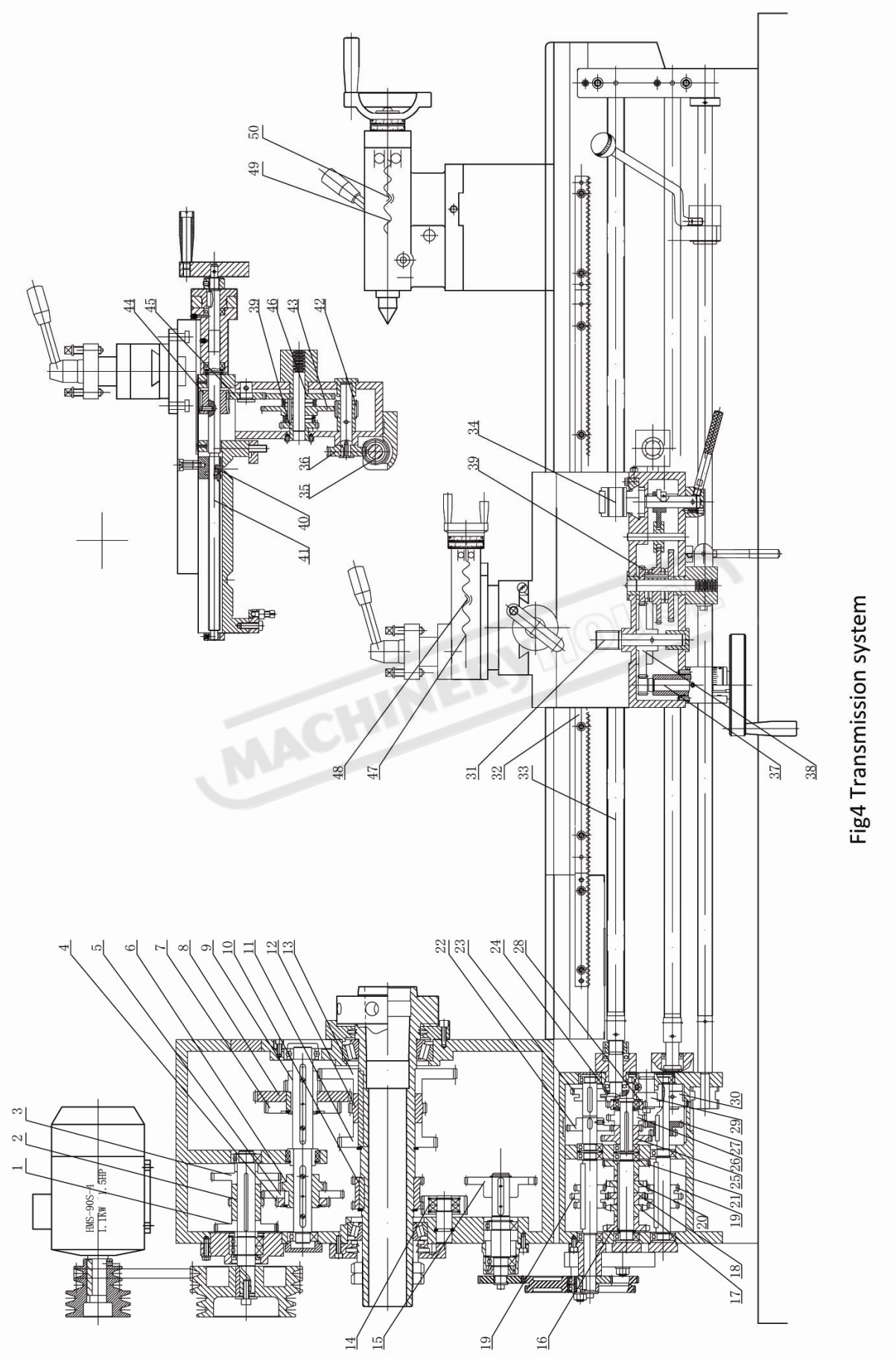


Fig4 Transmission system

TRANSMISSION SYSTEM & PARTS

TRANSMISSION SYSTEM (SEE FIG4)
TABLE 1

Part	NO.	NAME	Teeth no.	Modulus	Pressure Angle	Material	Note
Headstock	1	Gear	42	M2	20°	45	2013
	2	Gear	23	M2	20°	45	2018
	3	Gear	47	M2	20°	45	2019
	4	Gear	36	M2	20°	45	2021
	5	Gear	55	M2	20°	45	2020
	6	Gear	31	M2	20°	45	2022
	7	Gear	45	M2	20°	45	2016
	∞	Gear	58	M2	20°	45	2015
	9	Gear	21	M2	20°	45	2017
	10	Duplicate gear	48	M2	20°	45	2008
	11	Gear	59	M2	20°	45	2029
	12	Gear	46	M2	20°	45	2030
	13	Gear	83	M2	20°	45	2031
	14	Duplicate gear	30	M2	20°	45	2032
	15	Gear	48	M2	20°	45	2026
Gear box	16	Gear	24	M2.25	20°	45	3029B
	17	Gear	16	M2.75	20°	45	3031B
	18	Gear	18	M2.75	20°	45	3032B
	19	triple gear	18	M2.25 M2.75 M2.25	20°	45	3005B
	20	Gear	20	M2.75	20°	45	3003B
	21	Gear	28	M2.25	20°	45	3002B
	22	Gear	27	M2.25	20°	45	3027C
	23	Gear	21	M2.25	20°	45	3025B
	24	Gear	21	M2.25	20°	45	3018C
	25	Duplicate gear	30 18	M2.25	20°	45	3026C
	26	Gear	22	M2.25	20°	45	3007C
	27	Duplicate gear	15 22	M2.25	20°	45	3006C
	28	Gear	23	M2.25	20°	45	3009B
	29	Gear	17	M2.25	20°	45	3016C

	30	Gear	15	M2.25	20°	45	3014C

TRANSMISSION SYSTEM & PARTS

TRANSMISSION SYSTEM (SEE FIG4) RENEWAL TABLE

