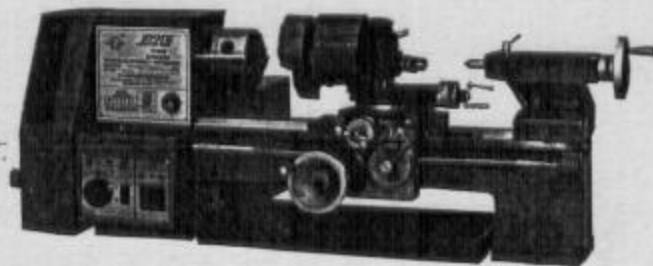


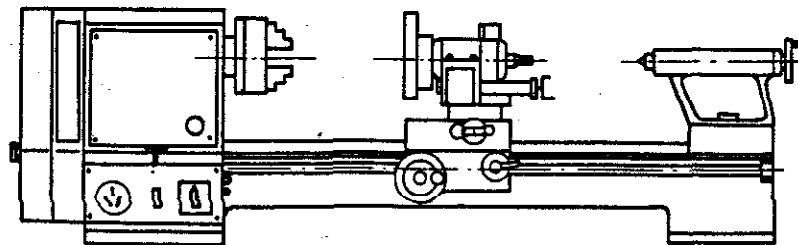
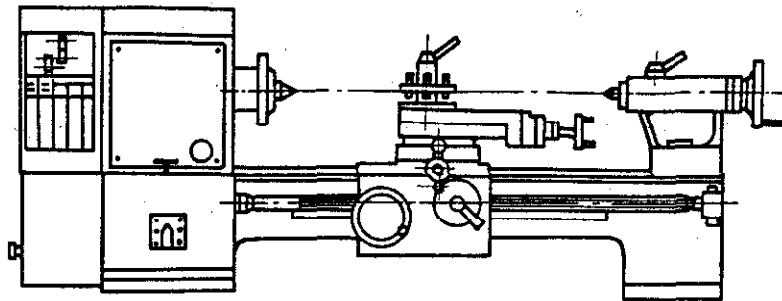
OPERATING INSTRUCTION
SKU#: T34632
LATHE 20" B. C. (MULTI-PURPOSE)



CENTRAL PURCHASING INC.
3491 MISSION OAKS BLVD., P. O. BOX 3169
CAMARILLO, CA 93011-3169

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I. Summary:

This Lathe is avnovelly-styled,artistially beautified,properly constructed and well knitted ordinary Lathe.It applies not only to the turning of the internal, external cylinder facing of metallic an nonmetallic materials, but also to the outting of all kinds of inch and metric threads and drawing oil grooves.It also has the functions of grinding the internal, external cylinder,drilling holes and cutting axial keyseater.

It can be used extensively as the teaching machines for job shops and occupation training.Especially,it applies to instrument and meter industry,handicrafts processing, automobile fittings an to machines' repair.

II. Specifications

1. Turning

Height of centers	100mm
Maximum length of workpiece	500mm
Max.swing over bed	200mm
Max.swing over carriage	110mm
Diameter of spindle hole	20mm
Taper of spindle	M.T.3
Steps of spindle speeds	4
Range of spindle speeds	180-1880r/min
Metric threads(types)	0.4-3mm (11types)
Inch threads(types)	8-24teeth/inch(10types)
Range of longitudinal feed(types)	0.04-0.30mm/r (11types)

Distance between the bearing surface of the tool and the center line of spindle 18mm
 Max.travel of tool post slide 55mm
 Max.travel of carriage 100mm
 Max travel of tailstock sleeve 60mm
 Taper of tailstock sleeve MT2
 Horse power of the motor 3/4HP
 Specification of v-type belt model 07710
 Quantity of v-type belt 1

2.Drilling,Milling and Grinding:

Max.drilling diameter 6mm
 Max.width of slot milled 6mm
 Max.grinding diameter of external cylinder 80mm
 Max.grinding length of external cylinder 350mm
 Range of the grinding bore 13-80mm
 Depth of the grinding bore 50mm
 Horse power of the motor 1/5HP
 Belts model J225.2pcs
 Belts model J425.1pcs

3.Overall dimension and weight

Processing length	Length(mm)	Width(mm)	Height(mm)	Weight(kg)
500	1130	530	390	117
Milling & grinding attachment	270	200	160	5.5

Note:Equipment for milling and grinding is an additional accessory
 If you order,it will be packed together with the machine.

III. Installation

1. First, Check whether the parts, accessories and technical documents listed complete or not, when opening the case.
2. It must be installed on hard wood board or iron plate. The size of base plate is shown in Figure 1. It should not be installed on a soft wood board or landslide, otherwise it may cause vibration and displacement which will influence precision.
3. Clean the surface of sliding and unpainted surface with turpentine and kerosene to clean up the rust-proof lubricant. Then adjust the machine to be level.
4. Clean the spindle box with kerosene and gasoline, then add lubricant.
5. Pour the lubricant into all the oilholes and the rotating places.
6. Check all the handles are in the proper position, belts tightness are of proper degree, the tightened sphenoid iron matches well.
7. Check all the electrical parts work well, so as to ensure safety in operation, when starting.
8. Choose low speed of rotation when testing. Five minutes later, operate from low speed to highest speed to check the machine. Each step of speeds should be no less than 2 minutes.
9. Before operation, please read this manual carefully so as to avoid mistakes in operation.
10. Installation of the milling & grinding attachment
Please refer to Figure 2 for the above installation. Install this attachment on the tool post with the method of tightening the screw and locking the chuck with the taper screw of spindle locking equipment. Then you can do drilling and milling process. If you turn the toolpost to right at 90° , then loosen the spindle lock equipment, install the grinder or grinding bore, then you can do process of grinding external cylinder or bore.

11. The speeds adjustment of the milling & grinding attachment.

Please refer to Figure 4. Loosen the screw on the adjustment rest to make it in free station. Put two belts with same lengths on step I (driving wheel-reversing wheel, driven wheel). Then turn the adjustment rest to right to tighten the belts, also tighten the adjustment rest. Now you can do process of drilling and milling. In the same way, loosen the adjustment rest, remove the above stated two belts, put the long belt on step II or step III (driving wheel-driven wheel). Then turn the adjustment rest to right, tighten the belt and the adjustment rest. Now you can do process of external and bore grinding.

