

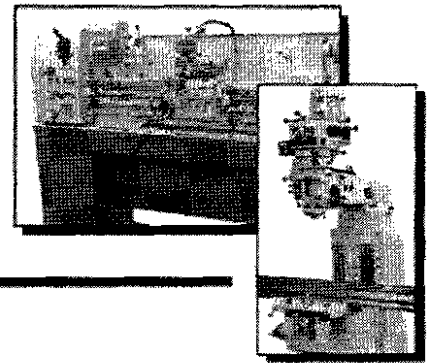


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MODEL GRIP-1236E LATHE

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GRIP-1236E

ENGINE LATHE

**OPERATION INSTRUCTION
AND PARTS LIST**

CAUTION

1. WHEN UNPACKING, LATHE ACCESSORIES SHOULD CORRESPOND TO THE ITEM OF PACKING LIST. IF NOT, PLEASE MAKE CONTACT WITH YOUR DEALER.
2. NEVER USING THE MACHINE WITHOUT FIRST READING THE OPERATING INSTRUCTION AND UNDERSTANDING IT'S REQUIREMENTS OF INSTALLING, OPERATING AND ADJUSTING ETC.
3. IF THE MACHINE OPERATING IS NOT ABLE TO BE SATISFIED IN USUAL OPERATING, MAINTENANCE AND WITHIN THE FIXED TIME, PLEASE MAKE CONTACT WITH YOUR DEALER.

CONTENTS

OUTSIDE DIAGRAM	1
APPLICATION.....	2
MAIN TECHNICAL SPECIFICATION	2
HOISTING AND INSTALLATION	3
LATHE DRIVING SYSTEM DIAGRAM AND THE LIST OF MAIN GEARS, SCREWS, AND NUTS.....	6
BEARING LIST.....	10
LUBRICATION.....	12
ELECTRICAL SYSTEM EXPLANATION	14
TRIAL DRIVE, ADJUSTMENT AND OPERATION	19
MAINTENANCE	26
DAMAGEABLE PARTS.....	27

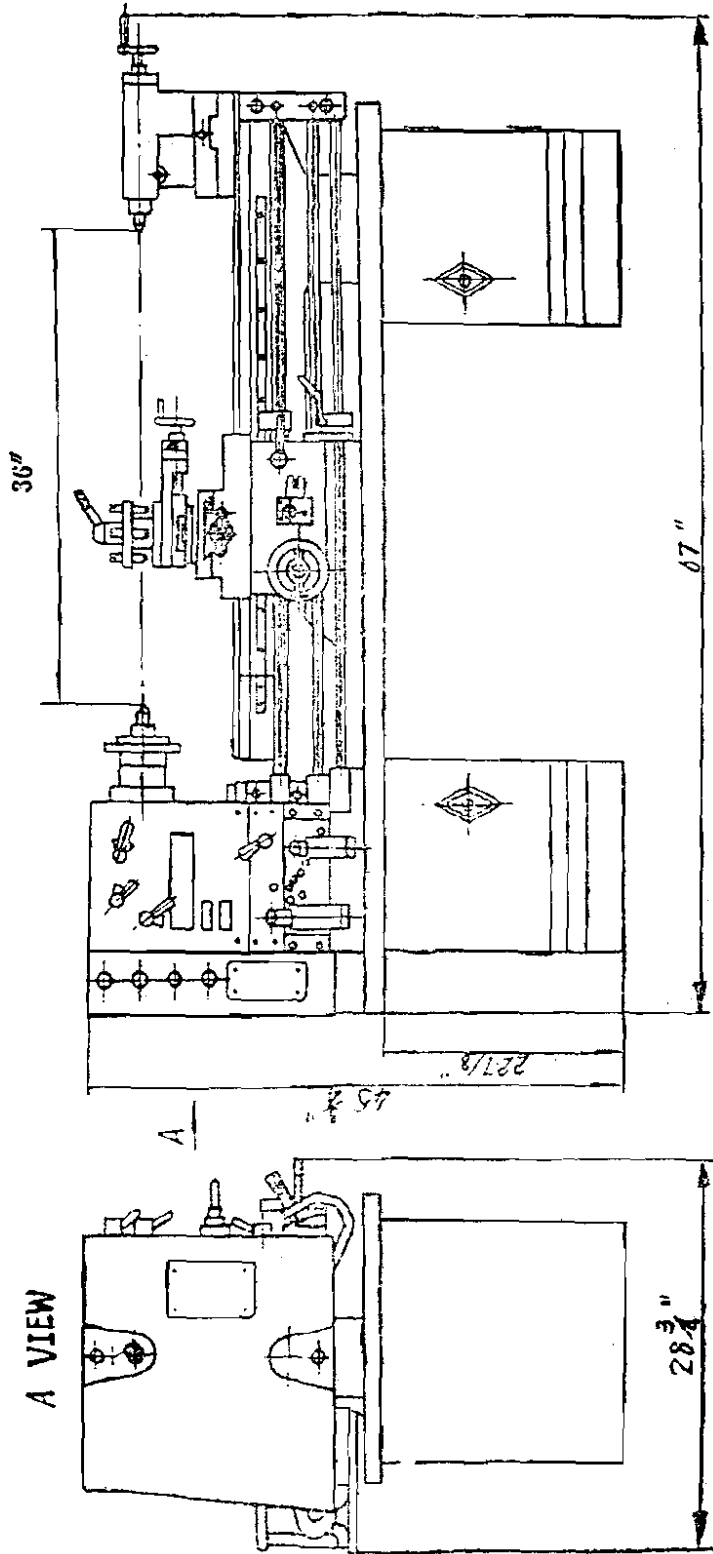


Fig. 1 Outside Diagram

APPLICATION

The machine is a small-scale universal engine lathe. It can perform various turning operation, as well as boring, drilling, grooving and other operations. It can also be used for turning metric threads and inch threads.

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

MAIN TECHNICAL SPECIFICATION

1. Main Specification

Max. swing dia. of workpiece over bed	12" (300 mm)
Max. swing dia. of workpiece over saddle gap.....	17" (430 mm)
Max. swing over cross slide.....	7" (178 mm)
Max. length of workpiece.....	36" (900 mm)

2. Headstock

(dia. of) spindle bore.....	$1\frac{1}{2}"$ (38 mm)
Taper of spindle bore.....	M.T. No. 5
Range of spindle speeds (9 or 18 changes)	50—1500r.p.m.

3. Change Gears And Gear Box

Threads which can be cut	Metric, 29 kinds, 0.2—4.5 mm
	Inch; 40 kinds, 4—112 T.P.I.
Saddle feed range per spindle revolution:	40 kinds, 0.028—0.791 mm/rev.
Cross feed range per spindle revolution:	40 kinds, 0.010—0.268 mm/rev.
Threads per inch lead screw	8 T.P.I.
Threads per inch cross screw	8 T.P.I.
Cross Feed per division on its dial	0.001" (0.025 mm)
Threads per inch tool post screw	8 T.P.I.
Tool Post feed per division on its dial	0.001" (0.03 mm)

4. Tool Post And Saddle

Max. turn angle of tool post	$\pm 90^\circ$
Tool slide travel	3" (76 mm)

Cross slide travel	$5\frac{1}{8}$ " (130 mm)
Saddle travel	30" (760 mm)
5. Tailstock	
Dia. of tailstock quill	$1\frac{1}{4}$ " (32 mm)
Taper of tailstock quill bore	M.T.No.3
Max. travel of tailstock quill	4" (100 mm)
6. Motor	
Motor frequency	60 Hz or 50 Hz
Motor horse power	1.5 HP (1.1 kW)
Motor rotational speed	1720 R.P.M. or 1420 R.P.M.
Motor voltage	220 V/380 V 3 phase or 110 V/220 V 1 phase
7. Lathe size and weight	
Overall dimensions(L x W x H)	
	$67" \times 28\frac{3}{4}" \times 22\frac{7}{8}"$ (1700 x 730 x 580 mm)
	[With stands: $67" \times 28\frac{3}{4}" \times 45\frac{3}{4}"$ (1700 x 730 x 1160 mm)]
Net weight	400 kg
Gross weight	480 kg

HOISTING AND INSTALLATION

1. After unpacking, count the lathe accessories according to packing list.
2. Remove the paper which covered the unpainted surfaces and using a non-volatile solvent and brush, thoroughly clean grease which covered surfaces.
3. Sling the machine as shown in the hoisting chart Fig. 2 when it is transporting.
4. The fixed dimension of this machine are shown in the Fig. 3. The machine should be firmly attached to the floor by lathe stands. If you purchase a bench lathe, place the chip tray on top of the bench, mark off the location of the bed mounting holes using a pencil. Then drill the six bolt holes.
5. To maintain accuracy, it is important to keep the bed way leveled. Please use the following procedure. Move the carriage to the headstock end of the bed way. Place the level in a 45 degree position on top of the cross slide. Loosen the mounting bolts and lean up the base stand (or bed) with adjusting washers to center the bubble in the level. Tighten the mounting bolts. Move the carriage to tailstock end of the bed way and repeat that procedure. After doing that please recheck the headstock end and continue the procedure with both ends of

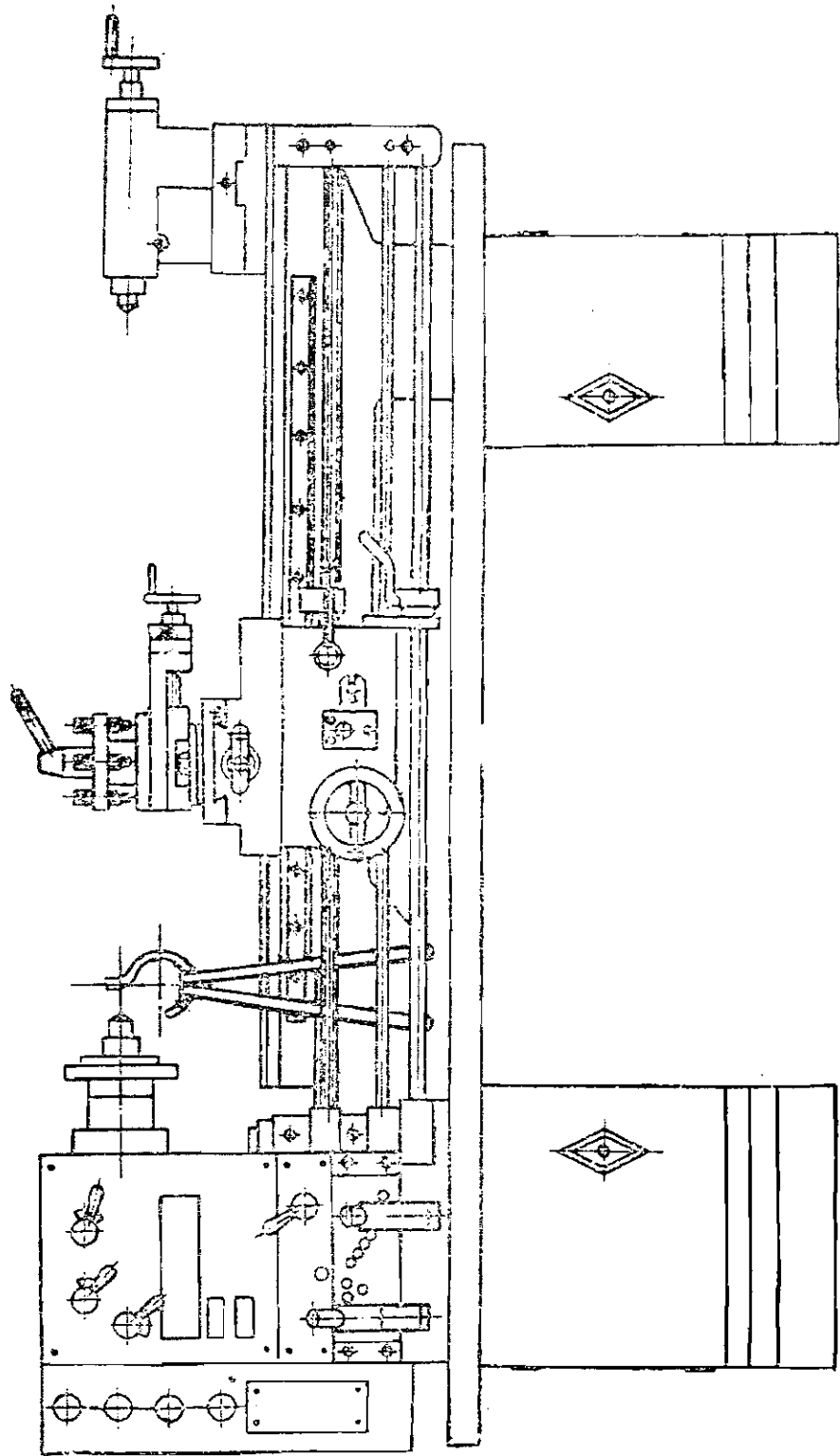


Fig. 2 Hoisting Chart

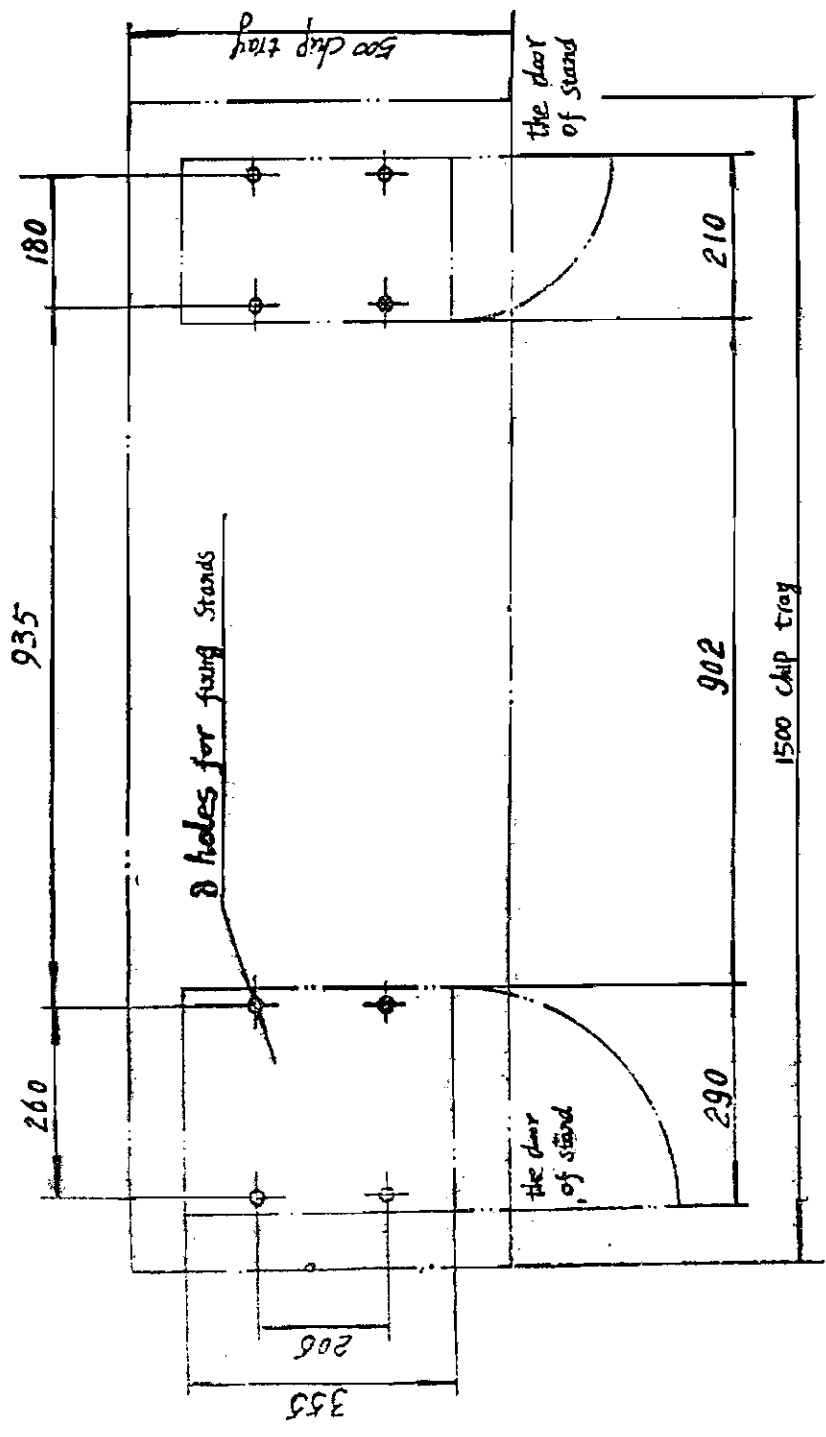


FIG. 3 Fixing dimensions for lathe stand cabinets

the bedway are level (the longitudinal tolerance is 0.02/1000 and the cross one is 0.04/1000).

