

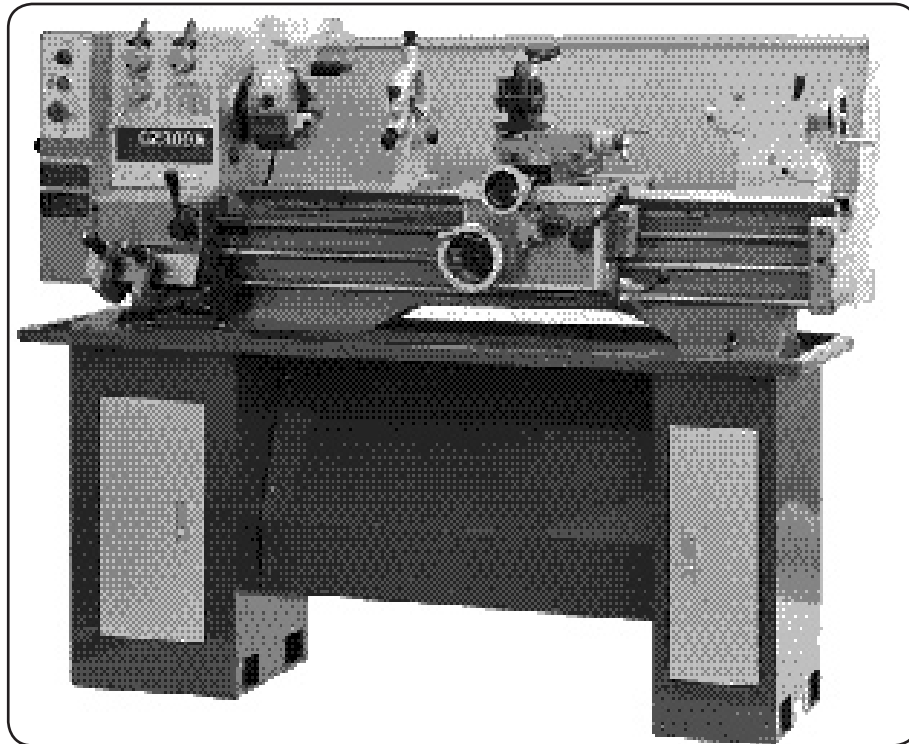
CENTRAL MACHINERY

®

12" x 37" Gap Bed Lathe

Model 43681

ASSEMBLY AND OPERATION INSTRUCTIONS



(Stand Not Included)

Due to continuing improvements, actual product may differ slightly from the product described herein.



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND
ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

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For technical questions or replacement parts, please call 1-800-444-3353.

REV 12/06; 1/07

SPECIFICATIONS

Motor: 2HP, 1700 RPM, Reversible Power Required: 220 V / 60 Hz, 1-Phase Drive: Belt/Gear Swing Over Bed: 12" Swing Over Gap: 18.8" Width of Gap: 7" Center to Center: 37" Spindle Bore Taper: MT5 Spindle Bore: 1.5" Three Jaw Chuck Diameter: 6" Spindle Speed: 18 Speed Spindle Speed Range: 72; 82; 147; 168; 240; 275; 325; 370; 415; 476; 660; 760; 850; 975; 1080; 1240; 1380; 1600 Bed Way Heat Treatment: 46-52 HRC Tool Post Type: 4-Position	Max. Tool Shank Size: 3/4" x 3/4" Lathe Bit Tool Post Travel: Max. 3.5" , 0.001" per scale Cross Slide Travel: 5.9" , 0.002" per scale (Total Cut) Longitudinal Feed Range: 0.005" - 0.0165" /R (16 Steps) Cross Feed Range: 0.0014" - 0.0049 /R (16 Steps) Tailstock Travel: Max 3.6" Tailstock Spindle Bore Taper: MT3 Thread Indicator: Yes Thread Feeding: SAE: 4 - 112 TPI, Total 40 Setting Metric: 0.25 - 7.5 mm, Total 19 Setting Net Weight: 838 lb.
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ACCESSORIES

(1) Steady Rest (1) Follow Rest (2) Dead Center: #3 (1) Center Sleeve: #5 / 3 (1) Live Center: MT3 (1) 6" 4-Jaw Chuck (1) Back Plate for 4-Jaw Chuck (1) Tool Post Wrench (1) Double End Wrenches 13-16	(5) Hex Wrenches (3, 4, 5, 6, 8 mm) (1) Screwdriver (1) Oil Gun (5) Changing Gears: T30, T32, T40 (2 pcs), T127/120 (1) Face Plate 9-3/4" (1) Splash Guard (1) Oil Tray
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SAVE THIS MANUAL

You will need the manual for the safety warnings and cautions, assembly instructions, operating procedures, maintenance procedures, trouble shooting, parts list, and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep both this manual and your invoice in a safe, dry place for future reference.

READ ALL INSTRUCTIONS BEFORE USING THIS TOOL!

NOTICE

The Warnings, Cautions, and Instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAFETY WARNING & CAUTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS TOOL!

1. **KEEP WORK AREA CLEAN.** Cluttered areas invite injuries.
2. **OBSERVE WORK AREA CONDITIONS.** Do not use tools in damp, wet, or poorly lit locations. Don't expose to rain. Keep work area well lit. Do not use electrically powered equipment in the presence of flammable gases or liquids.
3. **KEEP CHILDREN AWAY.** Children must never be allowed in the work area. Do not let them handle machines, tools, or equipment.
4. **STORE IDLE EQUIPMENT.** When not in use, tools must be locked up in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **DO NOT FORCE THE TOOL.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool's capacities.
6. **USE THE RIGHT TOOL FOR THE JOB.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. Do not modify this tool, and do not use this tool for a purpose for which it was not intended.
7. **DRESS PROPERLY.** Do not wear loose clothing or jewelry, as they can be caught in moving parts. Non-skid footwear is recommended. Wear restrictive hair covering to contain long hair. Always wear appropriate work clothing.
8. **USE EYE, EAR AND BREATHING PROTECTION.** Always wear ANSI approved impact safety goggles if you are producing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists. Use ANSI approved ear protection when working in a loud or noisy environment.
9. **DO NOT ABUSE THE POWER CORD.** Protect the power cord from damage, either from impacts, pulling or corrosive materials. Do not yank machine's cord to disconnect it from the receptacle.
10. **DO NOT OVERREACH.** Keep proper footing and balance at all times. Do not reach over or across running machines.
11. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect power cord periodically and, if damaged, have it repaired by an authorized technician. Control handle and power switch must be kept clean, dry, and free from oil and grease at all times.
12. **REMOVE ADJUSTING KEYS AND WRENCHES.** Be sure that keys and adjusting wrenches are removed from the tool or machine work surface before operation.

13. **AVOID UNINTENTIONAL STARTING.** Be sure that you are prepared to begin work before turning the start switch on.
14. **STAY ALERT.** Watch what you are doing. Do not operate this machine when you are tired.
15. **DO NOT OPERATE THIS MACHINE WHILE UNDER THE INFLUENCE OF ALCOHOL, DRUGS, OR PRESCRIPTION MEDICINES.**
16. **CHECK FOR DAMAGED PARTS.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts, any broken parts or mounting fixtures, and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn on and off properly.
17. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts intended for use with this tool. Replacement parts are available from Harbor Freight Tools. Use of any other parts will void the warranty.

SPECIAL WARNINGS WHEN USING THIS BENCH LATHE

Using this Bench Lathe may create special hazards.
Take particular care to safeguard yourself and those around you.

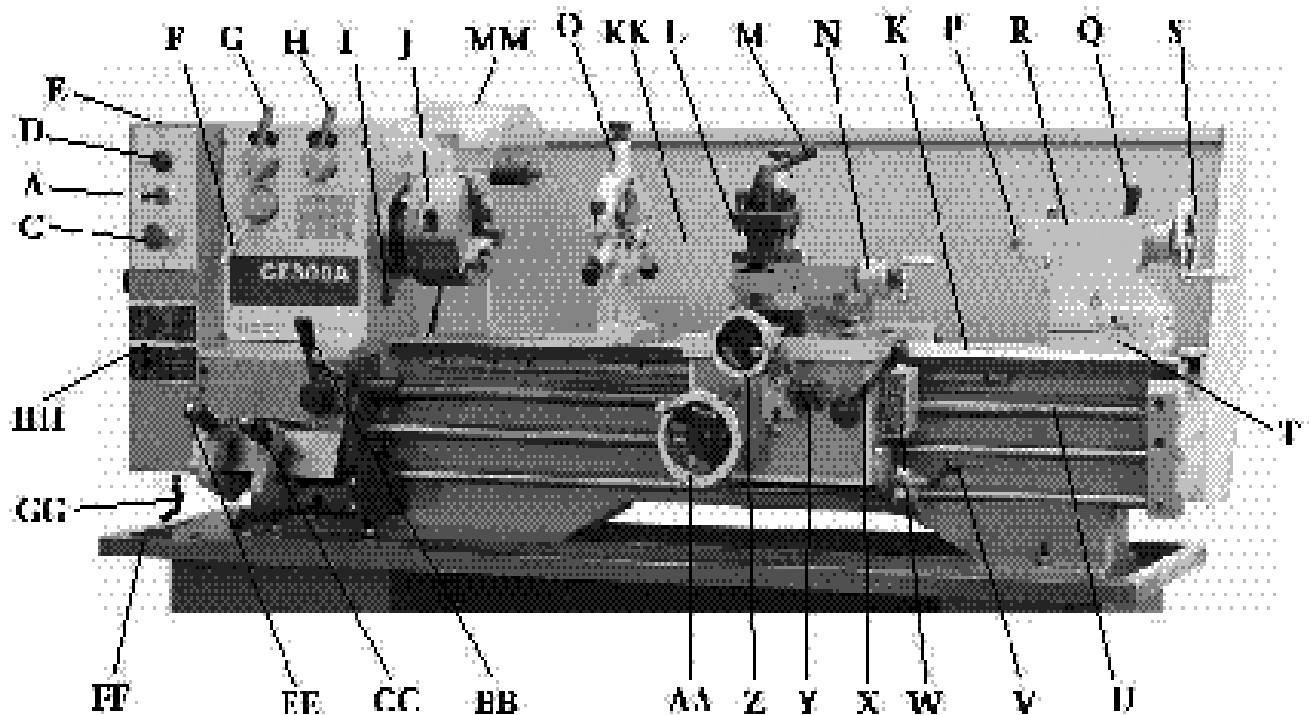
Electrical Safety. *Never operate any tool if there is an electrical hazard.* Never operate an electrical tool in wet conditions. Never operate a tool with an improper electrical cord or extension cord. Never operate an electrical tool unless you are plugged into a properly grounded outlet, which supplies 115 Volts at 60 Hz. We recommend you use a circuit which is protected by an appropriate circuit breaker.

Ejected Material. *Use safe practices to avoid injury from ejected material.* Because the lathe and the workpieces turn at high speed, there is a danger of being injured by materials that may be ejected. Always wear ANSI-certified eye protection. Never attempt to work on any item if it is not adequately held. Always stand to one side of the plane in which the materials are spinning, to avoid being hit if an item is ejected. Never allow bystanders to be in the proximity of the lathe while in operation.

Entanglement. *Use extreme caution to prevent loose materials from being caught in the machine.* Never operate this lathe with loose clothing, long hair, jewelry, or other items which may become caught in the tools or workpieces. In case of entanglement, press the OFF switch immediately.

NOTICE: No list of warnings can be all inclusive. The operator must supply common sense, and operate this tool in a safe manner.

BASIC COMPONENTS AND FEATURES OF YOUR #43681 GAP BED LATHE



Reference	Description
A	Press Switch
C	Emergency Stop Control
D	Indicator Light
E	Gear Box
F	Direction Control
G	Speed Control A
H	Speed Control B
I	Oil Gauge
J	Chuck
K	Bedway
L	Tool Holder
M	Tool Post Clamping Lever
N	Compound Slide
O	Steady Rest
P	Tailstock Quill
Q	Tailstock Clamping Lever
R	Tailstock
S	Tailstock Handwheel

Reference	Description
T	Tailstock Base
U	Lead Screw
V	Control Lever
W	Thread Dial
X	Half Nut Lever
Y	Cross/Longitudinal Feed Lever
Z	Cross Slide Handwheel
AA	Saddle Handwheel
BB	Feedrod & Leadscrew Exchange Lever
CC	Change Gear Control A
EE	Change Gear Control B
FF	Oil Tray
GG	Power Cord
HH	Leadscrew Chart
KK	Splash Guard
MM	Chuck Protection Cover

Parts references in this text:

When parts are identified with **letters**, please refer to the diagram on this page. When parts are identified with **numbers**, refer to parts lists and diagrams starting on page 16.

UNPACKING, ASSEMBLY, AND SET UP.

*Basic assembly and adjustment of your new lathe was completed before being shipped.
Final assembly and adjustments must be made before operating your new lathe.*

First find a suitable location for your lathe.

1. The floor or work table which you place your lathe on must be level, solid, and resistant to vibration.
2. Your lathe should be positioned in an area which is protected from the weather, especially water and moisture.
3. You should provide good light to work in, and adequate space to operate and maintain the machine, as well as to handle work materials which will be loaded in the machine.
4. You will need an appropriate power supply to operate the machine, which requires 220 V~, 60 Hz, single phase current, and must be protected by a suitable circuit breaker.



Fig.1 Mounting bolts in the headstock.

WARNING: Consult a licensed electrician if you are not completely sure that your power supply is correct and safe.

Complete Assembly.

You will have to assemble the lathe onto the oil tray (FF) and then onto a bench top (not included) or metal stand.

Please note: The bench top must be able to withstand the weight of the Lathe (838 lb.) as well as the weight of the workpiece. Do not exceed the maximum weight capacity of 1320 lb.

If you choose to use a metal stand with this Lathe, the only Stand that will fit with this Lathe is SKU 95647 (sold separately).

