



**CT500**  
**CT800**  
MULTI-FUNCTION MACHINE  
多功能一体机

## 使用本机前, 请详细阅读下述注意事项:

1. 使用前, 钻铣头罩和车削传动箱盖要合上。
2. 不使用时, 要切断机床电源。
3. 起动机床前要取下卡盘上的扳手。
4. 保持工作场所清洁, 乱糟糟的环境可能诱发事故。
5. 不得手持工件。一定要使用合适的夹具夹持工件, 确保安全可靠的加工。
6. 操作时要注意平衡, 不得过于倾身。
7. 要求正确着装: 不能穿宽大衣装, 不能戴领带、手饰、手套等容易缭绕机床运动部件的东西。建议鞋底防滑。长头发要用发套束拢。
8. 使用合适的刀具, 对于使用安全、高效高质量地完成工作很有意义。
9. 不能将刀具、工具、附件用于非指定(设计范围内的)用途。
10. 应很好地保养刀具, 使其锋利清洁。磨削刀具请参照其它有关技术指导资料。
11. 请使用工厂提供的附件, 使用不适当的附件可会导致事故。
12. 不能让机器在无人状态下运转, 只有在切断电源, 并且机器完全停止的情况下才能离开。
13. 更换刀具或进行维护操作时一定要切断电源。
14. 不能站到机床上。若碰到机床锋利的棱角或刀具上, 就有可能造成严重的伤害。
15. 不要在危险的场所使用机器, 也不要将机器放置在潮湿的环境里或暴露在雨中, 工作环境应干爽。
16. 防止儿童介入。所有参观者要和机床保持安全距离。车间要有防儿童进入措施。
17. 其它: 每次使用机床前, 应检查所有主要零部件及其功能以确保它们能正常运行。检查各运动部件的连接与紧固、各零件上是否有裂纹或任何其它能够影响机床正确运行的缺陷。有缺陷的零件要及时修理或更换。  
如有问题, 请与销售商或工厂联系, 以获得有用的建议或帮助。

## 1、技术参数

车削	CT500	CT800
床身最大工作回转直径	420mm	
两顶针间最大距离	500mm	800mm
中托板最大回转直径	150mm	
最大纵向行程	440mm	740mm
最大横向行程	200mm	
主轴孔锥度	MT4	
尾架套筒行程	70 mm	
尾架套筒锥度	MT3	
主轴孔径	28 mm	
主轴转速	160-1360RPM (7种)	
螺纹切削范围	4-120TPI 或 0.7-6mm	
纵、横向自动走刀进给量	0.05~0.35 mm/r (12种)	
钻铣	CT500	CT800
钻铣轴孔锥度	MT3	
钻铣轴最大行程	110 mm	
钻铣轴线与立柱表面最大距离	285mm	
钻铣轴端与工作台面最大距离	306mm	
钻铣轴转速	125-3000RPM (16种)	
工作台尺寸	475×160mm	

最大钻孔直径	25mm	
最大立铣刀直径	20mm	
最大面铣刀直径	80mm	
机床电机	0.75KW 220V	
其它	CT500	CT800
外观尺寸	1100*650*965mm	1400×650×965mm
净重	245KG	275KG
包装尺寸	1130*580*1100mm	1430×580×1100mm
毛重	285KG	325KG

## 2、用途及适用范围

本机床具有车削、铣削、钻铣和螺纹加工功能，进给运动分手动、自动两种，适用于加工金属、木材及其他材料。

本机床适用各种小型企业生产维修、教学研究、职业培训，以及家庭工厂或修理间加工各种机械零件。

## 3、结构特点

本机床结构紧凑，操作简便、灵活，变速范围广，集车、钻、铣功能为一体。工作台具有横向、纵向自动（手动）进给方式，钻铣箱可自由旋转 180°。整个机型按 CE 要求设计，

## 4、安装

### 4.1 基础

基础应坚固沉实，足以承受机床重量，并应没有明显的缺陷，安装面应平整。

如使用本公司提供的床脚（特殊附件），则应将床脚放在安装位置，在地基上床脚的四个安装孔位置做上记号，移开床脚，埋好底脚孔螺栓，在主轴箱端和尾架端前后各放两个可调垫块，为增大接触面积，前后垫铁可错开旋转，然后将床脚放在可调垫块上，用底脚螺栓紧固。再将机床放在床脚上，用螺栓与螺母将机床与床脚牢固地连接在一起，有条件的可请专业安装工安装。

### 4.2 安装钻铣头

首先，清洁钻铣头的旋转和连接部分及立柱的旋转部分，再按下图将钻铣头安装在立柱上，锁紧刹紧螺母、手柄等。

### 4.3 吊装

起吊前在机床上垫上垫子，以免在起吊过程中损伤机床表面，同时，锁紧拖板、尾架，防止在起吊过程中滑移，在吊装轴上用钢丝绳起吊，注意重心。把机床放在基础上，调整好水平，安装好机床。

### 4.4 清理

出厂前，所有机床未涂漆表面均涂有防锈油，使用前应用清洁剂或汽油清洗，擦试干净，然后用润滑油润滑导轨。

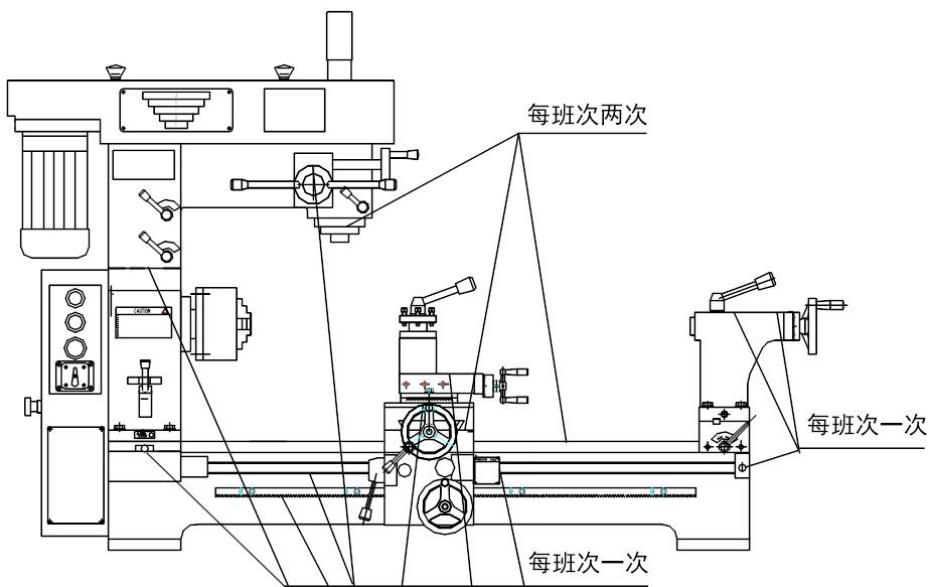
### 4.5 校准

用水平仪校平机床的纵横向，然后拧紧底脚螺母，将机床牢固地固定在基础上。

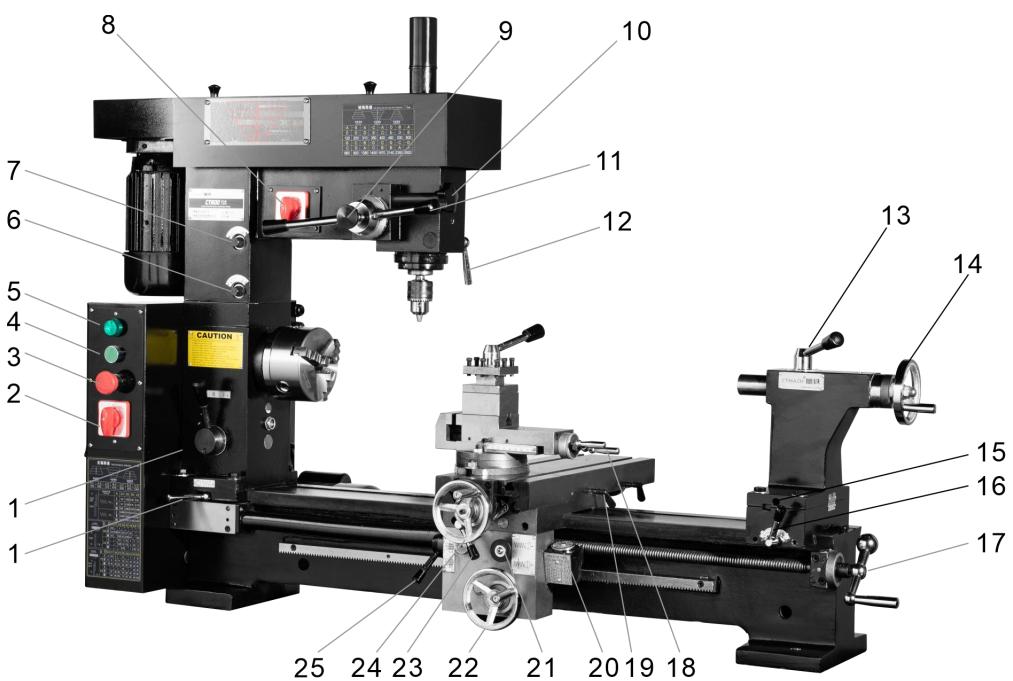
## 5、润滑

机床在工作前应在各油杯孔及导轨上加注润滑油，传动轴承应定期加注黄油，每年清洗一次。

主轴箱内应用 70 号齿轮油或 HL-30 齿轮润滑油，油位应以油标卡线为准。主轴箱内润滑油更换期：第一次在机床正常运转 15 天左右更换；第二次 30 天左右更换；以后每隔半年更换一次。



## 6、操作说明



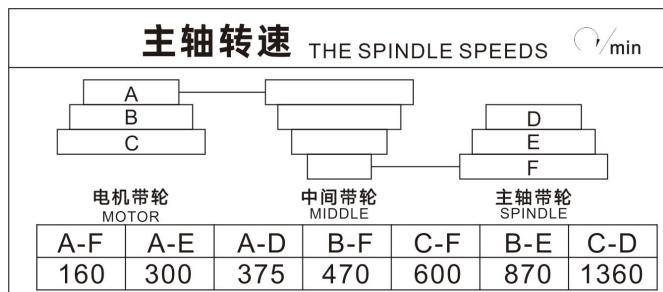
1、丝杆离合器手柄 2、变换手柄 3、转换开关 4、急停按钮 5、启动按钮 6、指示灯 7、钻铣刹紧手柄 8、钻铣转换开关 9、钻铣微进给离合手柄 10、微进给手柄 11、钻铣轴进给手柄 12、钻铣轴锁紧手柄 13、尾架套筒锁紧手柄 14、尾架手轮 15、调整螺钉 16、尾架锁紧手柄 17、纵向进给手柄 18、刀架进给手轮 19、拖板锁紧手柄 20、车牙盘 21、纵横向进给离合手柄 22、纵向进给手轮 23、大拖板锁紧手柄 24、横向进给手轮 25、开合螺母手柄

## 6.1 注意事项

- a. 在没有完全熟悉各控制元件及其功能时，不要操作机床；
- b. 检查润滑油面和各滑动及旋转零件情况，对各润滑点进润滑；
- c. 工作结束后，应切断电源；
- d. 该机床未配照明装置，请用户自备光线强度足够的照明装置，并排除阴影干扰，以避免切削加工过程中因光线不足而产生危险；
- e. 夹持工件时，应保证工件夹持牢固以免甩出，发生危险；工件悬伸量一般不宜超过 80mm，悬伸量与直径之比不应大于 4；
- f. 在切削过程中，遇到紧急情况时，应立即切断电源，使机床停止运行；
- g. 在对刀具、机床、工件进行调整时，必须关闭电源按钮，使机床处于停止运行状态后方可进行；

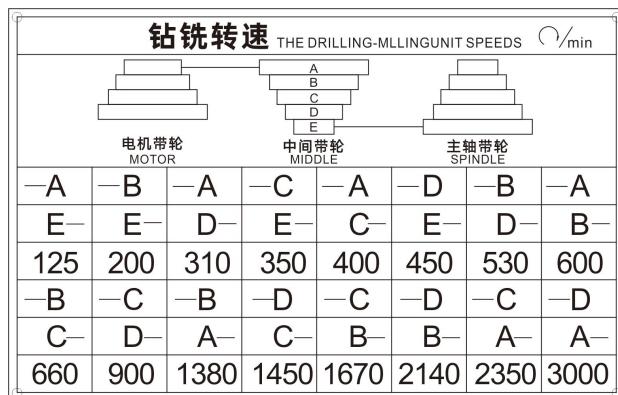
## 6.2 主轴传动

- a. 在试机之前检查一下皮带的松紧度，在正常的指力下，调整皮带的松紧度，大致下压 10mm 左右；
- b. 主轴的运转、停止及正反转可通过转换开关 3 来实现。如需要改变主轴的转向，请将转换开关转至中间位置，片刻后再转至相对位置，如直接转至相对位置，主轴将不改变转向；
- c. 松开锁紧手柄，按下图调整皮带的位置，然后锁紧手柄，可获得 7 种主轴转速。



## 6.3 钻铣传动

- a. 首先检查各种防护装置是否有效，然后按下总开关（5），指示灯亮，机床处于待机状态，此时，可操作转换开关（8），来实现钻铣床主轴的正转/反转、停车。
- b. 钻铣轴的进给是通过手柄（11）来实现的，如需微进给，可将钻铣离合器手柄（9）拉出，然后操作手柄（10），就可实现。
- c. 钻铣轴的变速通过手柄（8）向后，松开皮带，改变皮带地塔轮上的位置，再向前涨紧皮带，可得到 16 级转速如下表。



## 6.4 纵向进给

- a. 手动进给：开合螺母手柄（25）位于打开位置，转动传动手轮（17）就可进行纵向手动进给；
- b. 自动进给：开合螺母手柄（25）位于合上位置，纵横向进给离合手柄（21）向里，即可实现纵向自动进给；对照挂轮表，通过变换手柄（2）可获得不同的进给量，如下表；左表适用于英制丝杆，右表适用于公制丝杆。

A		A	24	30	36	42
		I	0.2	0.25	0.30	0.35
		II	0.1	0.125	0.15	0.175
		III	0.05	0.063	0.075	0.088
		I	0.008	0.010	0.012	0.014
		II	0.004	0.005	0.006	0.007
		III	0.002	0.025	0.003	0.0035

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		II	0.004	0.005	0.006	0.007
		III	0.002	0.025	0.003	0.0035

## 6.5 横向进给

- a. 手动进给：转动手轮（24）即可；
- b. 自动进给：手柄（1）位于左侧时，开合螺母手柄（25）位于开启位置，纵横向进给离合手柄（21）拉出，即可实现自动进给；对照挂轮表，通过变换手柄（2）可获得 12 种不同的进给量。

## 6.6 螺纹切削

- a. 主轴皮带调整到低速状态，手柄（1）位于左侧，合上开合螺母手柄（25），即可进行螺纹切削，变换手柄（2）和变换齿轮 A、B、C、D 的位置的齿数，可切削不同螺距（英制、公制）的螺纹。如下表：左表适用于英制丝杆，右表适用于公制丝杆。

A		A	36	42	48	60	72
		I	0.75	/	1	1.25	1.5
		II	1.5	1.75	2	2.5	3
		I	3	3.5	4	5	6
		II	4	4.5	5	/	6
		I	8	9	10	11	12
		II	16	18	20	22	24
		I	/	/	/	18	/
		II	/	27	30	33	36
		I	54	60	66	72	78
		II	60	66	72	78	84

A		D	24	27	30	36	42	48	60	72	
		I	0.8	/	1	/	/	/	/	/	
		II	0.4	0.45	0.5	0.6	0.7	0.8	/	/	
		III	0.2	/	0.25	0.3	0.35	0.4	/	0.6	
		I	/	/	2.5	3	3.5	4	5	6	
		II	/	/	1.25	1.5	1.75	2	2.5	3	
		III	/	/	/	0.75	/	1	1.25	1.5	
		I	4	4.5	5	/	6	/	7	8	10
		II	8	9	10	11	12	13	14	16	20
		III	16	18	20	22	24	26	28	32	40
		I	/	/	/	18	/	24	30		
		II	/	27	30	33	36	39	42	48	60
		III	54	60	66	72	78	84	96	120	

- b. 注意：切削螺纹时手柄（1）不得脱开，同一螺纹需多次切削时，应转动手轮（24）使刀具离开工件，操作电气开关，使电机停止，然后使电机反转，完成退刀后，再进行切削；如此多次，直至完成螺纹切削。

## 6.7 尾架

尾架可沿导轨任意移动，并可通过尾架刹紧手柄（16）锁定在导轨上任一处。

尾架套筒可通过尾架手轮（14）旋转来调节位置，套筒可通过刹紧手柄（13）锁紧；在出厂前，以保证尾架顶尖中心与主轴顶尖中心在同一轴线上，若需利用尾架顶尖加工较长的小锥度时，可先松开连接螺钉，调整两个复位螺钉（15），使尾架顶尖与主轴顶尖中心产生偏距，然后旋紧连接螺钉，即可进行加工。加工完结后，利用与上述过程相反的调整方法，使尾架复位。同样，若利用尾架顶尖顶着工件加工轴的外圆时，出现圆柱度误差，用上述方法调整两个复位螺钉（15）使尾架复位，即可消除锥度。

## 6.8 牙表

牙表是用来指示正确地合上开合螺母的时间，保证在进行螺纹加工切削时，每次进刀都在同一牙槽内。牙表上刻有标记为 1,2,3,4,5,6 的六条刻线，牙表壳上还刻有一条线（定位线）。

钉在牙表上的标牌（见下表）说明了转动线与定位线相一致的号码选择。

INDICATOR TABLE							
TPI	SCALE	TPI	SCALE	TPI	SCALE	TPI	SCALE
8	14	12	1-6	20	14	32	14
9	1-6	14	14	22	14	40	14
10	14	16	14	24	1-6		
11	14	18	1-6	28	14		

在切削螺纹时，应在牙表牌刻线栏中合适的数字处合上开合螺母。1-6 表示在连续切削时开合螺母可在 1-2-3-4-5-6 任一刻线处合上。在每第一次切削时，若数字刻线对齐定位线时合上开合螺母，则在连续切削时，也只能是数字刻线对齐定位线时合上开合螺母。14 表示连续切削时，开合螺母可在 1 和 4 时合上开合螺母。

如果在螺纹切削过程中，开合螺母与丝杆一直保持在啮合状态而未脱开，那就无需用牙表，但必须在每次切削完毕后，先退刀且反转电机，把刀具退回到起始切削位置再作下一次切削。

## 7、故障检修

注意：在进行故障检修前应切断电源。

### 7.1 电源接通后主轴不转

- a. 电压不对，主开关中断。——调整输入电压，调整主开关。
- b. 电气盒中保险丝断裂。——更换。
- c. 电线接头松动。——请检查并修复。

### 7.2 电机过热或无力

- a. 过载或工作时间太长。——减小进给量。
- b. 电压较低——调整到准确的电压。
- c. 电机损坏。——更换。
- d. 保险丝或导线接触不良（造成电机断路）。——立即关掉电源，换保险丝。
- e. 皮带过紧。——调整。

### 7.3 主轴承温度太高

- a. 润滑油不够或没有。——按油标加注润滑油。
- b. 主轴轴承安装太紧。——调整主轴轴承间隙。
- c. 长时间高速切削。——适当减小切削量。

### 7.4 主轴旋转缺少动力

- a. 皮带太松或磨损失效。——调整皮带张力或更换。
- b. 电机烧坏。——更换。
- c. 保险丝烧断。——更换。

## 7.5 车削外圆时产生锥度

主轴顶尖中心线与尾架顶尖中心线不在同一轴线。——按说明书调整尾架。

## 7.6 加工过程中，工件表面粗糙度差。

- a. 主轴轴承间隙太大。——调整或更换轴承。
- b. 拖板与镶条之间间隙太大。——调整。
- c. 电机旋转不平衡引起振动。——换一只新的。
- d. 刀具钝化。——磨刀。
- e. 工件未夹牢。——重新夹紧工件。
- f. 主轴轴承磨损换效。——更换。

## 8、保养

经常保养比用坏后修复更容易，保证机床的正常良好的工作状态和加工精度。

### 8.1 日保养

- a. 每日使用前注好润滑油，确保润滑良好。
- b. 若因主轴温升引起过热噪声，应立即停机检查修复，以确保工作精度。
- c. 出现故障应立即停车检修，如自己排除不了，请找专业修理工。
- d. 不得使机床超负荷运转。
- e. 下班前，清扫工作区，松开皮带涨力手柄，卸下工件；关闭电源，仔细清除机床上的铁屑和油污，按说明书加注润滑油或防锈油。