6. During transport and unpacking, it is likely that debris will be present on top of the lathe. Do not move the carriage or tailstock until the bed way has been thoroughly cleaned.

LATHE DRIVING SYSTEM AND THE LIST OF MAIN GEARS, SCREWS, NUTS

Machine driving system, see Fig. 4

The list of main gears, screws and nuts in the machine driving system

parts	part №	description	№ of gear teeth or screw thread	modulus or pitch	pressure angle	material	notes
head-stock	1	gear	42	m 2	20 deg	45	
	2	gear	23	m 2	20 deg	45	
	3	gear	51(47)	m 2	20 deg	45	47 teeth gear is used to 18 chang speed lathe.
	4	gear	36	m 2	20 deg	45	
	5	gear	55	m 2	20 deg	45	
	6	gear	27(31)	m 2	20 deg	45	"
	7	gear	50(45)	m 2	20 deg	45	"
	8	gear	65(58)	m 2	20 deg	45	
	9	gear	21	m 2	20 deg	45	
	10	gear	45	m 2	20 deg	45	"
	11	gear	54(59)	m 2	20 deg	45	"
	12	gear	39(46)	m 2	20 deg	45	
	13	gear	83	m 2	20 deg	45	
	14	paired gear	45	m 2	20 deg	45	
	15	paired gear	40	m 2	20 deg	45	
		gear	45	m 2	20 deg	45	

续表

parts	part No	description	Na of teeth or thread	modulus or pitch	pressure angle	material	notes
gear-box	16	paired	32	m1.75	20 deg	45	
		gear	16	m1.75	20 deg	45	
	17	paired	32	m1.75	20 deg	45	
		gear	16	m1.75	20 deg	45	
	18	gear	16	m1.75	20 deg	45	
	19	gear	32	m1.75	20 deg	45	
	20	gear	16	m1.75	20 deg	45	
	21	gear	16	m1.75	20 deg	45	
	22	gear	18	m1.75	20 deg	45	
	23	gear	19	m1.75	20 deg	45	
	24	gear	20	m1.75	20 deg	45	
	25	gear	22	m1.75	20 deg	45	
	26	gear	24	m1.75	20 deg	45	
	27	gear	26	m1.75	20 deg	45	
	28	gear	28	m1.75	20 deg	45	
	29	gear	24	m1.75	20 deg	45	
	30	gear	24	m1.75	20 deg	45	
	31	gear	15	m1.75	20 deg	45	
	32	gear	16	m1.75	20 deg	45	
	apron	33	gear	32	m1.75	20 deg	45
34		gear	24	m1.75	20 deg	45	
35		gear	11	m2	20 deg	45	
36		rack		m2	20 deg	45	
	37	lead screw	single thread	8 teeth per inch		ZQ45	
	38	half nuts	single thread			ZQSn 6-6-3	

续表

parts	part No	description	No of teeth or thread	modulus or pitch	pressure angle	material	notes
apron	39	worm	single thread	m 2	20 deg	45	
	40	worm gear	24	m 2	20 deg	ZQSn 6-6-3	
	41	gear	12	m 2	20 deg	45	
	42	gear	50	m 2	20 deg	45	
	43	pinion	25	m 2	20 deg	45	
	44	nut	single thread	8 teeth per inch		ZQSn 6-6-3	lefthand thread
	45	screw	single thread	8 teeth per inch		45	
	46	gear	14	m 2	20 deg	45	
	47	gear	51	m 2	20 deg	45	
	48	gear	13	m 2	20 deg	45	
	49	gear	25	m 2	20 deg	45	
	50	gear	48	m 2	20 deg	45	
	51	screw	single thread	8 teeth per inch		45	
	52	screw nut	single thread	8 teeth per inch		ZQSn 6-6-3	
tail-stock	53	screw	single thread	10 teeth per inch		45	lefthand thread
	54	nut	single thread	10 teeth per inch		ZQSn 6-6-3	lefthand thread
change gear		gear	40	m 1.5	20 deg	45	2 pieces
		gear	25	m 1.5	20 deg	45	
		gear	26	m 1.5	20 deg	45	
		gear	43	m 1.5	20 deg	45	
		gear	46	m 1.5	20 deg	45	
		gear	47	m 1.5	20 deg	45	
		gear	60	m 1.5	20 deg	45	
		gear	80	m 1.5	20 deg	45	

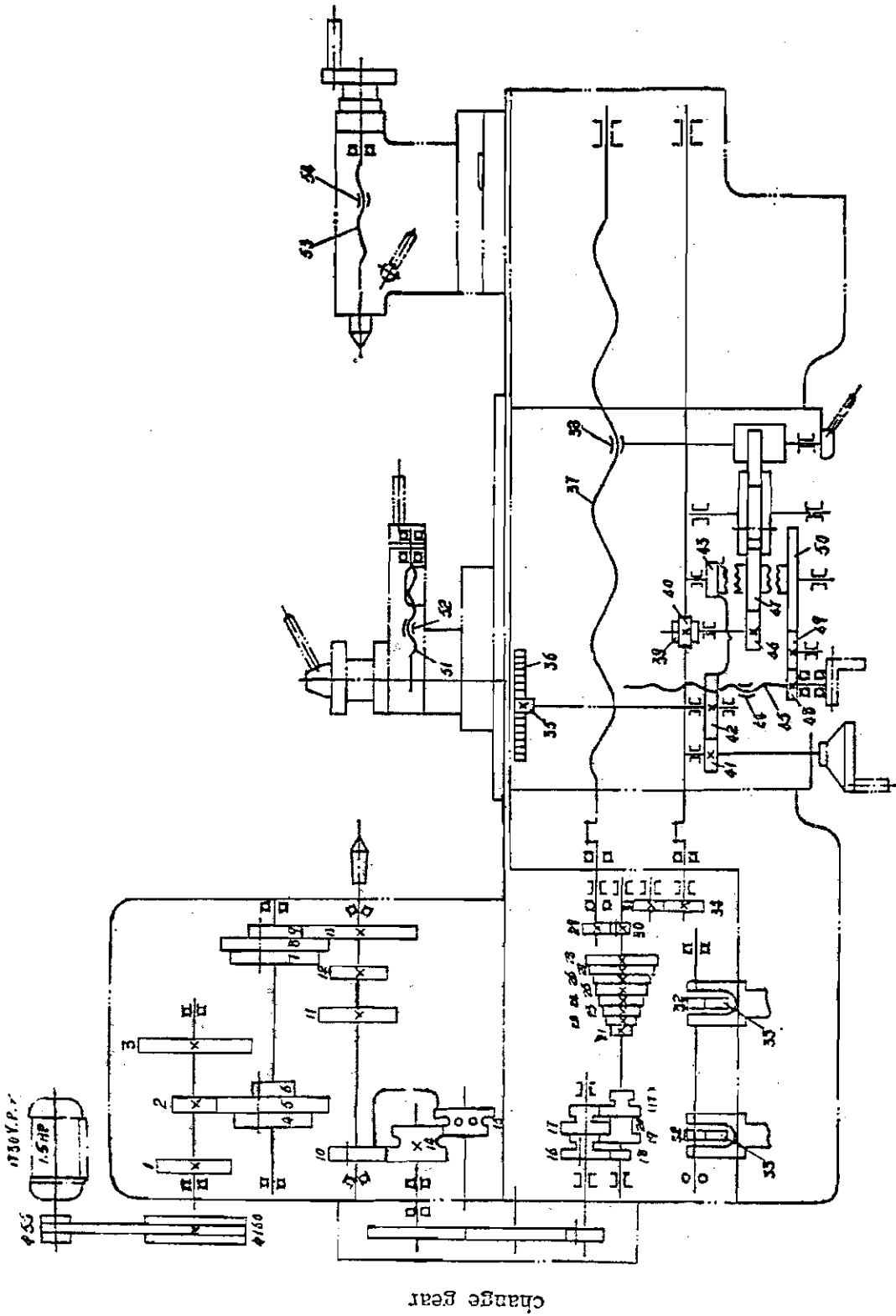


Fig. 4 Driving System

BEARING LIST(See Fig 5)

Type	Name	Specification	Q'TY	Installation
60104	single row ball bearing with shield	20 × 42 × 12	2	headstock
60304	"	20 × 52 × 15	1	
104	single row ball bearing	20 × 42 × 12	3	
204	"	20 × 47 × 14	1	
D7211	single row taper roller bearing	55 × 100 × 23	1	
D7212	"	60 × 110 × 24	1	
8000102	single row ball bearing	15 × 32 × 8	2	gear box
8103	single row pillow-block bearing	17 × 30 × 9	3	
8101	"	12 × 26 × 9	2	carriage
8102	"	15 × 28 × 9	2	
8101	"	12 × 26 × 9	1	tailstock
80202	single row ball bearing with two end shield	15 × 35 × 11	1	change gear

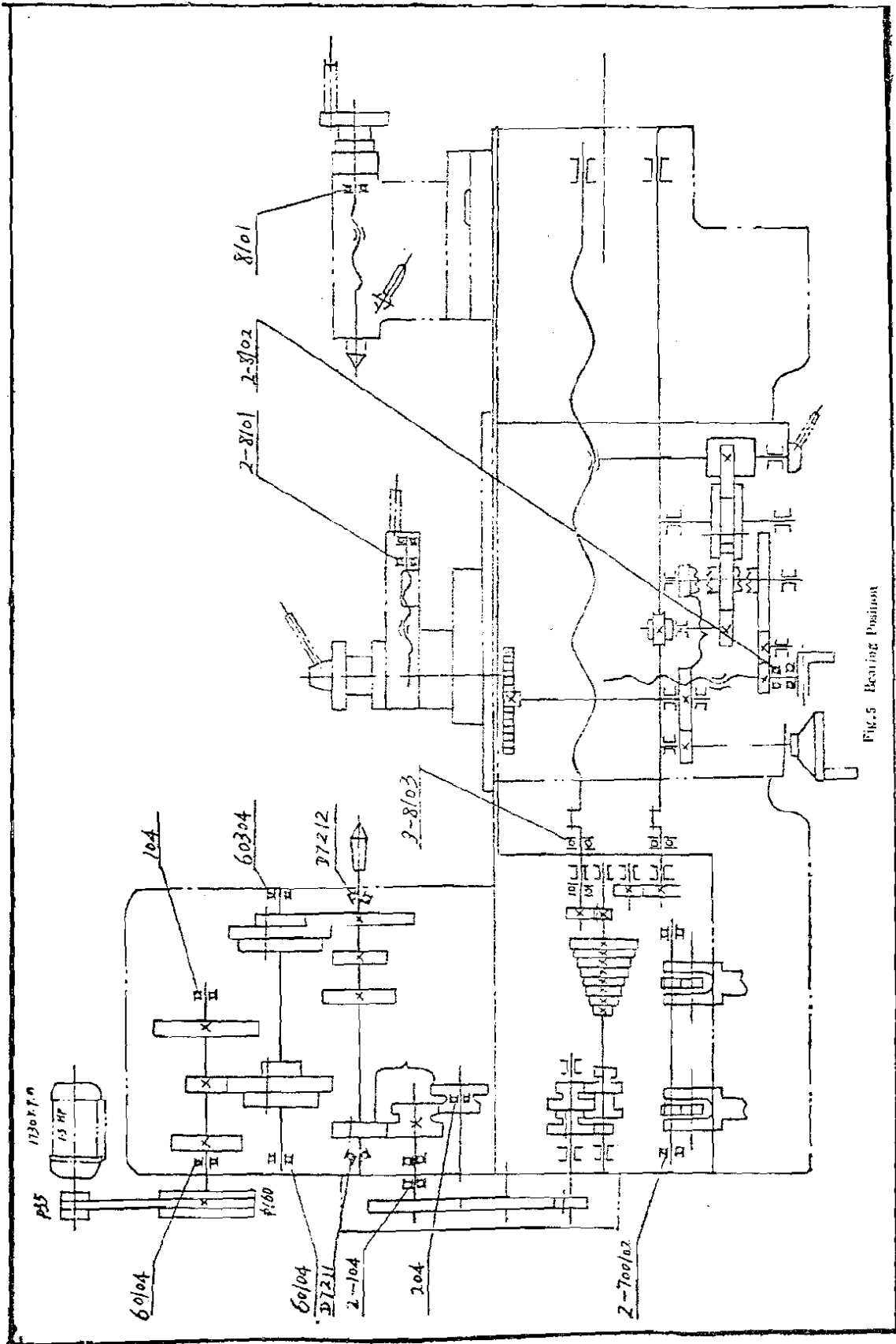


Fig. 5 Bearing Pinpoint

LUBRICATION

- * All moving parts and sliding surfaces should be regularly lubricated with clean lubricating oil. Please refer to Fig. 6 for the lubrication holes.
- * No.1, the cover of headstock, is for headstock lubrication point. Open the cover and fill oil until it reaches the oil-level sight gauge. Running for the first two weeks, or usually for three months, exchange the oil. While exchanging the oil, loosen the oil screw and flow all-out the oil. Then wash the headstock with kerosene etc. and pour clean oil into headstock.
- * No.2 through 11 are lubrication points (see Fig. 6). They are oiled with oil gun twice a day.
- * No.2 is the lubrication point for gear box, No.3 for change gear, No.4 for apron, No.5 (two slanting holes) for gear box, No.6 (two points) for carriage sliding, No.7 for handwheel, No.8 (two points) for collar of bracket, No.9 for tailstock, No.10 for tool post slide, No.11 for saddle screw.
- * The other sliding surfaces contain dovetail slot, half nut, worm gear, lead screw, feed rod, handle rod, quill of tailstock etc. They should be oiled before operating and after doing.
- * Oil recommendations: a. For headstock and feedbox; Mobil D.T.E. light, b. For all other applications; Mobil Vactra No.2.

