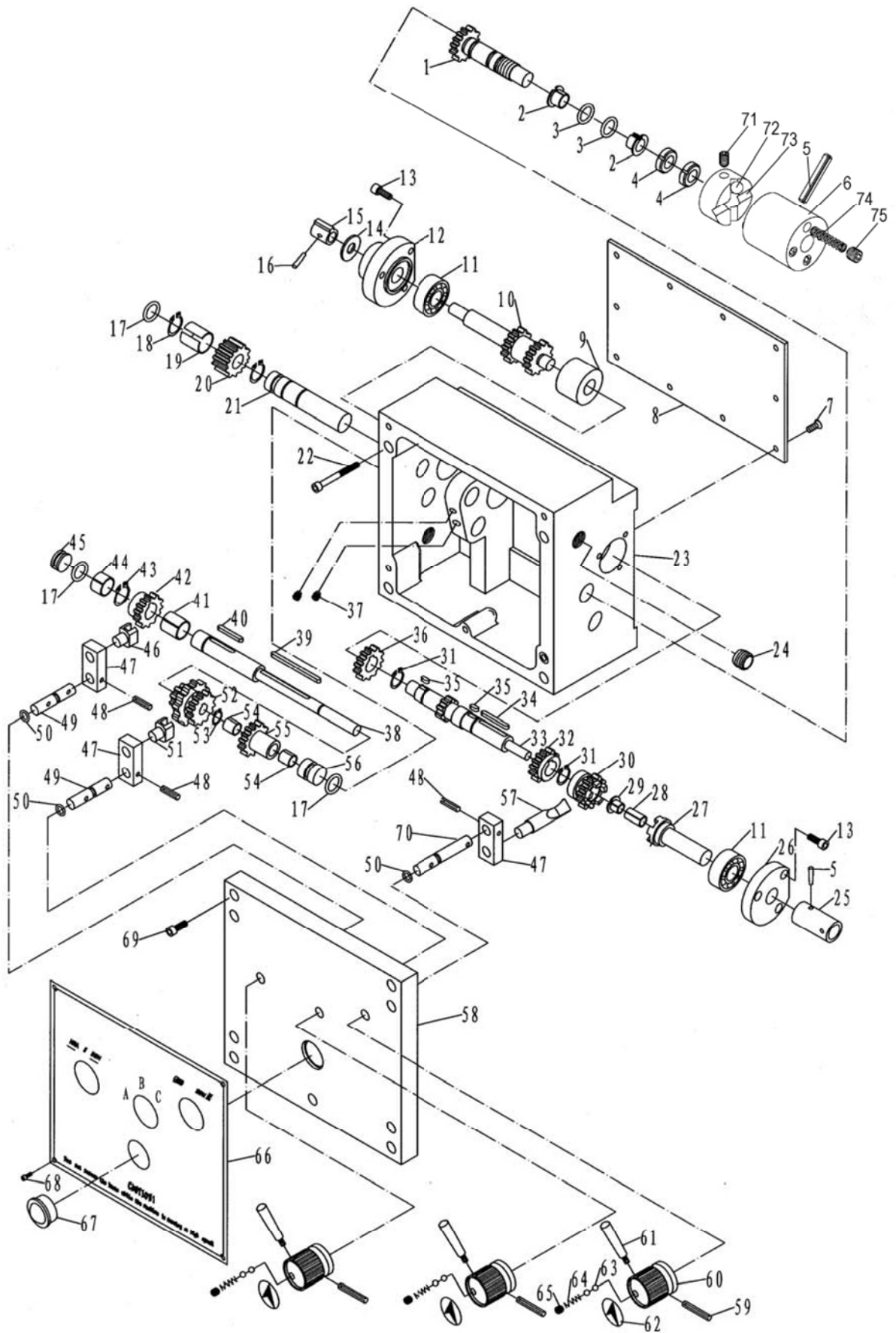
Headstock and Driving Assembly



Headstock and Driving Assembly

No.	Parts No.	Description	Specification	Qty
1	1	Headstock		1
2	2	Bearing	33012	2
3	3	Spindle		1
4	4	Chuck	K11 160	1
5	5	Gear	Z48 m1.5	1
6	6	Spindle Pulley		1
7	7	Motor Pulley		1
8	8	Bush Washer		2
9	9	Bush Washer		2
10	10	Bush		1
11	11	Clock Nut	M48×1.5	2
12	12	Bolt	M10×65	3
13	13	Nut	M10	3
14	14	Washer	10	3
15	15	Spring Washer	10	3
16	16	Belt Cover		1
17	17	Motor		1
18	18	Motor Plate		1
19	19	Adjustment Plate		1
20	20	Support Block		1
21	21	Block		1
22	22	Label		1
23	23	Screw	M5×10	5
24	24	Key	8×42	1
25	25	Screw	M8×20	4
26	26	Key	5×20	1
27	27	Spring Washer	8	11
28	28	Bolt	M8×30	4
29	29	Nut	M8	4
30	30	Washer	8	6
31	31	Screw	M6×8	1
32	32	Screw	M6×40	2
33	33	Screw	M8×30	2
34	34	Bolt	M8×55	1
35	35	Screw	M8×50	2
36	36	Pin	12×70	1
37	37	Nut	M8	2
38	38	Belt	7M-925	1