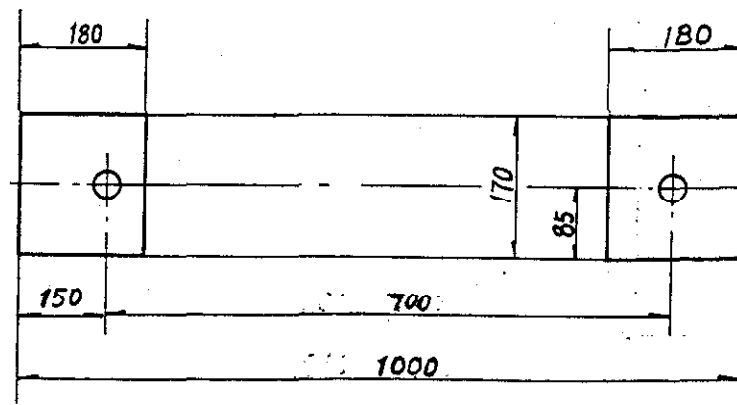


Figure 1 Installation

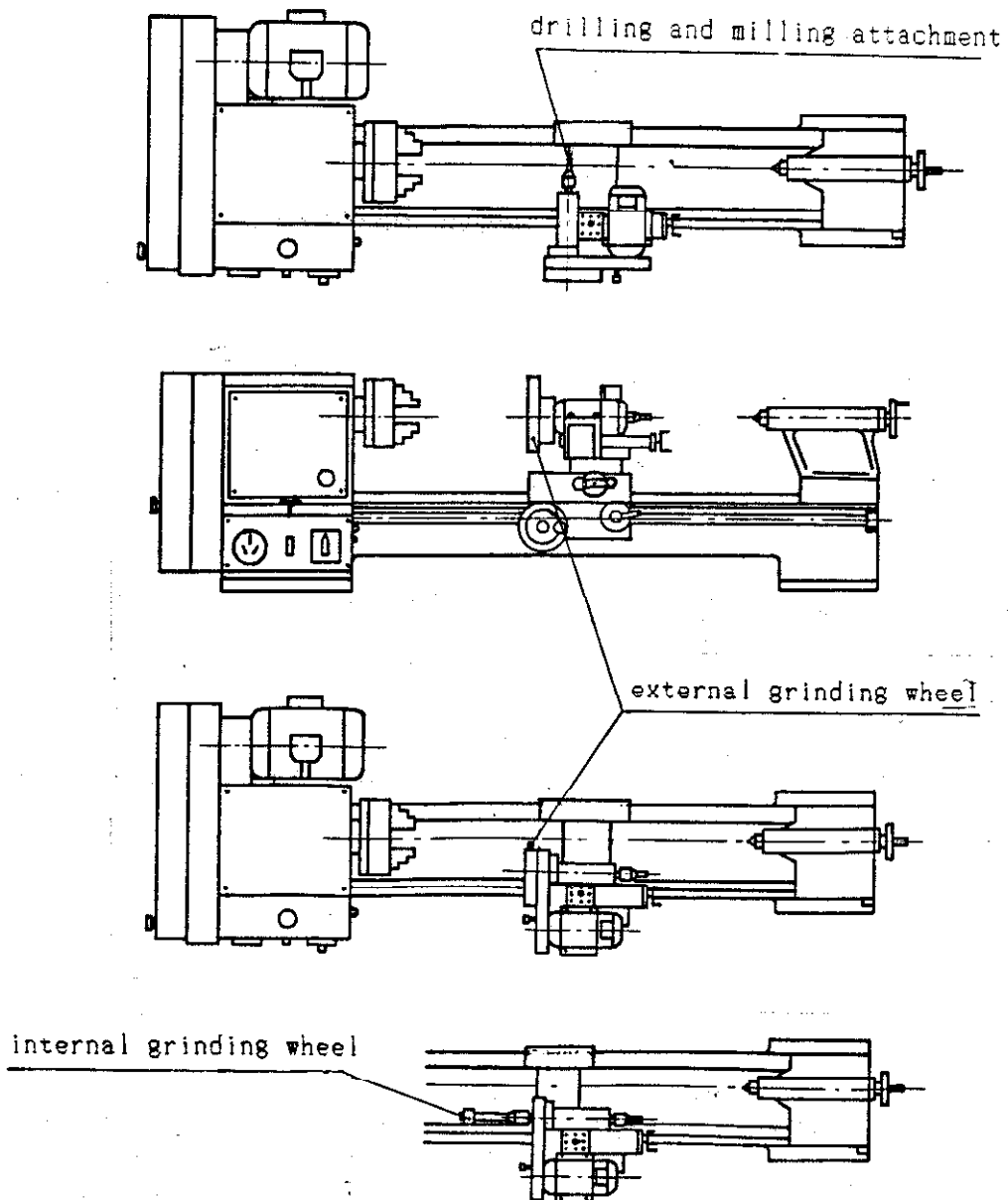


Figure 2 Installation of milling,drilling and grinding attachment

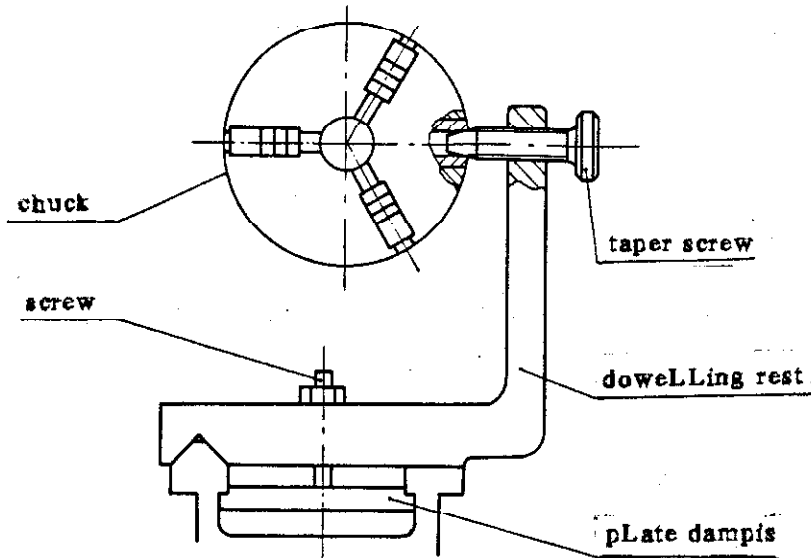


Figure 3: Lockset of Spindle

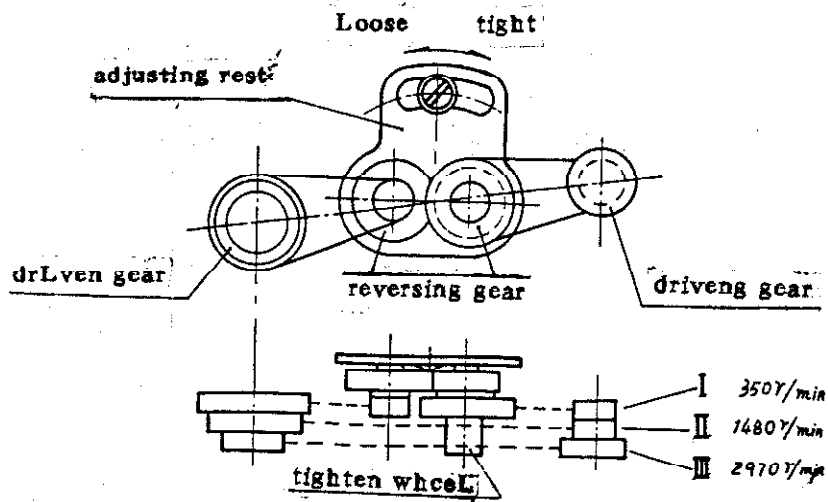
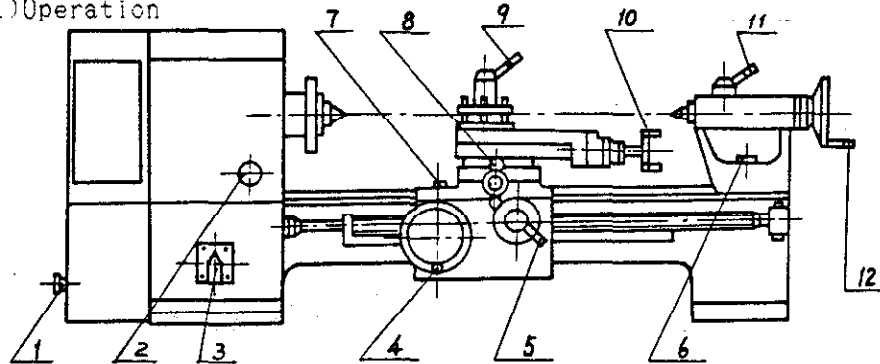


Figure 4: Speeds adjustment for milling & grinding attachment

IV: Operation and maintenance

(1) Operation



1. Star-type holder screw
2. Viewing hole for filling oil
3. Switch
4. Carriage moving handle
5. On-off nut handle
6. Tightening screw of tailstock sleeve
7. Mounting screw for carriage
8. Carriage slide moving handle
9. Toolpost turning and tightening handle
10. Toolpost slide moving handle
11. Tailstock sleeve mounting handle
12. Tailstock sleeve moving handle

(2) Maintenance

- a. After the machine has worked normally for 15 days, change the lubricant in the spindle box, clean it with kero.. Pay attention to the oil's position when refueling, including the gear reduction box.
- b. Refuel the machine according to its lubrication rule before starting operation everyday.
- c. After operation everyday, clean away the iron fillings and greasy dirt. Then clean all the parts, refuel the sliding surface.
- d. If the machine is damaged, first please find out the reason and then you can repair.

V. Transmission

Please refer to Figure 5 and Figure 6 for the positions of bearings and gears, refer to form 1 for gears, leadscrew and form 2 for bearings, Form 1

Description	No. on figure 5	Modulus or pitch	Teeth	Description	No. on figure 5	Modulus or pitch	Teeth
Spindle box	02016	1	35	Hanging gear box	03020	28	1
	02017E	1	66		03021	30	1
	02020	1	24		03022	42	1
	02021	1	75		03023	49	1
	02022	1	76		03024	60	1
	02023	1	24		03025	63	1
	02025	1	76		03026	84	1
	02026	1	56		03027	98	1
	02030E	1	53		03028	105	1
Reduction box	27011	1.5	21		03032	55	1
	27016	1.5	50		03033	127	1
	27018	1.5	21		03034	40	1
	27020	1.5	50		03035	70	1
Sliding box	06019	1	17		03036	75	1
	06024	2	17	Toolpost	01017		2
	06025	1	51	Tailstock	03015		2
Bed	01016	3		Carriage	05013		2