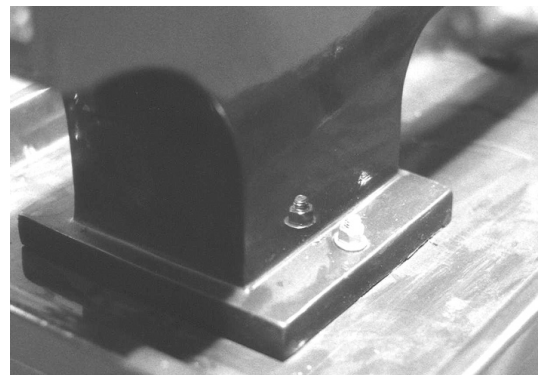


Fig.2 Mounting bolts in the tailstock.

1. Check to be sure that the bench is level and stable on the shop floor. If you need to repair the floor, do it now to be sure you have a solid, level surface to mount the machine.
2. Once the work bench is positioned properly on a solid level floor, place the oil tray (FF) on the bench. Using the mounting holes on the oil tray (FF) as reference, drill matching 1/2" holes into the wood bench. Always check to make sure no obstructions are in the drilling path.
3. Place the angled iron levelers between the oil tray (FF) and the bench top. Check the level and position of the bench top again to be sure that when the Lathe is positioned on the bench and oil tray (FF) it will be level, solid and aligned with the mounting holes in the bench and tray.
4. Using a drill and other hardware (not included) bolt the work bench to the floor before putting Lathe on the workbench to keep the bench and Lathe in place during use.

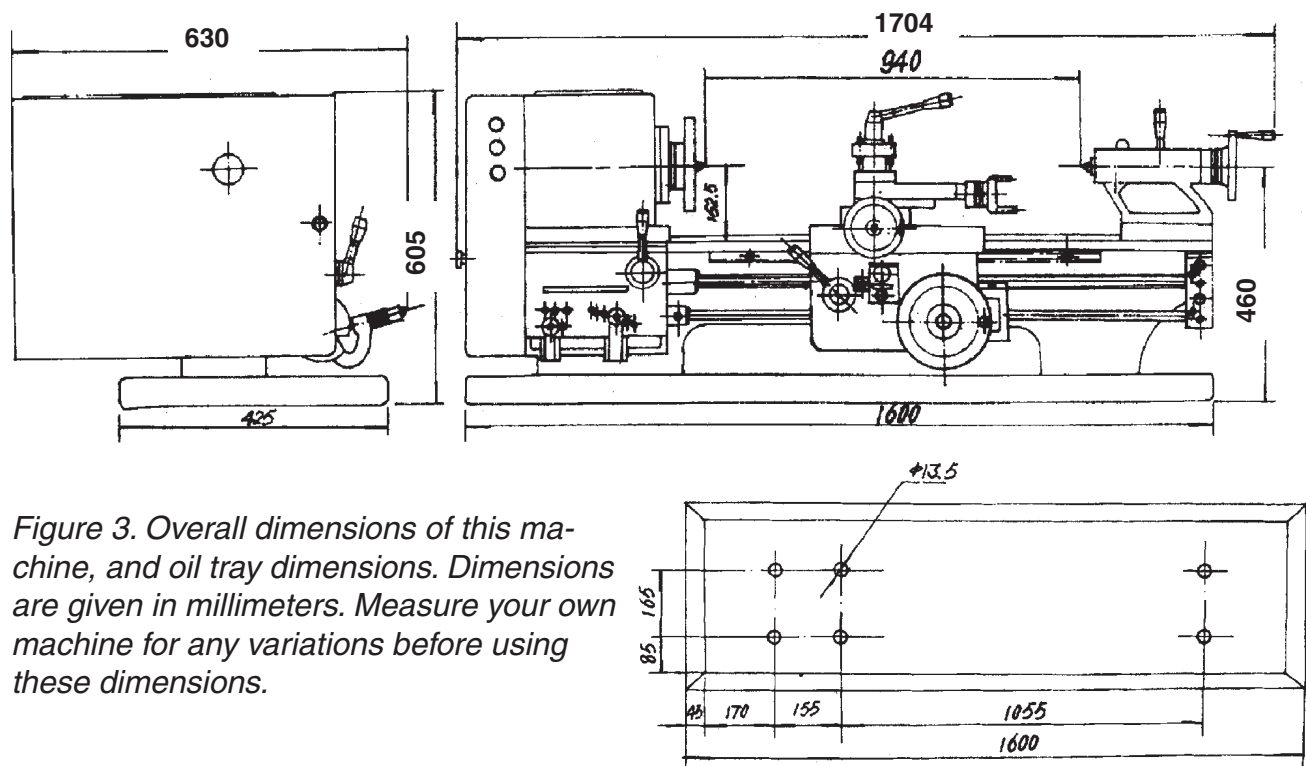
HOISTING AND LEVELING THIS MACHINE

WARNING: DO NOT ATTEMPT TO LIFT THE LATHE BY YOURSELF.

This tool weighs over 800 lb., and cannot be lifted safely by one or several strong men. Be sure this lathe is balanced on the hoist or lift you will use to move it before moving.

1. Before hoisting, lifting or moving this machine, move the tailstock and apron to the far right end of the bedway (away from the headstock) and lock them in place there. This will help to balance the overall mass of the machine near the center.
2. Use pads (not included) to protect the lathe from damage by the equipment used to hoist it.
3. Use a hydraulic lift, fork lift, or hoist to position the lathe onto the bench (or SKU 95647 Stand).
4. When the lathe is positioned on the oil tray and bench, align the mounting holes and drop in the mounting bolts.
5. Check the level of the machine. Using a spirit level, check to be sure that the bed of the lathe is level both horizontally and front to back. If there is any out of level, correct it now. Depending on your installation, use the angled iron levelers to adjust the machine into exact level front to back and side to side. Check both ends of the tool before being satisfied. Be sure the machine is level, positioned solidly, and is resistant to vibration.
6. Fasten the lathe to the bench and oil tray (FF) by inserting a bolt through a lock washer from the inside of the bench and upward through the oil tray and lathe. Fasten with a washer and nut. Repeat this for each of the four mounting holes in the headstock, and both mounting holes in the tailstock. Tighten securely. Recheck and readjust level if required.

Note: Periodically recheck the level of the machine to ensure that it remains level while in use.



THE HEADSTOCK

The headstock includes a Gear box (E) which contains gears and a belt drive. The gears are controlled by controls (F), (G), and (H). The belt drive transmits the motor power to the drive system of the machine.

1. The motor and drive belt are installed and adjusted when delivered. However, you should check the adjustment of the drive belt before using this lathe.
2. Check the belt tension by pressing in the middle with your finger. You should be able to depress it approximately 1/2 inch. If the belt is too tight, it will wear the bearings, and if too loose, it will slip on the pulleys and wear out prematurely.
3. If it is necessary to adjust the belt tension, do so by adjusting the bolt and locknut assembly on the underside of the motor. The motor mounted on the back of the headstock.
4. Four additional change gears are included for use in cutting metric and SAE threads. Refer to the lead screw chart on the headstock for the gears required for the thread pitches you want.
Please refer to the section on threading for more information.

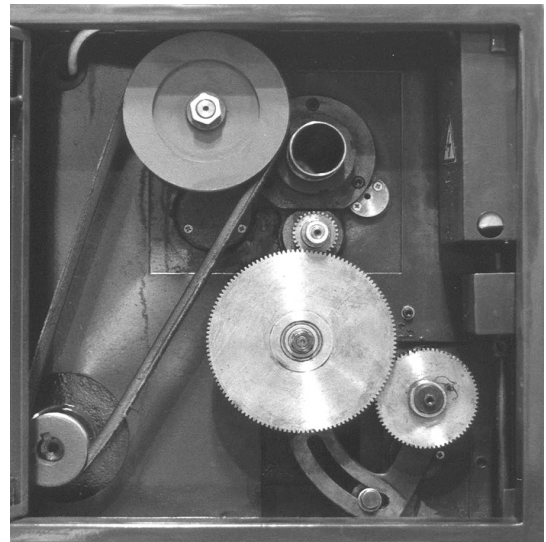


Fig.4 Inside the Gear Box.

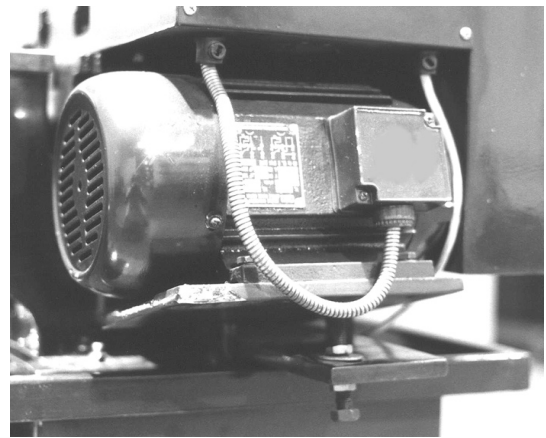


Fig.5 Motor mount and adjustment.

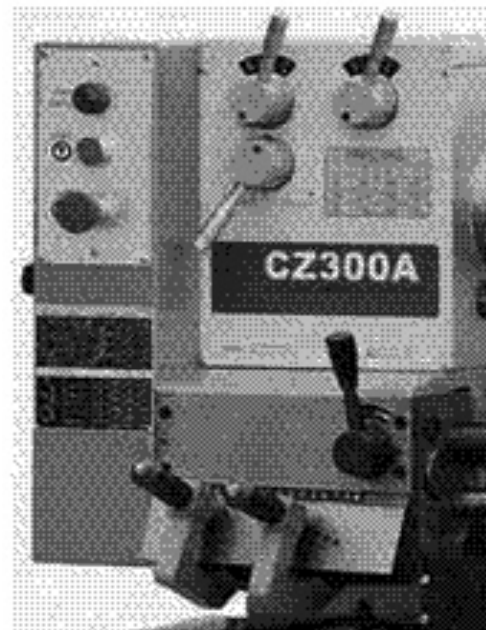


Fig.6 Headstock Controls.

SPEED AND POWER CONTROLS

You can turn lathe on and off and control speed and direction from the main control panel.

The Power Switch

1. Turn the Emergency Stop Switch (C) clockwise; the Indicator Light (D) will light up. The Spindle will not turn without operating the Control Lever (V).
2. The Press Switch (A) is used to run the spindle temporarily to allow the gears to engage when changing speed gears. When you release the switch, the spindle will stop.
3. In an emergency, you can stop the machine by pressing the Emergency Stop Control (C).



Fig.7 Power Switch.

Speed and Direction Controls

Note: Do not change the settings of these controls if the motor is running. Shut OFF the power before changing these settings.

The Spindle Speed can be controlled by setting the Speed Control knobs (G) and (H). Refer to the chart on the Headstock to the right of the knobs to determine the proper setting for the desired spindle rotation speed. Eighteen speeds are possible from 72 to 1600 RPM. The direction may be controlled using Direction Control (F).

Quick Change Gearbox

The headstock is equipped with a quick change gearbox to control the rate of the spindle to the lead screw and feed rod, when it is used to cut threads, or for turning or facing.

1. Controls (CC) and (EE) may be used in combination to control the feed rate. Please refer to the lead screw chart (HH) for the desired setting.
2. The change gears may need to be replaced to achieve the correct setting. Be sure the machine is turned off and is unplugged from its power supply before replacing the gears. Select the gears required from the lead screw chart.
3. When the Exchange Lever (BB) is in the middle position, the Lead Screw (118) and Feeding Rod (107) are locked. When Exchange Lever (BB) is to the right, the Lead Screw (118) is running and the machine can be used to turn the threads. When Exchange Lever (BB) is to the left, the Feeding Rod is running and the machine can be used set for automatic feeding.

		THREADING								mm									
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8
40T	A	6					4			40T	A	7.5				6		5	
120T	B	3					2			120T	B	3.75				3		2.5	
40T	C	1.5					1			120T	C					1.5		1.25	
	D	0.75					0.5			32T	D					0.75			
	E			0.3		0.25					E								

		THREADING								INCHES									
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8
40T	A	4	4 $\frac{1}{2}$	4 $\frac{3}{4}$	5	5 $\frac{1}{2}$	6	6 $\frac{1}{2}$	7										
120T	B	8	9	9 $\frac{1}{2}$	10	11	12	13	14										
40T	C	16	18	19	20	22	24	26	28										
	D	32	36	38	40	44	48	52	56										
	E	64	72	76	80	88	96	104	112										

		FEEDING								INCHES									
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8
40T	D	.0165	.0146	.0138	.0131	.0120	.0110	.0101	.0094										
120T	E	.0082	.0073	.0069	.0065	.0060	.0055	.0050	.0047										

		FEEDING								mm									
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8
40T	D	0.42	0.37	0.35	0.33	0.30	0.28	0.26	0.24										
120T	E	0.21	0.185	0.175	0.165	0.150	0.140	0.13	0.120										

Fig.8 Lead Screw Chart.

4. The half nut is engaged or disengaged using the Half Nut Lever (X). Note that the half nut must be engaged for the lead screw to function properly.

APRON

The function of the Apron is to support the toolpost, and to be carried along the workpiece by the lead screw.

1. Use the Control Lever (V) to start the motion of the Spindle, and to rotate it forward or reverse.
2. To operate the lever, push it toward the headstock, then move it up or down. Moving the lever down will cause the spindle to rotate forward, moving it up will cause the spindle to rotate in reverse. Placing the lever in the middle will cause the spindle not to rotate.
3. The Half Nut Lever (X) for engaging the lead screw is mounted on the right side of the apron.
4. The Half Nut Lever (X) is used to engage or remove the half nut from the lead screw. This lever is mounted on the front of the apron. Engage the half nut only when moving the apron in a longitudinal direction along the workpiece.