Gearbox Assembly



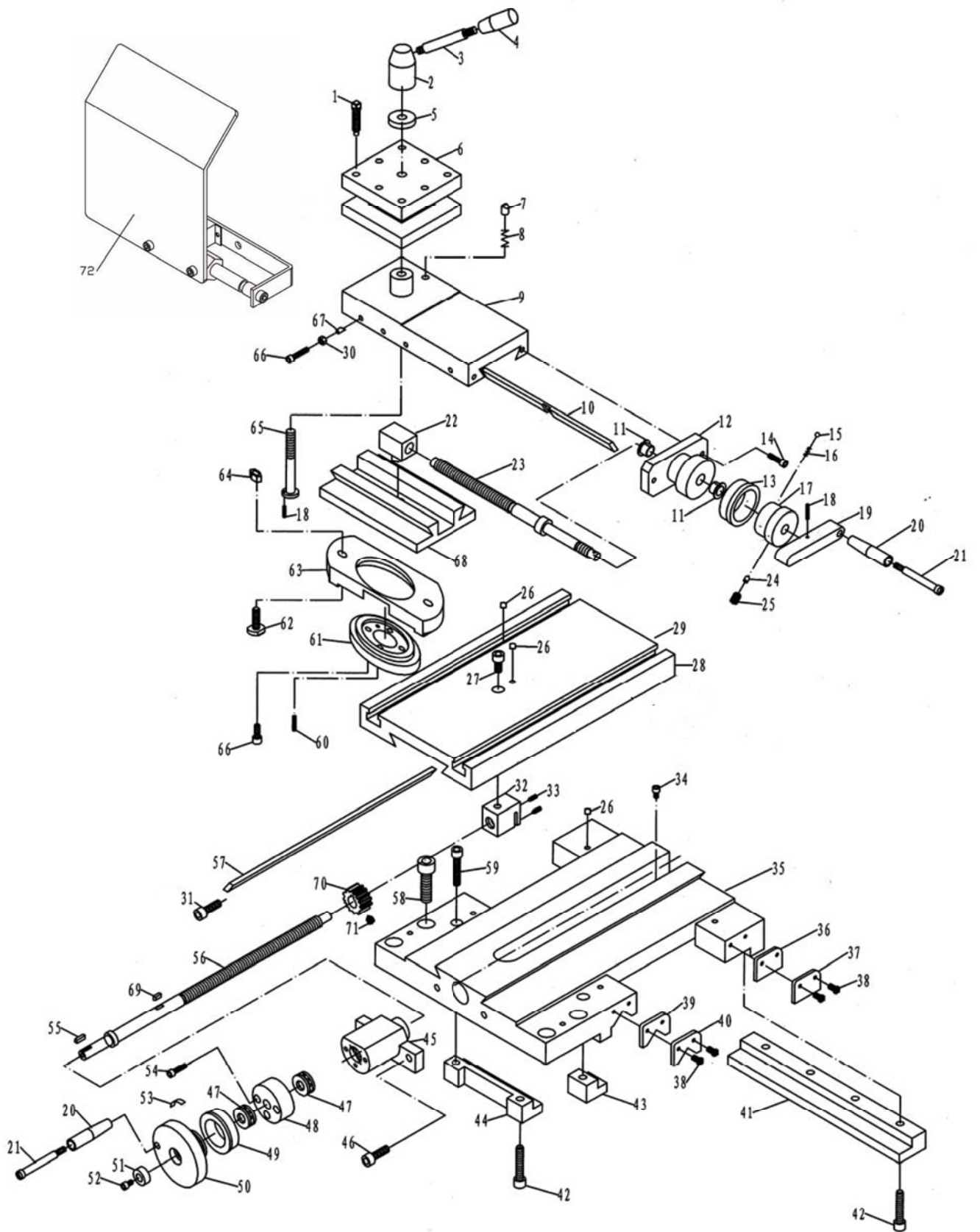
Gearbox Assembly

No.	Parts No.	Description	Specification	Qty
49	1	Gear Shaft		1
50	2	Bearing	16170	2
51	3	O-Ring	18001400	2
52	4	Nut	M16×1.5	2
53	5	Spring Pin	5×35	1
54	6	Collar		1
55	7	Screw	M5×8	10
56	8	Cover		1
57	9	Collar		1
58	10	Gear		1
59	11	Bearing	6202	2
60	12	Left Plug		1
61	13	Screw	M5×10	6
62	14	Washer	10	1
63	15	Key		1
64	16	Pin	4×14	1
65	17	O-Ring	18001500	3
66	18	Snap Ring	18	2
67	19	Bearing	1815	1
68	20	Gear		1
69	21	Shaft		1
70	22	Screw	M6×50	4
71	23	Gearbox		1
72	24	Screw	M16×1.5×12	2
73	25	Collar		4
74	26	Right Plug		1
75	27	Shaft		1
76	28	Bearing	0815	1
77	29	Bearing	08075	1
78	30	Gear		1
79	31	Snap Ring	15	2
80	32	Gear		1
81	33	Shaft		1
82	34	Key	4×25	1
83	35	Key	4×8	2
84	36	Gear		1
85	37	Screw	M6×10	2
86	38	Shaft		1
87	39	Key	4×50	1
88	40	Key	4×20	1
