

# OPERATOR'S MANUAL



**Keep Read and Understand the Operation Manual and Safety Information  
Before Operated!**



## Special Attention

1、 Removing the wooden crate, if the standard accessories do not accord with the packing list, please contact the seller.

2、 Never attempt to use, operate or adjust the lathe before reading the operation manual and understanding the installation procedure. If malfunction appears send for professional technicians to make maintenance.

3、 Wear gaberdine, approved safty glass and face shield while using this machine to make maintenance .

4、 Forbidden to wear gloves, high-heel shoes and skirts.

5、 Be subject to alteration without notice during the production procedure.

6、 Under the condition of normal use and maintenance, if the operation is not satisfied, please contact the seller.

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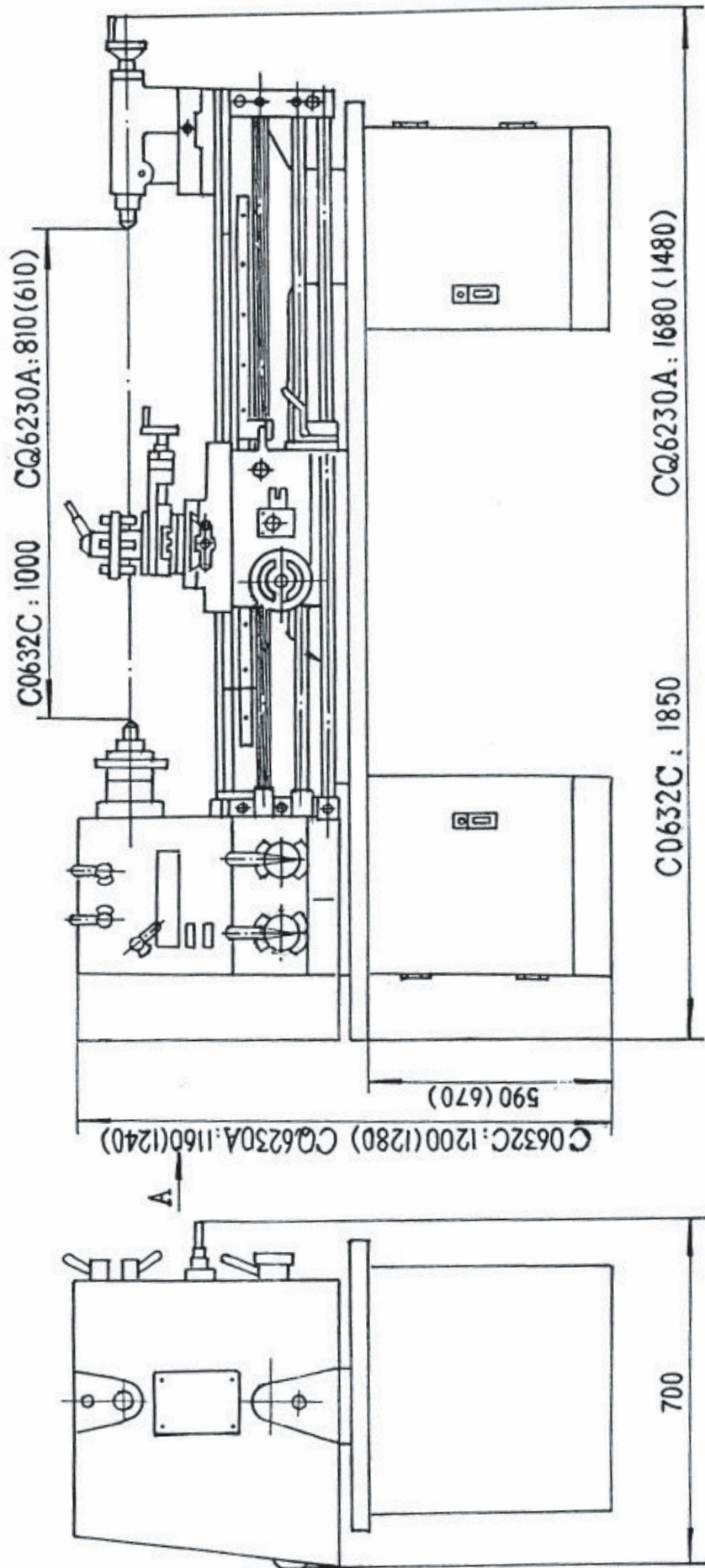


Fig. 1 Exterior chart

## 1、NSTRUCTIONS

This machine is a small-scale universal engine Lathe. It can perform various turning metric threads and English threads.

The machine is characterized by a simple construction, an easy operation , large spindle bore and small space occupation. It is used in the instrument industry and repairing workshops and is suitable for metal manufacturing in single piece, small and medium batch production.

## 2、 MAIN TECHNICAL SPECIFICATIONS

FROM.1

	CQ6230A-1	CO632C
Max swing over bed	300mm	320mm
Max swing in gap	430mm	450mm
Distance between centers	810mm CQ6230A×750(610mm)	1000mm
Threads which can be cut	Imperial 32kinds 0.4-7 Metric 32 kinds 4-60TPI	
Longitudinal feed range per spindle revolution	40kinds 0.0527-1.2912 mm/rev	
Gross feed range per spindle revolution	40kinds 0.014-0.3448mm or 0.011-0.276mm	
Saddle travel	760mm CQ6230A×750(560mm)	880mm
Max swing over apron	178mm	
Spindle bore	38mm	

Taper of spindle bore	M.T.NO.5
Range of spindle speeds(9steps or 18 steps)	75-1400r.p.m or 65-1810r.p.m
Lead serew pitch	8TPI 3mm
Cross screw pitch	10TPI2mm
Cross feed per division on its dial	0.001 " (0.025mm) or 0.001 " (0.02mm)
Tool post screw pitch	10TPI or 2mm
Tool post feed per division on its dial	0.001 " (0.02mm)
Max rotary angle of tool post	$\pm 90^{\circ}$
Tool slide travel	76mm
Saddle travel	130mm
Dia of tailstock quill	32mm
Taper of tailstock quill bore	M.T.NO.3
Max travel of tailstock quill	100mm
Motor frequency	50Hz or 60Hz
Motor power	1.1 or 1.5KW
Motor speed	1440R.P.M or 1720R.P.M
Motor voltage	380V three phase or 220V single phase

### **3、 HOISTIG & INSTLLATION**

3.1 Finish removing the wooden crate from around the lathe, check the accessories according to the Packing list.

3.2 Remove the protection paper from the unpainted side of the lathe. Clean all surfaces off anti-rust oil using a mild commercial solvent, kerosene or diesel fuel.

3.3 Sling lathe as shown in the hoisting Fig.2 When it is being transported.

3.4 The fixed dimension of the machine is shown in Fig.3. The lathe stand cabinets should be fixed firmly to the base.

3.5 It's important to keep the tracks level to get the main processing precision of the production. Please follow the steps below: To move the saddle to headstock until it reaches the end of the lathe tracks, put the level on the apron to form the right angle, loose the fixing bolts and adjust the end of lathe using shims, repeat the steps until the two ends of tracks in level condition and fix the bolts firmly. (along the length direction of the tracks,  $\text{error} < 0.02/1000$ , and horizontal direction,  $\text{error} < 0.04/1000$ .)

3.6 When transporting and opening the wooden crate, there may be some other things on the lathe, before the leading tracks are cleaned thoroughly, do not move the saddle and the tailstock.



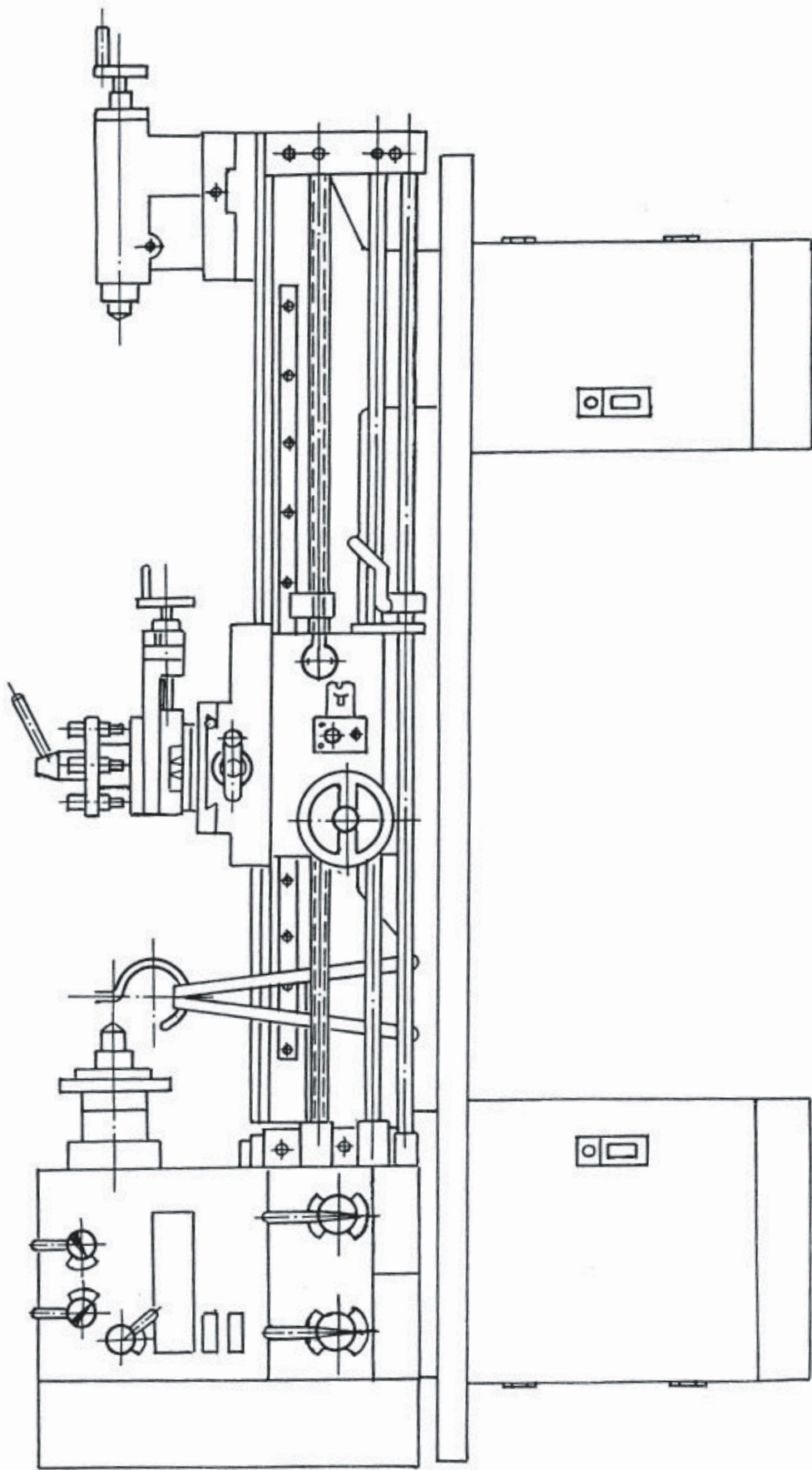


Fig.2 Position to hoist the lathe

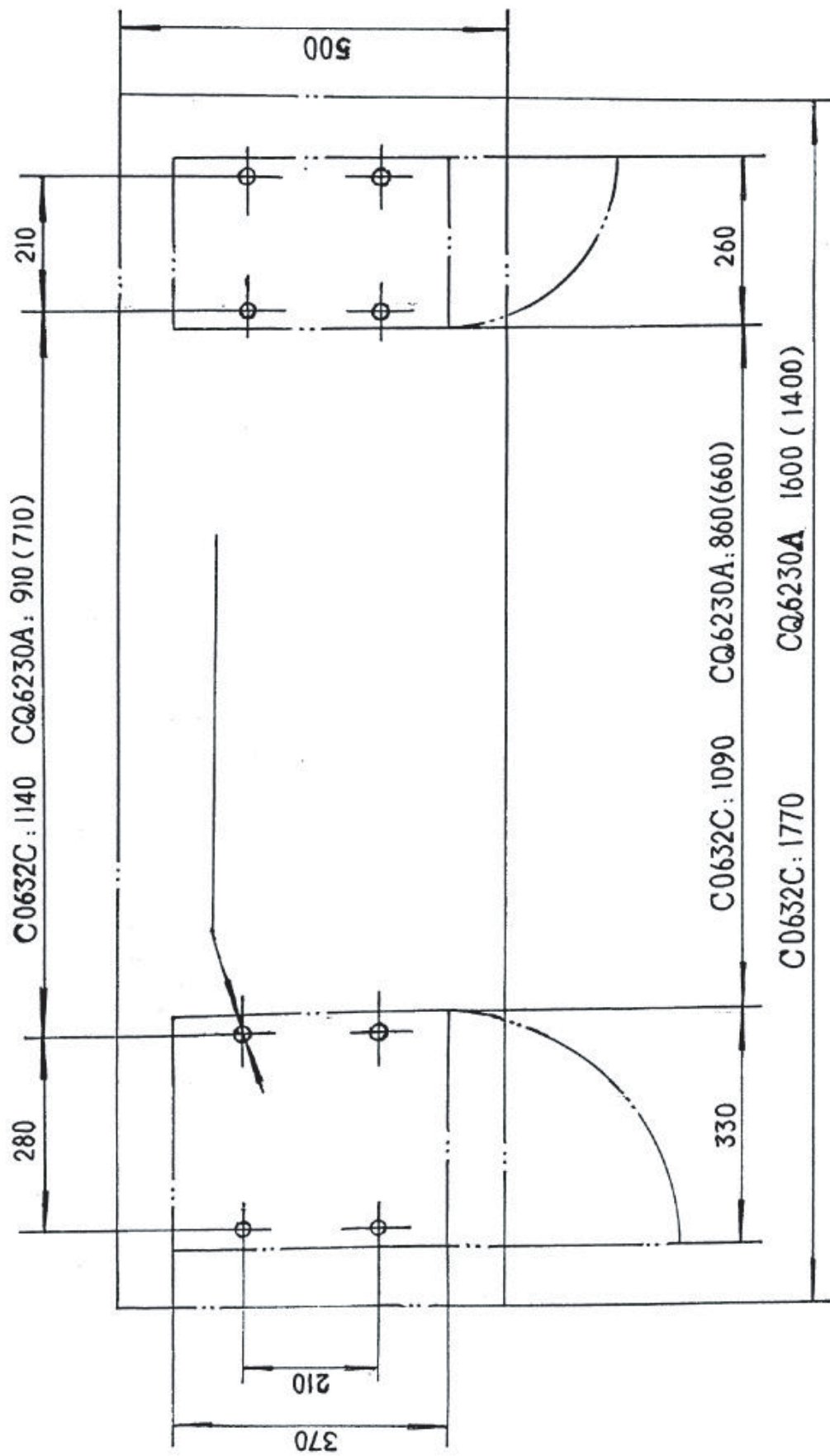


Fig.3 Fixing dimensions for lath stand cabinets

## 4.TRANSMISSION SYSTEM &PARTS

CO623A.CO623C Transmission system see Fig.4

From.2

Parts	Part No.	Kinds	No.of teeth of thread	Modulus Of pitch	Pressure angle	Material	Notes
Head-s  tock	1	Gear	42	M2	20°	45	
	2	Gear	23	M2	20°	45	
	3	Gear	47	M2	20°	45	
	4	Gear	36	M2	20°	45	
	5	Gear	55	M2	20°	45	
	6	Gear	31	M2	20°	45	
	7	Gear	45	M2	20°	45	
	8	Gear	58	M2	20°	45	
	9	Gear	21	M2	20°	45	
	10	Gear	45	M2	20°	45	
	11	Gear	59	M2	20°	45	
	12	Gear	46	M2	20°	45	
	13	Gear	83	M2	20°	45	
	14	Pairde Gear	45	M2	20°	45	
			40	M2	20°	45	
15	Pairde Gear	40	M2	20°	45		
		45	M2	20°	45		

## Continuing

Parts	Part No.	Kinds	No.of Teeth of thread	Modulus of pitch	Pressure angle	Material	Notes
Feed-box	16	Gear	24	M2.25	20°	45	
	17	Gear	16	M2.25	20°	45	
	18	Gear	18	M2.25	20°	45	
	19	Triplicate Gear	18	M2.25	20°	45	
			18	M2.25	20°	45	
			18	M2.25	20°	45	
	20	Gear	20	M2.25	20°	45	
	21	Gear	28	M2.25	20°	45	
	22	Gear	27	M2.25	20°	45	
	23	Gear	21	M2.25	20°	45	
	24	Gear	21	M2.25	20°	45	
	25	Gear	18	M2.25	20°	45	
	26	Paired Gear	30	M2.25	20°	45	
			22	M2.25	20°	45	
	27	Paired Gear	15	M2.25	20°	45	
			22	M2.25	20°	45	
28	Gear	23	M2.25	20°	45		
29	Gear	17	M2.25	20°	45		
30	Gear	15	M2.25	20°	45		
Apron	31	Gear	11	M2.25	20°	45	
	32	Rack		M2.25	20°	45	
	33	Lead screw	Single thread	8T.P.ior 3mm	29° or 30°	45	
	34	Half nut	Single thread			ZQSn6-6-3	
	35	Worm	Single thread	MS2	20°	45	
	36	Worm gear	24	MS2	20°	ZQSn6-6-3	

Continuing

Parts	Part No.	kinds	No.of teeth of thread	Modulus of pitch	Pressure angle	Material	Notes
Apron	37	Gear	15	M2	20°	45	
	38	Gear	50	M2	20°	ZQSn6-6-3	
	39	Gear	25	M2	20°	45	
	40	Nut	Single thread	10T.P.I.、2mm		ZQSn6-6-3	Left hand tread
	41	Screw	Single thread	10T.P.I.、2mm		45	
	42	Gear	14	M2	20°	45	
	43	Gear	51	M2	20°	45	
	44	Gear	43	M2	20°	45	
	45	Gear	25	M2	20°	45	
	46	Gear	48	M2	20°	45	
	47	screw	Single thread	10T.P.I.、2mm		45	
	48	Nut	Single thread	10T.P.I.、2mm		ZQSn6-6-3	
Tail-stock	49	Rod screw	Single thread	10T.P.I.、2mm		45	Left hand tread
	50	Nut	Single thread	10T.P.I.、2mm		ZQSn6-6-3	Left hand tread
Change gear		Gear	22	M1.25	20°		
		Gear	24	M1.25	20°	45	
		Gear	26	M1.25	20°	45	
		Gear	44	M1.25	20°	45	
		Gear	48	M1.25	20°	45	
		Gear	52	M1.25	20°	45	
		Gear	127(120)	M1.25	20°	45	Paired Gear

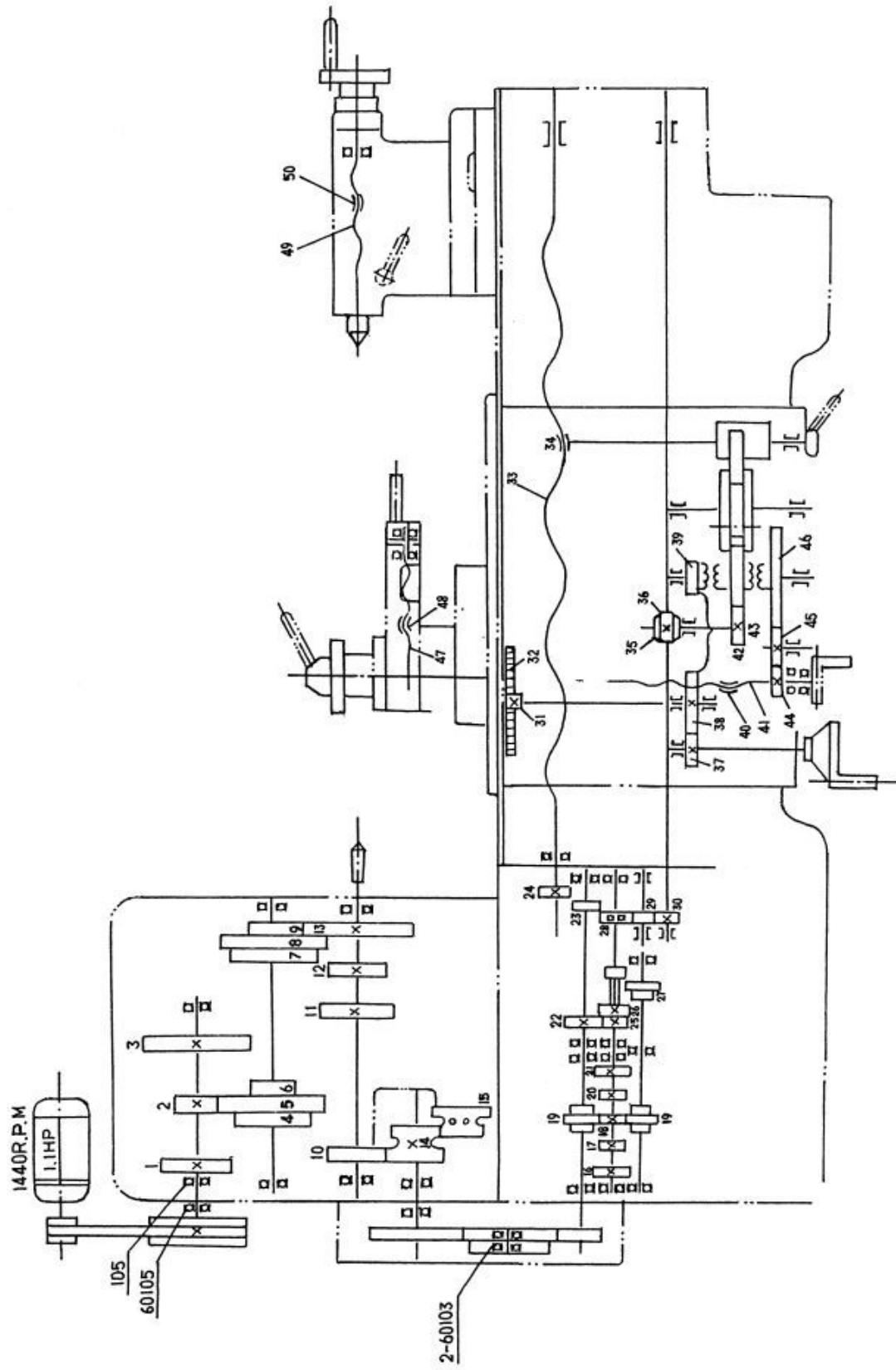


Fig.4 Transmission system

## 5.BEARING DISTRIBUTION

CQ6230A、CQ632C Bearing list (see Fig.5)