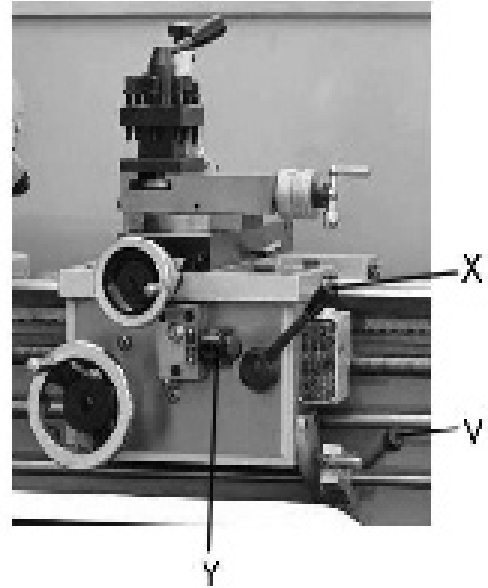


Fig.9 The Apron.

5. The Cross/Longitudinal Feed Lever (Y) is used to determine the direction of travel of the tool on the workpiece. With the lever up, and the gear engaged, the apron will travel in a longitudinal direction along the workpiece; for example when threading. With the lever down, and the half nut disengaged, the tool post will travel horizontally across the workpiece; for example when face cutting.
6. Note: The interlock will prevent the half nut from being engaged when the Feed Lever (Y) is down in the cross feed position.
7. For threading, put the Feed rod & Leadscrew Exchange Lever (BB) to the right to start the lead screw, then move the Cross/Longitudinal Feed Lever (Y) to the center, and engage the half nut, using the Half Nut Lever (X). This will cause the lead screw to rotate, and the apron to move to the right.
8. You can also control the direction of travel of the apron using the Direction Control (F). Rotating this control to the right will cause the carriage to move to the right. Rotating this control to the left will cause the apron to move to the left.

THE THREADING DIAL

When the threads on the lead screw and on the workpiece are not in an integer ratio, it is necessary to use the threading dial to control successive cuts. Determine this ratio by dividing the desired TPI of the workpiece (for example 24 TPI) by the thread pitch of the lead screw (8 TPI). This example results in an integer ratio of 3:1. A desired thread pitch of 26 TPI (for example) on the workpiece would require use of the threading dial.

1. When the threads on the workpiece are not in an integer proportion to the threads on the lead screw, it is necessary to operate the half nut intermittently. This is controlled by using the threading dial.
2. The Threading Dial (W) is located on the right side of the apron.
3. The dial is marked with four numbered lines, 1, 2, 3, and 4. Between each numbered line is an unnumbered line. On the dial there is also a fixed reference line.
4. When the threading dial is engaged with the lead screw, the dial will rotate.
5. There is an instruction plate attached to the threading dial explaining the use of the dial, depending on the specific thread you are cutting.
6. For thread cutting, engage the half nut at the appropriate numbers shown on the threading dial. 1-4 means the half nut can be engaged at any of the numbered lines 1, 2, 3, or 4. For successive cuts, only numbered lines must be used. 1-3 / 2-4 on the scale means that the half nut can only be engaged on 1 and 3 or 2 and 4 for successive cuts. For example, if you engage the half nut on "1" on the first cut, you can only engage it on "1" or "3" on following cuts. If you engage it on "2" on the first cut, you can only engage it on "2" and "4" on successive cuts.
7. 1-8 means the half nut cannot be engaged on any lines, numbered or unnumbered.
8. If the half-nut is engaged throughout the initial cut, there is no need to use the threading dial. Simply disengage the half nut, back the tool to the starting point, reengage the half nut and start over.

FOUR-POSITION TOOL REST

The four position tool rest can be used to hold up to four tools. It is controlled by the three handwheels on the Apron, the Saddle Handwheel (AA), the Cross Slide Handwheel (Z) and the Compound Slide Handwheel (N).

1. Tools are held in place on each side of the tool holder by two or three of the bolts on that side. Tools must fit into the tool groove.
2. When installing tools, check to see that the cutting edge is properly aligned with the rotating direction of the workpiece.
3. The tool post can be rotated by loosening the Tool Post Clamping Lever (M), rotating the tool post, and retightening the lever.

INDICATOR TABLE					
T.P.I.	SCALE	T.P.I.	SCALE	T.P.I.	SCALE
4	1-4	12	1-4	38	$\frac{13}{24}$
$4\frac{1}{2}$	/	13	1	40	1-8
$4\frac{3}{4}$	/	14	$\frac{13}{24}$	44	1-4
5	1	16	1-8	48	1-8
$5\frac{1}{2}$	/	18	$\frac{13}{24}$	52	1-4
6	$\frac{13}{24}$	19	1	56	1-8
$6\frac{1}{2}$	/	20	1-4	64	1-8
7	1	22	$\frac{13}{24}$	72	1-8
8	1-8	24	1-8	76	1-4
9	1	26	$\frac{13}{24}$	80	1-8
$9\frac{1}{2}$	/	28	1-4	96	1-8
10	$\frac{13}{24}$	32	1-8	104	1-8
11	1	36	1-4	112	1-8

Fig.10 Threading Dial.

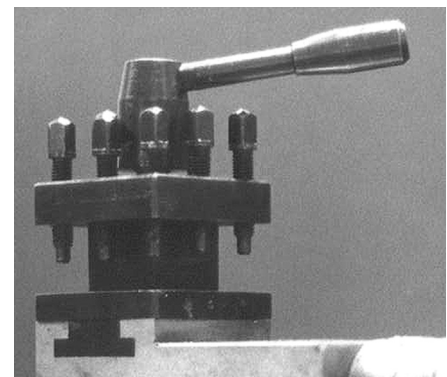


Fig.11 Tool Post.

COMPOUND SLIDE

The tool is moved along the workpiece by the motion of the apron and its components. The apron may be power-driven by the lead screw, or may be moved by hand using the handwheels.

1. The Saddle Handwheel (AA) may be used to move the apron with its attached tool post and tools along the rotating axis of the workpiece. This is used to make longitudinal cuts.
2. The Cross Slide Handwheel (Z) is used to move the tool post horizontally across the axis of the workpiece. This motion is used to make face cuts at a 90 degree angle to the longitudinal axis of the workpiece.
3. Cuts made at any angle other than 90 degrees to the axis are accomplished by using the Compound Slide Handwheel (N).
4. To use the compound slide, loosen the bolt holding it in place on the cross-slide, rotate it into the desired position, then retighten the bolt.
5. The cutting tool can be moved into the workpiece by operating the handwheel.

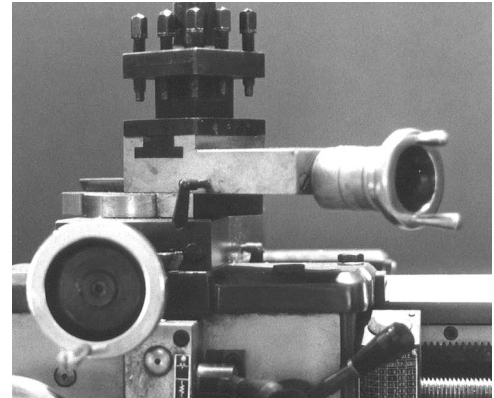


Fig.12 Compound Slide.

CHUCK AND FACEPLATE

This lathe may be operated using either chuck or faceplate to hold the workpiece.

1. Chucks and faceplates are mounted on the arbor shaft using a threaded connection. Open the gear box, and using a suitable wrench, hold back the arbor shaft to prevent it from turning. Grip the chuck or faceplate, and rotate it in a counter-clockwise direction to unthread it from the arbor shaft.
2. When re-installing a chuck or faceplate, be sure to put light grease on the threaded end of the arbor shaft to ease installation and removal of the chuck or faceplate.
3. You are provided with both three and four jaw chucks. Each may be used to hold workpieces by clamping from the outside, or by expanding on the inside of tubes and hollow pieces. To tighten the jaws, rotate any of the internal hex head bolts in the side of the chuck with an appropriate size hex wrench. Chucks are self centering, and will align concentric workpieces with the axis of rotation of the arbor shaft.
4. Faceplates are used typically to hold larger or non-round pieces. Work pieces may be attached to the faceplate by a variety of methods including clamps, bolts and screws. It is critical that the centerpoint of the workpiece be exactly aligned with the center of rotation of the arbor shaft for accurate turning.

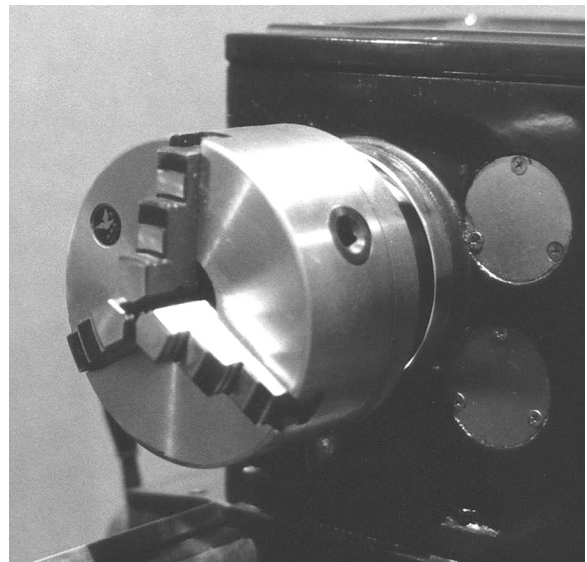


Fig.13 Chuck.

TAILSTOCK

The tailstock slides along the bed way freely, and may be used to secure the free end of a rotating workpiece.

1. The tailstock is clamped to the bedway using the Tailstock Clamping Lever (Q).
2. The Quill (P) can be rotated inward and outward, using the Tailstock Handwheel (S). The Quill can be locked in place using the Quill Lock Lever.
3. The quill is shipped with a “dead end” which may be inserted into the quill. “Dead end” means that the end remains stationary, and allows the workpiece to rotate upon it. To reduce friction, it is a good idea to apply a little grease to the contact between the workpiece and the dead end. Check this lubrication from time to time.

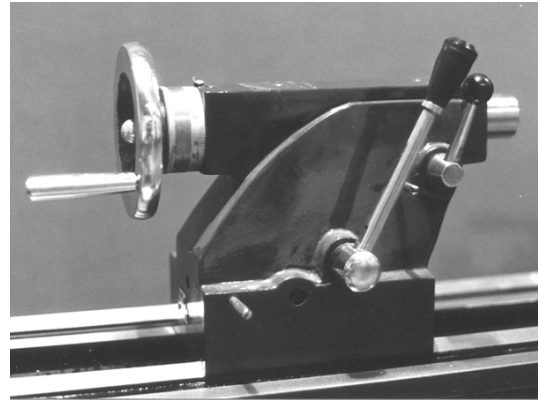


Fig. 14 Tailstock.

- “Live ends” are available to fit this machine and may be purchased separately. Live ends incorporate a bearing to reduce friction between the workpiece and the quill.
4. Before using your lathe, it is important to check the alignment of the tailstock with the arbor spindle. Do this by placing a precisely machined rod in the chuck, and checking its alignment with the center of the quill. Accurate measurements may be made by mounting a dial indicator to the bedway, and making measurements on the rod near the headstock, and near the tailstock. These measurements must be exactly alike for the tailstock to be properly aligned.
 5. Adjustments may be made by loosening the tailstock lock lever, then adjusting the position of the tailstock with the alignment screw (512). Retighten the lock lever, and recheck the alignment before proceeding.

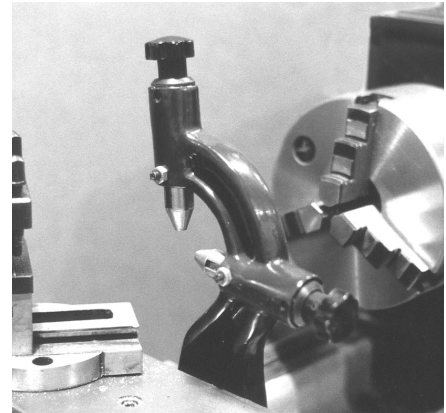


Fig. 15 Follow Rest.

FOLLOW REST AND STEADY REST

These are useful supports for your workpiece, which help you improve machining accuracy.

1. The Follow Rest is attached to the Apron, and follows the movement of the apron as the workpiece is machined.
2. The Steady Rest is attached to the bedway, and remains in place as the workpiece turns within it.
3. Install these rests as needed to support the workpiece.
4. Adjust the brass holders within the rests to lightly ride upon the workpieces. It is advisable to apply a little grease to the points of the brass holders to reduce friction between them and the workpiece.
5. The rests should be cleaned and stored in a dry clean place when not in use.

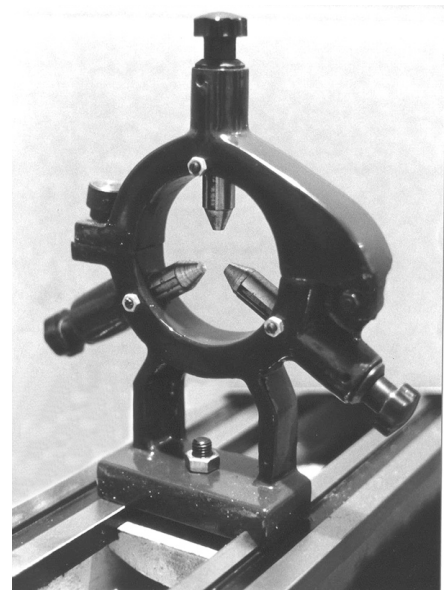


Fig. 16 Steady Rest.