### 8.2 每周保养

- a. 丝杆清洗并保养。
- b. 查看一下所有润滑和转动表面是否缺少润滑。若润滑不足，请加润滑油。

### 8.3 每月保养

- a. 调整所有拖板与镶条的间隙。
- b. 润滑蜗轮、蜗杆、轴承以免磨损。

## 9、电气系统

### 9.1 组成

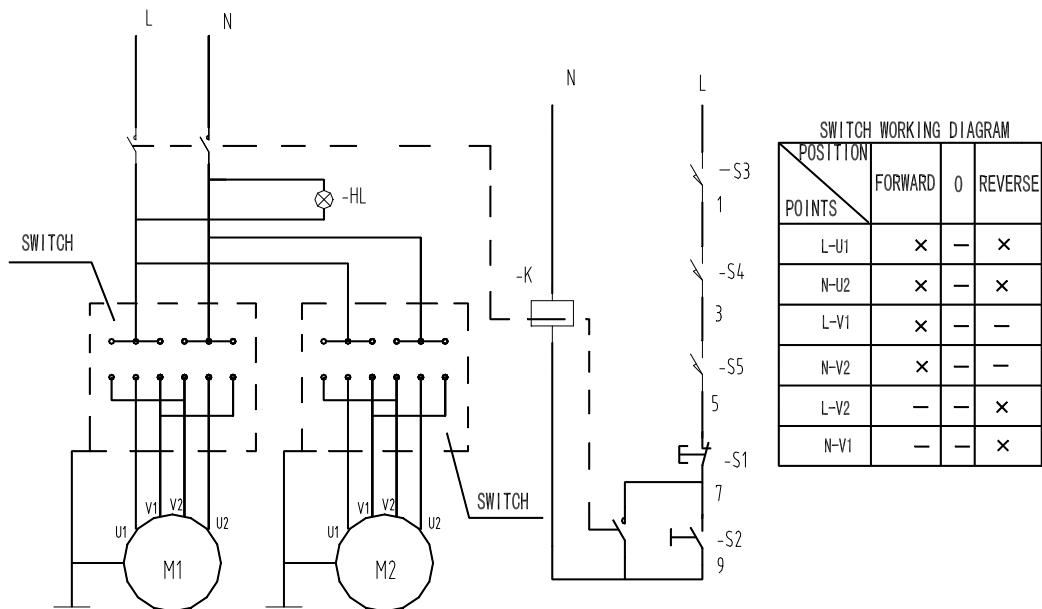
本系统由交流接触器（—K），蘑菇头红色急停钮（—S1），绿色按钮（—S2），指示灯（—HL），开启护罩门断电开关（—S3，—S4，—S5），转换开关等组成。本系统具有失压保护，开启护罩门断电等功能。

### 9.2 操作

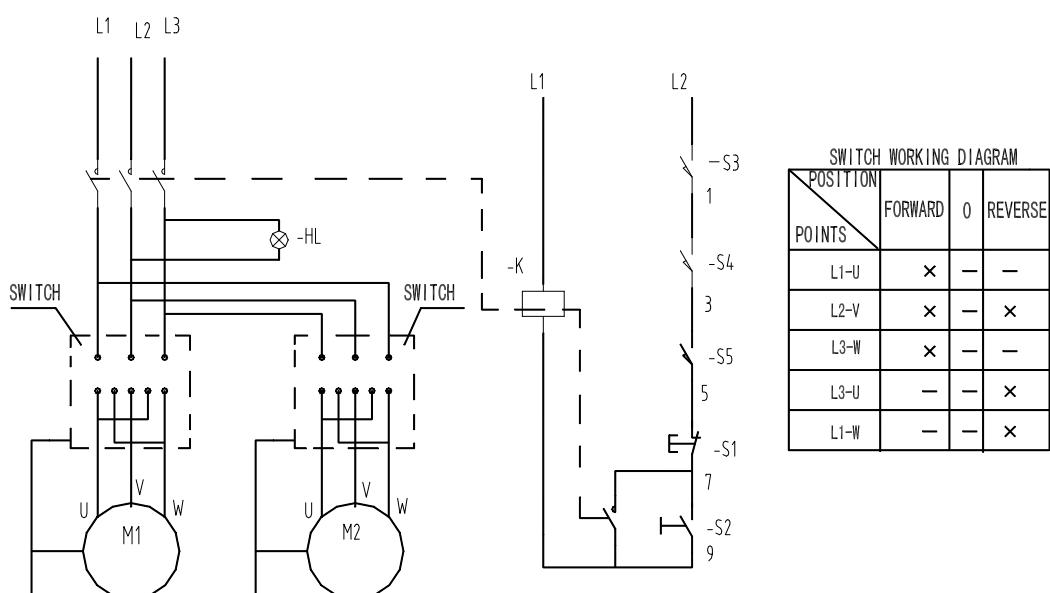
按照说明，做好全部准备工作后，关闭好全部护罩，使红色急停钮处于复位状态，按下绿色按钮，指示灯点亮，表示交流接触器已将主电路接通。此时，根据你需要，操作转换开关，机床即可进入工作状态。按下红色急停钮，交流接触器释放，此时，不论是主轴电机电源，还是钻铣电源将切断，工作过程中，若是护罩门开启，电机的电源同样被切断。

### 9.3 注意事项

- 必须通过参数如表所列的熔断器，方可将符合本机要求的电源接入机床。
- 本机的接地端子必须可靠接地。
- 在没有切断接入本机的电源之前，不得打开电气护罩。机床出了电气故障，请找电工修理。



单相 220V/380V/440V 电路



三相 220V/380V 电路

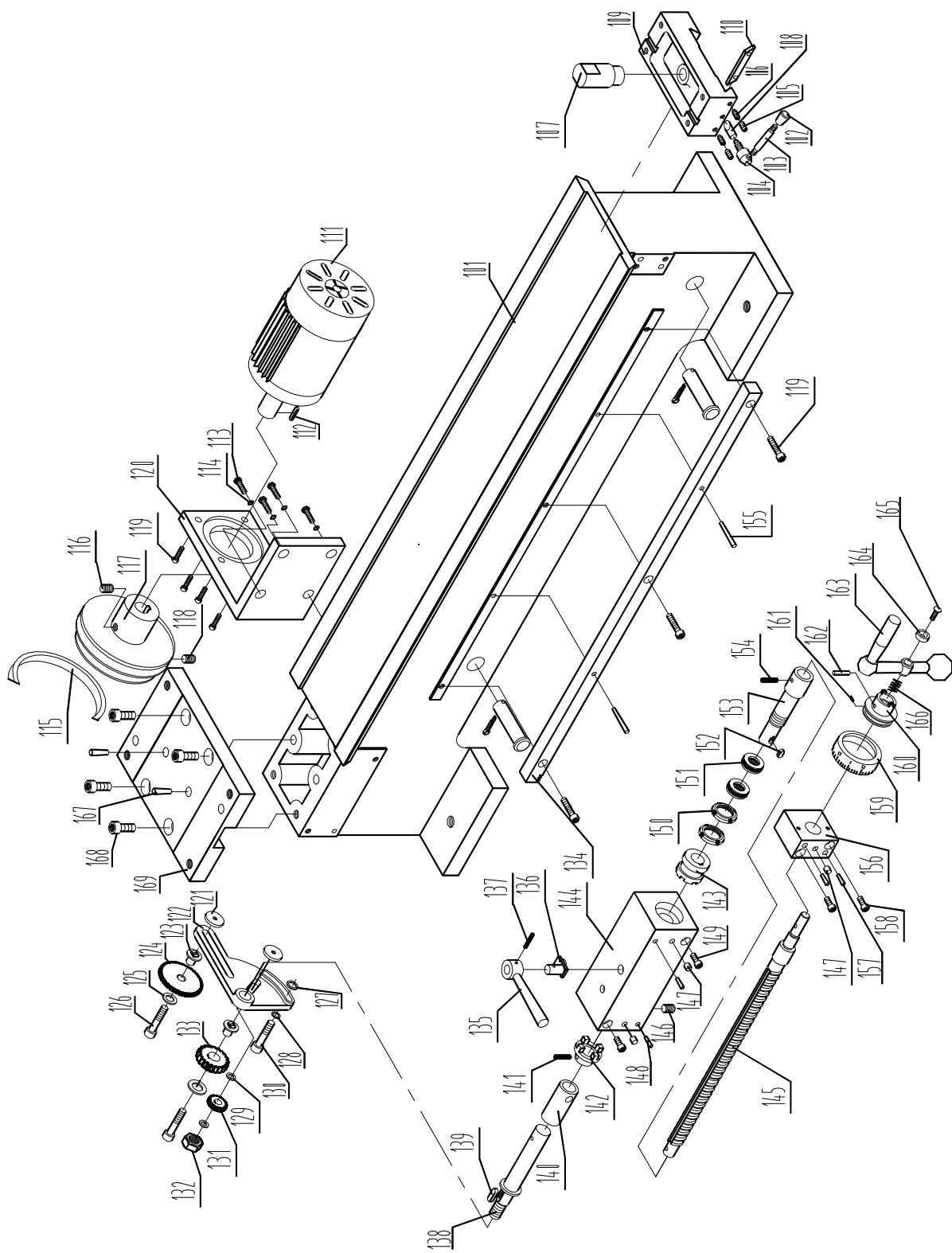
## 熔断器参数

电 压	单 相	三 相
110V	30A	
220V	20A	10A
380V		7.5A

## 十.随机附件

序号	名称	规格	数量	备注
1	三爪卡盘	130mm	1	已装机
2	固定顶尖	莫氏 3 号	1	
	固定顶尖	莫氏 4 号	1	
3	退刀楔		1	
4	拉杆		1	已装机
5	拉杆垫片		1	已装机
6	刀架扳手		1	
7	双头扳手	13*16mm	1	
8	内六角扳手	3mm	1	
		4mm	1	
		5mm	1	
		6mm	1	
9	一字型螺丝旋具	100×6mm	1	
10	双联齿轮 (m=1)	60 齿-120 齿	1	60-127 (英制)
		120 齿-127 齿	1	(公、英制)
11	齿轮 (m=1)	T=24	1	(公、英制)
		T=27	1	(公、英制)
		T=30	1	(公、英制)
		T=33	1	(公、英制)
		T=36	1	(公、英制)
		T=39	1	(英制)
		T=42	1	(公、英制)
		T=48	1	(英制)
		T=60	1	(公、英制)
		T=72	1	(公、英制)
		T=120	1	(公、英制)

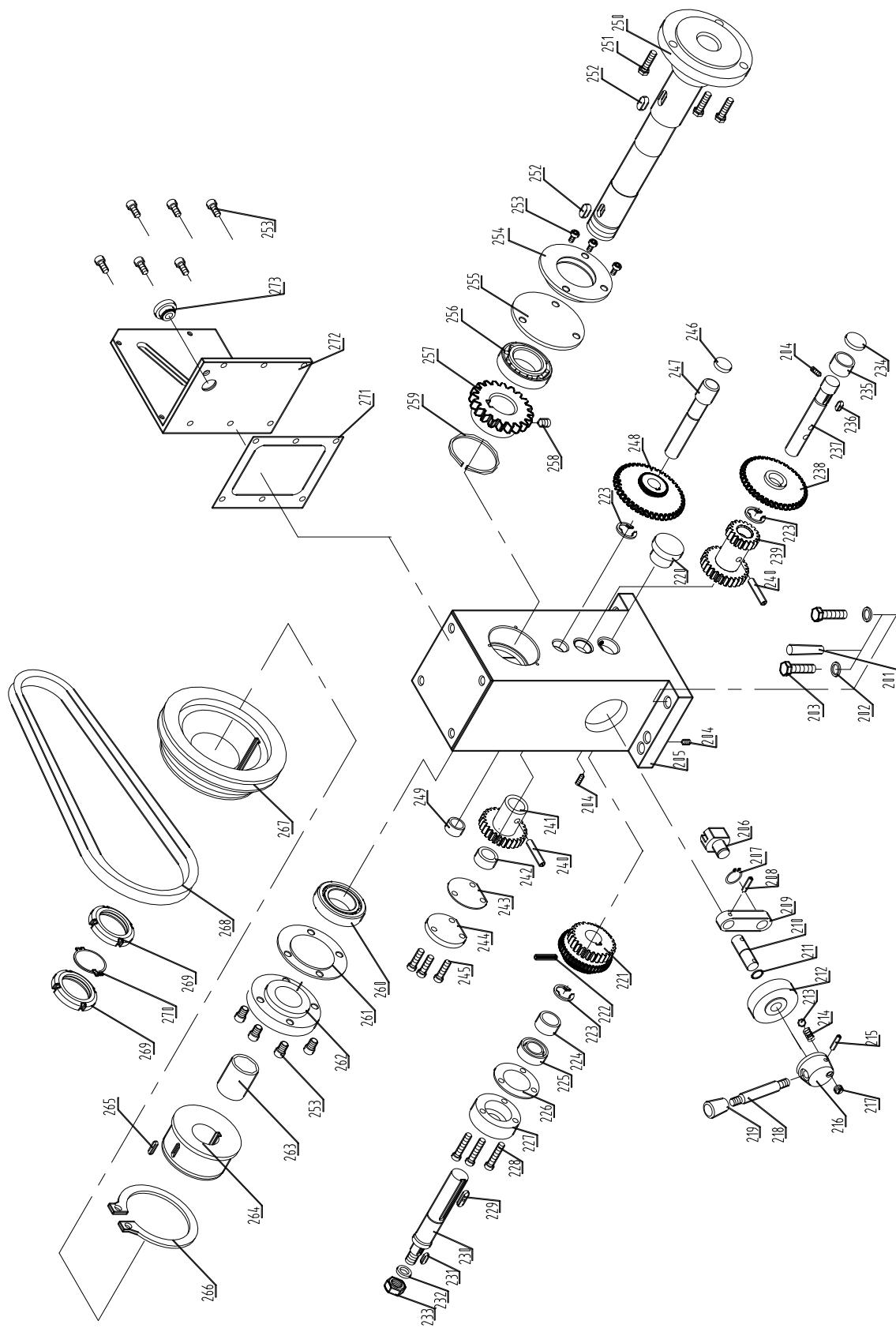
床身部装



序号	代 号	名 称	数 量
101	HQ500-01-003(2)	床身	1
102	GB/T4141.2	手柄套 M6×20	1
103	HQ400-00-016	手柄杆	1
104	HQ400-11-022	刹紧螺钉	1
105	GB/T77	螺钉 M8×25	2
106	GB/T75	螺钉 M8×14	2
107	HQ400-11-034	调整挡柱	1
108	HQ400-11-015	刹紧垫块	1
109	HQ400-11-004	尾架底板	1
110	HQ400-11-016	镶条	1
111	YC-7144	电机 (0.55KW)	1
112	GB/T1096	平键 A5×16	1
113	GB/T5782	螺栓 M10×25	4
114	GB/T97.1	垫圈 10	5
115	GB/T1171	V 型带 Z630	1
116	GB/T78	螺钉 M8×8	1
117	HQ500-01-010	皮带轮	1
118	GB/T78	螺钉 M8×6	1
119	GB/T70	内六角螺钉 M6×20	4
120	HQ500-01-005	电机座	1
121	HQ400/3-01-009	T型螺钉	2
122	HQ500-01-001	挂轮架	1
123	HQ400/3-01-010	T 型套	2
124	HQ400/3-F-01	交换齿轮	1
125	GB5287-85	垫圈 6	2
126	GB/T70	内六角螺钉 M6×40	2
127	GB5287-85	垫圈 6	1
128	GB/T97.1	弹垫 6	1
129	HQ400/3-01-012	调整垫片	1
130	GB/T70	内六角螺钉 M6×30	1
131	HQ400/3-F-01-009	交换齿轮	1
132	GB/T6170	六角螺母 M10	1
133	HQ400/3-F01-015	齿轮	1
134	CZ1224CHG-01-007 (1)	齿条	1
135	GB/T4141.7	手柄杆 A10×80	1
136	HQ500-09-002	偏心拔销	1
137	GB/T879	弹性销 3×20	1
138	HQ400/3-04-001	传动轴	1
139	GB/T1096	平键 A4×12	1
140	HQ500-09-005	轴套	1
141	GB/T879	弹性销 5×22	1

序号	代号	名称	数量
142	HQ400/3-04-003	离合器 A	1
143	HQ500-09-001	离合器 B	1
144	HQ500-09-003	连接座	1
145	HQ500-01-002	丝杆	1
146	GB/T78	螺钉 M6×8	1
147	GB/T1155	油杯 6	2
148	GB/T117	圆锥销 B5×55	2
149	GB/T70	内六角螺钉 M6×50	2
150	HQ500-09-006	圆螺母 M17×1.5	2
151	GB/T301	推力球轴承 8103	2
152	GB/T1096	平键 5×10	1
153	HQ500-09-004	轴	1
154	GB/T879	弹性销 4×24	1
155	GB/T879	弹性销 5×30	2
156	HQ500-01-004	丝杆挂脚	1
157	GB/T118	锥销 6×55	2
158	GB/T70	内六角螺钉 M6×45	2
159	HQ500-01-006	刻度盘	1
160	HQ500-01-007	刻度盘座	1
161	HQ500-10-016	簧片	1
162	GB/T879	锥销 4×20	1
163	HQ500-01-009	对重手柄	1
164	HQ500-01-008	压圈	1
165	GB/T819	螺钉 M4×12	1
166	GB/T2089	压簧 14×1×15	1
167	GB/T117	锥销 B10×35	2
168	GB/T70	内六角螺钉 M10×25	4
169	HQ500-01-003(1)	固定块	1

主轴箱部装

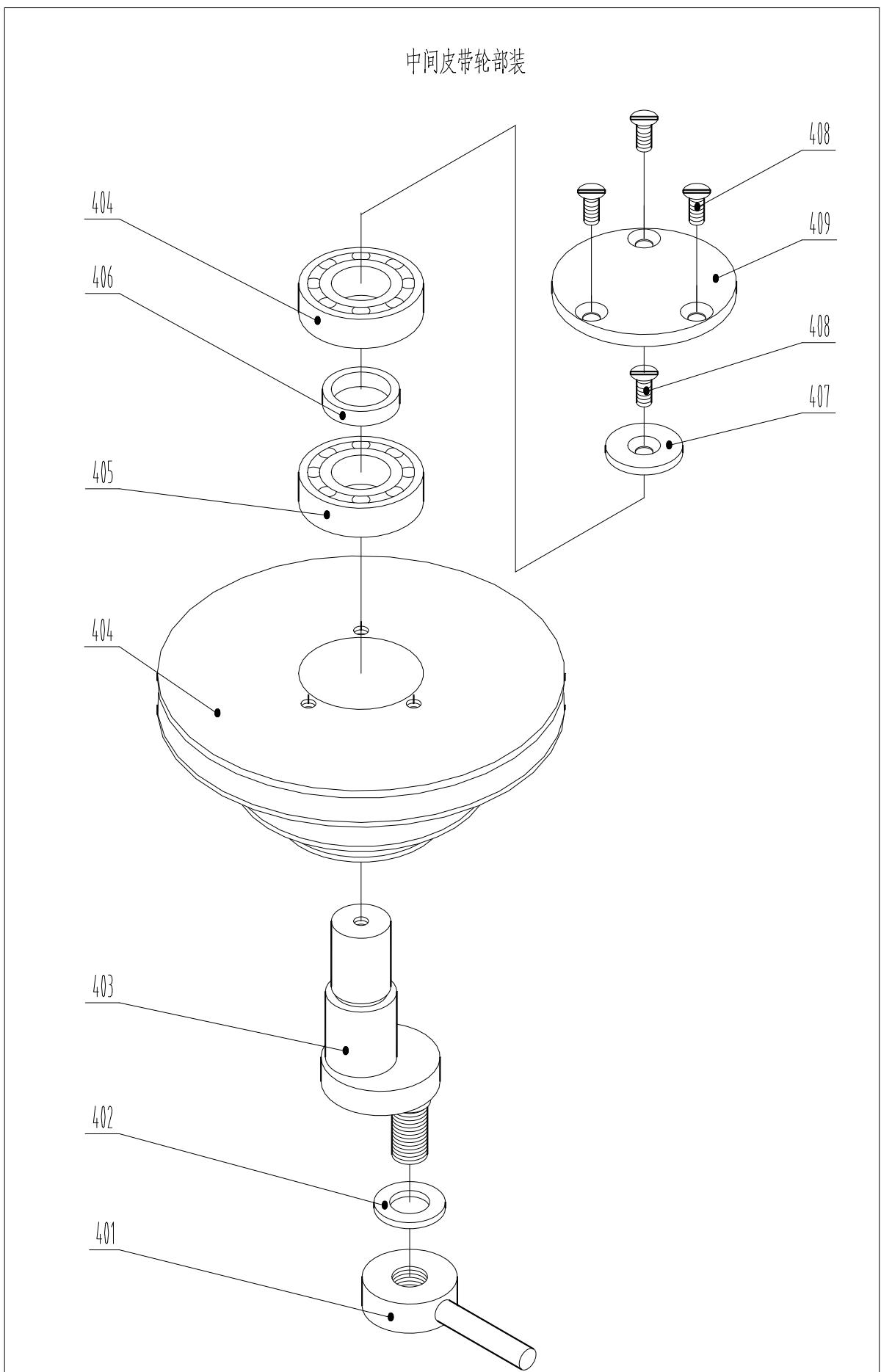


## 主轴箱部装

序号	代 号	名 称	数 量
201	GB/T117	锥销 8×40	2
202	GB/T97.2	平垫圈 10	4
203	GB/T5781	螺栓 M10×35	4
204	GB/T78	螺钉 M5×12	3
205	HQ500-02-005	主轴箱	1
206	HQ500-02-027	拔叉	1
207	GB/T894.1	轴用弹性挡圈 12	1
208	GB/T879.1	圆柱销 5×18	1
209	CZ300-03-050	连接板	1
210	HQ400/3-02-041	拔销轴	1
211	GB/T3452.1	O型圈 8.5×1.8	1
212	HQ500-02-013	定位套	1
213	GB/T308	钢球 Φ6.5	1
214	GB/T2089	压弹 1×6×15	1
215	GB/T879	弹性销 4×40	1
216	HQ400/3-02-042	手柄座	1
217	GB/T73	平端紧定螺钉 M8×5	1
218	CM1224C-04-003	手柄	1
219	GB/T4141.12	手柄套 M10×32	1
220	GB/T1160	油标	1
221	HQ500-02-025	三联齿轮	1
222	GB/T879	弹性销 3×8	1
223	GB/T894.1	轴用弹性挡圈 14	3
224	HQ500-02-015	铜套	1
225	HG4-692-67	骨架式橡胶油封 PD15×30×10	1
226	HQ400/3-02-005	垫	1
227	HQ400/3-02-002	油封架	1
228	GB/T65	螺钉 M5×20	3
229	HQ500-02-028	键	1
230	HQ500-02-021	轴 D	1
231	GB/T1096	平键 4×8	1
232	GB/T848	垫圈 10	1
233	GB/T6170	螺母 M10	1
234	HQ500-02-020	闷头	1
235	HQ500-02-014	铜套	1
236	GB/T1096	平键 5×14	1
237	HQ500-02-017	轴 C	1
238	HQ400/3-02-012	齿轮 C	1
239	HQ500-02-026(2)	齿轮 C(2)	1
240	GB/T879	弹性销 4×20	2