89	41	Bearing	1615	1
90	42	Gear		1

Gearbox Assembly

No.	Parts No.	Description	Specification	Qty
91	43	Snap Ring	16	1
92	44	Bearing	1610	1
93	45	Left Plug		1
94	46	Fork		1
95	47	Bracket		3
96	48	Pin	3×20	3
97	49	Shaft		2
98	50	O-Ring	1800690	3
99	51	Fork		1
100	52	Gear		1
101	53	Snap Ring	10	1
102	54	Bearing	1010	2
103	55	Gear		1
104	56	Right Plug		1
105	57	Dials Block		1
106	58	Gearbox Cover		1
107	59	Pin	5×40	3
108	60	Knob Base		3
109	61	Knob		3
110	62	Label		3
111	63	Ball	5	6
112	64	Spring	0.8×4×16	3
113	65	Screw	M6×12	3
114	66	Label		1
115	67	Oil Slight		1
116	68	Screw	M3×16	4
117	69	Screw	M5×16	5
118	70	Shaft		1
119	71	Screw	M6×10	1
120	72	Ball	6	4
121	73	Collar		1
122	74	Spring	1×5×28	4
123	75	Screw	M8×8	4

Top slide Cross slide , Carriage Assembly



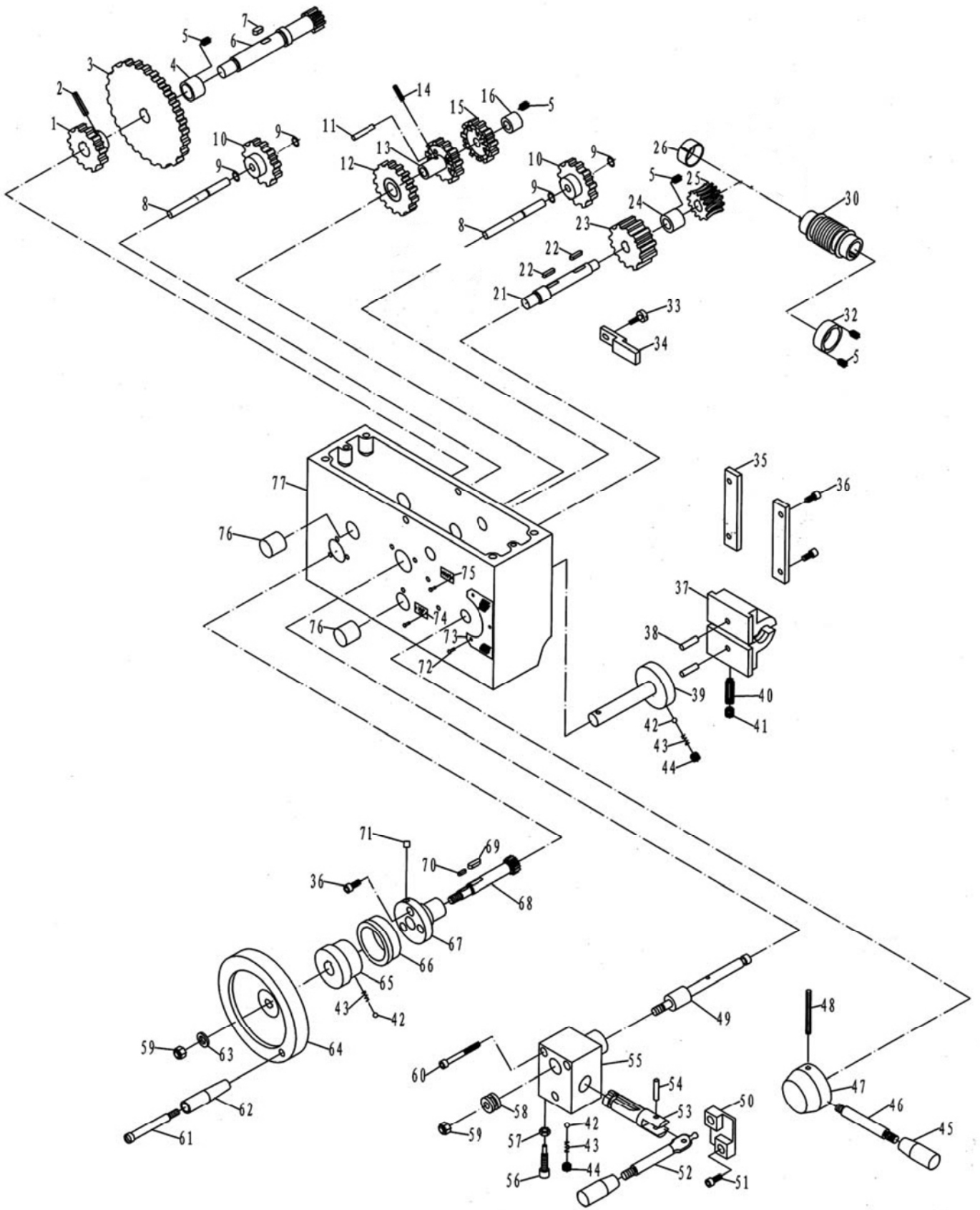
Top slide Cross slide, Carriage Assembly