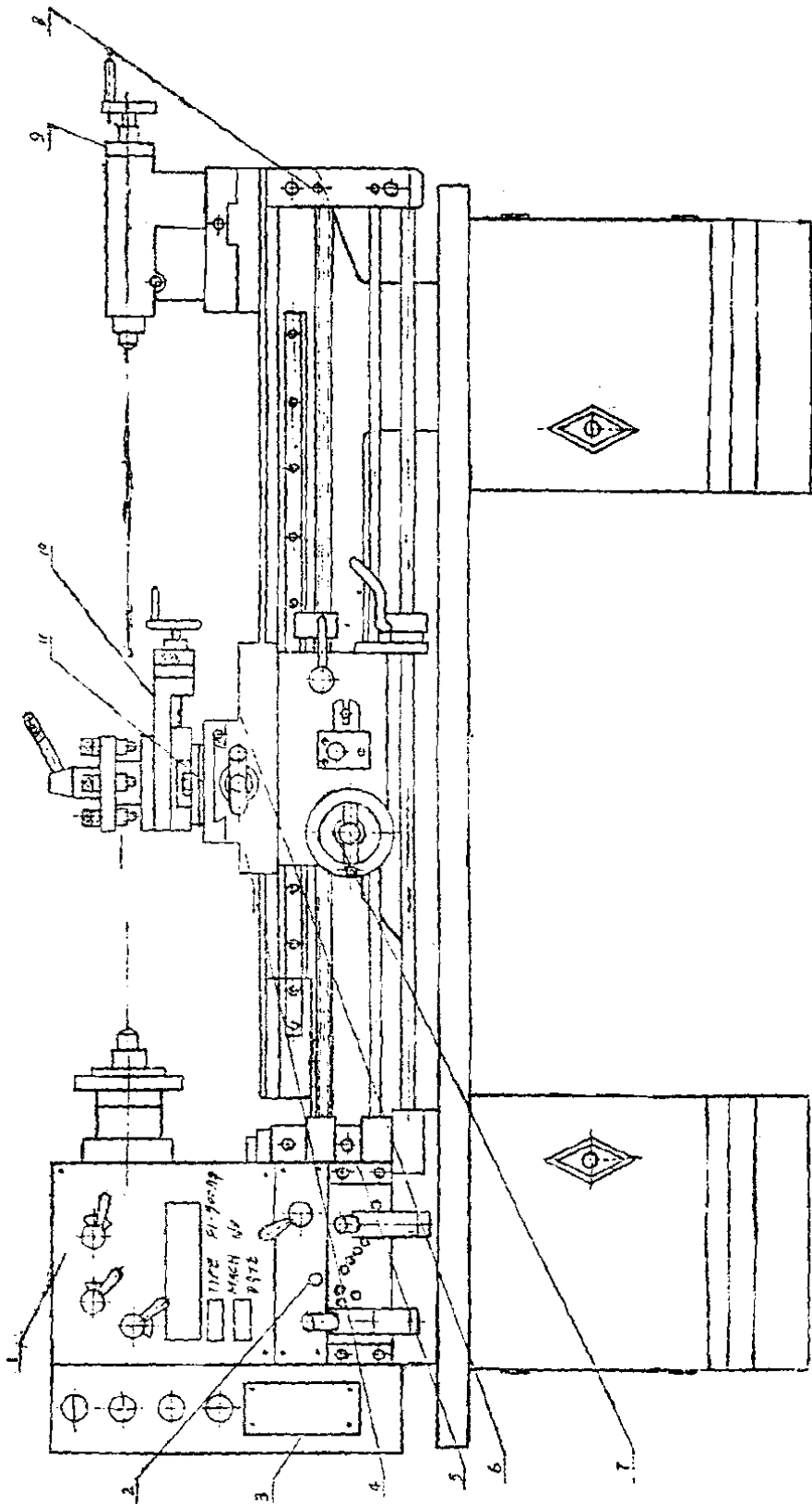


Fig 6 Lubrication Chart

ELECTRICAL DOCUMENT CATALOGUE

No.	Name	Page
1	electrical system explanation	14
2	Fig.7 Wiring diagram for 3 phase	15
3	electrical element list	16
4	Fig.8 Wiring diagram for 1 phase	17
5	electrical element list	18

ELECTRICAL SYSTEM EXPLANATION

- * The standard lathe are wired for 220V/380 V 3 phase 60 & 50 Cycle (See Fig. 7) or for 110 V/220 V 1 phase 60 & 50 cycle (See Fig.8) according to order. For connection to other volts, check the wiring diagram for the changeover shown in the motor terminal cover.
For electrical connections, merely connect your supply lines to the leads provided on the lathe. Before connecting, make sure the motor specification and the machine wiring correspond with power supply and connect 15/30 A fuse into power line.
- * Electrical control box is located behind the headstock.
- * Put the cs handle in the middle position and push the "power start" to close the electrical circuit. The cs switch is wired for counter-clockwise spindle rotation in the forward position and clockwise spindle rotation in the reverse position. If not, turn off the power and interchange the leads according to the motor wiring diagram.
- * Putting cs-handle in the middle position can stop the machine. Pushing the knob "reset" will open the circuit.
- * The machine must be connected to ground or ground wire.

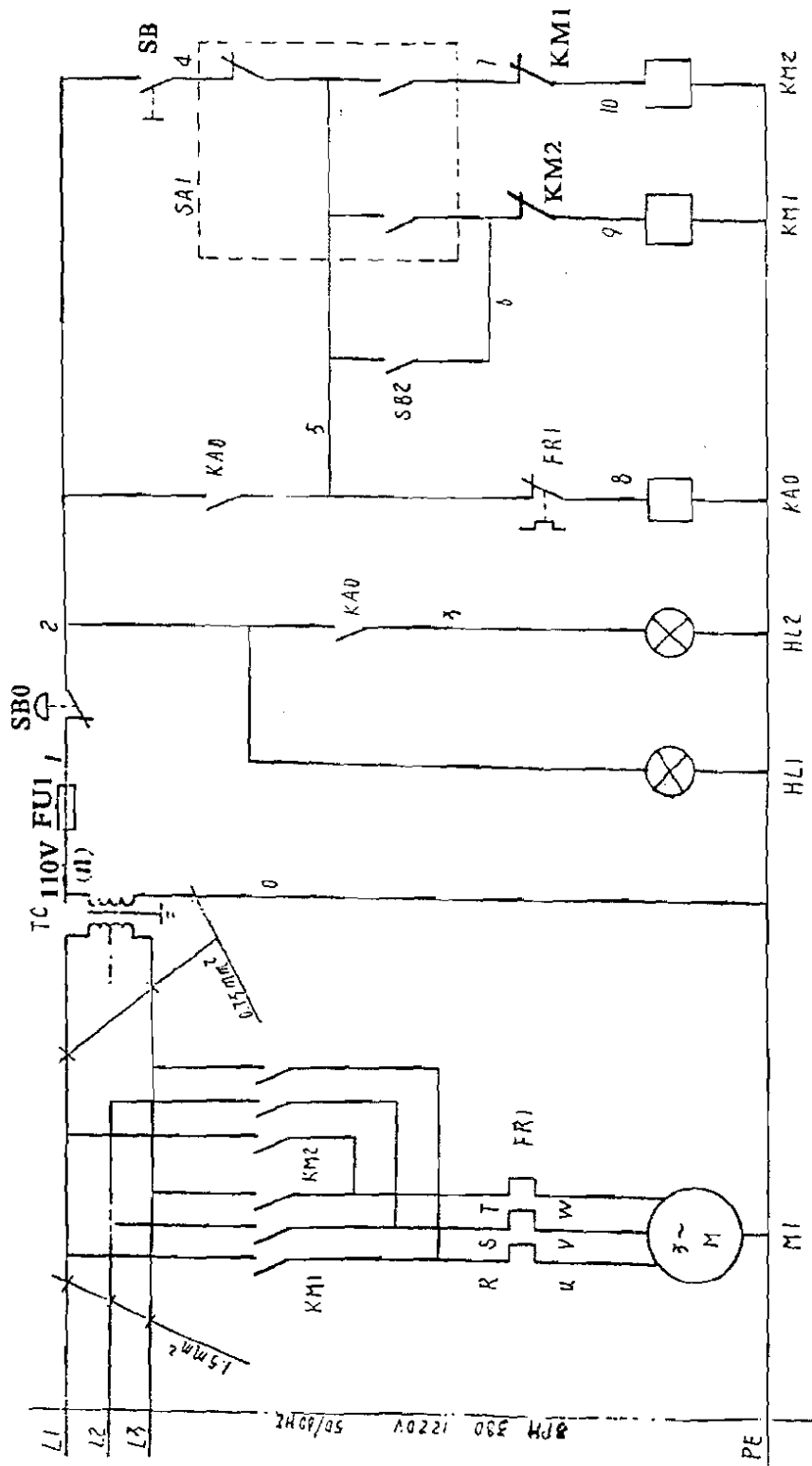


Fig 7 WIRING DIAGRAM FOR 3 PHASE

PARTS LIST

Symbol	Name	Type
M1	Motor	Y90S-4
FR1	Heat device relay	T16
FU1	Fuse	RDD-1 110V 2A
SB0	Button	LAY3-01ZS / 1
SB1	Button	LAY3-10DN / 32J
SB2	Button	LAY3-10 / 3
SA1	Selector Switch	HZ5B-10 / 2D009
HL1	Indicator Lamp	AD1-22 / 212 110V
HL2	Indicator Lamp	In SB1
TC	Transformer	JBK-63
KA0	Relay	CA2-DN140 110V
KM1	AC Contactor	LC1-D129 110V
KM2	AC Contactor	LC1-D129 110V

FOR 3 PHASE

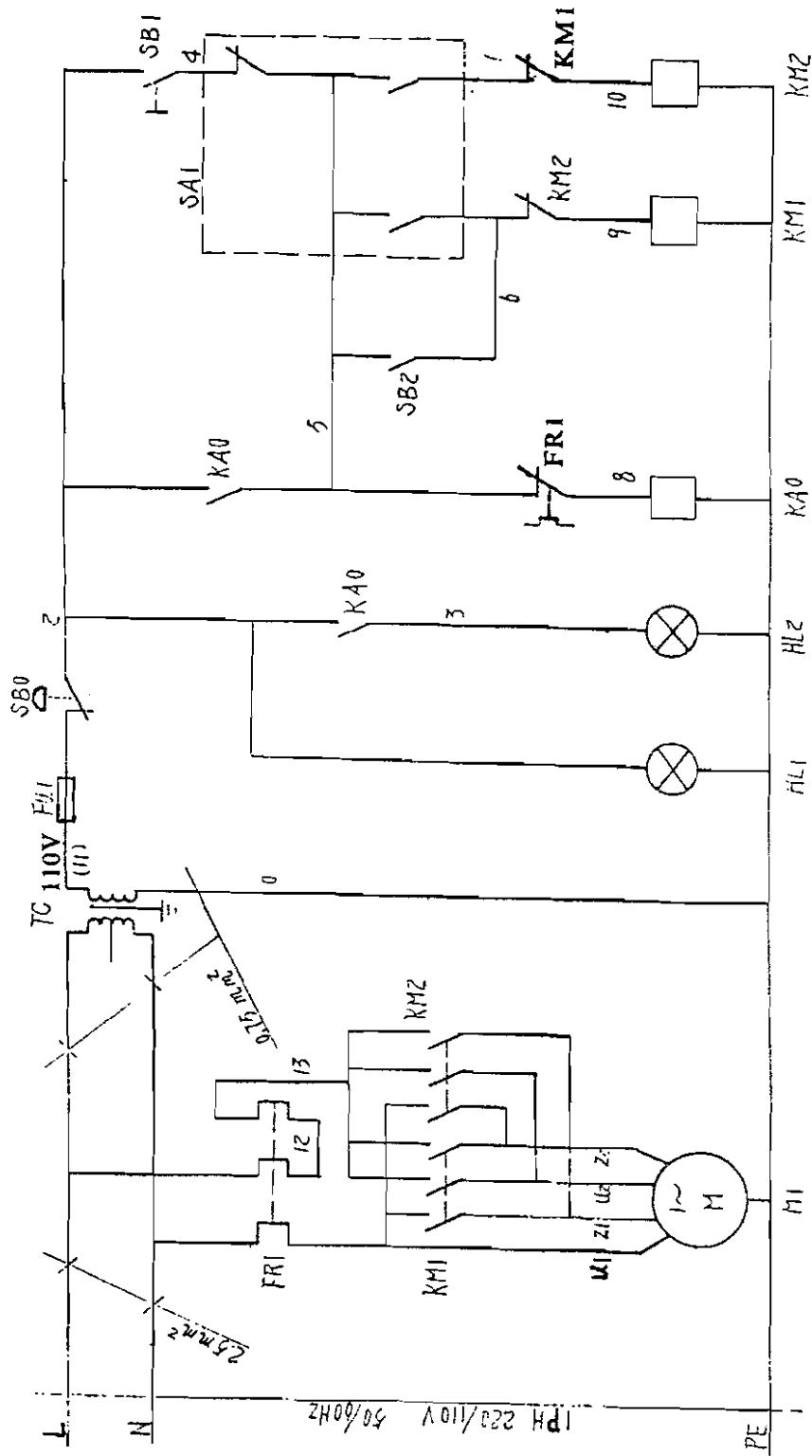


Fig 8 WIRING DIAGRAM FOR 1 PHASE

PARTS LIST

Symbol	Name	Type
M1	IPH Motor	YC90L2-4
FR1	Heat device relay	T16
FU1	Fuse	RDD-1 110V 2A
SB0	Button	LAY3-01ZS/1
SB1	Button	LAY3-10DN/32J
SB2	Button	LAY3-10/3
SA1	Selector Switch	HZ5B-10/2D009
HL1	Indicator Lamp	AD1-22/212 110V
HL2	Indicator Lamp	In SB1
TC	Transformer	JBK-63
KAO	Relay	CA2-DN140 110V
KM1	AC Cotactor	LC1-D259 110V
KM2	AC Contactor	LC1-D259 110V

FOR 1 PHASE

TRIAL DRIVE, ADJUSTING AND OPERATING INSTRUCTION

1. Before operating the machine, read this operating instruction and understand it's requirement of adjusting, operating, maintenance and lubrication etc.
2. The machine is equipped with 1 or 2 V-belts from the motor to the low rear pulley. It is advisable to check the tension before starting the machine. The belts should be depressed about 1/2 inch by normal finger pressure. Tight belt will ruin the bearing. Adjust the tension, if necessary.
3. When trial driving, set changing lever on the Lowest speed and let the machine operate for 20 minutes. If functioning normally, increase the spindle speed step by step until the highest speed (then the feed lever in the middle rate) each step operating for over 5 minutes.

