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LATHE INSTRUCTION MANUAL

MODEL:WM210V-L

We continue to be committed to provide you tools with competitive price.
"Save Half", "Half Price" or any other similar expressions used by us only represents an estimate of savings you might benefit from buying certain tools with us compared to the major top brands and doses not necessarily mean to cover all categories of tools offered by us. You are kindly reminded to verify carefully when you are placing an order with us if you are actually saving half in comparison with the top major brands.

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NEED HELP? CONTACT US!

Have product questions? Need technical support? Please feel free to contact us:

CustomerService@vevor.com

This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

MATTERS NEEDING ATTENTION

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. We strive to ensure the accuracy of this information and try to verify each item and each data, but we cannot guarantee the full accuracy of the information, which means that the equipment supply may differ in detail from the description of the instructions. 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.

QUALITY ASSURANCE

We will make every effort to ensure the quality of our products, and we promise to consumers that we will guarantee our products for one year, except for machine damage caused by improper operation of customers, and accidents resulting therefrom, or abnormal wear and damage caused by lack of maintenance.
In order to fulfill the warranty commitment, the product or part with quality problems, please return to us for verification, postage prepaid. Goods sent back should be accompanied by a note of the date of purchase and a written explanation of the quality of the product. After our inspection and confirmation, we will repair or replace their products, or refund the payment; If we fail to provide repair or replacement in a timely manner, we shall bear the costs arising from the repair or replacement of the products; If the damage is not due to the quality of the product, but due to the user's improper operation or other reasons, the cost shall be borne by the customer .

Our company reserves the right to make changes to this specification and product specifications. We will make continuous efforts to improve the quality of our products.

SAFETY WARNING

Symbol	Symbol Description
	Warning - To reduce the risk of injury, user must read instructions manual carefully.
	This symbol, placed before a safety comment, indicates a kind of precaution, warning, or danger. Ignoring this warning may lead to an accident. To reduce the risk of injury, fire, or electrocution, please always follow the recommendation shown below.
	**Danger!** Risk of personal injury or environmental damage! Risk of electric shock! Risk of personal injury by electric shock!
	Alternating current
	Beware of clamping
	Warning- Be sure to wear ear protectors when using this product.
	Warning- Be sure to wear eye protectors when using this product.

	Do not put your hands into safety guard when machine is working
	No entry automatic machinery in operation Authorized personnel only
	Do not fill oil during operation
	Do not turn during repair
	No fatigue operation
	The operation is no phone calls
	**Disposal information:** This product is subject to the provision of European Directive 2012/19/EC. The symbol showing a wheelie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices

 WARNING: Read all safety warnings, instructions, illustrations and specifications provided with this machine. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1.The machine tool should be used by experienced personnel. If you are not familiar with the operation process of the lathe, do not use the

machine tool at will. Use the instructions before operating.

2.Before starting the machine tool, the safety cover should be in the correct position.

3.Before starting the machine tool, please check whether the tool rest wrench and chuck key are removed.

4.Prevent the machine from starting accidentally. Turn off the motor power before clamping the workpiece or tool.

5.Don't force cut. Cutting according to the set cutting speed, cutting depth and feed speed.

6.Use the right tools. Use the correct tool or workpiece for machining.

7.Keep the tool sharp and clean to ensure normal and safe operation. Lubricate and replace accessories regularly.

8.Before adjusting or repairing the machine, be sure to disconnect the power supply.

9. Please check the safety performance of the machine before starting it. Check the performance of all moving parts. All parts must be installed correctly. Damaged parts must be repaired promptly.

10. When the machine is running, the operator shall not leave.

11. Keep the working place clean, dirty working environment is easy to lead to accidents.

12. Do not use the machine in dangerous environment.
Do not work in damp places. Ensure that electrical components are protected from moisture. Keep good lighting.

13. Children are prohibited from entering the work site, and non-operating personnel should keep a safe distance from the work area.

14. To keep children out of the work area. The door should be locked when leaving the workshop.

15. Dress appropriately. Don't wear loose clothing, gloves, ties, rings, bracelets, jewelry, etc. To be on the safe side, For the sake of safety, wearing non-slip shoes. If you have long hair, please wear a work hat.

16. Wear protective glasses when operating.

17. Pay attention to where you stand and keep your balance at all times.

18. Do not place your hands near the moving parts of the machine.

19. Do not perform any setting operations while the machine is running.
20. Read and understand all warning signs posted on the machine.
21. This manual is intended only to familiarize customers with the operation of the machine and is not a training manual.
22. Please obey these warnings or serious injury may result.
23. The machine will produce some harmful chemicals in the work of dust, sawing, grinding and drilling produced by grinding. To reduce the harm of these chemicals, please work in a well-ventilated place and wear safety devices. Such as particulate filter masks.

TECHNICAL PARAMETER

Type number	WM210V-L
Capacities	
Swing over Bed	210mm
Swing over Cross Side	110mm
Distance Between Centers	735mm
Width of Bed	100mm
Headstock	
Hole Through Spindle	38mm
Taper in Spindle Nose	MT3
Number of Spindle Speeds	Variable
Range of Spindle Speeds	50-2500RPM
Feeding and Threading	
Number of Metric Threads	14
Range of Metric Threads	0.3~3mm
Number of 1mperial Threads	10
Range of 1mperial Threads	10~44T.P.I.
Range of Longitudinal Feed	0.1~0.20mm
Compound and Carriage	
Tool Post Type	4
Maximum Compound Slide Travel	55mm
Maximum Cross Slide Travel	75mm
Maximum Carriage Travel	736mm
tail stock	
Tail Stock Spindle Travel	60mm
Taper in Tail stock Spindle	MT2
Miscellaneous	
Main Motor	110V~60Hz/220-240V~50Hz,1Ph /750W,
Length, Width and Height	1200×340×360（mm）
Product Weight	N.W:79Kg; G.W:90Kg
Package Size	1230*460*450 mm

The general information given in this specification is not binding.

Standard accessories

1. Oil Pan 1
2. Rear Chip Plate 1
3. Three Jaw Chuck 1
4. Specification 1
5. Tool Box 1

Fig. 1

Accessories in the tool box (Fig. 1)

1 Dead Center MT5
1 Dead Center MT2
3 Tool Post Wrench
1 Oil Gun
1 Cross Screwdriver
1 Fiat Screwdriver
1 Three Jaw Chuck
5 Hex Socket Wrenches
3 Double End Head Wrenches
8 Pulley Set (30T,33T,35T,50T,52T,40T,60T,66T)

Special accessories（Accessories that require additional payment）

Four jaw chuck and back plate (connecting plate)
Heel rest
Center frame
Back disk
Disjointed disk
Tool rest protection cover
Lead screw protective cover
Turning tool
Drill chuck and connecting rod

UNPACKING AND CLEANING

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 dray, 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). 1f 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 heavy, non-slinging grease.

FOUNDATION DRAWING

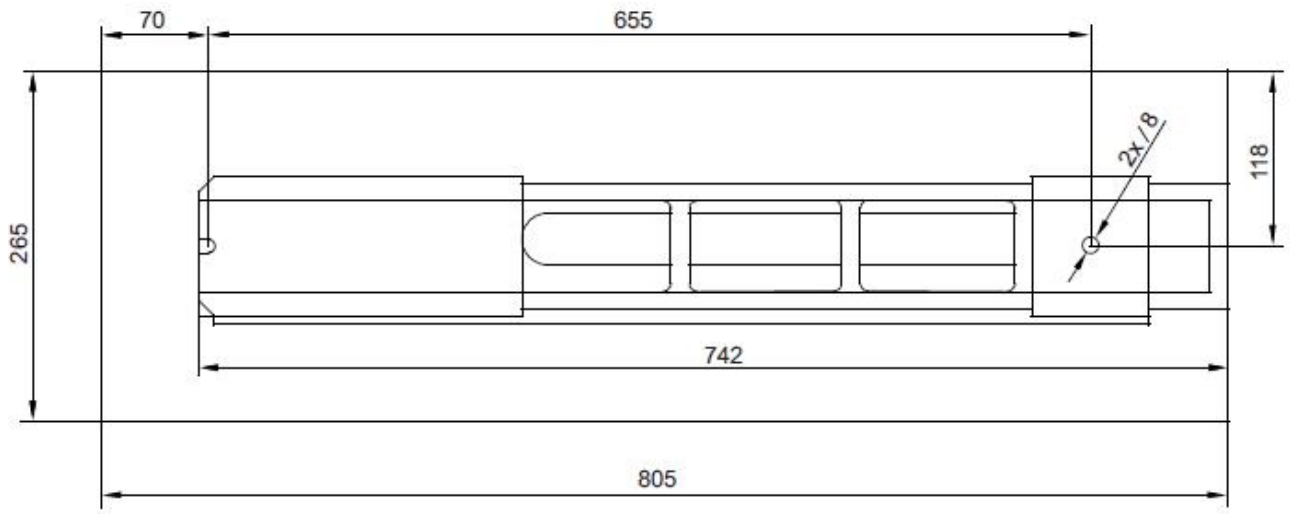


Fig. 2

Lathe Bed (Fig. 3)

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 drives the unit, for attaching the carriage and lead screw. The two precision-ground V - sideways, reinforced by heat hardening and grinding, are the accurate guide for the carriage and tail stock. The main motor is mounted to the rear of the left side of the bed.

Fig. 3

Headstock (Fig. 4)

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. 4

Carriage (Fig. 5)

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.

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.

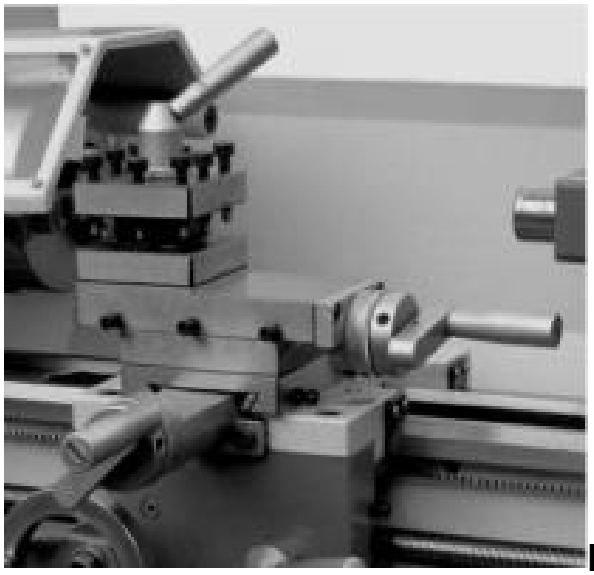


Fig. 5

Apron (Fig. 6)

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 allows for quick travel of the apron.

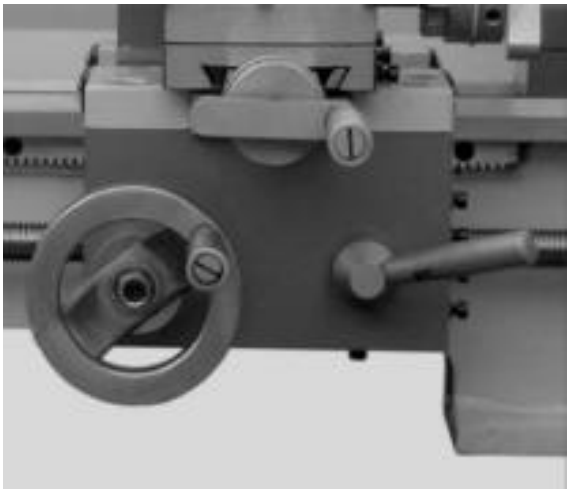


Fig. 6

Lead screw (Fig. 7)

The lead screw (A, Fig.7) 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 hex nut(B,Fig.7)on the right end is designed to take up play on the lead screw.