序号	代 号	名 称	数量
241	HQ500-02-026(1)	齿轮 C(1)	1
242	HQ400/3-02-038	铜套	1
243	HQ400/3-02-026	垫	1
244	HQ500-02-022	端盖	1
245	GB/T818	螺钉 M5×12	3
246	HQ500-02-019	闷头	1
247	HQ500-02-009	轴 B	1
248	HQ400/3-02-013	双联齿轮 B	1
249	HQ400/3-02-030	铜套	1
250	HQ500-02-010	主轴	1
251	GB/T5783	螺栓 M8×25	3
252	GB/T1096	平键 8×22	2
253	GB/T70	螺钉 M5×16	13
254	DIY1619-02-036	右端盖	1
255	DIY1619-02-037	右密封圈	1
256	GB/T297	圆锥滚子轴承 2007109	1
257	HQ500-02-006	齿轮 A	1
258	GB/T71	螺钉 M8×10	1
259	GB/T921	锁圈 47	1
260	GB/T297	圆锥滚子轴承 2007108	1
261	HQ500-02-003	左密封圈	1
262	HQ500-02-002	左端盖	1
263	HQ500-02-004	衬套	1
264	HQ500-02-024	皮带轮衬套	1
265	GB/T1096	平键 10×25	1
266	GB/T894.1	轴用弹性挡圈 63	1
267	HQ500-02-001	皮带轮	1
268	GB/T1171	V 型带 O-710	1
269	GB/T812	圆螺母 M40×1.5	2
270	GB/T858	止动垫圈 40	1
271	HQ500-02-012	密封垫	1
272	HQ500-02-011	支撑板	1
273	CM1224C-03-034	油塞	1

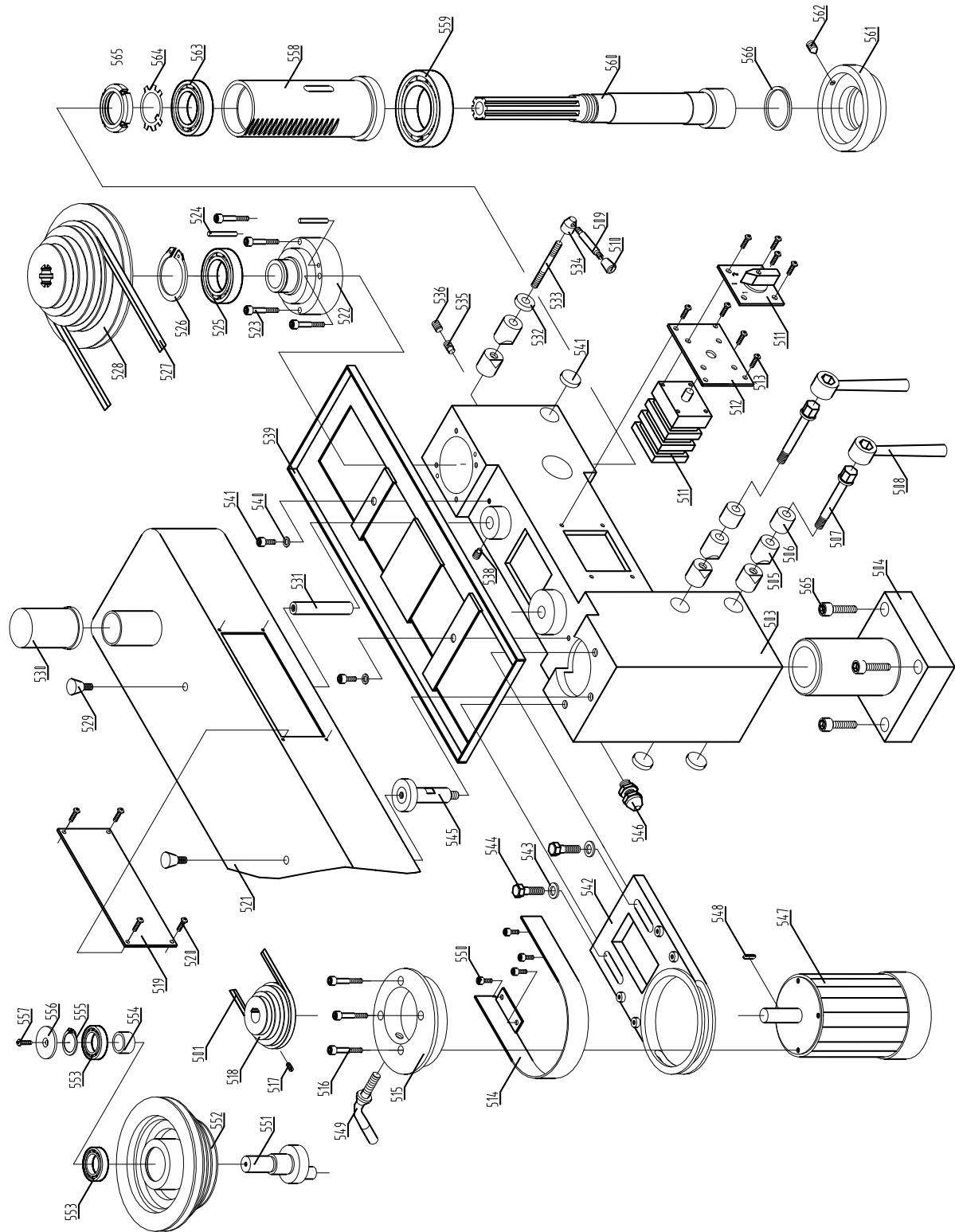
中间皮带轮部装



### 中间皮带轮部装

序号	代 号	名 称	数 量
401	GB/T4141.8	手柄杆	1
402	GB/T97.1	垫圈 12	1
403	HQ500-04-001	皮带轮轴	1
404	HQ400/3-02-034	中间皮带轮	1
405	GB/T276	轴承 104	2
406	HQ400/3-02-035	中间轮隔套	1
407	HQ400/3-02-036	轴承压盖	1
408	GB/T68	螺钉 M5×10	4
409	HQ400/3-02-037	中间轮压盖	1

钻铣箱部装

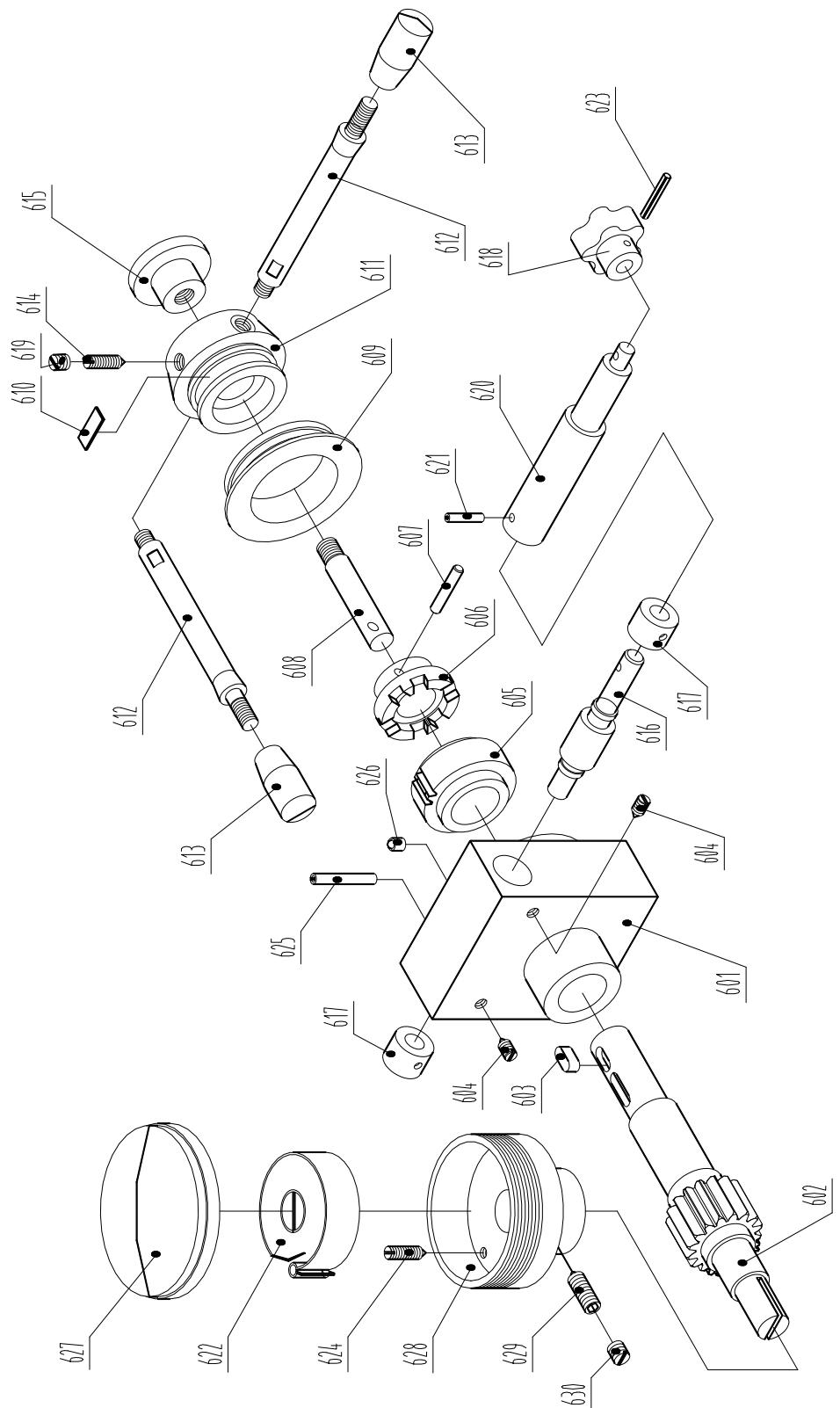


## 钻铣箱部装

序号	代号	名称	数量
501	GB/T1154-89	V型带 Z800	1
502	GB/T70	内六角螺钉 M10×40	4
503	HQ500-05-002	钻铣箱	1
504	HQ500-05-001	转向座	1
505	HQ500-05-003	刹紧块	3
506	HQ500-05-004	垫片	3
507	HQ500-05-022	刹紧螺钉	2
508	CX16-03-006	手柄	2
509	GB/T4141.15-84	手柄杆 M10×50	2
510	GB/T4141.12-84	手柄套 BM10×32	2
511	HZ5-10	开关	1
512	HQ500-05-020	盖板	1
513	GB/T818	螺钉 M5×8	4
514	HQ500-05-018	护罩	1
515	HQ500-05-014	偏心环	1
516	GB/T 70	内六角螺钉 6×20	4
517	GB/T 73	螺钉 M8×12	1
518	HQ500-05-015	电机皮带轮	1
519	GB/T 818	螺钉 M4×6	4
520	HQ500-05-011	透视窗	1
521	HQ500-05-016	上护罩	1
522	HQ500-05-009	带轮座	1
523	GB/T 70	内六角螺钉 M6×40	4
524	BG/T 117-86	锥销 A5×45	2
525	GB/T 276	向心球轴承 108Z	1
526	GB/T 894.1	轴用弹性挡圈 40	1
527	GB1154-89	V型带 Z860	1
528	HQ500-05-010	钻铣皮带轮	1
529	GB4141.26-84	手柄套 CM8×25	2
530	HQ400-24-021	护套	1
531	HQ500-05-019	防尘套顶杆	1
532	HQ500-05-004	垫片	2
533	GB/T899	双头螺柱 AM10×80	2
534	GB/T4141.16-84	手柄座 BM10×20	1
535	GB/T75	螺钉 M10×14	1
536	GB/T73	螺钉 M10×12	1
537	HQ500-05-005	闷头	3
538	GB/T79	螺钉 M8×12	1
539	HQ500-05-008	下护罩	1
540	GB/T97.1	垫圈 6	1
541	GB/T70	内六角螺钉 M6×12	2
542	HQ500-05-013	电机座	1
543	GB/T 97.1-85	垫圈 10	1

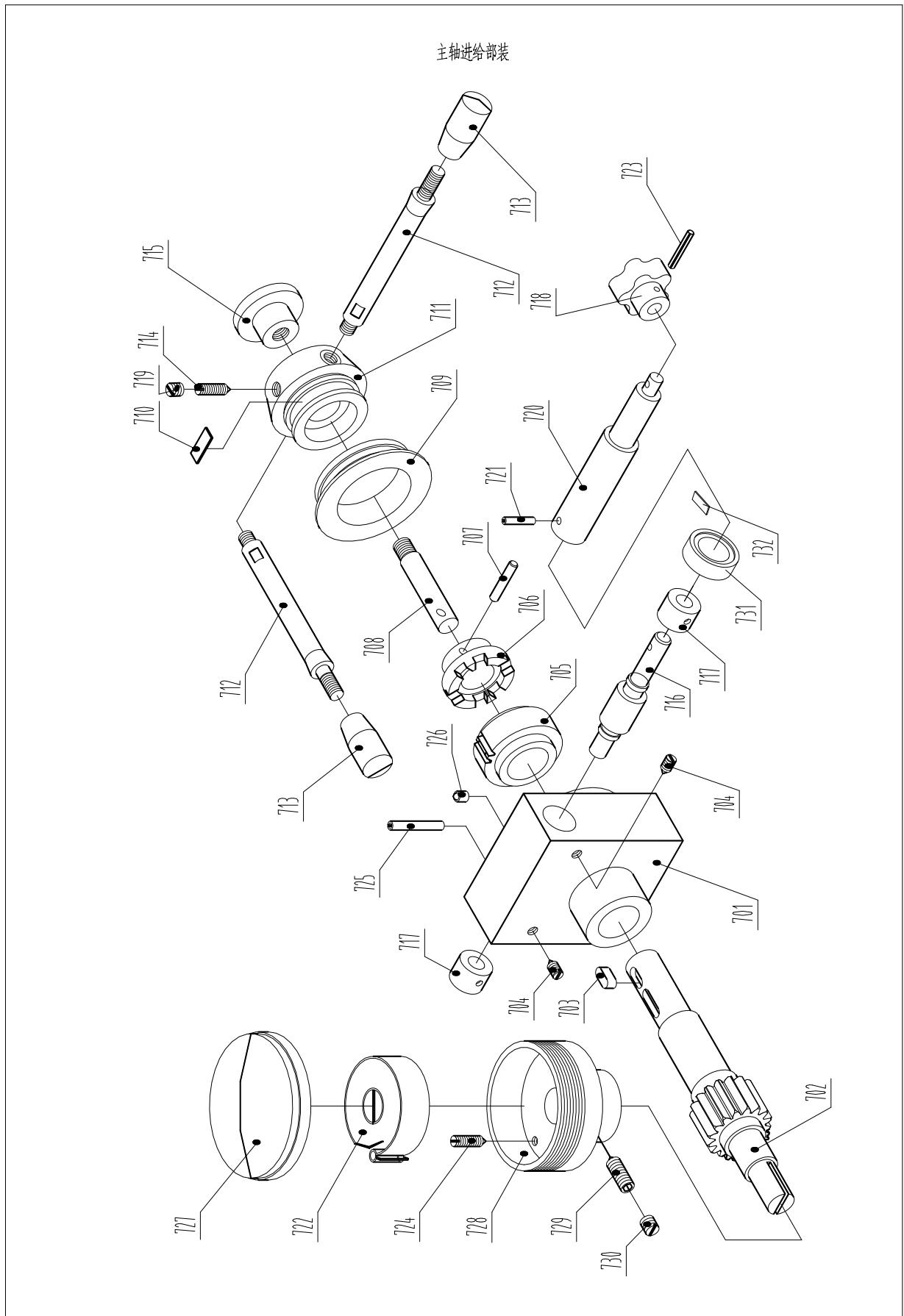
544	GB/T5781	六角头螺栓 M10×30	2
545	HQ500-05-012	螺杆	1
546	D97-4-18(20)	管接头 M18(20)×1.5	3
547	YL7144	电机	1
548	GB/T1096-79	平键 A5×16	1
549	HQ500-05-017	涨紧手轮	1
550	GB/T68	螺钉 M5×8	4
551	HQ500-06-004	偏心轴	1
552	HQ500-06-003	中间皮带轮	1
553	GB/T276	向心球轴承 104Z	2
554	HQ500-06-002	轴承隔套	1
555	GB/T893.1	轴用弹性挡圈 42	1
556	HQ500-06-001	轴承盖	1
557	GB/T68	螺钉 M5×10	1
558	HQ500-08-001	空心轴	1
559	GB/T297	向心球轴承 2007107	1
560	HQ500-08-002	钻铣轴	1
561	HQ400-22-002	防尘罩	1
562	GB/T71	螺钉 M5×8	1
563	GB/T297	轴承 2007106	1
564	GB/T812	圆螺母 M30×1.5	1
565	GB/T858	垫圈 Φ30	1
566	GB/T3452.1	O型密封圈 69×3.55	1

主轴进给部装



### 主轴进给部装

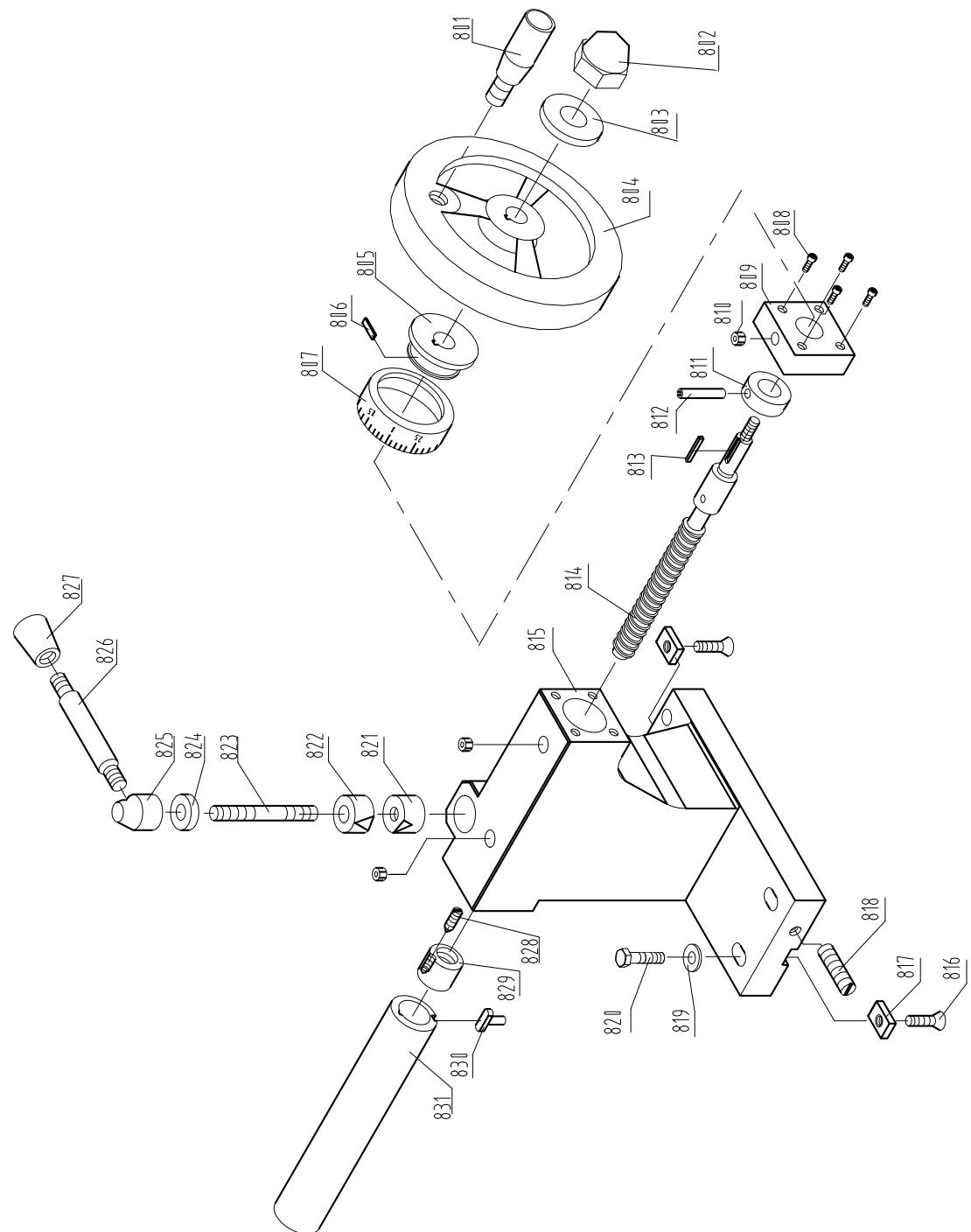
序号	代 号	名 称	数 量
601	HQ500-07-002	进给箱	1
602	HQ500-07-001	齿轴	1
603	GB1096-79	平键 A6×14	1
604	GB/T71	螺钉 M6×8	2
605	HQ400-23-005	蜗轮	1
606	HQ400-23-006	离合齿	1
607	GB/T119	圆柱销 5×28	1
608	HQ400-23-009	轴	1
609	HQ400-23-007	刻度盘	1
610	HQ400-23-008	簧片	1
611	HQ400-23-013	刻度环座	1
612	HQ400-23-001	手柄杆	2
613	GB/T4141.14	手柄套 BM8×40	2
614	GB/T71	螺钉 M6×10	1
615	GB/T4141.27	手柄 BM10×40	1
616	HQ400-23-004	蜗杆	1
617	HQ400-23-010	衬套	2
618	GB/T4141.4	手柄 12×50	1
619	GB/T73	螺钉 M8×12	1
620	HQ500-07-003A	蜗轮手柄	1
621	GB/T879	弹性销 4×20	1
622	HQ500-05-006	蜗旋弹簧	1
623	GB/T879	弹性销 4×28	1
624	GB/T71	螺钉 M5×25	1
625	GB/T879	弹性销 5×35	1
626	GB/T1155	油杯 6	1
627	HQ400-24-019	弹簧盒盖	1
628	HQ500-05-007	弹簧盒	1
629	GB/78-85	螺钉 M8×20	1
630	GB/73-85	螺钉 M8×12	1