Caution: Speed changing can be made when motor is completely stopped.

4. Machine Operating Lever. See Fig. 13

Headstock

- * With the help of lever (1), (2) and v-belts the headstock can provide 18 or 9 step speeds from 60 to 1500 r.p.m as shown in "spindle speed chart" located on the front side of headstock (see Fig. 14)
- * Starting & stopping of spindle can be made merely by the starting lever(11). Moving the lever (11) up, the spindle will be counter-clockwise rotation; starting lever (11) down, the spindle will be reverse rotation.

Quick Change Gear Box.

- * Lever (4) is a selecting lever of threading or turning. Left position is for feed shaft. Center position is neutral. Right position is for lead screw.
- * Lever (5) & (6) can control the feed gear box. Lever (5) has five positions. Lever (6) has eight positions. Moving the two tumbler levers can provide all kinds of feed rates positioned on left side of headstock (See Fig .15) and inch thread pitches positioned on the front of headstock (See Fig .16) With the help of metric change gears, the two tumbler lever can also provide metric threads in the "change gear chart for m/m size" located on the front side of headstock. (see Fig. 17)

Caution. Always stop the spindle before engaging any of above 3 levers.

Carriage Assembly

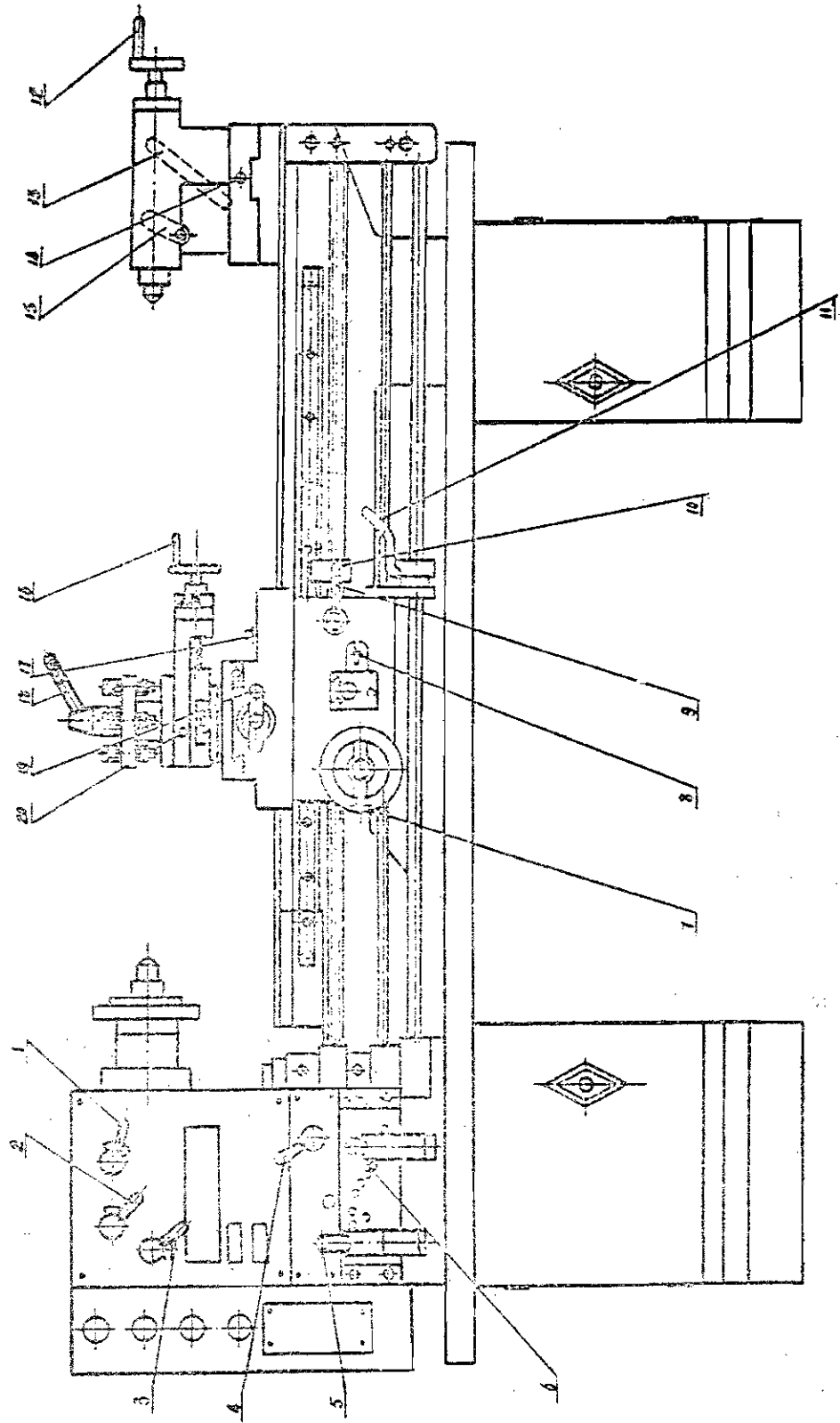
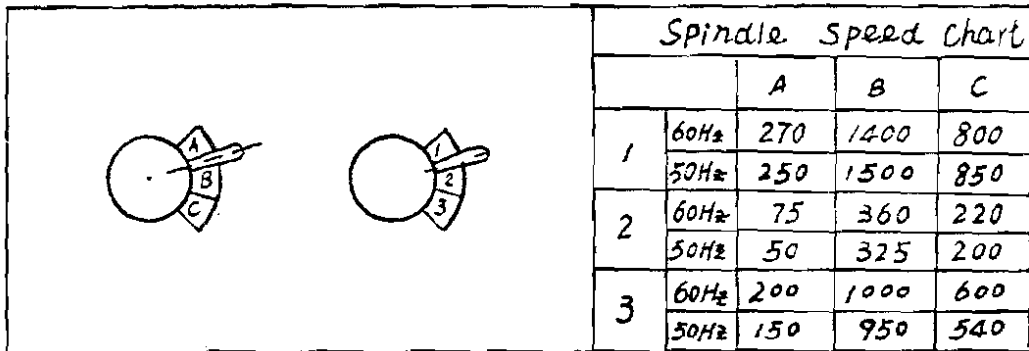


Fig. 13 Machine Operating Levers

List 1: 9 step spindle speed



List 2: 18 step spindle speed

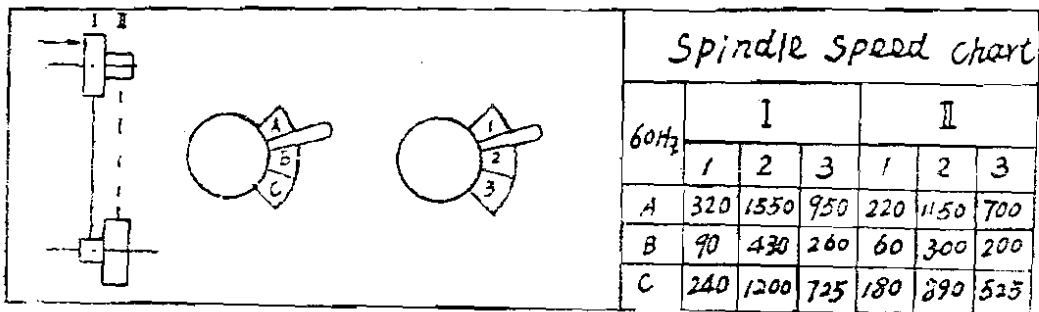


Fig. 14 Spindle Speed Chart

Position		1	2	3	4	5	6	7	8
A	~	0.791	0.703	0.666	0.632	0.575	0.527	0.486	0.452
	}	0.268	0.238	0.226	0.214	0.196	0.178	0.166	0.154
B	~	0.395	0.351	0.333	0.316	0.287	0.264	0.243	0.226
	}	0.134	0.119	0.113	0.107	0.098	0.089	0.083	0.077
C	~	0.198	0.175	0.167	0.158	0.144	0.132	0.122	0.113
	}	0.067	0.060	0.057	0.054	0.049	0.045	0.042	0.038
D	~	0.099	0.088	0.083	0.079	0.072	0.066	0.061	0.057
	}	0.033	0.030	0.028	0.027	0.025	0.022	0.021	0.019
E	~	0.050	0.044	0.042	0.040	0.036	0.033	0.031	0.028
	}	0.017	0.015	0.014	0.014	0.012	0.011	0.011	0.010

Designation		1	2	3	4	5	6	7	8
A	~	0.0311	0.0277	0.0262	0.0249	0.0226	0.0207	0.0191	0.0178
	}	0.0105	0.0094	0.0089	0.0084	0.0077	0.0070	0.0065	0.0061
B	~	0.0156	0.0138	0.0131	0.0124	0.0113	0.0104	0.0096	0.0089
	}	0.0053	0.0047	0.0044	0.0042	0.0039	0.0035	0.0032	0.0030
C	~	0.0078	0.0069	0.0066	0.0062	0.0057	0.0052	0.0048	0.0044
	}	0.0026	0.0024	0.0022	0.0021	0.0019	0.0018	0.0017	0.0015
D	~	0.0039	0.0035	0.0033	0.0031	0.0028	0.0026	0.0024	0.0022
	}	0.0013	0.0012	0.0011	0.0011	0.0010	0.0009	0.0008	0.0007
E	~	0.0020	0.0017	0.0017	0.0016	0.0014	0.0013	0.0012	0.0011
	}	0.0007	0.0006	0.0006	0.0006	0.0005	0.0004	0.0004	0.0004

Fig.15 Feed Rate list

Position	Threads Per Inch							
	1	2	3	4	5	6	7	8
A	4	4½	4¾	5	5½	6	6½	7
B	8	9	9½	10	11	12	13	14
C	16	18	19	20	22	24	26	28
D	32	36	38	40	44	48	52	56
E	64	72	76	80	88	96	104	112

Fig.16 Inch Thread Pitch list (imperial leadscrew)

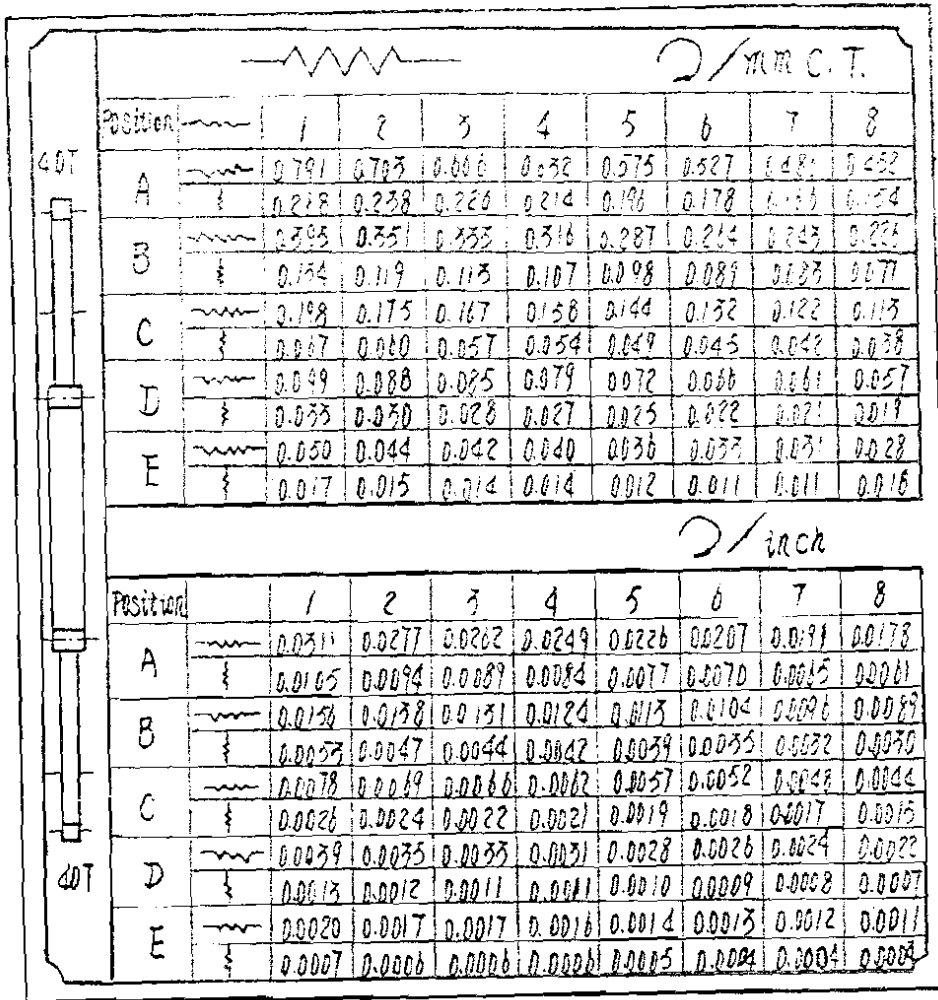


Fig. 15a Feed Rate list

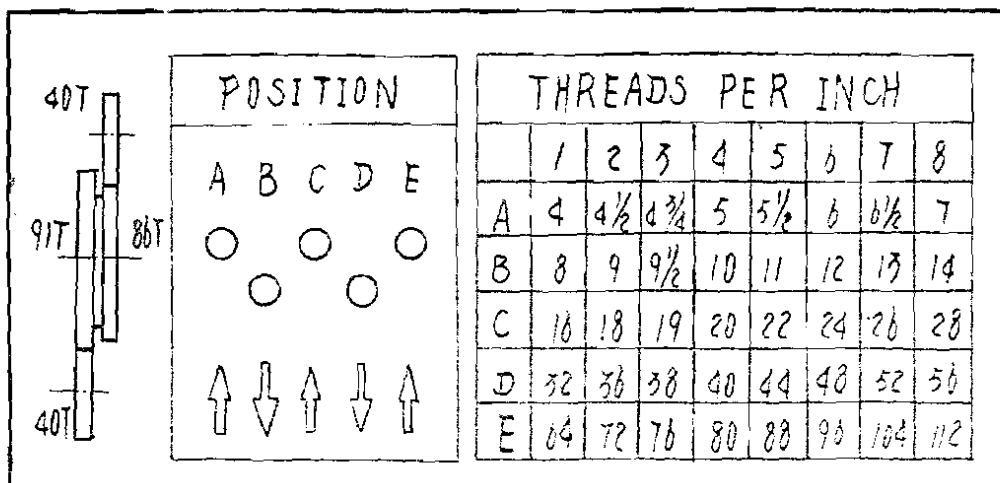


Fig. 15a Inch Thread Pitch list (Metric leadscrew)