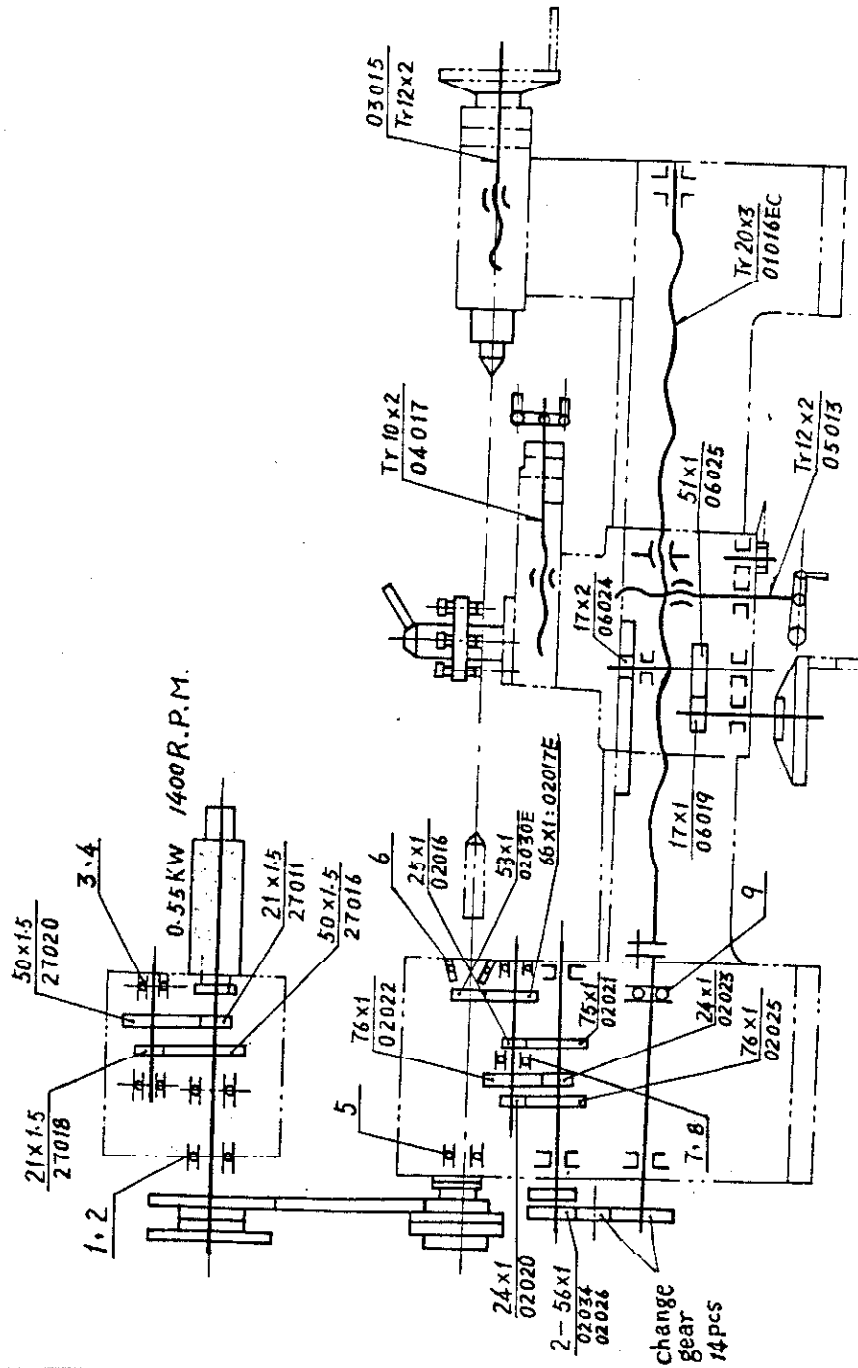


Figure 5: Transmission of the machine

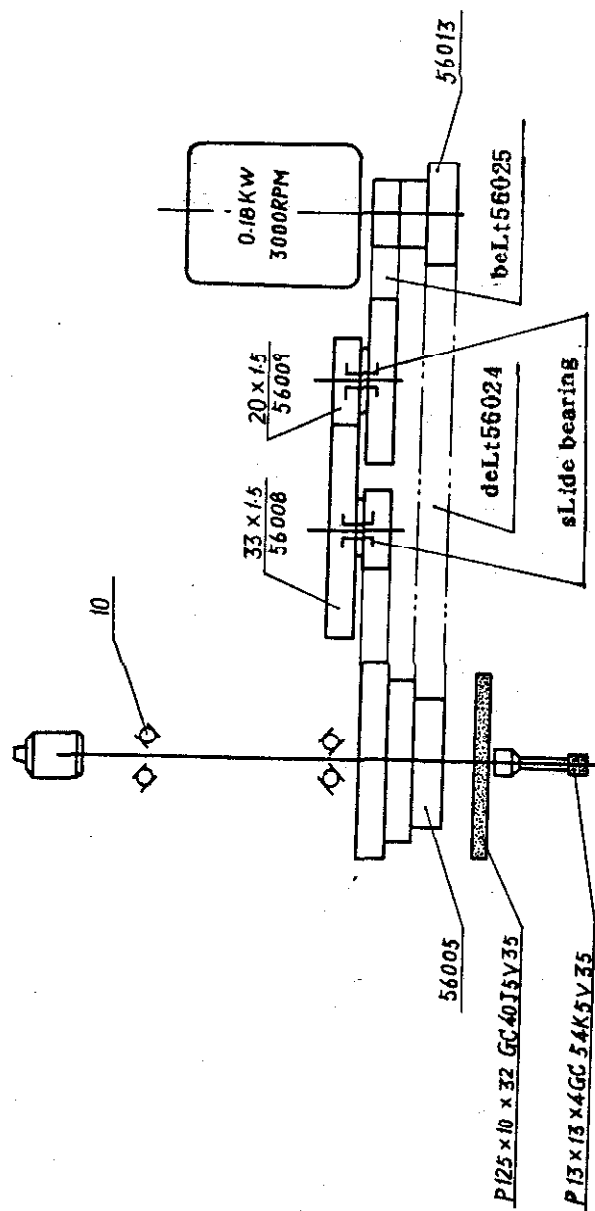


Figure 6: Transmission of the attachment for milling, drilling and grinding

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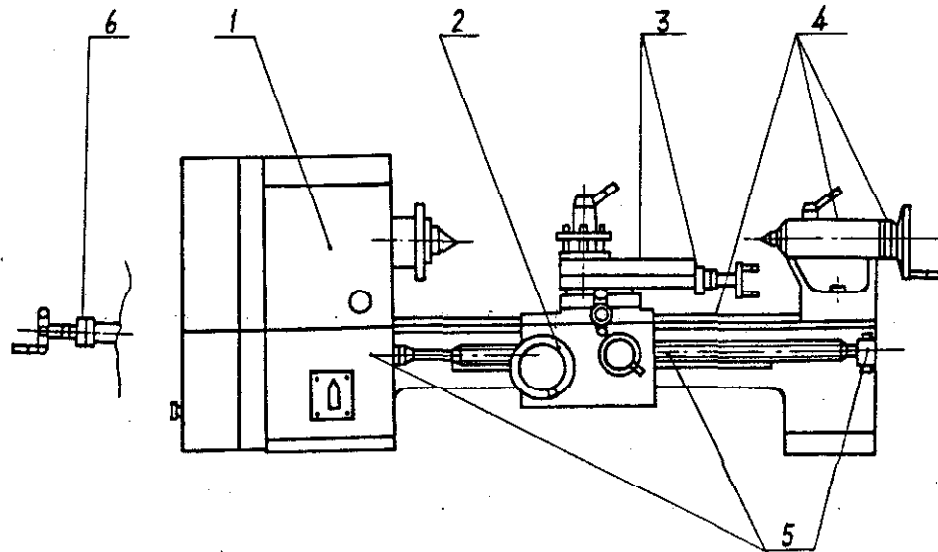
Form 2

Name of bearing	Model	Specifications	Quantity	Position for installation	Number in the figure
Uniseriate conical roller bearing	2007108D	40×68×18	1	front spindle box	6
Uniseriate centripetal thrusting bearing	64107D	35×62×11	1	back spindle box	5
Uniseriate centripetal ball bearing	102	15×32×19	2	shaft II in spindle box	7.8
One-way thrusting ball bearing	3104	20×35×10	1	lead screw connecting shaft	9
Uniseriate centripetal ball bearing	700101	12×28×8	2	reduction box	3.4
Uniseriate centripetal ball bearing	105	25×47×12	2	reduction gear box	1.2
Uniseriate centripetal thrusting ball bearing	E36101	12×28×8	2	grinding & milling attachment	01

VI: Lubrication (refer to form 3 and figure 7)

Form 3

No.	position	the parts for lubrication	means of lubrication	type	cycle
	Inside the spindle box	gears, bearing	by, sptashing	10#machinegrease	three months - six months
	Inside the sliding box	gears, bearing	by greasegun	"	day
	Toolpost slide	longitudinal slide	"	"	"
	Tailstock	lead, slide	"	"	"
	Leadscrew stand	leadscrew	"	"	"
	Central board	leadscrew	"	"	"



VII: Electrical appliance

1. Switch on the machine according to the regulated voltage and frequency
2. Unautomatic combination switch is supplied. Turn the switch button to right 45° , spindle rotate positively, turn the switch button in the middle, the machine will stop, turn the switch button to the left at 45° . The spindle negatively rotate.

3. Besides the unautomatic switch, mill & grinding switch (SA2) and socket (XS) are also supplied. Please refer to Figure 8.

8. The rotation of spindle are the same as above statement.

When you want to use the milling & grinding attachment, please insert the plug (XP2) into socket (XS). The socket is equipped with protection board. When the outlet is not used, the plughole on the board can revolve at 60° to the left to cover the socket plugholes inside so as to prevent the iron fillings from getting into the plughole. When you want to use the socket, you should insert the three-head plug into the three plugholes on the board, turn at 60° to the right and push the plug.