Form 3

TYPE	Name	Specification	Qty	Installation
60104	Ball bearing single row	20×42×12	1	Headstock
60105	Single row ball bearing with shield	25×47×12	1	
304	Singe row ball bearing with shield	20×52×15	1	
104	Single row ball bearing	20×42×12	2	
105	Single row ball bearing	25×17×12	2	
204	Single row ball bearing	20×47×14	1	
D7211	Single row taper roller bearing	55×100×22	1	
D7212	Single row taper roller bearing	60×110×22	1	
102	Single row ball bearing	15×32×9	3	
103	Single row ball bearing	17×35×10	8	
7000103	Single row ball bearing	17×35×8	1	
8103	Single row pillow block bearing	17×32×8	1	
8104	Single row pillow block bearing	20×35×10	1	
8101	Single row pillow block bearing	12×26×9	2	Carriage
8102	Single row pillow block bearing	15×28×9	2	
8101	Single row pillow block bearing	12×26×8	1	Tail stock
60103	Single row ball bearing	17×35×10	2	Change gear

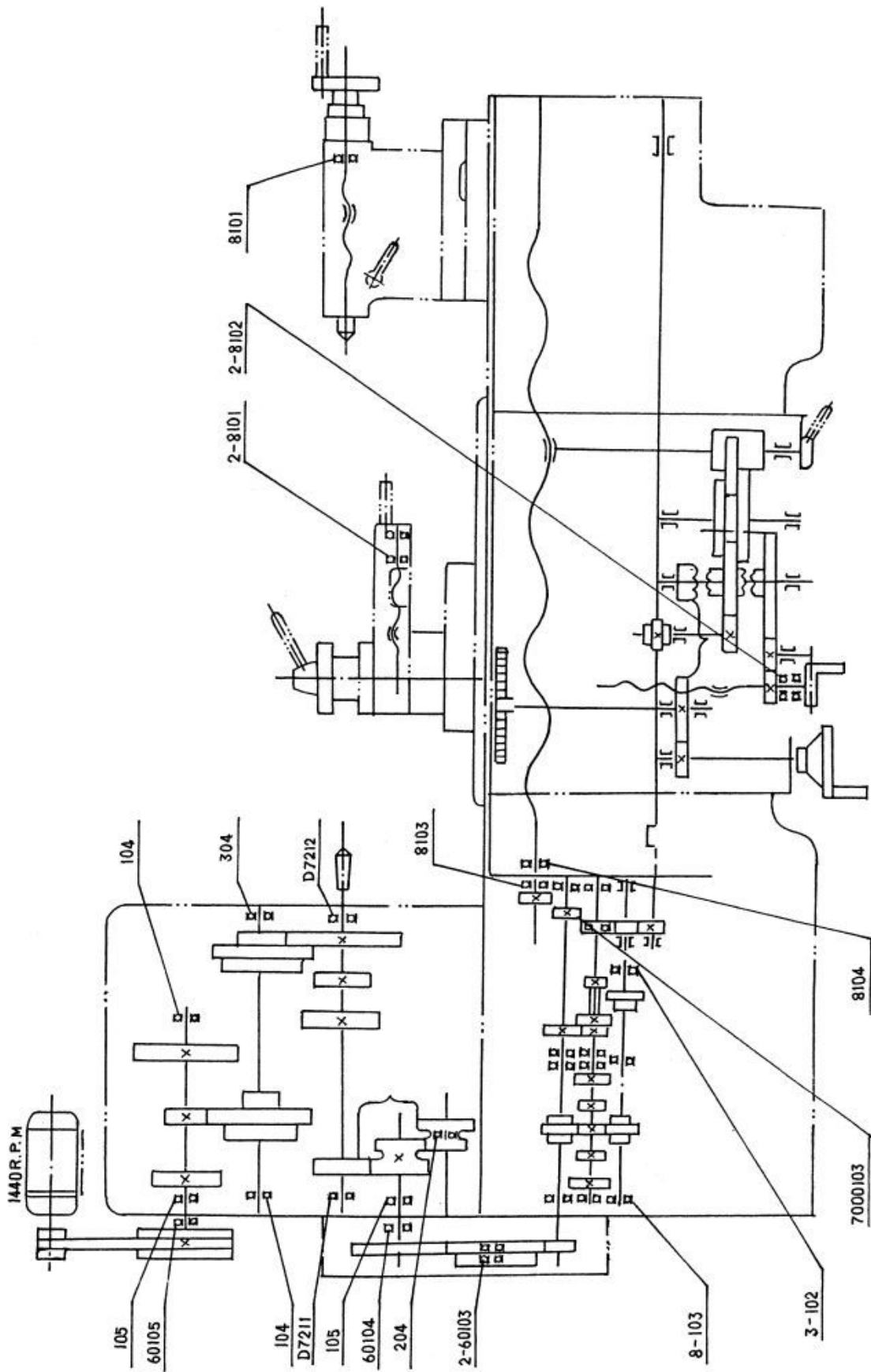


Fig. 5 Bearings Distribution



## 6. LUBRICATION SYSTEM

All the moving parts and sliding surface should be lubricated please consult Fig.6.

Oil cap is the cover of headstock. First Open the cover, Oil must be up to the indicator mark , normally change the oil after three months. To drain the whole waste oil by removing the drain plug, then rinse the headstock with the coal oil and refill the machine oil in the headstock.

Oil cap 2 to 11 are ball oilers (see Fig.6),except for filling the oil up to the indicator mark.at oil cap 2 & 6 ,other oil caps should be oiled twice a day by oil gun.

Oil cap 2 is the ball oilers for feed box .Oil cap 3 is for the chang gear , oil cap 4 for the saddle, oil cap 5 is headstock, feed box & apron. Oil cap 6(two ball oilers) for apron . Oil cap 7 for hand wheel. Oil cap 8(two ball oilers) for the support. Oil cap 9 for the stail stock. Oil cap 10 for the sliding cutting rest. Oil cap 11 for the sddle screw rod.

Other sliding surfaces including the swallow-tail-shape notch, half nut, lead screw rod, controlling rod , tailstock quill, etc. Before and after openration, these surfaces must be oiled.

Recommending lubrication oil: 20<sup>#</sup> machine oil.

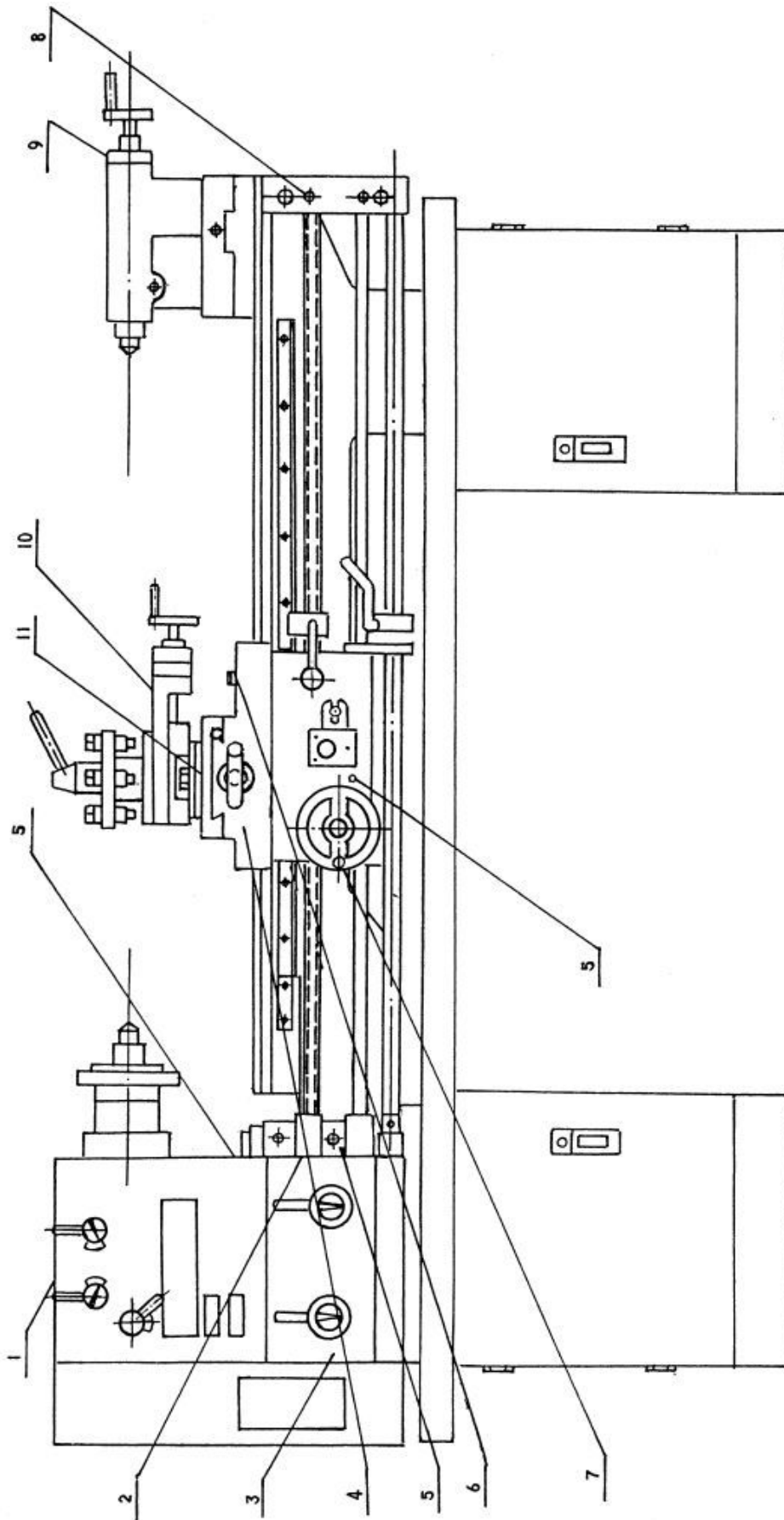


Fig.6 Lubrication system

## 7. ELECTRICAL SYSTEMS

For the connection of the 220v/380v , three phase 50HZ standard lathes, see Fig.7 and the connection of 110v/220v, single phase 50HZ standard lathes, see fig.8.

If there is any changes on the connection , please check the connection figure on the motor.

For the electrical connection, just connect the electric power lines with the leading end of the lathe, and the 15/30A fuse box must be connected on the power lines.

Electrical control box is located behind the headstock.

The controlling level should remain in the middle and also press down the switch to keep the electrical power off.

Push the controlling lever up, the spindle will turn clockwise, push the controlling lever down, the spindle will turn counter-clockwise. If not, switch off the power exchange the lines according to the connection figure on the motor.

Set the controlling lever in the middle, you can stop the lathe.

The machine must be connected to ground or ground wire.

## The list of electrical components(three phase)

From.4

Code	Name	Type	Amount	Notes
M <sub>1</sub>	Motor	Y90S4 380V1.1KW	1	
QF <sub>1</sub>	Switch	DZ47-63 6A 3P 380V	1	
QF <sub>2</sub>	Switch	DZ47-63 2A 3P 380V	1	
TC	Transformer	JBD5-63	1	
SB <sub>1</sub>	Fast-stop Knob	LA38-11/207 red	1	
SB <sub>2</sub>	Knob	LA38-11/207 black	1	
HL	Indicating light	AD188.8/21-8GZ white	1	
SQ <sub>1</sub> SQ <sub>2</sub>	Switch	LXW5-11G2/L	1	
SQ <sub>3</sub> SQ <sub>4</sub>	Switch	LXW5-11M/L	1	To switch off
KM <sub>1</sub> KM <sub>2</sub>	Contactor	LC <sub>1</sub> -D1201 24V	1	
KM <sub>3</sub>	Contactor	LC <sub>1</sub> -D129	1	Used in coolant system
KA	Relay	32C4-4024V	1	
SA <sub>1</sub>	Knob	LAI/310A black	1	Used for coolant system
SQ <sub>5</sub>	Switch	LXW5-11N <sub>1</sub> /L	1	Used for the break
EL	Light		1	Used for the light

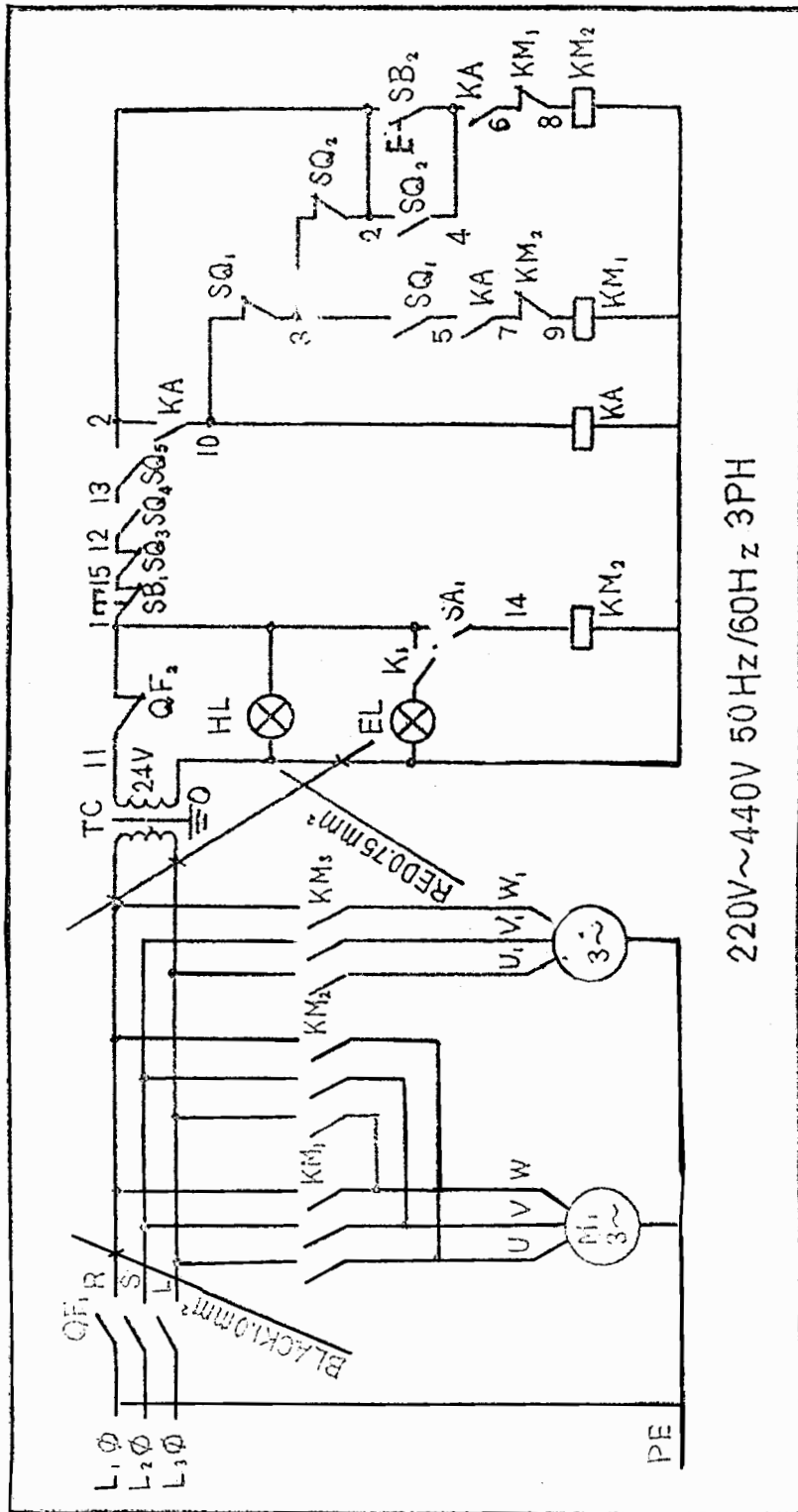


Fig.7 Electrical Principium(three phase)

## The list of electrical components(single phas)

From.5

Code	Name	Type	Amount	Notes
M1	Motor	Y90L <sub>2</sub> -4 220v 1.5kw	1	
QF1	Switch	DZ47-63 2P 16A	1	
QF2	Switch	DZ47-63 2A 3P	1	
TC	Transformer	JBK5-63	1	
SB1	Fast-stop Knob	LA38-11/207red	1	
SB2	Knob	LA38-11/207 black	1	
HL	Indicating light	AD188.8/21-8G <sub>2</sub> white	1	
SQ <sub>1</sub> SQ <sub>2</sub>	Switch	LXW5-11G2/L	1	
SQ <sub>3</sub> SQ <sub>4</sub>	Switch	LXW5-11M/L	1	To switch off
KM1KM2	Contactora	LC <sub>1</sub> -D259 24V	1	
KM3	Contactora	LC <sub>1</sub> -D129 24V	1	
KA	Relay	32C4-40 24V	1	
SA1	Knob	LAI/310A black	1	Used for coolant system
SQ5	Switch	LXW5-11N <sub>1</sub> /L	1	Used for the break
EL	Light		1	Used for the light

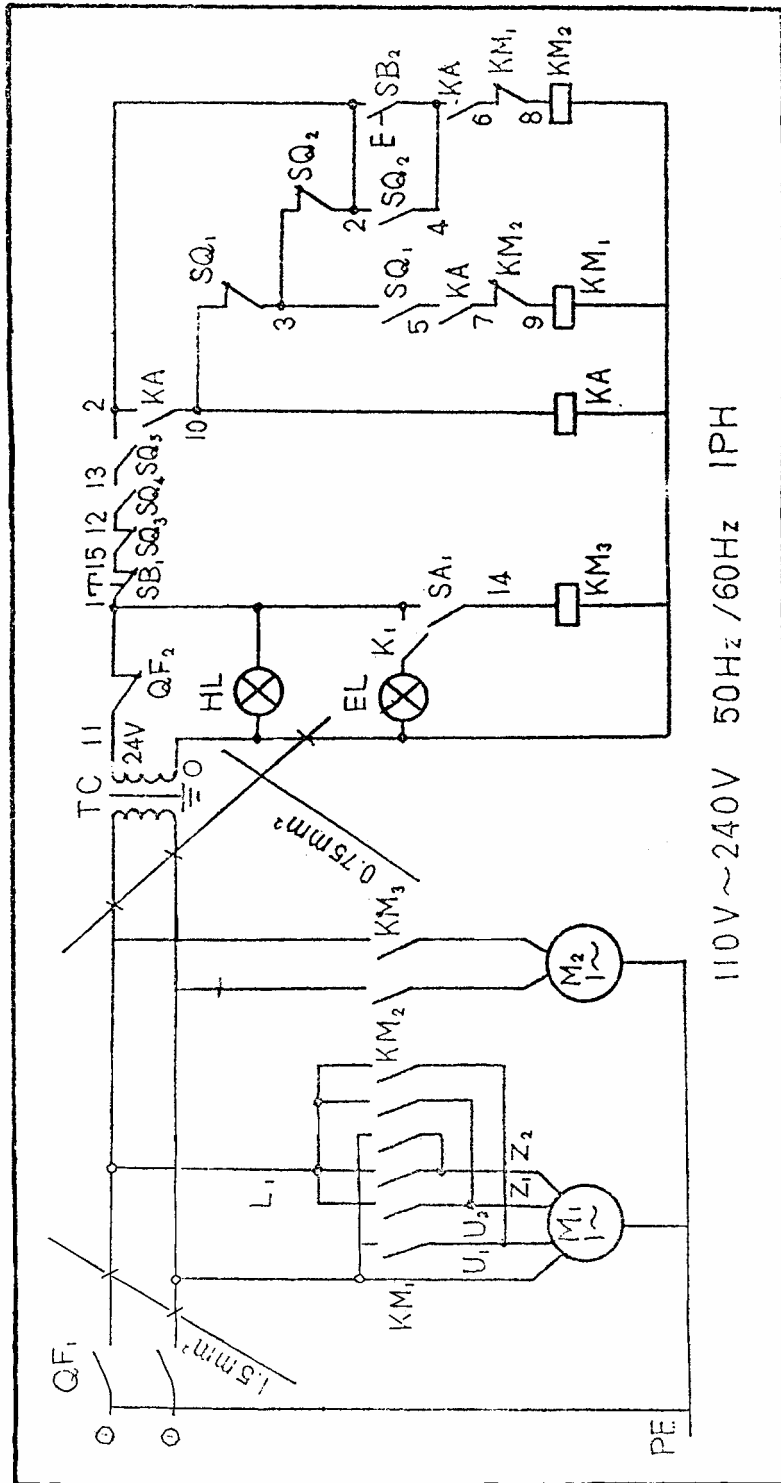


Fig. 8 Electrical Principium(single phase)