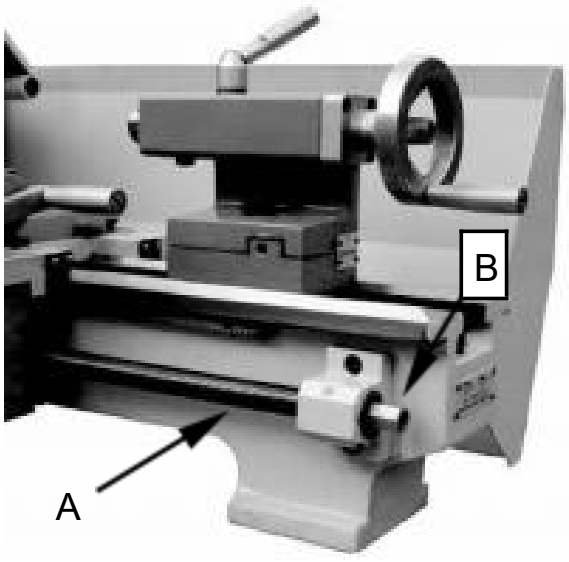


Fig.7

tail stock (Fig. 8)

The tail stock slides on a V way and can be clamped at any location. The tail stock has a heavy-duty spindle with a Morse taper No. 2 socket and a graduated scale. The spindle can be clamped at any location with a clamping lever. The spindle is moved with a hand wheel at the end of the tailstock.

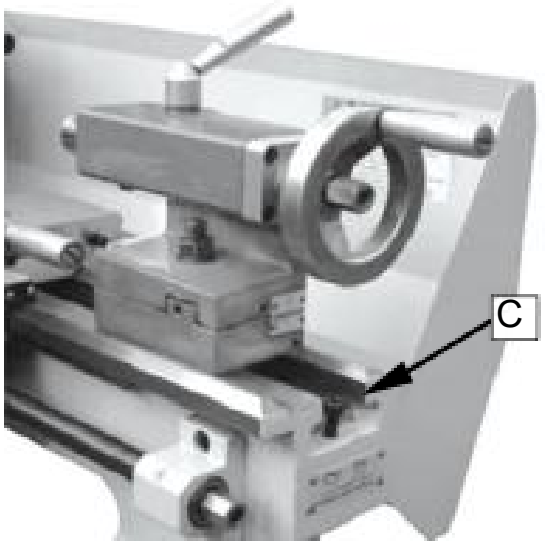


Fig.8

Notice:

Fit the securing screw (C, Fig. 8) at the end of the lathe in order to prevent the tailstock from falling off the lathe bed.

Operating equipment

1. **Emergency Button: 0N/0FF Switch (D,Fig. 9)**

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.

2. **Change-over Switch(E,Fig. 9)**

After the machine 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) ."O"position is OFF and the spindle remains idle.

3. **Variable Speed Control Switch (F,Fig. 9)**

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.

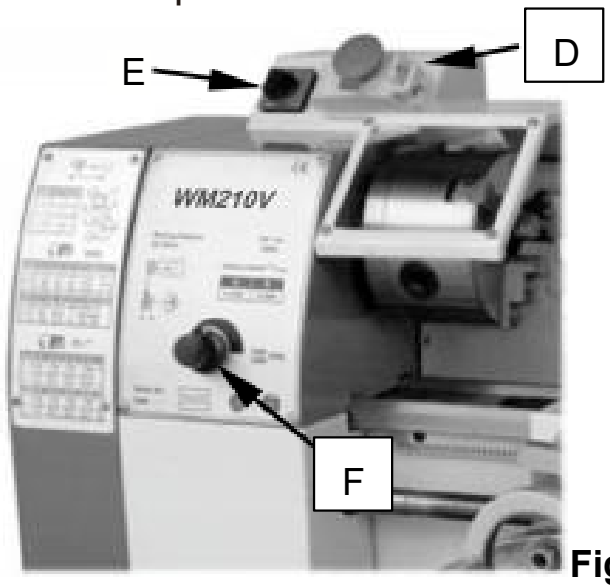


Fig.9

4．Carriage Lock

Turn hex socket cap screw (A, Fig. 10) clockwise and tighten to lock. Turn counter-clockwise and loosen to unlock.

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

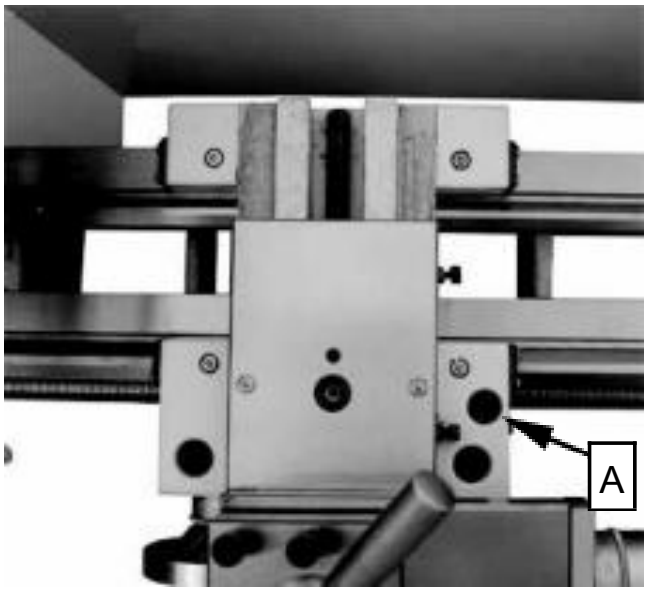


Fig.10

5．Longitudinal Traverse Hand wheel (B,Fig.11)

Rotate hand wheel clockwise to move the apron assembly toward the tail stock (right). Rotate the hand wheel counter-clockwise to move the apron assembly to ward the Headstock(left).

6．Cross Traverse Lever (C,Fig. 11)

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

7．Half Nut Engage Lever (D,Fig. 11)

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

8．Compound Rest Traverse Lever (E,Fig. 11)

Rotate clockwise or counter-clockwise to move or position.

9．Tool Post Clamping Lever (F,Fig. 11)

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

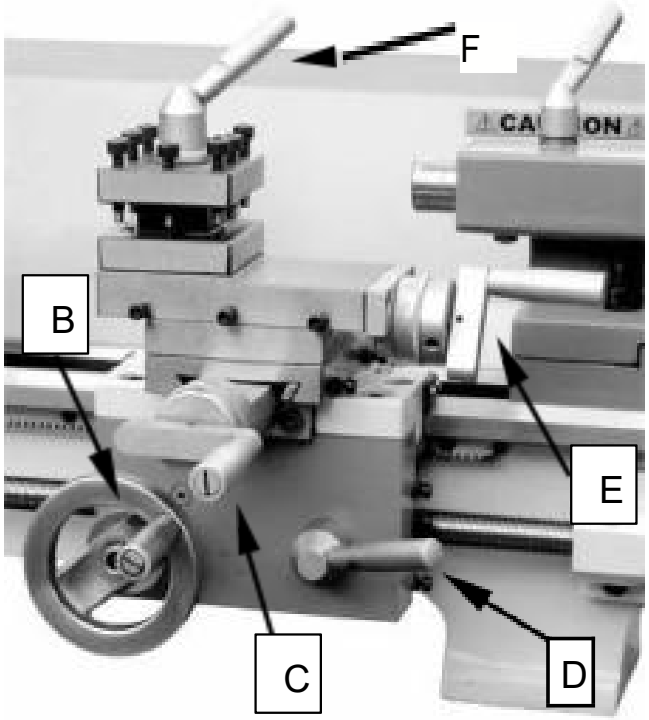


Fig.11

10．Tail stock Clamping screw (G,Fig. 12)

Turn hex nut clockwise to lock and counter-clockwise to unlock.

11．Tail stock Quill Clamping Lever (H,Fig. 12)

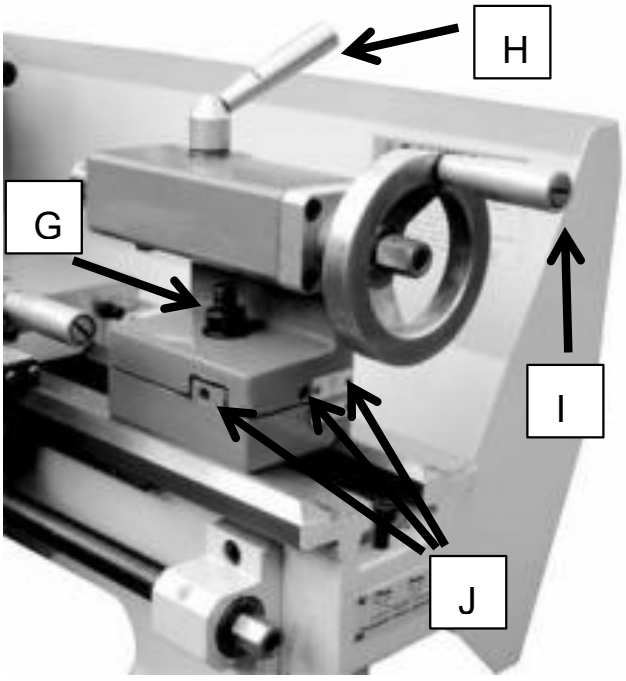
Rotate the lever clockwise to lock the spindle and counter-clockwise to unlock it.

12．Tail stock Quill Traverse Hand wheel (I,Fig. 12)

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

13．Tail stock off-set Adjustment (J,Fig. 12)

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



Fig．12

Replacement of Chuck

The head spindle holding fixture is cylindrical. Loose three set screws and nuts (A, Fig. 13 only two are shown)on the la the chuck flange to remove the chuck. Position the new chuck and fix it using the same set screws and nuts.

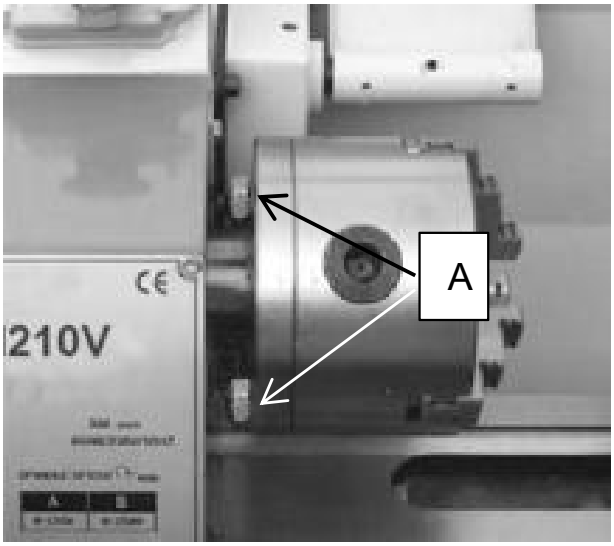


Fig. 13

TOOL SET UP

Clamp the turning tool into the tool holder.

The tool must be clamped firmly. When turning, the tool has a tendency to bend under the cutting force generated during the chip formation.