No.	Parts No.	Description	Specification	Qty
134	1	Screw	M8×30	8
135	2	Handle Base		1
136	3	Handle Shaft		1
137	4	Knob		1
138	5	Washer		1
139	6	Post Base		1
140	7	Stop		1
141	8	Spring	0.8×7×11	1
142	9	Top Slide		1
143	10	Gib		1
144	11	Bearing	12090	2
145	12	Hub		1
146	13	Index Ring		1
147	14	Screw	M6×20	2
148	15	Ball	5	1
149	16	Spring	0.5×4.5×6.5	1
150	17	Index Base		1
151	18	Pin	3×16	2
152	19	Lever		1
153	20	Lever		2
154	21	Lever Shaft		2
155	22	Block		1
156	23	Screw		1
157	24	Plug		3
158	25	Screw	M6×10	3
159	26	Oil Ball		7
160	27	Screw	M8×10	1
161	28	Cross Slide		1
162	29	Adjustment Screw		1
163	30	Nut	M6	4
164	31	Adjustment Screw		1
165	32	Block		1
166	33	Screw	M4×8	2
167	34	Screw	M5×6	1
168	35	Saddle		1
169	36	Wiper		2
170	37	Plate		2
171	38	Screw	M4×18	8
172	39	Wiper		2
173	40	Plate		2
174	41	Strip		1
175	42	Screw	M8×30	5

Top slide Cross slide, Carriage Assembly

No.	Parts No.	Description	Specification	Qty
176	43	Strip		1
177	44	Strip		1
178	45	Bracket		1
179	46	Screw	M5×20	3
180	47	Bearing	51101	1
181	48	Collar		1
182	49	Index Ring		1
183	50	Handle Wheel		1
184	51	Washer		1
185	52	Screw	M5×10	1
186	53	Spring		1
187	54	Screw	M5×20	3
188	55	Key	4×4×11	1
189	56	Leadscrew		1
190	57	Gib		1
191	58	Screw	M12×30	2
192	59	Screw	M8×40	2
193	60	Pin	4×20	1
194	61	Collar		1
195	62	T-Bolt	M10×30	2
196	63	Clamping Ring		1
197	64	Nut	M10	2
198	65	Bolt		1
199	66	Screw	M6×16	8
200	67	Plug		4
201	68	Swivel base		1
202	69	Key	4×10	1
203	70	Gear		1
204	71	Screw	M5×16	1
205	72	Tool post safety cover		1套

