VARIABLE SPEED MINI LATHE

OPERATION MANUAL

Before Using Be Sure To Read This Manual.
This machine is most suitable to use from 12℃ to 35℃ (53.6℉ to 95℉)

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 workpieces 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 machine, nor test the sharpness of the cutter with your hand.
6. Do not use too large a tool cutter to do your feeding with too large a workpiece. This will easily cause an accident because of a broken workpiece.
7. Always use the right tools and stand at the proper position when performing your work.
8. Do not change the gear when the machine is in operation.
9. Always keep a proper distance from the machine in order to avoid bring struck by a broken workpiece.

Your Mini Lathe

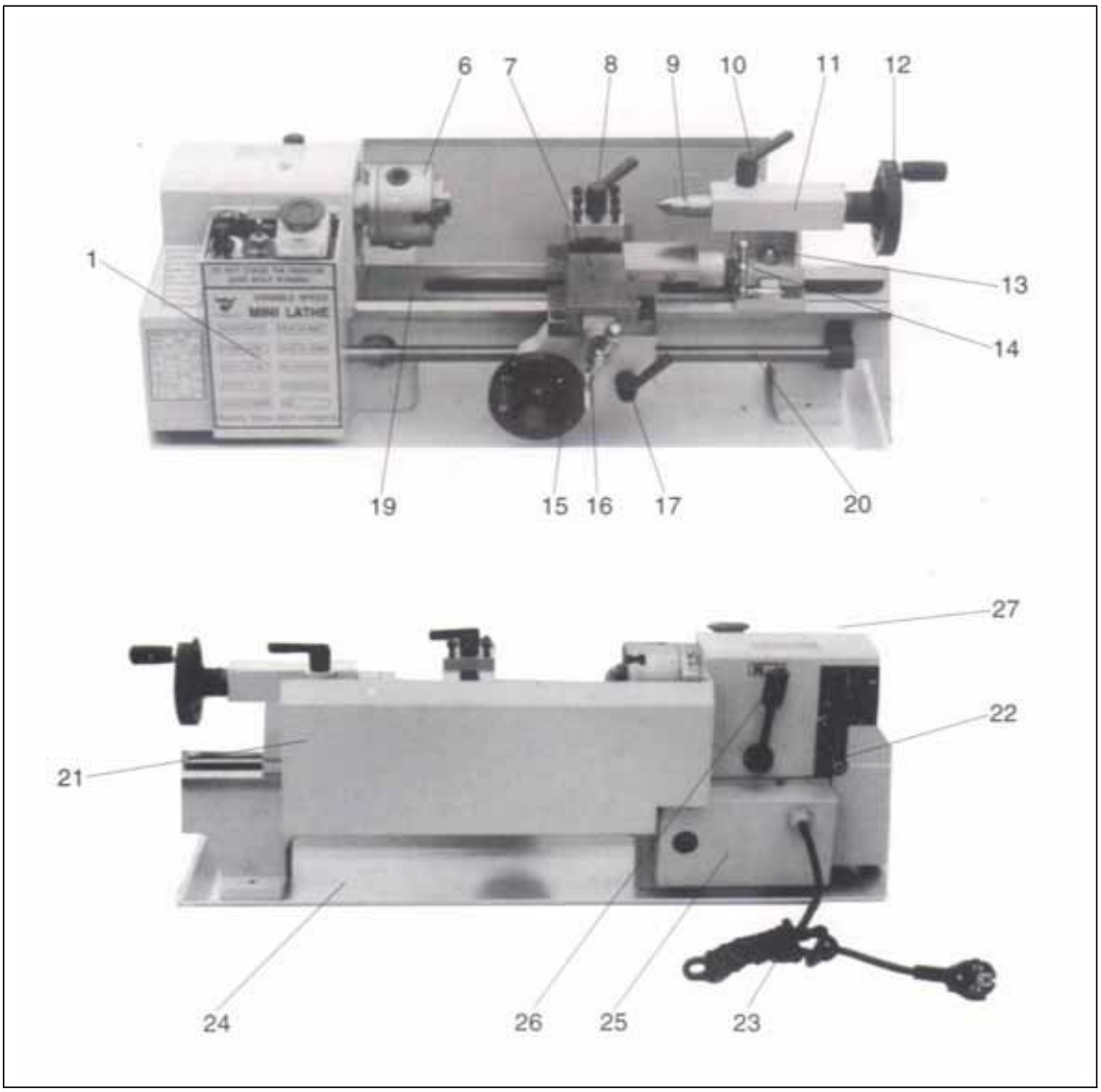


Fig.2.3

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

Grounding Instructions

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinates.
2. Do not moodily the plug provided it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripe is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.