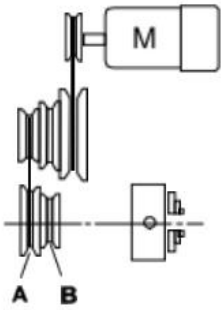
For best results, tool overhang should be kept to a minimum of 3/8" or less.

The cutting angle is correct when the cutting edge is inline with the center axis of the workpiece. The correct height of the tool can be achieved by comparing the tool point with the point of the center mounted in the tail stock. If necessary, use steel spacer shims under the tool to get the required height. (Fig. 14)

Fig. 14

Change Speed

1. Unscrew the two fastening screws (B, Fig.15) and remove the protective cover.
2. Adjust the V-belt(C,Fig.16)corresponding position.
3. Tighten the tension pulley and fasten the nut again.



sP1NDLE sPEED r/min

A	B
50.1250	100.2500

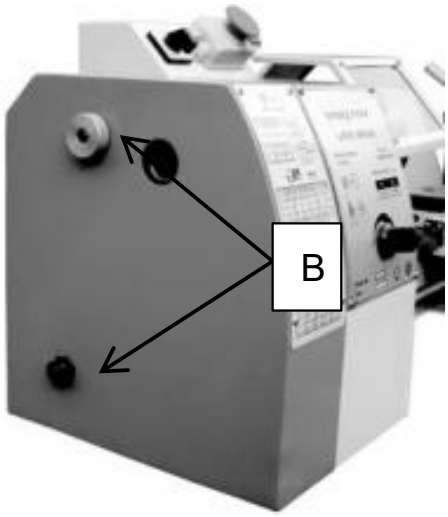


Fig. 15

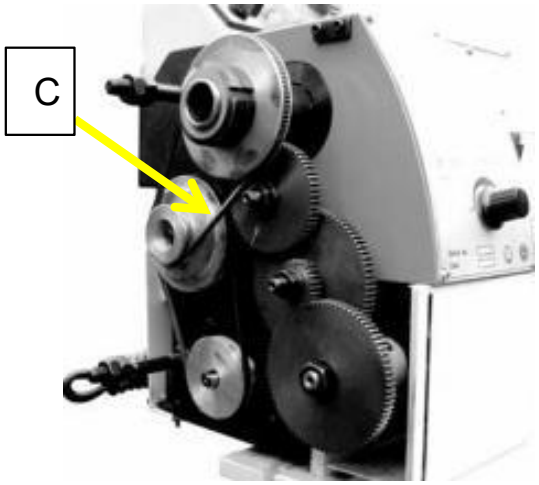


Fig. 16

Manual Turning

Apron travel, cross travel, and top slide hand wheel can be operated for longitudinal or cross feeding. (Fig.17)

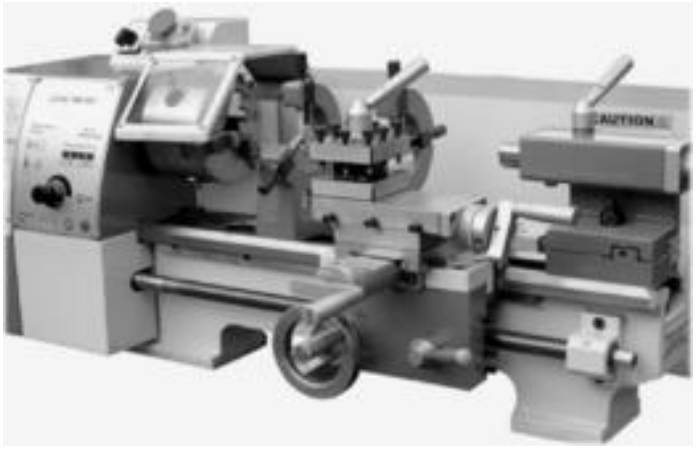


Fig. 17

Longitudinal Turning with Auto.Feed

Use the table (A, Fig.18) on the lathe for selecting the feed speed or the thread pitch. Adjust the change gear if the required feed or thread pitch can not be obtained with the installed gear set.

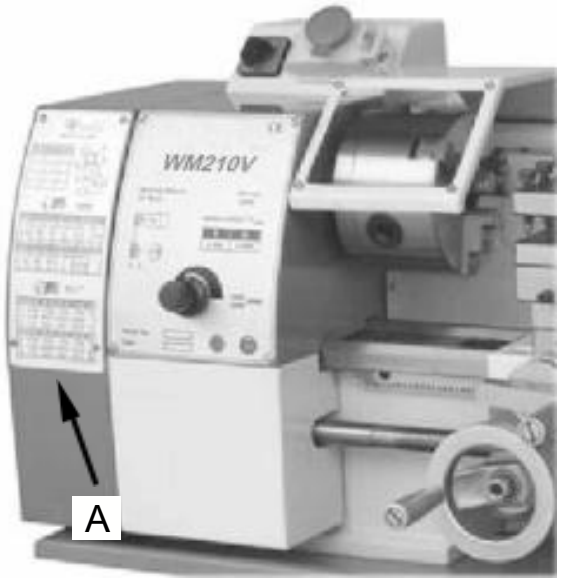


Fig. 18

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 (B, Fig.19) on the quadrant.
4. Swing the quadrant (C, Fig. 19) to the right.
5. Unscrew the nut (D, Fig.29) from the lead screw or the nuts (E, Fig.19) 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.20) 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 head stock and reconnect the machine to the power supply.

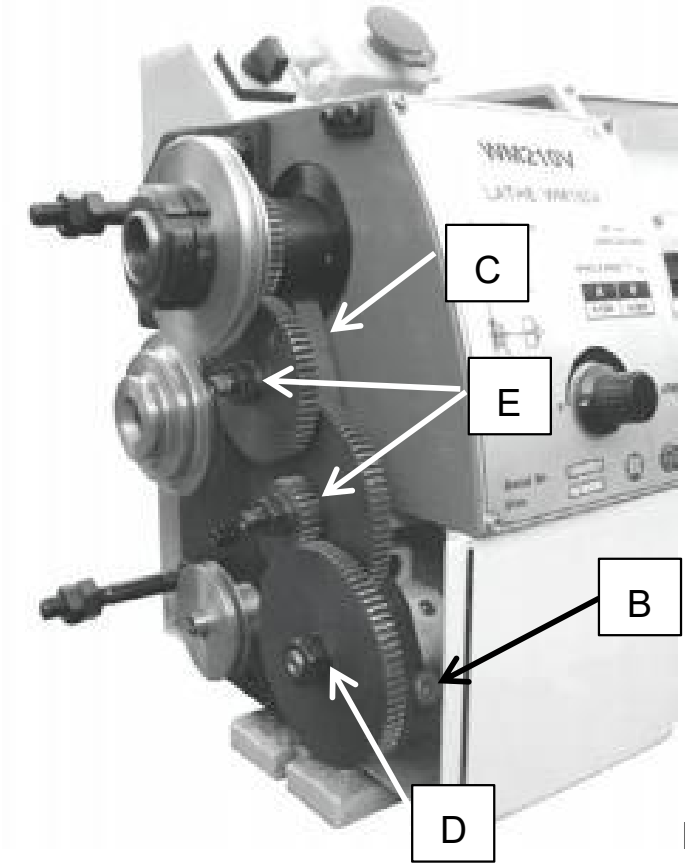
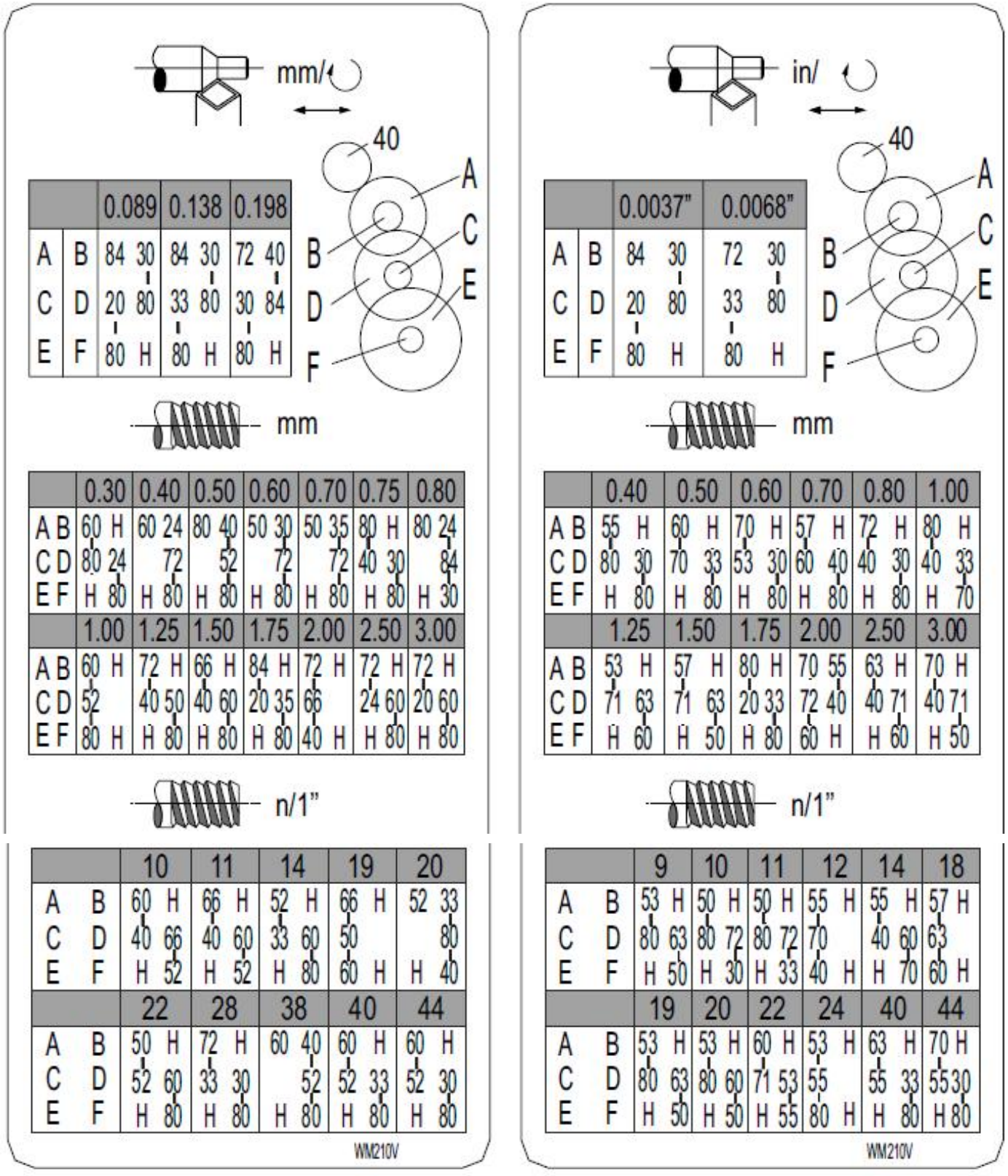


Fig. 19

Pitch plate(Fig. 20)