Part	NO.	NAME	Teeth	Modulus	Pressure Angle	Material	Note
Carriage box and saddle	31	Gear	11	M2	20°	45	4028
	32	Rack gear		M2	20°	45	1009, 1010
	33	Guide screw	Single head	3mm or8T.P.I		45	1005A
	34	Half nut	Single head	3mm or 8T.P.I		ZQSn6-6-3	4003A
	35	Worm	Single head	M2	20°	45	4008
	36	Worm gear	24	M2	20°	ZQSn6-6-3	4017
	37	shaft	12	M2	20°	45	4030
	38	Gear	50	M2	20°	45	4029
	39	Gear	25	M2	20°	45	4014
	40	Guide screw nut	Single head	2mmor10 T.P.I		ZQSn6-6-3	5104A
	41	Guide screw	Single head	2mmor10 T.P.I		45	5103A
	42	Gear	14	M2	20°	45	4019
	43	Gear	51	M2	20°	45	4013
	44	Gear	19	M2	20°	45	5127
	45	Gear	25	M2	20°	45	4010
	46	Gear	48	M2	20°	45	4012
	47	Guide screw	Single head	2mmor10 T.P.I		45	5011A
	48	Screw nut	Single head	2mmor10 T.P.I		ZQSn6-6-3	5012A
Tail stock	49	Guide screw of tailstock	Single head	2mmor10 T.P.I		45	6006A
	50	screw nut of tailstock	Single head	2mmor10 T.P.I		ZQSn6-6-3	6012A
Change gears	1	Gear	21	M1.25	20°	45	3093
	2	Gear	22	M1.25	20°	45	3076C
	3	Gear	24	M1.25	20°	45	2002C
	4	Gear	26	M1.25	20°	45	3075C
	5	Gear	28	M1.25	20°	45	3094
	6	Gear	38	M1.25	20°	45	3090C
	7	Gear	41	M1.25	20°	45	3095
	8	Gear	44	M1.25	20°	45	3077C
	9	Gear	47	M1.25	20°	45	3096
	10	Gear	48	M1.25	20°	45	3039C