Unpacking & Adjustment

1. Clean off grease on the machine.
2. Check that the 3 set screws of the check that it rotates freely.
3. Move the Feeding direction selector from the back of the body to the middle.
4. First shut off the switch ①. Adjust the switch ③ by turning to "0" position and turn the switch ② to STOP position. If the lathe needs to be started, turn the switch ① according to direction marked on switch to the normal position and turn the switch ② to R or L position. The spindle will turn immediately by turning the switch ③ . The speed can be adjusted by turning the switch ③ to "0" position, if the lathe needs to be changed, the switch ③ must be stopped under emergency situation, please put the switch ① immediately. If the lathe needs to be started again, please do it again according to above mentioned process. (SEE Fig.4)

Fig.4

1.emergency stop switch　　2.forward-reverse switch

3.speed control knob　　4.fuse

5. Check the compound rest crank and the cross feeding crank to see that they work properly if too tight or too loose, turn the adjusting screws located at both sides. (Fig.5)

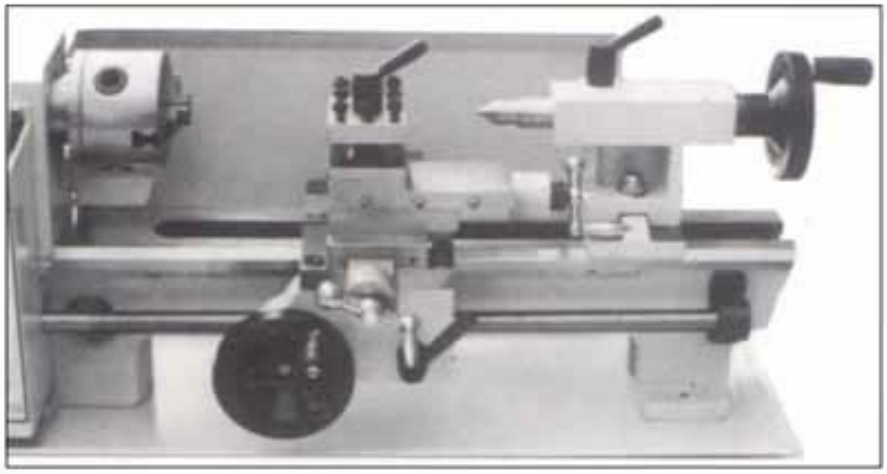


Fig.5

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.