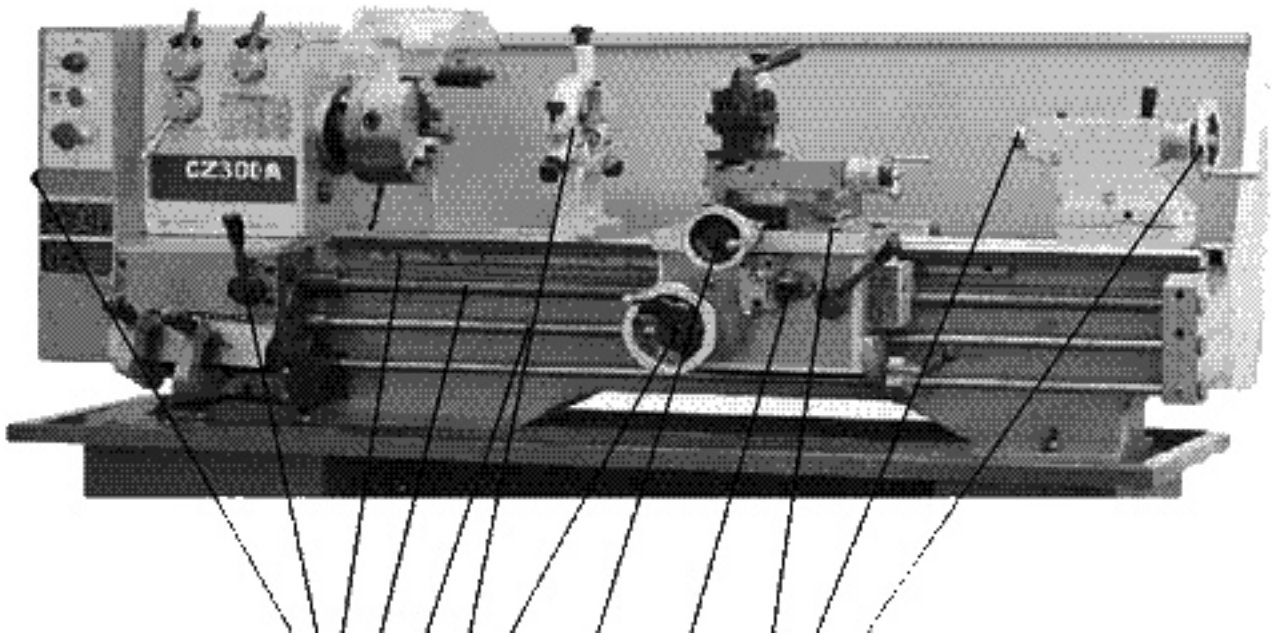
LUBRICATION

Headstock Lubrication.

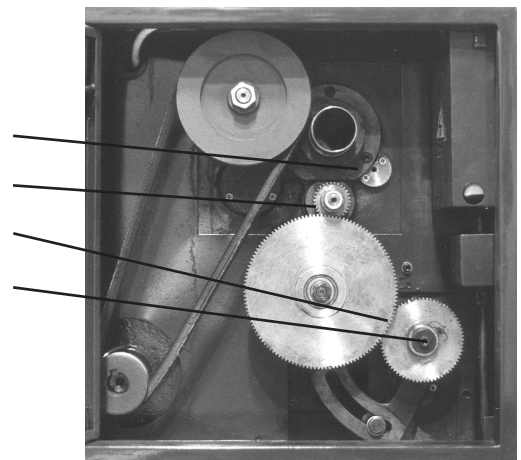
1. The headstock gears should be lubricated with No. 70 (HL-70) Gear Compound. Check them periodically, and apply lubrication whenever they appear dry. Do not apply excessive grease, since you do not want to get grease on the drive belt.
2. The oil in the headstock should be changed regularly. When the machine is new, change the oil after the first 15 days of use. Change it again after the next 45 days of use. Thereafter, change the oil after each 6 months. To change the oil, open the drain plug on the underside of the headstock. After draining, replace the drain plug and refill with clean lubricating oil until the oil level is at the red line on the oil gauge. Use standard 30 weight motor oil. Dispose of waste oil properly, and in accordance with local regulations.
3. If during operation the oil level is below the red line, stop machining and add oil until the level is at the red line.

Overall Lubrication.

Lubricate the parts indicated in this diagram periodically with light grease. Check before each use to ensure that the machine is properly lubricated.



*Fig. 17 Lubrication Chart.
Lubricate the indicated areas
with a light grease regularly.*



MAINTENANCE

WARNING: For your own safety, turn the switch OFF and remove plug from electrical outlet before performing any maintenance work on the lathe.

1. Frequently blow out any dust accumulation inside the motor.
2. A coat of automotive wax to the bed will help keep the surfaces clean, and allow the tool rest and tailstock to move freely.
3. If the power cord is damaged, worn, or cut in any way have it replaced by a qualified electrician right away.

TROUBLESHOOTING

<u>Trouble</u>	<u>Probable Cause</u>	<u>Remedy</u>
Motor will not run	Defective ON/OFF switch or damaged power cord.	Replace defective parts.
	Burned out motor	Have a qualified technician replace the motor.
Lathe slows down while turning.	V-belt loose.	Adjust tension.
Tailstock rocks back and forth excessively.	Adjusting screw is too loose.	Adjust screw.
Burning at tailstock end.	Live center binding or dead center not lubricated.	Check bearing on live center.
		Add lubrication if using dead center.

PLEASE READ THE FOLLOWING CAREFULLY

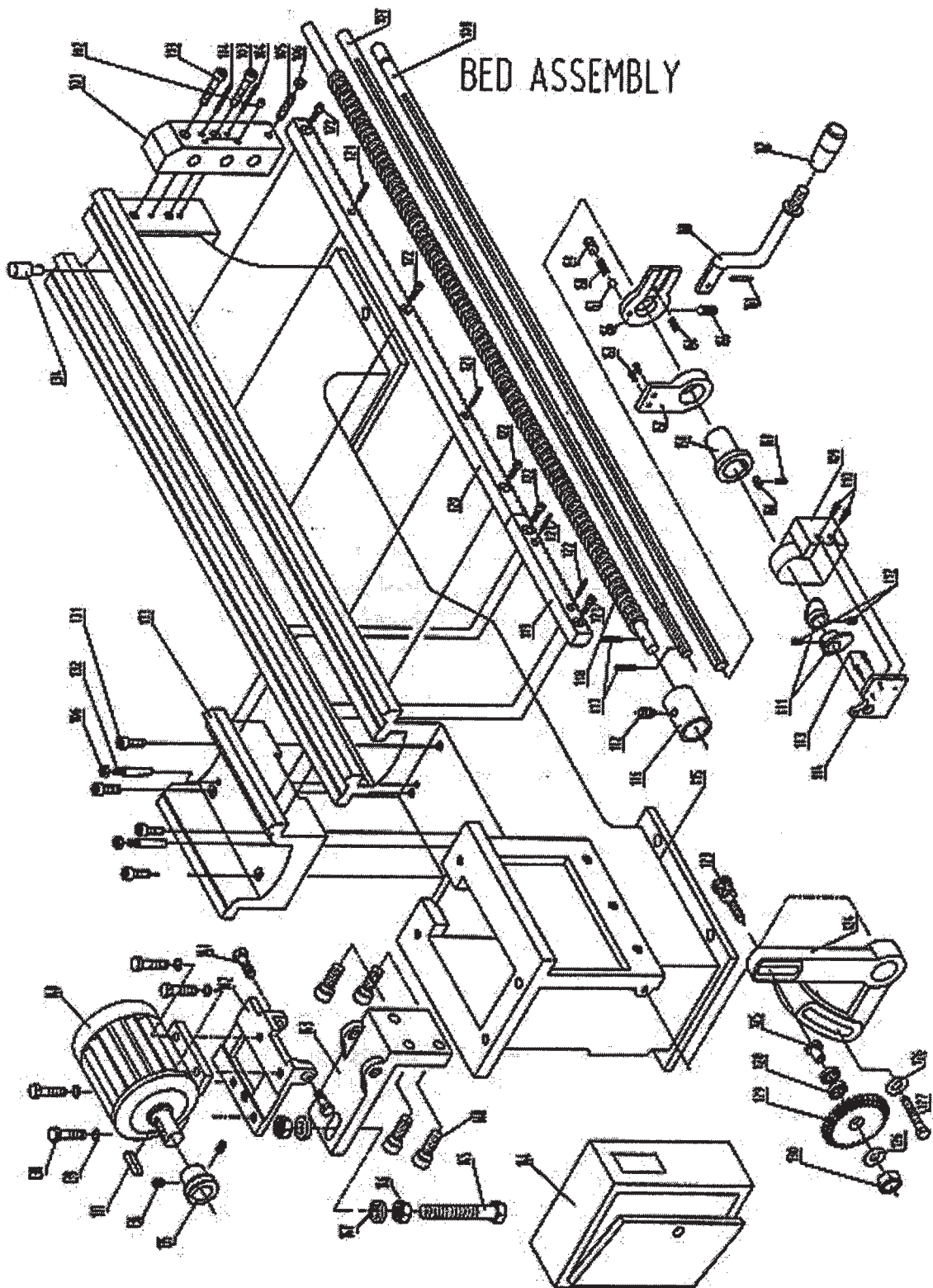
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Bed Assembly

Index No.	Part No.	Description	QTY.
101	CM1224C-01-011	Fixing block	1
102	JB/T7940.4	Oil cup 6	2
103	GB/T70	Screw M8×25	2
104	GB/T879	Spring pin 5×25	2
105	GB/T77	Screw M8×20	1
106	GB/T41	Nut M8	1
107	CM1237CHG-01-009	Feeding rod	1
108	CM1237CHG-01-013	Switch lever	1
109	CM1224C-01-015	Switch cover	1
110	GB/T65	Screw M6×12	2
111	CM1224C-01-014	Eccentric block	2
112	GB/T77	Screw M6×6	3
113	GB/T70	Screw M6×12	2
114	CM1224C-01-016	Switch board	1
115	CM1237CHG-01-010	Bed	1
116	CM1224C-01-005	Sleeve	1
117	GB/T879	Spring pin 5×30	2
118	CM1237CHG-01-006	Longitudinal lead screw	1
119	CM1237CHG-01-007(2)	Rack (left)	1
120	CM1237CHG-01-007(1)	Rack (right)	1
121	GB/T70	Screw M6×20	5
122	GB/T879	Spring pin 5×30	4
123	CM1224C-01-002	Change gear shaft	1
124	CM1224C-01-001	Change gear bracket	1
125	CM1224C-01-003	Bearing sleeve	1
126	GB/T95	Washer 10	2
127	GB/T5780	Bolt M10×40	1
128	GB/T276	Bearing 6003-Z	2
129	CM1224C-01-004	Change gear	1
130	GB/T41	Nut M10	1
131	GB/T70	Screw M10×34	4
132	GB/T881	Taper pin with thread 8×75	2
133	CM1237CHG-01-010(1)	Gap	1
134	CM1224C-01-017	Stop pin	1
135	CZ1237G-02-059	Motor pulley	1
136	GB/T77-85	Screw M6×8	2

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Index No.	Part No.	Description	QTY.
137	GB/T1096-79	Key 8×25	1
138	GB/T5780	Bolt M8×25	4
139	GB/T96	Washer 8	4
140	Y90L-4	Motor 1.5kw	1
141	CM1224C-02-042	Bolt	2
142	CM1224C-02-005	Motor seat	1
143	CM1224C-02-006	Motor rest	1
144	CZ1237A-00-001	Puller cover	1
145	GB/T5783	Bolt M12×90	1
146	GB/T6172	Nut M12	2
147	GB/T96	Washer 12	2
148	GB/T70-85	Screw M8×30	4
149	GB/T879	Spring pin 3×5	1
150	GB/T1096	Key B5×18	1
151	CM1224-06-005	Sleeve	1
152	CM1224-02-002	Arm	1
153	GB/T70	Screw M6×12	2
154	CM1224-07-004	Spring 1×6×22	1
155	GB/T78	Screw M8×12	1
156	CM1224-07-003	Cover	1
157	GB/T308	Steel ball 6	1
158	CM1224-07-006	Spring 1×6×9	1
159	GB/T77	Screw M8×10	1
160	CM1224-07-001	Lever	1
161	GB/T119	Pin B5×35	1
162	GB/T4141.14	Grip	1