	11	Gear	52	M1.25	20°	45	3078C
	12	Duplicate gear	120/127	M1.25	20°	45	3038C

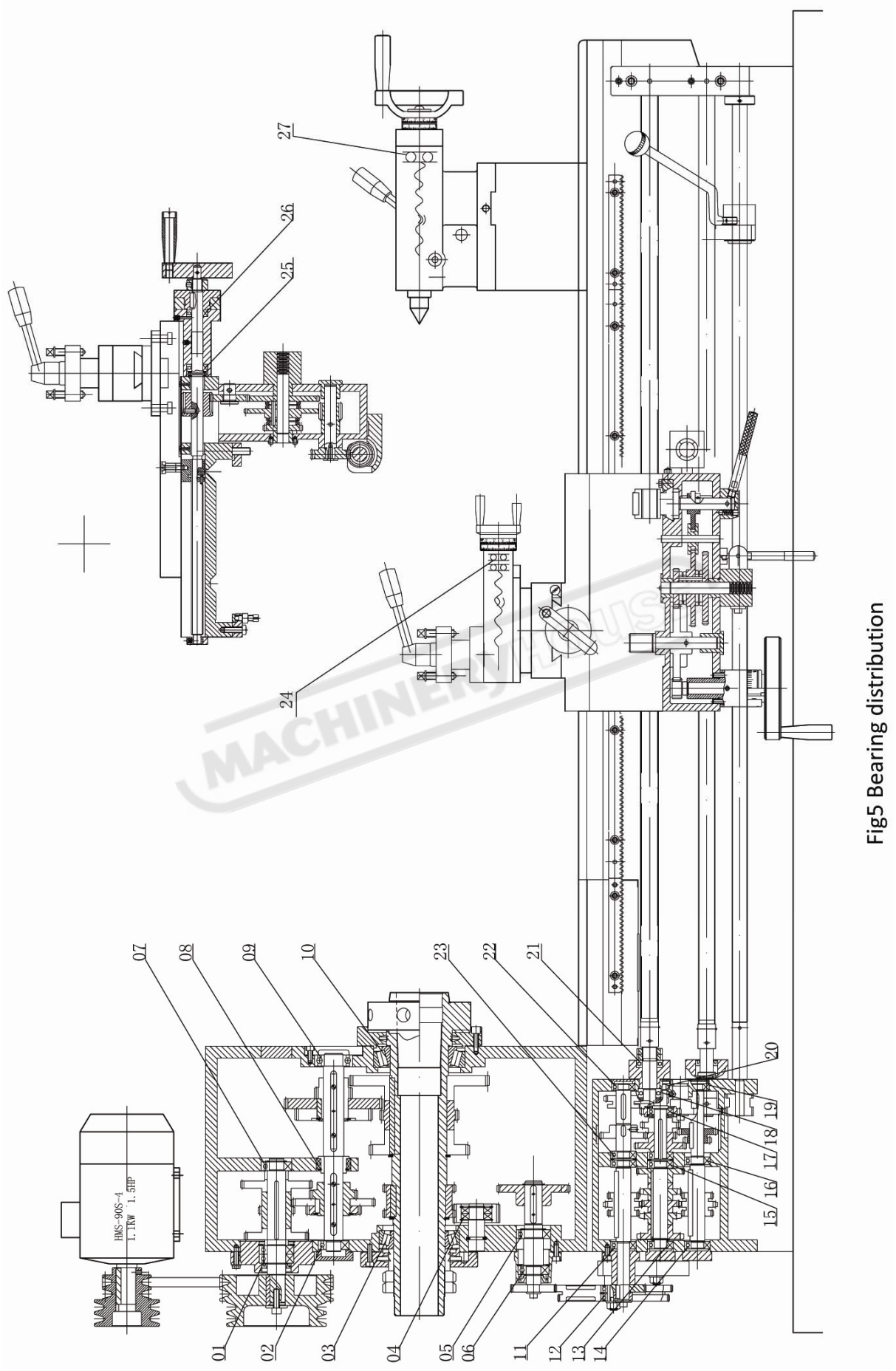


Fig5 Bearing distribution

BEARING DISTRIBUTION AND LIST

BEARING LIST (SEE FIG 5) TABLE 2

NO.	Name	Note	Specification	Qty.	Parts
1	groove ball bearing	6005	25×47×12	2	headstock
2	groove ball bearing	6004	20×42×12	1	
3	conical roller bearing	32014P5	70×140×25	1	
4	groove ball bearing	16004	20×42×8	2	
5	groove ball bearing	6005	25×47×12	1	
6	groove ball bearing	6004	20×42×12	1	
7	groove ball bearing	6004	20×42×12	1	
8	groove ball bearing	61807	35×47×7	2	
9	groove ball bearing	6205	25×52×15	1	
10	conical roller bearing	32016P5	80×125×29	1	
11	groove ball bearing	6003	17×35×10	1	gear box
12	groove ball bearing	6003Z	17×35×10	2	
13	groove ball bearing	6003	17×35×10	1	
14	groove ball bearing	6003	17×35×11	1	
15	groove ball bearing	6003	17×35×12	2	
16	groove ball bearing	6003	17×35×13	1	
17	groove ball bearing	16003	17×35×8	1	
18	thrust ball bearing	51103	17×30×9	1	
19	groove ball bearing	6002	15×32×9	1	