COMBINATION OF GEARS		CHANGE GEAR CHART FOR mm SIZE								
		POSITION	PITCH mm							
			1	2	3	4	5	6		
F G	26	ANY	60	A					2.0	
				B					1.0	0.9
				C	0.7				0.5	0.45
				D	0.35				0.25	
				E						
F G	27		60	A						
				B		1.2				
				C		0.6				
				D		0.3				
				E						
86T F G	35		60	A	3.5					
				B	1.75					
				C	0.875	0.8				
				D		0.4				
				E		0.2				
91T F G	45		60	A	4.5	4				3
				B	2.25					1.5
				C	1.25					0.75
				D						
				E						
F G	50		60	A	5					
				B	2.5	2.2				
				C	1.25	1.1				
				D		0.55				
				E						

Fig.17 Metric Thread pitch list(Imperial leadscrew)

		CHANGE GEAR CHART FOR mm SIZE							
91T F 86T G	COMBINATION OF GEARS		POSITION	PITCH mm					
	F	G		1	2	3	4	5	6
26	60	A						2.0	
		B						1.0	0.9
		C	0.7					0.5	0.45
		D	0.35					0.25	
		E							
27	60	A							
		B		1.2					
		C		0.6					
		D		0.3					
		E							
35	60	A	3.5						
		B	1.75						
		C	0.875	0.8					
		D		0.4					
		E		0.2					
45	60	A	4.5	4					3
		B	2.25						1.5
		C	1.25						0.75
		D							
		E							
50	60	A	5						
		B	2.5	2.2					
		C	1.25	1.1					
		D		0.55					
		E							

Fig.17a Metric Thread pitch list(Metric leadscrew)

- * Handwheel (7) is used for manually moving the carriage along the bedway.
- * crossfeed crank (19) is used to manually move the cross slide in or out.
- * Compound slide crank (16) is used to manually move the tool post. The compound is fully adjustable to any angle and is also used for threading or machining an angle on the workpiece.
- * Starting/stopping lever (11) is used to control the spindle direction of rotating, either forward or reverse.
- * Thread lever (9) is used to engage the half nuts when threading.
- * Feed lever (8) is used to engage either the longitudinal or cross feed. This lever has a safety interlock to prevent accidental engagement of the half nuts when the lathe is in feed mode. There are three positions: Center or disengaged position. Upper position engages the power longitudinal feed. Lower position engages the power cross feed.
- * The lead/feed lever (3) is used to change the direction of either longitudinal or cross feed in remaining the same spindle rotation.
- * Thread cutting dial (10) is used to engage the half nuts with the leadscrew in the same thread that has been previously cut. Please note: Use any line of the dial for even pitches of threads; but you must use the same starting line for odd pitches of threads, i.e. when cutting a shaft with 10 T.P.I. engage the half nuts at any number on the thread dial; when cutting an odd pitches, if you start the cut using a 1 or a 3, continue to use the 1 or the 3 until the thread is finished.
- * The clamp lever (18) is used to secured tool post against loosing. Loosing the lever, the tool post can rotate counter-clockwise to change cutting tools.
- * Saddle lock screw (17) is used to firmly clamp saddle to bed way.
- * Compound slide screw (20) is used to clamp compound silde to saddle.

Tailstock

- * The handwheel (12) is used to feed or retreat the quill. Turning the handwheel in counter-clockwise until a full stop is reached will automatically eject the tool being used.
 - * The tailstock clamp lever (13) locks the tailstock to the bedway. To lock, put the lever up. To release, put it down.
 - * The quill lock lever (15) prevent the quill from moving. Before operating the handwheel (12), release the lever. Feeding the quill to desired position. Lock it.
 - * Two set screws (14) on either side of the base is used to offset the tailstock. After taper adjustment is made, retighten both screws.
5. See the Fig. 18. Adjust the clearance of cross feed nuts on the saddle as

following

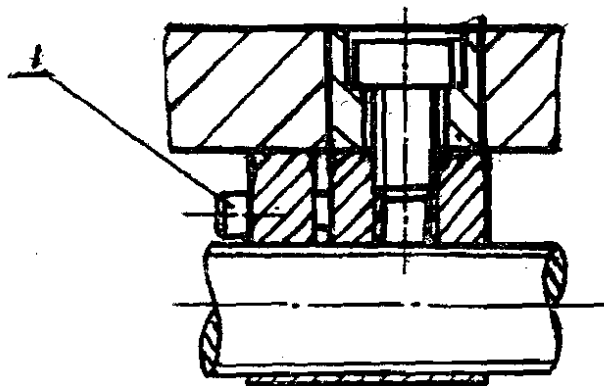


Fig. 18 Adjust the clearance of cross feed nut

rotate the screw (1) until the slide moves with a slight drag.

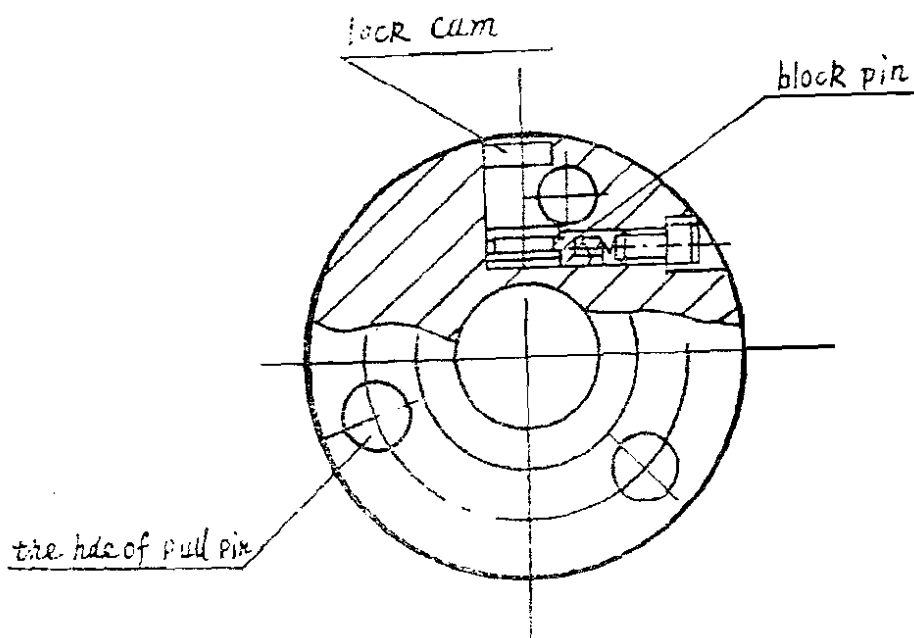


Fig. 19 chuck or face plate lock structure

6. See the Fig. 19, the Mounting and detaching of chuck or face plate. The connection between spindle and chuck or face plate is made by type D cam lock structure according to china rational Standard GB5900.3-86 (similar to

ISO702/ II -1975)

when mounting, put the three pull pin of chuck or face plate into the three holes (See Fig. 19) on the spindle face end. Then turn the three cams (See, Fig. 19) with the help of square head wrench when turning the cams clockwise the chuck or face plate will be locked, when turning the cams counter-clockwise to certain point, the chuck or face plate can be detached.

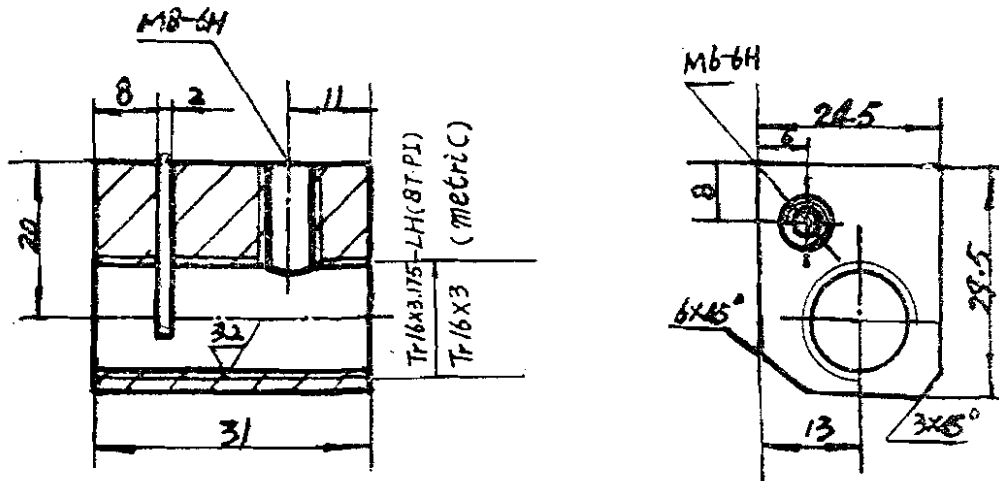
LATHE MAINTENANCE

1. Before operating the machine, check the oil level and lubricate all sliding and rotating parts according to "Lubricate Chart" (Fig. 6)
2. Always clean every sliding surfaces to prevent the chips. Often check the felt element on each end of the saddle. If being damaged, wash or change it. After operating, clean every parts of the machine and oil each slide surfaces, leadscrew, feed rod etc. to avoid rusting.
3. Periodically wash headstock, gear box, apron and change oil.
4. Keep oil from falling on the motor and v-belt. Periodically check and adjust v-belt.
5. Don't change every gear levers when the spindle is running to prevent damaging gears. If unable to change, you can turn the spindle with hand.
6. When changing spindle rotating direction, it can be accomplished with the help of forward and reverse rotation of motor. It is necessary first to stop spindle. Don't directly change the motor rotating direction before spindle stopped.
7. When using steady rest or follower rest, frequently oil the touching positions between slide pieces and workpiece.
8. Protect the spindle nose, short taper, taper bore of spindle from roughing and impacting on the working accuracy.
9. Finding the machine damaged, repair it immediately.

DAMAGEABLE PARTS

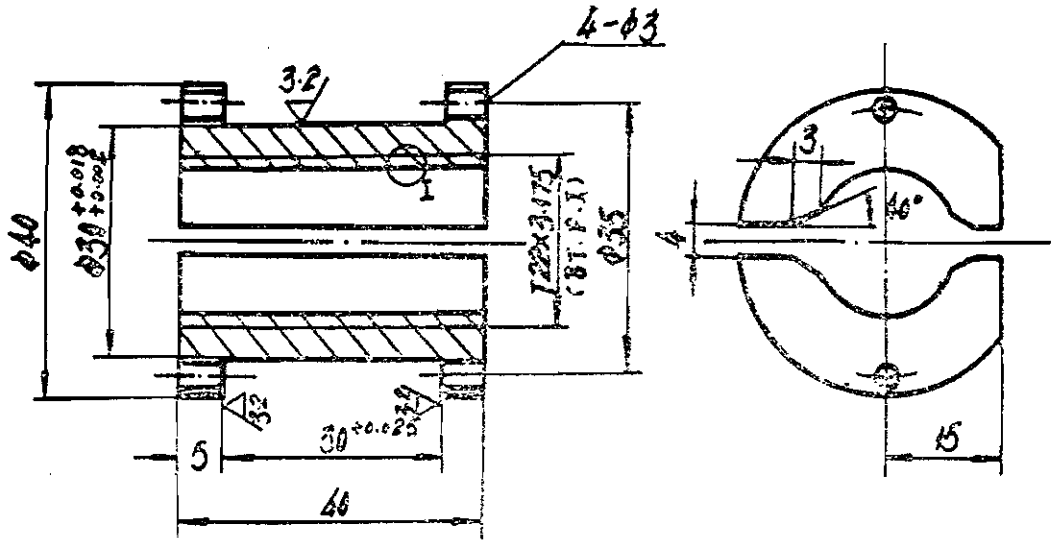
No	Name	Material	Q'ty	Notes
1	Cross feed nut	ZCuSn ₅ Pb ₅ Zn ₅	1	CQ6230-07-33
2	Half nut	ZCuSn ₅ Pb ₅ Zn ₅	1	CQ6230-06-03

the rest 6.3

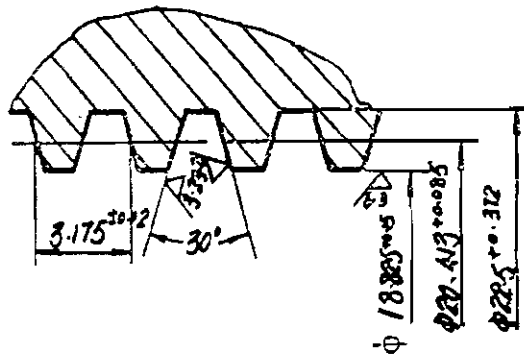


Appendix Fig.1 cross feed nut
Material ZCuSn₅ Pb₅Zn₅

the rest $\nabla 12.5$



$\frac{I}{M4:1}$



Appendix Fig. 2 half nut Material ZQSn 6-6-3

PARTS LIST

Head Stock.....	1
Change Gear.....	5
Gear Box.....	7
Apron.....	10
Saddle.....	13
Tool Post.....	15
Tail Stock.....	17
Bed And Drive Assembly.....	19
Control Switch Assembly.....	21
Bed Assembly.....	23

Head Stock

Index NO.	Part NO.	Description	Size	Qty
1	GB70-85	Screw	M6×20	4
2	04-39	Cover		1
3	04-41	Oil Seal		1
4	04-40	Spindle		1
5	C0632-04231	Camlock		3
6	GB1096-79	Key	8×80	1
7	04-56	Key		1
8	GB67-85	Screw	M3×8	2
9	C0632-04230	Look Pin		3
10	GB2089-80	Spring	0.6×4×22	3
11	GB70-85	Screw	M8×16	3
12	GB297-84	Bearing	D7212	1
13	04-36	Gear		1
14	04-35	Gear		1
15	04-34	Gear		1
16	GB894.1-86	Circlip	58	1
17	04-57a	Gear		1
18	GB297-84	Bearing	D7211	1
19	04-54	Nut		2
20	04-58	Oil Seal		1
21	04-55a	Covew		1
22	GB70-85	Screw	M8×20	4
23	GB70-85	Screw	M6×12	5
24	04-32	Cover		1
25	04-31	Oil Seal		1
26	GB208-89	Bearing	60304	1
27	04-61	Shaft		1
28	GB1096-79	Key	8×180	1
29	04-29a	Gear		1
30	GB1096-79	Key	5×18	2
31	04-28	Gear		1
32	04-27a	Gear		1
33	GB894.1-86	Circlip	45	1
34	04-24a	Gear		1
35	04-26	Gear		1
36	04-23a	Gear		1
37	GB276-89	Bearing	104	1
38	04-59	Oil Seal		1
39	04-60	Cover		1
40	GB70-85	Screw	M8×20	1
41	04-62	Washer		1