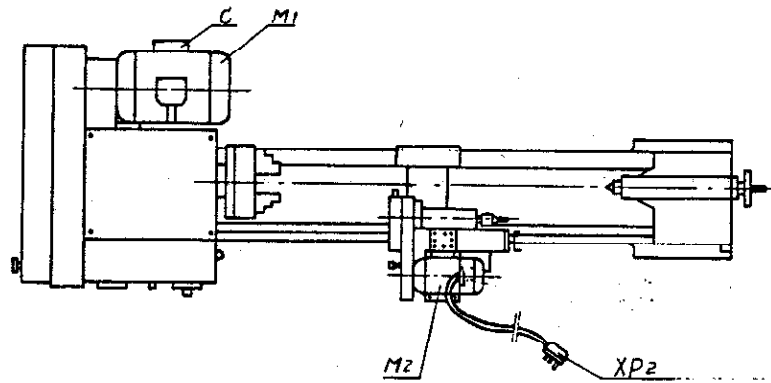
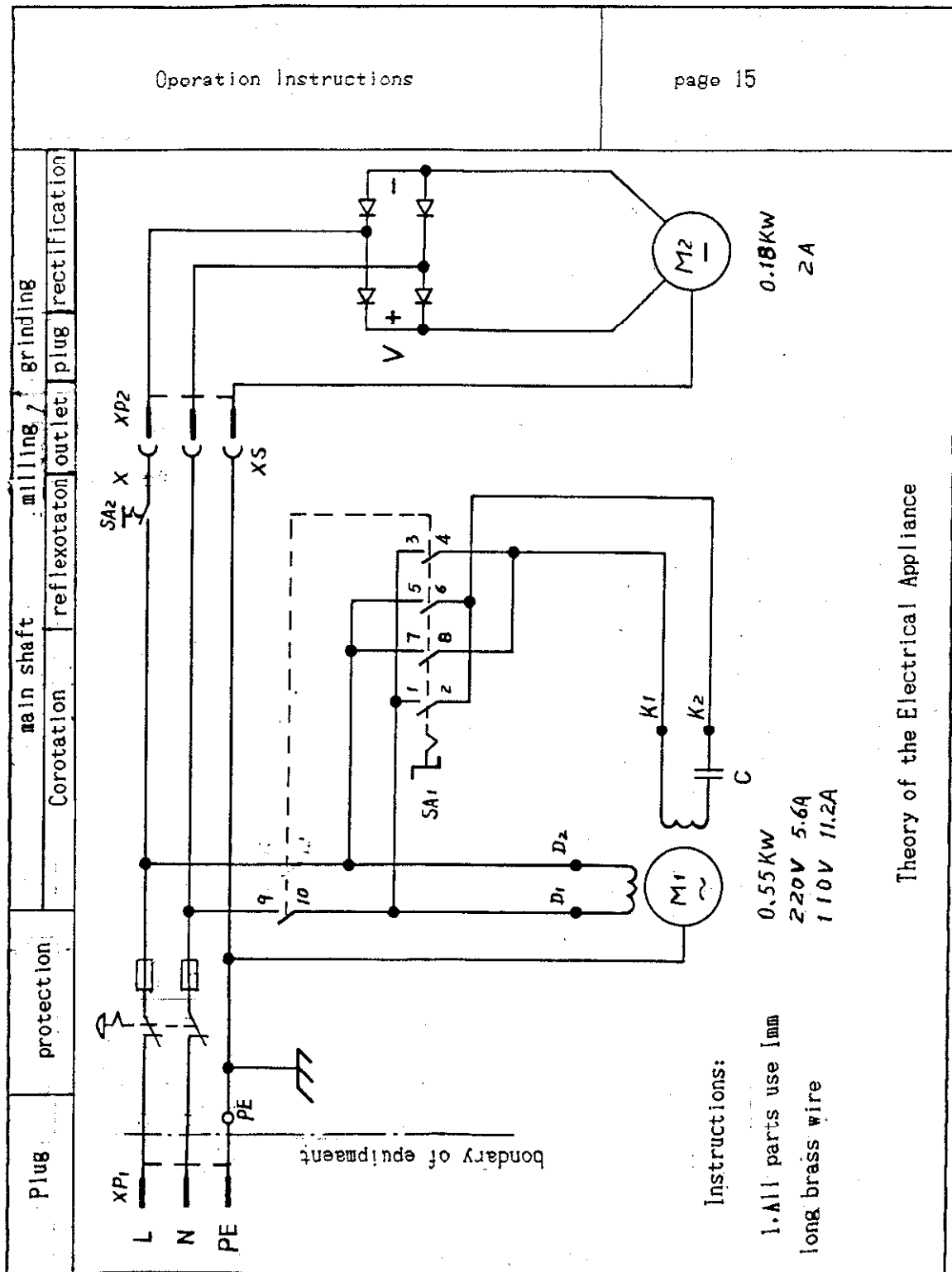
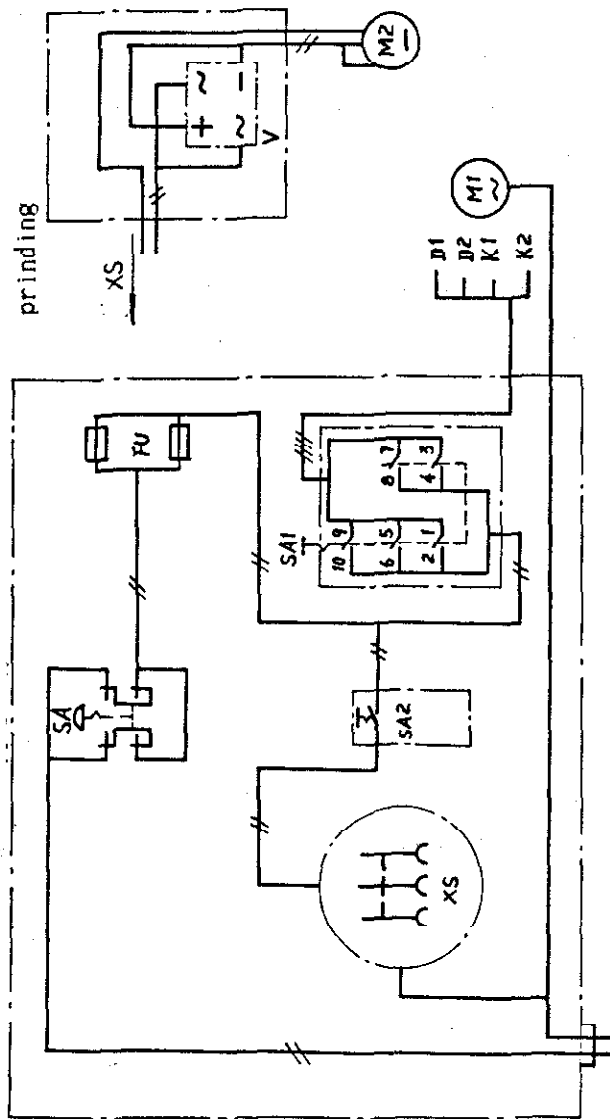


Figure 8: Location of the Electrical Appliance



The box of the electrical
equipments of the main
engine

The box of the electrical
appliance for milling and
grinding



peu ersup oly + PE

Interlinkande of Eletrical Appliance

The list of Electrical Equipments

code- name	area in the fi- gure	Name and Model	Technical data			Quan- tity	Remarks Col- umn
M1	3	main motor	power	voltage	freque- ncy	1	B5
			0.55KW	1-110V	60HZ	1	
			0.55KW	1-220V	50HZ	1	
M2	6	motor for grinding , milling and dri- -lling attachment	0.18 KW	-220V		1	B5
SA1	3.4	handle build-up selective switch 11Z5B-10/3 D011	Ue=380V Ie=10A			1	
SA2	5	unipolar handle switch	Ue=250V Ie=10A			1	
FU	2	fuse	15A			2	
XS	3	Outlet	Ue=250V Ie=10A			1	
XP1	1	plug cable	Ue=250V Ie=10A			1	brown torchid +Greenish- yellow
XP2	1	plug cable	Ue=250V Ie=10A			1	brown torchid +greenish- yellow
V	6	rectiblock KBPCLOL				1	

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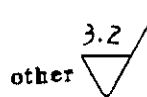
VIII: The list and Attached Drawings of The Vulnerable Parts

1. The list: See Form 4

Form 4

NO.	number in the figure	Description of parts	quantity	Position for installation
1	03019	nut	1	tailstock's sleeve
2	04018	nut	1	toolpost turning plate
3	05014	nut	1	carriage slide
4	06012	nut	1	sliding box

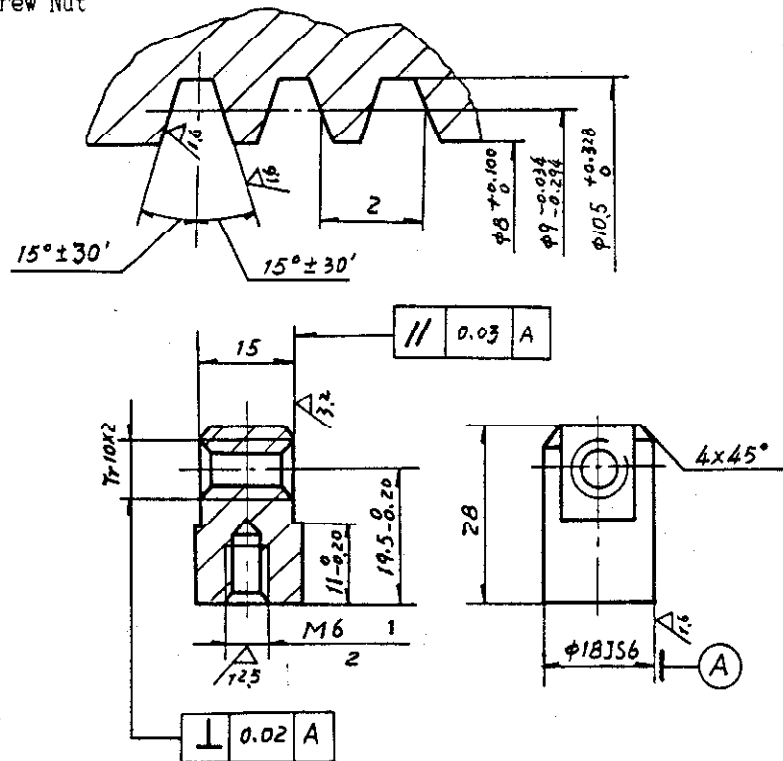
2. The Attached Drawing: refer to the following page