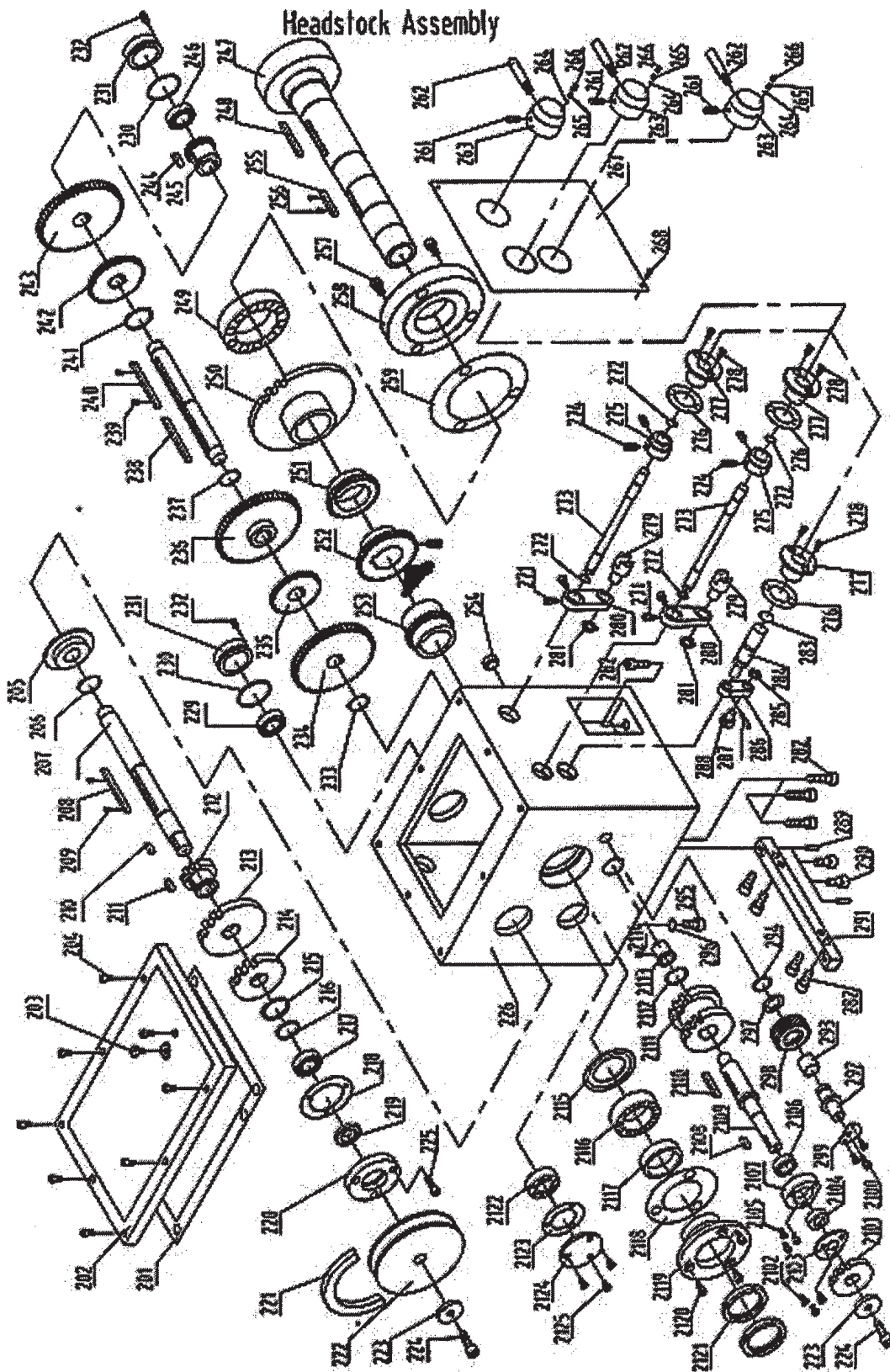


Headstock Assembly

Index No.	Part No.	Description	QTY.
201	CZ1237G-02-055	Gasket	1
202	CZ1237A-02T01-001	Cover	1
203	CM1224C-03-034	Oil fill plug	1
204	GB/T70	Screw M6×25	8
205	CZ1237G-02-024	Round fork	1
206	GB/T894.2	Retaining ring (external) 25	1
207	CZ1237G-02-025	Input shaft	1
208	GB/T1096	Key 8×80	1
209	GB/T65	Screw M3×8	2
210	GB/T1096	Key 5×14	1
211	GB/T1096	Key 8×20	1
212	CZ1237G-02-022	Gear	1
213	CZ1237G-02-021	Gear	1
214	CZ1237G-02-020	Gear	1
215	GB/T894.2	Retaining ring (external) 38	1
216	GB/T894.2	Retaining ring (external) 25	1
217	GB/T276	Bearing 6205P6	1
218	CZ1237G-02-017	Gasket	1
219	GB/T9877.1	Oil seal B25×40×7	1
220	CZ1237G-02-015	Cover	1
221	GB/T1174	B-Belt B914	1
222	CZ1237G-02-060	Pulley	1
223	CM1224C-03-008	Washer	2
224	GB/T70	Screw M6×14	2
225	GB/T70	Screw M6×20	3
226	CZ1237G-02-002	Headstock	1
229	GB/T276	Bearing 6204P6	1
230	GB/T7757.2	O-Ring gasket 43.7×1.8	2
231	CZ1237G-02-026	Plug	2
232	GB/T71	Screw M6×10	2
233	GB/T894.2	Retaining ring (external) 25	1
234	CZ1237G-02-013	Gear	1
235	CZ1237G-02-014	Gear	1
236	CZ1237G-02-23	Gear	1
237	GB/T894.2	Retaining ring (external) 25	1
238	GB/T1096	Key 8×80	1
239	GB/T65	Screw M3×8	2
240	GB/T1097	Key 8×80	1
241	Gb/t894.2	Retaining ring (external) 38	1
242	CZ1237G-02-028	Gear	1

Index No.	Part No.	Description	QTY.
243	CZ1237G-02-027	Gear	1
244	GB/T1096	Key 8×20	1
245	CZ1237G-02-029	Gear	1
246	GB/T276	Bearing 6204P6	1
247	CZ1237G-02-034	Spindle	1
248	GB/T1096	Key 8×80	1
249	GB/T297	Bearing 30211P5	1
250	CZ1237G-02-031	Gear	1
251	CZ1237G-02-033	Gear	1
252	CZ1237G-02-032	Gear	1
253	CZ1237G-02-037	Gear	1
254	GB/T1160	Oil level indicator	1
255	GB/T1096	Key 8×70	1
256	GB/T65	Screw M6×8	1
257	GB/T70	Screw M8×30	3
258	CZ1237G-02-035	Cover	1
259	CZ1237G-02-030	Gasket	1
261	GB/T78	Screw M8×14	3
262	CZ1237G-02-046	Handle	3
263	CZ1237G-02-045	Handle seat	3
264	GB/T308	Steel ball	3
265	GB/T2089	Spring 1×5×20	3
266	GB/T73	Screw M8×5	3
267	CZ1237G-02T01-006	Name plate	1
268	GB/T818	Screw M4×8	4
271	GB/T71	Screw M6×10	4
272	GB/T7757.2	O-Ring gasket	4
273	CZ1237G-02T01-005	Shaft	2
274	GB/T71	Screw M6×10	4
275	CZ1237G-02-054	Collar	2
276	CZ1237G-02-047	Gasket	3
277	CZ1237G-02-044	Fixing seat	3
278	GB/T819	Screw M5×10	6
279	CZ1237G-02-040	Fork	2
280	CZ1237G-02-039	Arm	2
281	GB/T894.2	Retaining ring (external) 15	2
282	GB/T70	Screw M10×35	6
283	GB/T7757.2	O-Ring gasket	1
284	CZ1237G-02T01-003	Shaft	1
285	GB/T894.2	Retaining ring (external) 10	1

NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

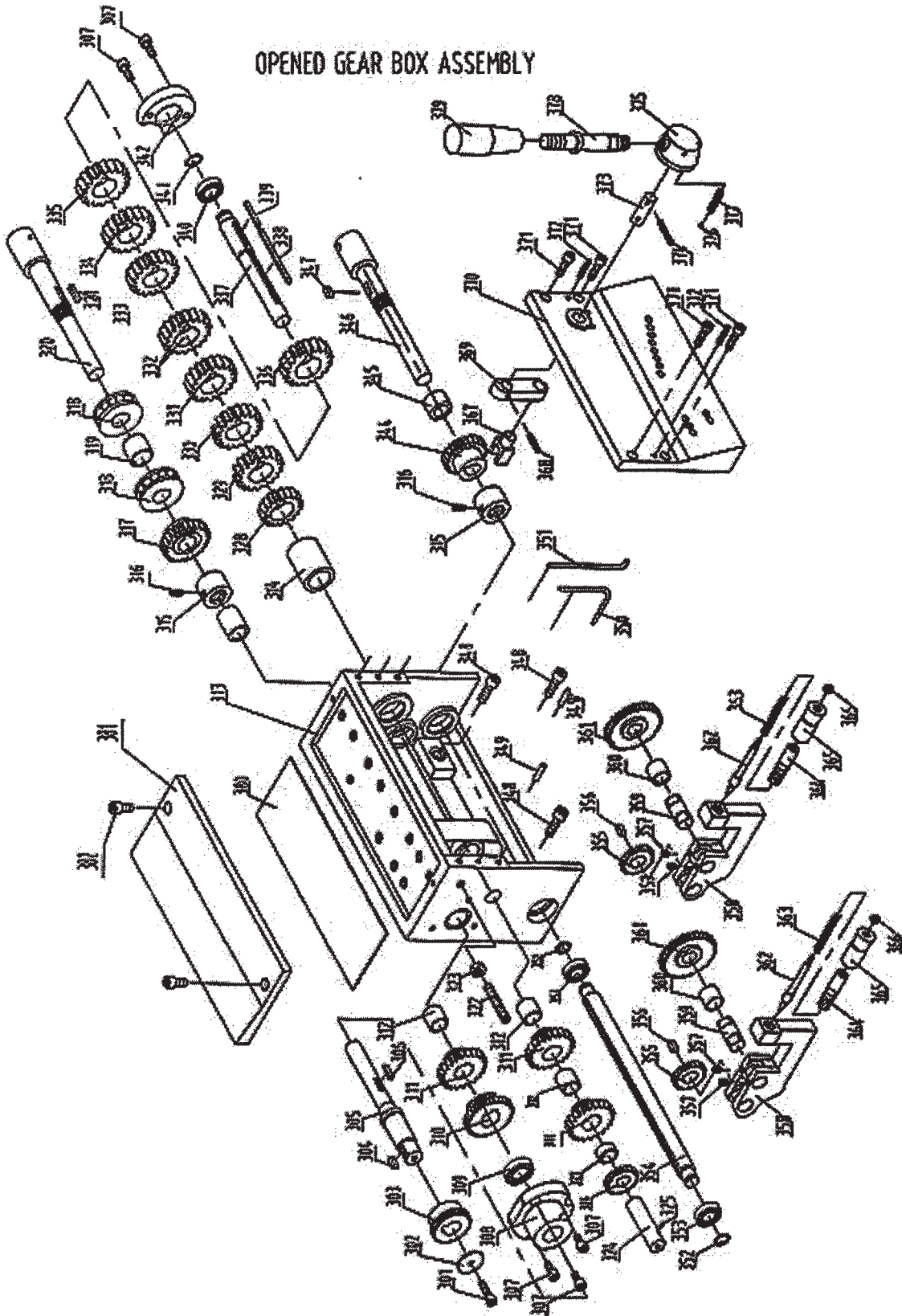


Opened Gear Box Assembly

Index No.	Part No.	Description	Qty.
301	GB/T70	Screw M6×12	1
302	CM1224C-03-008	Washer	1
303	CM1224C-03-009	Gear	1
304	GB/T1096	Key 5×14	1
305	CM1224C-03-007	Shaft	1
306	GB/T1567	5×3×6	1
307	GB/T70	Screw M6×10	5
308	CM1224C-03-010	Bearing cover	1
309	GB/T276	Bearing 6003	1
310	CM1224C-03-013	Duplex gear	1
311	CM1224C-03-014	Duplex gear	3
312	CM1224C-03-012	Gear sleeve	3
313	CM1224C-03-033	Gear box	1
314	CM1224C-03-011	Sleeve	2
315	CM1224C-03-049	Nut	2
316	GB/T78	Screw M6×6	2
317	CM1224C-03-025	Gear	1
318	GB/T301	Bearing 51104	2
319	CM1224C-03-026	Sleeve	1
320	CM1224C-03-027	Shaft	1
321	GB/T1096	Key 6×16	2
322	GB/T73	Screw M8×35	1
323	GB/T41	Nut M8	1
324	CM1224C-03-041	Shaft	1
325	GB/T78	Screw M6×6	1
326	CM1224C-03-015	Gear	1
327	CM1224C-03-016	Gear sleeve	1
328	CM1224C-03-017	Gear	1
329	CM1224C-03-018	Gear	1
330	CM1224C-03-019	Gear	1
331	CM1224C-03-020	Gear	1
332	CM1224C-03-021	Gear	1
333	CM1224C-03-022	Gear	1
334	CM1224C-03-023	Gear	1
335	CM1224C-03-024	Gear	1
336	CM1224C-03-025	Gear	1
337	CM1224C-03-029	Shaft	1
338	CM1224C-03-051	Key 5×74	1
339	GB/T1096	Key 6×32	1
340	GB/T276	Bearing 6002-z	1

Index No.	Part No.	Description	Qty.
341	GB/T894.1	Retain ring (external) 15	1
342	CM1224C-03-050	Cover	1
344	CM1224C-03-032	Gear	1
345	CM1224C-03-031	Sleeve	1
346	CM1224C-03-030	Shaft	3
348	GB/T70	Screw M8×25	4
349	GB/T879	Pin 5×20	1
350	CM1224C-03-042	Oil pipe	1
351	CM1224C-03-043	Oil pipe	2
352	GB/T894.1	Retain ring	2
353	GB/T276	Bearing 6201-z	1
354	CM1224C-03-005	Shaft	2
355	CM1224C-03-006	Gear	2
356	GB/T1096	Key 5×14	4
357	GB/T77	Screw M6×6	2
358	CM1224C-03-001	Handle seat	2
359	CM1224C-03-003	Shaft	2
360	CM1224C-03-004	Gear sleeve	2
361	CM1224C-03-002	Gear	2
362	CM1224C-03-045	Axle of gripper	2
363	CM1224C-03-046	Spring	2
364	CM1224C-03-047	Sleeve of gripper	2
365	CM1224C-03-044	Lever	2
366	GB/T923	Nut M6	1
367	CM1224C-03-036	Fork	1
368	GB/T879	Pin 5×24	1
369	CM1224C-03-038	Arm	1
370	CM1224C-03-040	Front cover of gear box	4
371	GB/T70	Screw M6×16	1
272	GB/T879	Pin 5×20	2
373	CM1224C-03-039	Shaft	1
374	GB/T879	Pin 5×40	1
375	CM1224C-03-048	Knob	1
376	GB/T308	Steel ball 6	1
377	GB/T2089	Spring 1×4.5×16	1
378	CM1224C-04-003	Lever	1
379	GB/T4141.14	Lever grip BM10×50	1
380	CM1224C-03-037	Gasket	1
381	CZ300A-03-004	Cover	2
382	GB/T70	Screw M6×12	2

