



MACHINERY DIVISION

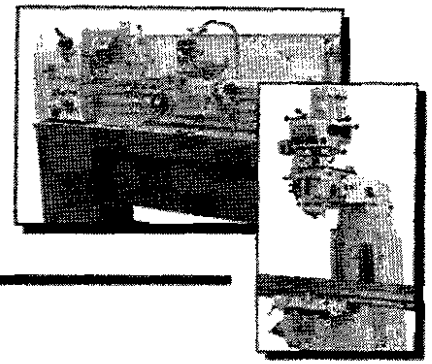
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MODEL ML-712 LATHE

THANK YOU FOR PURCHASING WITH KBC MACHINERY. ALL KBC MACHINES ARE BACKED BY OUR 1 YEAR PARTS REPLACEMENT WARRANTY. WHEN USED AS INTENDED, AND WITH PROPER MAINTENANCE THIS MACHINE WILL PROVIDE YOU WITH YEARS OF TROUBLE-FREE SERVICE. IF YOU NEED PARTS SIMPLY FILL OUT THE PARTS REQUEST FORM, AND FAX OR E-MAIL YOUR REQUEST. ALL OTHER QUESTIONS PLEASE CONTACT US @ :

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PARTS REQUEST FORM

YOUR COMPANY NAME: _____

STATE/PROVINCE _____

YOUR NAME _____

PHONE # + EXT _____

FAX # _____

MACHINE INFO:

MAKE/MANUFACTURER _____

MODEL NUMBER _____

YEAR MADE _____

SERIAL# _____

PARTS REQUESTED:

PART#

DESCRIPTION

PLEASE INCLUDE COPY(S) OF THE PARTS DRAWING FROM THE
MANUAL AND CIRCLE THE PARTS NEEDED

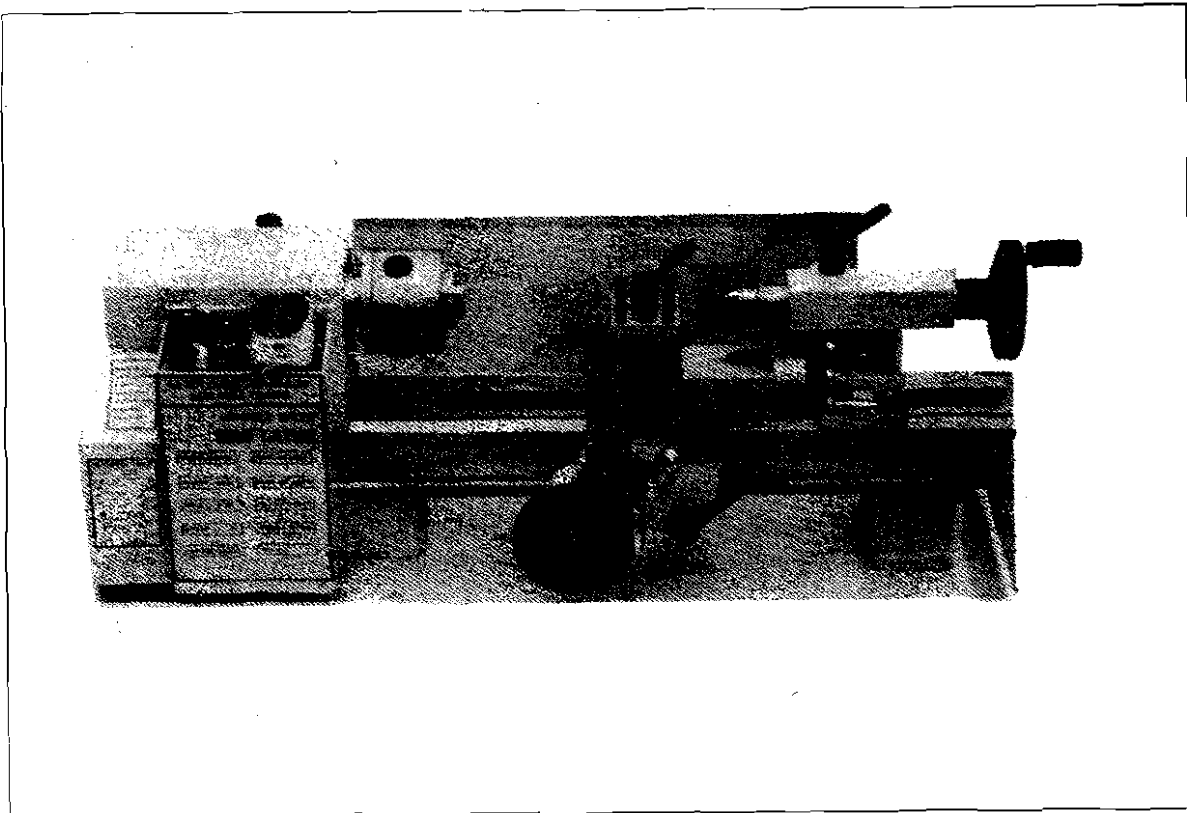
FAX PARTS REQUEST TO (800) 862-1740

E-MAIL PARTS REQUEST TO: machinery@kbctools.com

THANKS; KBC MACHINERY - MICHIGAN

Instruction Manual

VARIABLE SPEED MINI LATHE



Before Using Be Sure To Read This Manual.

This Machine is Suitable To Use Only From 12°C ~ 35°C (53.6°F ~ 95°F).

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Safety Rules For Lathe

1. Before you turn on the motor, be sure that you have put in suitable lubrication according to manual's instruction. Also check carefully to see all the tool work-pieces etc. are in proper positions.
2. Always use your hand to dismount the chuck or the lathe's face plate. Do not use power tools.
3. After installation of the chuck, remove the wrenches and tools in order not to cause any accidents when the machine is turned on.
4. When the lathe is on, do not use a wrench to fix or adjust the workpiece or any other rotating parts of the machines.
5. When the machine is in motion, do not use any instruments to measure the workpiece, nor test the sharpness of the cutter with your hand.
6. Do not use too large a tool cutter, and do your feeding with too large a feed force. This will easily cause an accident because of a broken workpiece.
7. Always use the right tools and set them in the proper position when you start to do work.
8. Do not change the gear while the lathe is in operation.
9. Always keep a proper distance from the machine in order to avoid being hurt by a broken workpiece.

Product Features

- 1) This precision mini lathe is designed to perform various types of processing jobs. Counterface turning, drilling, threading, and cutting jobs on materials made up of round bar and bar materials can be performed with this machine. This machine can be used in areas such as mini precision parts processing, sample processing and modeling works.
- 2) The lathe bed is made of high grade iron. The rigidity of lathe, the narrowness and accuracy of the v-slides, are guaranteed by raw materials, heat treating and grinding.
- 3) This machine is DC motor driven.
- 4) The spindle speed is 24 RPM, adjustable from zero to 2500RPM.
- 5) The feed speed can be adjusted according to the requirements of different work-pieces.

Specifications

Model	CT0618 - 300/CJ0618 - 200	
Distance Between Centers	300mm/200mm	12"/8"
Swing over bed	180mm	7"
Spindle Taper MT3		
Tailstock Taper	MT2	
Chuck Diameter	80mm	3.15"
Spindle Bore	20mm	0.79"
Cross slide Travel	65mm	2.56"
Top Slide Travel	35mm	1.38"
Range of imperial threads	12 - 52 T.P.I	
Spindle Accuracy	0.01mm	0.0004"
Spindle speed	0 - 2500 RPM Infinitely Variable	
Power of Motor	400w Single Phase	0.53HP
Vol./Freq.	230V/50Hz or 120V/60Hz(± 10%)	
Net Weight	38KG/36KG	84b/80b
Packing Dimensions	760 × 305 × 315/660 × 325 × 315mm	30 × 12 × 12"/26 × 12 × 12.4"