THREADING AND FEEDING TABLE



		0.089	0.138	0.198
A	B	84 30	84 30	72 40
C	D	20 80	33 80	30 84
E	F	80 H	80 H	80 H

		0.0037"	0.0068"
A	B	84 30	72 30
C	D	20 80	33 80
E	F	80 H	80 H

		0.30	0.40	0.50	0.60	0.70	0.75	0.80
A	B	60 H	60 24	80 40	50 30	50 35	80 H	80 24
C	D	80 24	72	52	72	72	40 30	84
E	F	H 80	H 80	H 80	H 80	H 80	H 80	H 30
		1.00	1.25	1.50	1.75	2.00	2.50	3.00
A	B	60 H	72 H	66 H	84 H	72 H	72 H	72 H
C	D	52	40 50	40 60	20 35	66	24 60	20 60
E	F	80 H	H 80	H 80	H 80	40 H	H 80	H 80

		0.40	0.50	0.60	0.70	0.80	1.00
A	B	55 H	60 H	70 H	57 H	72 H	80 H
C	D	80 30	70 33	53 30	60 40	40 30	40 33
E	F	H 80	H 80	H 80	H 80	H 80	H 70
		1.25	1.50	1.75	2.00	2.50	3.00
A	B	53 H	57 H	80 H	70 55	63 H	70 H
C	D	71 63	71 63	20 33	72 40	40 71	40 71
E	F	H 60	H 50	H 80	60 H	H 60	H 50

		10	11	14	19	20
A	B	60 H	66 H	52 H	66 H	52 33
C	D	40 66	40 60	33 60	50	80
E	F	H 52	H 52	H 80	60 H	H 40
		22	28	38	40	44
A	B	50 H	72 H	60 40	60 H	60 H
C	D	52 60	33 30	52	52 33	52 30
E	F	H 80	H 80	H 80	H 80	H 80

		9	10	11	12	14	18
A	B	53 H	50 H	50 H	55 H	55 H	57 H
C	D	80 63	80 72	80 72	70	40 60	63
E	F	H 50	H 30	H 33	40 H	H 70	60 H
		19	20	22	24	40	44
A	B	53 H	53 H	60 H	53 H	63 H	70 H
C	D	80 63	80 60	71 53	55	55 33	55 30
E	F	H 50	H 50	H 55	80 H	H 80	H 80

Fig. 20

Cylindrical Turning (Fig. 21)

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 hand wheel on the lathe saddle or the top slide, or by activating the automatic feed. The cross feed for the depth of cut is achieved using the cross slide.

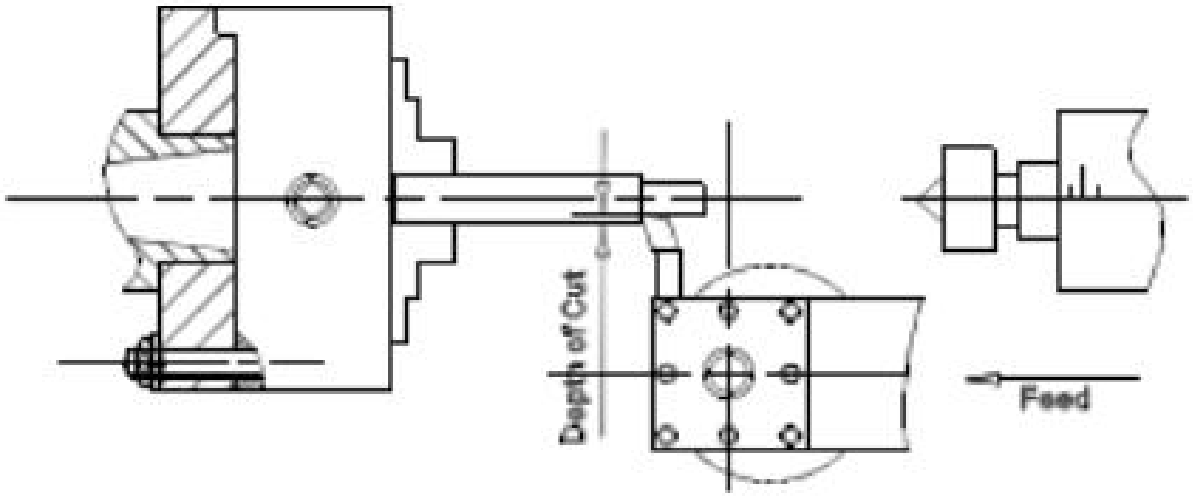


Fig. 21

End turning (Fig. 22)

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 hand wheel. The cross feed for cut depth is made with the top slide or lathe saddle.

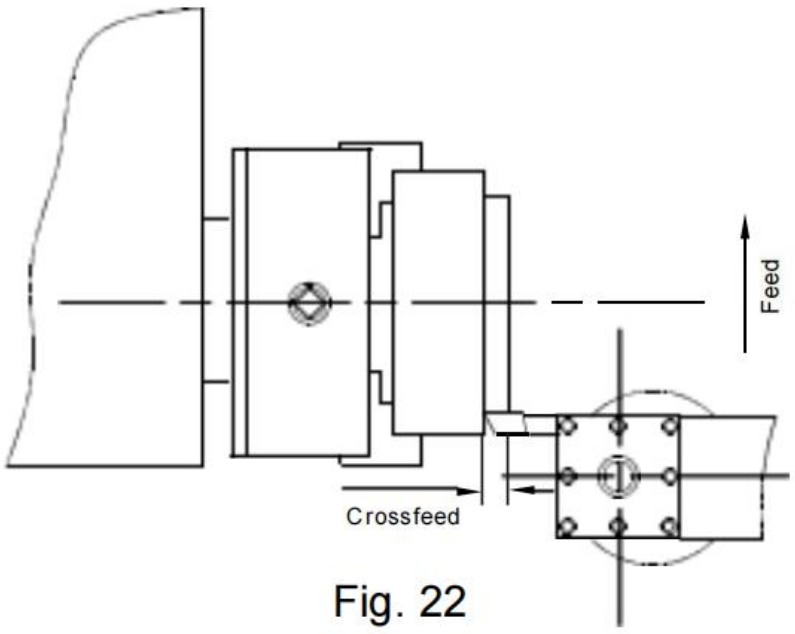
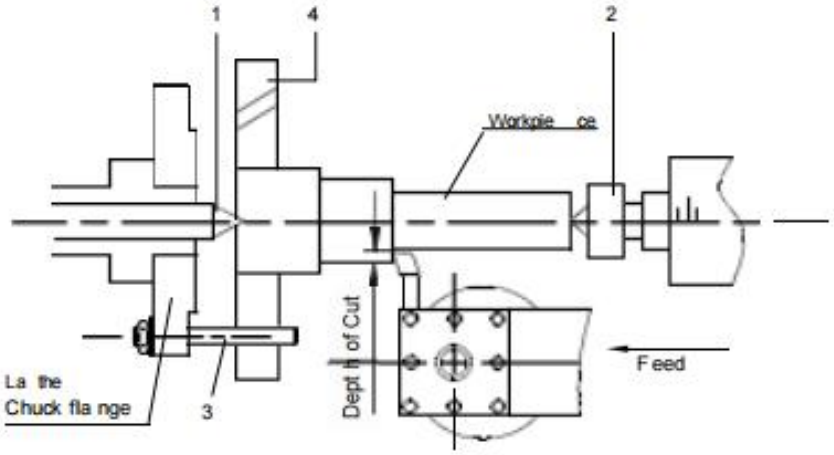


Fig. 22

Turning: Slender shaft (Fig. 23)

For turning between centers, it is necessary to remove the chuck from the spindle. Fit the M. T. 3 center into the spindle nose and the M.T. 2 center into the tail stock. Mount the workpiece fitted with the driver dog between the centers. The driver is driven by a catch or face plate.

Note: Always use a small amount of grease on the tail stock center to prevent center tip from overheating.



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

Fig. 23

Taper Turning Using Tail stock Nff-Ret

Adjust the deviation between the tailstock sleeve center and the spindle center to complete the taper turning. The angle depends on the length of the workpiece.

To off-set the tail stock, loosen locking screw (A, Fig.24).
Unscrew the set screw (B, Fig.24) on right end of the tailstock. Loosen the front adjusting screw(C, Fig.24) and take up the same amount by tightening the rear adjusting screw (D, Fig.24) until the desired taper has been reached. The desired cross- adjustment can be read off the scale. (E, Fig.24). First re-tighten the set screw (B, Fig,24) and then the two (front and rear) adjusting screw to lock the tail stock in position. Re-tighten the locking screw (A, Fig.24) of the tailstock. The workpiece must be held between to centers and driven by a face plate and driver dog.

After taper turning, the tailstock should be returned to its original position according to the zero position on the scale of tail stock. (E, Fig.24)

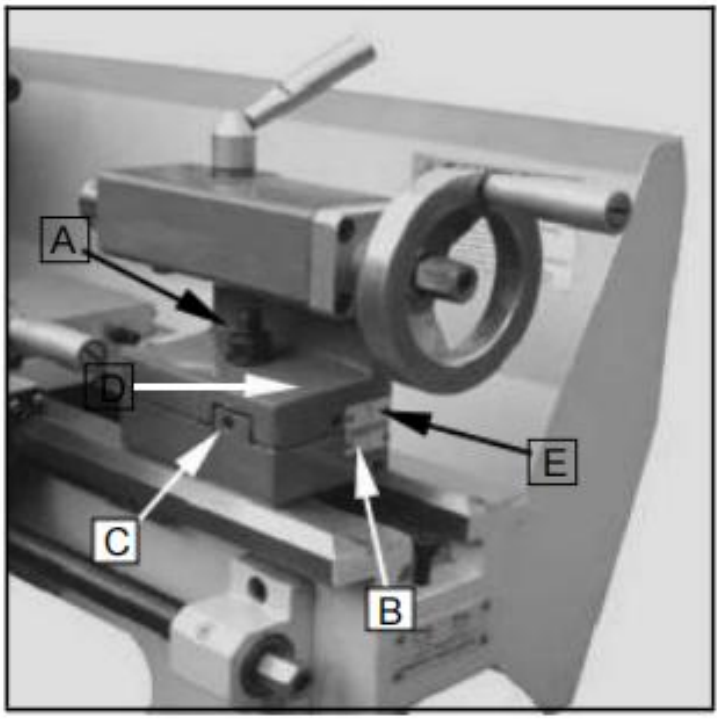


Fig. 24

Thread Cutting

Set the machine up to the desired thread pitch (according to the threading chart, Fig.20). 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 run out.

- 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 sample shape as the thread, must be absolutely rectangular and clamped so that it coincides exactly with the turning enter.
- 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 lead screw 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 cut only on one thread flank with each passage. Keep cutting the thread free until you have almost reached the full depth of thread.

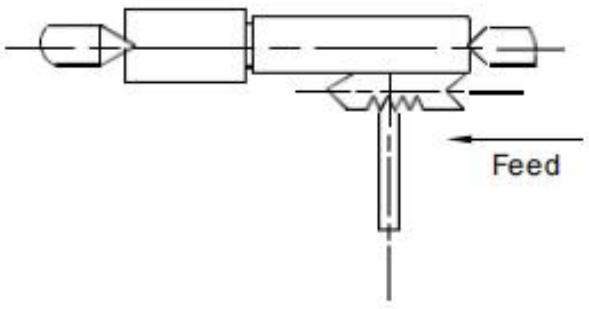


Fig. 25

Three Jaw Universal Lathe Chuck

Using this universal chuck round triangular square hexagonal octagonal and twelve,cornered stock may be clamped. (Fig.26)

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 adjusts automatically and their operation becomes progressively Smoother.