Note: Please process cooperatively

other $\frac{6.3}{\nabla}$

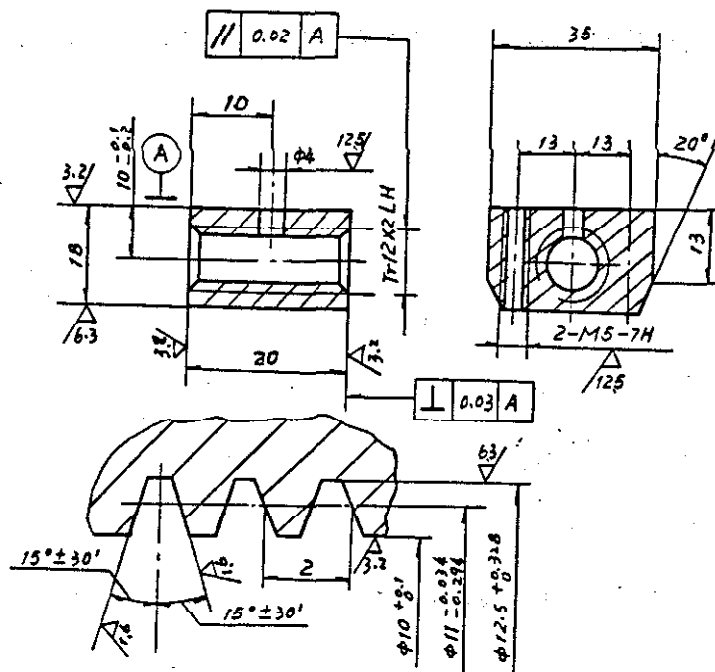
Leadscrew Nut



04018 material: ZQ Sn6-6-3

1. height: 8mm
2. height of the hole: 13mm

other



Leadscrew nut

05014 material: ZQ sn6-6-3

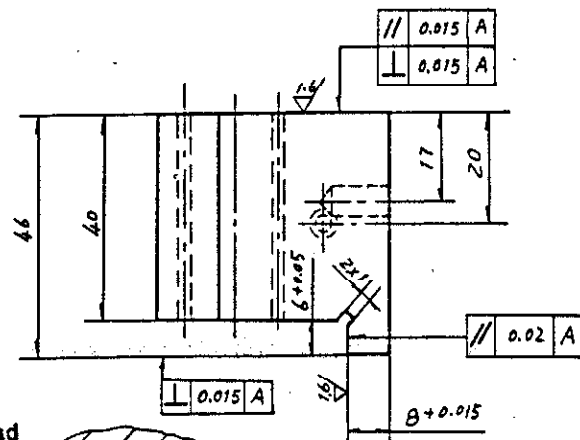
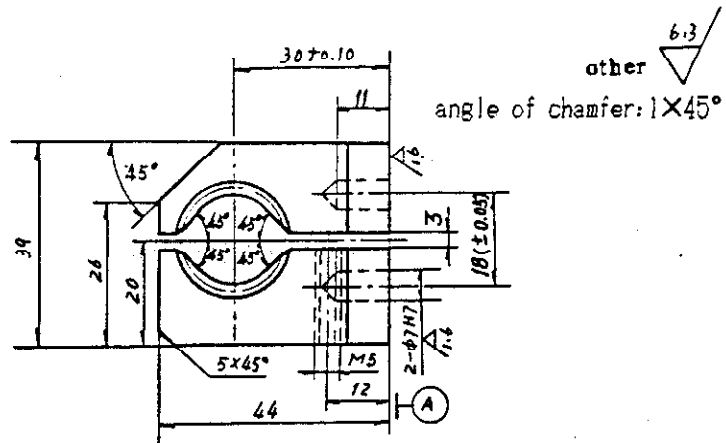
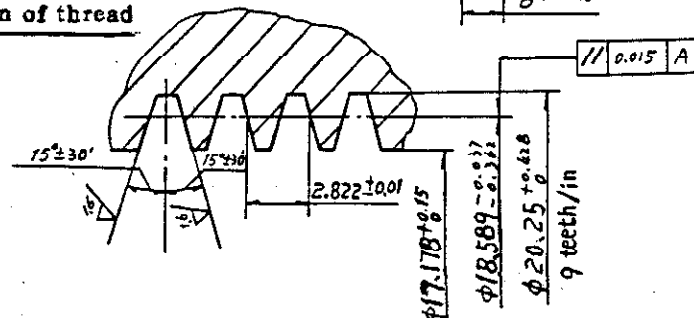
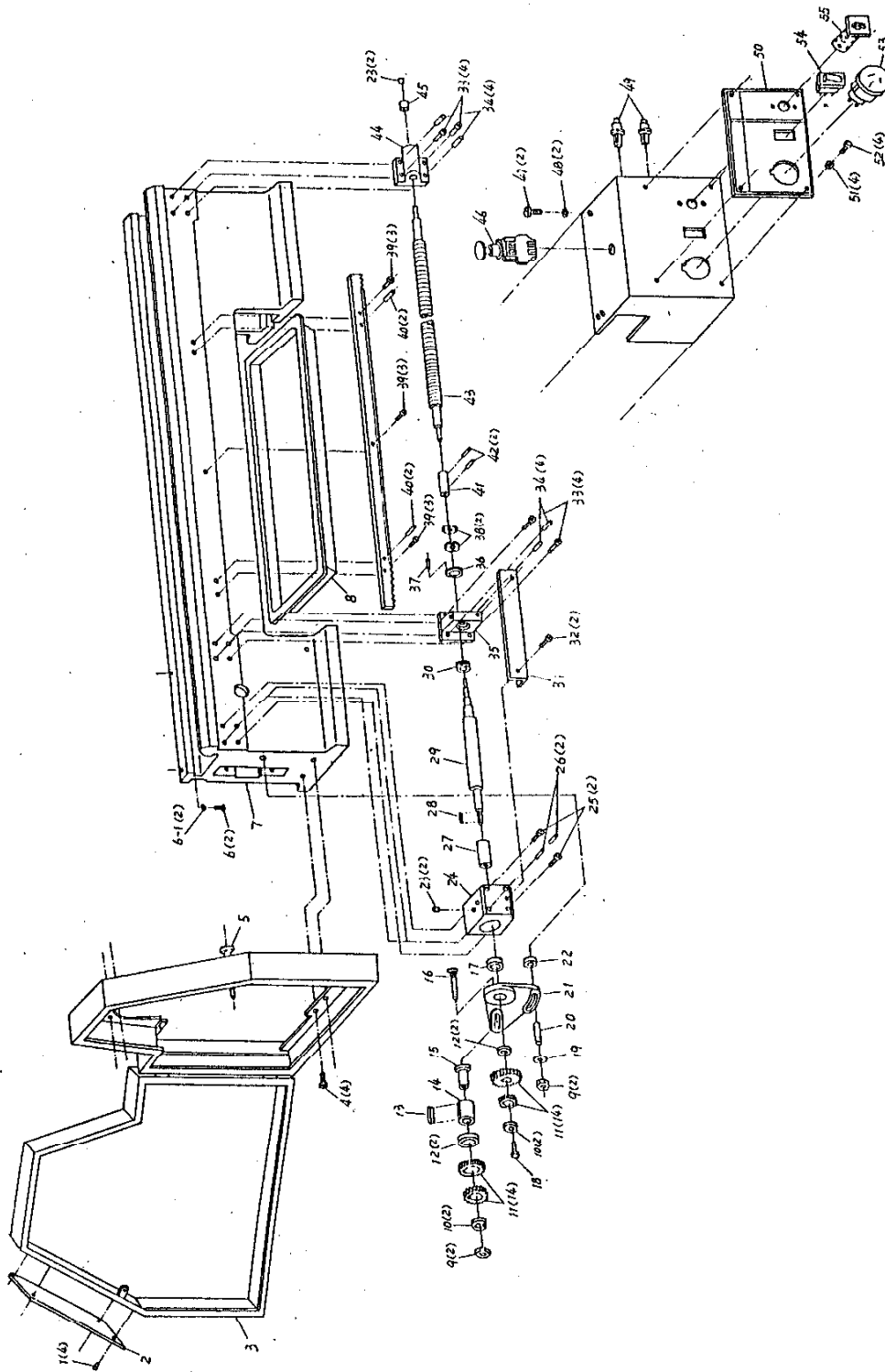