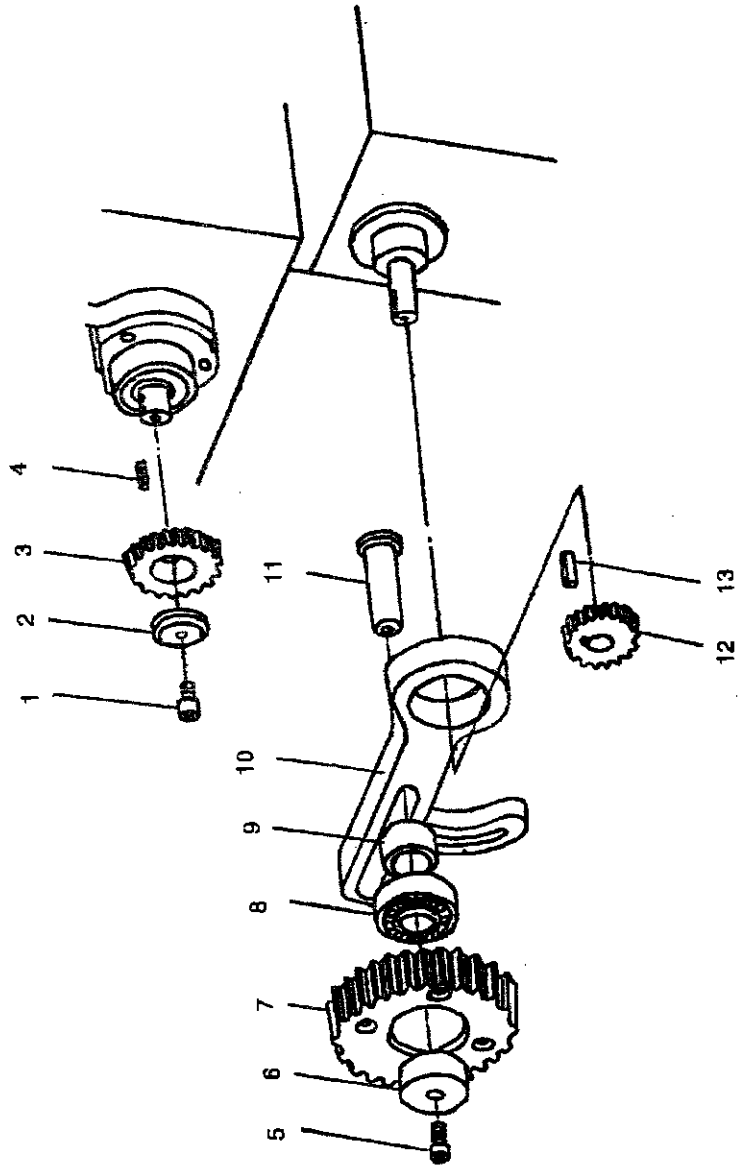
Head Stock

Index NO.	Part NO.	Description	Size	Qty
42	04-18	Pulley		1
43	GB70-85	Screw	M6×12	4
44	04-19a	Cover		1
45	04-20	Oil Seal		1
46	04-21	Gear		1
47	04-22	Gear		1
48	04-25	Gear		1
49	04-63	Shaft		1
50	GB1096-79	Key	C5×30	1
51	GB1096-79	Key	5×80	1
52	GB276-89	Bearing	104	2
53	GB70-85	Screw	M6×12	2
54	04-44	Washer		2
55	GB1096-79	Key	C5×20	1
56	04-45	Gear		1
57	04-49	Shaft		1
58	GB894.1-86	Circlip	20	2
59	GB1096-79	Key	C5×8	1
60	GB278-89	Bearing	60104	2
61	04-46	Collar		1
62	GB893.1-86	Circlip	42	1
63	04-47	Cover		1
64	04-50	Oil Seal		1
65	HC4-692-67	Oil Seal	PD20×45×10	2
66	04-48	Gear		1
67	GB70-85	Screw	M6×12	3
68	GB3452.1-82	Oil Seal	17×2.65	1
69	GB894.1-86	Circlip	20	1
70	GB78-85	Screw	M8×6	1
71	04-51	Shaft		1
72	GB276-89	Bearing	204	1
73	GB893.1-86	Circlip	47	2
74	04-52	Gear		1
75	GB827-86	Rivet	2×6	6
76	04-11	Signboard		1
77	Q/ZB285.3	Screw	ZG3/8'	1
78	GB70-85	Screw	M6×25	6
79	04-06	Oil Seal		1
80	04-43	Headstock		1
81	GB77-85	Screw	M6×8	2
82	GB79-85	Screw	M6×8	2
83	04-07	Cover		1
84	CL6132-04-06	Oil Cap		1

Head Stock

Index NO.	Part NO.	Description	Size	Qty
85	GB4141.14-84	Handle Cap	M8×50	2
86	04-03a	Handle		2
87	04-66	Signboard		2
88	GB77-85	Screw	M8×3	3
89	GB2089-80	Spring	1.2×4.8×27	3
90	04-05a	Boss		2
91	GB308-79	Ball	6	3
92	GB80-85	Screw	M6×20	2
93	GB1096-79	Key	5×14	1
94	04-67	Gear		2
95	GB6170-86	Nut	M8	3
96	GB78-85	Screw	M6×16	3
97	04-15a	Shaft Lever		2
98	GB894.1-86	Circlip	12	3
99	04-12	Shift Fork		2
100	GB3452.1-82	Oil Seal	11.2×2.65	5
101	04-14a	Shaft		2
102	GB80-85	Screw	M6×16	2
103	04-65	Gear		2
104	GB879-86	Pin	5×25	2
105	04-03	Handle		1
106	GB879-86	Pin	5×40	1
107	04-05	Boss		1
108	04-17	Collar		1
109	04-04	Shaft		1
110	04-64	Collar		1
111	04-02	Shaft Lever		1
112	04-01	Shaft Fork		1
113	GB1160-74	Oil Window	12	1
114	GB70-85	Screw	M12×25	2
115	GB70-85	Screw	M8×30	2

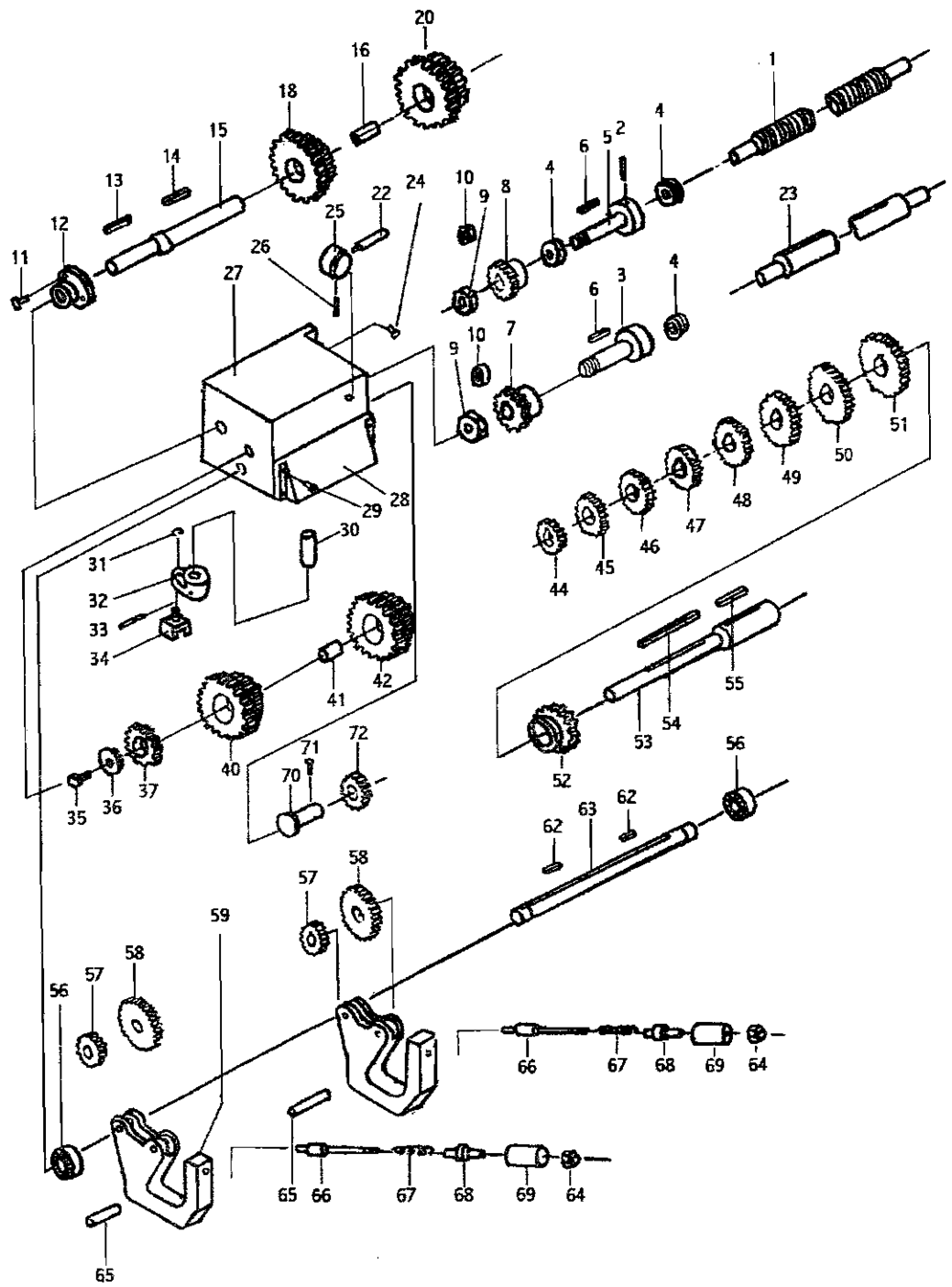
Change Gear



Change Gear

Index NO.	Part NO.	Description	Size	Qty
1	GB70-85	Screw	M6×12	1
2	04-44	Washer		1
3	04-48	Gear		1
4	GB1096-79	Key	5×30	1
5	GB70-85	Screw	M6×12	1
6	05-21	Washer		1
7	05-62	Gear		1
8	GB278-89	Bearing	103	1
9	05-61	Collar		1
10	05-30	Quadrant		1
11	05-64	Shaft		1
12	05-32	Gear		1
13	GB1096-79	Key	5×30	1

Gear Box



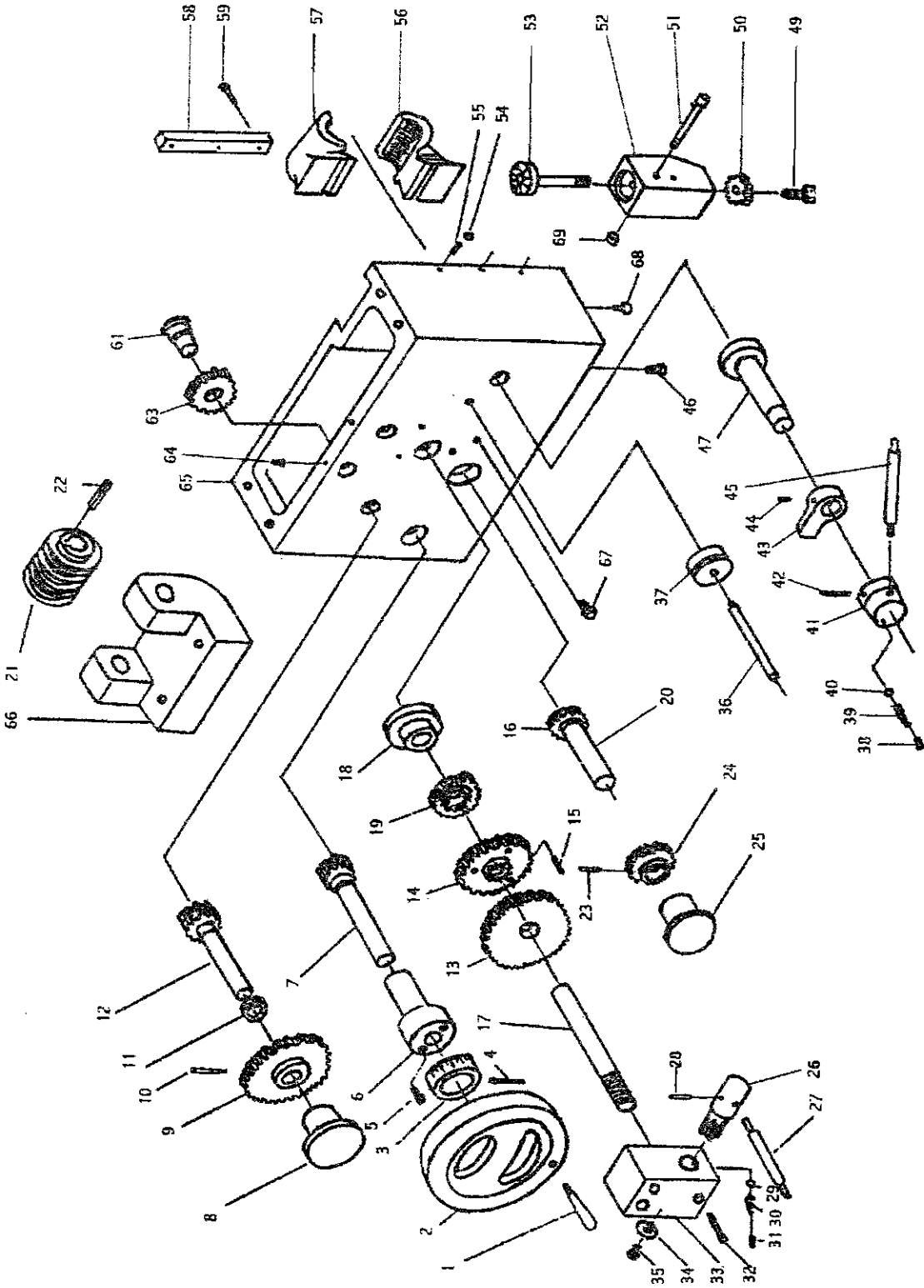
Gear Box

Index NO.	Part NO.	Description	Size	Qty
1	01-05	Lead Screw		1
2	GB879-86	Pin	5×35	2
3	05-47	Shaft		1
4	GB301-84	Bearing	8103	3
5	05-28	Shaft		1
6	GB1096-79	Key	5×14	2
7	05-04a	Gear		1
8	05-26	Gear		1
9	GB6172-86	Nut	M12	4
10	05-25	Washer		2
11	GB70-85	Screw	M6×16	3
12	05-31	Cover		1
13	GB1096-79	Key	5×30	1
14	GB1096-79	Key	5×10	1
15	05-22	Shaft		1
16	05-24	Collar		1
18	05-23	Gear		1
20	05-15	Gear		1
22	04-03	Lever		1
23	01-06	Feed Rod		1
24	GB5738-86	Screw	M10×30	2
25	04-05	Boss		1
26	GB879-86	Pin	5×40	1
27	05-01	Gear Box Casting		1
28	05-29	Plate		1
29	GB70-85	Screw	M6×16	1
30	05-39	Shaft		1
31	GB894-86	Circlip	12	1
32	05-40	Shift Pivot		1
33	GB879-86	Pin	4×30	1
34	05-41	Shift Fork		1
35	GB70-85	Screw	M6×12	1
36	05-21	Washer		1
37	05-18	Gear		1
40	05-15	Gear		1
41	05-17	Collar		2
42	05-15	Gear		1