### 主轴进给部装

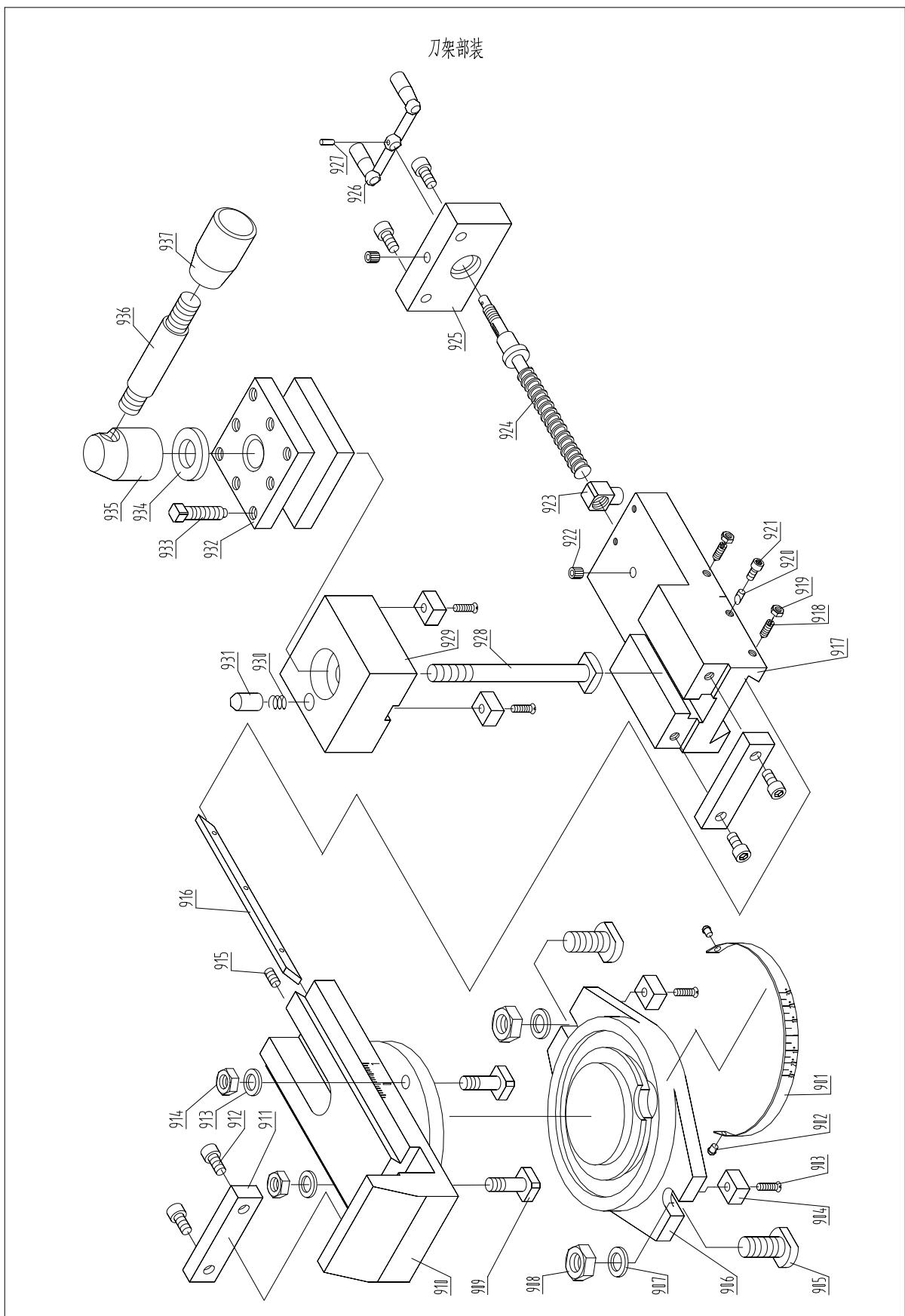
序 号	代 号	名 称	数 量
701	HQ500-07-002	进给箱体	1
702	HQ500-07-001	齿轴	1
703	GB1096-79	平键 A6×14	1
704	GB/T71	螺钉 M6×8	2
705	HQ400-23-005	蜗轮	1
706	HQ400-23-006	离合齿	1
707	GB/T119	圆柱销 5×28	1
708	HQ400-23-009	轴	1
709	HQ400-23-007	刻度盘	1
710	HQ400-23-008	簧片	1
711	HQ400-23-013	刻度盘座	1
712	HQ400-23-001	手柄杆	2
713	GB/T4141.14	手柄套 BM8×40	2
714	GB/T71	螺钉 M6×10	1
715	GB/T4141.27	手柄 BM10×40	1
716	HQ400-23-004	蜗杆	1
717	HQ400-23-010	衬套	2
718	GB/T4141.4	手柄 12×50	1
719	GB/T73	螺钉 M8×12	1
720	HQ500-07-003A	蜗轮手柄	1
721	GB/T879	弹性销 4×20	1
722	HQ500-05-006	蜗旋弹簧	1
723	GB/T879	弹性销 4×28	1
724	GB/T71	螺钉 M5×25	1
725	GB/T879	弹性销 5×35	1
726	GB/T1155	油杯 6	1
727	HQ400-24-019	弹簧盒盖	1
728	HQ500-05-007	弹簧盒	1
729	GB/78-85	螺钉 M8×20	1
730	GB/73-85	螺钉 M8×12	1
731	HQ500-07-005	刻度盘	1
732	HQ500-10-026	簧片	1

尾座部装



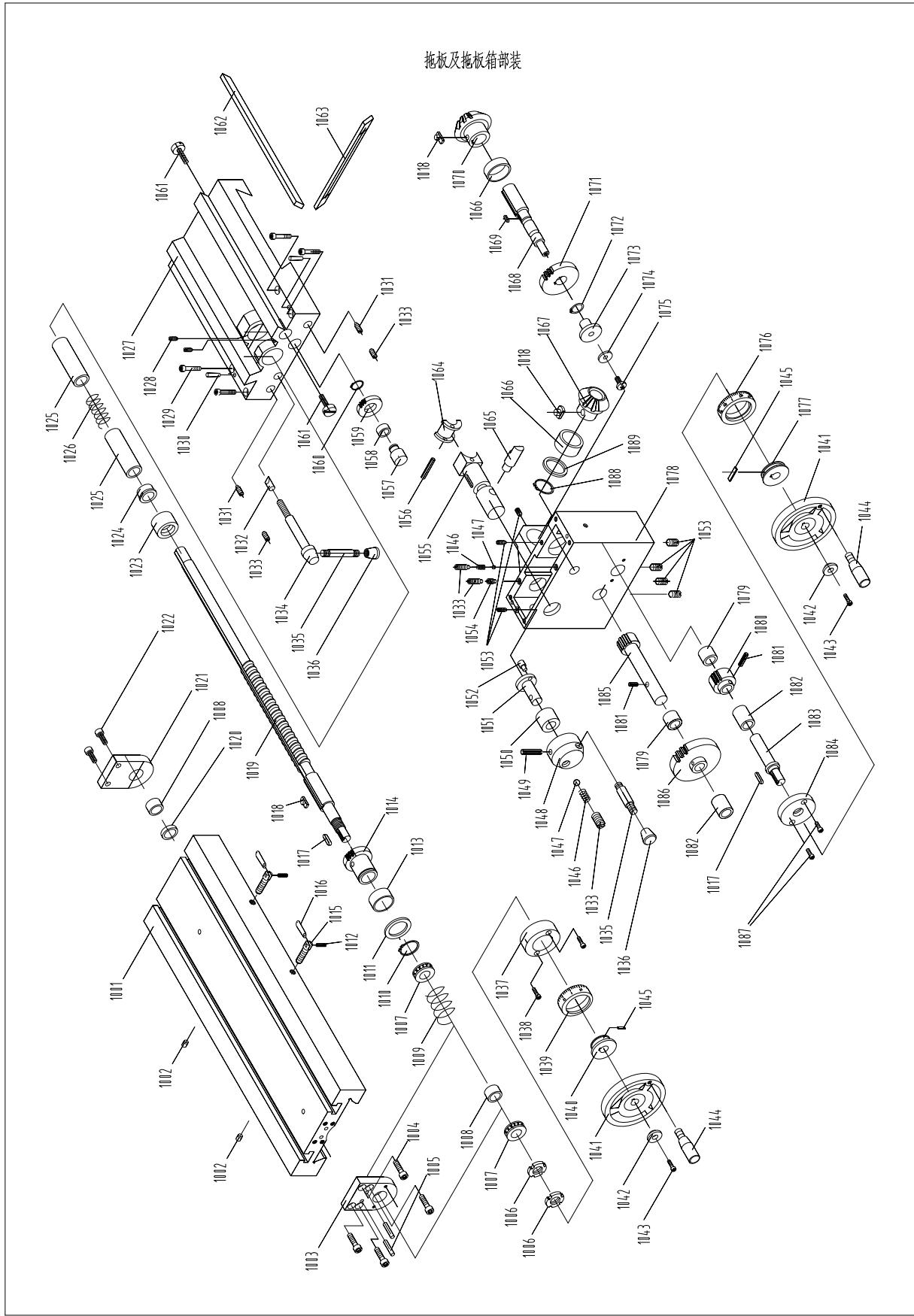
### 尾座部装

序号	代 号	名 称	规 格	数 量
801	JB/T7270.5-94	手柄	M6×50	1
802	GB/T923-88	盖形螺母	M10	1
803	GB/T97-85	平垫圈	10	1
804	JB/T7273.3-94	手轮	B12×100	1
805	HQ500-10-019	内衬套		1
806	HQ500-10-016	簧片		1
807	HQ400-13-010	刻度盘		1
808	GB/T70-85	螺钉	M5×20	4
809	HQ400-13-009	(尾架)丝杆座		1
810	JB/T7940.4-95	油杯	6	3
811	CM-1224C-06-022	套		1
812	GB/T119-86	销	D5×24	1
813	GB/T1096-79	平键	C4×18	1
814	HQ400-13-006	(尾架)丝杆		1
815	HQ400-13-001	尾架体		1
816	GB/T819-85	沉头螺钉	M5×14	2
817	HQ400-13-014	键		2
818	GB/T73-85	沉头螺钉	M10×50	2
819	GB/T97.2-85	垫圈	10	4
820	GB/T5780-2000	螺栓	M10×40	4
821	HQ400-13-011	下刹块		1
822	HQ400-13-012	上刹块		1
823	GB/T899-85	双头螺柱	AM10×40	1
824	HQ400-13-013	垫圈		1
825	HQ400-13-004	刹紧螺母		1
826	HQ400-13-005	刹紧手柄		1
827	JB/T7271.3-94	手柄套	M10×32	1
828	GB/T71-85	紧定螺钉	M4×8	1
829	HQ400-13-007	螺母		1
830	CM-1224C-06-021	T型键		1
831	HQ400-13-002	尾架套筒		1



## 刀架部装

序号	代 号	名 称	规 格	数 量
901	HQ400-14T02-002(1)	角度标尺		1
902	GB/T827-1985	铆钉	2.5×5	2
903	GB/T68-1985	螺钉	M4×12	2
904	HQ400-14T02-010	平键		2
905	HQ400-14T02-001	“T”型螺栓		2
906	HQ400-14T02-002	刀架座		1
907	GB/T97.1-1985	垫圈	10	2
908	GB/T6170-2000	六角螺母	M10	2
909	GB/T37-88	T型槽用螺栓	M8×24	2
910	HQ400-14T02-005	钳体		1
911	HQ400-14T02-006	钳口垫		2
912	GB/T70.1-2000	内六角螺钉	M5×14	4
913	GB/T97.1-1985	垫圈	8	2
914	GB/T6170-2000	六角螺钉	M8	2
915	GB/T77-2000	螺钉	M5×6	1
916	HQ400-14T02-014	镶条		1
917	HQ400-14T02-004	活动钳口		1
918	GB/T71-1985	螺钉	M5×14	2
919	GB/T6170-2000	六角螺母	M5	2
920	HQ400-14T02-007	刹紧垫块		1
921	GB/T70.1-2000	六角螺钉	M5×8	1
922	JB/T7940.4-1995	油杯	6	2
923	HQ400-14T02-011	螺母		1
924	HQ400-14T02-012	螺杆		1
925	HQ400-14T02-013	螺杆托架		1
926	GB/T70	内六角螺钉	M6×16	2
927	GB/T117-2000	圆柱销	3×16	1
928	HQ400-14T02-009	螺栓	M10×100	1
929	HQ400-14T02-008	刀架座		1
930	GB/T1358-1993	弹簧	5×0.6×30	1
931	HQ400-14-007	定位块		1
932	HQ400-14-003	刀架		
933	GB/T85-1998	螺钉	M8×25	8
934	GB97.2-85	垫圈	12	1
935	HQ400-13-004	刹紧螺母	M10	1
936	HQ400-14-006	刹紧手柄		1
937	JB/T7271.3-1994	手柄套	M10×32	1
938	DJ136/2-012	刻度盘		1
939	DJ136/2-010	刻度盘座		1
940	DJ136/2-011	簧片		1
941	GB/T810	圆螺弹琴	M10×1	2
942	GB/T4141.10	对重手柄	8×25	1

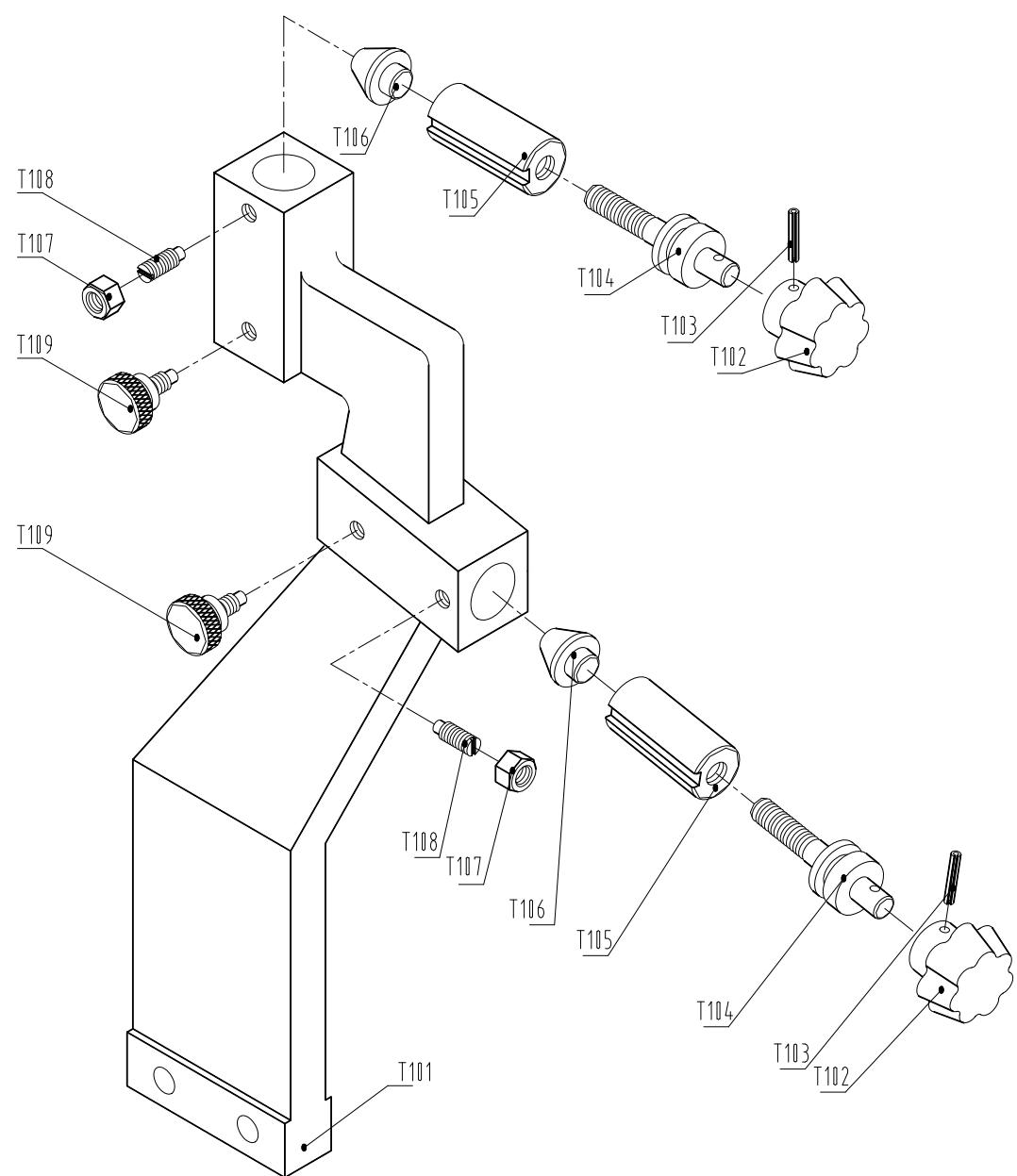


## 拖板及拖板箱部装

序号	代 号	名 称	数 量
1001	HQ500-10-003	工作台	1
1002	JB/T 7940.4-4	油杯 6	6
1003	HQ500-10-010	丝杆座 (B)	1
1004	GB/T 70-85	内六角螺钉 M5×16	4
1005	GB/T 879-5	弹性销 5×20	2
1006	GB/T 810-13	圆螺母 M14×1.5	2
1007	GB/T 301-11	推力球轴承 8102	2
1008	HQ500-10-011	隔套 A	2
1009	HQ500-10-048	弹簧 B	1
1010	GB/T 894.1-9	轴用弹性挡圈 26	1
1011	HQ500-10-046	垫圈	1
1012	GB/T 879-7	弹性销 2×10	2
1013	HQ500-10-045	垫圈 G	1
1014	HQ500-10-010	齿轮 A	1
1015	HQ500-10-006	刹紧螺钉	2
1016	CM1224C-05-022B	刹紧手柄	2
1017	GB/T 1096-14	平键 4×18	2
1018	HQ500-10-030	T型键	2
1019	HQ500-10-008	横向进给丝杆	1
1020	HQ500-10-050	隔圈	1
1021	HQ500-10-007	横向丝杆挂脚 (A)	1
1022	GB/T 70-85	内六角螺钉 M6×16	2
1023	HQ500-10-009	横向丝杆螺母	1
1024	HQ500-10-051	削边隔套	1
1025	HQ500-10-049	弹簧隔套	2
1026	HQ500-10-047	弹簧 A	1
1027	HQ500-10-002	拖板	1
1028	GB/T 71-85	螺钉 M6×8	10
1029	GB/T 70-85	内六角螺钉 M6×35	4
1030	GB/T 117-6	圆锥销 A5×25	2
1031	GB/T 75-85	螺钉 M8×16	2
1032	HQ400-11-014	刹紧垫块	1
1033	GB/T 73-85	螺钉 M8×8	5
1034	HQ500-10-025	拖板刹紧螺钉	1
1035	HQ400-00-016	手柄杆	2
1036	JB/T 7271.3-23	手柄套 M6×20	2
1037	HQ500-10-013	固定套 (A)	1
1038	GB/T 70-85	内六角螺钉 M5×16	4
1039	HQ500-10-014	刻度盘	1
1040	HQ500-10-015	刻度盘座 (A)	1
1041	JB/T 7273.3-16	手轮 B12×100	2
1042	GB5287-85	垫圈 5	2
1043	GB/T 70-15	内六角螺钉 M4×12	2
1044	JB/T 7270.4-17	手柄 M6×50	2