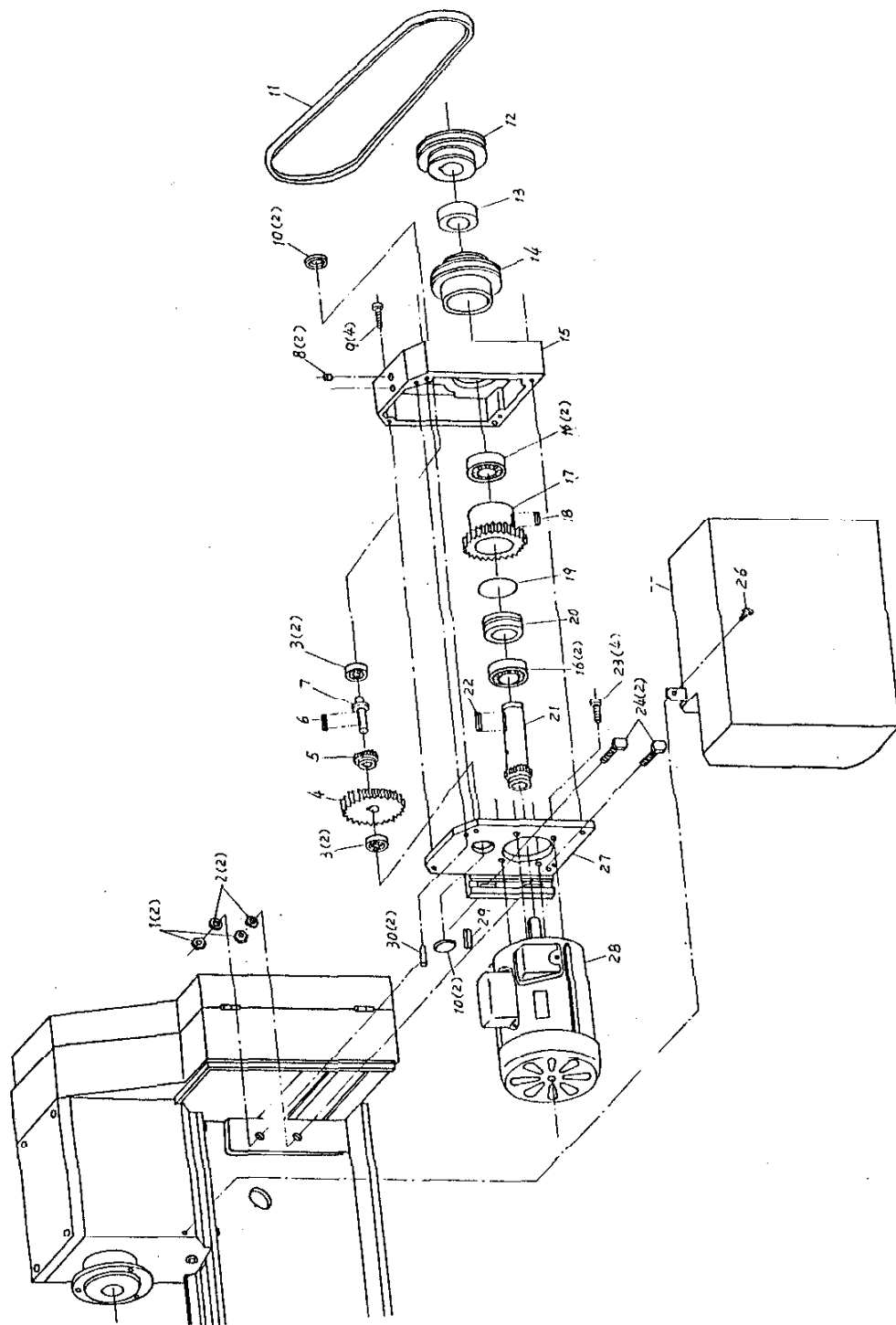
Figure section of thread



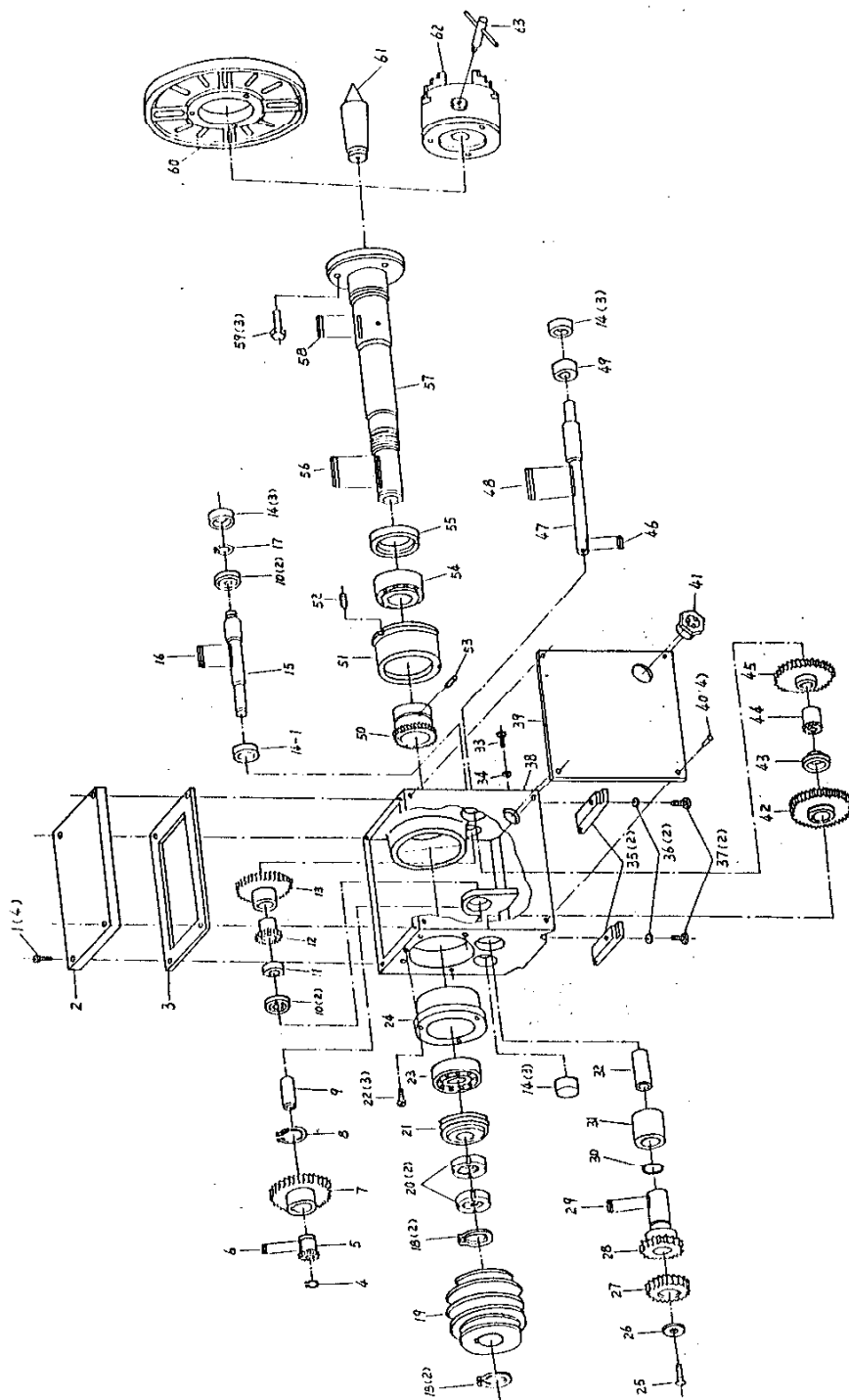
06012E material ZQSn6-6-3



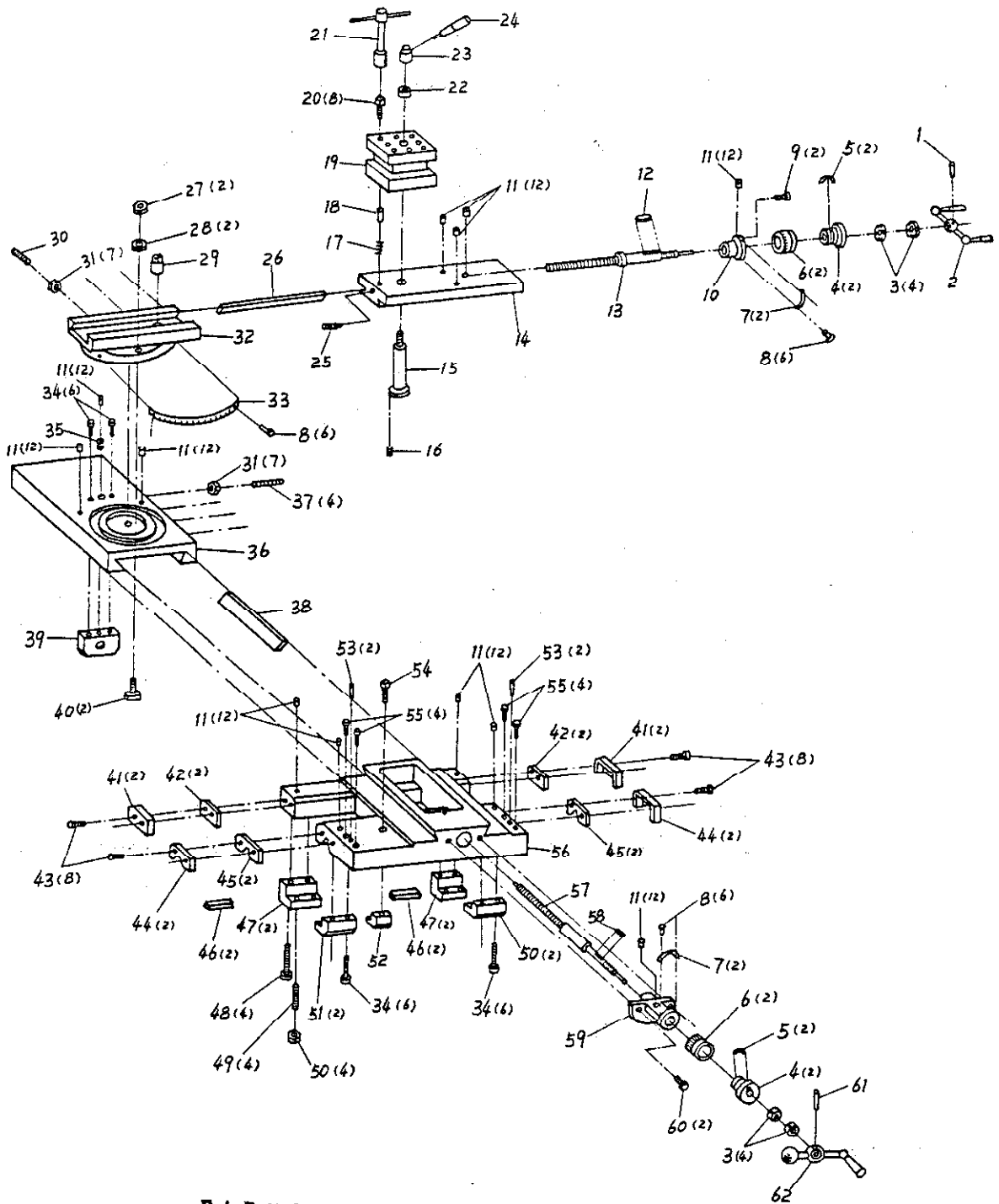
PARTS FIGURE 100



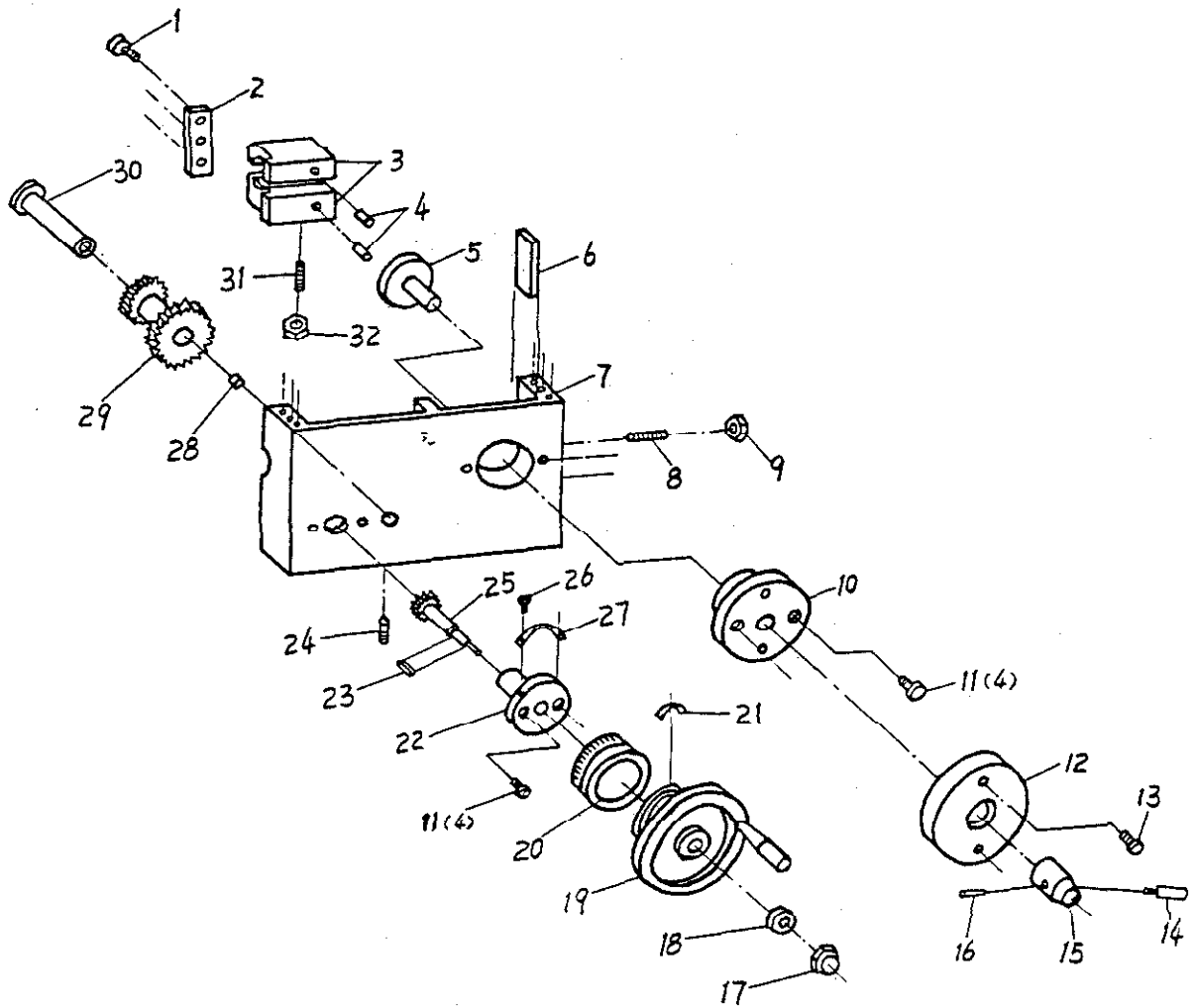
PARTS FIGURE 200



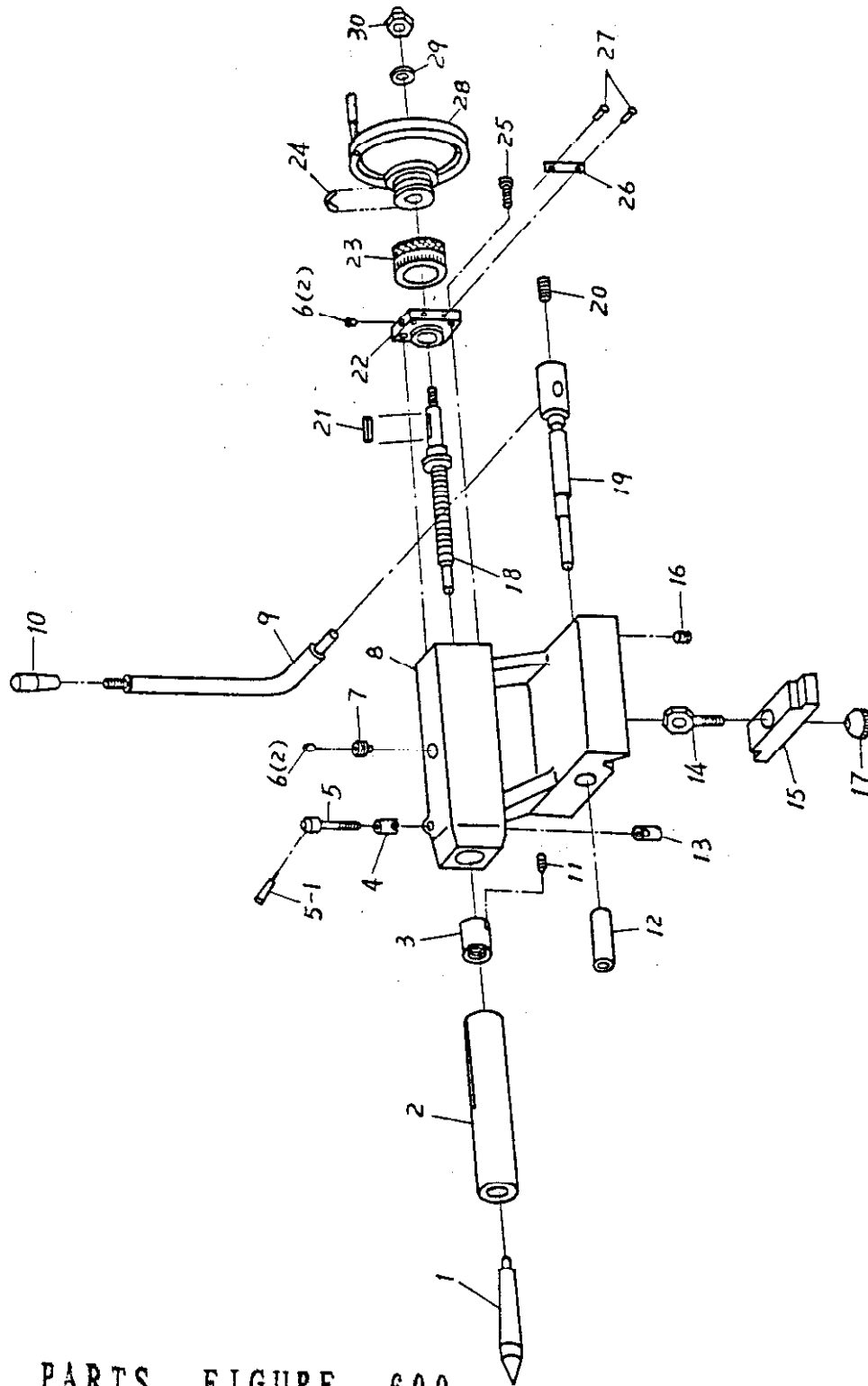
PARTS FIGURE 300



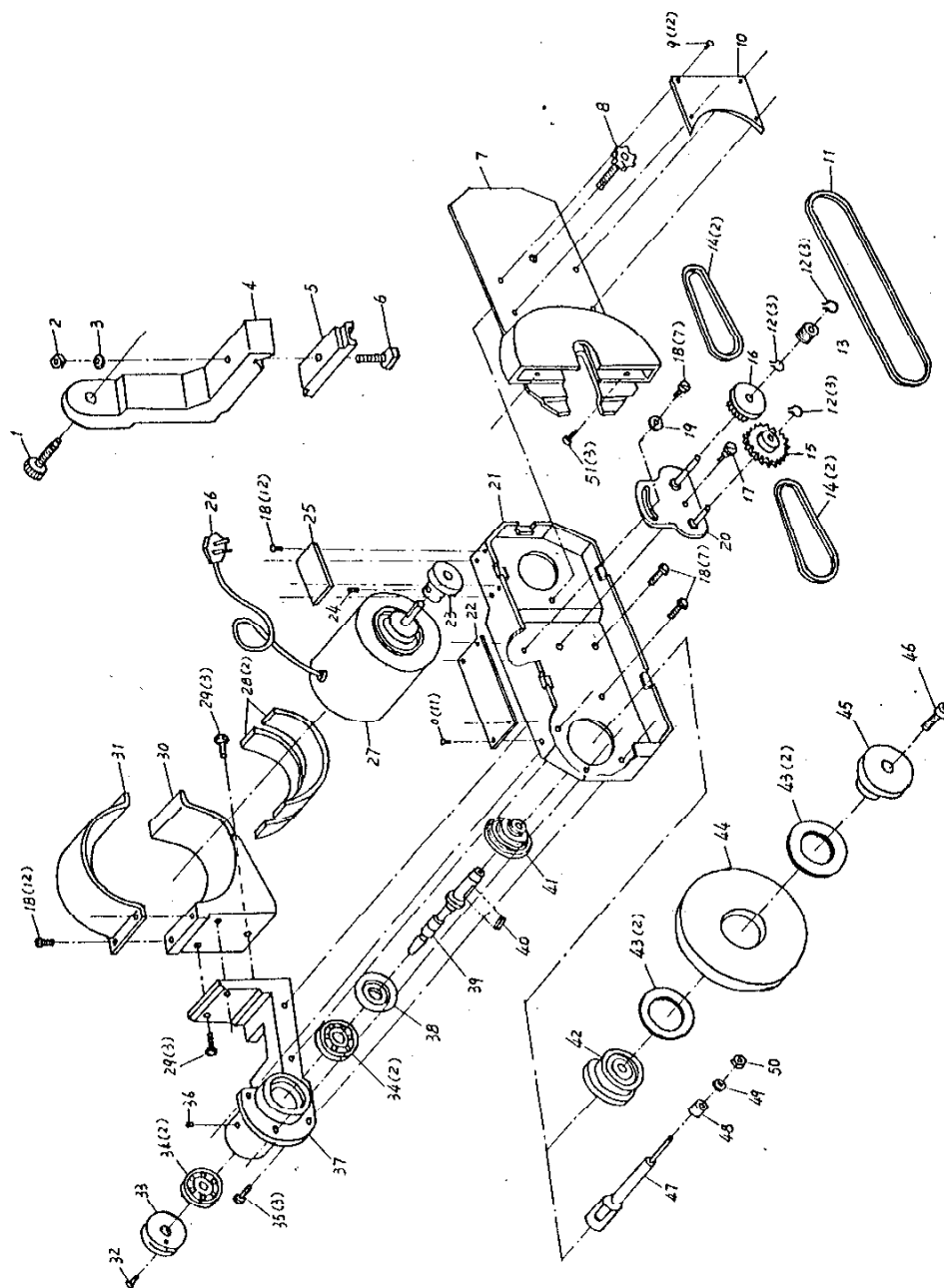
PARTS FIGURE 400



PARTS FIGURE 500



PARTS FIGURE 600



PARTS FIGURE 700

PARTS LIST

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
101	RIVET	4	102	LABEL	1
103	HANGING GEAR BOX	1	104	BOLT M6x10	4
105	LOCKING HANDLE	1	106	SCREW M6x20	2
106-1	WASHER	2	107	LATHE BED	1
108	TRAY	1	109	NUT M8	2
110	WASHER	2	111	ENCHANGEABLE GEAR	14
112	SLEEVE	2	113	KEY 4x25	1
114	SLEEVE	1	115	INNER SLEEVE	1
116	BOLT	1	117	SLEEVE	1
118	BOLT M8x16	1	119	WASHER	1
120	BOLT	1	121	HANGING GEAR FRAME	1
122	SLEEVE	1	123	OIL CUP	2
124	LEFT REST	1	125	SCREW M4x40	2
126	TAPER PIN	2	127	SLEEVE	1
128	KEY 4x25	1	129	SHAFT	1
130	BEARING	1	131	ANGLE IRON	1
132	SCREW M5x8	2	133	SCREW M4x20	4
134	TAPER PIN 4x20	4	135	MIDDLE REST	1
136	WASHER	1	137	PIN 2x8	1
138	NUT M16x1.5	2	139	SCREW M4x10	3
140	PIN 4x20	2	141	SLEEVE	1
142	TAPER PIN 4x20	2	143	LEAD SCREW	1
144	RIGHT REST	1	145	STOPPER	1
146	SWITCH	1	147	SCREW M5x8	2
148	WASHER	2	149	FUSE	2
150	SWITCH PLATE	1	151	NUT M5	4
152	SCREW M5x8	4	153	SOCKET FOR D/M HEAD	1
154	SWITCH FOR D/M HEAD	1	155	SWITCH FOR MAIN MOTOR	1
201	NUT M8	2	202	WASHER	2
203	BEARING	2	204	GEAR	1
205	GEAR	1	206	KEY	1
207	SMALL SHAFT	1	208	OIL CUP	2
209	SCREW M6x40	4	210	STOPPER	2
211	V-TYPE BELT	1	212	HIGH-SPEED PULLEY	1
213	SLEEVE	1	214	LOW-SPEED PULLEY	1
215	BOX COVER	1	216	BEARING	2
217	LARGE GEAR	1	218	KEY	1
219	WASHER	1	220	SLEEVE	1

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
221	SLEEVE	1	222	KEY 4x16	1
223	SCREW M6x16	4	224	SCREW M8x45	2
225	MOTOR BOX	1	226	SCREW M5x8	1
227	BOX COVER	1	228	MOTOR 3/4HP	1
229	KEY 5x25	1	230	PIN 4x25	2