OPENED GEAR BOX ASSEMBLY

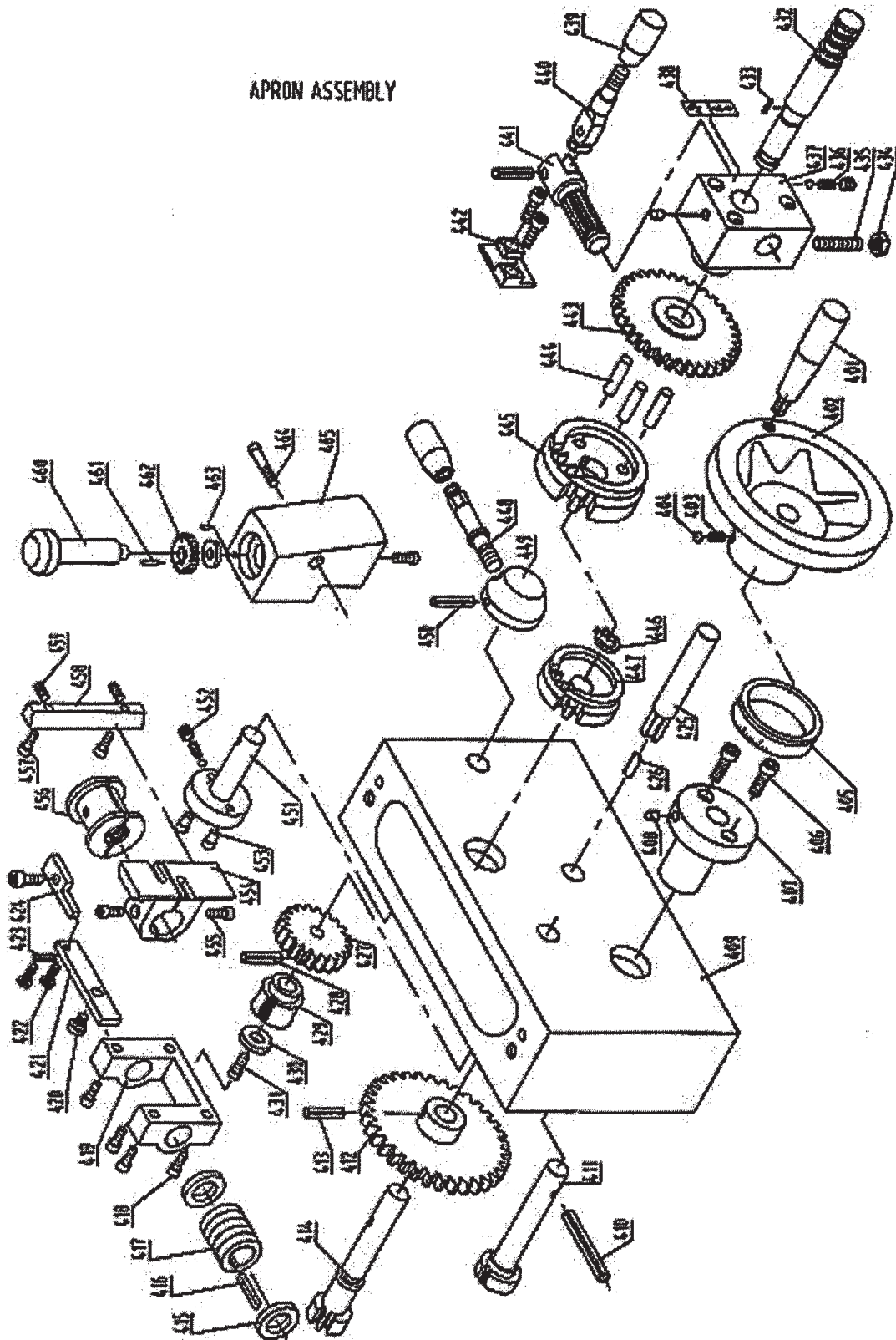


Apron Assembly

Index No.	Part No.	Description	Qty.
401	JB/T7270.1	Handle BM8×63	1
402	CM1224-04-011	Handwheel	1
403	CM1224-06-007	Spring	2
404	GB/T308	Steel ball 6	3
405	CM1224-04-013	Indicate ring	1
406	GB/T70	Screw M6×16	3
407	CM1224-04-014	Handwheel seat	1
408	GB/T7940.4	Oil cup 6	2
409	CM1224-04-015	Box	1
410	GB/T879	Pin 5×60	1
411	CM1224-04-012	Gear	1
412	CM1224-04-016	Gear	1
413	GB/T879	Pin 5×30	1
414	CM1224-04-010	Shaft	1
415	CM1224-04-037	Washer	2
416	GB/T1096	Key 5×32	1
417	CM1224-04-022	Worm	1
418	GB/T70	Screw M6×25	1
419	CM1224-04-021	Nut support	1
420	GB/T830	Screw M6×6	1
421	CM1224-04-035	Safe pin	1
422	GB/T65	Screw M4×14	1
423	CM1224-04-034	Spring	1
424	CM1224-04-032	Block	1
425	CM1224-04-007	Arbor	1
426	GB/T1096	Key 4×20	1
427	CM1224-04-006	Gear	1
428	GB/T879	Pin 5×24	2
429	CM1224-04-023	Worm	1
430	CM1224-04-031	Washer	2
431	GB/T70	Screw M6×12	4
432	CM1224-04-020	Shaft	1
433	GB/T1096	Key 4×8	1
434	GB/T6170	Nut M8	1
435	GB/T75	Screw M8×35	1
436	CM1224-04-038	Spring	2
437	CM1224-04-017	Change lever seat	1
438	CM1224-04-011	Feeding plate	1
439	JB/T7271.5	Grip BM10×50	1
440	CM1224-04-001	Change lever	1

Index No.	Part No.	Description	Qty.
441	CM1224-04-018	Change rod	1
442	CM1224-04-002	Safe guide piece	1
443	CM1224-04-008	Gear	1
444	GB/T119	Pin A6×30	3
445	CM1224-04-009	Gear	1
446	GB/T894.1	Retain ring (external) 16	1
447	CM1224-04-019	Clutch	1
448	CM1224-04-003	Handle	1
449	CM1224-04-036	Knob	1
450	GB/T879	Pin 5×40	1
451	CM1224-04-004	Rod	1
452	GB/T77	Screw M8×8	2
453	CM1224-04-024	Pin	2
454	CM1224-04-026	Half nut seat	1
455	GB/T70	Screw M6×8	2
456	CM1224-04-025	Half nut	1
457	GB/T70	Screw M5×16	2
458	CM1224-04-029	Pressure bar	1
459	GB/T78	Screw M6×12	2
460	CM1224-04-028	Indicate arbor	1
461	GB/T119	Pin 3×12	1
462	CM1224-04-030	Gear	1
463	GB/T827	Rivet 2.5×5	1
464	GB/T70	Screw M6×45	1
465	CM1224-04-027	Threading seat	1

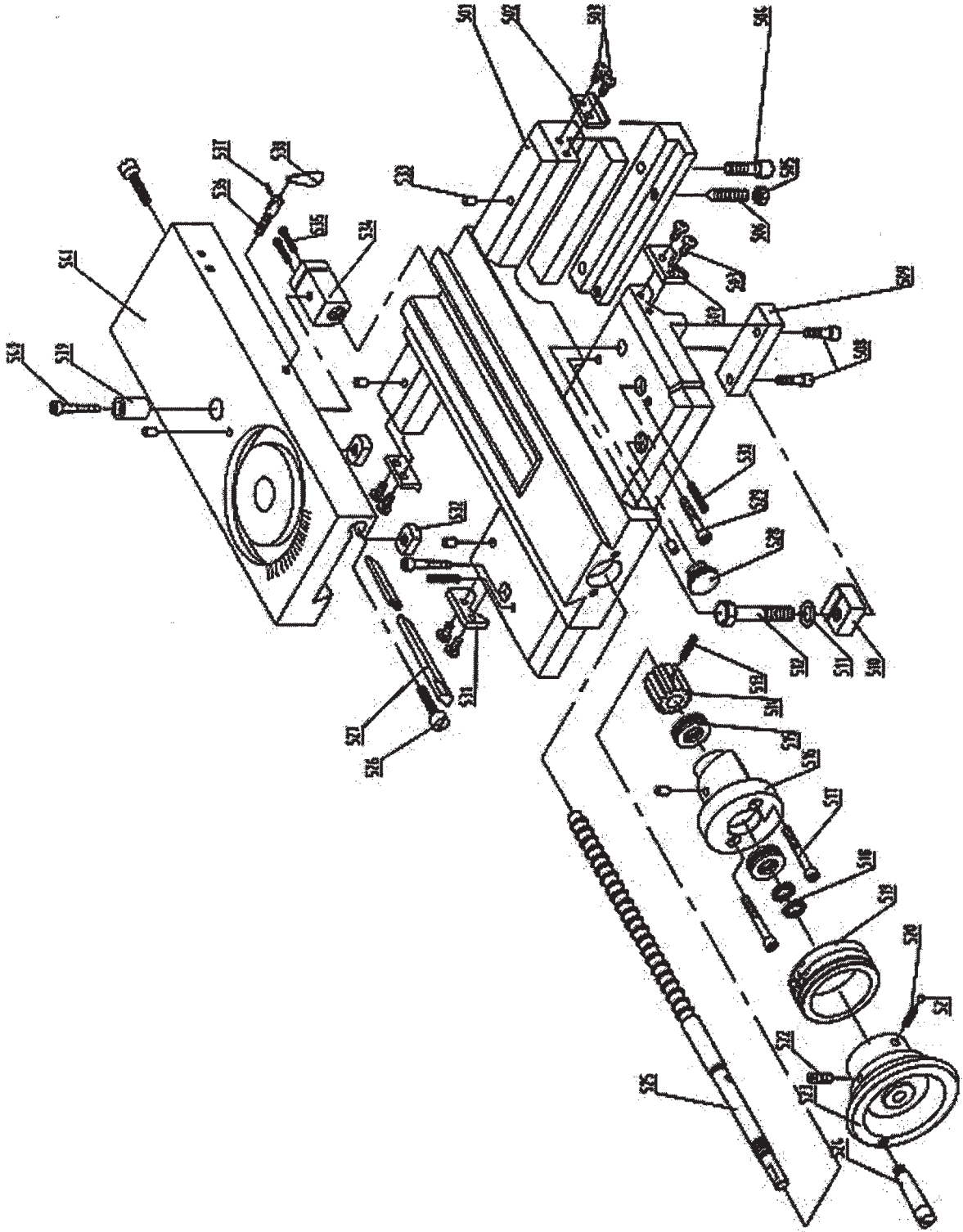
APRON ASSEMBLY



Saddle Assembly

Index No.	Part No.	Description	QTY.
501	CM1224C-05-003	Saddle	1
502	CM1224C-05-044	Wiper	2
503	GB/T818	Screw M5×12	8
504	GB/T70	Screw M8×25	3
505	GB/T41	Nut M8	3
506	GB/T78	Screw M8×22	3
507	CM1224C-05-041	Wiper	1
508	GB/T70	Screw M6×16	4
509	CM1224C-05-040	Block slide	2
510	CM1224C-05-032	Locking block	1
511	GB/T95	Washer 10	1
512	GB/T5780	Bolt M10×60	1
513	GB/T879	Pin 5×20	1
514	CM1224C-05-039	Gear	1
515	GB/T301	Bearing 51101	2
516	CM1224C-05-038	Lead screw seat	1
517	GB/T70	Screw M6×45	2
518	GB/T810	Nut M12×1.25	2
519	CM1224C-05-037	Graduation collar	1
520	CM1224C-06-007	Compressing spring	2
521	GB/T308	Steel ball 6	1
522	GB/T77	Screw M6×16	1
523	CM1224C-05-023	Handwheel	1
524	CM1224C-05-024	Handle	1
525	CM1224C-05-004	Lead screw of saddle	1
526	CM1224C-05-034	Adjusting screw	2
527	CM1224C-05-035	Gib	1
528	CM1224C-03-034	Plug	1
529	GB/T70	Screw M8×30	2
530	GB/T879	Pin 5×35	2
531	CM1224C-05-042	Wiper	1
532	CM1224C-05-008	Fixing block	2
533	JB/T7940.1	Oil cup 6	6
534	CM1224C-05-006	Lead screw nut	1
535	GB/T818	Screw M4×20	2
536	CM1224C-05-022A	Locking screw	2
537	GB/T879	Pin 2×8	2
538	CM1224C-05-022B	Locking lever	2
539	CM1224C-05-007	Fixing seat	1
540	GB/T70	Screw M6×20	1
541	CM1224C-05-005	Cross slide	1