序号	代 号	名 称	数 量
1045	HQ500-10-016	簧片	2
1046	CM1224C-06-007	压簧	2
1047	GB/T 308-2	钢球 6.5	2
1048	HQ500-10-036	手柄座	1
1049	GB/T 879-86	销 4×40	1
1050	HQ500-10-035	衬套 (E)	1
1051	HQ500-10-034	偏心拔销	1
1052	HQ400/3-06-003	拔销	1
1053	GB/T 71-85	螺钉 M6×8	10
1054	HQ500-10-001	导向螺钉	1
1055	HQ500-10-033	半螺母座	1
1056	GB/T 879-25	弹性销 4×30	1
1057	HQ500-10-043	心轴	1
1058	HQ500-10-037	衬套 (F)	1
1059	HQ500-10-042	齿轮 T32	1
1060	GB/T 894. 1-27	轴用弹性挡圈 12	1
1061	GB833-88	开槽大圆柱头螺钉 M5*20	2
1062	HQ500-10-005	工作台镶条	1
1063	HQ500-10-026	拖板镶条	1
1064	HQ400/3-06-002B	半螺母	1
1065	HQ500-10-032	挡位销	1
1066	HQ500-10-031	衬套(D)	2
1067	HQ500-10-029A	齿轮	1
1068	HQ500-10-017	移动轴	1
1069	GB/T 1096-29	平键 A5×8	1
1070	HQ500-10-029	齿轮	1
1071	HQ500-10-027	齿轮 T48	1
1072	GB/T 894. 1-27	轴用弹性挡圈 14	1
1073	HQ500-10-038	推拉手柄	1
1074	GB/T 96-85	垫圈 6	1
1075	GB/T 818-19	螺钉 M6×8	1
1076	HQ500-10-041	刻度盘	1
1077	HQ500-10-019	刻度盘座 (B)	1
1078	HQ500-10-028	拖板箱	1
1079	HQ500-10-024	衬套(C)	2
1080	HQ500-10-023	齿轮 T25	1
1081	GB/T 879-21	弹性销 4×20	2
1082	HQ500-10-022	衬套 (B)	2
1083	HQ500-10-020	轴	1
1084	HQ500-10-021	固定套 B)	1
1085	HQ500-10-040	齿轴 T21	1
1086	HQ500-10-039	齿轮 T65	1
1087	GB/T 70-85	内六角螺钉 M4×12	4
1088	GB894. 1-86	轴用弹性挡圈 28	1
1089	HQ500-10-029B	垫圈	1

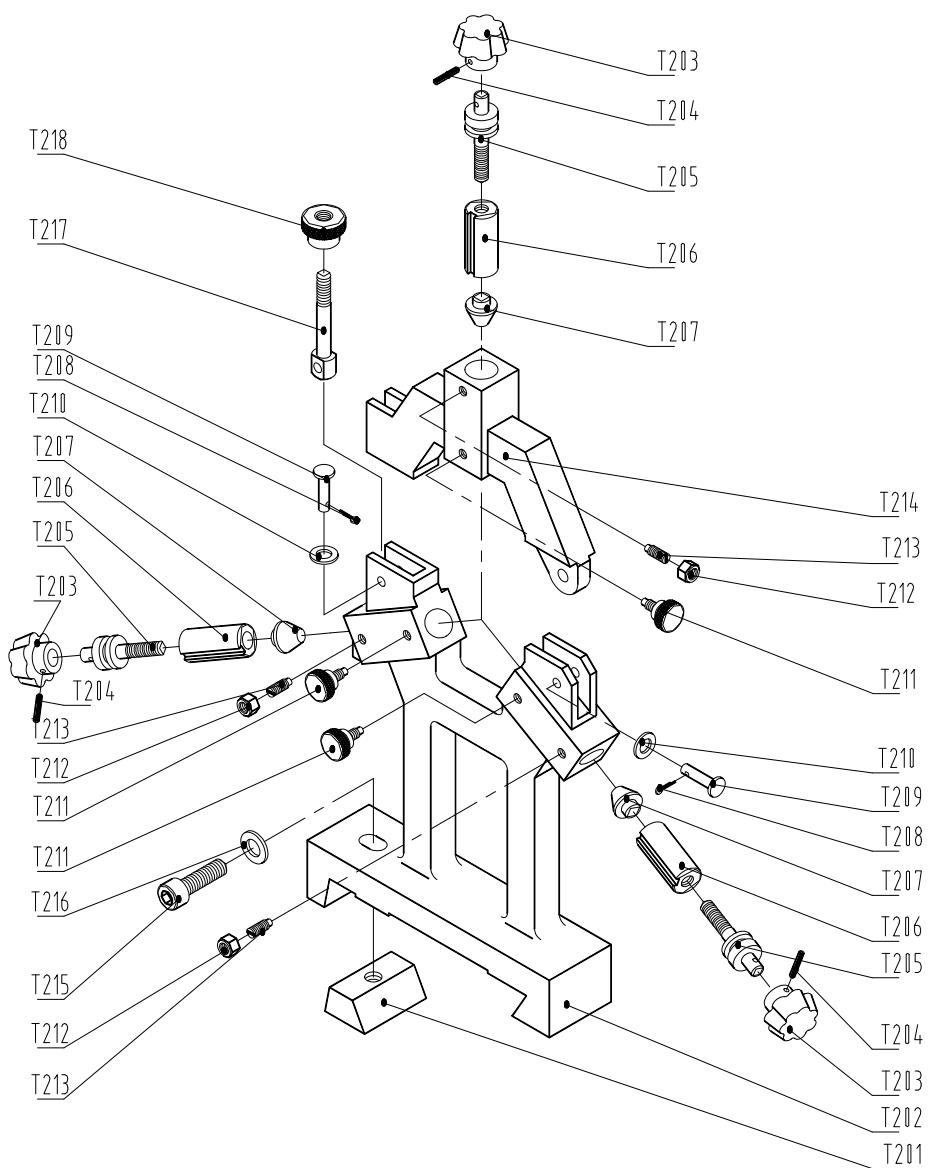
跟刀架部装 |T|



### 跟刀架部装 (T)

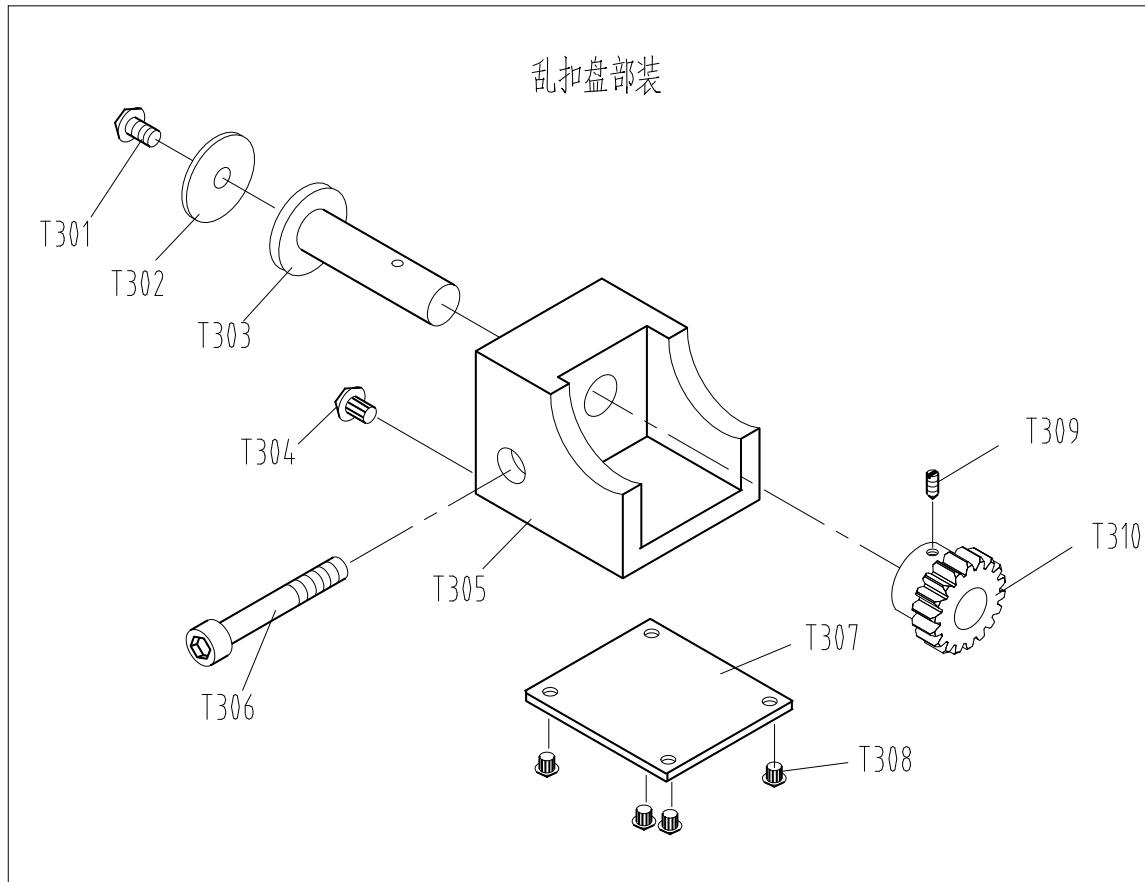
序号	代号	名 称	规格	数量
T101	HQ500-10T04-005	跟刀架体		1
T102	JB/T72714.40	星形把手	8×32	2
T103	GB/T879	弹性销	3×16	2
T104	HQ500-10T04-001	调整螺钉		2
T105	HQ500-10T04-003	心套		1
T106	HQ500-10T04-004	衬垫		2
T107	GB/T41	六角螺母	M6	2
T108	GB/T75	紧定螺钉	M6×16	2
T109	HQ500-10T04-002	捏手螺钉		2

中心架部装[T]



## 中心架部装 (T)

序号	代号	名 称	规 格	数 量
T201	HQ500-10T05-005	锁紧块		1
T202	HQ500-10T05-001	中心架底座		1
T203	JB/T7274.4	星形把手	8×32	1
T204	GB/T879	弹性销	3×16	3
T205	HQ500-10T04-001	调整螺钉		3
T206	HQ500-10T04-003	心套		3
T207	HQ500-10T04-004	衬垫		3
T208	GB/T91	开口销	1.6×20	2
T209	GB/T882	销轴	A6×26	2
T210	GB/T848	垫圈	8	2
T211	HQ500-10T04-002	捏手螺钉		3
T212	GB/T41	六角螺母	M6	3
T213	GB/T75	紧定螺钉	M6×16	3
T214	HQ500-10T05-004	中心架盖		1
T215	GB/T70	内六角螺钉	M10×1035	1
T216	GB/T848	垫圈		1
T217	HQ500-10T05-002	锁紧螺栓		1
T218	HQ500-10T05-003	锁紧旋钮		1



## 乱扣盘部装

序号	代 号	名 称	数 量
T301	GB/T818	螺钉 M4×12	1
T302	HQ500-10T01-004	指示盘	1
T303	HQ500-10T01-002	指标轴	1
T304	GB/T827	铆钉 2×4	1
T305	HQ500-10T01-001	车牙装置座	1
T306	GB/T70	内六角螺钉 M6×50	1
T307	HQ500-00-017	乱扣盘标牌	1
T308	GB/T827	铆钉 2×4	4
T309	GB/T71	螺钉 M5×8	1
T310	HQ500-10T01-003	齿轮 T24	1

Many thanks for purchasing our Multi-Purpose Machine. Before operating, Please study the operation manual, and should be according to it to operate step and step.

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## 1. SPECIFICATION

### TURNING

Model	CT500	CT800
Distance between centers	500 mm	800 mm
Swing over bed	420 mm	
Max.longitudinal travel	440 mm	740 mm
Max.cross travel	200 mm	
Spindle taper	M.T.4	
Travel of tailstock barrel	70mm	
Taper of tailstock barrel	M.T.3	
Spindle hole diameter	Ø28mm	
Spindle speed	160-1360r.p.m. (7steps)	
Longitudinal leadscrew pitch	6T.P.I. or 4mm	
Thread can be cutted	4-120T.P.I./0.2-6mm	
Range of automatic feeding (Longitudinal and cross)	0.002-0.014inch/0.05-0.35mm	

### DRILLING & MILLING

Spindle taper	M.T.3
Spindle travel	110mm
Max. distance between spindle center to column	285mm
Max. distance between nose and table	306mm
Spindle speed	120-3000r.p.m. (16steps)
Table size	475mm×160mm
Drilling capacity	25mm
End milling capacity	20mm
Face milling capacity	80mm

### OTHERS

Motor power	0.55KW	
Voltage/Frequency	As customer's requirement	
Net weight	245kg	280kg
Gross weight	275kg	325kg
Overall dimension (CT500)	1460mm×580mm×965mm	
Packing size (CT500)	1430mm×580mm×1100mm	
Overall dimension (CT800)	1760mm×580mm×965mm	
Packing size (CT800)	1130mm×580mm×1100mm	

## **2. APPLICATION**

The machine has the function of turning, milling, drilling and thread cutting. Feed can be controlled automatically or manually, suitable for processing metal, wood and other materials. It is extensively used in job-shops, teaching, scientific research, occupation training, especially in house for household utensils.

## **3. CONSTRUCTION**

The machine has the character of compact construction, easy operating and wide-range speed. The function of turning, drilling, and milling can be made in one machine. Worktable feed can be controlled automatically or manually in longitudinal and cross direction. The drilling -milling headstock can be rotated  $180^{\circ}$ . The machine was designed according to CE standard. It also can be controlled by personal computer when connecting with it.

## **4. ELECTRICAL SYSTEM**

### **4.1 COMPOSITION**

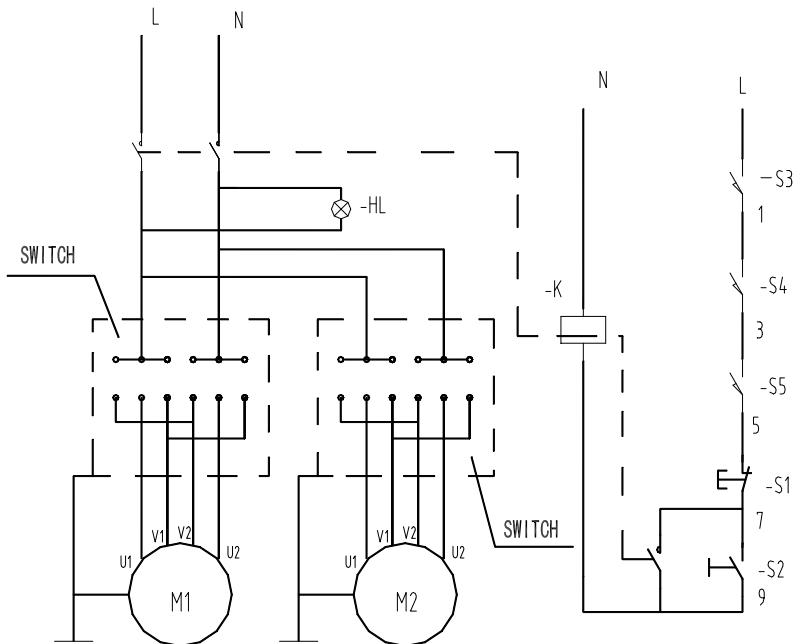
The system consists of alternating current contactor (-K), red emergency button (-S1), green (-S2), pilot (-HL), microswitch (-S3,-S4,-S5), shift switch, etc. the system has the protection of lose-voltage, and cutting off the current when cover is opened.

### **4.2 OPERATION**

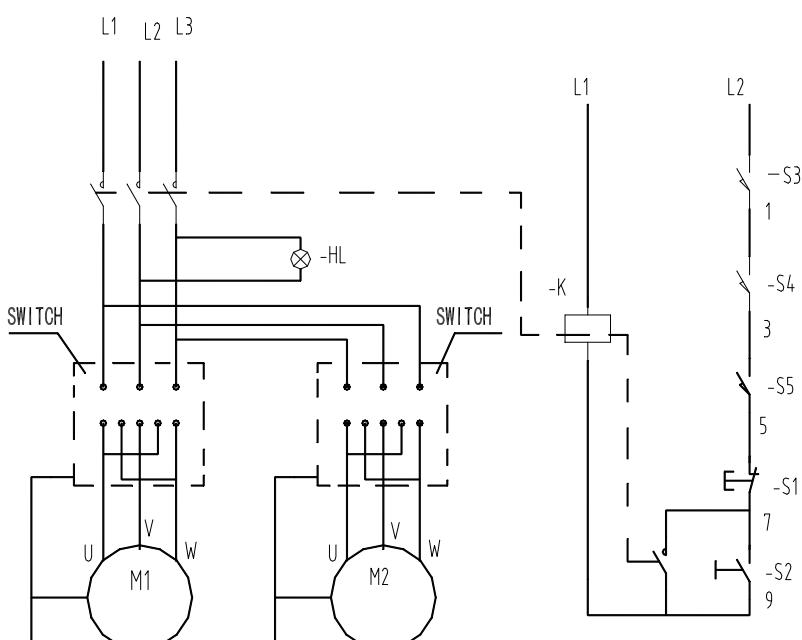
According to the manual, after finish all the preparations, close all the protection instrument, let the red button in original condition. Push the green button, now pilot light which show that alternating contactor has put through the main circuit and the machine enter into working condition. Push the red emergency button, the alternating contactor break down. Now whether the spindle motor or drilling-milling motors are all cut off. When working, if the protection instrument doors are opened the motor also are cut off.

### **4.3 CAUTION**

- (1) A FUSE AS THE FOLLOWING CHART APECIFICATIONS MUST BE CONNECTED BETWEEN CURRENT AND THE MACHINE.
- (2) THE GROUND TREMINAL OF THE MACHINE MUST BE GROUNDING PERFECTLY.
- (3) BEFORE CUTTING OF CURRENT OF THE MACHINE, DON'T OPEN ELECTRIC PROTECTIONS, IF SOME WRONG WITH ELECTRIC SYSTEM, PLEASE ASK FOR A REPAIRMAN TO HELP YOU.



SINGLE PHASE

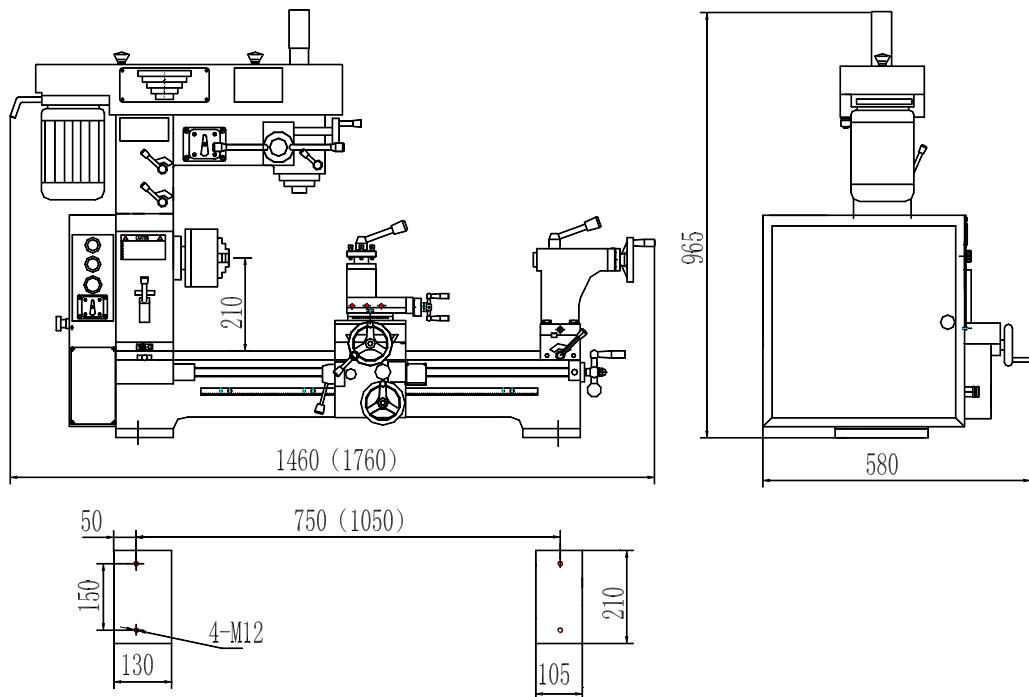


THREE PHASE

#### 4.4 SPECIFICATION OF FUSE

VOLTAGE	SINGLE PHASE	THREE PHASE
110V	30A	
220V	20A	10A
380V		7.5A

#### 5.GENERAL DIMENSION



Bed fixing hole size

Overall size

#### 6.INSTALLATION

##### 6.1 FOUNDATION

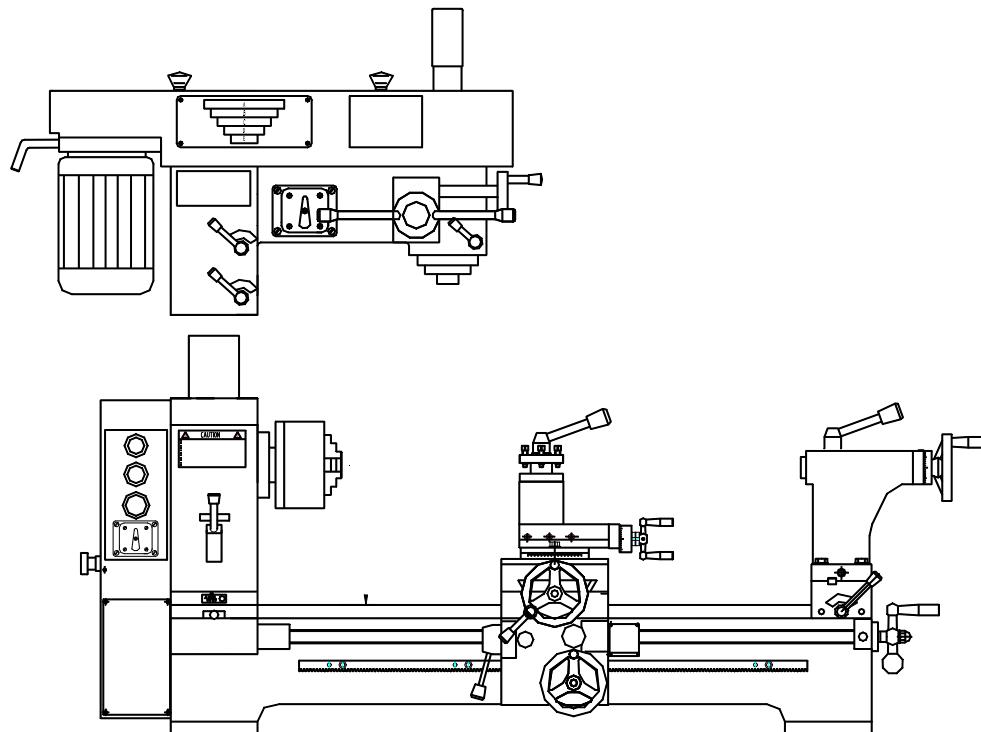
The base of the machine foundation must be solid without noticeable deflection and heavy enough to support the weight of the machine. The floor installation must be fairly level.