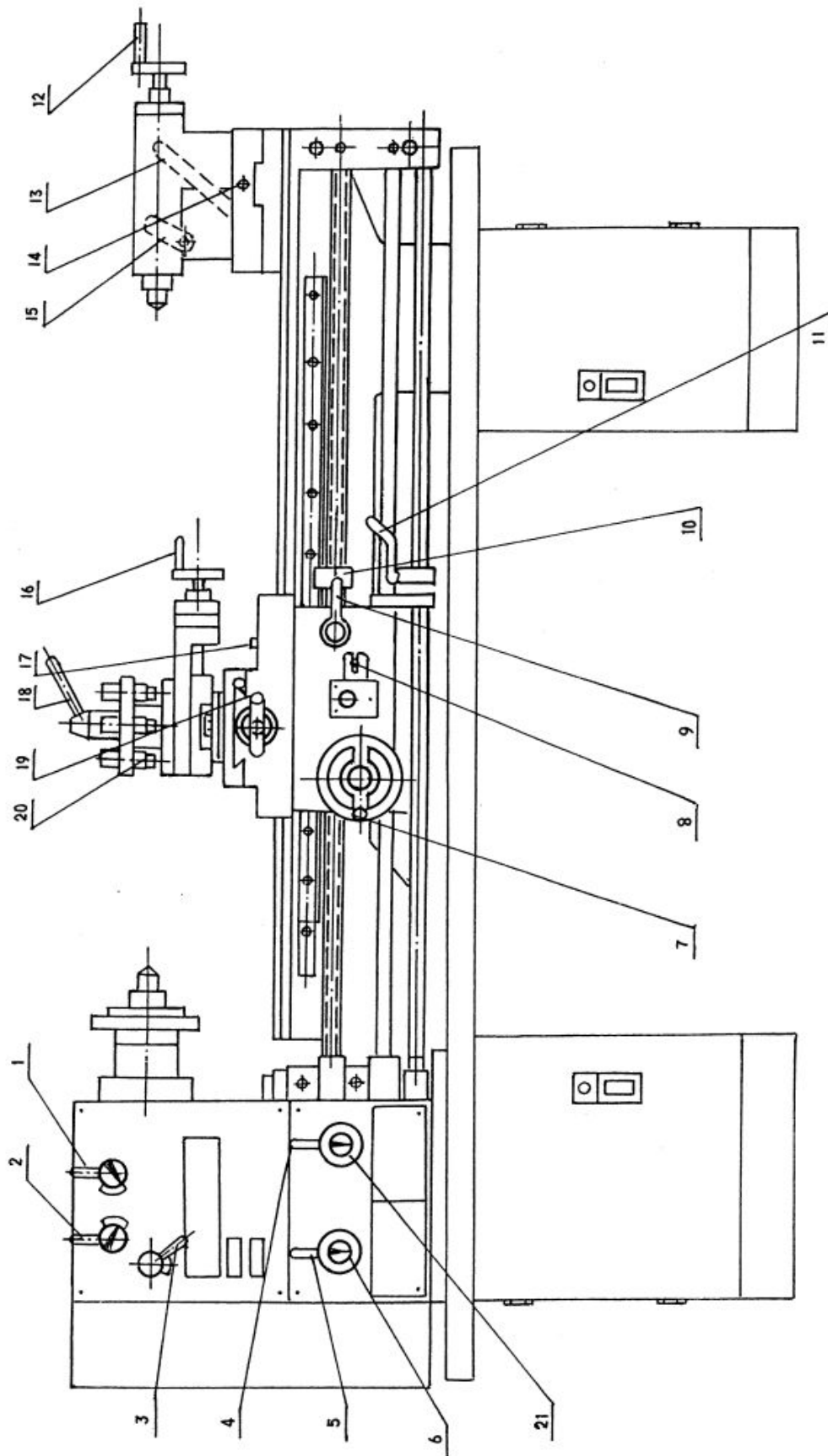


Fig.9 Operation levers I type Feedback



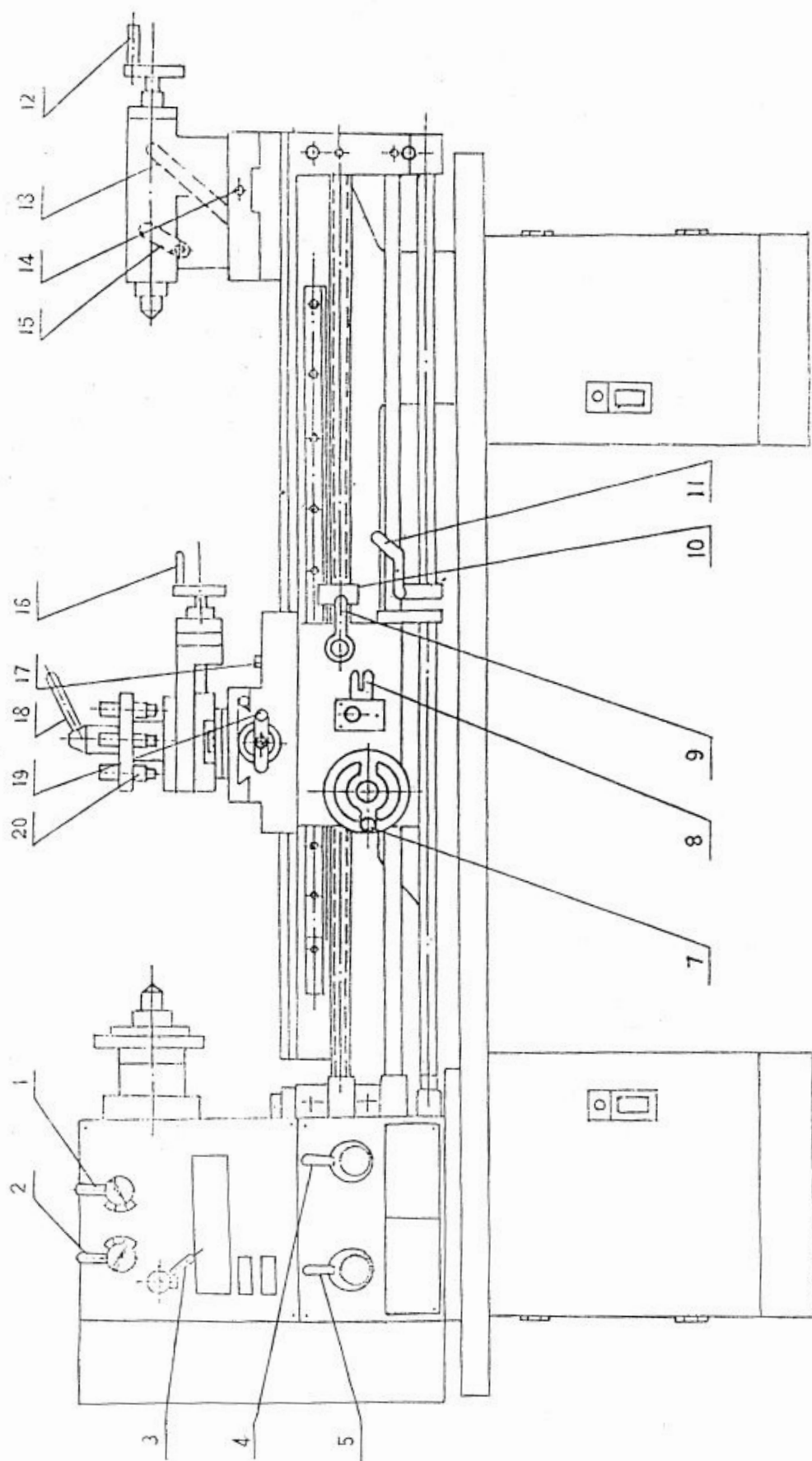


Fig. 10 Operation levers II type Feedback

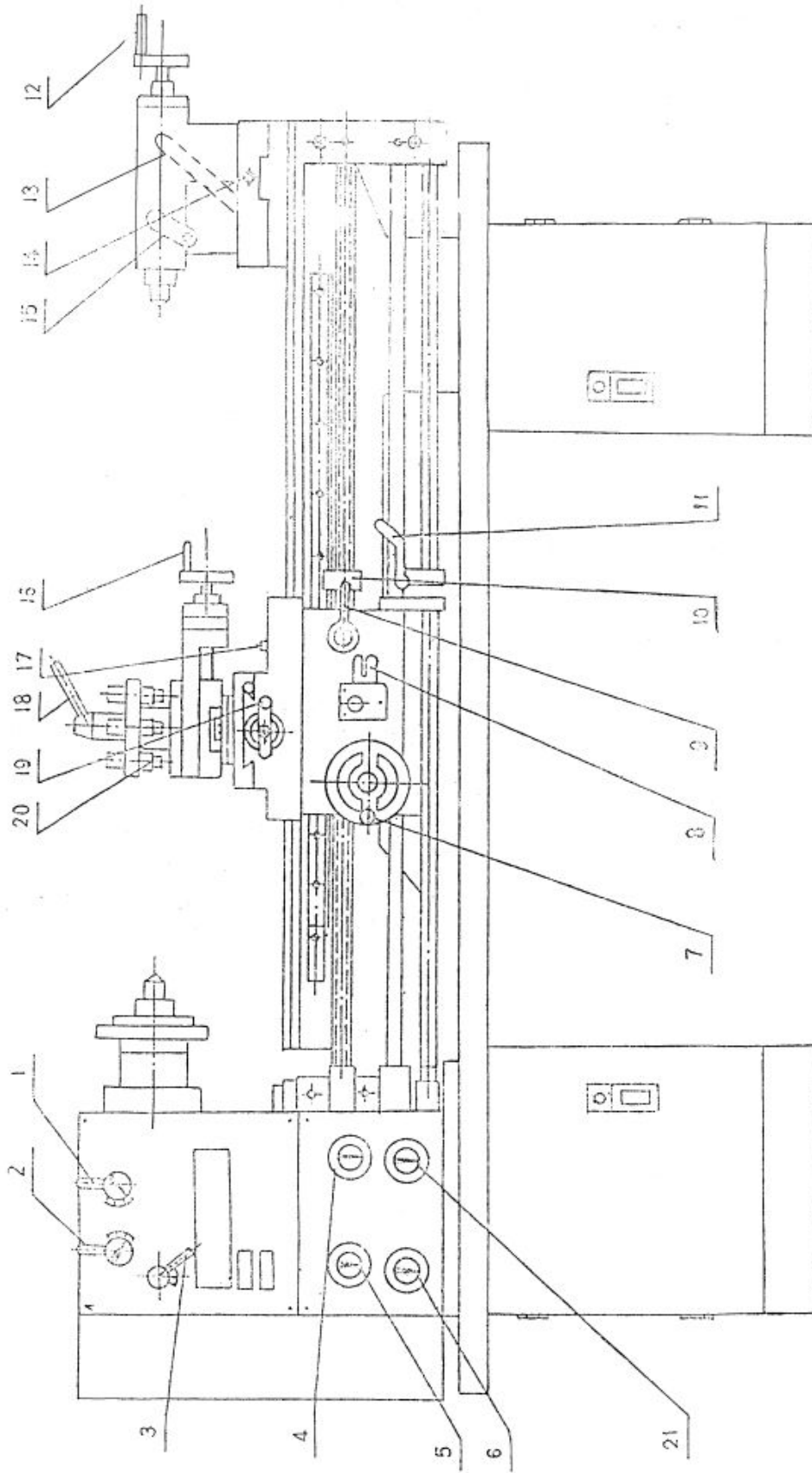


Fig. 11 Operation levers III type Feedback

## **8.INSTRUCTIONS ON TRIAL ADJUSTMENT & OPERATION**

8.1 Before operation, read operation manual carefully, understand the request on adjustment, operation, upkeep and lubrication to the lathes.

8.2 From motor to the low speed wheels, there is one or two V-TYPE belt. Before switching on the lathe, check the belt whether it's too tight or not. It's in normal condition that usually with finger you can press down for 2 inches. Too tight belt will spoil the bearings, so the tight belt must be adjusted.

8.3 When trying the lathe, put the speed change lever in low speed position and keep the lathe running for 20 minutes, if it's normal, gradually change the speed of the spindle up to the fastest (set the feed selection lever in the moderate speed position, for the spindle, every grade running over 5 minutes)

Caution: The speed cannot be changed. Only after the motor completely stops running.

8.4 The lathe operation lever, see Fig.9.10.11.

### **8.4.1 Spindle**

With the help of spindle 1, 2 & V-Type belt, headstock can supply within the scope of 18 kinds and 9 kinds of speed from 65 to 1810 r.p.m or 75 to 1400 r.p.m, you can see from the speed diagram on the headstock.

Move the starting lever 11 up, spindle will turn counter-clockwise, move the starting lever down, spindle will turn clockwise. Sometimes we'll adjust the moving direction according to customers' request.

### **8.4.2 I, III type: Feedbox**

Lever 4 is the selection lever for common cutting and threading. Lever 5,6,21 for controlling the speed of the feedbox. Lever 5 has 5 positions, lever 6 also has 5 positions. Lever 21 has 2 positions, moving the three levers to get all kinds of feed rate listed in the diagram on the left of the headstock, also to be able to get the metric & imperial threadings listed in the diagram in the front of the feedbox.

## II Type Feedbox

Push lever 4 inside to choose the common cutting and threading, left move for cutting shaft, right move for threading, drawing back to choose the left and right positions for controlling the feed rate and size of the threads. Lever 5 is pushed inside or drawn back to choose 5 positions for controlling the feed rate and the size of threads.

Caution: The spindle must be stopped running before moving any above levers.

### 8.4.3 Carriage:

Rotate hand wheel 7 to make the carriage moving along the leading tracks.

Cross feed selection lever 19 used for the saddle moving forward and back-ward by manual operation .

Compound fuction lever 16 is used to move the follow rest manually and adjust it to any angles to cut the threads and process the parts with angles.

When processing the threacils, operate half nut engage lever 9. Feed selection lever 8 is to adjust the feed rate/threading pitch horizontally and longitudinally, with a safety plug in the lever. When the lathe remains in a certain feeding state, it can prevent the unexpected combination, the lever has 3 positions:

① At neutral position or non-combination position ② Move it up to feed longitudinally. ③ Move it down to feed horizontally. When the moving direction of the spindle is not changed, the feed rate selection 3 can change the direction of the feeding movement horizontally or longitudinally.

Thread disorder in stalation 10 is used for making the half nut and guides crew connect on the same thread which is just being cut , but please pay attention: When the guides crew turns a circle, the number of the thread on the product is integer the thread will be in order, but if the guides crew turns a circle, the number of the thread is not integer, the thread will be in disorder. In order to be convenient in processing threads, you can use the thread disorder installation, please see the meaning of the cocle on the thread disorder instalation.

Code	Explanation
1-8	Aline any number(1-8)press half nut lever, no disorder
1	Every time aline mark "1" press half nut lever down, no disorder.
1, 5	Every time aline mark "1" or "5" press half nut lever down, no disorder.
1, 3, 5, 7	Every time aline mark"1, 3, 5, 7" press half nut lever down, no disorder.
/	No need of thread disorder in stalation, press half nut down at any position, no disorder.

Clamping lever 18 is used to lock the follow rest and prevent it from loosening. Loosen the lever, you can turn the follow rest counter-clockwise to change the cutting tools.

#### 8.4.4 Tailstock

Handwheel 12 is used to feed or withdraw the tailstock quill. Reverse the handwheel until it stops, you can withdraw the using tool automatically. Tailstock clamping on the eading tracks the lever remains upward when it is locked, the lever remains downward when it is loosened. Quill clamping lever 13 is to prevent the quill from moving , before rotating the handwheel 12 , loosen the lever. At the right position you need, lock the quill tightly, The two bolts at the lateral sides of the tailstock are used to move the tailstock, when you adjust it to the right angle, tighten the two bolts.

8.5 Adjust the nut gap on the carriage csee Fig.2. Rotate the peg 1 on the nut to the satisfied saddle moving and required travel.

8.6 Chuck and faceplate mounting see Fig.13. The connection between spindle and chuck or faceplate is made by D-Cam lock structure. When mounting, put the three pull pins of chuck or faceplate into the three holes on the spindle face end, The turn the three cams with the aid of square head wrench. When turning the cams clockwise, the chuck or faceplate will be locked. When turning the cams counter-clockwise to certain point, the chuck or faceplate can be detached.

#### 9.MAINTENANCE

9.1 Before operation, check the oil indicator, refer to lubrication Fig6 and lubricate all sliding and rolling parts.

9.2 Avoid hurting from chips, every sliding surface should be cleaned, check the felts at every side of the carriage. If it's damaged or dirty, just change or clean it. After operation clean every part of the lathe, lubricate the sliding surface, feed rod, guidescrew to prevent from rusting.

9.3 Periodically wash headstock, feed box, apron and change lubrication oil.

9.4 Avoid oil leaking into motor and v-type belt, timely check and adjust v-type belt.

9.5 When rotating the spindle, never stir the speed change in order to prevent the gears from being damaged. If you can't move the speed chang lever, use hand to rotate the spindle.

9.6 The motor can turn clockwise and counter-clock wise to change the rotating direction of the spindle, but never change the motor rotating direction before stopping the running of the spindle.

9.7 When operating the sleady rest or follow test, the joint between sliding part and word part needs to be lubricated very often.

9.8 Avoid spindle bench sides, spindle taper & spindle bore from becoming unsmvoth, for that will effect the processing precision.

9.9 When something goes wrong with the lathe, maintain it in no time.

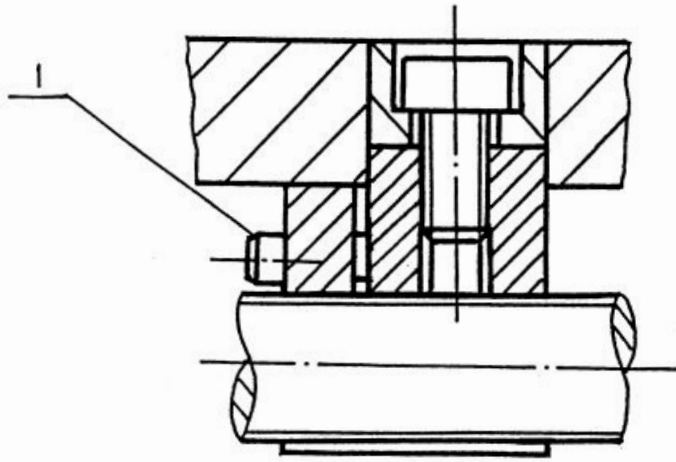


Fig.12 Adjust the gap of horizontal feeding nut

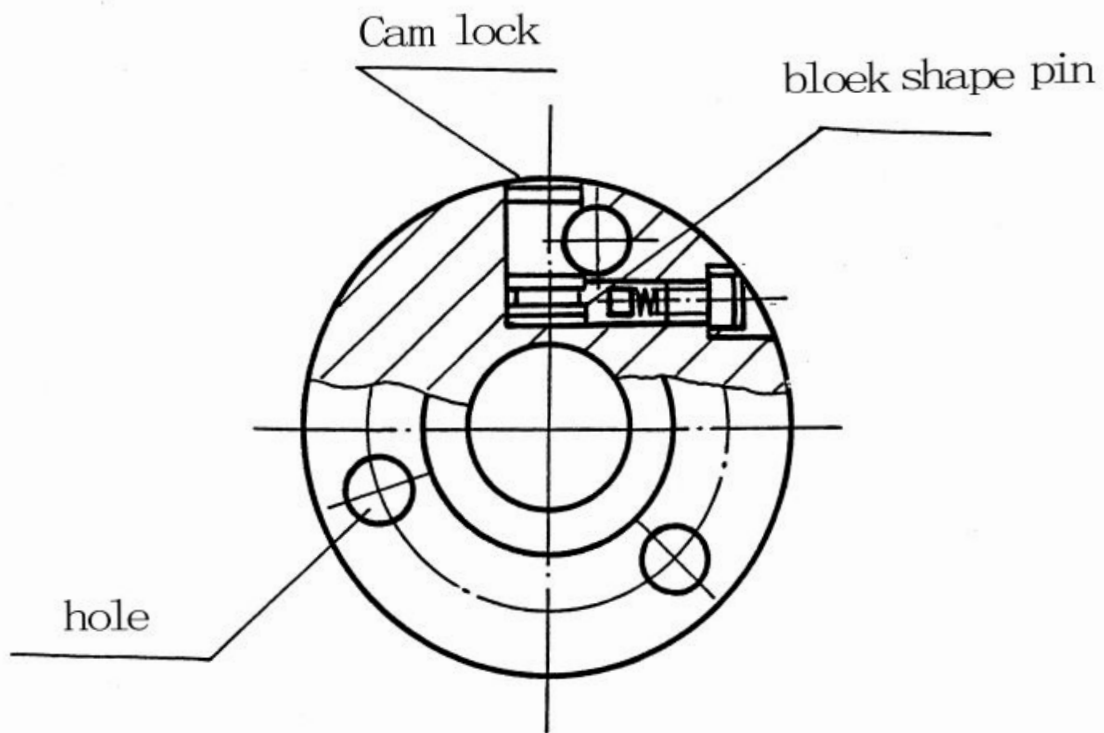
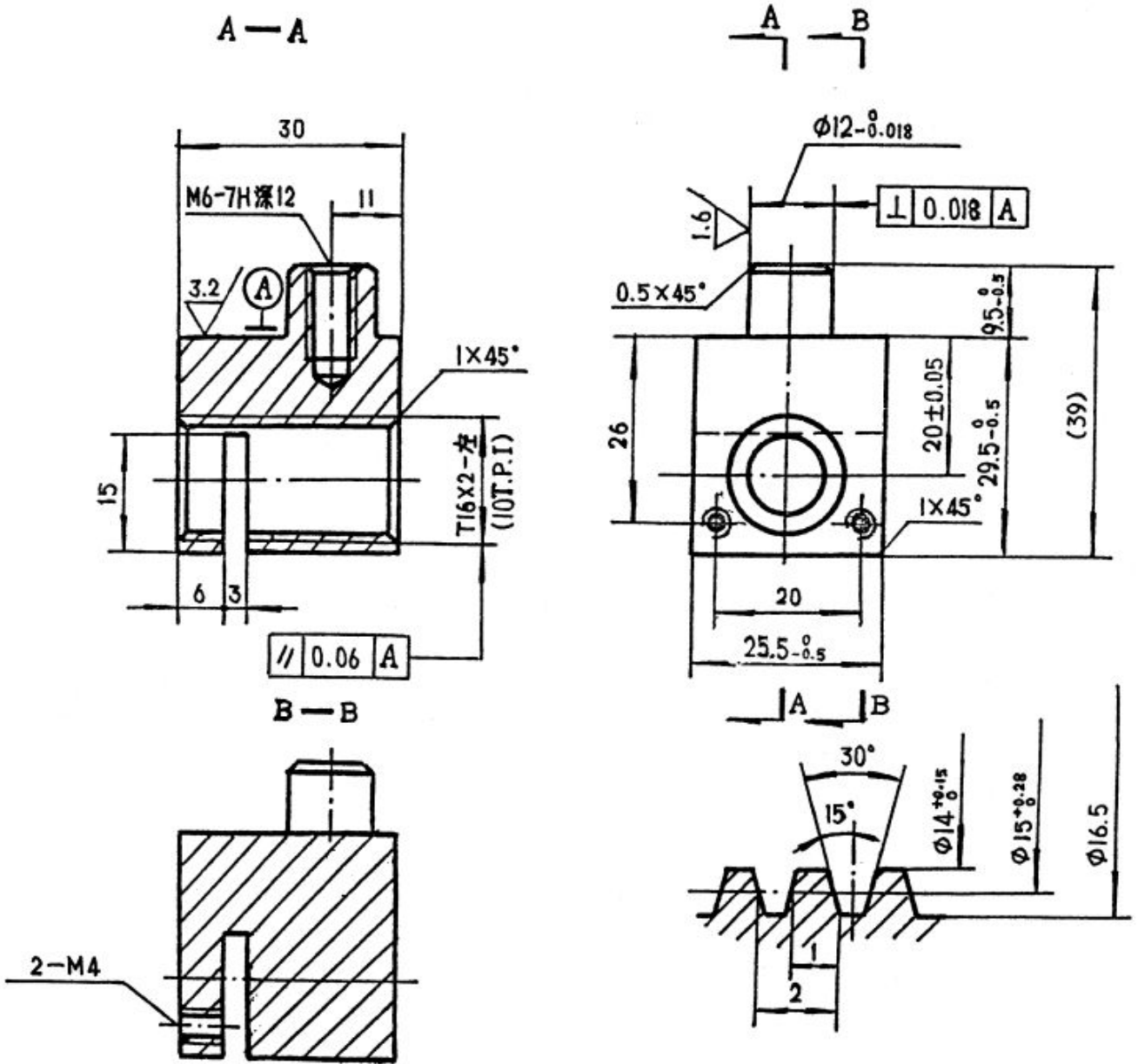