Unpacking And Major Parts

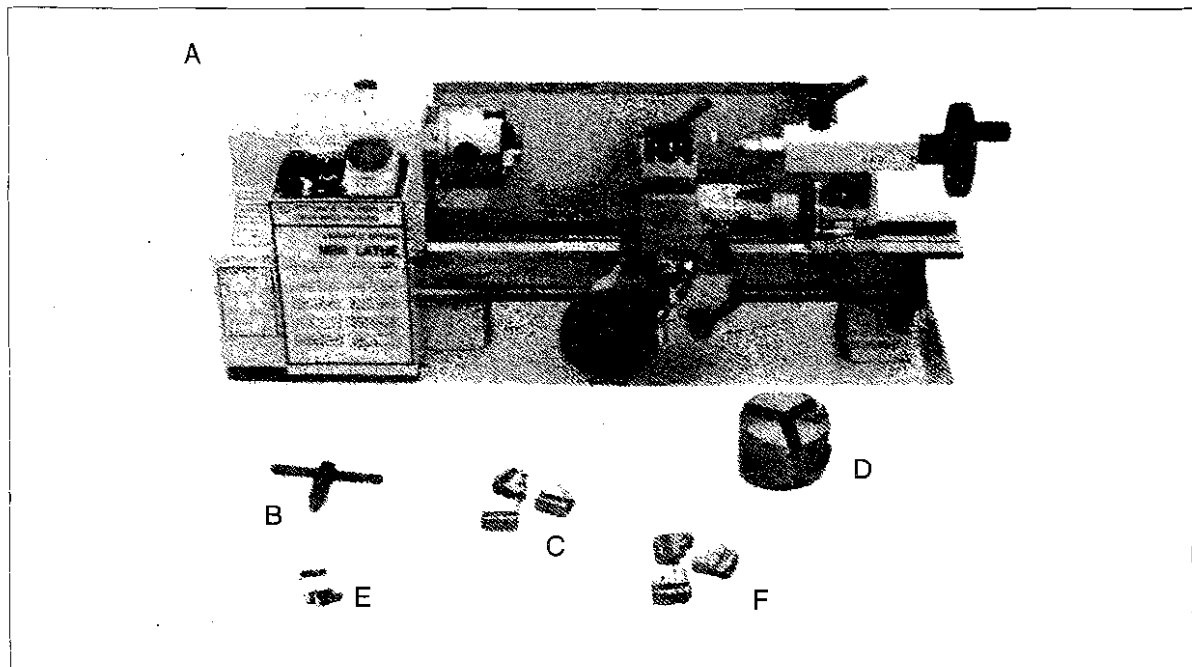


Fig. 1 Contents Of The Carton

Carefully unpack the Mini Lathe and check all items. Figure 1 illustrates contents of the carton. Do not discard any packing material until the Mini Lathe is fully assembled and operational.

A. Lathe
D. Chuck

B. Chuck key
E. Chuck set screws

C. External Jaws
F. Internal Jaws

The major parts of the lathe are shown in Fig. 2 and in Fig. 3.