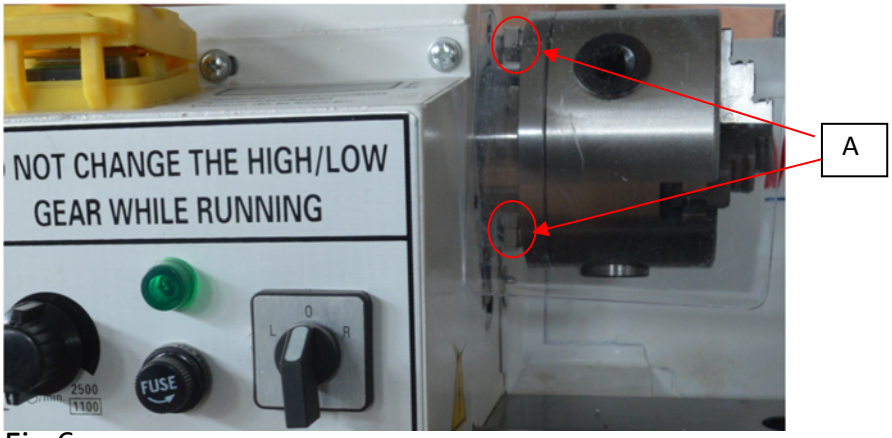


Fig.6

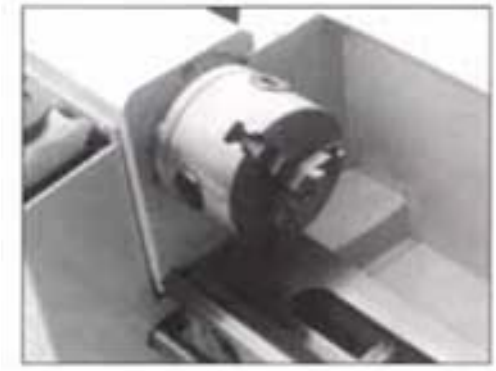


Fig.7

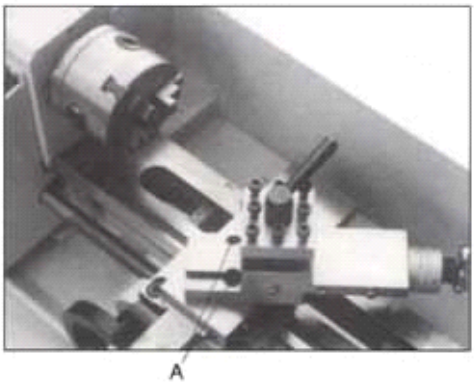


Fig.8

Replacement of jaws

The jaws are two types: the internal jaws and the external jaws. Please pay notice 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, 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 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 jaws. 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 tignten 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.

Replacement of carbon brushes

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

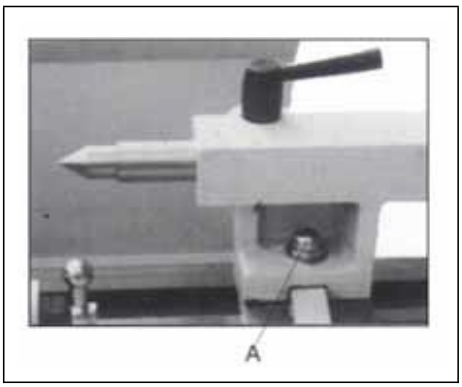


Fig.9

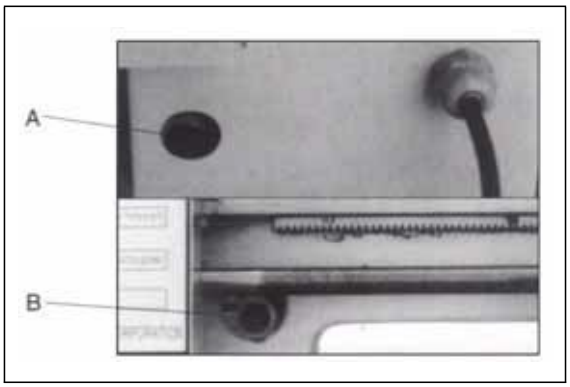


Fig.10-A

Fig.10-B

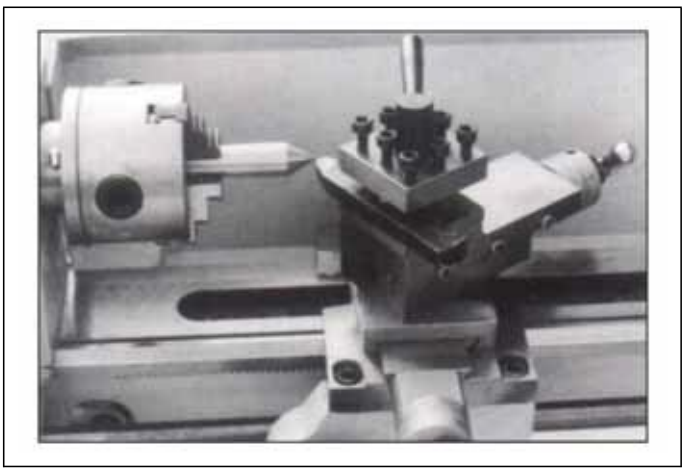


Fig.11

Tool pose 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

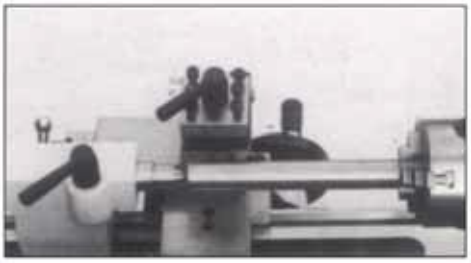


Fig.13

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

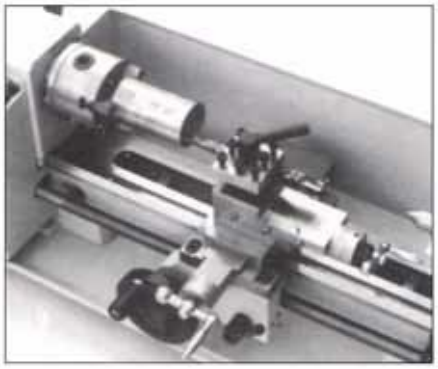


Fig.14

Use the chuck to hold 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)