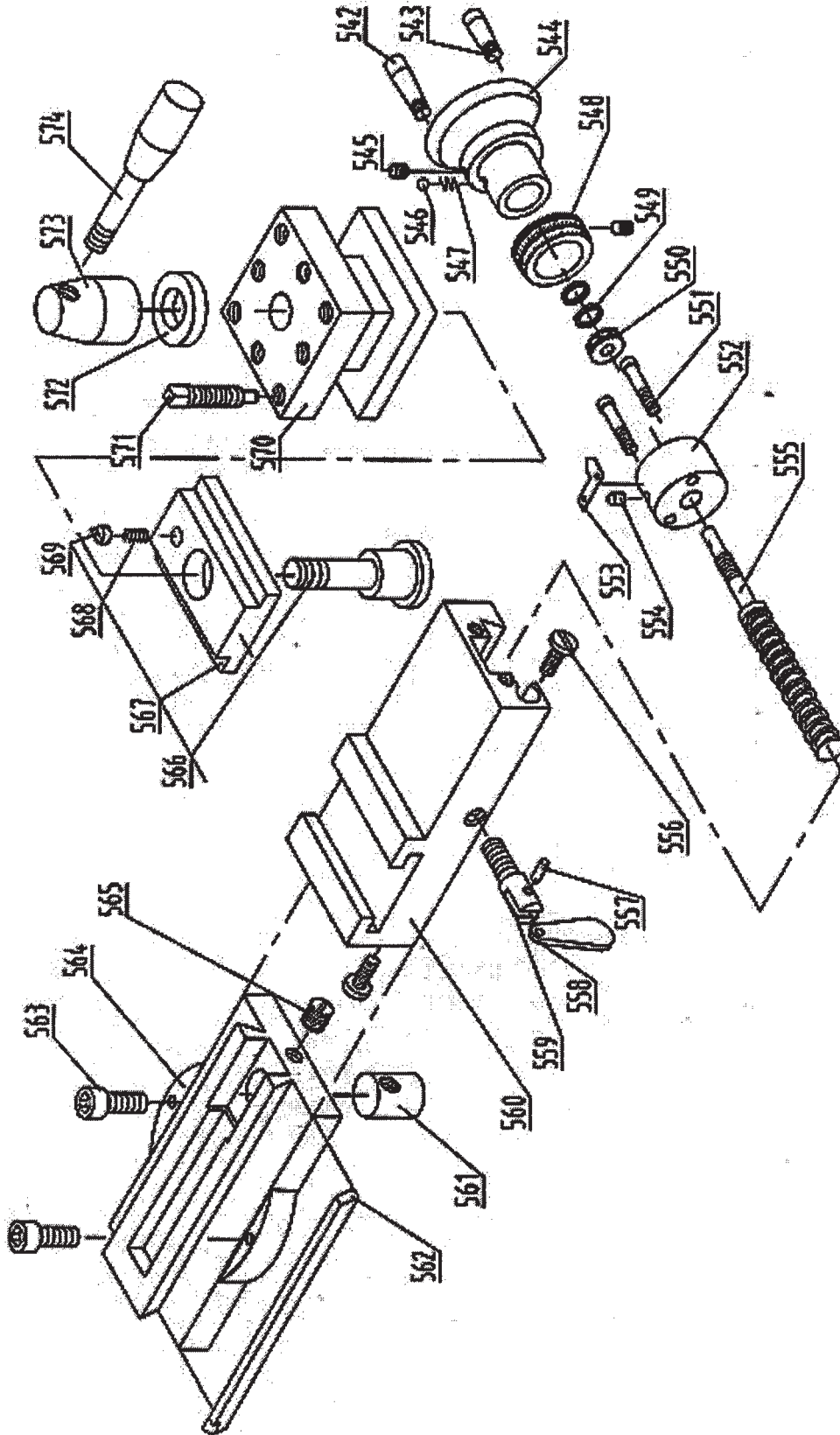
SADDLE ASSEMBLY



Tool post assembly

Index No.	Part No.	Description	QTY.
542	CM1224C-05-031	Handle	1
543	CM1224C-05-030	Handle	1
544	CM1224C-05-029	Handwheel	1
545	GB/T77	Screw M6×16	2
546	GB/T308	Steel ball6	1
547	CM1224C-06-007	Pressure spring	1
548	CM1224C-05-028	Graduation collar	1
549	GB/T810	Nut M10×1	2
550	GB/T301	Bearing 51100	1
551	GB/T70	Screw M4×30	2
552	CM1224C-05-027	Leadscrew seat	1
553	CM1224C-00-006	Indicator plate	1
554	JB/T7940.4	Oil cup 6	1
555	CM1224C-05-025	Leadscrew	1
556	CM1224C-05-020	Adjusting screw	2
557	GB/T879	Pin 2×8	2
558	CM1224C-05-022(B)	Clamping knob	1
559	CM1224C-05-022(A)	Clamping screw	1
560	CM1224C-05-010	Base of tool post	1
561	CM1224C-05-026	Leadscrew nut	1
562	CM1224C-05-019	Gib	1
563	GB/T70	Screw M8×24	2
564	CM1224C-05-009	Swivel base	1
565	GB/T78	Screw M6×12	1
566	CM1224C-05-016	Locking screw	1
567	CM1224C-05-043	T-block	1
568	CM1224C-05-011	Compressing spring	1
569	CM1224C-05-012	Locating block	1
570	CM1224C-05-014	Tool post	1
571	CM1224C-05-013	Screw	8
572	CM1224C-05-015	Washer	1
573	CM1224C-05-017	Lever	1
574	CM1224C-05-018	Handle	1

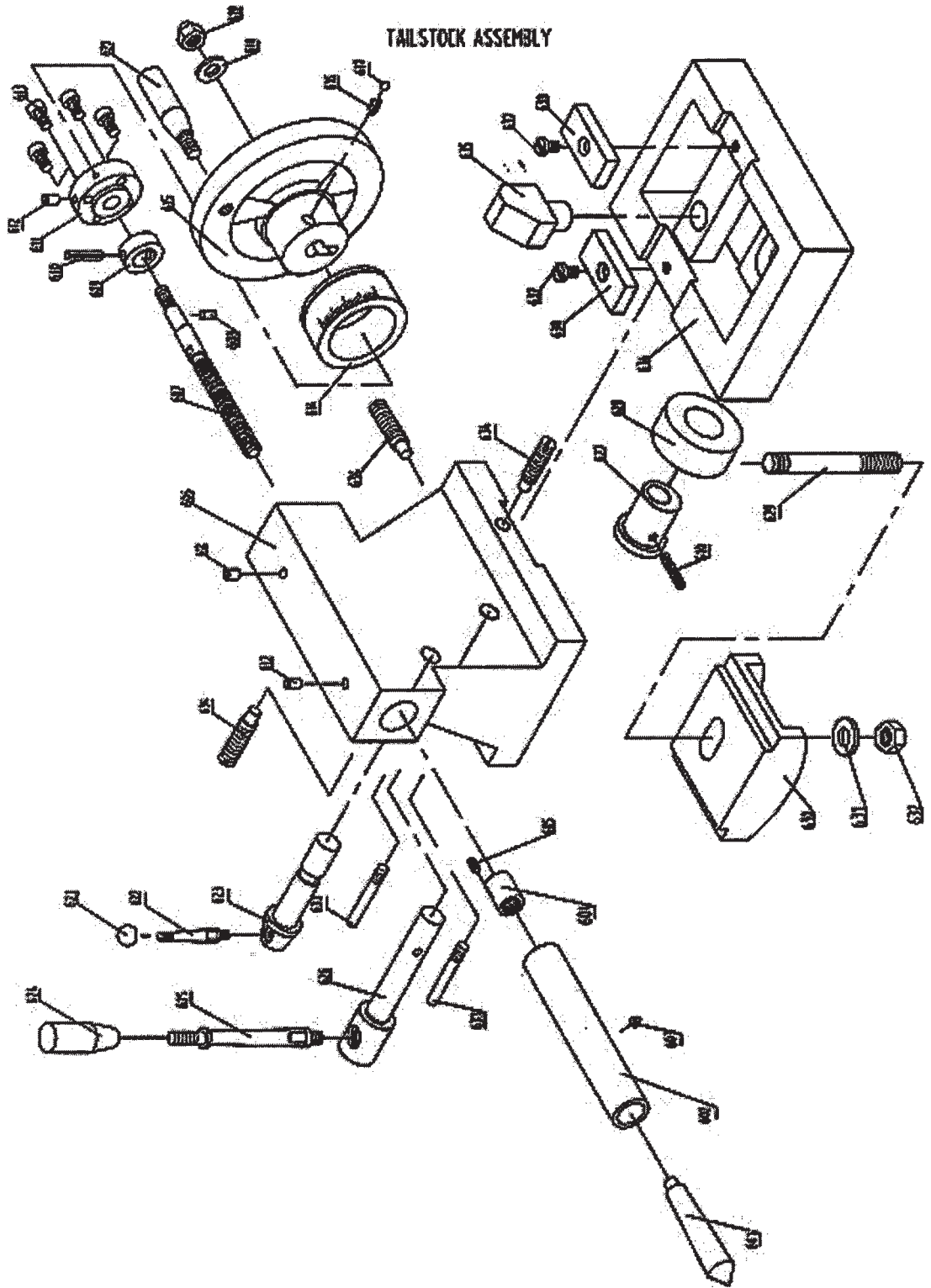
TOOL POST ASSEMBLY



Tailstock Assembly

Index No.	Part No.	Description	QTY.
601	GB/T9204.1	Center M.T.3.	1
602	CM1224C-06-002	Tailstock quill	1
603	CM1224C-06-021	T-Key	1
604	CM1224C-06-004	Nut of leadscrew	1
605	GB/T78	Screw M6×10	1
606	CM1224C-06-001	Tailstock	1
607	CM1224C-06-003	Leadscrew	1
608	GB/T119	Pin 5×8	1
609	CM1224C-06-022	Sleeve	1
610	GB/T879	Spring pin.5×24	2
611	CM1224C-06-005	Leadscrew seat	1
612	JB/T7940.4	Oil cup	3
613	GB/T70	Screw M6×16	4
614	CM1224C-06-006	Graduation collar	1
615	CM1224C-06-016	Handwheel	1
616	CM1224C-06-007	Spring	1
617	GB/T308	Steel ball 6	1
618	GB/T97.1	Washer 10	1
619	GB/T923	Nut M10	1
620	GB/T4141.1	Handle BM8×63	1
621	GB/T4141.11	Lever ball M6×20	1
622	CM1224C-06-008	Lever	1
623	CM1224C-06-009	Eccentric axle	1
624	GB/T4141.14	Lever grip M10×50	1
625	CM1224C-06-015	Lever	1
626	CM1224C-06-014	Clamping shaft	1
627	CM1224C-06-011	Sleeve of eccentric axle	1
628	CM1224C-06-010	Sleeve	1
629	CM1224C-06-019	Double end bolt	1
630	CM1224C-06-018	Fixing block	1
631	GB/T97.1	Washer 12	1
632	GB/T6170	Nut M12	1
633	CM1224C-06-013	Clamping axle	2
634	GB/T75	Screw M10×40	3
635	CM1224C-06-017	Fixing bracket	1
636	CM1224C-06-020	Base plate	1
637	GB/T68	Screw M6×12	2
638	CM1224C-06-012	Fixing block	2

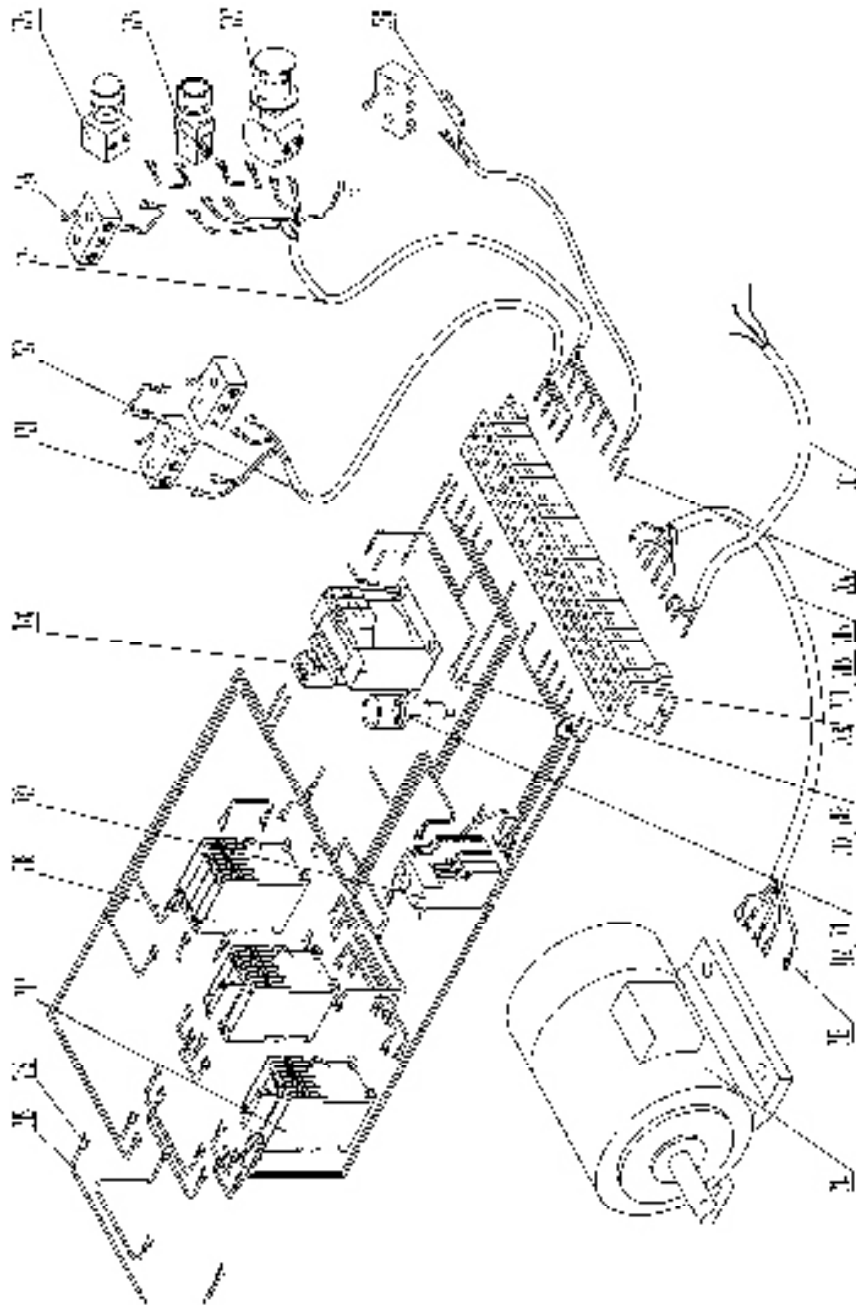
TAILSTOCK ASSEMBLY



Electric system assembly

Index No.	Part No.	Description	QTY.
701	RVV3×25	Plug wire	1.8 meter
704		"needle" connector wire	26
705		Metal hose Φ 10	0.6meter
706	BVR1.5	Copper wire	3meter
707	BVR1	Copper wire	2meter
708	JXB15-19	Wiring panel	1
709		Plug in unit 4.8	2
710		Sleeve of plug in unit	2
711	BLX	Fuse core 2A	1
712	BLX	Fuse	1
713	OT1.5-4	Connector wire	5
714	YL90LA	Motor	1
715	BVR1.5	Copper wire	1.6meter
716	UT1.5-4	Connector wire	20
717	B16	Contactator	2
718	CJX2	Contactator	1
719	T16	Thermal relay	1
720	JBK5-63	Transformer	1
721	UT1-3	Connector wire	40
722	RVV5×1	Wire, 5 core in	1.2meter
723	RVV6×1	Wire, 6 core in	1meter
724	LXW5-11	Micro-switch	4
725	AD11	Indicator light	1
726	LA19	Green button	1
727	LAY3	Emergency switch	1
728	RVV2×1	Wire, 2 core in	1meter