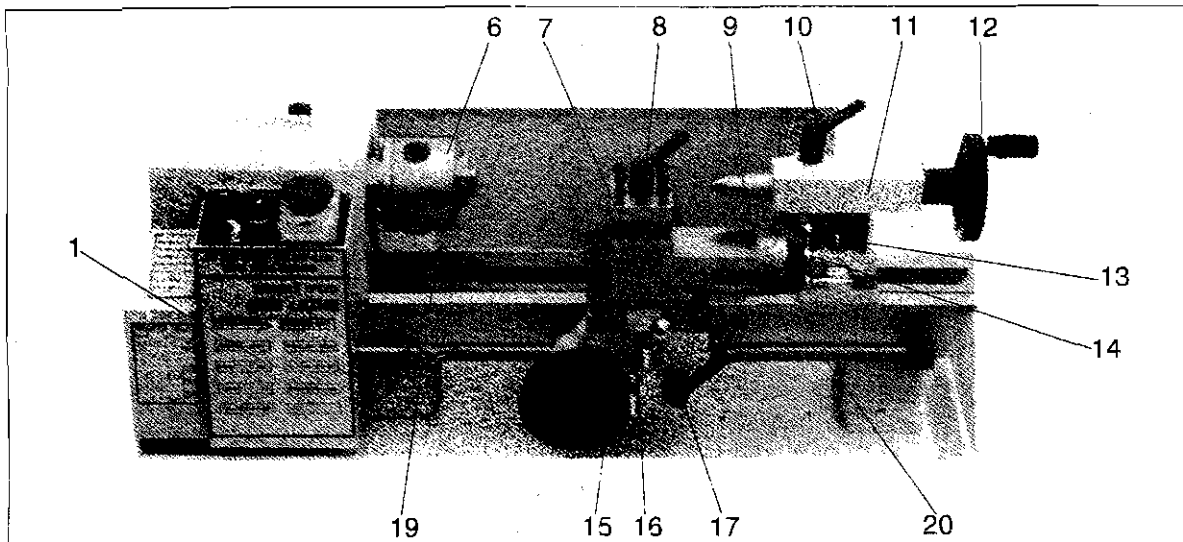


Fig. 2 Front View Of The Lathe

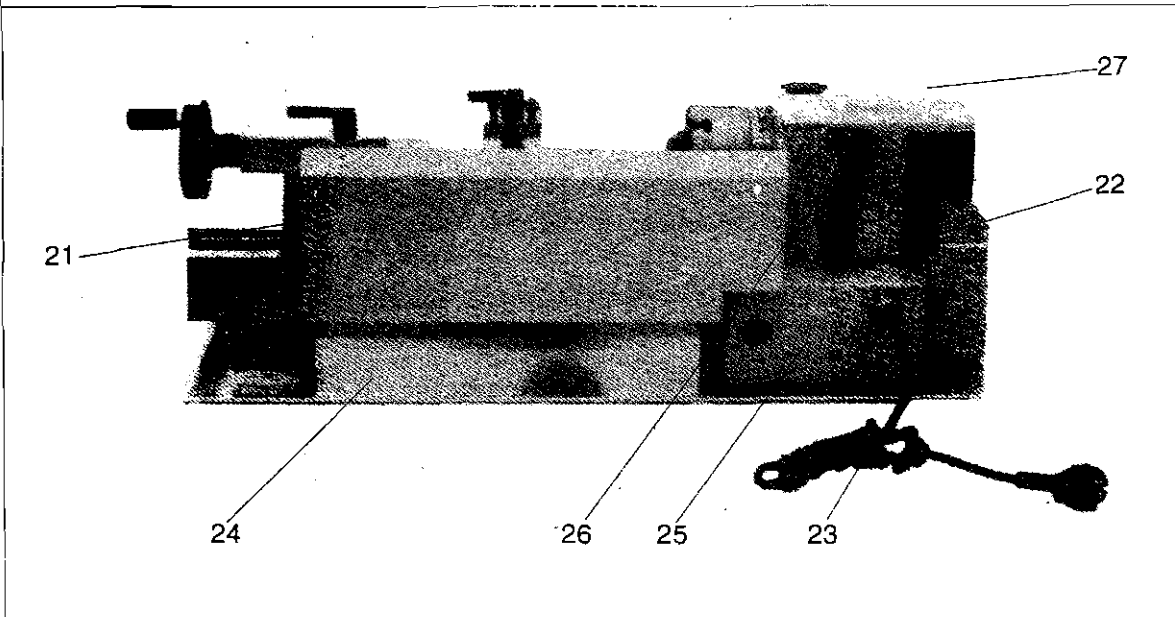


Fig. 3 Back View Of The Lathe

- | | | |
|--------------------------------|------------------------------|--------------------------------|
| 1. Control box (see page 4) | handwheel | 21. Rear splash guard |
| 6. Chuck | 13. Tailstock set screw | 22. Feeding direction selector |
| 7. Compound rest | 14. Compound rest crank | 23. Power cord |
| 8. Tool post | 15. Feeding control wheel | 24. Chip tray |
| 9. Fixed center | 16. Cross feeding crank | 25. Motor cover |
| 10. Tailstock quill fix holder | 17. Automatic feeding handle | 26. H/L Gear shift lever |
| 11. Tailstock | 19. Bed way | 27. End cover |
| 12. Tailstock quill adjust | 20. Lead screw | |

Operation & Replacement

Replacement of chuck

When replacing the chuck, place a cloth or a piece of wood on the bed way at the bottom of the chuck. This is to avoid damage to the bed way caused by carelessly dropping the chuck. Loosen the 3 set screws as shown in Fig. 6. (A) to replace the chuck.