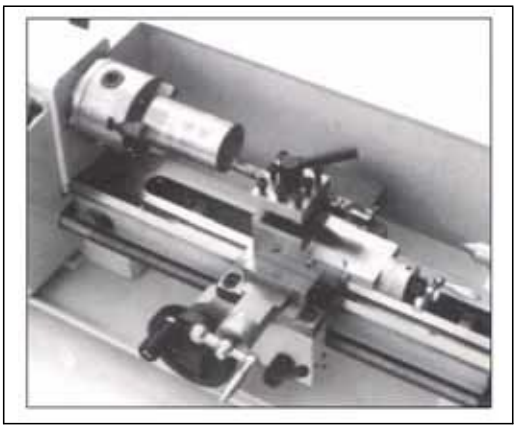


Fig.15

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

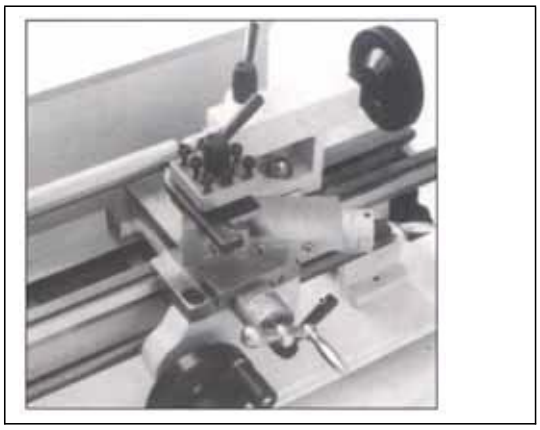
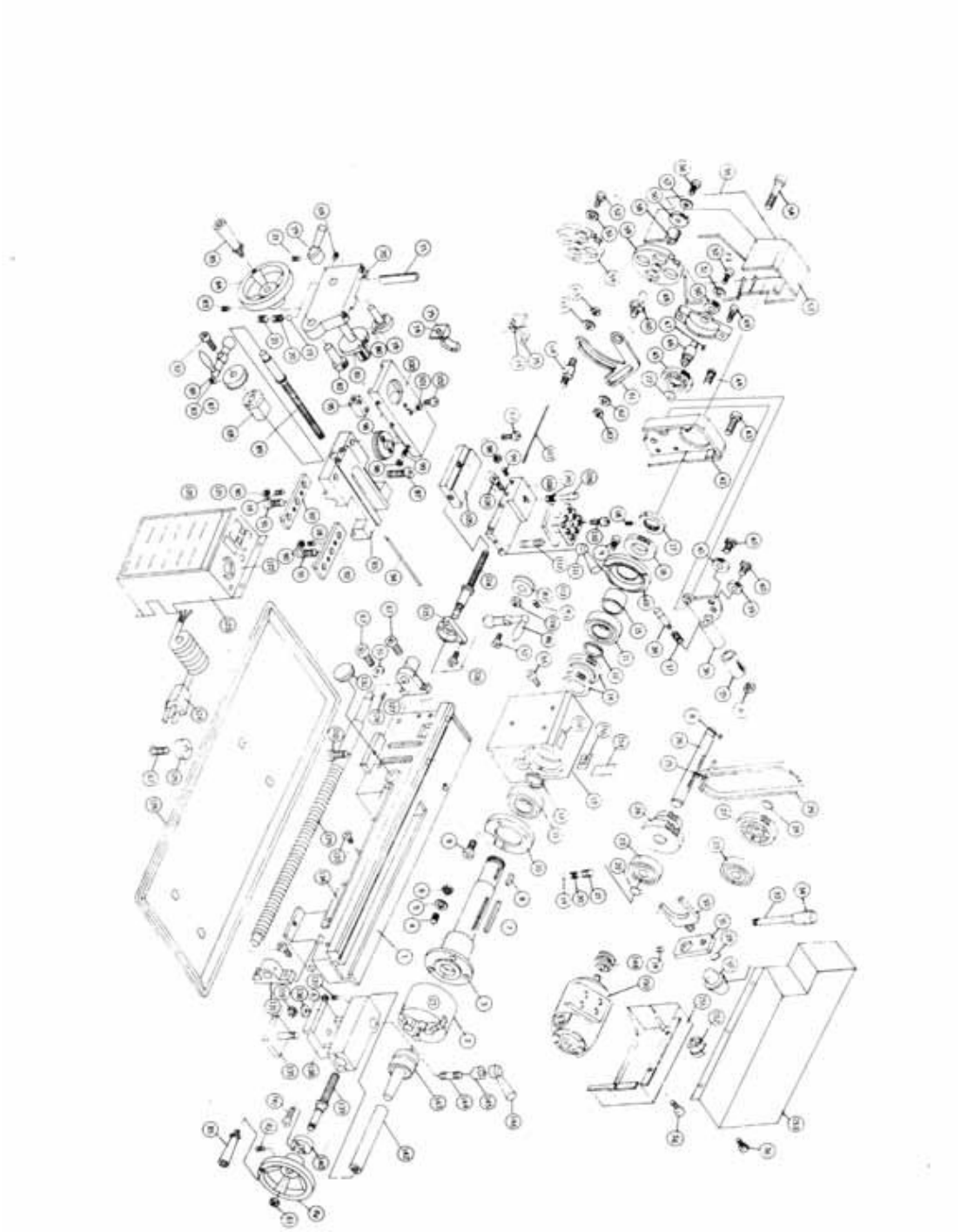