Apron Assembly



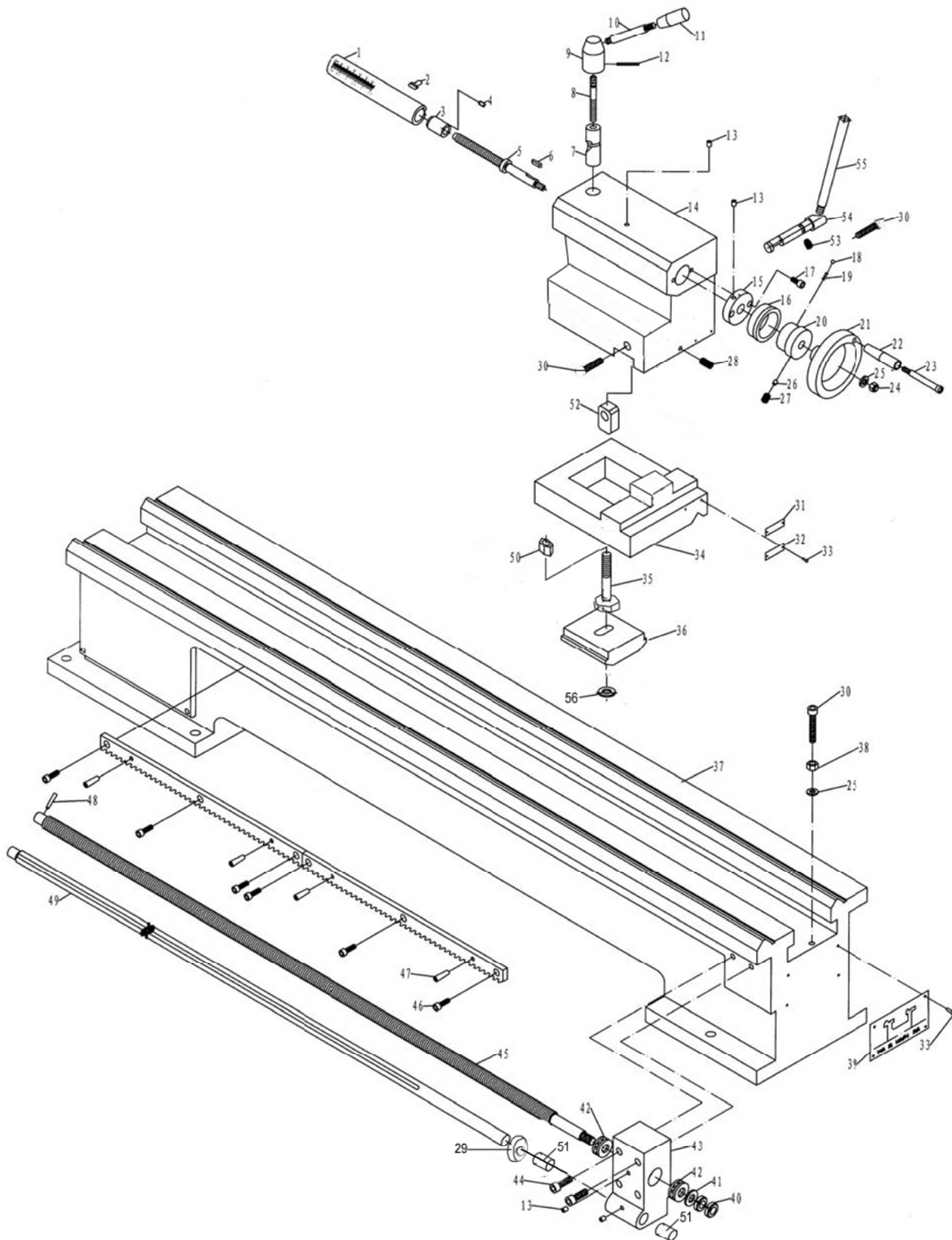
Apron Assembly

No.	Parts No.	Description	Specification	Qty
215	1	Gear		1
216	2	Pin	5×24	1
217	3	Gear		1
218	4	Washer		1
219	5	Screw	M4×8	5
220	6	Gear Shaft		1
221	7	Key		1
222	8	Shaft		1
223	9	Snap Ring	8	4
224	10	Gear		2
225	11	Shaft		3
226	12	Gear		1
227	13	Gear		1
228	14	Pin	4×16	1
229	15	Gear		1
230	16	Washer		1
231	20	Shaft		1
232	21	Shaft		1
233	22	Key	5×14	2
234	23	Gear		1
235	24	Washer		1
236	25	Worm Gear		1
237	26	Bearing	2510	1
238	30	Worm		1
239	32	Washer		1
240	33	Screw		1
241	34	Plate		1
242	35	Plate		2
243	36	Screw	M5×12	7
244	37	Half Nut		1
245	38	Pin	6×18	2
246	39	Cam Shaft		1
247	40	Screw	M6×20	1
248	41	Screw	M6×8	1
249	42	Ball	5	3
250	43	Spring	0.7×4×10	3
251	44	Screw	M6×6	2
252	45	Knob		2
253	46	Handle		1
254	47	Handle Base		1
255	48	Pin	5×45	1
256	49	Shaft		1