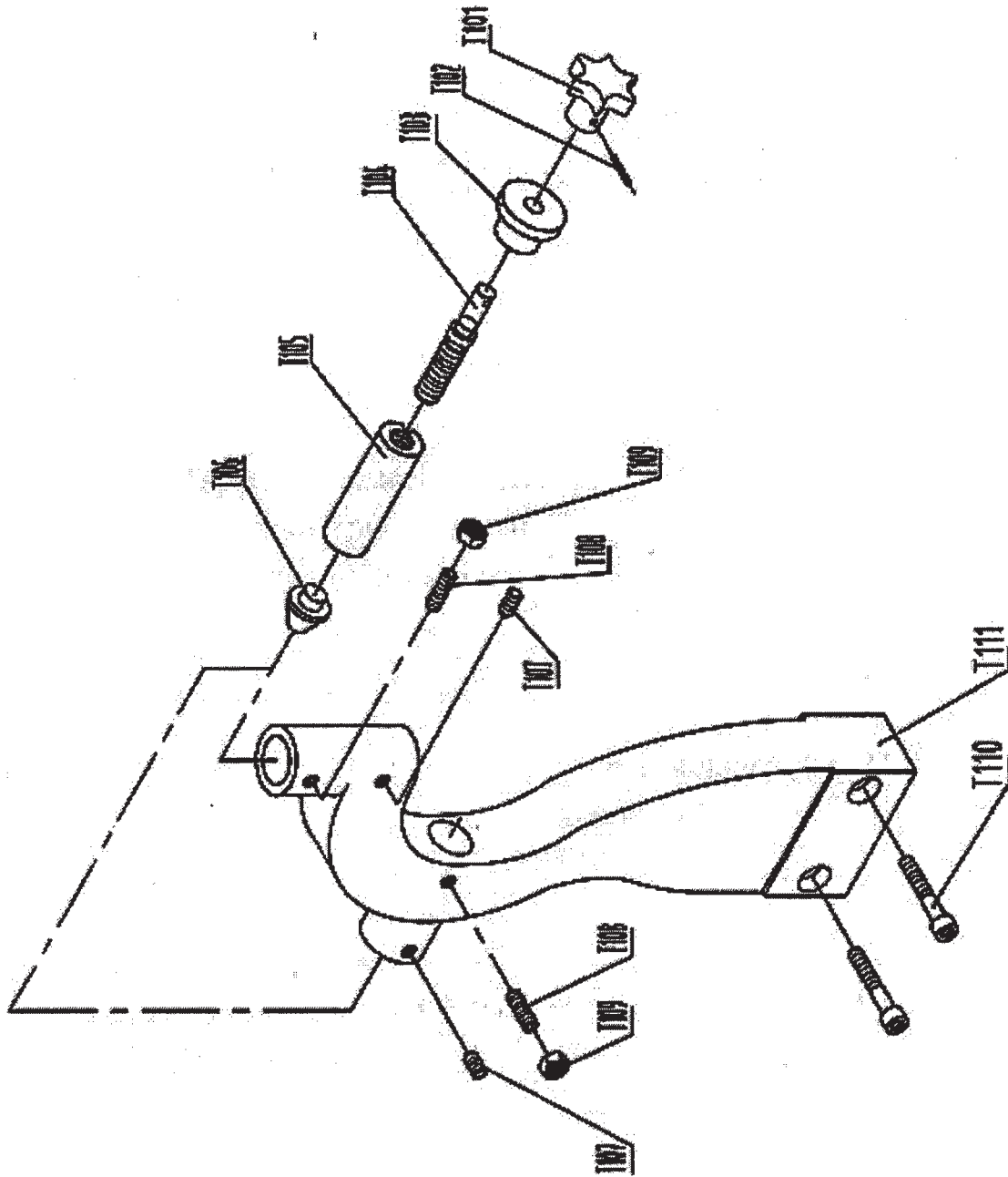
ELECTRIC ASSEMBLY



Follow rest assembly

Index No.	Part No.	Description	QTY.
T101	JB/T727404	Star handle M8×30	2
T102	GB/T879	Pin 3×16	2
T103	CM1224C-05T02-003	Collar	2
T104	CM1224C-05T02-002	Adjusting screw	2
T105	CM1224C-05T02-004	Sleeve	2
T106	CM1224C-05T02-005	Clamping block	2
T107	GB/T78	Screw M6×8	2
T108	GB/T71	Screw M6×16	2
T109	GB/T6170	Nut M6	2
T110	GB/T70	Screw M8×35	2
T111	CM1224C-05T02-002	Follow rest	1

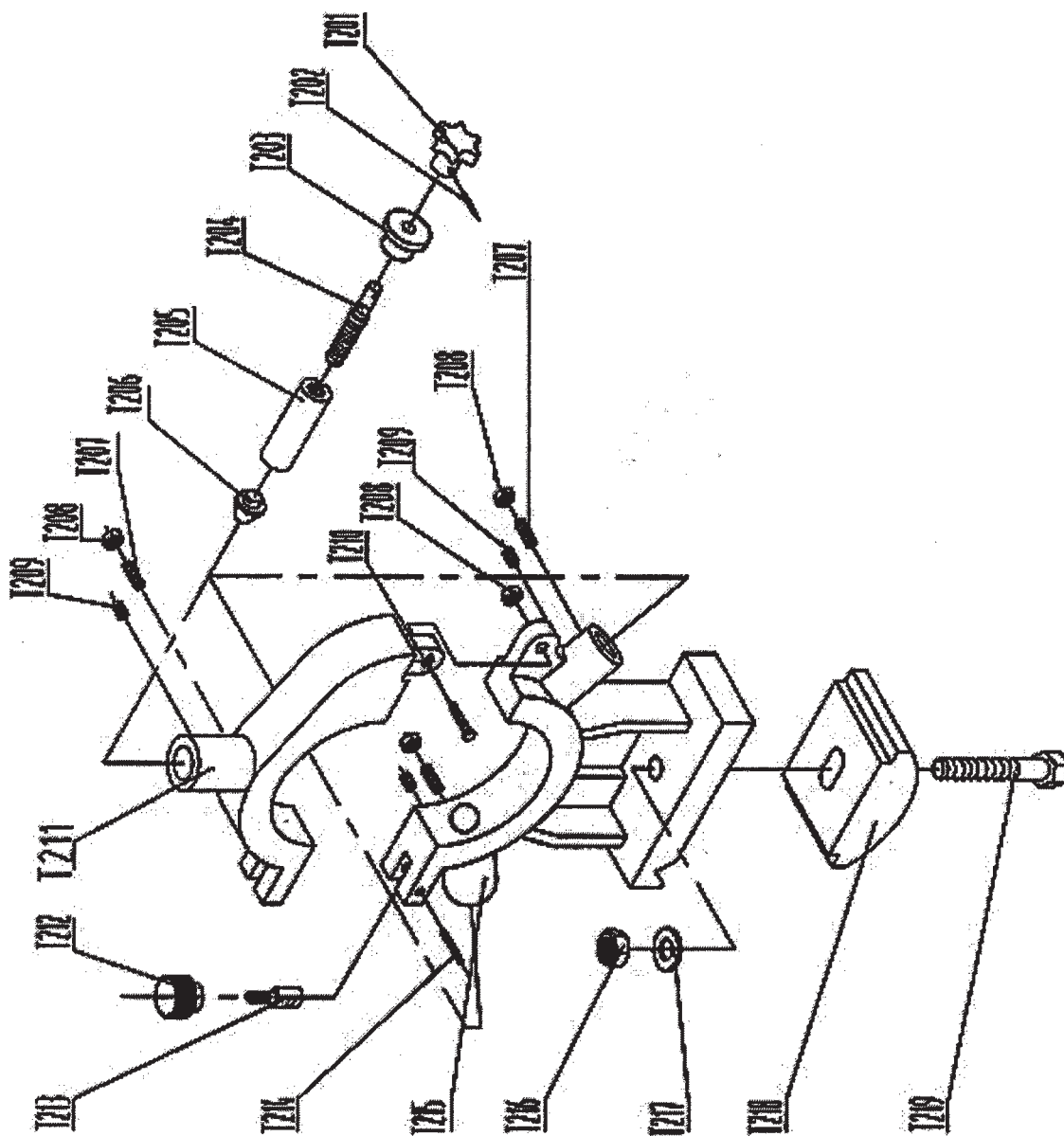
FOLLOW REST ASSEMBLY

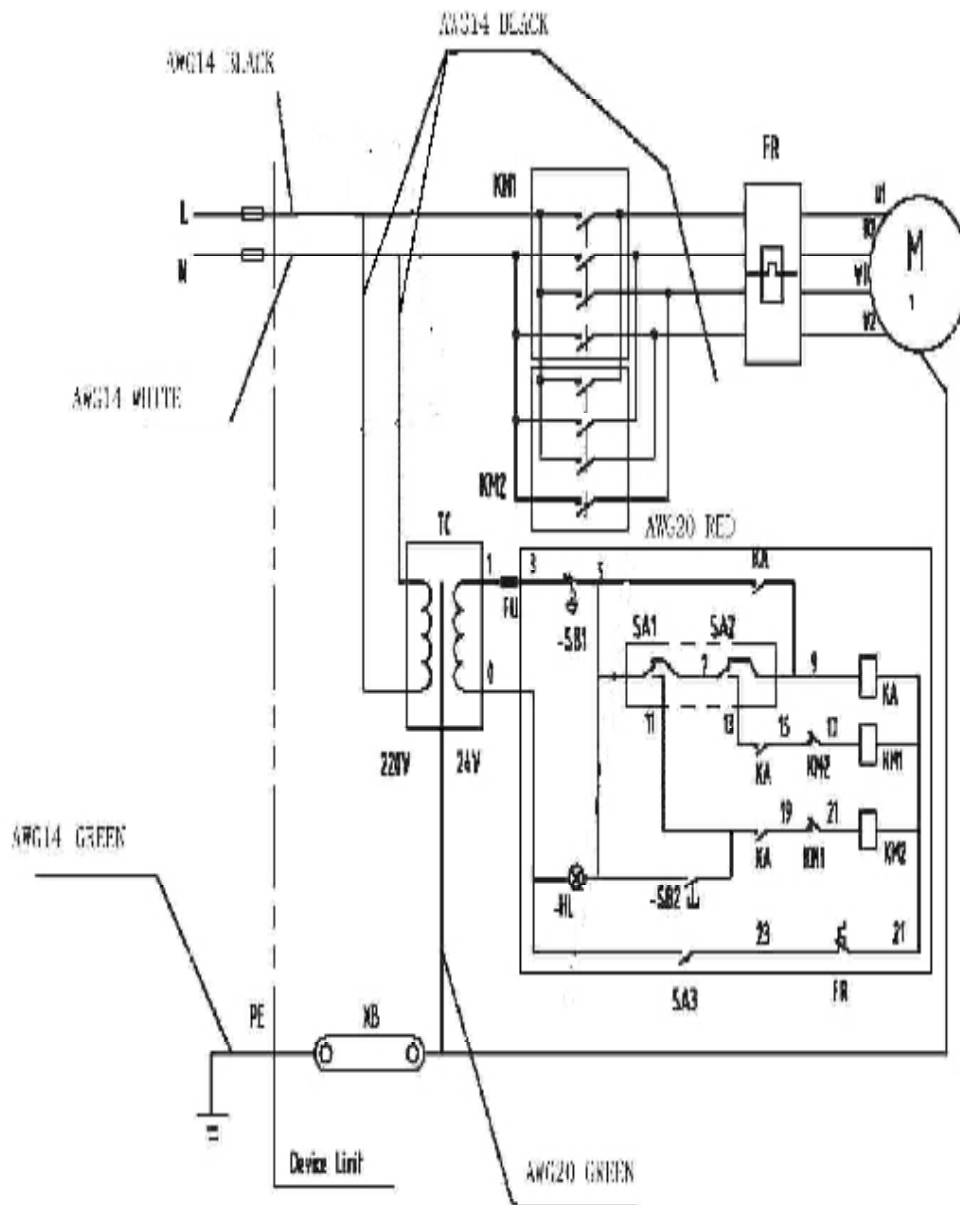


Steady rest assembly

Index No.	Part No.	Description	QTY.
T201	JB/T7274.4	Star handle M8×30	3
T202	GB/T879	Pin 3×16	3
T203	CM1224C-05T02-003	Collar	3
T204	CM1224C-05T02-002	Adjusting screw	3
T205	CM1224C-05T02-004	Sleeve	3
T206	CM1224C-05T02-005	Clamping block	3
T207	GB/T71	Screw M6×16	3
T208	GB/T6170	Nut M6	4
T209	GB/T78	Screw M6×8	3
T210	GB/T27	Bolt M6×25	3
T211	CM1224C-05T03-003	Cover of steady rest	1
T212	CM1224C-05T03-002	Knob	1
T213	CM1224C-05T03-001	Lever	1
T214	GB/T879	Pin 5×30	1
T215	CM1224C-05T03-004	Base of steady rest	1
T216	GB/T41	Nut M12	1
T217	GB/T95	Washer 12	1
T218	CM1224C-06-018	Fixing plate	1
T219	GB/T5780	Bolt M12×70	1

STEADY REST ASSEMBLY





Wiring Diagram

WARRANTY INFORMATION



CENTRAL MACHINERY®

LIMITED 90 DAY/1 YEAR WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser for a period of ninety days from date of purchase that the motor/engine, the belts (if so equipped), and the blades (if so equipped) are free of defects in materials and workmanship. Harbor Freight Tools also warrants to the original purchaser, for a period of one year from date of purchase, that all other parts and components of the product are free from defects in materials and workmanship. This warranty does not apply to damage due directly or indirectly to misuse, abuse, negligence or accidents; repairs or alterations outside our facilities; or to 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 product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.**

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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