Note:
For the original 3, jaw chuck that was mounted on the lathe the factory has mounted the chuck in the best way to guarantee the holding accuracy with two "0" mark (A) Fig.26 showed on the chuck and chuck flange.

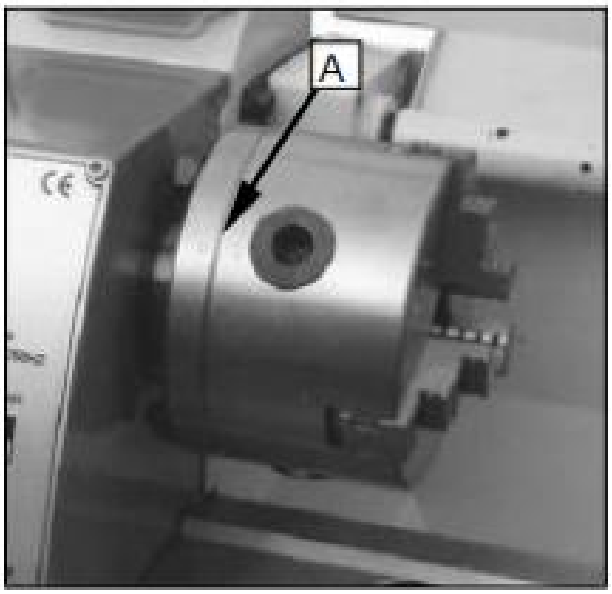


Fig. 26

There are two types of jaws: Internal and external jaws. Please note that the number of jaws fits with the number inside the chucks groove. Do not mix them together. When you are going to mount them please mount them in ascending order 0, 1 , 3 when you are going to take them out be sure to

take them out in descending order 3,1,0 one by one- After you finish this procedure rotate the jaws to the smallest diameter and check that the three jaws are well-fitted.

Four Jaw 1ndependent 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.27)

Fig. 27

Drill Chuck (optional)

Use the drill chuck to hold centering drills and twist drills in the tail stock- (B) (Fig.28)

Morse Taper Arbor (optional)

An arbor is necessary for mounting the drill chuck in the tailstock. It has a No. 1 Morse taper. (C) Fig.28

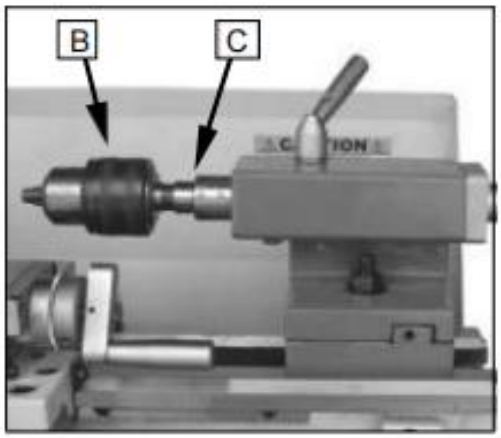


Fig. 28

Live Center (optional)

The live center is mounted in ball bearings- Its use is highly recommended for turning at speeds in excess of 6.RPM. (Fig.29)

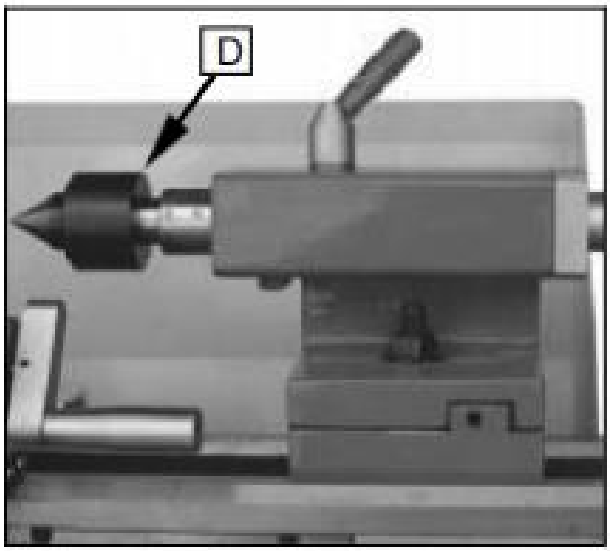


Fig. 29

Steady Rest

The steady rest serves as a support for shafts on the free tail stock end. For many operations the tail stock 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 functions as an end support, ensures chatter- free operation. The steady rest is mounted on the bed ways and is secured from below with a locking plate. The grease requires continuous lubrication at the contact points to prevent premature wear. (Fig.30)

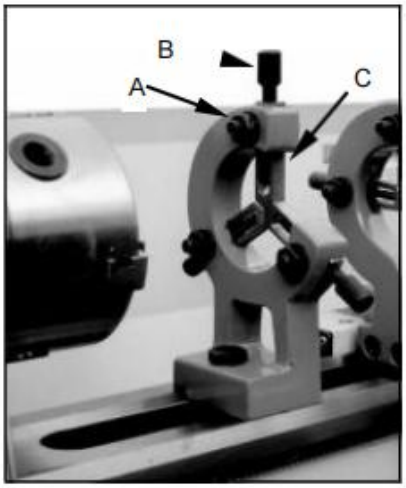


Fig. 30

Setting the Steady Rest

1. Loosen three hex nuts. (A, Fig.31)
2. Loosen knurled screw (B, Fig.36) and open the sliding fingers. (C, Fig.31) 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.31). 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 re-milled.

Follow Rest

The following rest is mounted on the saddle and follows the movement of the turning tool. Only two support blocks are required. The place of the third support block is taken by the turning tool. The following rest is used for turning operations on long, slender workpieces. It prevents flexing of the workpiece under pressure from the turning tool. (Fig.31)
Set the support blocks snug to the workpiece but not overly tight. Lubricate the support blocks during operation to prevent premature wear.

Fig. 31

ADJUSTMENTS

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

Main spindle Bearings

The main spindle bearings are adjusted at the factory. 1f end play becomes evident after considerable use, the bearings may be adjusted.

Fasten the slotted nut (A, Fig.32) on the back of the spindle, loosen the outer slotted nut (B, Fig.32). Adjust the slotted nut (A, Fig.32) until all end play is taken up. The spindle should still revolve freely. Fasten the slotted nut (A, Fig.32) again and tighten the outer slotted nut (B, Fig.32).

Caution: excessive tightening or preloading will damage the bearings.

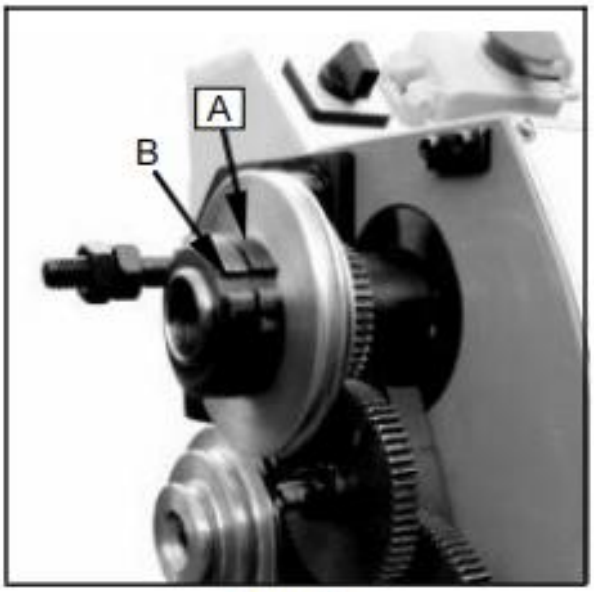


Fig. 32

Adjustment of Cross slide

The cross slide is fitted with a gib strip(C, Fig.33) and can be adjusted with screws (D, Fig.33) fitted with lock nuts. (E, Fig.33) Loosen the lock nuts and tighten the set screws until slide moves freely without play. Tighten lock nuts to retain adjustment.

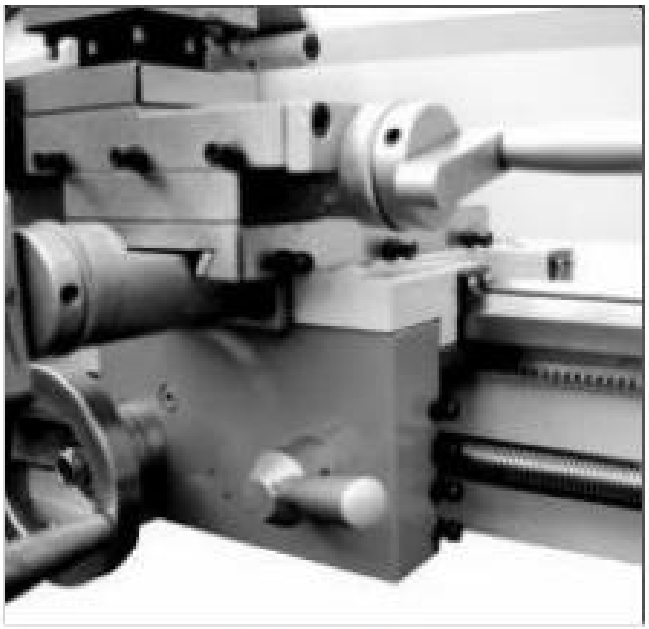


Fig. 33

Adjustment of Top slide

The top slide is fitted with a gib strip(F, Fig.34) and can be adjusted with screws (G, Fig. 34) fitted with lock nuts. (H, Fig. 34) Loosen the lock nuts and tighten the set screws until slide moves freely without play. Tighten lock nuts to retain adjustment.

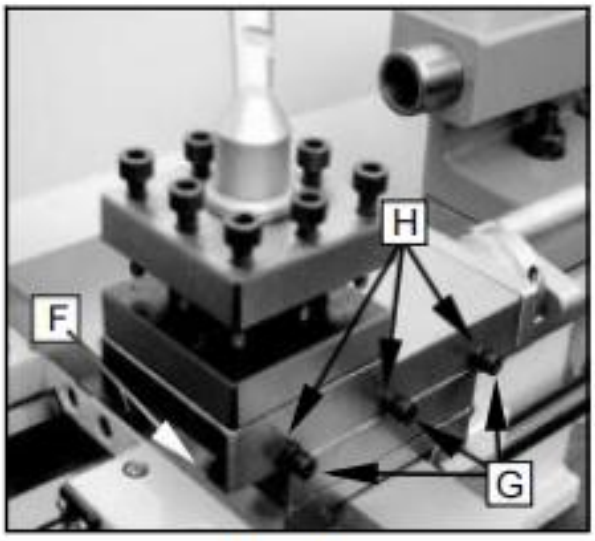


Fig. 34

Adjustment of Half Nut Guide

The half nuts engagement can be adjusted with screws (I, Fig.35) fitted with lock nuts (J, Fig.35). Loosen the nuts on the right side of the apron and adjust the control screws until both half nuts move freely without play. Tighten the nut.