Apron Assembly

No.	Parts No.	Description	Specification	Qty
257	50	Base		1
258	51	Screw	M5×10	6
259	52	Shaft Handle		1
260	53	Shaft		1
261	54	Pin	5×20	1
262	55	Base		1
263	56	Screw		1
264	57	Nut	M6	1
265	58	Shift Lever		1
266	59	Nut	M8	2
267	60	Screw	M5×35	2
268	61	Shaft Handle		1
269	62	Knob		1
270	63	Washer	8	1
271	64	Handlewheel		1
272	65	Shaft		1
273	66	Graduated Collar		1
274	67	Bracket		1
275	68	Shaft		1
276	69	Key	5×14	1
277	70	Key	3×10	1
278	71	Oil Ball	6	1
279	72	Rivet	2×6	7
280	73	Plate		1
281	74	Plate		1
282	75	Plate		1
283	76	Collar		2
284	77	Apron		1

Tailstock, Bed Assembly



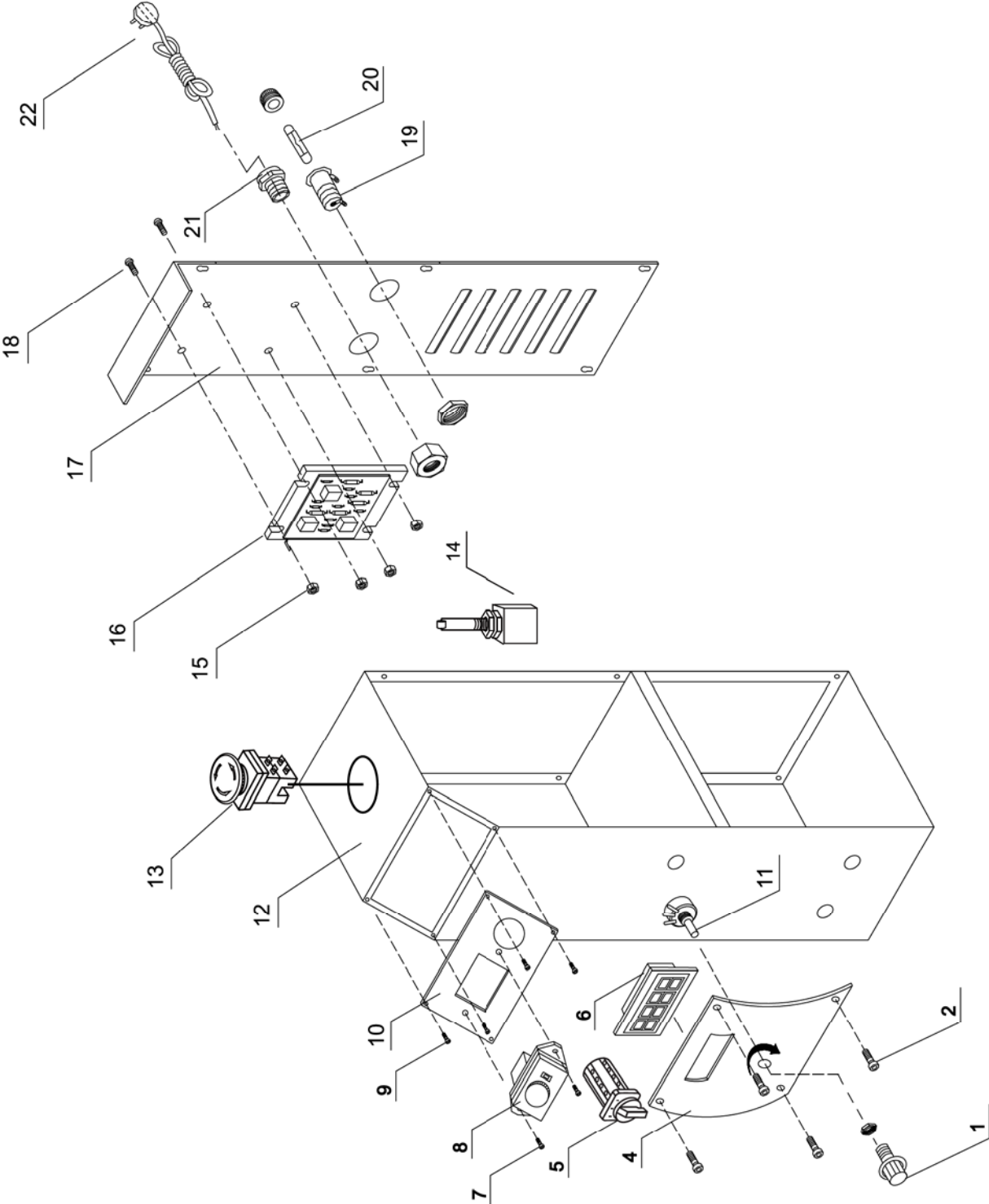
Tailstock and Bed Assembly

No.	Parts No.	Description	Specification	Qty
295	1	Quill		1
296	2	Key		1
297	3	Nut		1
298	4	Screw	M6×10	1
299	5	Screw		1
300	6	Key	4×10	1
301	7	Pivot Block		1
302	8	Screw		1
303	9	Handle Base		1
304	10	Handle Shaft		1
305	11	Knob	M8	1
306	12	Pin	3×30	1
307	13	Oil Ball	6	4
308	14	Tailstock		1
309	15	Flange Cover		1
310	16	Index Ring		1
311	17	Screw	M6×10	2
312	18	Ball	4	1
313	19	Spring	1×4×6	1
314	20	Sleeve		1
315	21	Handlewheel		1
316	22	Knob		1
317	23	Screw		1
318	24	Nut	M8	1
319	25	Washer	8	6
320	26	Brake Block		1
321	27	Screw	M6×10	1
322	28	Screw	M6×16	1
323	29	Collar		1
324	30	Screw	M8×40	3
325	31	Plate		1
326	32	Plate		1
327	33	Rivet	2×6	8
328	34	Base		1