Fig.13 Chuck or face plate lock structure

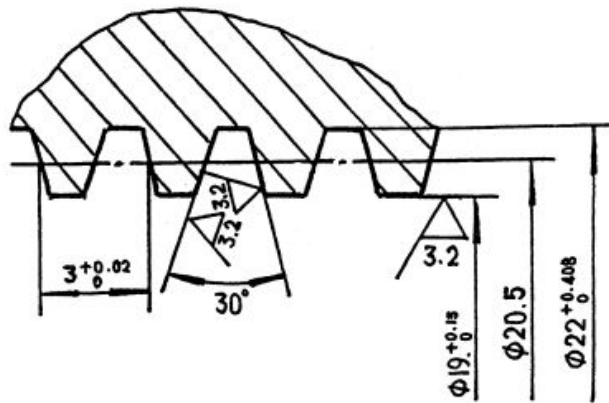
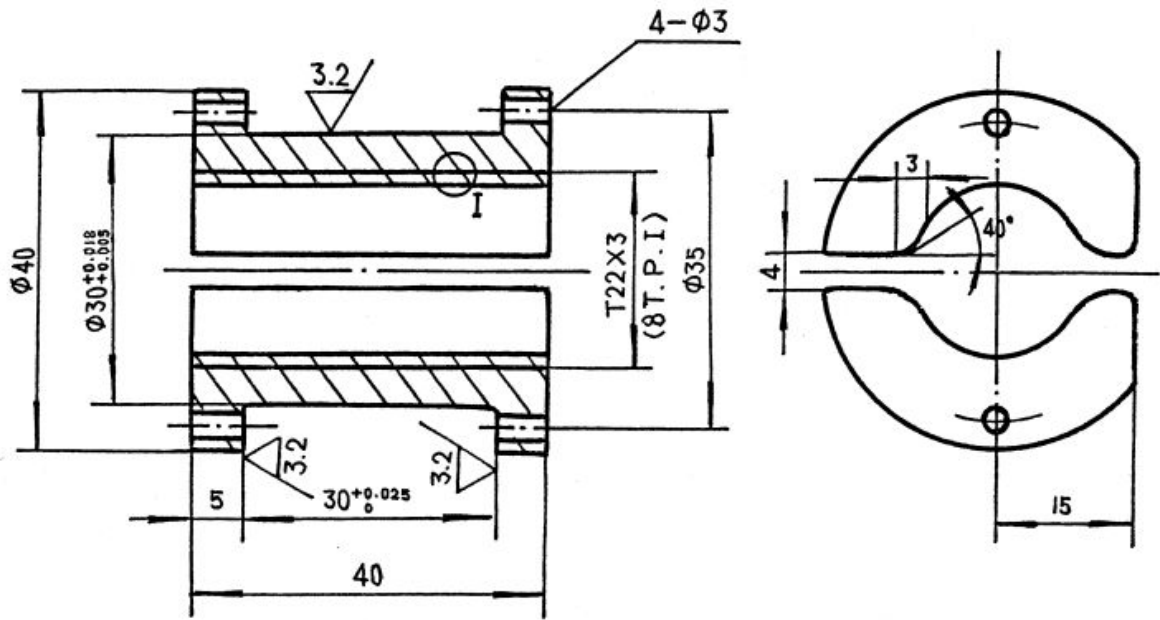
其余  $\sqrt{12.5}$



Additional Fig.1 ZQSn6-6-3



其余  $\sqrt{12.5}$



Additional Fig.2 Half Nut Material

## 11.OPTIONAL ACCESSORIES

In order to meet the need of the customers, besides the standard accessories, we produce some optional accessories. Customers should mention the producer when offering orders so that we can arrange the production. The payment is extra.

Optional accessories see Fig 11

No.	Name	Amount	Note
1	Steady rest	1 Set	
2	Follow rest	1 Set	
3	4 jaw chrck	1 Set	
4	Faceplate	1 Set	
5	Coolant system	1 Set	
6	Safety chuck cover	1 Set	With switch
7	Live center M.T.No.3	1 Set	
8	Foot break	1 Set	

# **PARTS DRAWING & PARTS LIST**

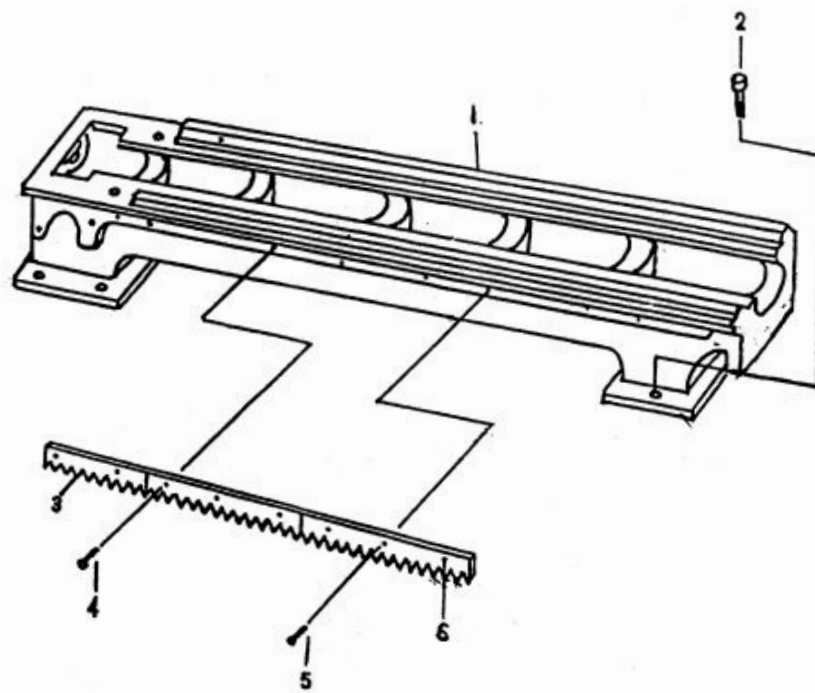
**BE SUBJECT TO ALTERATION WITHOUT NOTICE  
EDITION DATE:6/9/2002**

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19.PRETCTING COVER-----	48
20.GUARD-----	50

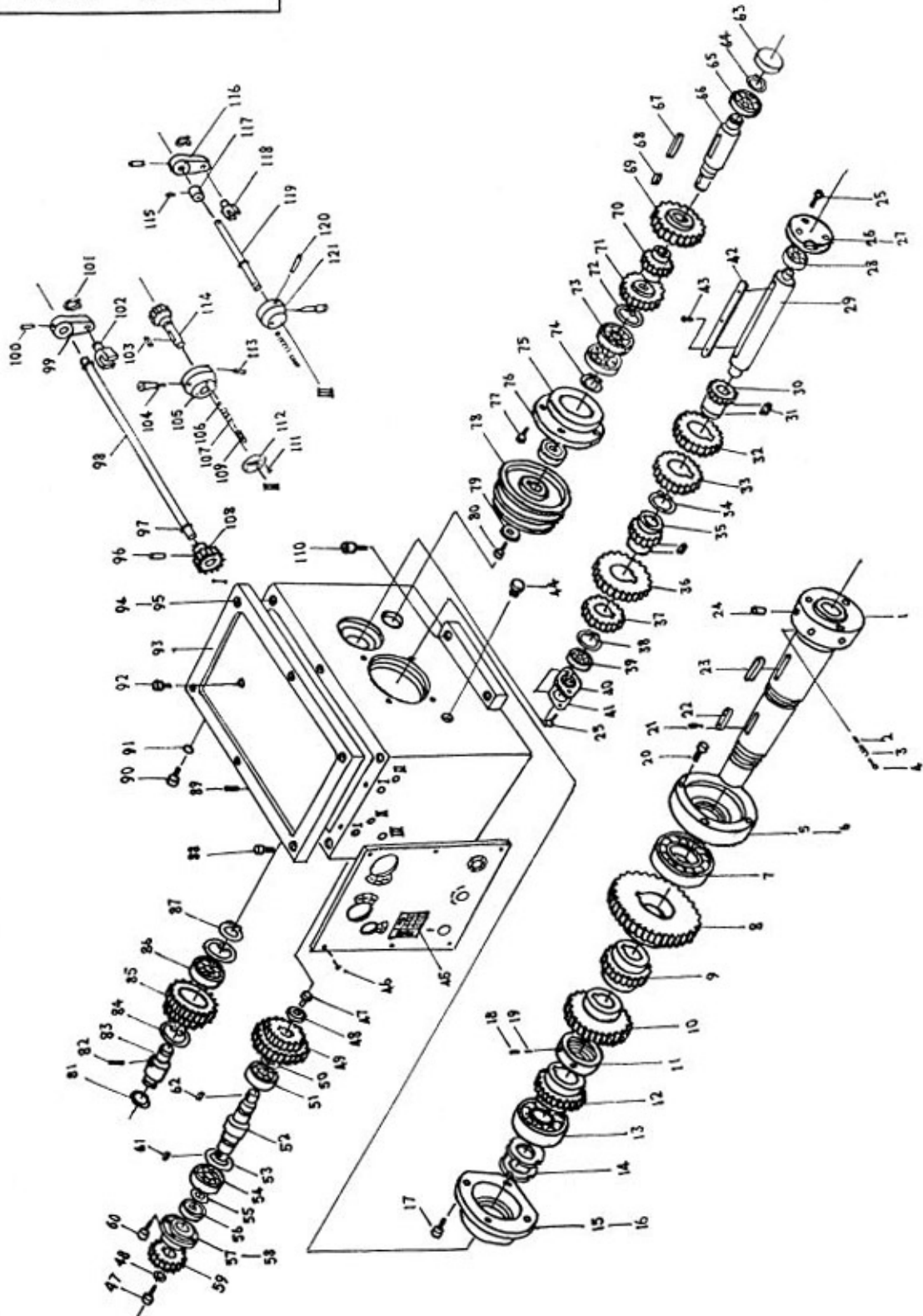


BED ASSEMBLY



<b>BED ASSEMBLY</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Lathe bed	1	1004				
2	Screw	6	GB5783-86 M12×40				
3	Rack gear	12	1009				
4	Screw	6	GB70-85 M6×15				
5	Pin	6	GB879-860 5×20				
6	Rack gear	2	1011				

# HEAD STOCK



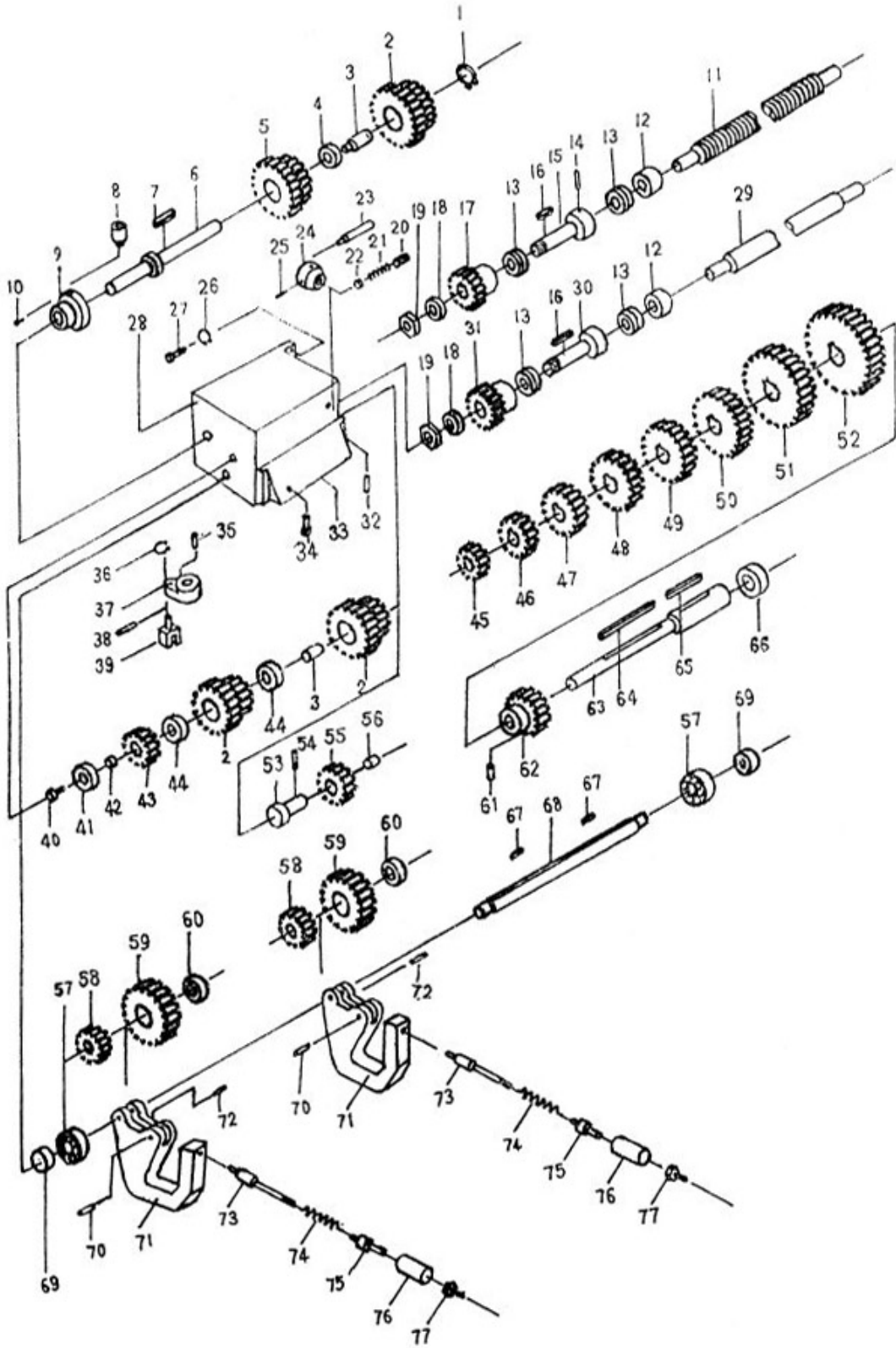


HEAD STOCK							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Spindle	1	2034	23	Key	1	GB1096-79 8x80
2	Lock pin	3	2035	24	Shaft	3	2037
3	Spring	3	GB2089-80 0.6x4x22	25	Screw	5	GB70-85 M6x12
4	Screw	3	GB70-85 M8x16	26	Cover	1	2040
5	Cover	1	2038	27	Oil seal	1	2028
6	Oil seal	1	2006	28	Bearing	1	GB276-79 304
7	Bearing	1	GB297-84 D7212	29	Shaft	1	2039
8	Gear	1	2031	30	Gear	1	2017
9	Gear	1	2030	31	Key	2	GB1096-79 5x18
10	Gear	1	2029	32	Gear	1	2015
11	Nut	1	2024	33	Gear	1	2016
12	Gear	1	2008	34	Circlip	1	GB894.1-86 36
13	Bearing	1	GB297-84 d7211	35	Gear	1	2022
14	Nut	2	2007	36	Gear	1	2020
15	Cover	1	2005A	37	Gear	1	2021
16	Oil seal	1	2023	38	Circlip	1	GB894.1-86 45
17	Screw	4	GB70-85 M8x16	39	Bearing	1	GB276-89 104
18	Screw	2	GB77-85 M8x8	40	Cover	1	2009
19	Collar	2	2025	41	Oil seal	1	2009A
20	Screw	4	GB70-85 M6x12	42	Key	1	GB1096-79 8x108
21	Screw	2	GB65-85 M3x8	43	Screw	2	GB65-85 M3x8
22	Key	1	GB1096-79 8x45	44	Oil window	1	GB1160.1-89 A10

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
45	Fascia	1	2055	67	Key	1	GB1096-79 5×80
46	Screw	6	GB818-86 M3×8	68	Key	1	GB1096-79 C5×24
47	Screwg	2	GB70-85 M6×12	69	Gear	1	2019
48	Washer	2	2003	70	Gear	1	2018
49	Gear	2	2026	71	Gear	1	2013
50	Circlip	1	GB894.1-86 25	72	Circlip	1	GB893.1-86 47
51	Bearing	1	GB176-89 105	73	Bearing	2	GB276-89 105
52	Shaft	1	2027a	74	Circlip	1	GB894.1-86 25
53	Circlip	1	GB893.1-86 42	75	Cover	1	2012B
54	Bearing	1	GB276-89 104	76	Oil seal	1	HC4-692-67 PD25×40×10
55	Circlip	1	BG894.1-86 20	77	Screw	4	GB5781-85 M6×20
56	Oil seal	1	HC4-692-67 D20×40×10	78	Pulley	1	2014
57	Cover	1	2004A	79	Washer	1	2011
58	Oil seal	2	2066	80	Screw	1	GB70-85 M8×20
59	Gear	1	2002B	81	Oil seal	1	GB34521-85 22×24
60	Screw	3	GB70-85 M6×15	82	Screw	1	GB78-85 M6×8
61	Key	1	GB1096-79 C5×8	83	Shaft	1	2001
62	Key	1	GB1096-79 C5×20	84	Circlip	2	GB893.1-86 47
63	Cover	1	2063	85	Gear	1	2032
64	Circlip	1	GB894.1-86 20	86	Bearing	1	GB276-89 204
65	Bearing	1	GB276-89 104	87	Circlip	1	GB894.1-86 20
66	Shaft	1	2010B	88	Screw	6	GB70-85 M6×30

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
89	Screw	2	GB78-85 M6x20	111	Screw	4	GB818-86 M3x6
90	Screw	1	JB1071-77 M16x1.5	112	Fascia	2	2060
91	Oil seal	1	GB34521-86 16x2.4	113	Screw	2	GB78-85 M6x20
92	Screw	1	JB1071-77 M16x1.5	114	Gear	2	2061
93	Cover	1	2044	115	Screw	1	GB78-85 M6x8
94	Oil seal	1	2062	116	Shift arm	1	2054A
95	Headstock	1	2033	117	Collar	1	2049
96	Pin	2	GB879-86 4x24	18	Shifter	1	2048
97	Oil seal	7	GB34521-86 16x2.4	119	Shaft	1	2052
98	Shaft	2	2046	120	Pin	1	GB879-86 5x40
99	Shaft arm	2	2042	121	Boss	1	2051
100	Pin	3	GB879-86 4x24				
101	Circlip	3	GB894.1-86 12				
102	Shifter	2	2041				
103	Key	2	GB1096-79 5x16				
104	Handle	3	2058				
105	Boss	2	2059				
106	Ball	4	GB308-89 6				
107	Spring	4	GB2089-80 1x6x20				
108	Gear	2	2047				
109	Screw	4	GB77-85 M8x8				
110	Screw	2	GB70-85 M12x25				