Fig.16

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

Assemble Diagram and Parts List



Ref.No.	Description	Part No.	Ref.No.	Description	Part No.
1	Bed Way	1	41	Pinion 25T	1
2	Chuck	1	42	Fixed Cover	1
3	Spindle	1	43	Screw M6×20	2
4	Stud M6 × 16	5	44	Screw M5×10	1
5	Washer M6	3	45	Gear 45T	1
6	Nut M6	7	46	Shaft	1
7	Key 5×40	1	47	Parellel Key 4×8	1
8	Key 4×8	2	48	Mount	1
9	Screw M5×10	6	49	Screw M5×10	3
10	Cover	2	50	Pinion 20T	2
11	Ball Bearing 6206ZZ	2	51	Washer 16	1
12	Spacer	2	52	Screw M5×10	8
13	Head Stock Casting	1	53	Cover	1
14	H/L Gear 21T/29T	1	54	Screw M5x40	2
15	Spacer	1	55	Threads Cutting Table	1
16	Spur Gear 45T	1	56	Screw M6×6	3
17	Nut	2	57	Washer 5	3
18	Set Screw M5×8	1	58	Bush w/Key	1
19	Steel Ball φ5	2	59	Gear 80T	2
20	Compression Springφ4×9	3	60	Shaft	1
21	Set Screw M6×6	3	61	Support Plate	1
22	Retaining Ring 12	2	62	Washer 8	2
23	Ball Bearings 6201ZZ	2	63	Nut M8	5
24	H/L Gear 12T/20T	1	64	Shaft	1
25	Parellel Key 4x45	1	65	Screw M6×16	10
26	H/L Gear Shaft	1	66	Set Screw M4×10	3
27	Pulley	1	67	Apron	1
28	Retaining Ring 10	1	68	Gib Strip	1
29	Timing Belt	1	69	shaft	2
30	Shifting Fork	1	70	Half Nut Base	1
31	Shift Arm	1	71	Groove Cam	1
32	Shift Knob	1	72	Handle	1
33	Shift Level	1	72	Handle	1
34	Shift Grip	1	73	shaft	1
35	Handle	1	74	Feeding Gear(A) 11T/54T	1
36	Handle Mount	1	75	Feeding Gear(B) 24T	1
37	Spring	1	76	Screw M6 ×12	3
38	Indicator	1	77	Wheel	2
39	Pinion 25T	1	78	Knob	2
40	Support Screw	2	79	Handle	2