329	35	Bolt		1
330	36	Clamping Block		1
331	37	Bed		1
332	38	Nut	M8	5
333	39	Plate		1
334	40	Nut	M12×1.25	2
335	41	Washer	12	1
336	42	Bearing	51102	2

Tailstock and Bed Assembly

No.	Parts No.	Description	Specification	Qty
337	43	Bracket		1
338	44	Screw	M8×20	2
339	45	Feed Shaft		1
340	46	Screw	M6×15	6
341	47	Pin	6×20	4
342	48	Pin	4×22	1
343	49	Shaft		1
344	50	Nut	M10	1
345	51	Bearing	1420	2
346	52	Brack Block		1
347	53	Screw	M6×10	1
348	54	Shaft		1
349	55	Handle		1
350	56	Washer	10	1

ELECTRICAL BOX ASSEMBLY



ELECTRICAL BOX ASSEMBLY

No	Parts No.	Description	Specification	Qty
315	1	Timing Knob		1
316	2	Screw		4
317	3	Nut		4
318	4	Lable		1
319	5	R/F Swich	ZH-A EN61058	1
320	6	Speed Display	Optional	1
321	7	Screw		2
322	8	Magnetic Swich		1
323	9	Screw		4
324	10	Electrical Plate		1
325	11	Potentiometer	WX 14-12	1
326	12	Electrical Box		1
327	13	Emergency Stop	XB2-BS542	1
328	14	Limited Switch	LXW5-11Q1	6
329	15	Nut		4
330	16	Speed Control Board		1
331	17	Cover		1
332	18	Screw		4
333	19	Fuse Holder		1
334	20	Fuse (10A)		1
335	21	Strand Relief		1
336	22	Plug		1

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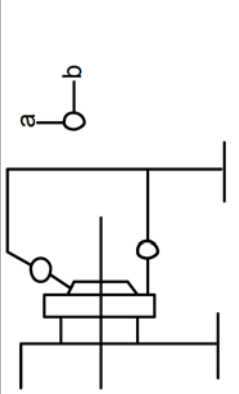
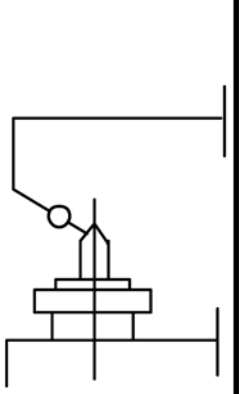
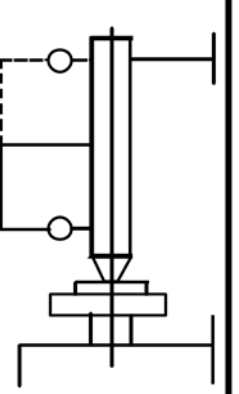
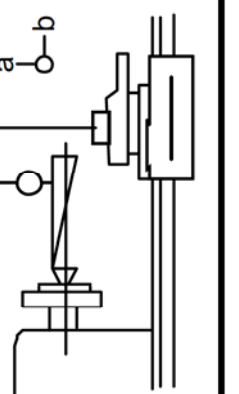
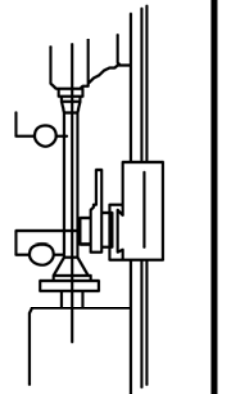
Test Record