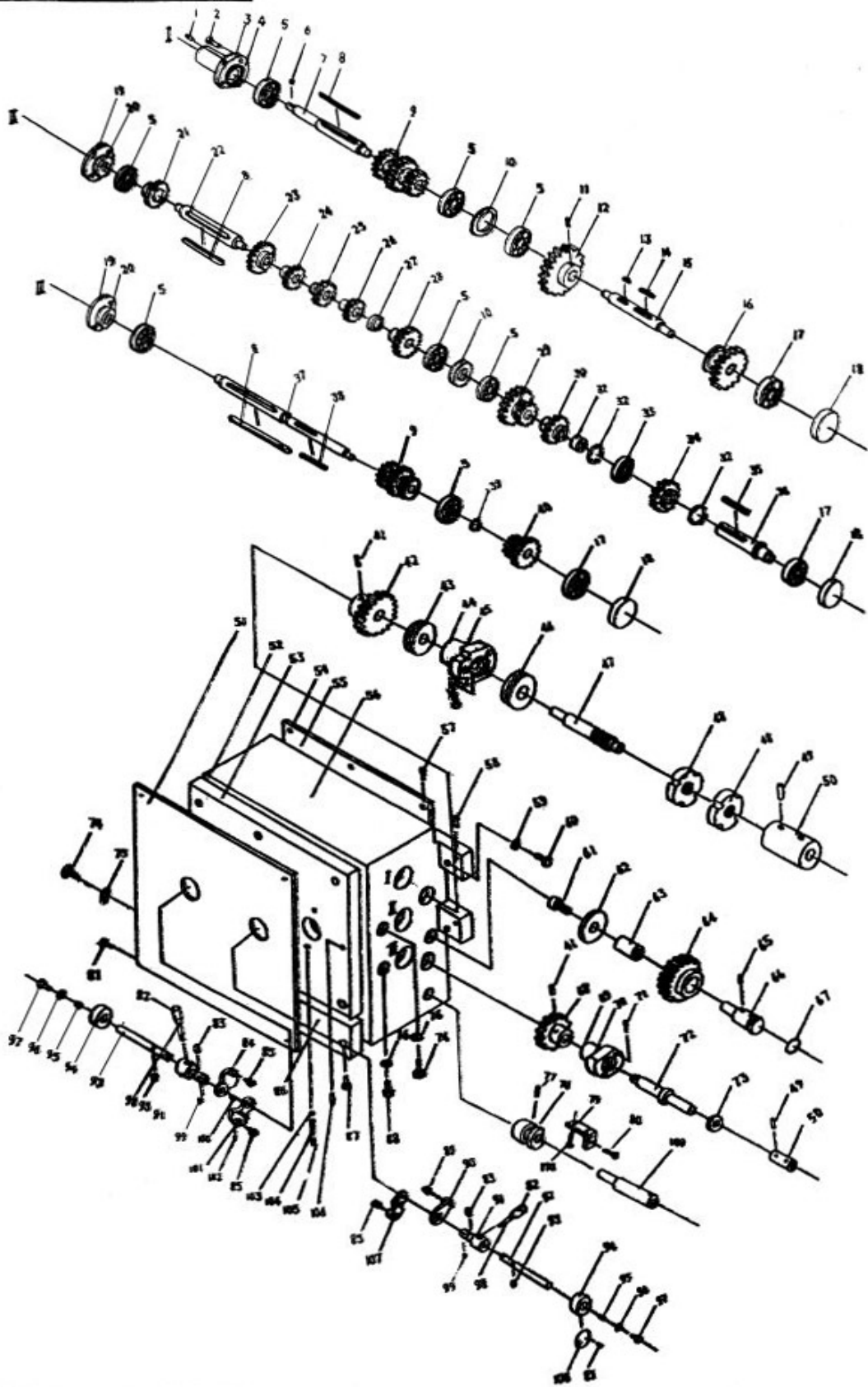
# GEAR BOX



GEAR BOX							
NO.	DESCRIIION	QTY	PART NO.	NO.	DESCRIIION	QTY	PART NO.
1	Oil Cup	1	GB1155-79 6	21	Boss	1	2057
2	Circlip	1	GB294.1-86 16	22	Pin	1	GB879-86 5x40
3	Gear	3	3015	23	Gear Box	1	3001
4	Bushing	3	3016	24	Screw	3	GB77-85 M8x8
5	Washer	1	3024	25	Spring	2	GB2089-80 1x4.5x7
6	Gear	1	3023	26	Sted Ball	2	GB308-86 5
7	Shaft	1	3022	27	Screw	2	GB5738-85 M10x30
8	Key	1	GB1096-79 5x10	28	Spring washer	2	GB93-85 10
9	Cover	1	3031	29	Feed Rod	1	1006
10	Screw	3	GB70-86 M6x16	30	Shaft	1	3047
11	Guide Screw	1	1005	31	Gear	1	3004
12	Sheath	2	3084	32	Plate	1	3029
13	Bearing	4	GB301-84 8103	33	Screw	4	GB70-85 M6x16
14	Pin	2	GB879-86 5x35	34	Shaft	1	3039
15	Shaft	1	3028	35	Circlip	1	GB894.1-86 12
16	Key	2	GB1096-79 5x14	36	Shifter Arm	1	3040
17	Gear	1	3026	37	Pin	1	GB879-85 5x30
18	Nut	4	GB6172-86 M12	38	Shifter	1	3041
19	Washer	4	3025	39	Bushing	1	3019
20	Lever	1	6056	40	Screw	1	GB70-85 M6x12

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
41	Washer	1	3021	61	Pin	1	GB1096-79 3n6x6
42	Gear	2	3018	62	Gear	1	3027
43	Washer	2	3017	63	Shaft	1	3020
44	Gear	1	3012	64	Key	1	GB1096-79 5x75
45	Gear	1	3011	65	Key	1	3042
46	Gear	1	3010	66	Top	1	3043
47	Gear	1	3009	67	Key	2	3014
48	Gear	1	3008	68	Shaft	1	3003
49	Gear	1	3007	69	Pin	2	GB879-85 5x18
50	Gear	1	3006	70	Top	2	3002
51	Gear	1	3005	71	Screw	2	GB71-85 M6x5
52	Shaft	2	3044	72	Shaft	2	3051
53	Pin	4	GB119-86 6x25	73	Shaft	2	3054
54	Gear	2	3045	74	Spring	2	GB2089-80 1x8x47
55	Bushing	1	3046	75	Slecve	2	2053
56	Bearing	2	GB279-89 102	76	Housing	2	3055
57	Gear	1	3013	77	Nut	2	GB928-86 M6
58	Gear	2	3049				
59	Bushing	2	3050				
60	Shifter Lever	2	3052				

# GEAR BOX-1



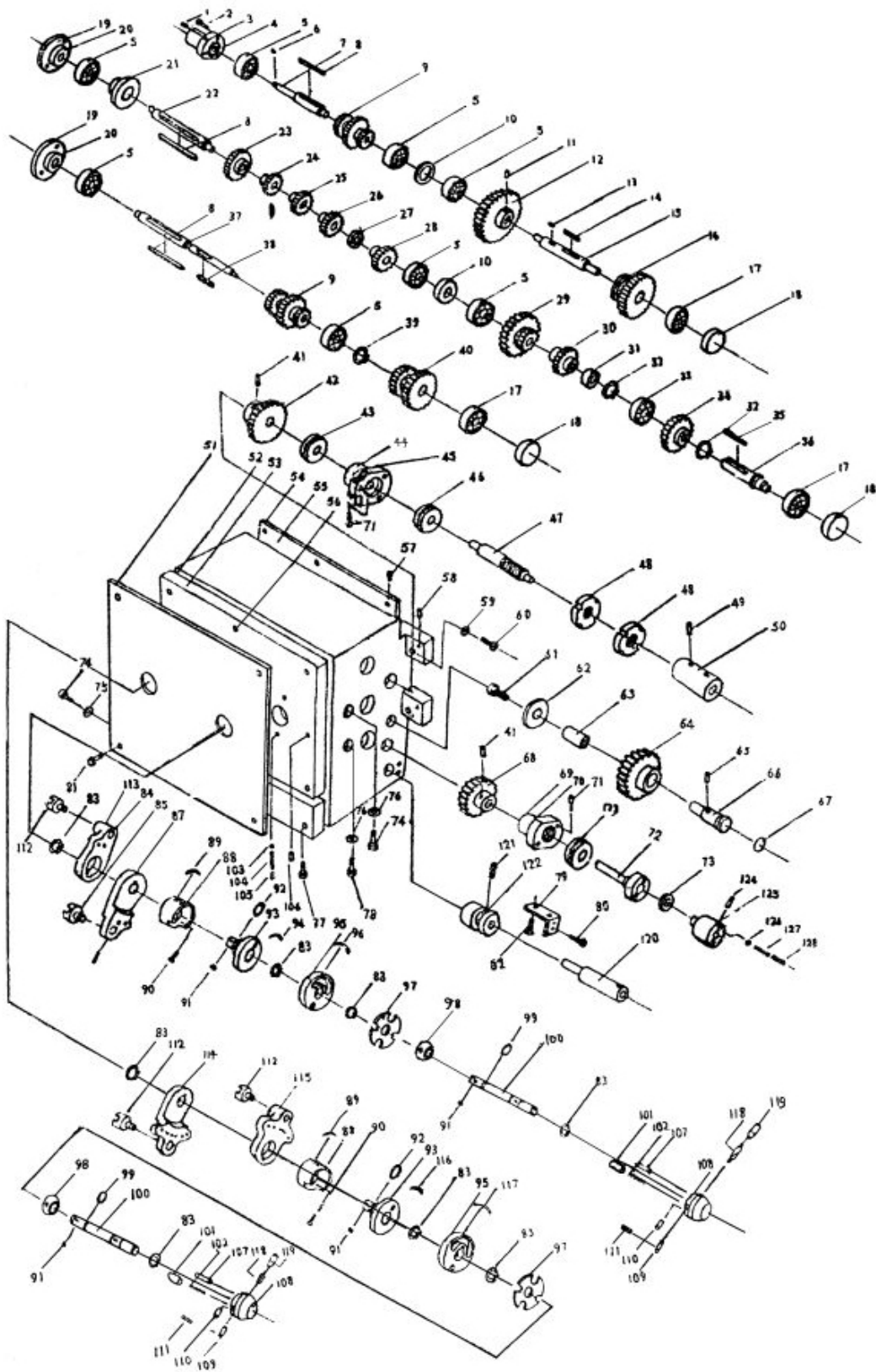
GEAR BOX- I							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Oil cup	1	GB1155-86 6	23	Gear	1	3029B
2	Screw	7	GB70-85 m6x12	24	Gear	1	3031B
3	Cover	1	3034B	25	Gear	1	3032B
4	Oil seal	1	3035C	26	Gear	1	3003B
5	Bearing	8	GB276-89 103	27	Washer	1	3030B
6	Key	1	GB1096-79 5x13	28	Gear	1	3002B
7	Shaft	1	3041B	29	Gear	1	3026C
8	Key	3	GB1096-79 6x90	30	Gear	1	3007C
9	Gear	2	3005B	31	Washer	1	3008C
10	Washer	2	3066B	32	Circlip	2	GB893.1-86 35
11	Screw	1	GB71-85 M6x8	33	Bearing	1	GB276-89 70001103
12	Gear	1	3027C	34	Gear	1	3009B
13	Key	1	GB1096-79 6x15	35	Key	1	GB1096-79 C5x40
14	Key	1	GB1096-79 6x35	36	Shaft	1	3019C
15	Shaft	1	3067B	37	Shaft	1	3004B
16	Gear	1	3025C	38	Key	1	GB1096-79 5x35
17	Bearing	3	GB276-89 102	39	Circlip	1	GB894.1-86 17
18	Cover	3	3017B	40	Gear	1	3006C
19	Cover	2	3044B	41	Pin	2	GB117-86 5x25
20	Oil seal	2	3046B	42	Gear	1	3018C
21	Washer	1	3045B	43	Bearing	1	GB301-86 8103
22	Shaft	1	3033B	44	Cover	1	3084D



NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
45	Oil seal	1	3068D	67	Oil seal	1	GB3452.1-82 22x2.65
46	Bearing	1	GB301-84 8104	68	Gear	1	3014C
47	Shaft	1	3021C	69	Cover	1	3022F
48	Nut	2	GB812-88 M20x1.5	70	Oil seal	1	3086D
49	Pin	1	GB117-86 5x25	71	Screw	5	GB70-85 M6x25
50	Bushing	1	3020C	72	Shaft	1	3013E
51	Fasica	1	3060B	73	Oil seal	1	GB9877.1-89 25x40x10
52	Oil seal	1	3071B	74	Screw	2	GB1071-77 M16x1.5
53	Cover	1	3059B	75	Washer	1	GB97.1-86 16
54	Cover	1	3042C	76	Oil seal	2	GB3452.1-86 16x2.4
55	Oil sear	1	3070C	77	Screw	1	GB71-85 M6x10
56	Gear box	1	3001C	78	Position Piec	1	3012D
57	Screw	6	GB68-85 M6x12	79	Support	1	7003B
58	Pin	2	GB879-86 5x25	80	Screw	2	GB818-85 M4x20
59	Spring washer	2	GB93-87 10	81	Screw	8	GB34521-85 22x24
60	Screw	2	GB70-85 M10x30	82	Knob	2	GB1342-72 M8x40
61	Screw	1	GB70-85 M6x10	83	Oil seal	2	GB3452.1-82 25x2.65
62	Washer	1	GB892-86 6x32x5	84	Shifter Aarm	1	3053B
63	Bushing	1	3024C	85	Shifter	3	3049B
64	Gear	1	3016C	86	Cover	1	3061B
65	Screw	1	GB71-85 M6x16	87	Screw	8	GB70-85 M8x15
66	Shaft	1	3015C	88	Oil widow	1	GB1160.1-89 A12

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
89	Shifter	1	3062B				
90	Shifter Arm	1	3063B				
91	Boss	2	3057C				
92	Shaft	2	3056C				
93	Oil seal	2	GB3452.1-82 16x2.4				
94	Hand wheel	2	3054C				
95	Key	2	GB1096-79 5x8				
96	Washer	2	GB96-85 6				
97	Screw	2	GB67-85 M6x10				
98	I===ever	2	3051C				
99	Key	2	GB1096-79 5x8				
100	Pin	2	GB879-86 4x40				
101	Shifter Arm	1	3058C				
102	Screw	4	GB72-88 M3x6				
103	Ball	4	GB308-80 φ15				
104	Spring	4	GB2089-80 1x5x8				
105	Screw	4	GB77-85 M8x5				
106	Pin	2	GB879-85 M5x25				
107	Shifter Arm	2	3065C				
108	Siangboard	2	2060				
109	Shaft	1	3011D				
110	Screw	2	GB819-85 M4x40				

# GEAR BOX—II

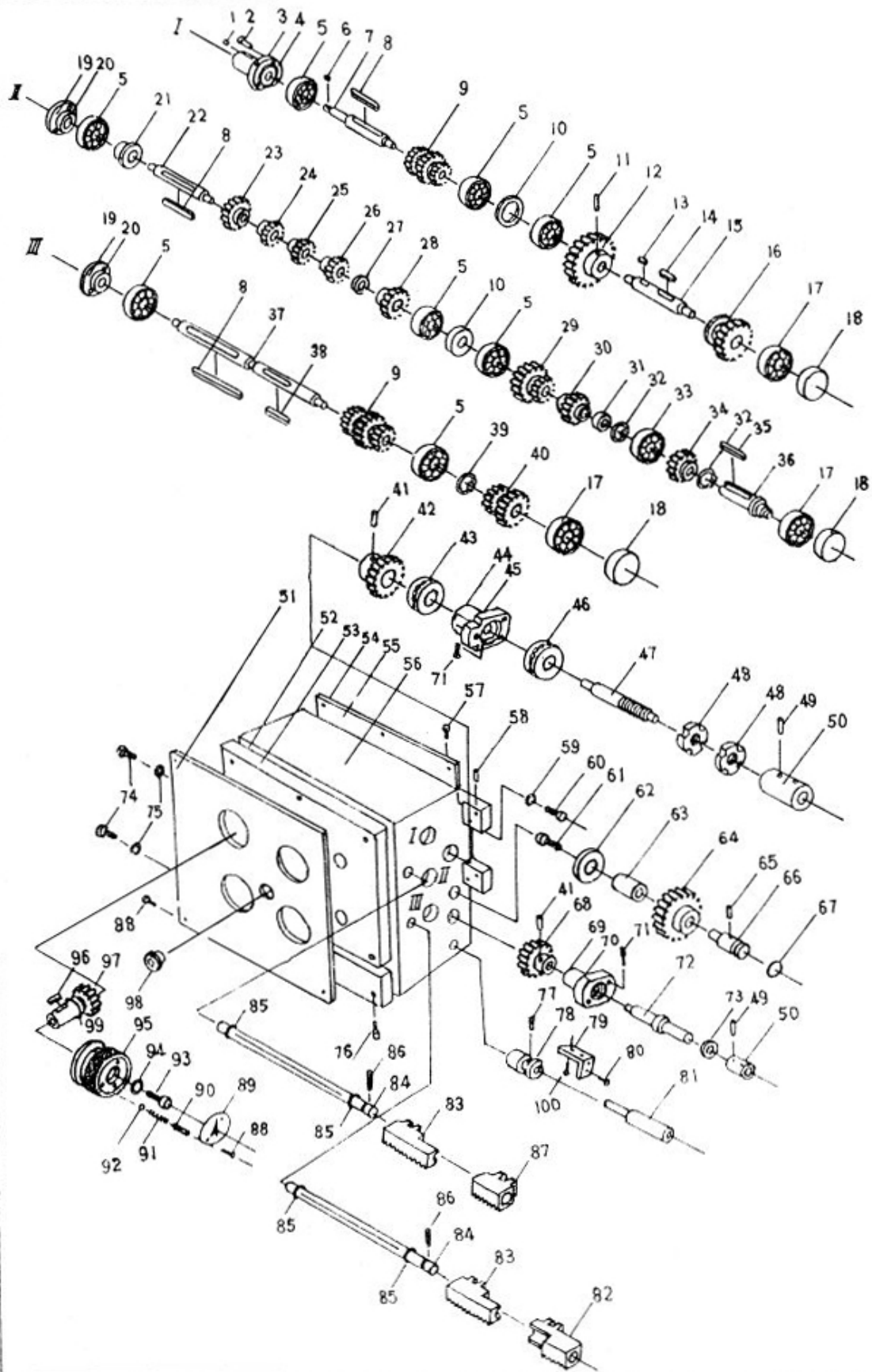


GEAR BOX- II							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Oil cup	1	GB1155-86 6	23	Gear	1	3029B
2	Screw	7	GB70-85 m6×12	24	Gear	1	3031B
3	Cover	1	3034B	25	Gear	1	3032B
4	Oil seal	1	3035C	26	Gear	1	3003B
5	Bearing	8	GB276-89 103	27	Washer	1	3030B
6	Key	1	GB1096-79 5×13	28	Gear	1	3002B
7	Shaft	1	3041B	29	Gear	1	3026C
8	Key	3	GB1096-79 6×90	30	Gear	1	3007C
9	Gear	2	3005B	31	Washer	1	3008C
10	Washer	2	3066B	32	Circlip	2	GB893.1-86 35
11	Screw	1	GB71-85 M6×8	33	Bearing	1	GB276-89 70001103
12	Gear	1	3027C	34	Gear	1	3009B
13	Key	1	GB1096-79 6×15	35	Key	1	GB1096-79 C5×40
14	Key	1	GB1096-79 6×35	36	Shaft	1	3019C
15	Shaft	1	3067B	37	Shaft	1	3004B
16	Gear	1	3025C	38	Key	1	GB1096-79 5×35
17	Bearing	3	GB276-89 102	39	Circlip	1	GB894.1-86 17
18	Cover	3	3017B	40	Gear	1	3006C
19	Cover	2	3044B	41	Pin	2	GB117-86 5×25
20	Oil seal	2	3046B	42	Gear	1	3018C
21	Washer	1	3045B	43	Bearing	1	GB301-86 8103
22	Shaft	1	3033B	44	Cover	1	3084D

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
45	Oil seal	1	3068D	67	Oil seal	1	GB3452.1-82 22x2.65
46	Bearing	1	GB301-84 8104	68	Gear	1	3014C
47	Shaft	1	3021C	69	Cover	1	3022F
48	Nut	2	GB812-88 M20x1.5	70	Oil seal	1	3086D
49	Pin	1	GB117-86 5x25	71	Screw	5	GB70-85 M6x25
50	Bushing	1	3020C	72	Shaft	1	3013D
51	Fasica	1	3060B	73	Oil seal	1	GB9877.1-89 25x40x10
52	Oil seal	1	3071B	74	Screw	2	GB1071-77 M16x1.5
53	Cover	1	3059B	75	Washer	1	GB97.1-86 16
54	Cover	1	3042C	76	Oil seal	2	GB3452.1-86 16x2.4
55	Oil sear	1	3070C	77	Screw	1	3012C
56	Gear box	1	3001C	78	Screw	1	3072C
57	Screw	6	GB68-85 M6x12	79	Bracket	1	3011C
58	Pin	2	GB879-86 5x25	80	Screw	1	3073C
59	Spring washer	2	GB93-87 10	81	Screw	4	GB34521-85 22x24
60	Screw	2	GB70-85 M10x30	82	Screw	2	GB819-85 M4x40
61	Screw	1	GB70-85 M6x10	83	Circlip	8	GB94.1-86 12
62	Washer	1	GB892-86 6x32x5	84	Shifter arm	1	3063D
63	Bushing	1	3024C	85	Shifter	1	3049B
64	Gear	1	3016C	86	Cover	1	3061B
65	Screw	1	GB71-85 M6x16	87	Shifter arm	1	3065D
66	Shaft	1	3015C	88	Jacket	2	3050D

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
89	Transparent scale	4	3080D	111	Screw	4	GB71-85 M4x6
90	Screw	6	GB68-85 m4x10	112	Shifter	3	3062B
91	Key	4	GB1096-79 5x6	113	Spring	2	GB2089-80 0.8x5x14
92	Oil seal	2	GB3452.1-82 21.5x1.8	114	Shifter arm	1	3058D
93	Tum plate	2	3057D	115	Shifter arm	1	3053D
94	Tag	1	3071D	116	Tag	1	3064D
95	Channel plate	2	3054D	117	Tag	1	3069D
96	Tag	1	3074D	118	Handle	2	2058
97	Pad	2	3048D	119	Knob	2	GB1342-73 M8x40
98	Bulb	2	3052D	120	Switch rod	1	3011D
99	Oil seal	2	GB3452.1-82 8.5x1.8	121	Screw	1	GB71-85 M6x10
100	Shaft	2	3056D	122	Position block	1	3012D
101	Pin	2	3079D	123	Bearing	1	GB301-84 8103
102	Spring	2	0.8x4.5x14	124	Pin	1	GB117-86 5x40
103	Ball	4	GB308-80 15	125	Connection part	1	3020D
104	Spring	4	GB2089-80 1x5x8	126	Ball	2	GB308-77 φ6
105	Screw	4	GB77-85 M8x5	127	Spring	2	GB2089-80 1x5x20
106	Pin	2	GB879-85 M5x25	128	Screw	2	GB77-85 M8x8
107	Pin	2	GB119-86 5x25				
108	Hand lever	2	3055D				
109	Pin	4	GB120-86 6x20				
110	Pin	2	GB119-86 5x15				