301	SCREW M5x6	4	302	BOX COVER	1
303	WASHER	1	304	WASHER	1
305	GEAR	1	306	KEY 3x10	1
307	GEAR	1	308	WASHER	1
309	SLEEVE	1	310	BEARING	2
311	SLEEVE	1	312	GEAR	1
313	GEAR	1	314	STOPPER	3
314-1	SLEEVE	1	315	SHAFT II	1
316	KEY 3x35	1	317	WASHER	1
318	WASHER	2	319	DRIVEN PULLEY	1
320	NUT M3x1.5	2	321	OIL CUP	1
322	SCREW M5x12	3	323	BEARING	1
324	FLANGE	1	325	SCREW M5x8	1
326	WASHER	1	327	GEAR FOR THREADING	1
328	GEAR FOR FEEDING	1	329	KEY 4x12	1
330	WASHER	1	331	SLEEVE	1
332	SLEEVE	1	333	SCREW M6x12	1
334	WASHER	1	335	LOWER PRESSING IRON	2
336	WASHER	2	337	BOLT M8x30	2
338	HEAD BOX	1	339	LABEL	1
340	RIVET	4	341	OIL WINDOW	1
342	GEAR	1	343	SLEEVE	1
344	GEAR	1	345	GEAR	1
346	KEY	1	347	SHAFT III	1
348	KEY	1	349	SLEEVE	1
350	GEAR	1	351	SLEEVE	1
352	SCREW M5x8	1	353	SCREW M5x8	1
354	BEARING	1	355	SLEEVE	1
356	KEY	1	357	SPINDLE	1
358	KEY	1	359	BOLT M8x16	3
360	FACE PLATE	1	361	FIXED CENTER	1
362	3-JAW CHUCK	1	363	WRENCH FOR CHUCK	1

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
401	TAPER PIN	1	402	HANDLE
403	NUT M10x1	4	404	SLEEVE
405	SPRING PIECE	2	406	DIAL GAUGE
407	LABEL	2	408	RIVET
409	SCREW M5x10	2	410	FLANGE
411	OIL CUP	12	412	KEY
413	LEAD SCREW	1	414	TOOLPOST SLIDE
415	TOOLPOST SHAFT	1	416	SCREW M5x8
417	SPRING	1	418	PIN
419	TOOLPOST	1	420	SCREW M8x20
421	WRENCH	1	422	ADJUSTABLE WASHER
423	HANDLE REST	1	424	HANDLE
425	SCREW M4x6	1	426	INLAY
427	NUT M5	2	428	WASHER
429	SCREW NUT	1	430	SCREW M5x20
431	NUT M5	7	432	ROTATING TABLE
433	ANGLE GAUGE	1	434	SCREW M5x20
435	BOLT M5x25	1	436	X-WAY SLIDE
437	SCREW M5x25	4	438	X-WAY INLAY
439	X-WAY NUT	1	440	SCREW
441	ASPHALT FELT COVER	2	442	ASPHALT FELT
443	SCREW M4x12	8	444	ASPHALT FELT COVER
445	ASPHALT FELT	2	446	INLAY
447	BACK PRESSING IRON	2	448	SCREW M5x30
449	SCREW M4x16	4	450	SCREW M5
451	FRONT PRESSING IRON	2	452	LOCKING PRESSING IRON
453	PIN 3x16	2	454	SCREW M6x40
455	SCREW M5x30	4	456	TABLE
457	LEAD SCREW	1	458	KEY
459	SUPPORTING SLEEVE	1	460	BOLT M5x16