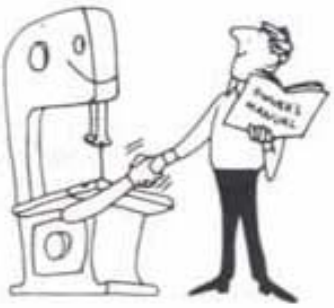
80	Shaft	1	123	Control Box	1
81	Feeding Gear(A) 11T/54T	1	124	Plug w/Cord	1
82	Feeding Gear(B) 24T	1	125	Rubber Pad	4
83	Screw M6 × 12	3	126	Chip Tray	1
84	Wheel	2	127	Bracket	1
85	Knob	2	128	Key B4×8	1
86	Handle	2	129	Lead screw	1
87	Dial	2	131	Bracket	1
88	Bracket	1	133	Screw M3×10	4
89	Feeding Screw	1	134	Rack	1
90	Nut M5	3	135	Clamp Plate	1
91	Screw M6×12	6	136	Washer 10	2
92	Slide Plate	2	137	Screw M5×15	1
93	Saddle	1	138	Tailstock Casting	1
94	Gib Strip	1	139	Tailstock screw	1
95	Feeding Nut	1	140	Bracket	1
96	Swivel Disk	1	141	Screw M4×10	6
97	Screw M8×20	2	142	Tailstock Quill	1
98	Nut M4	6	143	Center	1
99	Screw M4×16	6	144	Stud M8×25	1
100	Cross Slide	1	145	Clamp	1
101	Screw M5 x 10	4	146	Handle	1
102	Screw M4 x 10	2	148	Pulley	1
105	Compound Rest(B)	1	150	Motor	1
106	Screw M4 x 14	1	151	Cover	1
107	Gib Strip	1	152	Cord Fixer	1
108	Compound Rest(A)	1	153	Rear Splash Guard	1
109	Positioning Pin	1	154	Warning Label	1
110	Screw M8×25	4	155	HL Label	1
111	Clamping Lever	1	156	Warning Label	1
112	Tool Rest	1			
113	Stud M10×50	1			
114	Cross Feeding Screw	1			
115	Bracket	1			
116	Screw M4×14	2			
119	Nut M10	2			
120	Model Lable	1			
121	Warning Lable	1			
121	Switch Lable	1			

New SAFETY RULES for Stationary Power Tools

follow them for best results and full benefit from shop machines

Every good craftsman respects the tools with which he works. He knows they represent years of constantly improved design. He also knows that they are dangerous if misused.

This is the theme of a new safe-use program developed by the Power Tool institute, Inc., for stationary power tools. The institute has put together a list of safety rules, based on approved practices in industrial and home shops, to accompany a set of new standards for stationary power tools that members of the institute manufacture.



1 Know your power tool. Read the owner's manual carefully. Learn its applications and limitations, as well as the specific potential hazards peculiar to this tool.

2 Keep guards in place and in working order.

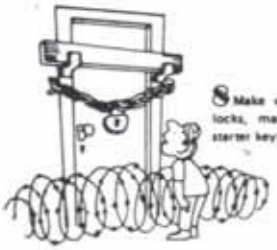
3 Ground all tools. If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter wire must be attached to a known ground. Never remove the third prong.

4 Remove adjusting keys and wrenches. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.

5 Keep work area clean. Cluttered areas and benches invite accidents.

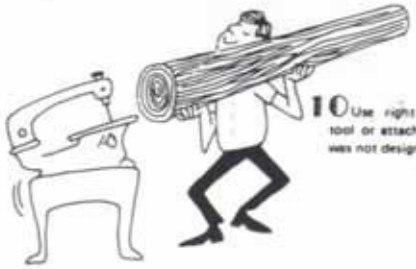
6 Avoid dangerous environment. Don't use power tools in damp or wet locations or expose them to rain. Keep your work area well lighted.

7 Keep children away. All visitors should be kept a safe distance from work area.



8 Make workshop kidproof – with padlocks, master switches, or by removing starter keys.

9 Don't force tool. It will do the job better and be safer at the rate for which it was designed.



10 Use right tool. Don't force tool or attachment to do a job it was not designed for.

11 Wear proper apparel. Wear no loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

12 Always use safety glasses. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses. They are NOT safety glasses.

13 Secure work. Use clamps or vise to hold work, when practial. It's safer than using your hands and it frees both hands to operate tool.

14 Don't overreach. Keep proper footing and balance at all times.

15 Maintain tools with care. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16 Disconnect tools before servicing and when changing accessories such as blades, bits, cutters and the like.

17 Use recommended accessories. Consult owner's manual for recommended accessories. Use of improper accessories may cause risk of injury to persons.

18 Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.