# GEAR BOX—III



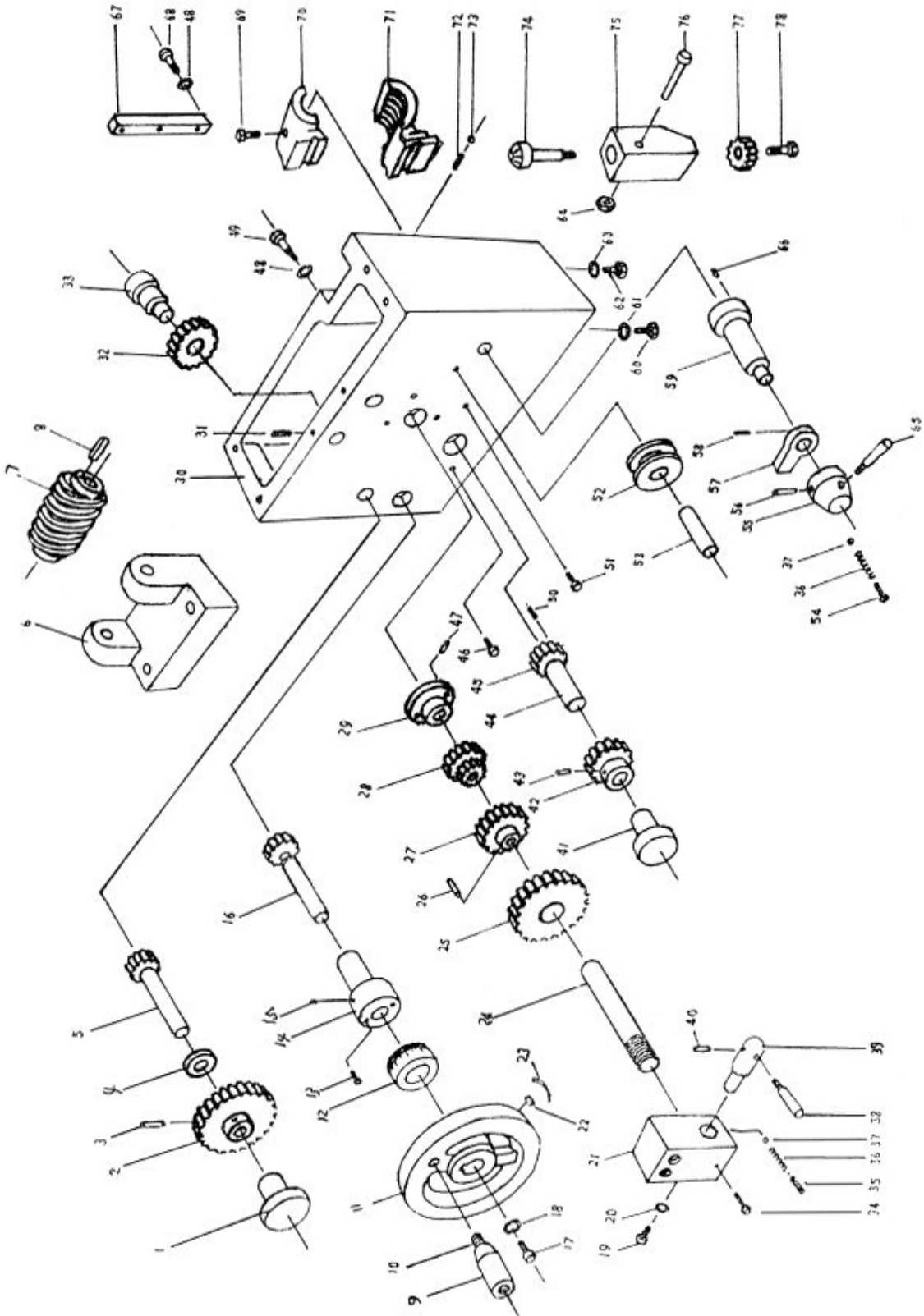
<b>GEAR BOX-III</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Oil cup	1	GB1155-86 6	23	Gear	1	3029B
2	Screw	7	GB70-85 M6×12	24	Gear	1	3031B
3	Cover	1	3034B	25	Gear	1	3032B
4	Oil seal	1	3035C	26	Gear	1	3003B
5	Bearing	8	GB276-89 103	27	Washer	1	3030B
6	Key	1	GB1096-79 5×13	28	Gear	1	3002B
7	Shaft	1	3041B	29	Gear	1	3026C
8	Key	3	GB1096-79 6×90	30	Gear	1	3007C
9	Gear	2	3005B	31	Washer	1	3008C
10	Washer	2	3066B	32	Circlip	2	GB893.1-86 35
11	Screw	1	GB71-85 M6×8	33	Bearing	1	GB276-89 70001103
12	Gear	1	3027C	34	Gear	1	3009B
13	Key	1	GB1096-79 6×15	35	Key	1	GB1096-79 C5×40
14	Key	1	GB1096-79 6×35	36	Shaft	1	3019C
15	Shaft	1	3067B	37	Shaft	1	3004B
16	Gear	1	3025C	38	Key	1	GB1096-79 5×35
17	Bearing	3	GB276-89 102	39	Circlip	1	GB894.1-86 17
18	Cover	3	3017B	40	Gear	1	3006C
19	Cover	2	3044B	41	Pin	2	GB117-86 5×25
20	Oil seal	2	3046B	42	Gear	1	3018C
21	Washer	1	3045B	43	Bearing	1	GB301-86 8103
22	Shaft	1	3033B	44	Cover	1	3084D



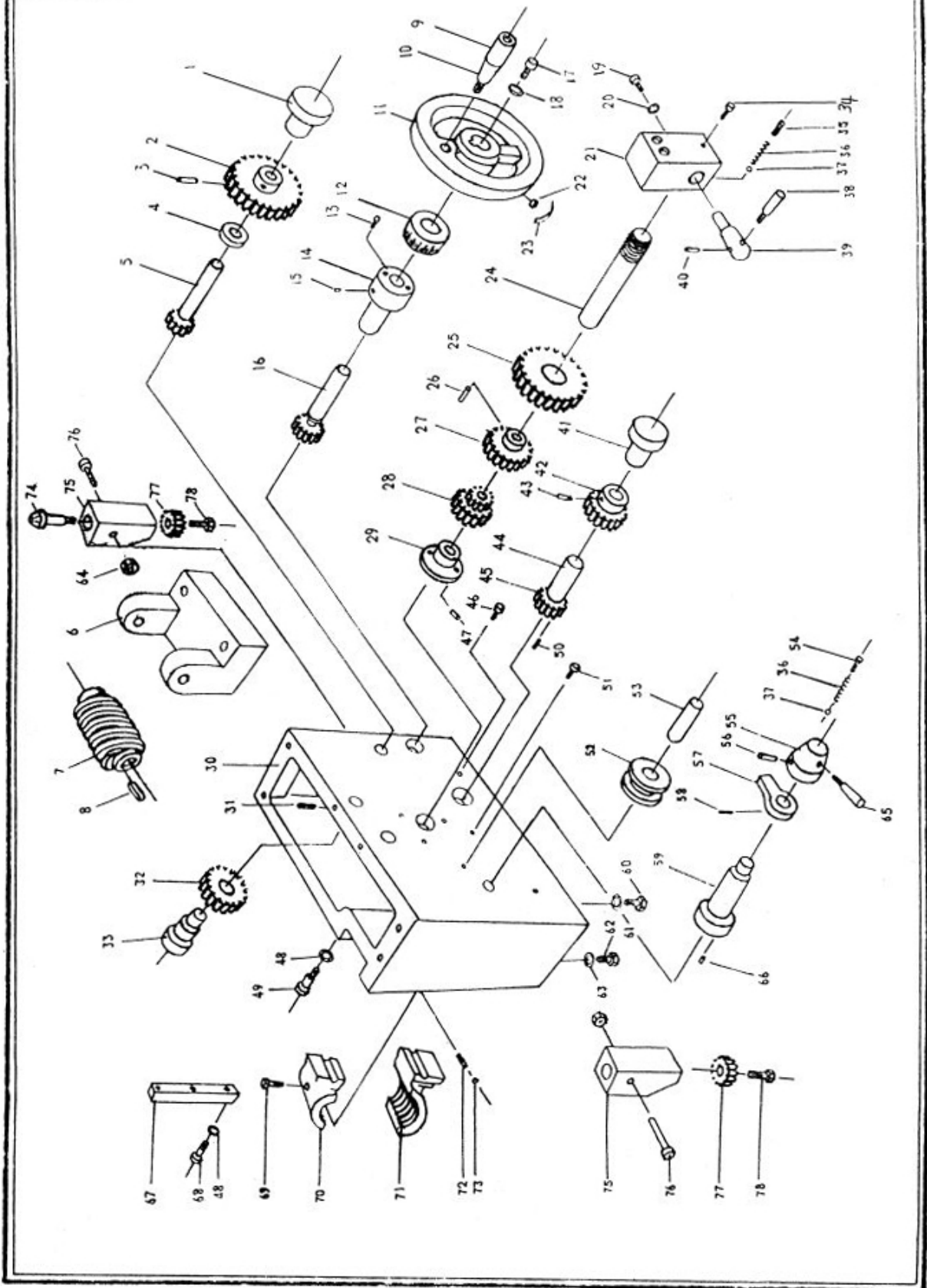
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
45	Oil seal	1	3068D	67	Oil seal	1	GB3452.1-82 22x2.65
46	Bearing	1	GB301-84 8104	68	Gear	1	3014C
47	Shaft	1	3021C	69	Cover	1	3022F
48	Nut	2	GB812-88 M20x1.5	70	Oil seal	1	3086D
49	Pin	1	GB117-86 5x25	71	Screw	5	GB70-85 M6x25
50	Bushing	1	3020C	72	Shaft	1	3013E
51	Fasica	1	3060E	73	Oil seal	1	GB9877.1-89 18x30x10
52	Oil seal	1	3071B	74	Screw	2	GB1071-77 M16x1.5
53	Cover	1	3059B	75	Washer	2	GB97.1-86 16
54	Cover	1	3042C	76	Screw	8	GB70-85 M8x15
55	Oil sear	1	3070C	77	Screw	1	GB71-85 M6x10
56	Gear box	1	3001D	78	Position piec	1	3012D
57	Screw	6	GB68-85 M6x12	79	Support	1	7003B
58	Pin	2	GB879-86 5x25	80	Screw	2	GB818-85 M4x20
59	Spring washer	2	GB93-87 10	81	Shaft	1	3011D
60	Screw	2	GB70-85 M10x30	82	Gear rack	1	3050C
61	Screw	1	GB70-85 M6x10	83	Gear rack	2	3049C
62	Washer	1	GB892-86 6x32x5	84	Shaft	2	3089
63	Bushing	1	3024C	85	Oil seal	4	GB1235-85 18x1.5
64	Gear	1	3016C	86	Screw	2	GB75-85 M4x6
65	Screw	1	GB71-85 M6x16	87	Gear rack	1	3062C
66	Shaft	1	3015C	88	Screw	12	GB818-85 M3x6

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
89	Siang board	4	2060				
90	Screw	4	GB77-85 M8×6				
91	Spring	4	GB2089-80 1×5×25				
92	Steel ball	4	GB308-86 φ5				
93	Screw	4	GB70-85 M6×10				
94	Washer	4	GB96-85 6				
95	Hand wheel	4	3054F				
96	Key	4	GB1096-79 5×8				
97	Gear	4	3088				
98	Oil window	1	GB1160.1-89 A12				
99	Oil seal	4	GB1235-86 16×2.4				

# APRON—LEFT



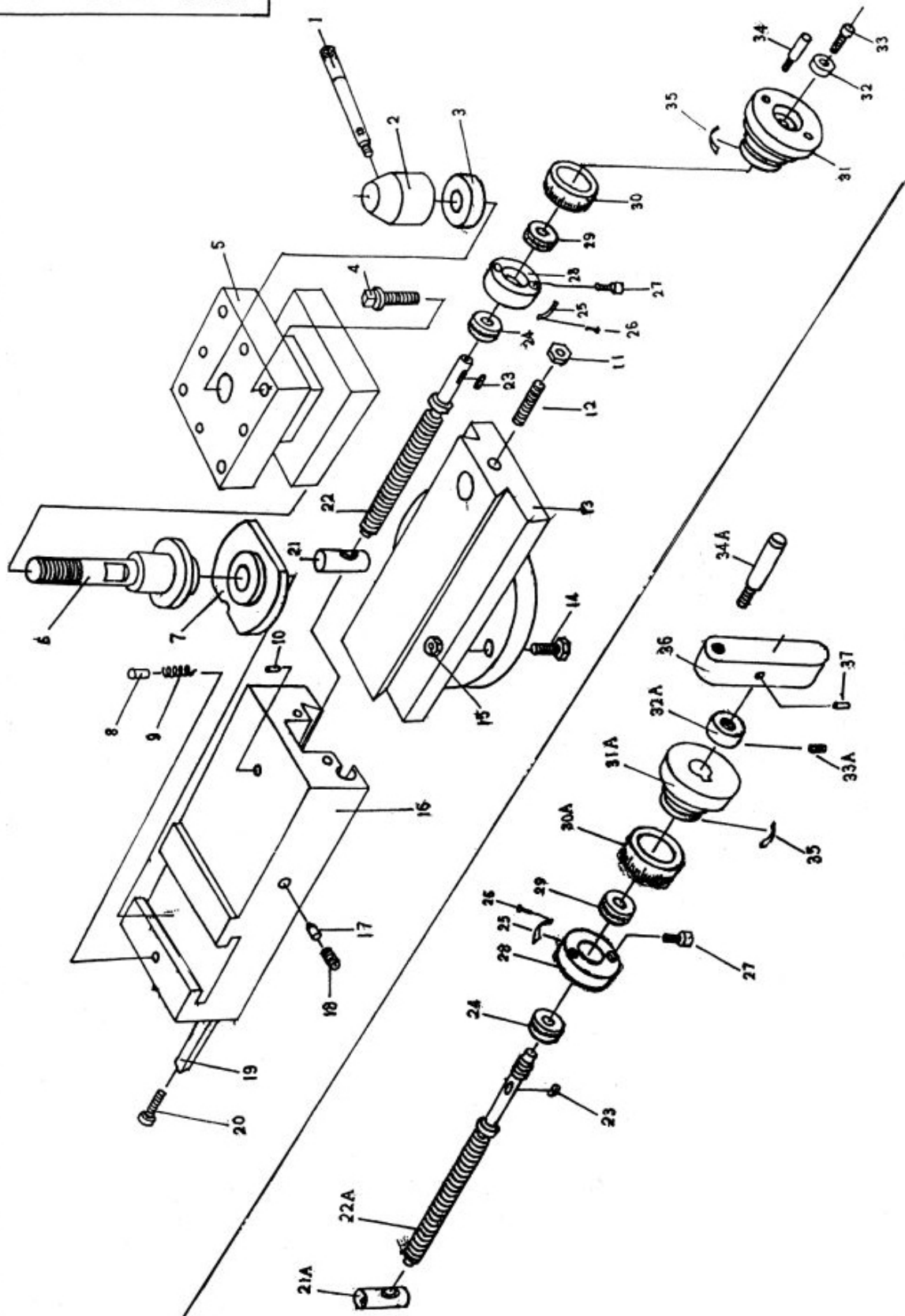
APRON-RIGHT



APRON-RIGHT OR APRON-LEFT							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Bushing	1	4026	23	Leaf spring	1	4037
2	Gear	1	4029	24	Shaft	1	4015
3	Pin	1	GB879-86 5x30	25	Gear	1	4012
4	Space	1	4027	26	Pin	1	GB119-86 5x33
5	Gear shaft	1	4028	27	Gear	1	4013
6	Worm ame	1	4008	28	Gear	1	4014
7	Worm	1	4009	29	Bushing	1	4016
8	Flat key	1	GB1096-79 B5x36	30	Apron cse	1	4001
9	Handle	1	4032	31	Screw	1	GB78-85 M6x6
10	Lever	1	4033	32	Gear	1	4010
11	Hand wheel	1	4034	33	Shaft	1	4011
12	Index ring	1	4036	34	Screw	3	GB70-85 M6x45
13	Screw	1	GB70-85 M6x20	35	Screw	1	GB77-85 M8x8
14	Bracket	2	4031	36	Spring	2	GB2089-80 1x45x6
15	Oil cup	1	GB1155-79 6	37	Ball	2	GB308-89 6
16	Gear shaft	4	4030	38	Lever	1	4041
17	Screw	1	GB70-85 M6x12	39	Gear shaft	1	4042
18	Washer	1	4035	40	Pin	1	GB879-86 5x25
19	Screw	4	GB70-85 M6x10	41	Bushing	1	4020
20	Washer	1	4038	42	Gear	1	4019
21	Boss	1	4039	43	Pin	1	GB879-86 5x25
22	Key	1	GB1096-79 5x16	44	Shaft	1	4018

NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
45	Worm gear	1	4017	67	Gib	1	3022
46	Oil window	1	GB1160.2-89 A12	68	Half nut house	2	GB5780-86 M6×25
47	Screw	2	GB818-85 M5×33	69	Screw	2	GB5786-85 M6×15
48	Washer	3	GB95-85 φ6	70	Half nut	1	4002
49	Screw	1	GB5780-85 m6×10	71	Screw	1	4003A1
50	Screw	1	GB78-85 M6×6	72	Screw	2	GB77-85 M6×15
51	Limit block	1	4043	73	Nut	2	GB6170-86 M6
52	Safety shifter	2	4025	74	Thread dial	1	4006
53	Shaft	1	4024	75	Housing	1	4005
54	Screw	1	GB77-85 M8×8	76	Screw	1	GB70-85 M6×65
55	Boss	1	4045	77	Gear	1	4044
56	Pin	1	GB879-86 5×40	78	Screw	1	GB70-85 M6×15
57	Cam	1	4021				
58	Screw	1	GB71-85 M5×12				
59	Shaft	1	4023				
60	Screw	2	GB5780-86 M8×30				
61	Washer	2	GB95-85 φ8				
62	Screw	1	Q/Z220.2-77 M10×1×20				
63	Washer	1	GB95-85 φ10				
64	Slever	1	4007				
65	Lever	1	4044				
66	Pin	2	GB119-86 5×10				

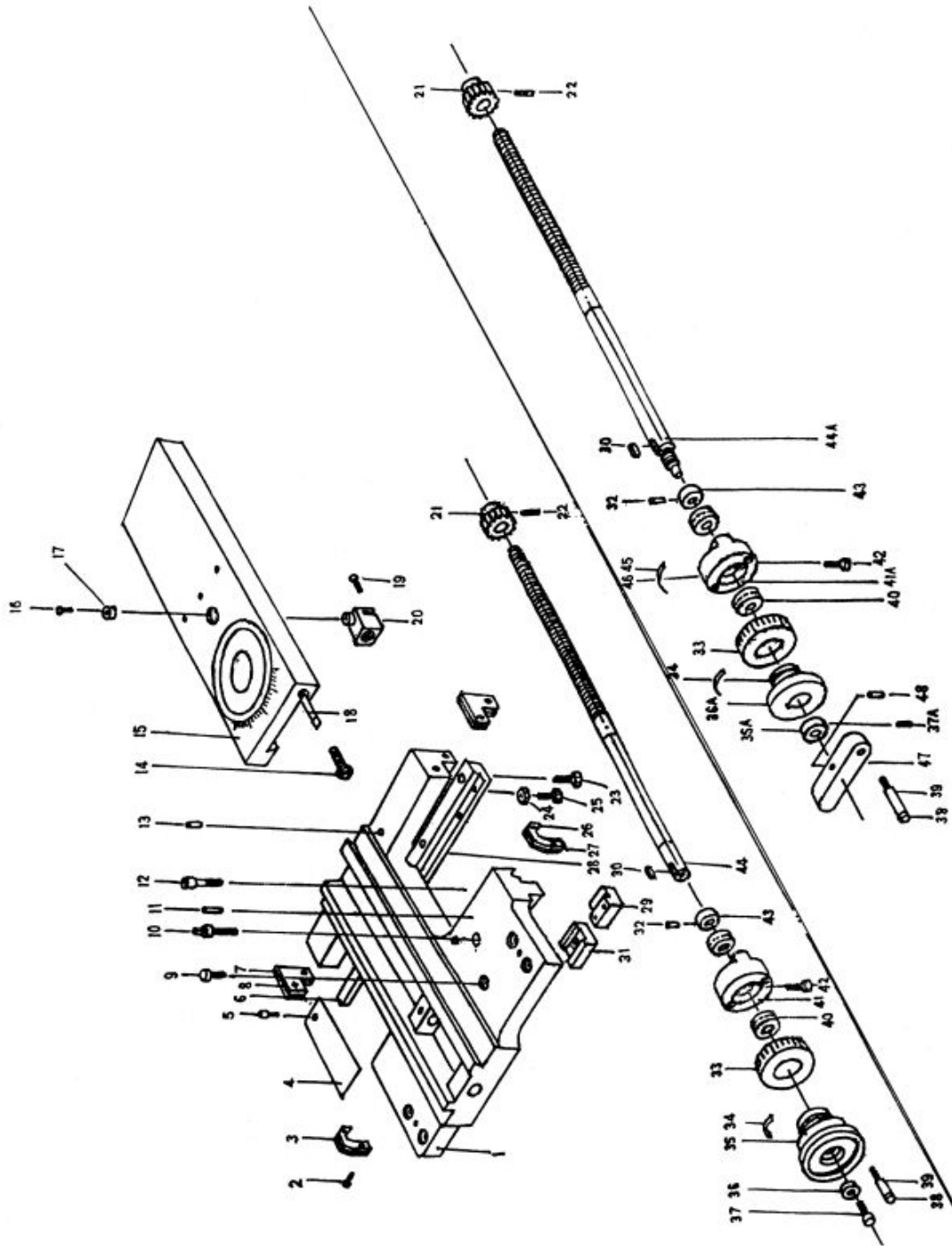
# COMPOUND REST



COMPOUND REST							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Handle	1	5010	23	Key	1	GB1096-79 4x8
2	Boss	1	5009	24	Bearing	1	GB301-84 8101
3	Collar	1	5008	25	Scale	1	5026A2
4	Screw	8	GB83-88 M10x45	26	Rivet	2	GB827-86 2x4
5	Tool post	1	5005	27	Screw	2	GB70-85 M6x25
6	Shaft	1	5006	28	Bracket	1	5013
7	Nut	1	5003	29	Bearing	1	GB301-84 8101
8	Pin	1	5004	30	Index ring	1	5014A3
9	Spring	1	GB2089-80 1.2x4.8x8	31	Hand wheel	1	5016A
10	Oil cup	1	GB1155-86 6	32	Washer	1	5028
11	Nut	1	GB6170-85 M6	33	Screw	1	GB70-85 M6x12
12	Screw	1	GB73-85 M6x16	34	Lever	2	5031
13	Compound	1	5001	35	Leaf spring	1	4037
14	Screw	2	5107	21A	Nut	1	5012
15	Nut	2	GB6172-80 M10	22A	Guide screw	1	5011
16	Compound	1	5002	30A	Index ring	1	5014
17	Pin	1	5024	31A	Washer	1	5016
18	Screw	1	GB77-85 M6x8	32A	Nut	1	5025
19	Gib	1	5023	33A	Screw	1	GB77-85 M6x8
20	Screw	2	5021	34A	Lever	1	GB414.5-84 M8x63
21	Nut	1	5012A1	36	Bracket	1	5017
22	Guide screw	1	5011A3	37	Pin	1	GB879-86 3x16