20	groove ball bearing	6002	15×32×10	1	
21	thrust ball bearing	51104	20×35×10	1	
22	groove ball bearing	6002	15×32×9	1	
23	groove ball bearing	6003	17×35×11	1	
24	thrust ball bearing	51101	12×26×9	2	saddle
25	thrust ball bearing	51102	15×28×9	1	
26	thrust ball bearing	51102	15×28×10	1	
27	thrust ball bearing	51101	12×26×9	1	tailstock

Table 3

NO.	LOCATION	HOW	HOW MUCH	HOW LONG TO FILL UP	OIL QUALITY
1	HEADSTOCK	Remove the screws of filler on left side up	L	Onece first month,then every two month	NO.15 SY1229
2	GEAR BOX	Open top cover remove the screws of filler	L	Once a month	N0.22 L-AN GB443-1989
3	SADDLE	open oil plug	L	Once a day	N0.22 L-AN
4	CHANGE GEAR	open the cover	Approp	Once a day	N0.22 L-AN
5	BEDWAYS	By oil gun	Approp	Twice a day	N0.22 L-AN
6	TOOL POST,TOP SLIDE,GUIDE SCREW	By oil gun	Approp	Twice a day	N0.22 L-AN
7	LEADSCREW ,FEED ROD, SWITCH ROD	By oil gun	Approp	Once a day	N0.22 L-AN
8	HALF NUT	By oil gun	Approp	Once a day	N0.22 L-AN
9	TAILSTOCK	By oil gun	Approp	Once a day	N0.22 L-AN
10	BRACKET	open oil plug	L	Twice a day	N0.22 L-AN