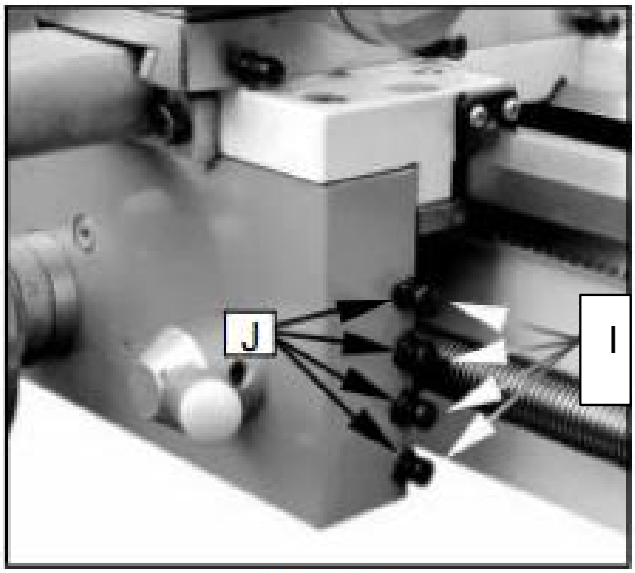


Fig. 35

LUBRICATION

CAUT10N

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

NOTES:

Lubricate all slideways lightly before every use. Lubricate the change gears and the lead screw slightly with grease.

1. **Carriage**

Lubricate Four oil ports (A, Fig. 36) with 20W machine oil once daily.

2. Cross Slide

Lubricate two oil ports (B , Fig. 36) with 20W machine oil once daily.

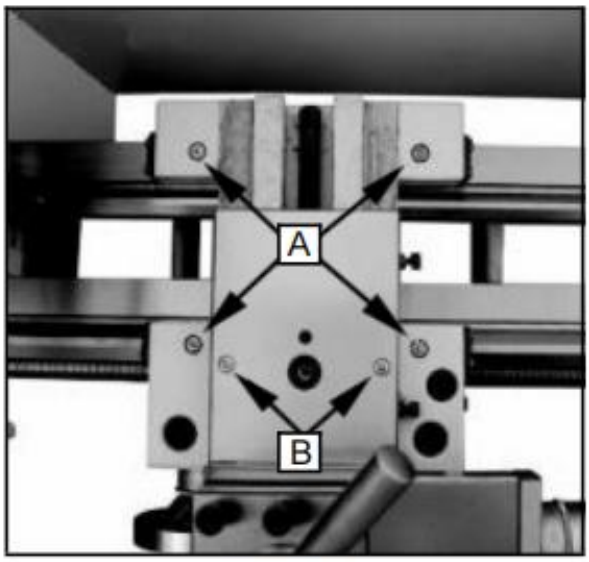


Fig. 36

3. Lead screw

Lubricate the left oil port (C Fig. 37) and right oil port (D, Fig.38) with 20W machine oil once daily.

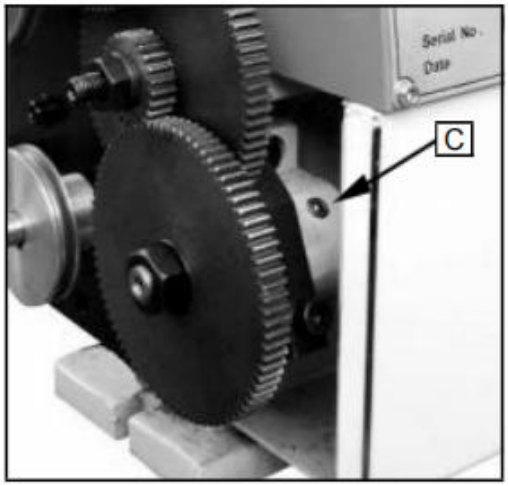


Fig. 37

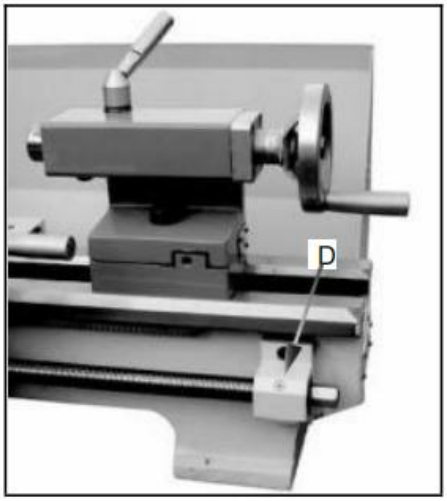


Fig. 38

Electricity

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!

The WM210V Lathe is rated at 7 50W, 1PH, 220V only. Confirm power available at the lathe' s location is the same rating as the lathe. Using the wiring diagram (Fig. 39) for connecting the lathe to the mains supply. Make sure the lathe is properly grounded**.**

The following is wiring diagram of the lathe: (Fig.39)

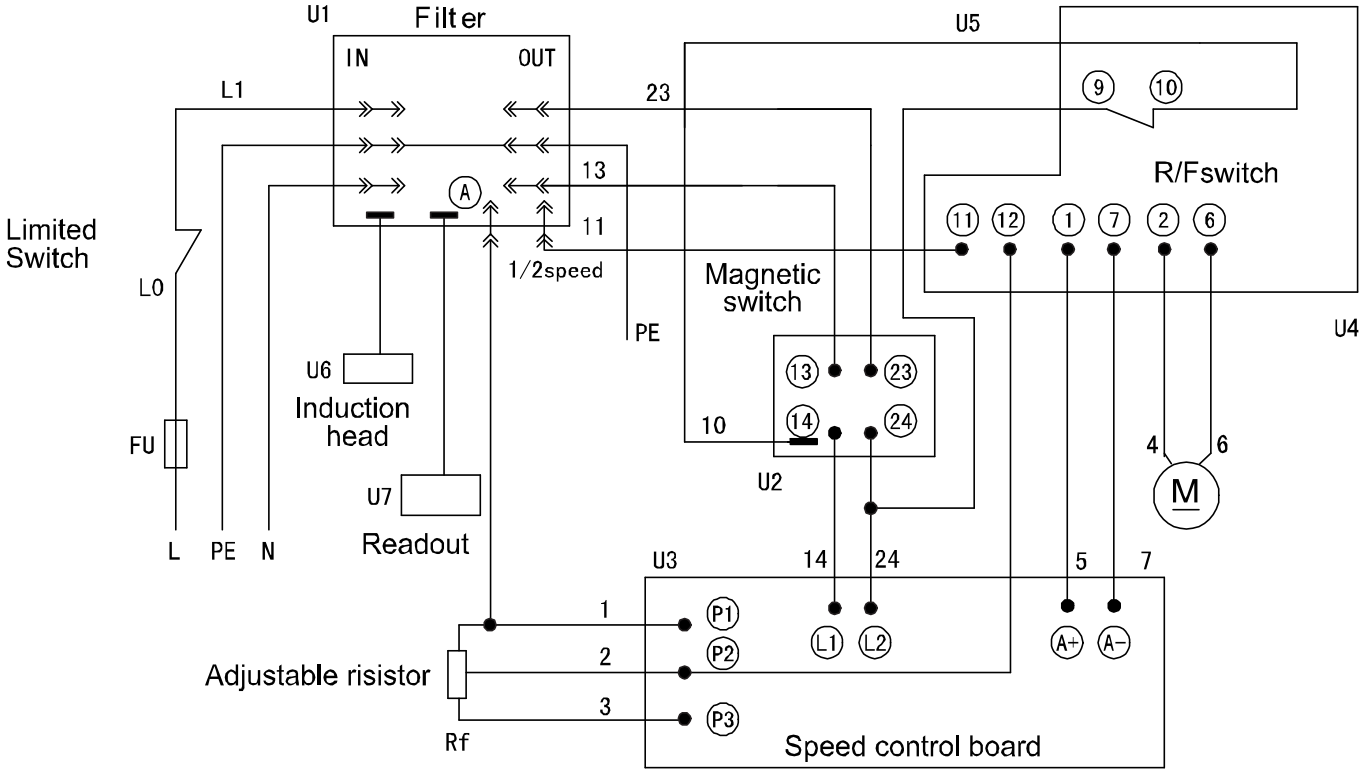


Fig. 39

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 slide ways lightly before every use. The change gears and the lead screw must also be lightly lubricated with grease.
3. During the operation. The chips which fall onto the sliding surface should be cleaned timely. and the inspection should be often made to prevent chips from 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 parts 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.

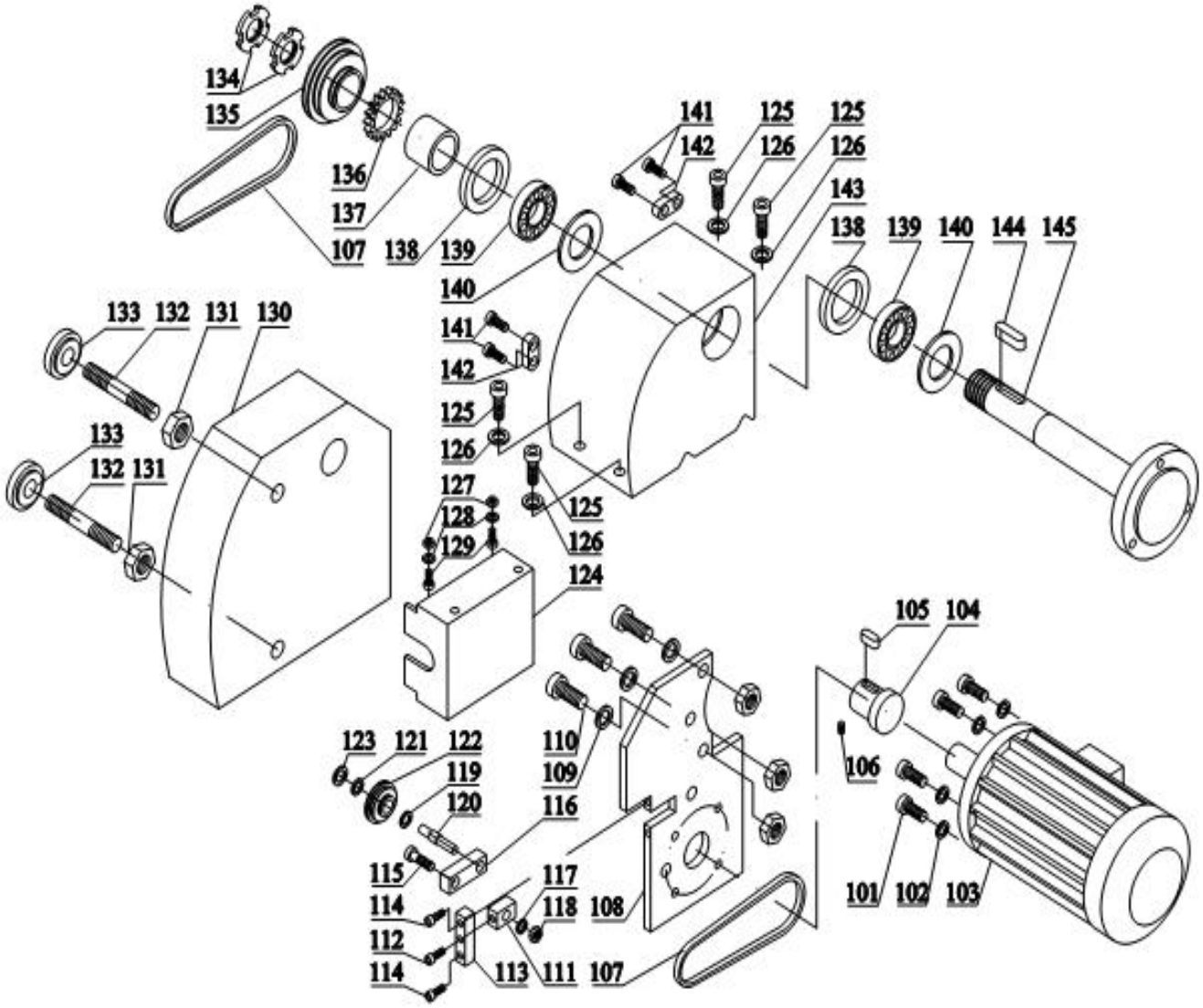
TROUBLE SHOOTING

Problem	Possible Reason	Elimination
Surface of work piece too rough	Tool blunt	Re.sharpen tool
	Tool springs	Clamp tool with less overhang
	Feed too high	Reduce feed
	Radius at the tool tip too small	Increase radius
workpiece becomes coned	Centers are not aligned (tail stock has offset)	Adjust tail stock to the center
	Top slide not aligned well (cutting with the top slide)	Align top slide well
Lathe is chattering	Feed too high	Reduce feed
	Slack in main bearing	Adjust the main bearing
Center runs hot	Work piece has expanded	Loosen tail stock center
Tool has a short Life	Cutting speed too high	Reduce cutting speed
	Cross feed too high	Lower cross feed(finishing allowance should not exceed 0.5mm)
	Insufficient cooling	More coolant
Flank wear too high	Clearance angle too small	Increase clearance angle
	Tool tip not adjusted to center high	Correct height adjustment of the tool
Cutting edge breaks off	Wedge angle too small (heat build.up)	Increase wedge angle
	Grinding crack due to wrong cooling	Cool uniformly
	Excessive slack in the spindle bearing	Adjust the slack in the spindle bearing
	Arrangement (vibrations)	Arrangement
Cut thread is wrong	Tool is clamped incorrectly	Adjust to the center
Cut thread is	Been started grinding the wrong way	Grind angle correctly