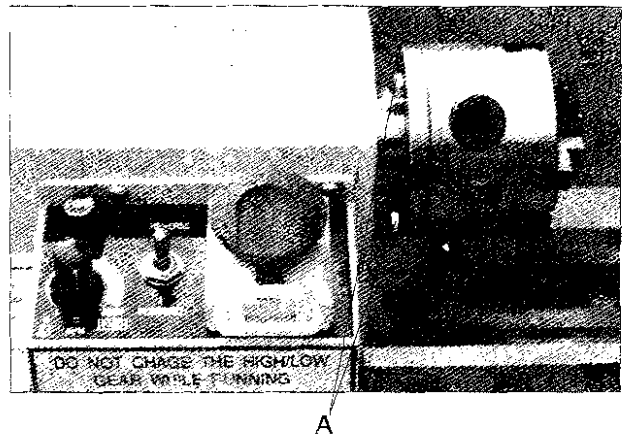


Fig. 6 Replacement Of Chuck

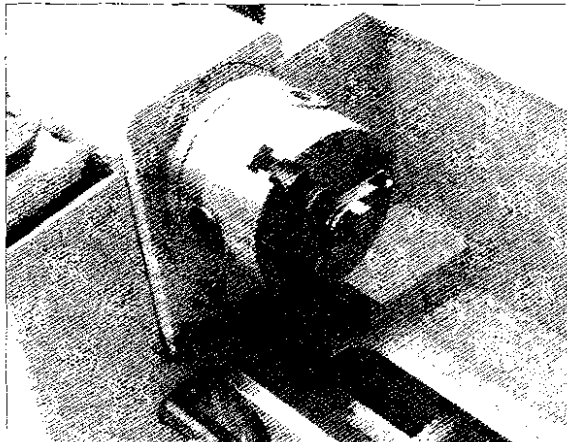


Fig. 7 Replacement Of Jaws

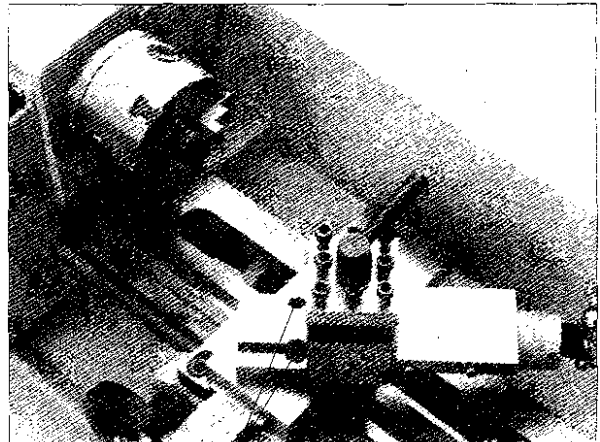


Fig. 8 Compound Rest Adjustment

Replacement of jaws

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

you need to reassemble them again as they are not properly assembled (Fig. 7). When you are going to mount the work piece you need only to loosen one jaw. However, we recommend you loosen the three jaws at the same time. In this way you can protect them and will not hurt the thread inside.

Compound rest adjustment

Loosen the two screws as shown in (A) of Fig. 8. After you have obtained the angle you demand, please do not forget to tighten them.

Tailstock rest adjustment

When you are going to change position or replace the tailstock you need to loosen the nut as shown in (A) of Fig. 9.

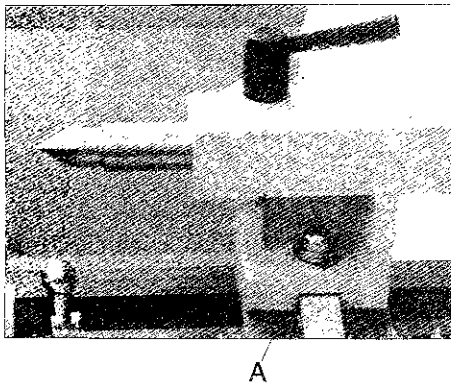


Fig. 9 Tailstock Rest Adjustment

Replacement of carbon brushes

Replace the carbon brushes by removing the brush covers both on Motor cover as shown in A of Fig. 10-A and the right bottom side of speed controller as shown in B of Fig. 10-B.