If you use our stand, please place the stand in installation position, then make mark in installation hole position, then move the stand, cover the foundation bolts, place two adjustable iron spacer in the end of headstock and tailstock separately. In order to increase the touched square, please stagger the front and back iron spacers. Hereafter, place the stand on the adjustable iron spacers and fix with foundation bolts. Lift the machine on the stand and fix to stand by using

the nut and bolts. If possible, you could ask a professional worker to install.

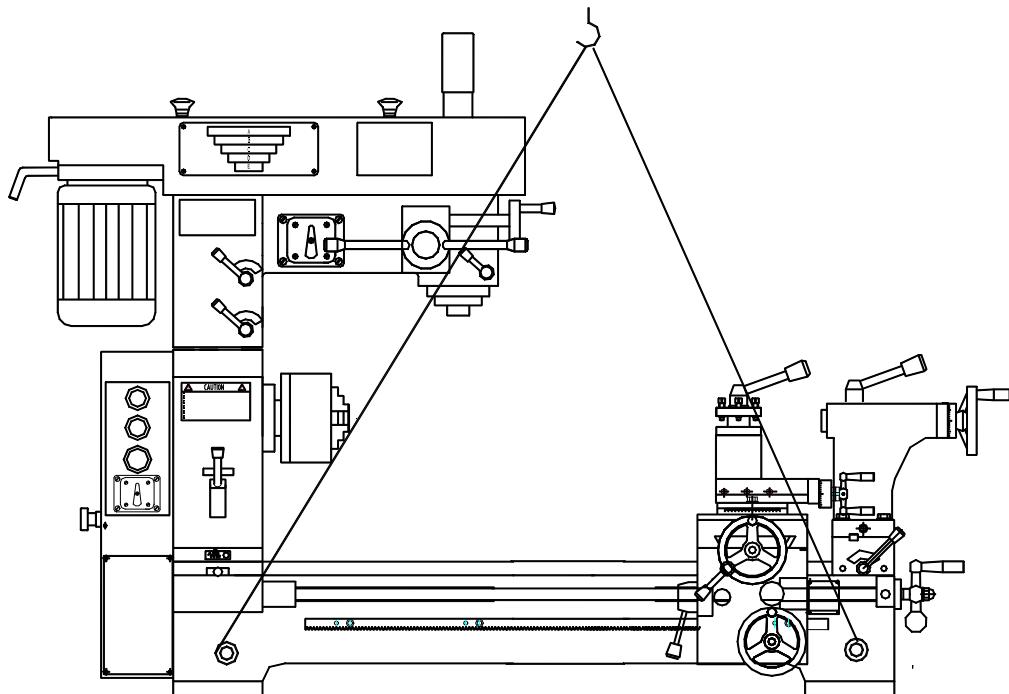
## 6.2 INSTALLATION OF DRILLING AND MILLING HEAD

Firstly, clean turning part and connected part of drilling-milling head and turning part. As the following figure, place the drilling-milling head on the turning part, then fit brake nut, lever,cork,etc.



## 6.3 LIFTING

Before lifting the machine, place spacers on the machine in order to prevent its surfaces from being damaged. In order to avoid machine dealing and leaning, please lock the slide and tailstock. When lift the machine under the lifting rod with steel rope, please pay more attention to the machine gravity. Place the machine carefully on the base, adjust the machine leveling position, and finally fit the machine perfectly.



#### 6.4 CLEANING

Before shipment, the machine un-painted surfaces are all coated with antirust oil. Before using, you can clean the antirust oil by cleanser and gasoline. After finishing cleaning, lubricate the slide way.

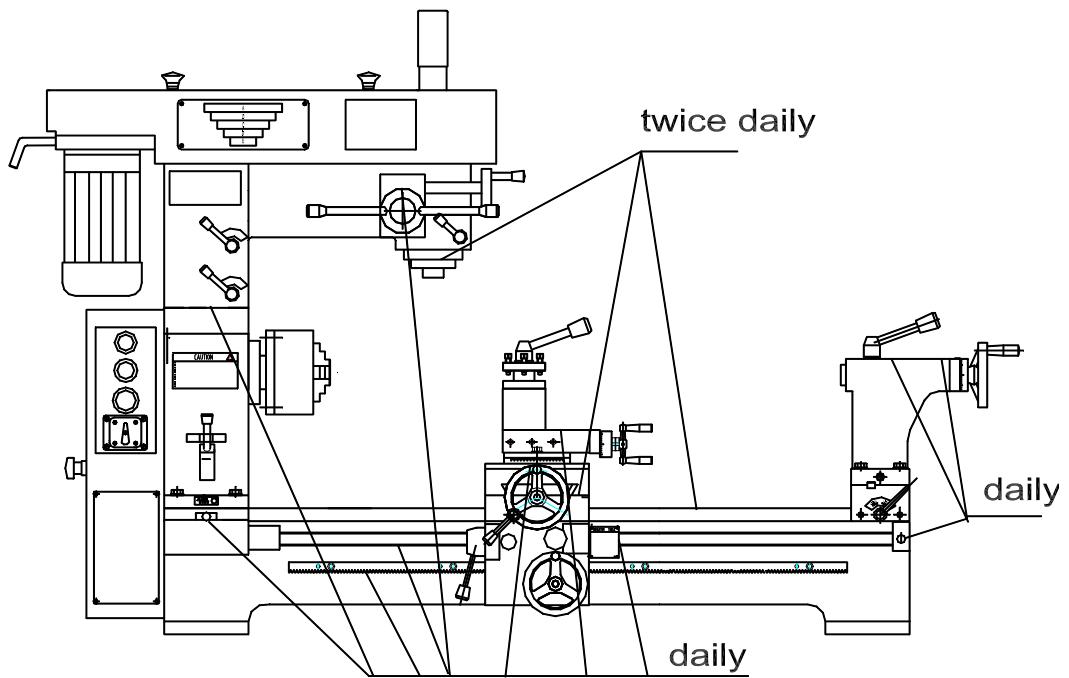
#### 6.5 LEVELING

By a 6" precision machine spirit level, you can level the machine in longitudinal and cross direction. Then tighten the foundation bolts and nuts.

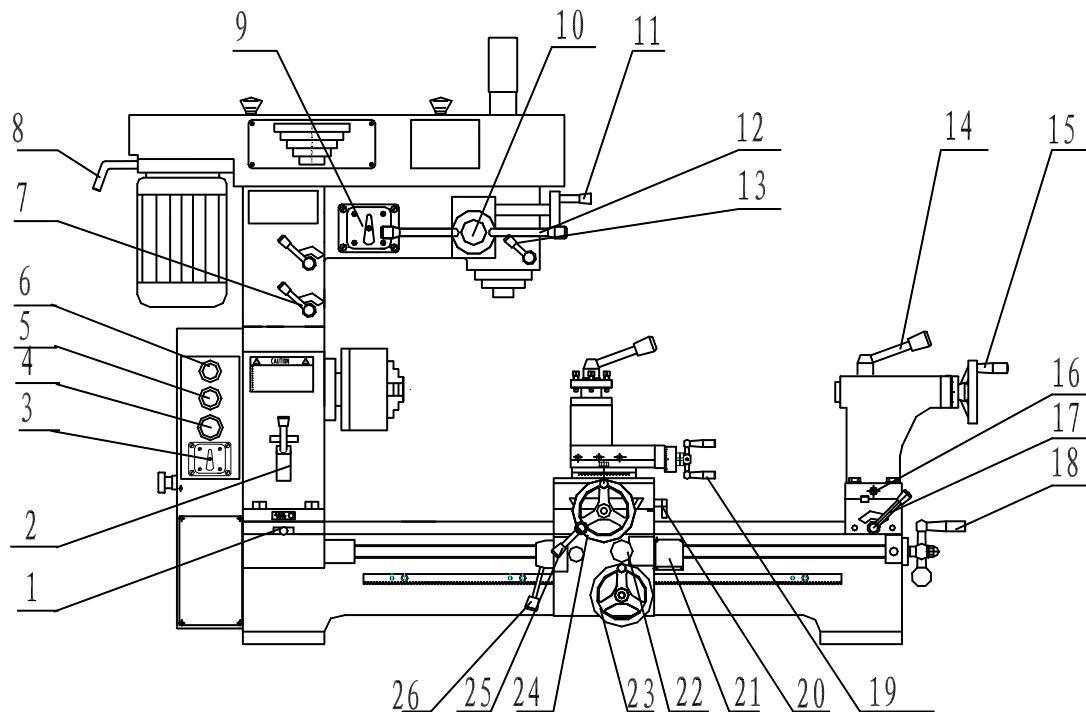
### 7. LUBRICATING CHART

The machine lubricating points should be lubricated according to the lubricating chart. Driving bearings should be lubricated with grease regularly, clean once each year. The gears in the headstock should be lubricated by No.70 or HL-30 gear oil, oil level according to oil gauge.

The oil in the headstock should be changed regularly, the first time after about half a month, the second time after 45 days, later once each half a year.



## 8. OPERATION EXPLANATION



(1) Lead screw clutch handle	(15) Tailstock handwheel
(2) Change lever	(16) Reset screw
(3) Shift switch	(17) Tailstock locking lever
(4) Emergency switch	(18) Longitudinal feed handle
(5) Start switch	(19) Toolpost feed handwheel
(6) Pilot	(20) Slide lock lever
(7) Locking lever	(21) Threading dial
(8) Belt tension lever	(22) Longitudinal-cross feed clutch handle
(9) Drilling-milling shift switch	(23) Longitudinal feed handwheel
(10) Micro feed clutch lever	(24) Cross feed handwheel
(11) Micro feed handle	(25) Saddle lock lever
(12) Spindle locking lever	(26) Half nut lever
(13) Spindle feed lever	
(14) Tailstock barrel lock lever	

## 8.1 CAUTION

- a. BEFORE FAMILIAR WITH THE CONTROL PARTS AND THEIR FUNCTIONS, PLEASE DON'T OPERATE THE MACHINE COMPLETELY.
- b. CHECK LUBRICATING SURFACES AND SLIDES, TURNING SPARE PARTS REFERING TO LUBRICATING CHART AND USE GREASE TO LUBRICATE.
- c. AFTER WORKING, YOU SHOLD CUT OFF CURRENT.
- d. THE MACHINE IS NOT ARMED WITH LIGHT EQUIPNENT. YOU SHOULD SUPPLY ENOUGH LIGHT INSTRUMENT YOUSELF, AND AVOID SHADOW INTERRUTING IN ORDER TO PREVENT THE DANGER FROM HAPPENING BECAUSE OF LACK LIGHTING.
- e. KEEP CLAMPING THE WORKKING PIECE FIRMLY, PREVENT IT FLYING OFF. THE OUTSTANDING PART OF THE PIECE SHOULD NOT BE MORE 80MM. THE RATE OF LENGEH AND DIAMETER FOR THE OUTSTANDIING PART SHOUD BE NOT MOTE THAN 4.
- f. WHEN ACCIDENT HAPPENED DURING OPERATION, PLEASE CUT OFF POWEER AT ONCE TO MAKE THE MACHINE STOP.
- g. THEN NEEDING TO ADJUST TOOL, THE MACHINE OR WORKING PIECE, YOU MUST CUT OFF POWER.

## 8.2 MAIN SPINDLE DRIVING

- a. Before starting the machine, you should check the tension of belt. The belt should depress about 10mm under normal finger pressure. The tension of the belts can be adjusted by the lever (8).
- b. Main spindle running, stop, forward and reverse can be realized by shift switch (3). If needing to change main spindle running, please turn the shift switch to middle position, after a moment, then to the opposite side. Or, if turn the switch to another side directly, the direction of main spindle running don't change.
- c. Loose lock lever, change the belt position in tower pulley, then tighten belt. Now the main spindle can obtain 7 kinds of speed according to the following chart.

SPINDLE SPEEDS (○/min)						
MOTOR		MIDDLE		SPINDLE		
A-F	A-E	A-D	B-F	C-F	B-E	C-D
160	300	375	470	600	870	1360

### 8.3 DRILLING-MILLING SPINDEL DRIVING

- a. At first, check the protection instrument if effective, then push start switch, pilot light, the machine is awaiting working. Now stop, forward and reverse of drilling-milling spindle can be made by operating the shift switch (9).
- b. Drilling-milling spindle feeding can be change by lever(13), If need micro feeding, pull out drilling-milling clutch lever(10), then operate lever(11) to micro feed.

THE DRILLING-MILLING UNIT SPEEDS (○/min)							
MOTOR		MIDDLE		SPINDLE			
- A	- B	- A	- C	- A	- D	- B	- A
E -	E -	D -	E -	C -	E -	D -	B -
125	200	310	350	400	450	530	600
- B	- C	- B	- D	- C	- D	- C	- D
C -	D -	A -	C -	B -	B -	A -	A -
660	900	1380	1450	1670	2140	2350	3000

- c. The speed of drilling-milling spindle can be made by lever(8):push lever to backward, loose belt and change the belt position on the pulley, then push the lever to the front to tighten belt, finally lock lever(8).16 kind of speed can be obtained as the above chart.

### 8.4 LONGITUDIANL FEED

- a. HAND FEEDING: Turn the clutch handle (1) to the middle position, half-nut lever (26) in disengaged position, turn the hand wheel (23), now longitudinal hand feeding can be made.
- b. AUTOMATIC FEEDING: The half-nut lever (26) in engaged position, longitudinal-cross feed clutch handle (22) in inner position. Now cross auto-feeding can be made. By changing the handle (2) position and gear A,B,C,D, 12 kinds of automatic feed amount can be obtained as follows. (the left chart is for the inch

leadscrew, and the right chart is for the metric leadscrew)

	A	24	30	36	42
I	0.2	0.25	0.30	0.35	
II	0.1	0.125	0.15	0.175	
I	0.05	0.063	0.075	0.088	
II	0.008	0.010	0.012	0.014	
I	0.004	0.005	0.006	0.007	
II	0.002	0.025	0.003	0.0035	

	A	24	30	36	42
I	0.2	0.25	0.30	0.35	
II	0.1	0.125	0.15	0.175	
I	0.05	0.063	0.075	0.088	
II	0.008	0.010	0.012	0.014	
I	0.004	0.005	0.006	0.007	
II	0.002	0.025	0.003	0.0035	

## 8.5 CROSS FEEDING

- a. Hand feeding can be made by operating the hand wheel (24) directly.
- b. Automatic feeding: half-nut lever (26) in engaged position. Pull out longitudinal-cross feed clutch handle (22), now cross automatic feeding can go. By changing the handle (2) position and gear A,B,C,D, 12 kinds of automatic feed amount can be obtained as above.(the left chart is for the inch leadscrew, and the right chart is for the metric leadscrew)

## 8.6 THRED CUTTING

- a. Main spindle in low speed, the lever (1) in left position, Refer to gear chart, adjust gear shift lever(2) properly , half- nut lever (26) in engaged position. Now can go to cut thread. Different thread pitch (inch, metric) cutting can go by changing the lever (2) and gear A,B,C,D.

- b. CAUTION: IN CUTTING THREAD COURSE, DON'T LEAVE handle (2) OFF RIGHT OR LEFT POSITION. WHEN A KIND OF THREAD NEED MANY TIMES. TURN THE HANDWHEEL (15) TO MAKE TOOL AWAY FROM WORKPICCE, OPERATE THE ELECTRICAL SWITCH TO MAKE MOTOR RUN IN THE OPPOSITE DIRECTION. AFTER FINISHING RETURNING TOOL CONTINUE TO CUT THREADS. DO SO MANY TIMES UP TO FINISHING CUTTING THREADS.

	A	36	42	48	60	72
I	0.75	/	1	1.25	1.5	
II	1.5	1.75	2	2.5	3	
I	3	3.5	4	5	6	
II						
A	D	24	27	30	33	36
I	4	4.5	5	/	6	/
II	8	9	10	11	12	13
I	16	18	20	22	24	26
II	/	/	/	/	18	/
A	D	24	27	30	33	36
I	/	27	30	33	36	39
II	/	54	60	66	72	78

	A	24	27	30	36	42	48	60	72
I	0.8	/	1	/	/	/	/	/	/
II	0.4	0.45	0.5	0.6	0.7	0.8	/	/	/
I	0.2	/	0.25	0.3	0.35	0.4	/	0.6	
II	/	/	2.5	3	3.5	4	5	6	
A	D	24	27	30	33	36	39	42	48
I	/	/	/	1.25	1.5	1.75	2	2.5	3
II	/	/	/	/	0.75	/	1	1.25	1.5
A	D	24	27	30	33	36	39	42	48
I	4	4.5	5	/	6	/	7	8	10
II	8	9	10	11	12	13	14	16	20
A	D	24	27	30	33	36	39	42	48
I	16	18	20	22	24	26	28	32	40
II	/	/	/	/	18	/	/	24	30
A	D	24	27	30	33	36	39	42	48
I	/	27	30	33	36	39	42	48	60
II	/	54	60	66	72	78	84	96	120

## 8.7TAIL STOCK

The tail stock can slides along the bed ways freely and can be locked in any position by the lock lever(17).

Tail stock barrel position can be adjusted by turning the tail stock hand wheel (15), locked by lock lever (14). Before shipment, it is sure that the tail stock center and spindle center are in the same line. If need to use the tail stock center to cut small taper, you should loose the screw, adjust the two reset screw (16) to make the deviation between spindle center and tail stock center. Now you can start the work.. After finishing proceeding, you should do as the above to move tail stock in original position. When use tail stock to do the external cutting and get a taper, please adjust the reset screw (16) as the above way. Now you can eliminate the taper.

## 8.8THREADING DIAL

Threading dial performs the function of indicating the proper time to engage the half-nut so that the tool will enter the same groove of the thread on each successive cutting. Threading dial is marked with lines numbered 1.2.3.4.5.6, and a single line is marked on the housing of the threading dial (fixed line). The instruction plate (see the following figure) riveted on the threading dial shows the selection of matching the revolving lines with the fixed line.

When cutting thread, engage the half-nut at the proper numbers shown on the scale column of the threading dial plate. 1-6 on the scale means the half-nut can be engage on any of the numbered lines 1.2.3.4.5.6. In the first cutting, if engage the half-nut when matching the numbered lines with fixed line, you can engage the half-nut for successive cutting only when matching the numbered lines with the fixed line. 1.4 mean the half-nut can be engaged on 1.4 for successive cutting. If the half-nut engage with the lead screw all the time while cutting the thread, need not to use the threading dial. In this case, after finishing each successive cutting, firstly back the tool and reverse the motor, then move the tool to the last start cutting position and make the next successive cutting.

INDICATOR TABLE							
TPI	SCALE	TPI	SCALE	TPI	SCALE	TPI	SCALE
8	1,4	12	1-6	20	1,4	32	1,4
9	1-6	14	1,4	22	1,4	40	1,4
10	1,4	16	1,4	24	1-6		
11	1,4	18	1-6	28	1,4		

## 9.CHECK PROBLEMS AND TEPAIRING

CAUTION: BEFORE CHECKING, PLEASE TURN OFF THE CURRENT.

9.1 Turn on the current, the spindle doesn't run.

a. The voltage is not right and the main switch turned off .....please adjust the

input voltage and turn on the main switch.

- b. The fuse in electric box was broken ..... please change a new one.
- c. Wire connector is loosing ..... please check and fix it again.

9.2 The motor is too heat or not powerful.

- a. Overloading or working time is too long ..... please reduce it.
- b. The voltage is too low ..... adjust to correct volatage
- c. Poor quality of motor ..... please change a new one.
- d. The fuse or wire connector is not good (easily make the motor short circuit ..... please turn off the current and change a fuse.
- e. The belt is too tight ..... please loose it to suitable position.

9.3 Temperature of main spindle bearings is too high.

- a. No enough grease to lubricate ..... please fill the oil according to oil gauge.
- b. The bearing assembly is too tight ..... adjust spindle back nut properly .
- c. High speed turning for long time ..... slightly reduce the cutting amount.

9.4 Shortage of motive force when the spindle is running.

- a. The belt is too loose or worn and tore ..... please adjust the belt tension to correct position or change a new one .
- b. The motor is burnt ..... please change a new one .
- c .The fuse has broken .....please change a new one .

9.5 Making small taper when external turning.

- a. It is not on the same line between the spindle center and the tail stock center .....please adjust the tail stock according to the operation manual.
- b. The moving line of carriage does't parallel to the spindle center.....please loose the lock screw of headstock and adjust the spindle center to requirement and lock.