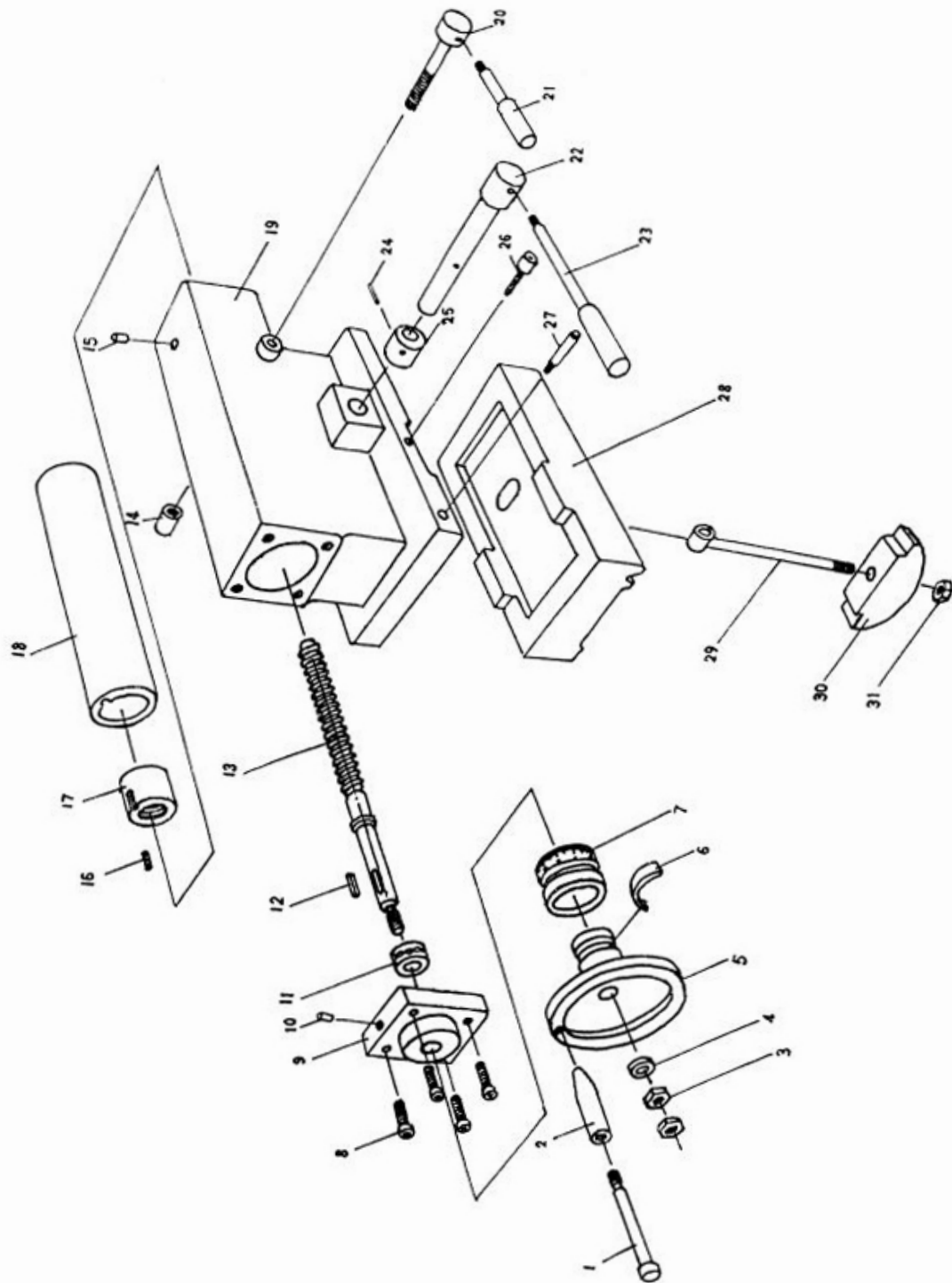
# SADDLE



SADDLE							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Saddle	1	5101	23	Screw	7	GB5781-86 M8x25
2	Screw	8	GB67-85 M5x12	24	Nut	4	GB41-86 M8
3	Wipper	1	5108	25	Screw	4	GB85-88 M8x25
4	Cover	1	5106	26	Press plate	2	5112
5	Screw	1	GB65-85 M3x8	27	Wipper	1	5111
6	Press plate	2	5130	28	Press plate	1	5131
7	Press plate	2	5110	29	Press plate	2	5116
8	Wipper	2	5109	30	Key	1	GB1096-79 5x20
9	Screw	1	5113	31	Press plate	1	5129
10	Screw	1	5128	32	Pin	1	GB879-86 3x20
11	Pin	2	GB118-86 6x45	33	Index ring	1	5124A3
12	Screw	4	GB70-85 M10x30	34	Leaf spring	1	5123
13	Oil cup	5	GB1155-86 6	35	Hand wheel	1	5122A
14	Screw	2	5115	36	Washer	1	5028
15	Tool post	1	5102	37	Screw	1	GB70-85 M6x16
16	Screw	1	GB68-85 M6x12	38	Hand	1	4033
17	Bushing	1	5105	39	Lever	1	4032
18	Gib	1	5114	40	Bearing	1	GB301-86 8102
19	Screw	2	GB75-85 M4x12	41	Bracket	1	5125A
20	Nut	1	5104A2	42	Screw	2	GB70-85 M8x30
21	Gear	1	5127	43	Washer	1	5126
22	Screw	1	GB78-85 M6x8	44	Guide screw	1	5103A3

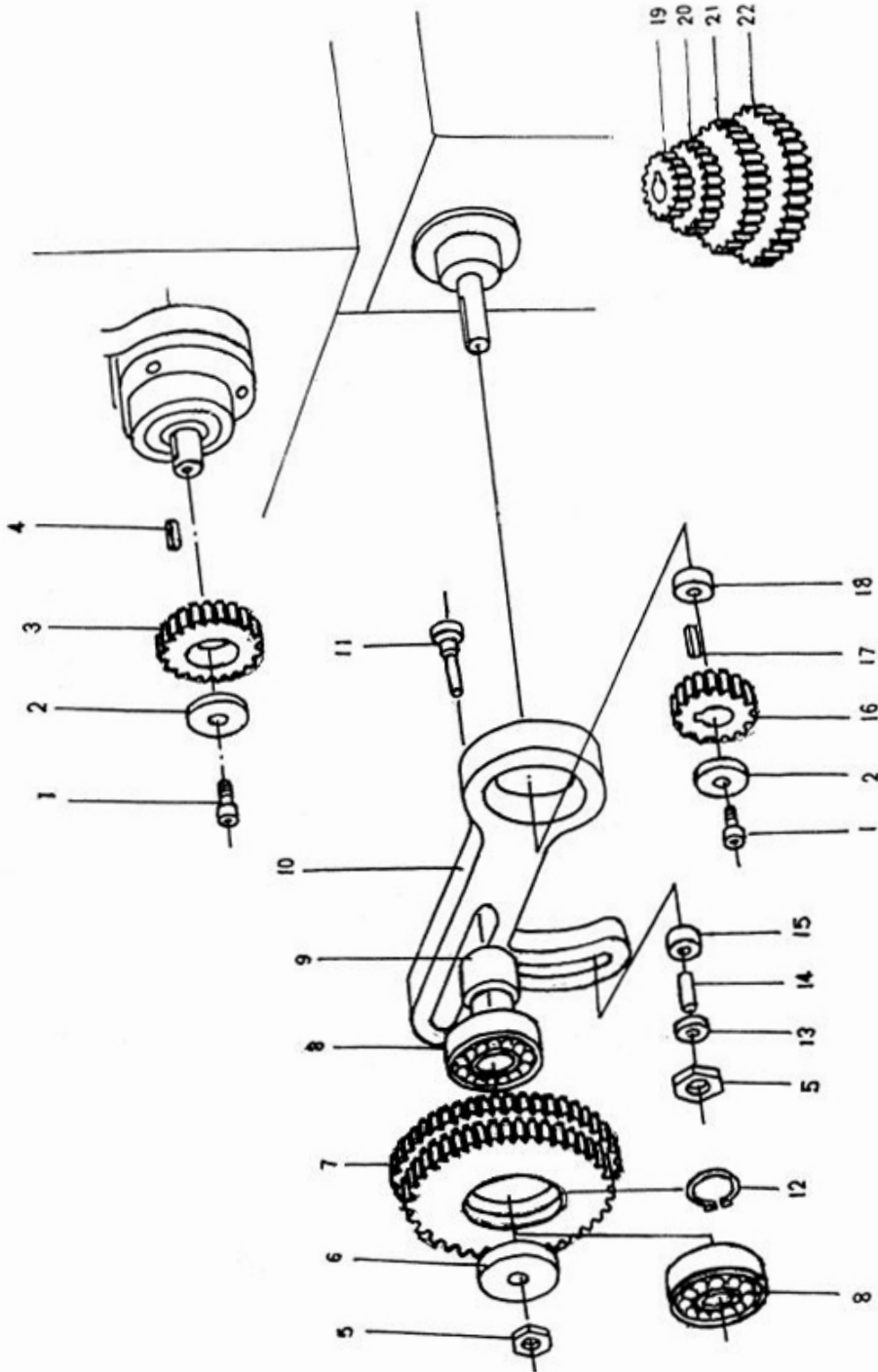
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
35A	Collar	1	5122				
36A	Nut	1	5121				
37A	Screw	1	GB77-85 M6×6				
41A	Bracket	1	5125A				
44A	Guide screw	1	5103A2				
45	Rivet	2	GB827-86 2×4				
46	Scale	1	5133A2				
47	Bracket	1	5120				
48	Pin	1	GB879-86 4×20				

# TAIL STOCK



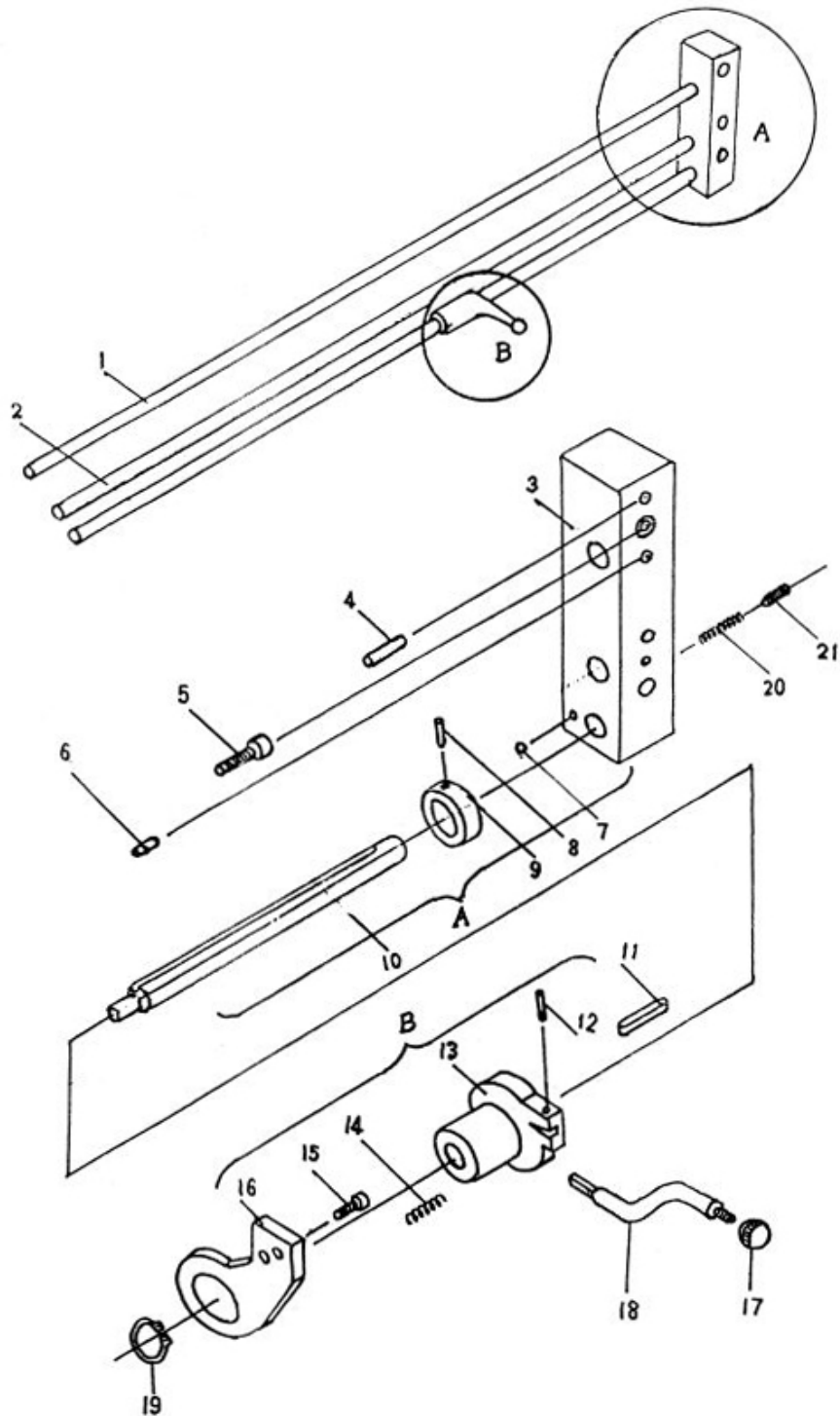
TAIL STOCK							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Handle	1	4033	23	Handle	1	6004
2	Lever	1	4032	24	Pin	1	GB879-86 5x30
3	Nut	2	GB2172-86 M10	25	Collar	1	6018
4	Washer	1	GB97.1-85 A10	26	Screw	1	GB70-85 M10x50
5	Hand wheel	1	6005	27	Screw	1	6003
6	Leaf spring	1	4037	28	Base	1	6002
7	Index ring	2	6010	29	Shaft	1	6019
8	Screw	4	GB70-85 M6x16	30	Base shoe black	1	6020
9	Bracket	1	6011	31	Nut	1	GB6172-86 M12
10	Oil cup	1	GB1155-86 6				
11	Bearing	1	GB301-84 8101				
12	Key	1	GB1096-79 4x15				
13	Guide screw	1	6006				
14	Lock nut	1	6023				
15	Oil cup	1	GB1155-86 6				
16	Screw	2	GB77-85 M6x8				
17	Nut	1	6012				
18	Ouill	1	6013				
19	Tail stock	1	6001				
20	Lock screw	1	6022				
21	Handle	1	6021				
22	Shaft	1	6017				

CHANGE GEAR



<b>CHANGE GEAR</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Screw	2	GB70-85 M6×12	12	Circlip	1	GB893.1-86 35
2	Washer	2	2003	13	Washer	1	GB97.1-85 10
3	Gear	1	2002B	14	Screw	1	GB73-85 M10×60
4	Key	1	GB1096-79 C5×8	15	Washer	1	3048B
5	Nut	2	GB41-85 M10	16	Gear	1	3039B
6	Washer	1	3036B	17	Key	1	GB1096-79 5×18
7	Gear	1	3038B	18	Washer	1	3040
8	Bearing	1	GB26-89 103	19	Change gear	1	3076C
9	Collar	1	3037B	20	Change gear	1	3075C
10	Qaudrant	1	3043B	21	Change gear	1	3077C
11	Screw	1	3035B	22	Change gear	1	3078C

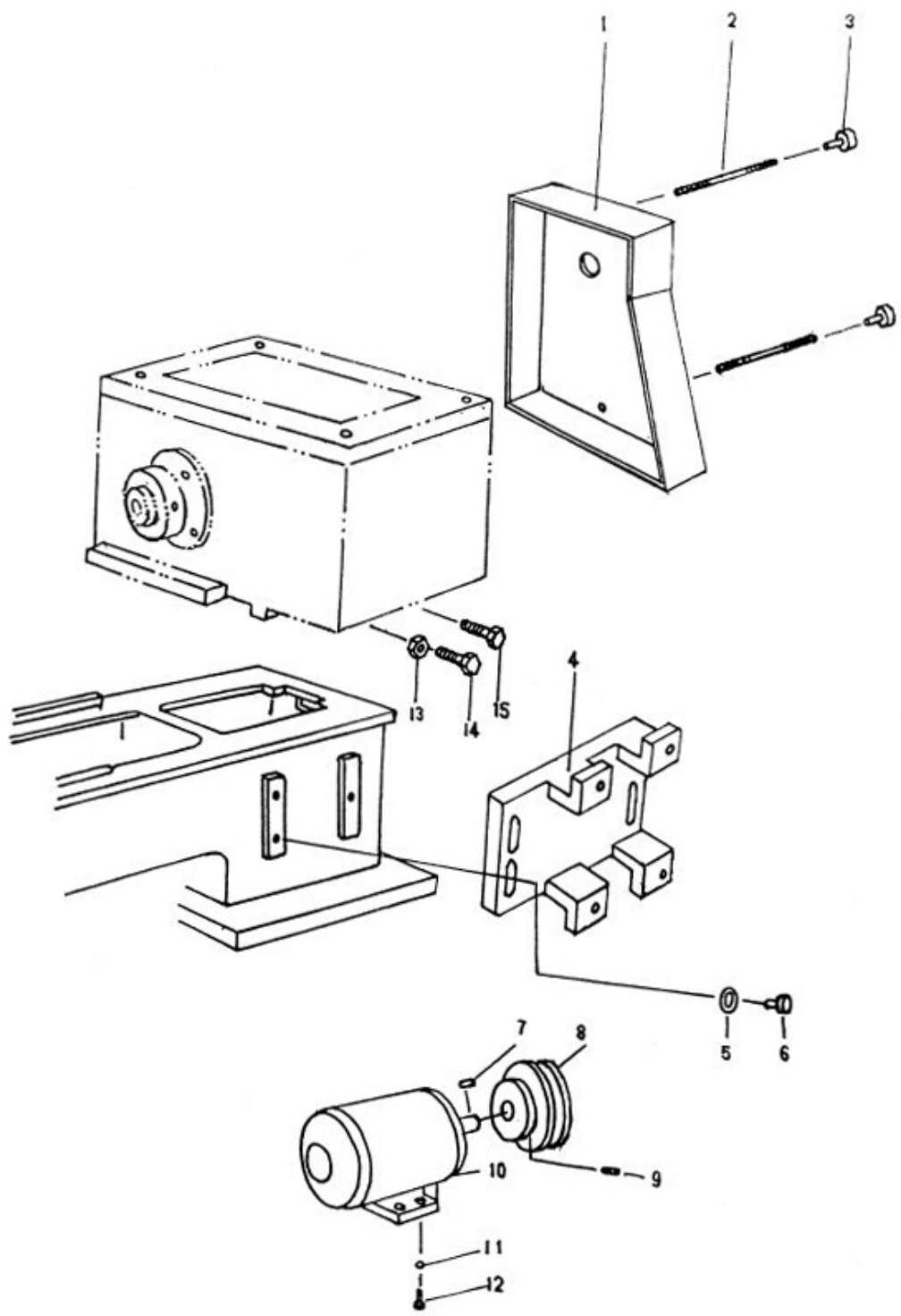
# CONTROL SWITCH ASSEMBLY





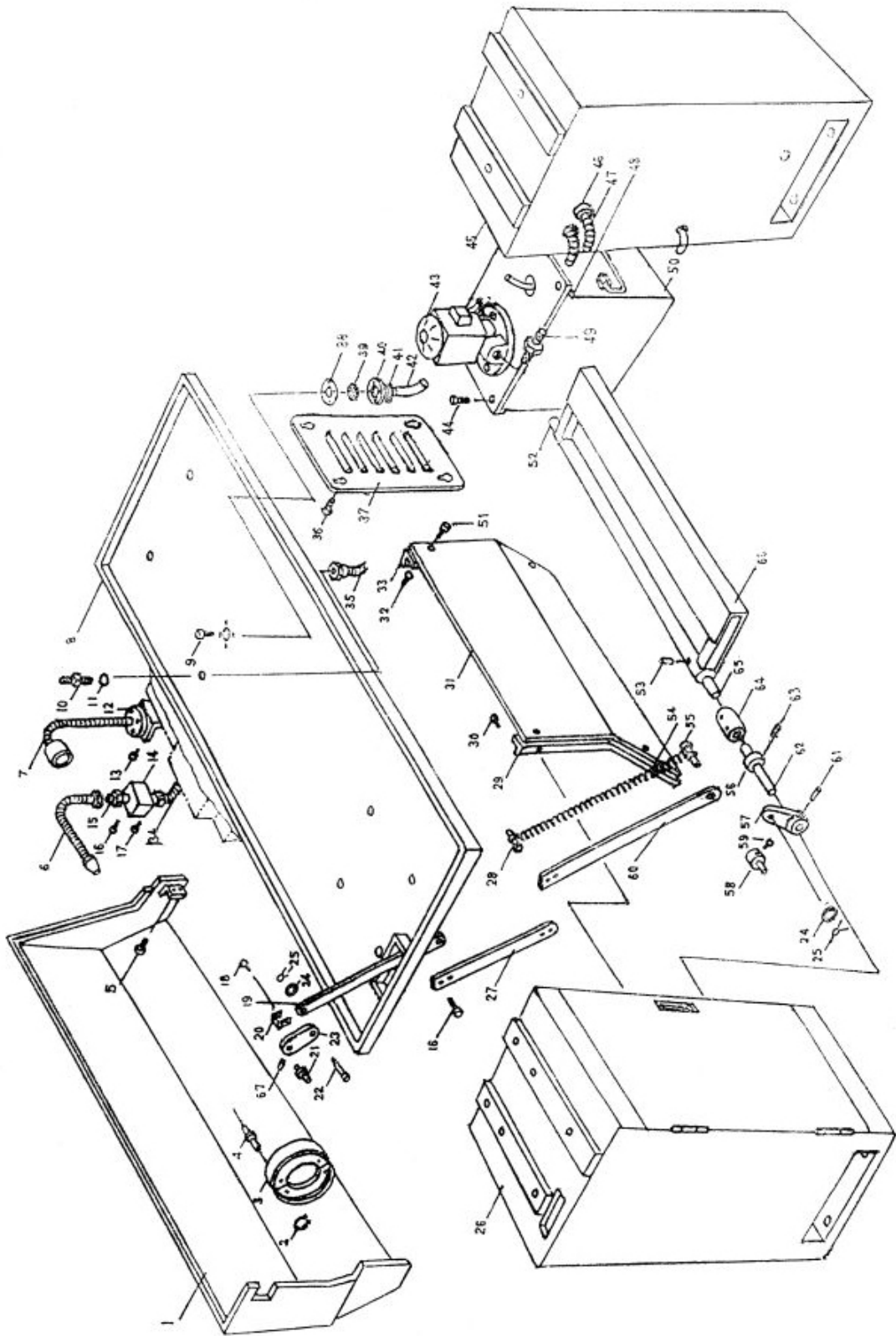
<b>CONTROL SWITCH ASSEMBLY</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Guide screw	1	1005B	11	Key	1	J31-3A 5x5x32
2	Rod	1	1006B	12	Pin	1	GB879-86 4x20
3	Bracket	1	1012	13	Bracket	1	1014
4	Pin	2	GB118-86 6x65	14	Spring	1	GB2089-80 1.2x8x10
5	Screw	2	GB70-85 M8x60	15	Screw	2	GB70-85 M6x15
6	Oil cup	2	GB1155-79 6	16	Bracket	1	1015
7	Ball	1	GB308-89 6	17	Handle ball	1	GB4141.11-84 M10x32
8	Pin	1	GB879-86 4x20	18	Handle	1	1016
9	Bushing	1	1035	19	Circlip	1	GB894.1-86 32
10	Feed rod	1	1010	20	Spring	1	GB2089-80 1x5x30
				21	Screw	1	GB71-85 M8x10