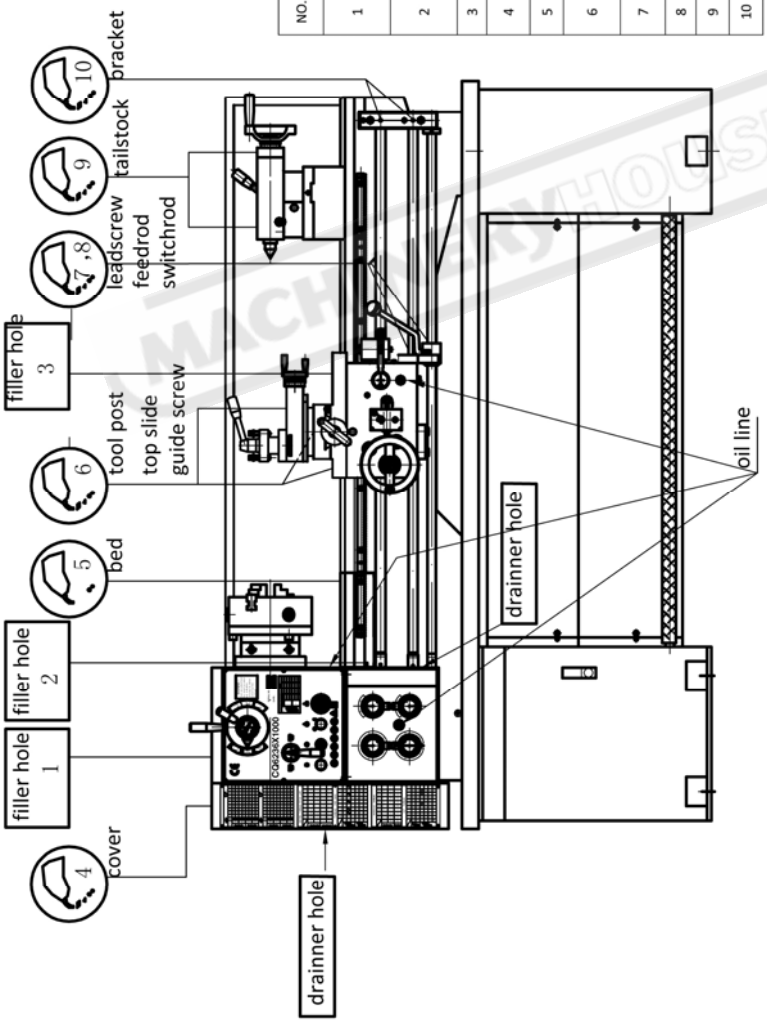


Fig 6 Lubrication

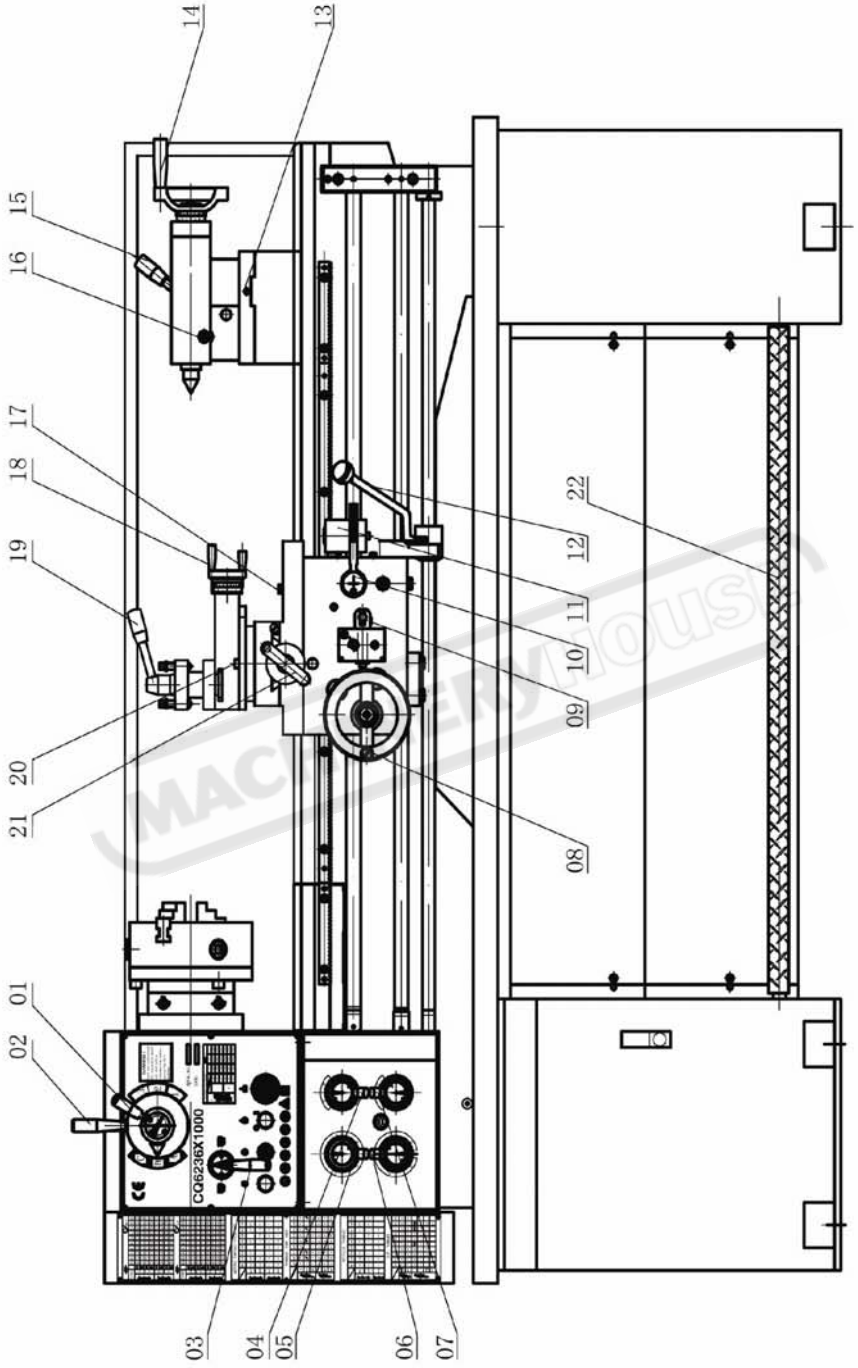


Fig 7 Handles

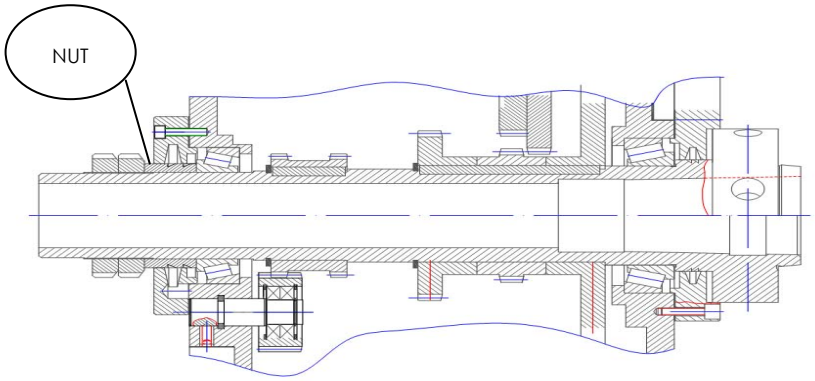
Handles and use

Table 5

NO.	INSTALLATION	NAME	FUNCTION
01	headstock	variable speed handle I	spindle speed
02		variable speed handle II	spindle speed
03		turn &reverse handles	change the move direction of the saddle
04	feed box	thread or feed handle	S-feeding M-threading
05		feeding and pitch handle	obtain appropriate feeding or pitch
06		feeding and pitch handle	
07		increases times optional handle	
08	carriage	carriage movement handle	carriage move left or right
09		vertical and horizontal handles	control move direction or manual
10		handle of half nut	the combination or separation of the thread
11		thread chasing dial	the combination or separation of thread dial
12		start switch handle	turn or reverse turn or stop of the machine
13	tailstock	adjust screw of tailstock center	the coaxial tolerance of tailstock and spindle
14		handwheel of tailstock sleeve	move forward or backward of the tailstock sleeve
15		lock handle of the tailstock	tailstock movement
16		lock handle of the tailstock sleeve	tailstock sleeve clearance and movement
17	compound rest and saddle	lock nut of bed	lock the saddle