Gear Box

Index NO.	Part NO.	Description	Size	Qty
44	05-12	Gear		1
45	05-11	Gear		1
46	05-10	Gear		1
47	05-09	Gear		1
48	05-08	Gear		1
49	05-07	Gear		1
50	05-06	Gear		1
51	05-05	Gear		1
52	05-27	Gear		1
53	05-20	Shaft		1
54	GB1096-79	Key	5×75	1
55	05-42	Key		1
56	GB276-89	Bearing	7000102	2
57	05-13	Gear		2
58	05-49	Gear		2
59	05-52	Shift Lever		2
62	05-14	Key		2
63	05-03	Shaft		1
64	GB923-86	Nut	M6	2
65	05-51	Shaft		2
66	05-64	Shaft		2
67	GB2089-88	Spring	1×8×47	2
68	05-53	Bushing		2
69	05-55	Handle		2
70	05-44	Shaft		1
71	GB77-85	Screw	M8×8	2
72	05-45	Gear		1

Apron



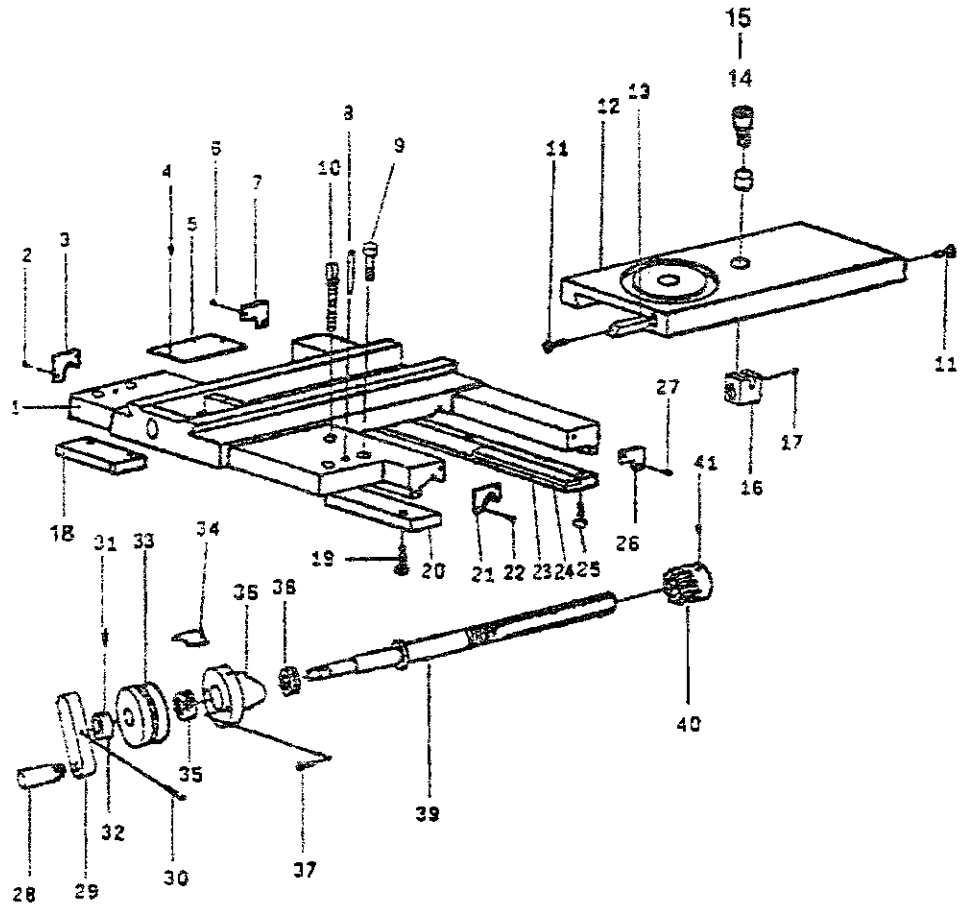
Apron

Index NO.	Part NO.	Description	Size	Qty
1	C0632-07207	Handle		1
2	06-32	Hand Wheel		1
3	06-33	Index Ring		1
4	GB879-86	Pin	5×50	1
5	GB70-85	Screw	M6×20	2
6	06-31	Bracket		1
7	06-30	Gear		1
8	06-26	Bushing		1
9	GB879-86	Pin	5×30	1
10	06-29	Gear		1
12	06-28	Gear		1
13	06-12	Gear		1
14	06-13	Gear		1
15	GB119-86	Pin	5×33	3
16	06-17c	Gear		1
17	06-15	Shaft		1
18	06-16	Bushing		1
19	06-14	Gear		1
20	06-18c	Shaft		1
21	06-08	Worm		1
22	GB1096-79	Key	B5×35	1
23	GB879-86	Pin	5×25	1
24	06-19	Gear		1
25	06-20a	Bushing		1
26	06-39	Gear		1
27	06-38	Handle		1
28	GB879-86	Pin	5×25	1
29	GB308-89	Ball	6	1
30	GB2089-80	Spring	1×4. 5×6	1
31	GB77-85	Screw	M8×10	1
32	GB70-85	Screw	M6×25	3
33	06-37	Boss		1
34	06-35	Washer		1
35	GB70-85	Screw	M6×10	1
36	06-24	Shaft		1
37	06-25	Safety Shifter		1
38	GB77-85	Screw	M8×6	1
39	GB2089-80	Spring	1×4. 5×6	1
40	GB308-89	Ball		6
41	06-42	Boss		1

Apron

Index NO.	Part NO.	Description	Size	Qty
42	GB879-86	Pin	5×40	1
43	06-21	Safety Catch		1
44	GB71-85	Screw	M5×12	1
45	06-41	Handle		1
47	06-23	Shaft		1
48	GB5780-86	Screw	M8×30	2
49	GB70-85	Screw	M6×14	1
50	06-04	Gear		1
51	GB70-85	Screw	M6×65	1
52	06-05	Thread Dial Body		1
53	06-06	Shaft		1
54	GB6170-86	Nut	M6	3
55	GB77-85	Screw	M6×16	3
56	06-03	Half Nut		1
57	06-02	Bracket		1
58	GB5780-86	Screw	M6×25	1
59	06-22	Gib		1
61	06-11	Shaft		1
63	06-10	Gear		1
64	GB78-85	Screw	M6×6	1
65	06-01	Apron Casting		1
66	06-09	Bracket		1
67	06-40	Limit Block		2
68	Q/ZB220.2-77	Screw	M10×1×20	1
69	06-07	Bushing		1

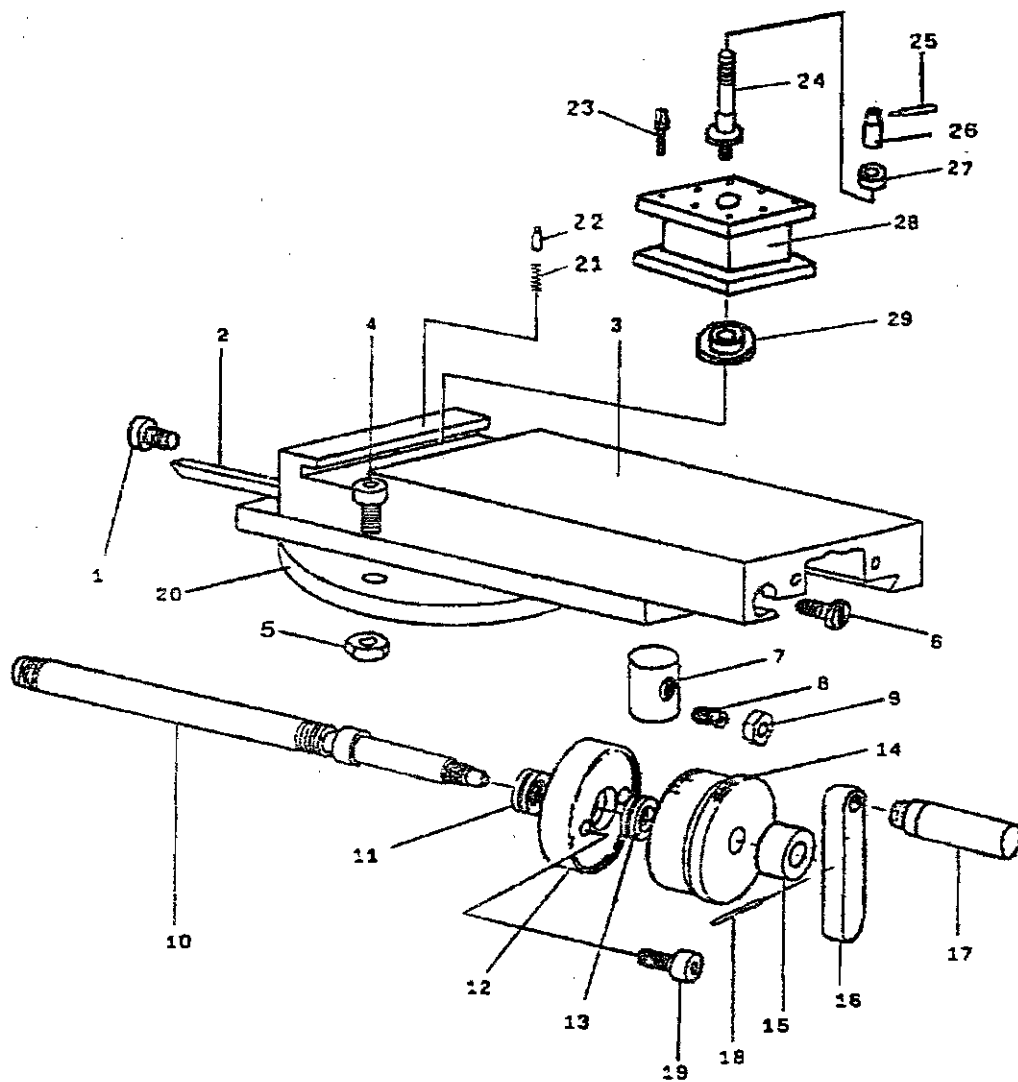
Saddle



Saddle

Index NO.	Part NO.	Description	Size	Qty
1	07-11	Saddle		1
2	GB65-85	Screw	M5×14	2
3	07-10	Wiper		1
4	GB819-85	Screw	M4×10	2
5	07-39	Cover		1
6	GB65-85	Screw	M5×14	2
7	07-12	Wiper		1
8	GB117-86	Pin	A5×45	2
9	GB70-85	Screw	M10×30	4
10	07-02	Screw		1
11	07-49	Screw		2
12	07-32	Tool Post		1
13	07-27	Gib		1
14	07-34	Bushing		1
15	GB70-85	Screw	M8×12	1
16	07-33	Nut		1
17	GB78-85	Screw	M6×14	1
18	07-50	Slide Plate		1
19	GB5783-86	Screw	M8×25	4
20	07-51	Slide Plate		1
21	07-47	Wiper		1
22	GB65-85	Screw	M5×14	2
23	07-04a	Slide Plate		2
24	07-01a	Slide Plate		1
25	GB5783-86	Screw	M8×25	4
26	07-12	Wiper		1
27	GB65-85	Screw	M5×14	2
28	07-31a	Handle		1
29	07-43	Bracket		1
30	GB879-86	Pin	4×19	1
31	GB77-85	Screw	M6×8	1
32	07-48	Nut		1
33	07-41	Index Ring		1
34	07-09	signboard		1
35	GB301-84	Bearing	8102	1
36	07-40	Bracket		1
37	GB70-85	Screw	M6×25	2
38	GB301-84	Bearing	8102	1
39	07-37	Screw		1
40	07-36	Gear		1
41	GB78-85	Screw	M6×8	1

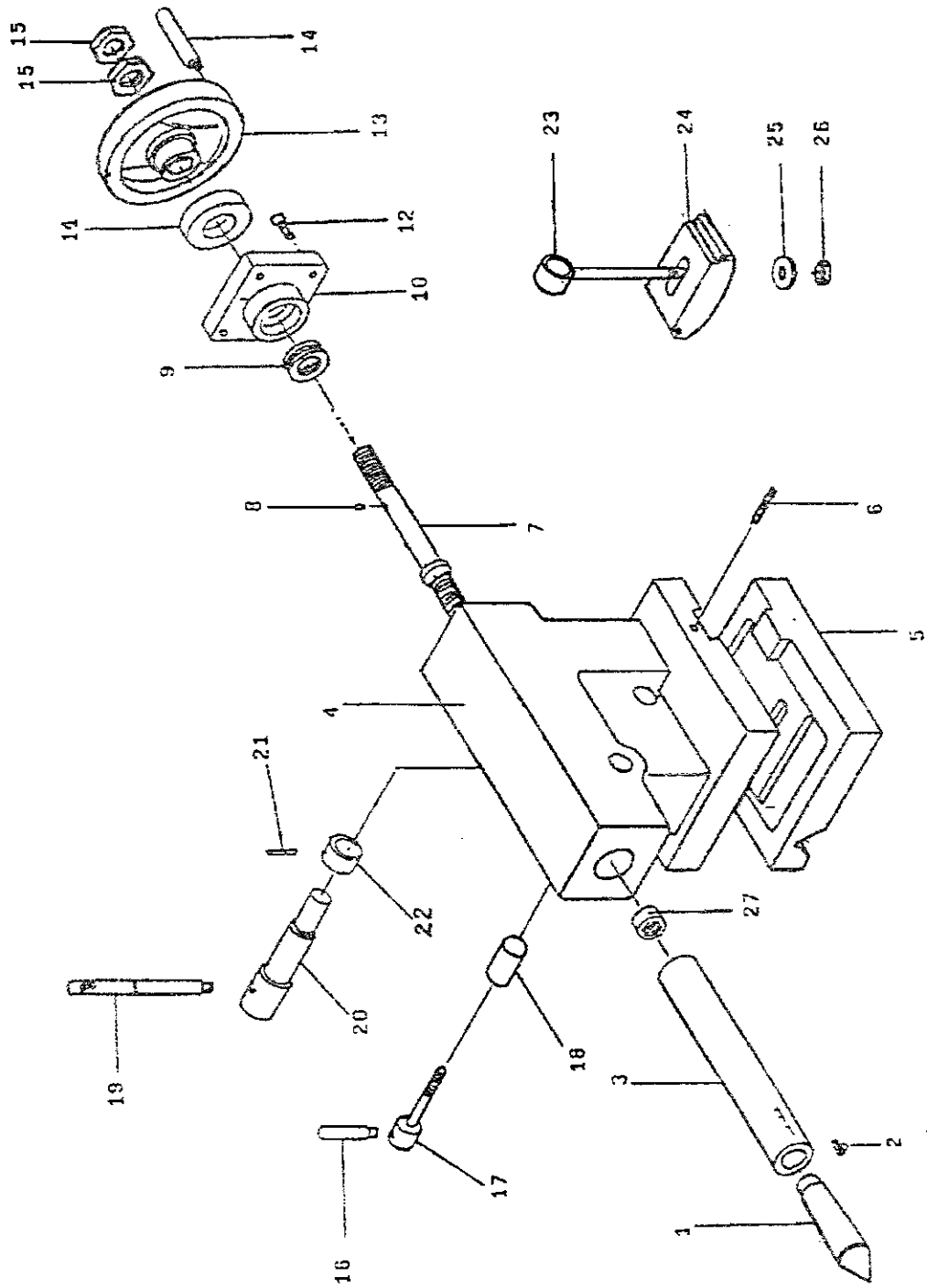
Tool Post



TOOL POST

Index NO.	Part NO.	Description	Size	Qty
1	07-07	Screw		1
2	07-38	Gib		1
3	07-24	Compound		1
4	GB70-85	Screw	M8×30	2
5	CL6132-07-07	Clamp Nut		2
6	07-07	Screw		1
7	07-26	Nut		1
8	GB77-85	Screw	M6×15	
9	GB6172-86	Nut	M6	1
10	07-25	Screw		1
11	GB301-84	Bearing	8101	1
12	07-28	Bracket		1
13	GB301-84	Bearing	8101	1
14	07-29	Index Ring		1
15	07-48	Nut		1
16	07-30	Bracket		1
17	07-31	Handle		1
18	GB879-86	Pin	3×15	1
19	GB70-85	Screw	M6×25	1
20	07-14	Compound		1
21	GB2089	Sping	1×5×12	1
22	07-16	Pin		1
23	07-22	Screw		8
24	07-18	Shaft		1
25	07-21	Handle		1
26	07-20	Boss		1
27	07-19	Collar		1
28	07-23	Tool Post		1
29	07-17	Nut		1