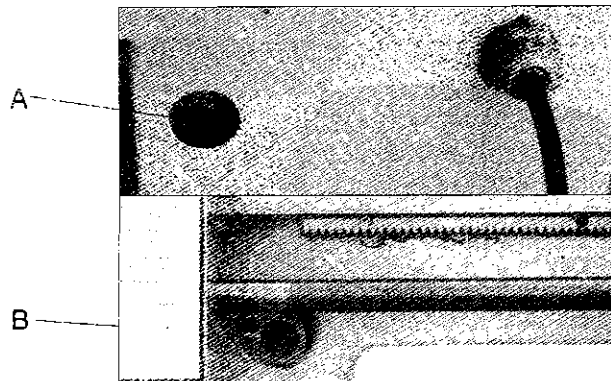


Fig. 10 Replacement Of Carbon Brushes

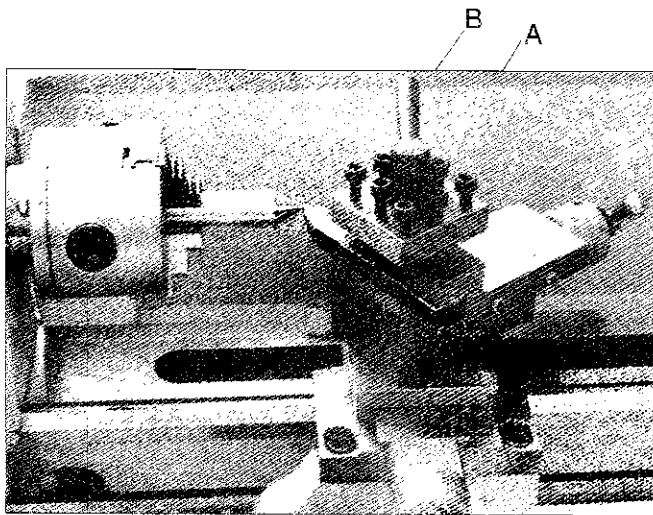


Fig. 11 Tool Post Adjustment

Tool post adjustment

When you are going to adjust the tool post position, you only need to loosen the lever shown in (B) of Fig. 11. After you have finished be sure to tighten. If you are going to replace the work cutter then you need to loosen the screws of (A) with the allen wrench provided.

Operation

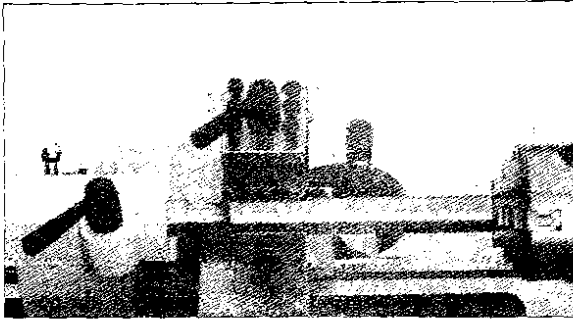


Fig. 13 Workpiece Holding And Drilling

Use the chuck to hold the workpiece firmly. Then, use the center to fix the other end. If you change the center to drilling chuck you can start your drilling immediately. (Fig. 13)

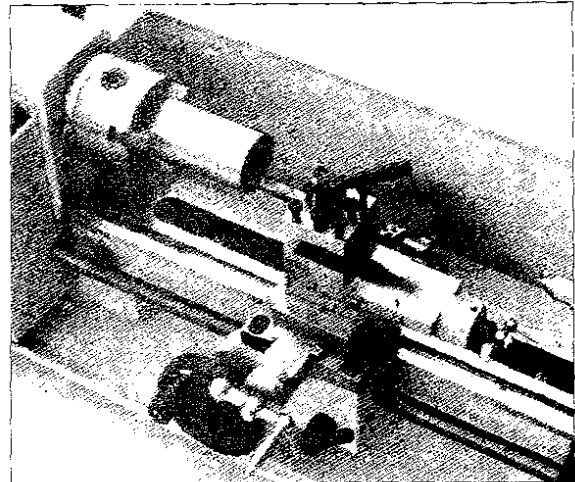


Fig. 14 Face Cutting

Use the chuck to hold the workpiece firmly and the cutter to start lathe's face cutting as shown in Fig. 14 (edge of the cutter must be at the same height as the center)

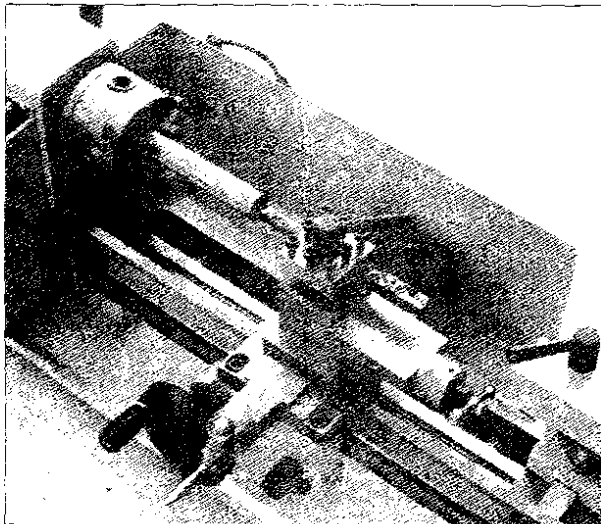


Fig. 15 Internal Cutting

By changing the tool post angle and adjusting the compound rest, you can do internal cutting as in Fig. 15.