# BED AND DRIVE ASSEMBLY



<b>BED AND DRIVE ASSEMBLY</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Cover	1	1021	11	Spacer	4	GB97.1-85 φ8
2	Screw	2	1002	12	Screw	4	GB5783-86
3	Nut	2	1001	13	Nut	2	GB41-86 M6
4	Trestle	1	1024	14	Screw	2	GB5781-86 M8×45
5	Washer	3	1013	15	Screw	2	GB70-85 M8×30
6	Screw	3	GB5781-86				
7	Key	1	GB1096-79 8×40				
8	Pulley	1	1003A5				
9	Screw	1	GB78-85 M6×8				
10	Motor	1	Y90S-4TH				

# SPECIAL ACCESSORIES



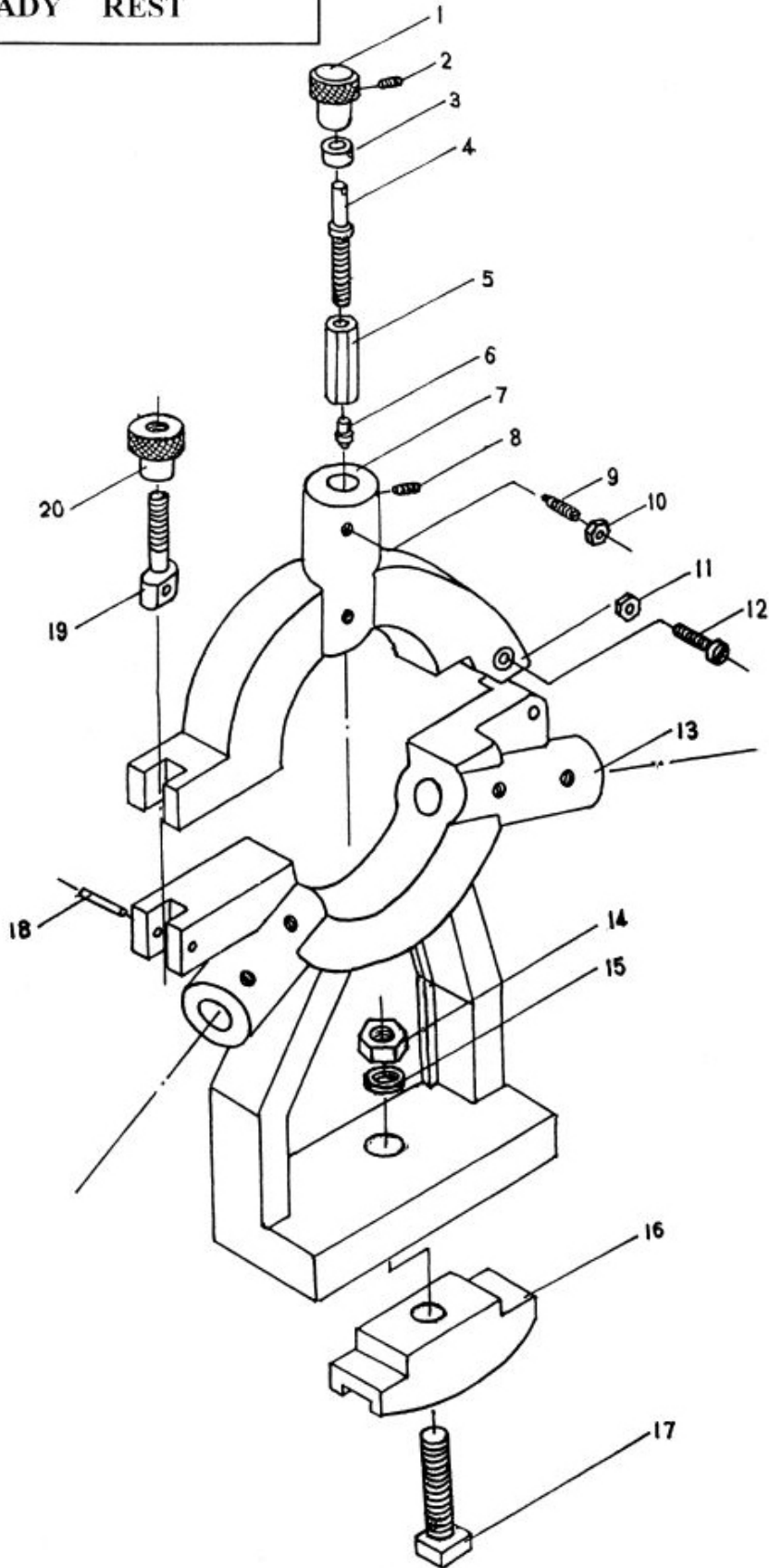
SPECIAL ACCESSORIES-BASE PART							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Chip guard	1	1023	31	Back plate	1	8601
5	Screw	4	GB70-85 M6×16	32	Nut	4	GB41-86 M6
8	Oil pan	1	1022	33	Right bracket	1	8603
26	Left cabinet	1	8400	45	Right cabinet	1	8500
29	Left bracket	1	8602	51	Screw	4	GB70-85 M6×16
30	Screw	4	GB70-85 M×16				

SPECIAL ACCESSORIES-BRAKE PART							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
2	Open circlip	1	GB894.1-868	53	Opring pin	1	GB879-86 5×25
3	Brack block	1		54	Spring	1	1048
4	Shaft	1	1040	55	Shaft	1	1047
16	Screw	2	GB70-85 M6×12	56	Circlip	1	GB885 20
18	Screw	1	GB818-85 M4×10	57	Shifter	1	1045
19	Draw rod	1	1043	58	Shaft	1	1052
20	Bracket	1	1053	59	Screw	1	GB70-85 M6×30
21	Pivot	1	1042	60	Draw rod	1	1054
22	Pin	1	GB882-67 8×20	61	Spring pin	1	GB879-86 5×40
23	Shirtet	1	1041	62	Shaft	1	1049-1
24	Washer	2	GB97.1-858	63	Screw	1	GB79-88 M6×12
25	Open clip	2	GB91-86 2.5×16	64	Connecting sleeve	1	1049-3
27	Draw rod	1	1044	65	Shaft	1	1049-2
28	Screw	1	GB70-85 M10×30	66	Paddle	1	1050
52	Shaft	1	1051	67	Spring pin	1	GB879-86 4×25

SPECIAL ACCESSORIES----COOL ING PART							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
6	Coolant pipe	1	JB/GQ0435-89 G3"/8x300	39	Filter	1	9203
9	Screw	4	GB70-85 M5x12	40	Pipe	1	9204
10	Pipe Connecting	1	9206	41	Hooping	1	2J51002-87 20
11	Washer	1	9207	42	Pine	1	SG79-75 16x1000
14	Bracket	1	9208	43	Coolant	1	GB-6B
15	Shaft	1	X6121-06011A	44	Screw	4	GB70-85 M5x10
17	Screw	2	GB70-85 M8x35	46	Pipe	1	M16-15
34	Coolant pipe	1	JB/GQ0435-89 G3"/8x800	47	Metal pipe	1	JBGQ0574-85 8x1800
35	Coolant pipe	1	JB/GQ0435-89 G3"/8x800	48	Cover	1	9210
36	Screw	4	GB818-86 M6x12	49	Pipe	1	9206
37	Cover	1	6201A	50	Coolant box	1	9209
38	Papet lining	1	9205				

SPECIAL ACCESSORIES----LIGHTING PART							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
7	Working lamp	1		13	Screw	2	GB70-85 M5x12
12	Bracket	1	7015				

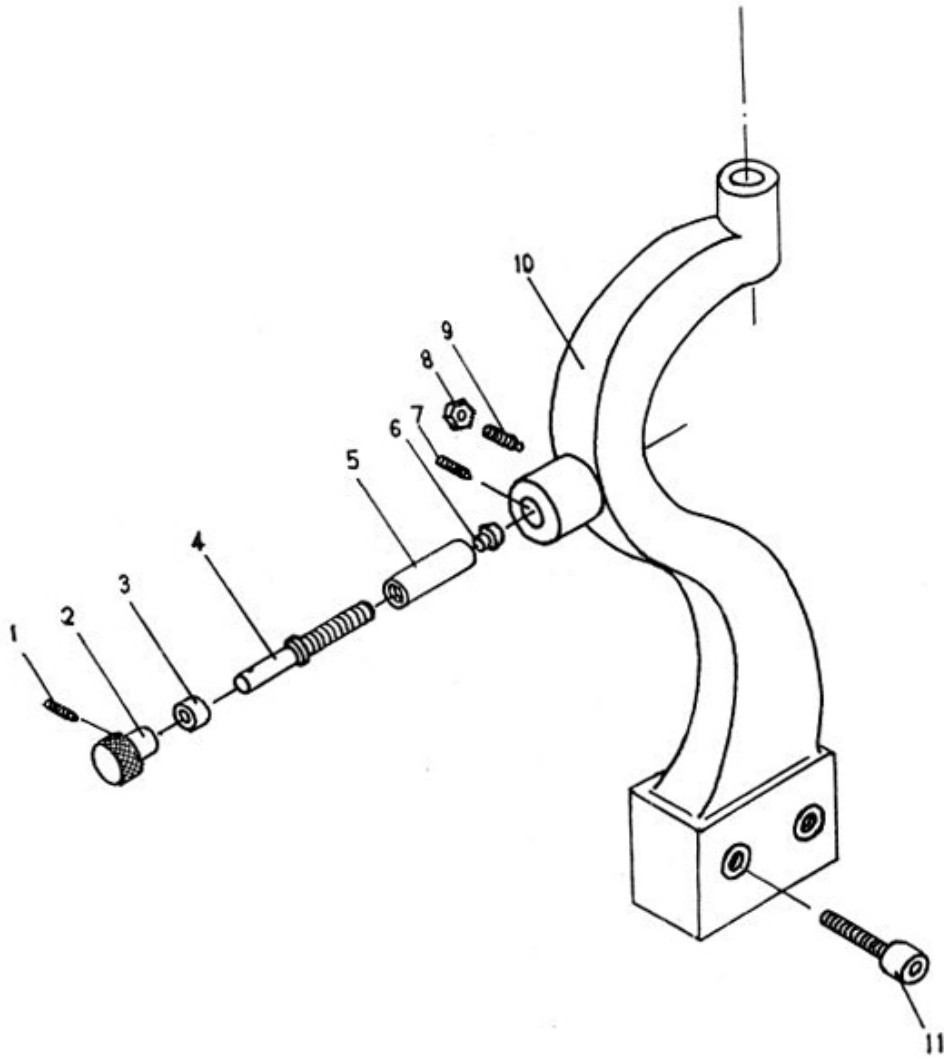
STEADY REST



<b>STEADY REST</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Knob	3	8205	11	Hex screw nut	1	GB41-86 M6
2	Screw	3	GB78-85 M6×8	12	Screw	1	GB65-85 M6×25
3	Collar	3	8207	13	Base body	1	8201
4	Pressing lever	3	8206	14	Hex screw nut	1	GB41-86 M12
5	Pressing collar	3	8208	15	Washer	1	GB97.1-85 12
6	Pressing base	3	8209	16	Pressing plate	1	8210
7	Upper body	1	8202	17	Square ad bolt	1	GB80-88 M12×60
8	Screw	3	GB78-85 M6×10	18	Spring pin	1	GB879-85 4×25
9	Screw	3	GB79-85 M6×16	19	Locking lever	1	8203
10	Hex screw nut	3	GB41-86 M6	20	Locking screw nut	1	8204

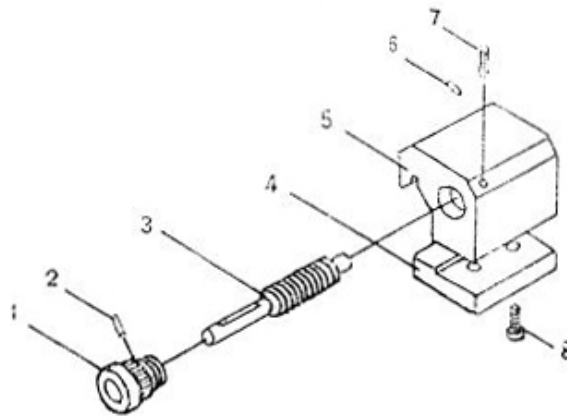


FOLLOW REST

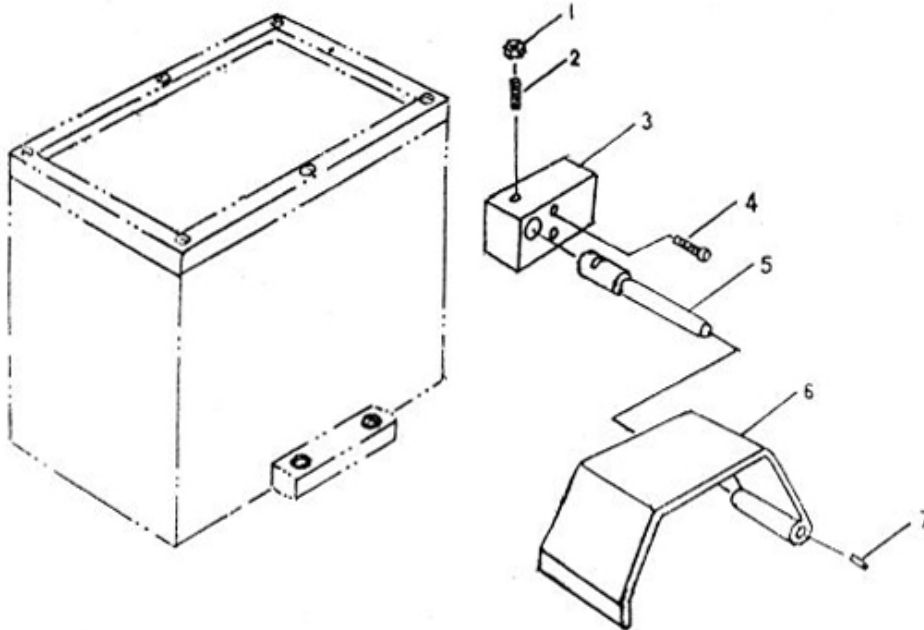


FOLLOW REST							
NO.	NAME	QTY	NOTE	NO.	NAME	QTY	NOTE
1	Screw	2	GB78-85 M6×6				
2	Knob	2	8205				
3	Collar	2	8207				
4	Pressing lever	2	8206				
5	Pressing collar	2	8208				
6	Pressing base	2	8209				
7	Screw	2	GB78-85 M6×10				
8	Hex screw nut	2	GB41-86 M6				
9	Screw	2	GB79-85 M6 ×16				
10	Body	1	8201				
11	Bolt	2	GB70-85 M8×40				

POSITIONING DEVICE



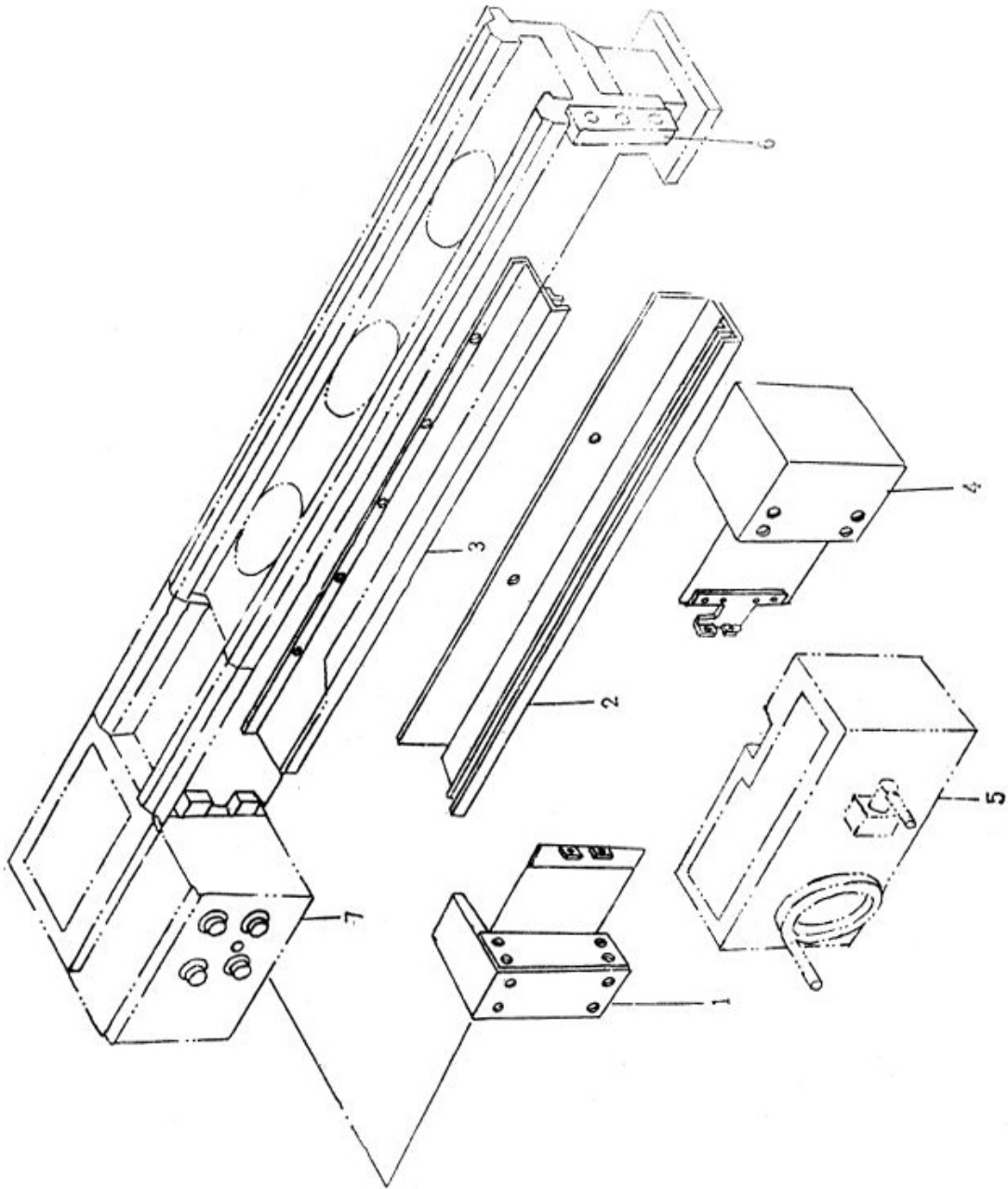
PRETECTING COVER



<b>POSITIONING DEVECE</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	knob	1	8705	5	Body	1	8703
2	Pin	1	GB879-86 3x6	6	Indictor	1	8707
3	Guide Screw	1	8706	7	Screw	1	GB79-85 M6x10
4	Pressing plate	1	8704	8	Screw	2	GB70-85 M6x12

<b>PROTECTING COVER</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Nut	1	GB41-86 M6	5	Shaft	1	8902
2	Screw	1	GB75-85 M6x16	6	Protecting cover	1	8903
3	Switch box	1	8901	7	Pin	1	GB79-86 4x12
4	Screw	2	GB70-85 M6x45				

GUARD



<b>GUARD</b>							
<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>	<b>NO.</b>	<b>NAME</b>	<b>QTY</b>	<b>NOTE</b>
1	Left box	1	1120				
2	Down board	1	1118				
3	Up board	1	1117				
4	Right box	1	1110				
5	Apron	1	4000				
6	Bracket	1	1012				
7	Gear box	1	3000				