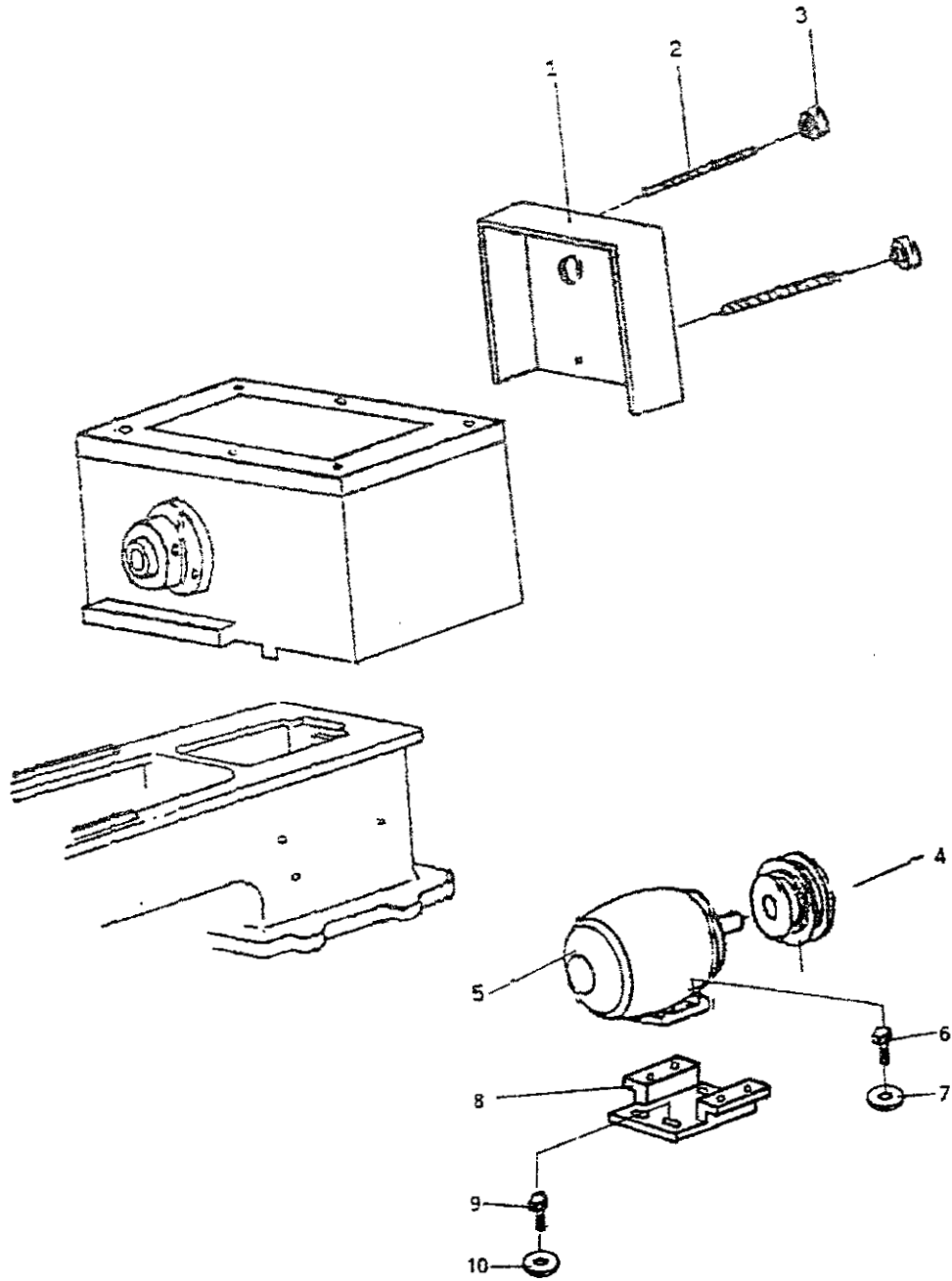
Tail Stock



Tail Stock

Index NO.	Part NO.	Description	Size	Qty
1	DG3	Center		1
2	GB77-85	Screw	M8×30	1
3	08-01a	Quill		1
4	08-11	Tail Stock		1
5	08-12	Base		1
6	GB79-85	Screw	M10×50	2
7	08-02	Screw		1
8	GB119-86	Pin	B4×10	1
9	08-04	Bracket		1
10	GB301-84	Bearing	8101	1
11	08-05	Index Ring		1
12	GB70-85	Screw	M6×20	4
13	08-06	Hand Wheel		1
14	08-07	Handle		1
15	GB6172-86	Nut	M10	2
16	08-17	Handle		1
17	08-16	Lock Screw		1
18	08-18	Lock Shaft		1
19	08-09	Handle		1
20	08-08	Shaft		1
21	GB879-86	Pin	5×20	1
22	08-10	Collar		1
23	08-14	Shaft		1
24	08-13	Base Shoe Block		1
25	GB95-85	Washer	12	1
26	GB6172-86	Nut	M12	1
27	08-03	Nut		1

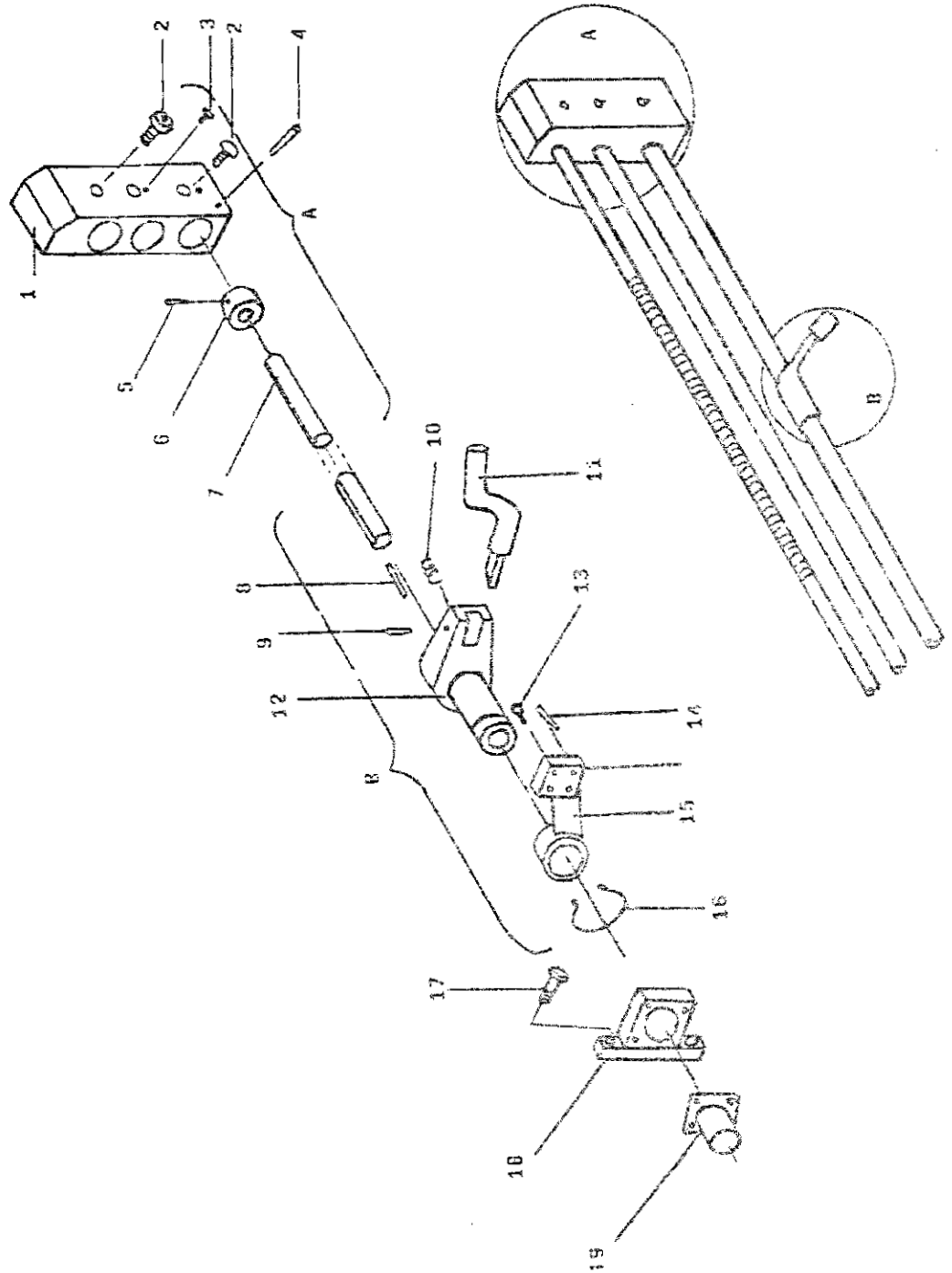
Bed And Drive Assembly



Bed And Drive Assembly

Index NO.	Part NO.	Description	Size	Qty
1	04-10	Cover		1
2	04-09	Screw		2
3	01-01	Nut		2
4	01-03	Pulleg		1
5	Y90S-4TH	Motor		1
6	GB5783-86	Screw	M10×30	4
7	GB93-85	Washer	12	2
8	01-14	Plate		1
9	GB5783-86	Screw	M10×30	3
10	GB93-85	Washer	12	3

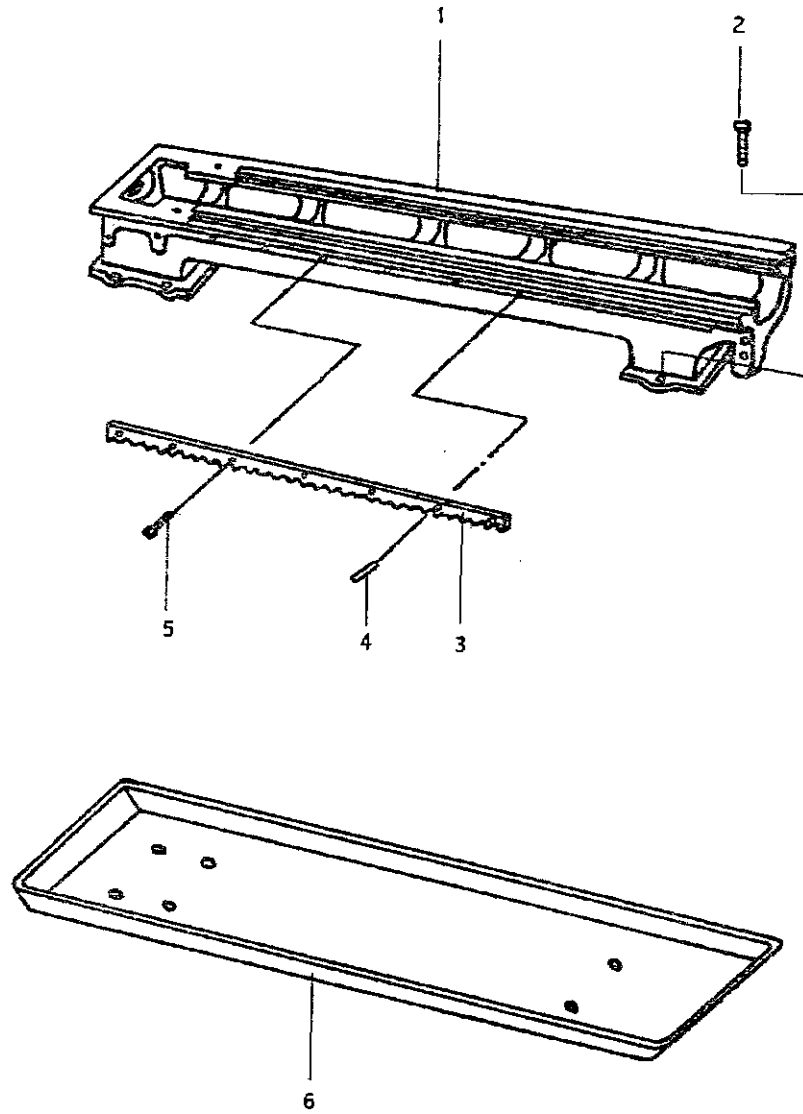
Control Switch Assembly



Control Switch Assembly

Index NO.	Part NO.	Description	Size	Qty
1	01-12	Bracket		1
2	GB70-85	Screw	M10×60	2
3	GB1155-79	Oil Cup	6	2
4	GB117-86	Pin	6×55	2
5	GB78-85	Screw	M6×8	1
6	01-18	Collar		1
7	01-10	Rod		1
8	01-17	Key		1
9	GB879-86	Pin	4×20	1
10	GB2089-80	Spring	1×8×14	1
11	01-16	Handle		1
12	01-20	Bracket		1
13	GB70-85	Screw	M6×14	2
14	GB879-86	Pin	5×25	2
15	01-15	Bracket		1
16	GB894.1-86	Circlip	32	1
17	GB70-85	Screw	M8×25	1
18	12-03	Bracket		1
19	HZSB-10	Switch		1

Bed Assembly



Bed Assembly

Index NO.	Part NO.	Description	Size	Qty
1	01-04	Lathe Bed		1
2	GB5783-86	Screw	M12×40	6
3	01-09 01-11	Rack Gear		1
4	GB879-86	Pin	5×20	6
5	GB70-85	Screw	M6×14	6
6	01-21	Chip Pan		1