18		handwheel of top slide	make the top slide move forward or backward
19		lock nut of tool	control of the rotation of the tool
20		Lock nut of rotary tool	control of the rotation of the rotary tool

21		tool post handwheel	tool post move forward or backward
22	bed	foot brake switch	control the rotation of the lathe

Adjustment



Adjustment of clearance of the spindle sees fig8

1. Spindle adopt high precision conical roller bearing, after period of time, bearing trace to wear, the gap increases, so adjustment is needed ,please follow below steps: Loosen the two nut at spindle back-end, tighten front nut, test the spindle by hand with micro tight, backward 1/4 circle, then tighten one back nut .
2. Clearance adjustments between the tool post and top slide: Turn the screw at the right hand to the right side, the gap becomes small, otherwise becomes big.
3. Gap adjustments to guide screw nut: See fig10, Turn screw 1 to eliminate the gap. The gap can't be too small or wear is intensified.
4. Amount or detach of chuck and face plate: sees fig11. The spindle connects chuck by D-Cam and pull pins. When mounting, put the three pull pins of the chuck into the three wholes on the spindle face end, then turn the three came with the aid of square head wrench, when turning the cams clockwise, the chuck will be locked, when turning the cams counter-clockwise to certain point, the chuck can be detached.

Electrical system

1. 380V -400V 50HZ,60HZ Electrical diagram see Fig 12 form8 Electrical components
2. 110V -220V 50HZ Electrical diagram see Fig 13 form9 Electrical components
3. **Check the power and frequency whether in accordance with the request of the machine**, add 25A fuse.
4. Switch Rod 12 located in the middle position, the machine stops.
5. Switch rod 12 lift upwards, the spindle turn counterclockwise; push it down, the spindle turn clockwise. If not, cut off power supply, exchange of any two power lines.
6. Lathe must be well grounded.
7. The circuit diagram is only for reference. Practical circuit diagram is covered at the back of the electrical box to facilitate the maintenance.

TROUBLE SHOOTING PART table 6

No.	Name	Material	Qty	Specification	Note
1	Horizontal feeding nut	ZQSn6-6-3	1	CQ6236-5104	Fig14
2	Half nut	ZQSn6-6-3	1	CQ6236-4003	Fig15

OPTIONAL ACCESSORIES see Form9 table7

No.	Name	Qty	Note
1	steady rest	1SET	
2	follow rest	1SET	
3	4 jaw chuck	1SET	
4	face plate	1SET	
5	coolant system	1SET	
6	chuck cover	1SET	Switch power
7	live center	M.T.NO.3	1SET
p8	footbrake system	1SET	