wrong	**Wrong pitch**	**Adjust the right pitch**
	Wrong diameter	**Turn the work piece to the correct diameter**
Spindle does not activate	**Emergency stop switch activated**	**Unlock emergency stop switch**

BREAKDOWN DIAGRAM AND PARTS LIST

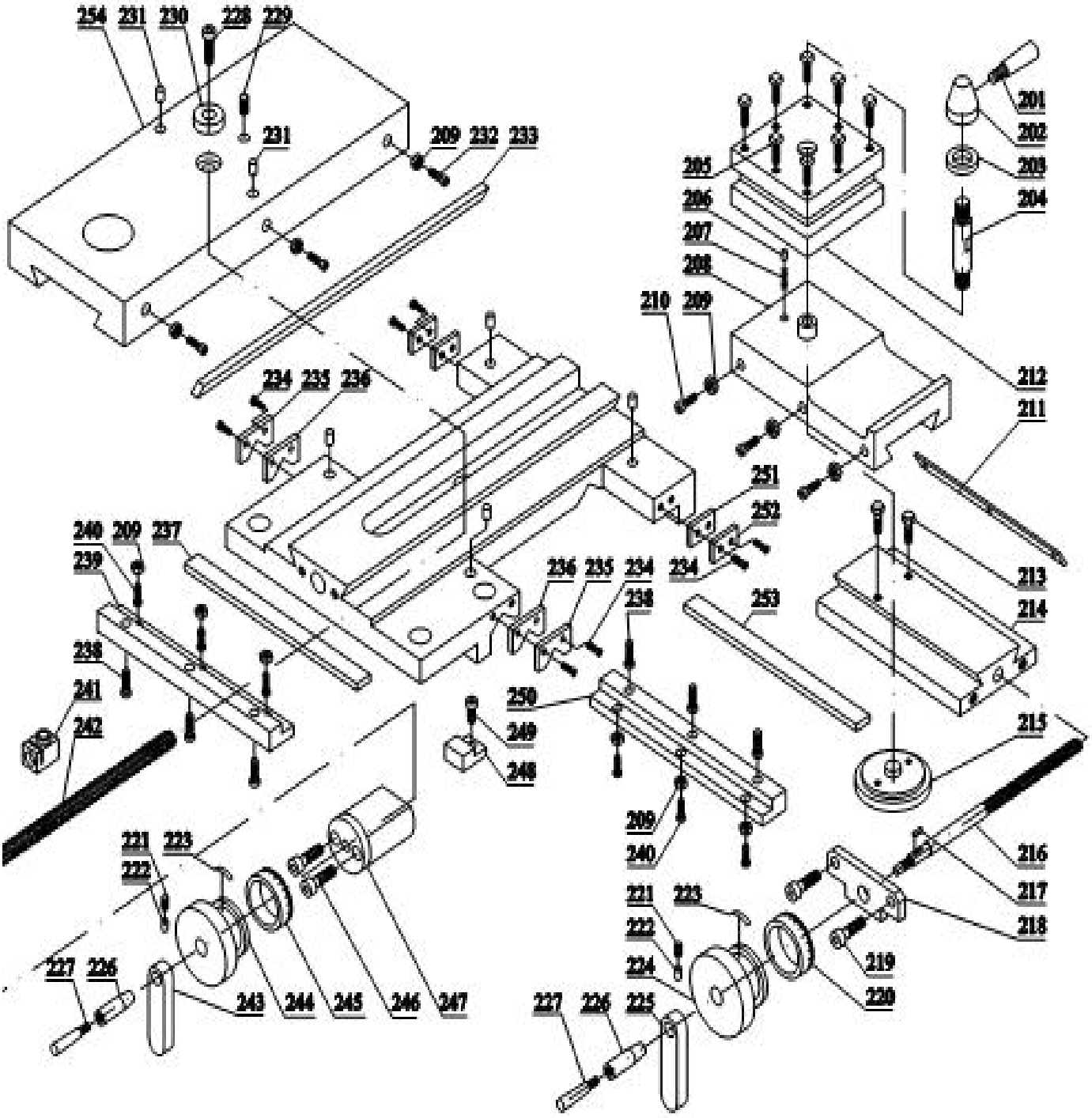
Headstock Assembly



Parts No.	Description	specification	Qty		Parts No.	Description	specification	Qty
101	Screw	M5x25	4		123	Spring Ring	ϕ 22xl	l
102	Washer		4		124	Cover		l
103	DC Motor	83ZY005A	l		125	Screw	M8x25	4
104	Motor Puller		l		126	Washer	8	4
105	Key	A4x4x20	l		127	Nut	M8	2
106	Screw	M6x8	l		128	Washer	8	2
107	Belt	Gates-5M- 360	2		129	Screw	M8	2
108	Bracket Plate		l		130	Belt Cover		l
109	Washer	8	3		131	Nut	Ml0	2
110	Screw	M8x20	3		132	Bolt	Ml0x80	2
111	Block		l		133	Nut	Ml0	2
112	Screw	M6x30	l		134	Nut	M27xl	2
113	Block		l		135	Spindle Puller		l
114	Screw	M6x20	l		136	Gear	40T	l
115	Bolt		l		137	Separator		l
116	Block		l		138	Gasket		l
117	Washer		l		139	Bearing	30206	l
118	Nut		l		140	Grease Cover		l
119	Spring Ring	ϕ8x0.8	l		141	Screw	M4xl0	2
120	Bolt		l		142	Block		l
121	Bearing		l		143	Headstock		l
122	Pulley		l		144	Key	A3x3xl5	l