9.6 During proceeding, the surface of work piece is very rough.

- a. The space of the spindle bearing is too big ..... adjust it to correct position or change a new one.
- b. The space between the saddle and the gib is too big ..... adjust them to correct position.
- c. The tool is not sharp ..... please sharpen it.
- d. The work piece doesn't lock tightly ..... please lock it tightly.
- e. The precision of spindle bearing is too bad to wear ..... please change a new one.

## 10. MAINTENANCE

Please often keep the machine in good condition and good precision. It is advisable that maintenance is better than repair.

10.1 Daily maintenance

- a. Before using everyday, please pour the oil and lubricate all the moving parts.
- b. If the spindle temperature is too high or too noisy, please stop the machine and

check it in order to keep its precision.

- c. When the machine is in trouble, please stop to repair it. If you don't do it well, please ask for the local repairman or supplier to help you.
- d. It is not allowable to work the machine with too many loads.
- e. Before leaving the workshop, please clean the working area, unload the work piece, turn off the power, be careful to clean the iron chipping and shavings and dust, pour into the lubricating oil or antirust oil according to the manual.

#### 10.2 Weekly maintenance

- a. Clean and protect the screw.
- b. Check all sliding turning surfaces if lack of lubricating, if not, please pour into oil.

#### 10.3 Monthly maintenance

- a. Adjust all the gib space of the saddle.
- b. Lubricate the worm gear, half nut bearings in order to prevent wearing.

## 11. STANDARD ACCESSORIES

Item no.	Item name	Specification	Quantity	Remarks
1	3-jaw chuck	160mm	1	Installed
2	Dead centers	M.T.3	1	
		M.T.4	1	
3	Wedge		1	
4	Tie rod		1	Installed
5	Tie rod washer		1	Installed
6	Tool post wrench		1	
7	Double end wrench	13×16mm	1	
8	Allen wrench	3mm	1	
		4mm	1	
		5mm	1	
		6mm	1	
9	“-“ screw driver	100×6mm	1	
10	Duplex gears (m=1)	T=120/127	1	Metric,inch
		T=60/127	1	Inch
		T=60/120		Metric
11	Gear (m=1)	T=24	1	Metric,inch
		T=24	1	Metric,inch
		T=27	1	Metric,inch
		T=30	1	Metric,inch
		T=33	1	Metric,inch

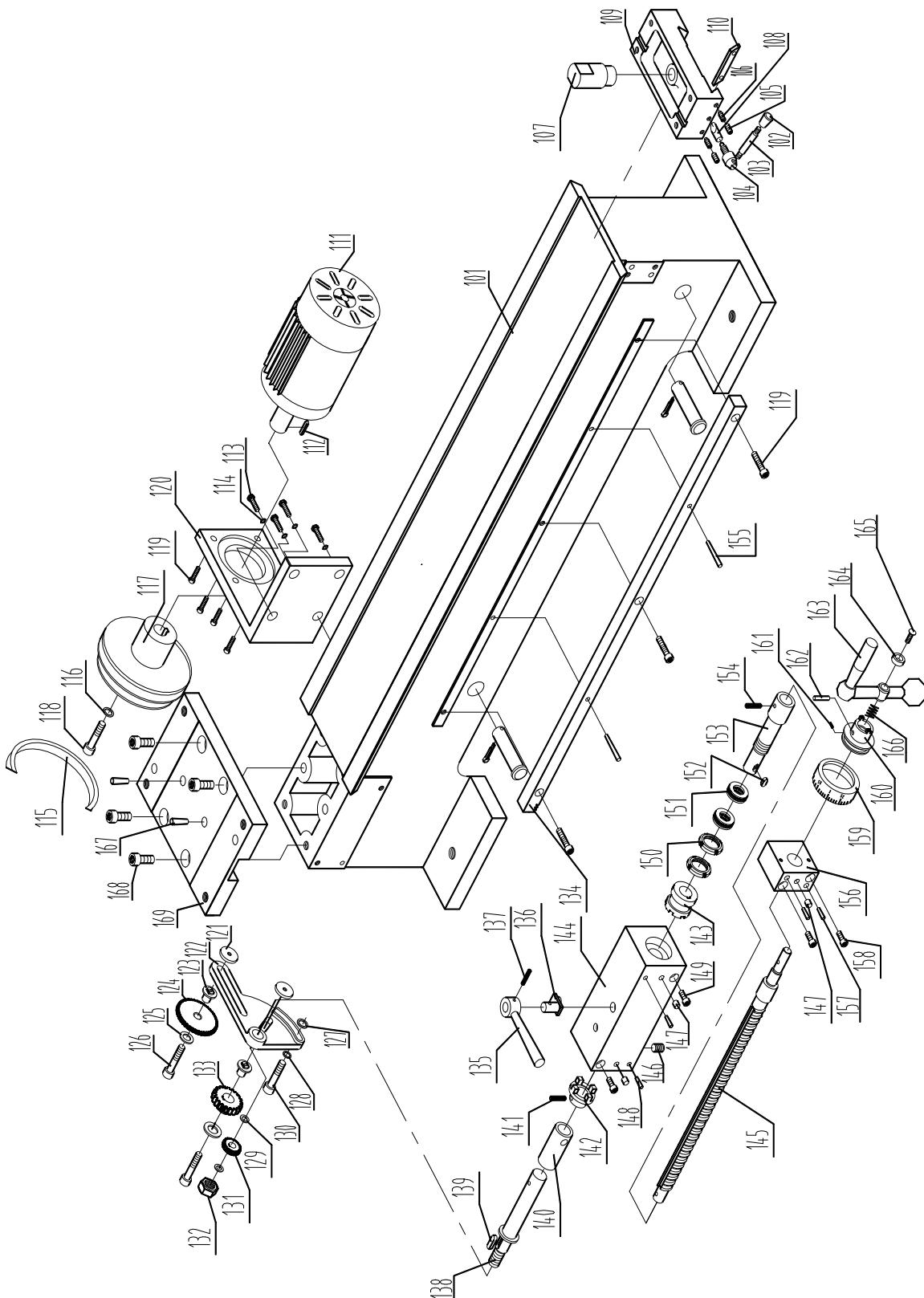
		T=36	1	Metric,inch
		T=39	1	Metric,inch
		T=42	1	Metric,inch
		T=48	1	Metric,inch
		T=60	1	Metric,inch
		T=72	1	Metric,inch
		T=120	1	Installed
12	Drill chuck	B16/1.5-13	1	Installed
13	Drill stock		1	Installed

The descriptions and specifications given in the manual are subject to alteration without notice.

## 12.OPTIONAL ACCESSORIES (ACCORDING TO THE SUPPLY CONTACT)

Item no.	Item name	Specification	Quantity	Remarks
1	Lathe tool		1	
2	Milling cutter holder		1	
3	Reversible thread tapping tools		1	
4	D.C. motor system		1	
5	Machine stand		1	
6	Protection for chuck		1	
7	Protection for lead screw		1	
8	Protection for tool post		1	
9	Protection for drilling and milling		1	
11	Follow rest		1	
12	Steady rest		1	

床身部装

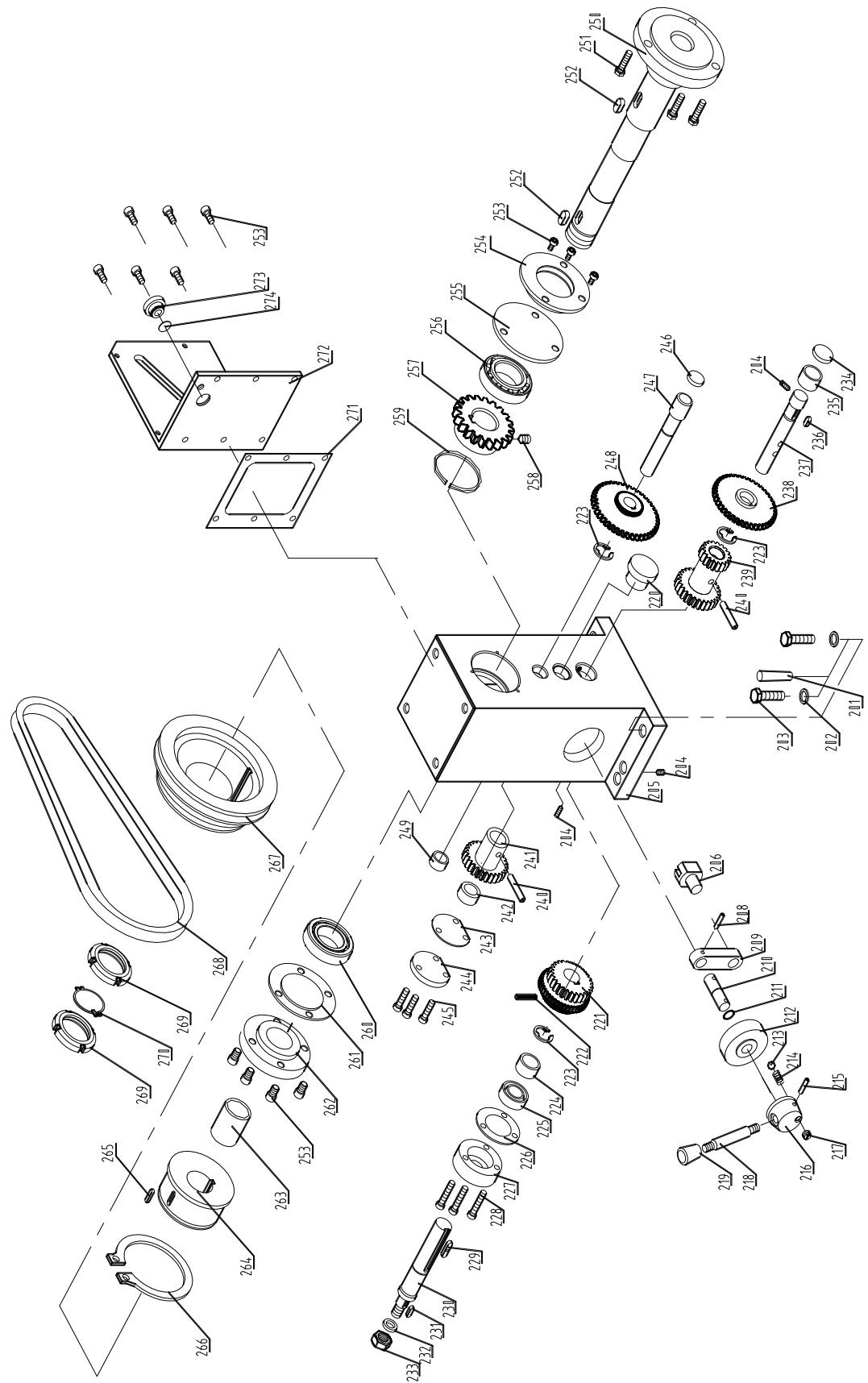


## BED ASSEMBLY

Index No.	Part No.	Description	QTY.
101	CT500-01-003(2)	Bed	1
102	JB/T7271.3	Handle knob M6×20	1
103	JB/T7271.6	Handle M6×50	1
104	HQ400-11-022	Locking screw	1
105	GB/T77	Screw M8×25	2
106	GB/T79	Screw M8×14	2
107	HQ400-11-034	Adjusting block	1
108	HQ400-11-015	Locking pin	1
109	HQ400-11-004	Tailstock carriage	1
110	HQ400-11-016	Gib	1
111	YC-7144	Motor (0.55KW)	1
112	GB/T1096	Key A5×16	1
113	GB/T5781	Bolt M10×25	4
114	GB/T97.1	Washer 10	5
115	GB/T1171	V-belt Z630	1
116	GB5287-85	Washer 6	1
117	CT500-01-010	Pulley	1
118	GB70-85	Screw M6×55	1
119	GB/T70	Screw M6×20	4
120	CT500-01-005	Motor mount	1
121	HQ400/3-01-009	T-nut	2
122	CT500-01-001	Bracket	1
123	HQ400/3-01-010	T-bushing	2
124	HQ400/3-F-01	Change gear	1
125	GB5287-85	Washer 6	2
126	GB/T70	Screw M6×40	2
127	GB5287-85	Washer 6	1
128	GB/T97.1	Washer 6	1
129	HQ400/3-01-012	Washer	1
130	GB/T70	Screw M6×30	1
131	HQ400/3-F-01-012	Change gear	1
132	GB/T6170	Hex nut M10	1
133	HQ400/3-F01-015	Gear	1
134	CZ1224CHG-01-007 (1)	Rack	1
135	GB/T4141.7	Handle A10×80	1
136	CT500-09-002	Eccentric lever	1
137	GB/T879	Spring pin 3×20	1
138	HQ400/3-04-001	Transmission shaft	1
139	GB/T1096	Key A4×12	1
140	CT500-09-005	Sleeve	1
141	GB/T879	Spring pin 5×22	1

Index No.	Part No.	Description	QTY.
142	HQ400/3-04-003	Clutch jaw A	1
143	CT500-09-001	Clutch jaw B	1
144	CT500-09-003	Transmission box	1
145	CT500-01-002	Leadscrew	1
146	GB/T78	Screw M6×8	1
147	GB/T1155	Oil ball 6	2
148	GB/T117	Taper pin B5×55	2
149	GB/T70	Screw M6×50	2
150	CT500-09-006	Spanner nut M17×1.5	2
151	GB/T301	Bearing 8103 (51103)	2
152	GB/T1096	Key 5×10	1
153	CT500-09-004	Shaft connector	1
154	GB/T879	Spring pin 4×20	1
155	GB/T879	Spring pin 5×25	2
156	CT500-01-004	Leadscrew seat	1
157	GB/T118	Taper pin 5×55	2
158	GB/T70	Screw M6×45	2
159	CT500-01-006	Dial	1
160	CT500-01-007	Dial seat	1
161	CT500-10-016	Spring piece	1
162	GB/T879	Spring pin 4×20	1
163	CT500-01-009	Crank handle	1
164	CT500-01-008	Washer	1
165	GB/T819	Screw M4×12	1
166	GB/T2089	Spring 14×1×15	1
167	GB/T117	Taper pin A8×40	2
168	GB/T70	Screw M10×25	4
169	CT500-01-003(1)	Fixing block	1

主轴箱部装

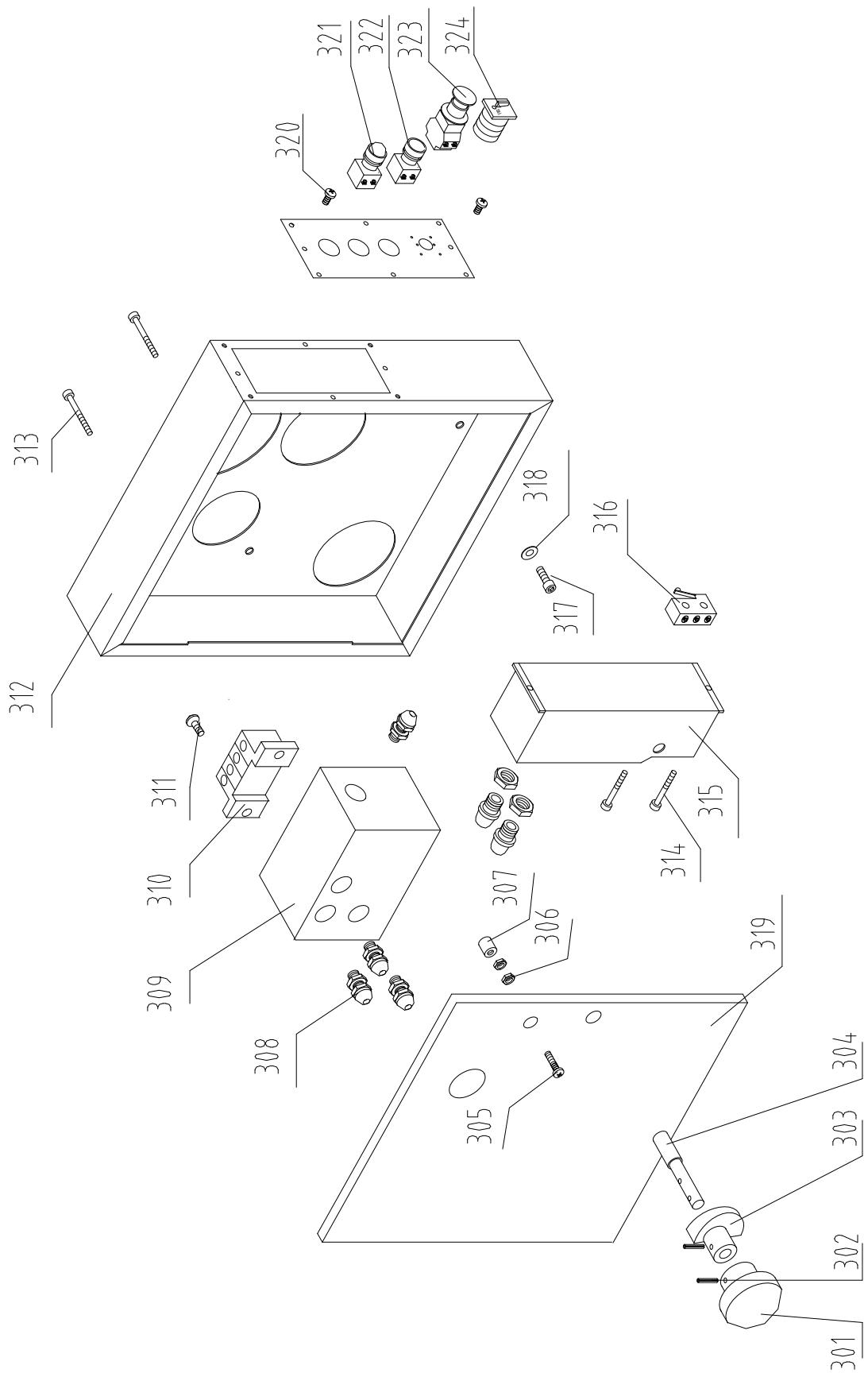


## Headstock Assembly

Index No.	Part No.	Description	QTY.
201	GB/T117	Taper bin $8 \times 40$	2
202	GB/T97.2	Washer 10	4
203	GB/T5781	Bolt M10 $\times 40$	4
204	GB/T78	screw M5 $\times 12$	3
205	CT500-02-005	Headstock	1
206	CT500-02-027	Fork	1
208	GB/T879.1	Roll bin $5 \times 18$	1
209	CZ300A-03-050	Fork arm	1
210	HQ400/3-02-041	Straight pin	1
211	GB/T3452.1	O-ring $8.5 \times 1.8$	1
212	CT500-02-013	Spacer	1
213	GB/T308	Steel ball $\Phi 6.5$	1
214	GB/T2089	Spring $1 \times 6 \times 15$	1
215	GB/T879	Spring pin $5 \times 45$	1
216	HQ400/3-02-042	Handle seat	1
217	GB/T73	flat point set screw M8 $\times 5$	1
218	CM1224C-04-003	Handle rod	1
219	GB/T4141.14	Handle knob BM10 $\times 50$	1
220	GB/T1160.2A	Oil level indicator	1
221	CT500-02-025	Triplex gear	1
222	GB/T879	Spring pin $3 \times 8$	1
223	GB/T894.1	Retain ring (external)14	3
224	CT500-02-015	Brass bushing	1
225	HG4-692-67	O ring PD15 $\times 30 \times 10$	1
226	HQ400/3-02-005	Gasket	1
227	HQ400/3-02-002	O-ring seat	1
228	GB/T65	Bolt M5 $\times 20$	3
229	CT500-02-028	Key	1
230	CT500-02-021	Shaft D	1
231	GB/T1096	Key 4 $\times$ 8	1
232	GB/T848	Washer 10	1
233	GB/T6170	Nut M10	1
234	CT500-02-020	Hole plug	1
235	CT500-02-014	Brass bushing	1
236	GB/T1096	Key 5 $\times$ 14	1
237	CT500-02-017	Shaft C	1
238	HQ400/3-02-012	Gear C	1
239	CT500-02-026(2)	Gear C(2)	1
240	GB/T879	Spring pin $4 \times 20$	2

Index No.	Part No.	Description	QTY.
241	CT500-02-026(1)	Gear C(1)	1
242	HQ400/3-02-038	Brass bushing	1
243	HQ400/3-02-026	Gasket	1
244	CT500-02-022	Cover	1
245	GB/T818	Screw M5×12	3
246	CT500-02-019	Hole plug	1
247	CT500-02-009	Shaft B	1
248	HQ400/3-02-013	Duplex gear B	1
249	HQ400/3-02-030	Brass bushing	1
250	CT500-02-010	Spindle	1
251	GB/T5783	Bolt M8×25	3
252	GB/T1096	Key 8×22	2
253	GB/T70	screw M5×16	13
254	DIY1619-02-036	Cover	1
255	DIY1619-02-037	Gasket	1
256	GB/T297	Taper roller bearing 2007109(32009)	1
257	CT500-02-006	Gear A	1
258	GB/T71	screw M8×10	1
259	GB/T921	Locking ring 47	1
260	GB/T297	Taper roller bearing 2007108(32008)	1
261	CT500-02-003	Gasket	1
262	CT500-02-002	Flange	1
263	CT500-02-004	Spacer	1
264	CT500-02-024	Pulley spacer	1
265	GB/T1096	Key 10×25	1
266	GB/T894.1	Retain ring (external) 63	1
267	CT500-02-001	Pulley	1
268	GB/T1171	V-belt O-710	1
269	GB/T812	Spanner nut M40×1.5	2
270	GB/T858	Locking washer 40	1
271	CT500-02-012	Gasket	1
272	CT500-02-011	Bracing plate	1
273	CM1224C-03-034	Oil plug	1
274	GB3452.1	O-ring 15.8×1.8	1