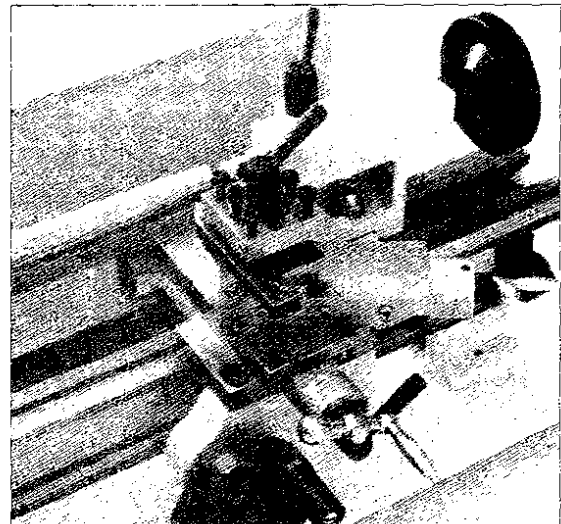
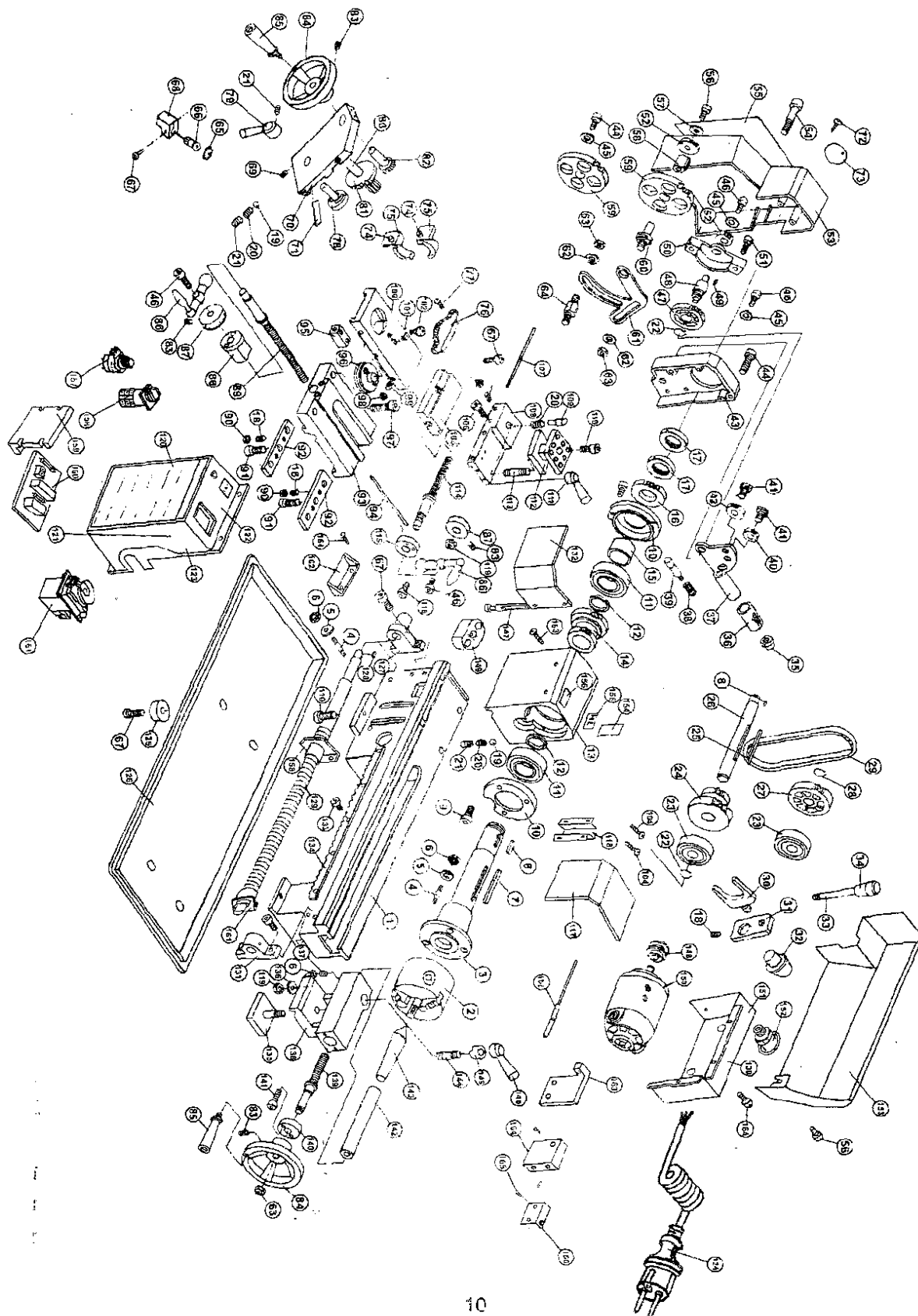


Fig. 16 Bevel Cutting

After adjusting the angle of the compound rest, you can do bevel cutting as in Fig. 16.