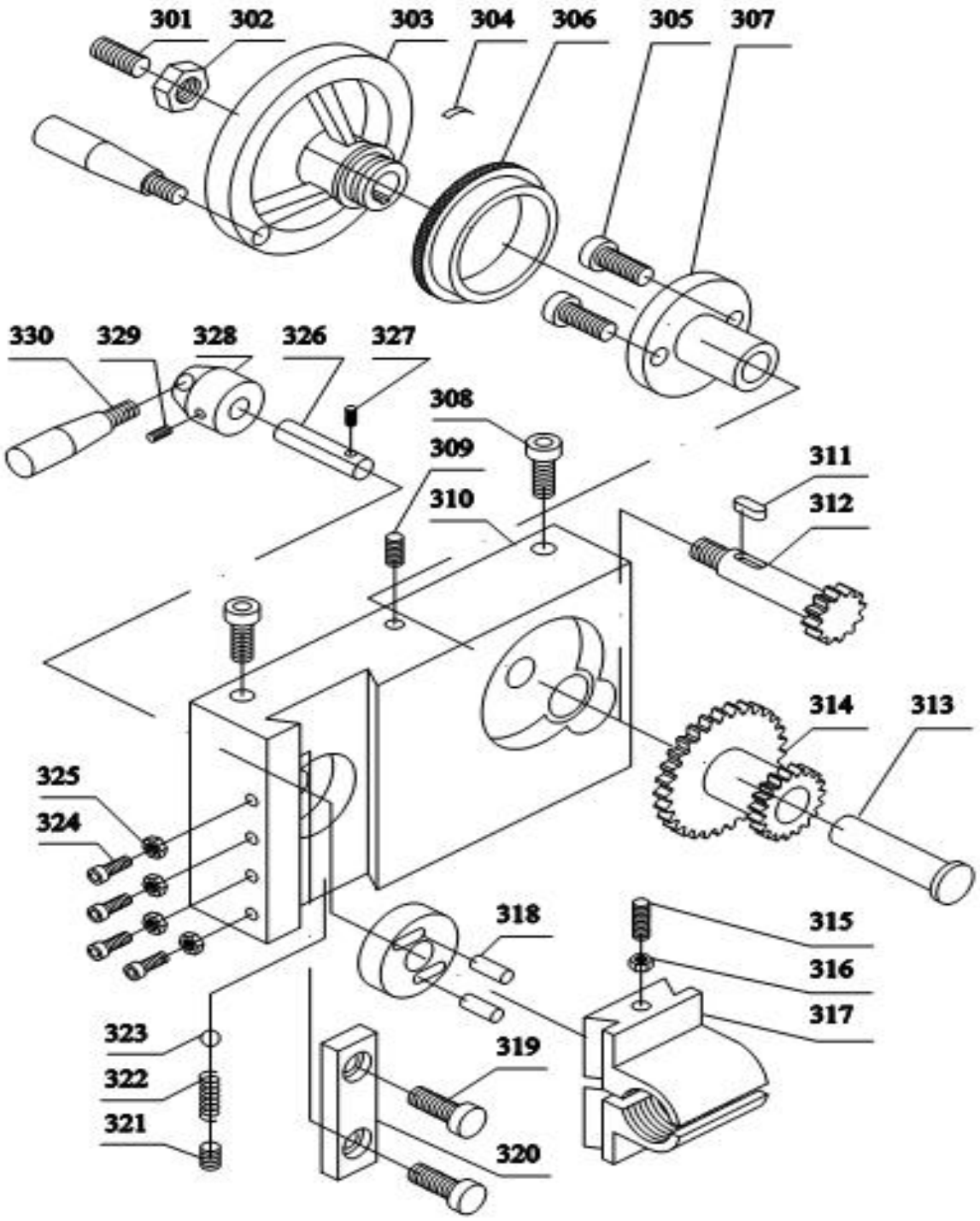
BREAKDOWN DIAGRAM AND PARTS LIST

Top slide, Cross slide, Carriage Assembly



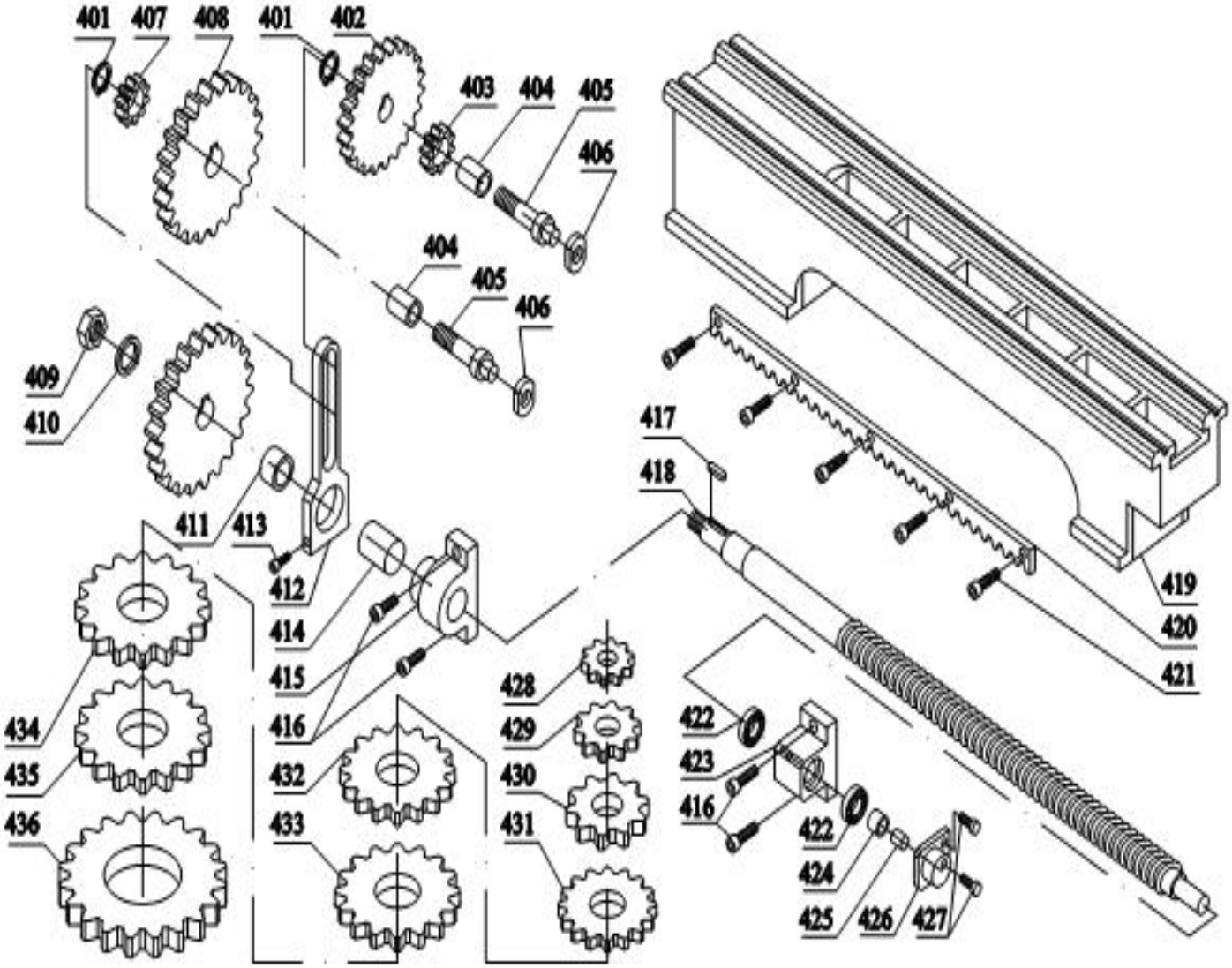
Parts No.	Description	Specification	Qty		Parts No.	Description	Specification	Qty
201	Handle		1		228	Screw	M4x8	1
202	Handle Base		1		229	Screw	M5x10	1
203	Washer		1		230	Bush		1
204	Bolt		1		231	oil Cup	Φ5	2
205	Screw	M6x25	1		232	Screw	M4x20	3
206	Pin		1		233	Gib		1
207	Spring	5x10x1	1		234	Screw		8
208	Longitudinal Slide		1		235	Wiper Cover		2
209	Nut	M4	9		236	Wiper		2
210	Screw	M4x14	3		237	Gib		1
211	Gib		1		238	Screw		6
212	Top Rest		1		239	Sliding Block		1
213	Screw	M5x30	1		240	Screw	M4x10	6
214	Swivel Base	M6x20	1		241	Nut		1
215	Micrometer Pan		1		242	Lead Screw		1
216	Lead Screw		1		243	Handle Block		1
217	Key	3x12	1		244	Handle wheel		1
218	Bracket		1		245	Collar		1
219	Screw	M5x12	2		246	Screw	M6x50	2
220	Collar		1		247	Bracket		1
221	Screw		2		248	Clamping Plate		1
222	Pin		2		249	Screw		1
223	Spring		2		250	Sliding Block		1
224	Hand wheel		1		251	Wiper		2
225	Handle Block		1		252	Wiper Cover		2
226	Handle Sleeve		2		253	Gib		1
227	Handle		2		254	Cross Slide		1

Apron Assembly



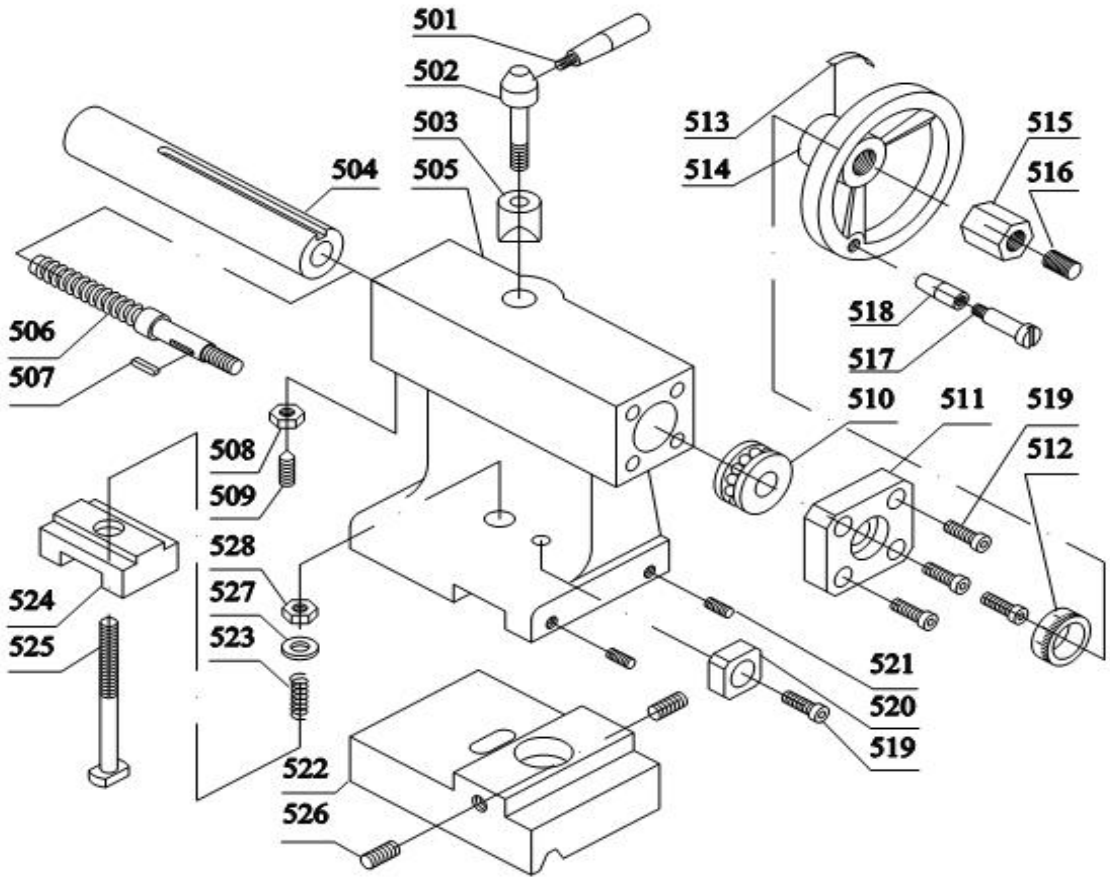
Parts No.	Description	Specification	Qty		Parts No.	Description	Specification	Qty
301	Screw	M8x8	1		317	Half Nut		1
302	Nut	M8	1		318	Pin	∅ 4x10	1
303	Hand wheel		1		319	Screw	M4x10	2
304	Spring		1		320	Block		1
305	Screw	M5x10	2		321	Screw	M6x8	1
306	Collar		1		322	Spring	0.6x 3.5x12	1
307	Bracket		1		323	Ball	∅ 4.5	2
308	Screw	M8x25	2		324	Screw	M4x12	4
309	Screw	M5x8	1		325	Nut	M4	1
310	Apron		1		326	Shaft		1
31 1	Key	A3x3x8	1		327	Pin	∅3x30	2
312	Gear Shaft	14T	1		328	Hand Base		1
313	Shaft		1		329	Screw	M5X6	1
314	Gear	44/2It	1		330	Handle		1
315	Screw	M4x35	1		331	Handle		1
316	Nut	M4	1		317	Half Nut		1

Bed, hanging wheel parts Abssemaly



Parts No.	Description	Specification	Qty		Parts No.	Description	Specification	Qty
401	Spring Ring		2		419	Bed		1
402	Gear	60T	1		420	Rack		1
403	Gear	20T	1		421	Screw	M2x12	5
404	Bush		1		422	Bearing	51100	2
405	Bolt		1		423	Right Support		1
406	Nut	M8	1		424	Nut		1
407	Gear	24T	1		425	Screw	M8x6	1
408	Gear	80T	1		426	Cover		1
409	Nut	M10	1		427	Screw	M4x12	2
410	Washer	10	1		428	Gear	25T	1
411	Bush		1		429	Gear	30T	1
412	Frame		1		430	Gear	33T	1
413	Screw	M6x35	1		431	Gear	35T	1
414	Bush		1		432	Gear	40T	1
415	Left Support		1		433	Gear	45T	1
416	Screw	M6x14	2		434	Gear	50T	1
417	Key	A3x3x16	1		435	Gear	52T	1
418	Lead Screw		1		436	Gear	66T	1

tail stock Assembly



Parts No.	Description	Specification	Qty		Parts No.	Description	Specification	Qty
501	Handle		1		515	Nut	M8	1
502	Handle Base		1		516	Screw	M8x6	1
503	Lock Base		1		517	Handle Screw		1
504	Sleeve		1		518	Handle Sleeve		1
505	tail stock		1		519	Screw	M5x12	1
506	Lead Screw		1		520	Adjustment Block		1
507	Key	A3x3x8	1		521	Screw	M6x12	1
508	Nut	M6	1		522	Base		1
509	Screw	M6x14	1		523	Spring		1
510	Bearing	51100	1		524	Clamping Plate		1
511	Housing		1		525	Bolt	M10x70	1
512	Collar		1		526	Screw	M6x16	2
513	Spring		1		527	washer	Ø 10	1
514	Hand wheel		1		528	Nut	M10	1

Importer: WAITCHX
Address: 250 bis boulevard Saint-Germain 75007 Paris
Importer: FREE MOOD LTD
Address: 2 Holywell Lane, London, England, EC2A 3ET

Manufacturer: Anhui Chizhou Weiss E&M Co. , Ltd.

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