461	PIN	1	462	HANDLE

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
501	SCREW M5x10	3	502	PRESSING IRON	1
503	NUT	1	504	PIN 6x16	2
505	CONTROLLING PLATE	1	506	INLAY	1
507	SLIDING BOX	1	508	SCREW M5x20	3
509	NUT M5	3	510	FLANGE	1
511	SCREW M5x12	4	512	COVER	1
513	SCREW M4x16	2	514	HANDLE	1
515	HANDLE REST	1	516	PIN 4x25	1
517	NUT M8	1	518	WASHER	1
519	HANDWHEEL	1	520	DIAL GAUGE	1
521	SPRING PIECE	1	522	FLANGE	1
523	KEY 4x20	1	524	SCREW M6x16	1
525	GEAR	1	526	RIVET	2
527	LABEL	1	528	OIL CUP	1
529	GEAR	1	530	SMALL SHAFT	1
531	SCREW M5x25	1	532	NUT M5	1
601	FIXED CENTER	1	602	TAILSTOCK SLEEVE	1
603	NUT	1	604	UPPER LOCKING PIECE	1
605	LOCKING SCREW	1	605-1	HANDLE	1
606	OIL CUP	2	607	SCREW	1
608	TAILSTOCK	1	609	ANGLE HANDLE	1
610	HANDLE	1	611	SCREW M4x8	1
612	SLEEVE	1	613	LOWER LOCKING PIECE	1
614	CONNECTING ROD	1	615	LOWER PRESSING IRON	1
616	SCREW M5x10	1	617	NUT	1
618	TAILSTOCK FEEDING LEADSCREW	1	619	ECCENTRIC SHAFT	1
620	SCREW M6x10	1	621	KEY 3x20	1
622	FLANGE	1	623	DIAL GAUGE	1
624	SCREW M5x16	4	625	LABEL	1
626	RIVET	2	627	HANDWHEEL	1
628	WASHER	1	629	NUT M8	1

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
701	SCREW	1	702	NUT M8
703	WASHER	1	704	CHUCK STAND
705	PRESSING IRON	1	705	SCREW M2x55
707	COVER	1	708	BUTTON
709	RIVET	12	710	LABEL
711	LONG BELT	1	712	WASHER
713	WHEEL	1	714	SHORT BELT
715	DRIVEN GEAR	1	716	DRIVING GEAR
717	SCREW	1	718	SCREW M6x10
719	WASHER	1	720	EXCHANGEABLE GEAR STAND
721	TRANSMISSION BOX	1	722	LABEL
723	DRIVING PULLEY	1	724	SCREW M4x5
725	LABLE	1	726	SORD WITH PLUG
727	DC MOTOR 1/5 HP	1	728	WASHER
729	BOLT M6x20	3	730	MOTOR STAND
731	MOTOR MOUNTING	1	732	SCREW M4x8
733	BEARING COVER	1	734	BEARING
735	SCREW M5x16	3	736	OIL CUP
737	MILLING & DRILLING HEAD	1	738	DUST-PROOF COVER
739	SPINDLE	1	740	KEY
741	DRIVEN PULLEY	1	742	GRINDER SLEEVE
743	WASHER	2	744	GRINDING WHEEL
745	GRINDER SLEEVE	1	746	SCREW M6x16
747	SHAFT	1	748	GRINDING WHEEL
749	WASHER	1	750	NUT M4
751	SCREW M5x3			