Assembly Diagram and Parts List



Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
1	Bed Way	1	37	Spring	1
2	Chuck	1	38	Indicator	1
3	Spindle	1	39	Pinion 25T	1
4	Stud M6 × 16	5	40	Support Screw	2
5	Washer M6	3	41	Pinion 20T	1
6	Nut M6	7	42	Fixed Cover	1
7	Key 5 × 40	1	43	Screw M6 × 20	2
8	Key 4 × 8	2	44	Screw M5 × 10	1
9	Screw M5 × 10	6	45	Gear 45T	1
10	Cover	2	46	Shaft	1
11	Ball Bearing 6206ZZ	2	47	Parallel Key 4 × 8	1
12	Spacer	2	48	Mount	1
13	Head Stock Casting	1	49	Screw M5 × 15	3
14	H/L Gear 21T/29T	1	50	Pinion 20T	2
15	Spacer	1	51	Washer 16	1
16	Spur Gear 45T	1	52	Screw M5 × 10	8
17	Nut	2	53	Cover	1
18	Set Screw M5 × 8	1	54	Screw M5 × 40	2
19	Steel Ball Φ5	2	56	Screw M6 × 6	3
20	Compression Spring Φ4 × 9	3	57	Washer 5	3
21	Set Screw M6 × 6	3	58	Bush w/Key	1
22	Retaining Ring 12	2	59	Gear 80T	2
23	Ball Bearings 6201ZZ	2	60	Shaft	1
24	H/L Gear 12T/20T	1	61	Support Plate	1
25	Parallel Key 4 × 45	1	62	Washer 8	2
26	H/L Gear Shaft	1	63	Nut M8	5
27	Pulley	1	64	Shaft	1
28	Retaining Ring 10	1	67	Screw M6 × 16	10
29	Timing Belt	1	69	Set Screw M4 × 10	3
30	Shifting Fork	1	70	Apron	1
31	Shifting Arm	1	71	Gib Strip	1
32	Shifting Knob	1	74	Shaft	2
33	Shifting Lever	1	75	Half Nut Base	1
34	Shifting Grip	1	78	Groove Cam	1
35	Handle	1	79	Handle	1
36	Handle Mount	1	80	Shaft	1

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
81	Feeding Gear(A) 11T/54T	1	119	Nut M10	2
82	Feeding Gear(B) 24T	1	120	Model Lable	1
83	Screw M6 × 12	3	121	Warning Label	1
84	Wheel	2	122	Switch Label	1
85	Knob	2	123	Control Box	1
86	Handle	2	124	Plug w/Cord	1
87	Dial	2	125	Rubber Pad	4
88	Bracket	1	126	Chip Tray	1
89	Feeding Screw	1	127	Bracket	1
90	Nut M5	3	128	Key B4 × 8	1
91	Screw M6 × 12	6	129	Lead Screw	1
92	Slide Plate	2	131	Bracket	1
93	Saddle	1	133	Screw M3 × 10	4
94	Gib Strip	1	134	Rack	1
95	Feeding Nut	1	135	Clamp Plate	1
96	Swivel Disk	1	136	Washer 10	2
97	Screw M8 × 20	2	137	Screw M5 × 15	1
98	Nut M4	6	138	Tailstock Casting	1
99	Screw M4 × 16	6	139	Tailstock Screw	1
100	Cross Slide	1	140	Bracket	1
101	Screw M5 × 10	4	141	Screw M4 × 10	6
102	Screw M4 × 10	2	142	Tailstock Quill	1
105	Compound Rest (B)	1	143	Center	1
106	Screw M4 × 14	1	144	Stud M8 × 25	1
107	Gib Strip	1	145	Clamp	1
108	Compound Rest(A)	1	146	Handle	1
109	Positioning Pin	1	148	Pulley	1
110	Screw M8 × 25	4	150	Motor	1
111	Clamping Lever	1	151	Cover	1
112	Tool Rest	1	152	Cord Fixer	1
113	Stud M10 × 50	1	153	Rear Splash Guard	1
114	Cross Feeding Screw	1	154	Warning Label	1
115	Bracket	1	155	HL Label	1
116	Screw M4 × 14	2	156	Warning Label	1