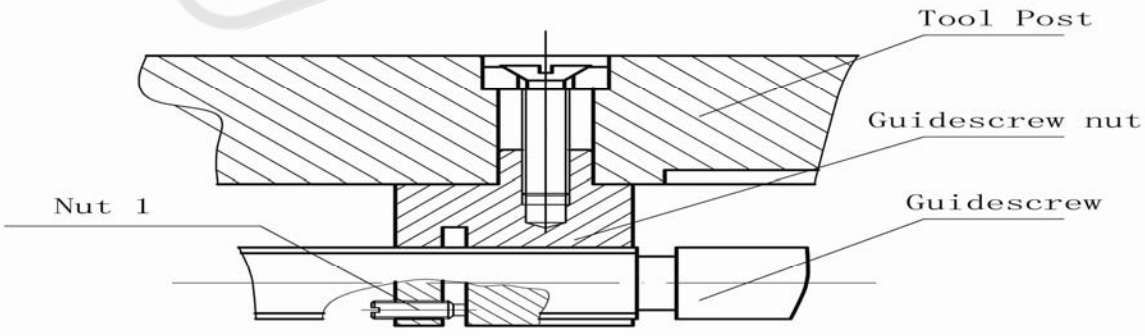


Fig 10 Adjust the gap of horizontal feeding nut

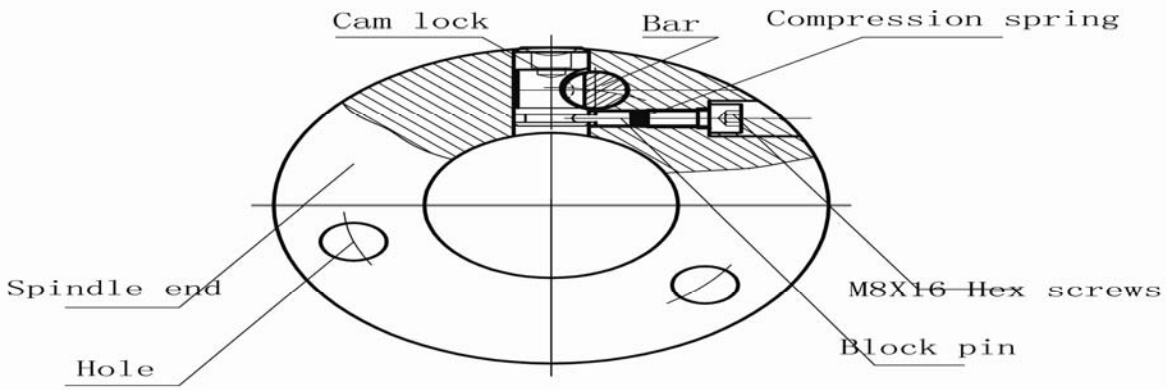


Fig 11 chuck or face plate lock structure

Electrical components list

Table 8

NO.	CODE	NAME	MODEL	QTY
1	M1	main motor	Y90S-4 380V	1
2	M2	cooling motor	DB-12	1
3	KM1 KM2	contactor	LC1-D1209 24V	2
4	KM3	cooling relay	LC1-D1209 24V	1
5	KA	middle relay	32C4-40 24V	1
6	QM	circuit breaker	DZ47-63,3P	1
7	QF	circuit breaker	DZ47-63,1P	1
8	TC	transformer	JBK5-63	1
9	EL	work light	JBK9-2A orJL50D-1	1
10	HL	indicator	AD118.8/21-8GZ	1
11	SB_1	emergency stop button	LA38 Ith 10A	1
12	SB_2	point start button	L38-11/207	1
13	1SA,2SA	positive &negative switching	LXW5-11D1	2
14	3SA	switch power of cover	LXW5-M/L	1
15	4SA	switch power of chuck cover	LXW5-M/L	1
16	5SA	cooling control switch	LAY-11X/2	1
17	SF	power switch of footbrake	LXW5-11N1/L	1

Electrical components list(Single phase)

Table9

1	M1	main motor	Y90L2-4 220V 1.5KW	1
2	FR	thermal relay	T16	1
3	FU	fuse	RT23-16 24V 2A	1
4	SB1	button	LA38 ITH 10A	1
5	SB2	button	LA38-11/207	1
6	SQ1	micro switch	LXW5-11D1	1
7	SQ2	micro switch	LXW5-11D1	1
8	HL	indicator	AD118.8/21-8GZ	1
9	T	control transformer	JBK5-63	1

10	KA	middle relay	32C4-40 24V	1
11	KM1	Ac contactor	LC1-D1209 24V	1
12	KM2	Ac contactor	LC1-D1209 24V	1