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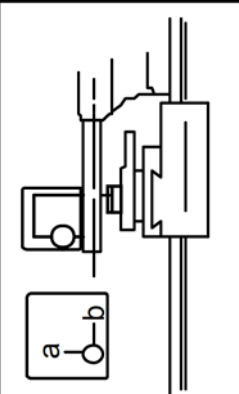
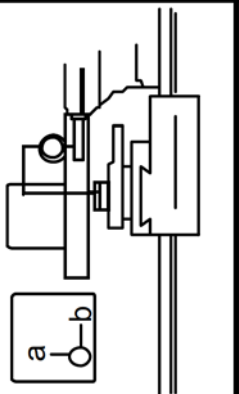
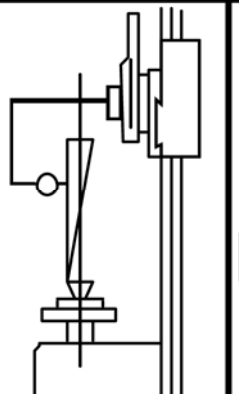
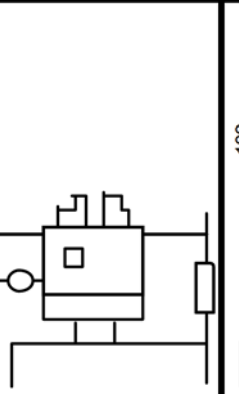
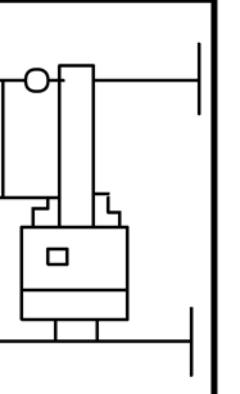
I. Visual Inspection		OK	IV. Electrical Inspection		OK
1. Correct label	<input type="checkbox"/>		1. Connection tightened	<input type="checkbox"/>	
2. Painting damage	<input type="checkbox"/>		2. Correct electrical elements	<input type="checkbox"/>	
3. Corrosion damage	<input type="checkbox"/>		3. Earth resistance	<input type="checkbox"/>	
4. Screw tightened	<input type="checkbox"/>		4. Insulation resistance	<input type="checkbox"/>	
II. Mechanical Inspection		OK	5. Tolerance voltage test	<input type="checkbox"/>	
1. Function of top slide	<input type="checkbox"/>		6. Function of F/R switch	<input type="checkbox"/>	
2. Function of cross slide	<input type="checkbox"/>		7. Emergency stop switch	<input type="checkbox"/>	
3. Function of carriage	<input type="checkbox"/>		8. Spindle safety cover	<input type="checkbox"/>	
4. Function of tailstock	<input type="checkbox"/>		9. Function of motor	<input type="checkbox"/>	
5. Lubrication for sliding parts	<input type="checkbox"/>		V. Final Inspection		OK
6. Parallelism of pulleys	<input type="checkbox"/>		1. Correct accessories	<input type="checkbox"/>	
7. Spindle adjustment	<input type="checkbox"/>		2. Correct documents	<input type="checkbox"/>	
III. Active Inspection		OK	3. Machine cleanness	<input type="checkbox"/>	
1. Function of gearbox	<input type="checkbox"/>		4. Credibility antitrust	<input type="checkbox"/>	
2. Function of apron	<input type="checkbox"/>		5. Correct mark	<input type="checkbox"/>	
3. Running test	<input type="checkbox"/>				
4. Noise test	<input type="checkbox"/>				
5. Leaky test	<input type="checkbox"/>				
6. Cutting test	<input type="checkbox"/>				
Remark:					

Serial No.	<input type="text"/>
Date	<input type="text"/>
Inspector	<input type="text"/>

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NO.	INSPECTION ITEM	DIAGRAM	TOLERANCE(mm)	
			PERMISSIBLE	ACTUAL
1	Runout of spindle nose a radial plane b face plane		a 0.01 b 0.015	
2	Runout of center		0.03	
3	Runout of spindle taper hole a spindle nose b 250 distance		a 0.015 b 0.03	
4	Parallelism of center line of spindle to carriage movement a in horizontal plane b in vertical plane		a 0.03/250 b 0.03/250	
5	Difference between two centers (higher at tailstock)		0.02-0.06	

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NO.	INSPECTION ITEM	DIAGRAM	TOLERANCE(mm)	
			PERMISSIBLE	ACTUAL
6	Parallelism of tailstock quill to carriage movement a in horizontal plane b in vertical plane		a 0.025/50 b 0.025/50	
7	Parallelism of tailstock quill hole to carriage movement a in horizontal plane b in vertical plane		a 0.03/250 b 0.02/250	
8	Parallelism of center line of spindle to top slide movement		0.04/50	
9	Radial runout of chuck		0.04	
10	Radial runout of ø20 test bar		0.08/100	