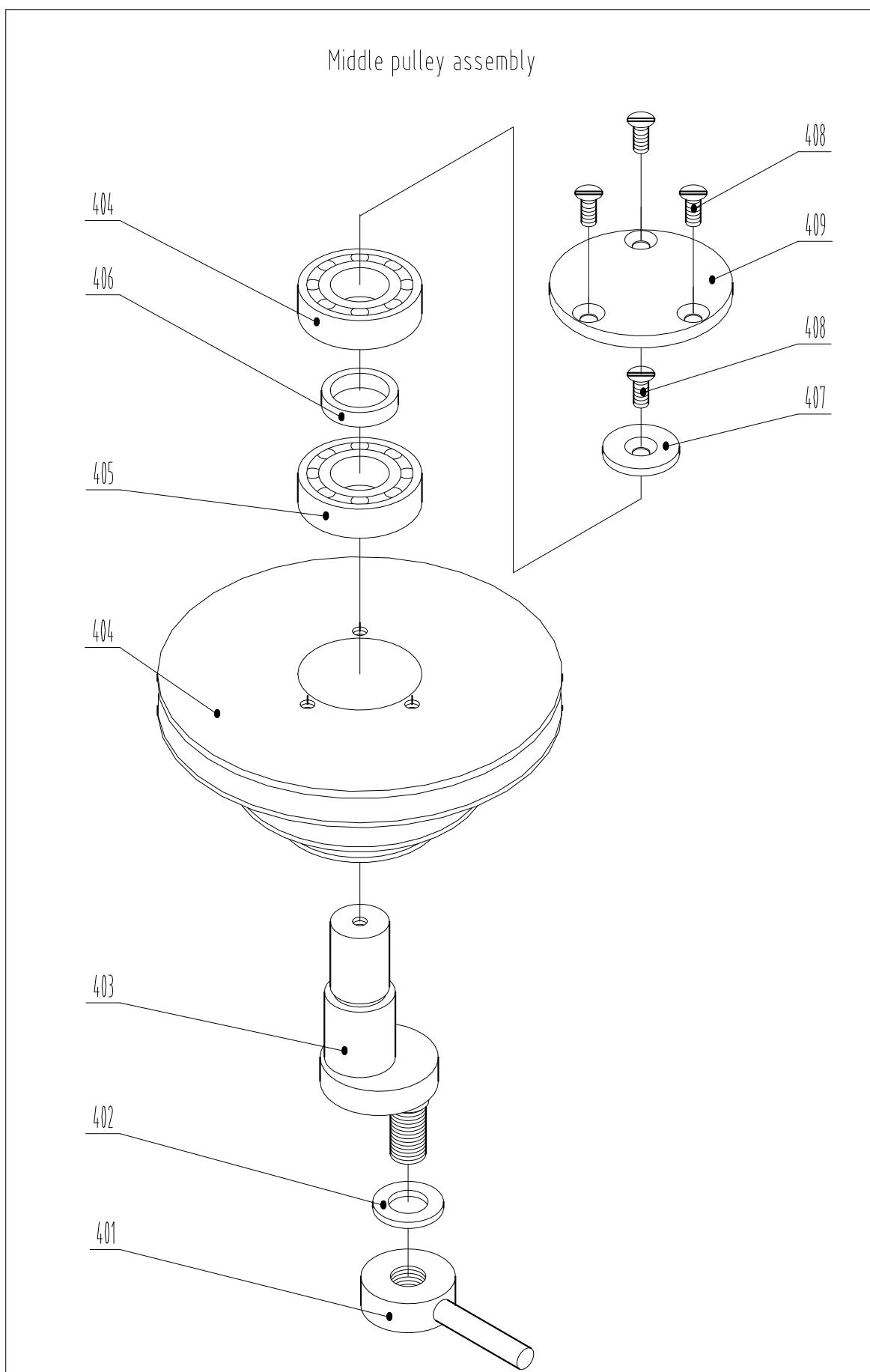
## Headstock Guard Assembly



## HEADSTOCK GUARD ASSEMBLY

Index No.	Part No.	Description	QTY.
301	GB4141.29	Knob A8×32	1
302	GB879	Pin 3×14	2
303	CZ300A-08-005	Clamping block	1
304	CZ300A-08-008	Rod	1
305	GB/T65-85	Screw M5×35	1
306	GB/T41-86	Nut M5	2
307	CT500-03-009	Adjustive pin	1
308	D97-4-20	Wire connector	4
309	CT500-03-003	Electrical box	1
310	B16	AC connector	1
311	GB/T818-85	Screw M4×8	7
312	CT500-03-002	Guard	1
313	GB/T819-85	Screw M4×12	2
314	GB/T67-85	Screw M4×25	2
315	CT500-03-006	Switch box	1
316	LX5-11N	Limit switch	1
317	GB/T70-85	Screw M5×10	5
318	GB/T96	Washer 5	5
319	CT500-03-001	Guard door	1
320	GB/T819	Screw M4×10	2
321	AD11	Indicator light	1
322	LA19	Button	1
323	LAY3	Emergency stop button	1
324	HZ5	Compose switch	1

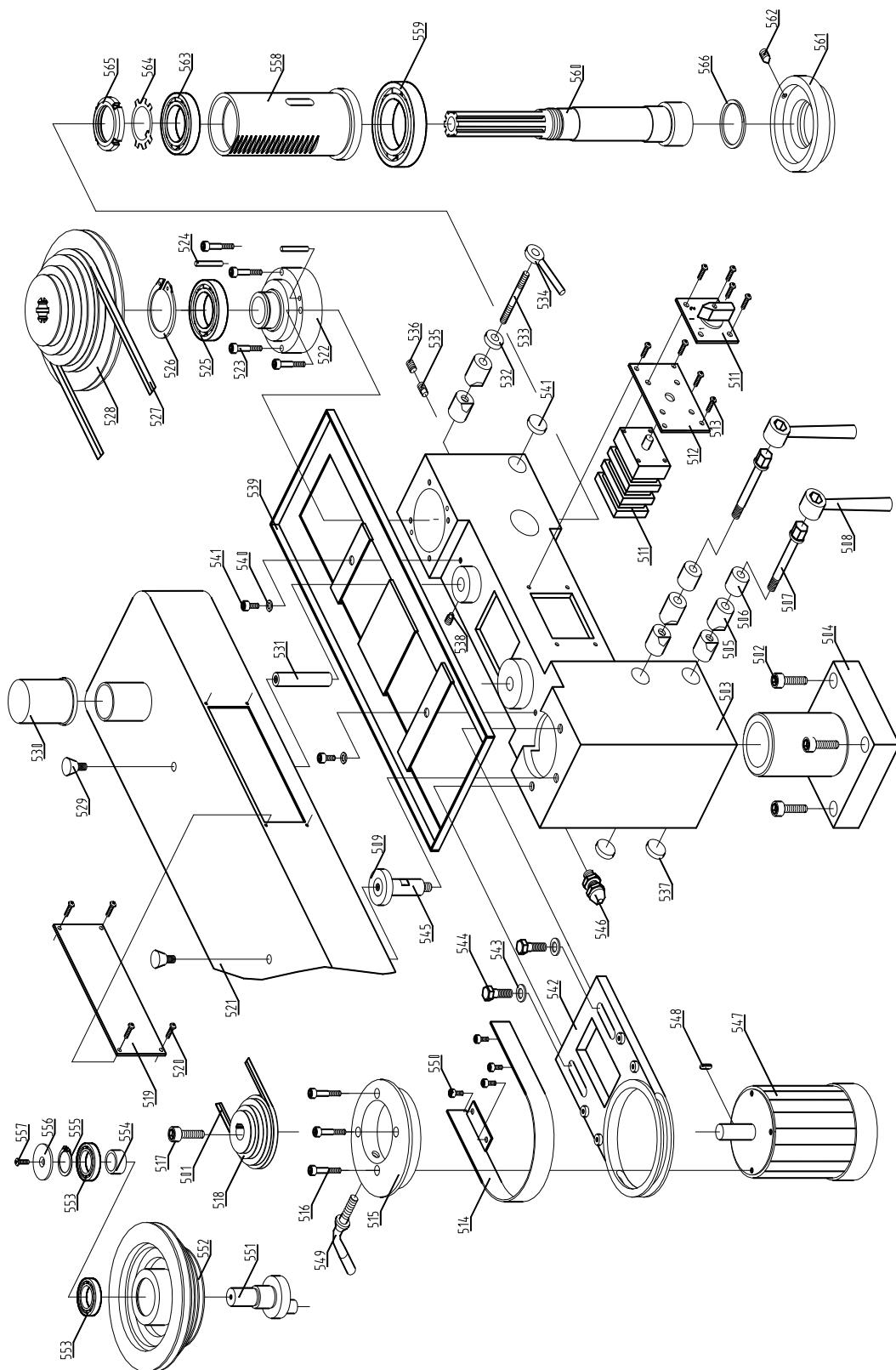
Middle pulley assembly



## MIDDLE PULLEY ASSEMBLY

Index No.	Part No.	Description	QTY.
401	JB/T7270.7	Handle BM12×80	1
402	GB/T97.1	Washer 12	1
403	HQ400/4-04-001	Pulley arbor	1
404	HQ400/3-02-034	Middle pulley	1
405	GB/T276	Bearing 104(6004-2RS)	2
406	HQ400/3-02-035	Spacer	1
407	HQ400/3-02-036	Cover	1
408	GB/T68	Screw M5×10	4
409	HQ400/3-02-037	Cover	1

钻铣箱部装

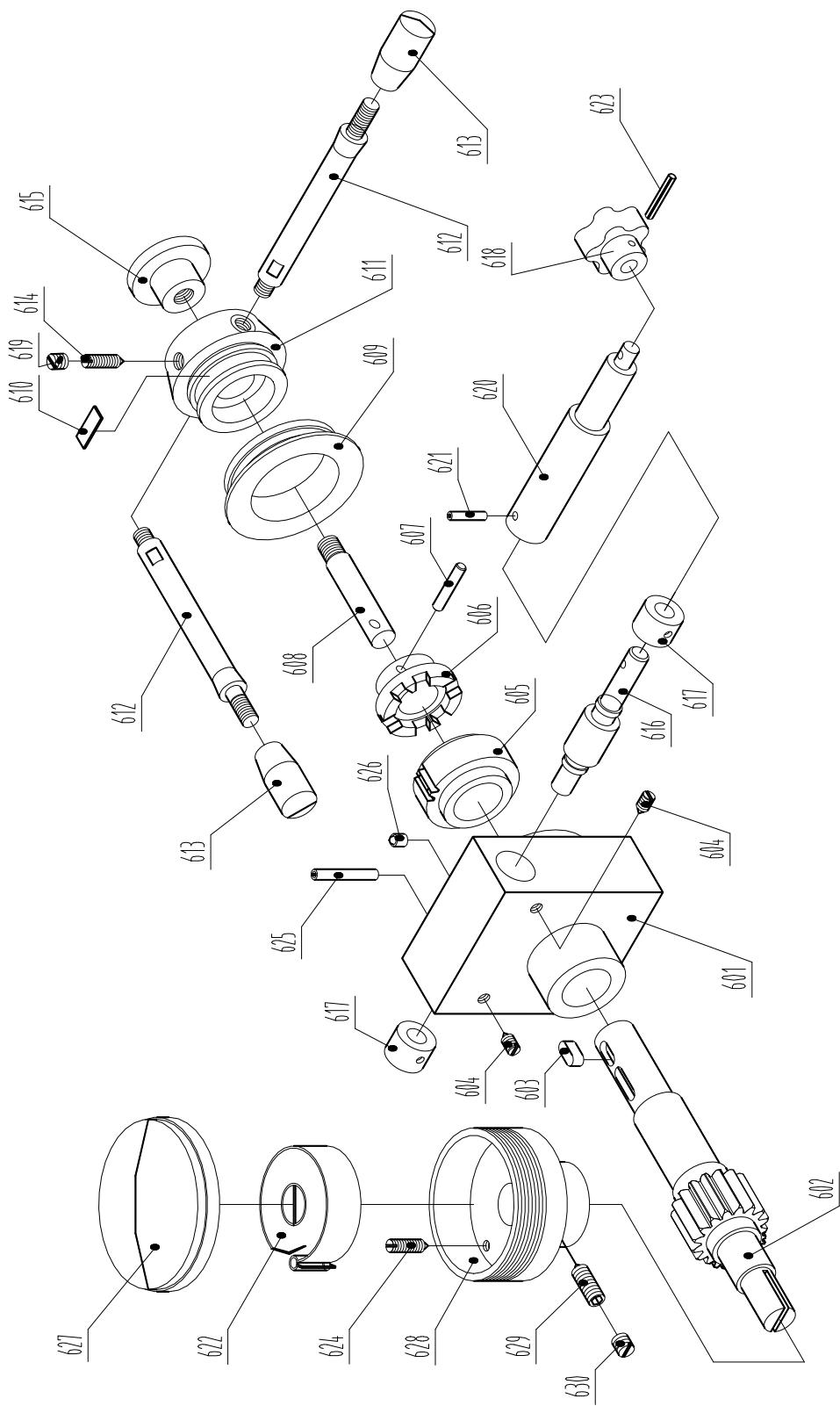


## MILLING & DRILLING ASSEMBLY

Index No.	Part No.	Description	QTY.
501	GB/T1171-2006	V-belt Z800	1
502	GB/T70	Screw M10×40	4
503	CT500-05-002	Milling-drilling headstock	1
504	CT500-05-001	Support column	1
505	CT500-05-003	Locking block (pair)	3
506	CT500-05-004	Spacer	3
507	CT500-05-022	Screw	2
508	CX16-03-006	Handle	2
509	CT500-05-023	Block	1
511	HZ5-10	On-off switch	1
512	CT500-05-020	Switch plate	1
513	GB/T818	Screw M5×8	4
514	CT500-05-018	Frame cover	1
515	CT500-05-014	Eccentric flange	1
516	GB/T 70	Screw 6×20	4
517	GB/T 70	Screw M6×45	1
518	CT500-05-015	Motor pulley	1
519	GB/T 818	Screw M4×6	4
520	CT500-05-011	See-through window	1
521	CT500-05-016	Upper cover	1
522	CT500-05-009	Pulley seat flange	1
523	GB/T 70	Screw M6×40	4
524	BG/T 117-86	Taper pin A5×45	2
525	GB/T 276	Ball bearing 6008-2RS	1
526	GB/T 894.1	Retain ring (External) 40	1
527	GB/T1171-2006	V-belt Z864	1
528	CT500-05-010	Milling-drilling pulley	1
529	JB/T7274.1	Knob CM8×25	2
530	HQ400-24-021	Cap	1
531	CT500-05-019	Upper cover post	1
532	CT500-05-004	Spacer	1
533	GB/T899	Stud AM10×85	1
534	JB/T7270.7	Handle seat BM10×80	1
535	GB/T75	Screw M10×14	1
536	GB/T73	Screw M10×12	1
537	CT500-05-005	Hole plug	3
538	GB/T78	Screw M8×12	1
539	CT500-05-008	Lower cover	1
540	GB/T97.1	Washer 6	2
541	GB/T70	Screw M6×12	2
542	CT500-05-013	Motor mount	1

543	GB/T 97.1-85	Washer 10	2
544	GB/T5781	Hex head screw M10×30	2
545	CT500-05-012	Mill-drill cover post	1
546	D97.4-18(20)	Connection tube M18(20)×1.5	3
547	YL7144	Motor	1
548	GB/T1096-79	Key A5×16	1
549	CT500-05-017	Tension handle	1
550	GB/T68	Screw M5×8	4
551	CT500-06-004	Eccentric shaft	1
552	CT500-06-003	Middle pulley	1
553	GB/T276	Ball bearing 104Z(6004-2RS)	2
554	CT500-06-002	Spacer	1
555	GB/T893.1	Retain ring (external) 42	1
556	CT500-06-001	Bearing cover	1
557	GB/T68	Screw M5×10	1
558	CT500-08-001	Quill	1
559	GB/T297	Ball bearing 32007	1
560	CT500-08-002	Spindle	1
561	HQ400-22-002	Cover	1
562	GB/T71	Screw M5×8	1
563	GB/T297	Bearing 32006	1
564	GB/T858	Washer Φ30	1
565	GB/T812	Spanner nut M30×1.5	1
566	GB/T3452.1-82	Gasket	1

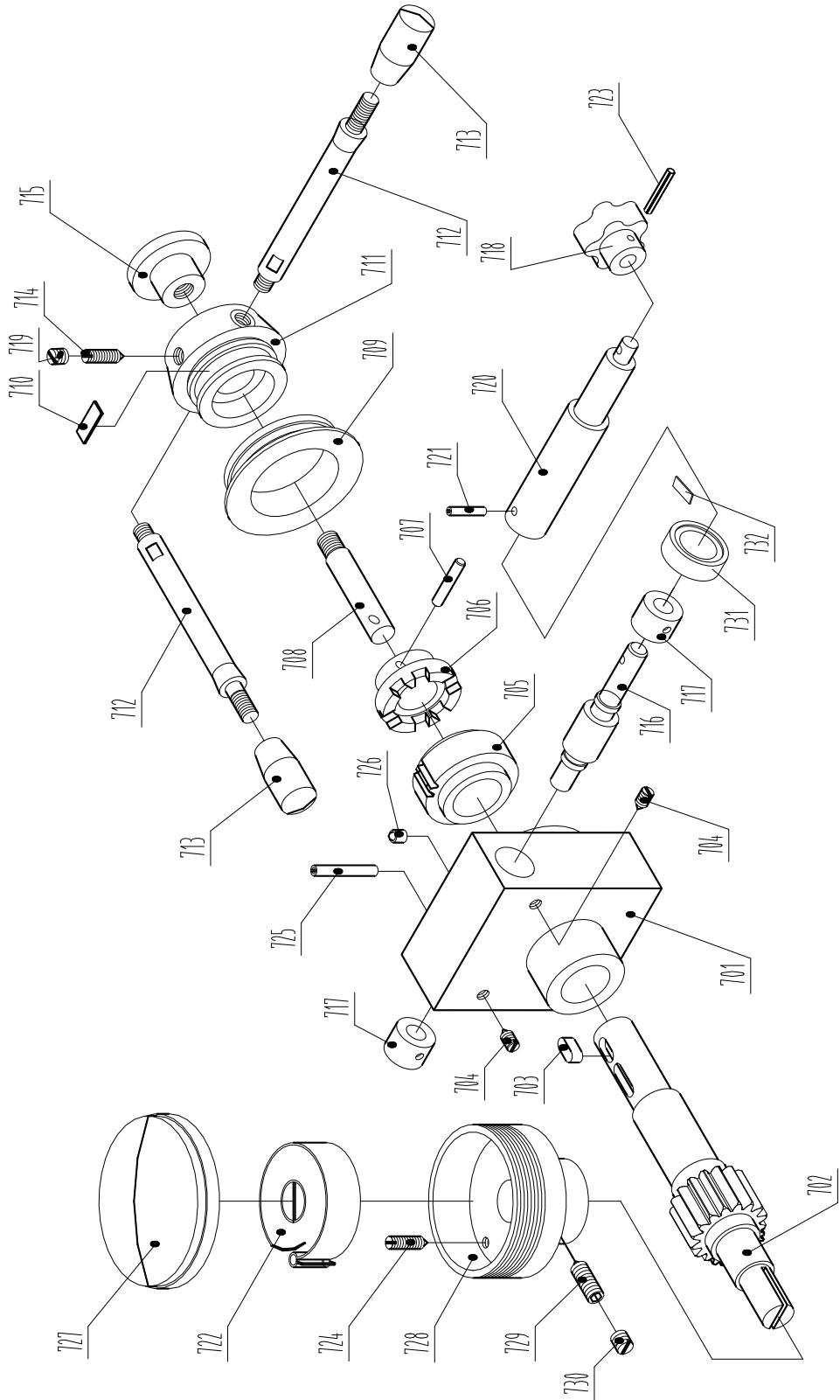
SPINDLE FEEDING ASSEMBLY



## SPINDLE FEEDING ASSEMBLY

Index No.	Part No.	Description	QTY.
601	CT500-07-002	Feeding box	1
602	CT500-07-001	Gear shaft	1
603	GB1096-79	Key A6×14	1
604	GB/T71	Screw M6×8	2
605	HQ400-23-005	Worm wheel	1
606	HQ400-23-006	Clutch	1
607	GB/T879	Pin 5×28	1
608	HQ400-23-009	Shaft	1
609	HQ400-23-007	Dial	1
610	HQ400-23-008	Spring piece	1
611	HQ400-23-013	Dial seat	1
612	HQ400-23-001	Handle	2
613	GB/T4141.14	Handle knob BM8×40	2
614	GB/T71	Screw M6×10	1
615	GB/T4141.27	Handle BM10×40	1
616	HQ400-23-004	Worm	1
617	HQ400-23-010	Bushing	2
618	JB7274.4	Handle 12×50	1
619	GB/T73	Screw M6×8	1
620	CT500-07-003A	Worm handle	1
621	GB/T879	Spring pin 4×20	1
622	CT500-05-006	Volute spring	1
623	GB/T879	Spring pin 4×28	1
624	GB/T71	Screw M5×25	1
625	GB/T879	Spring pin 5×35	1
626	GB/T1155	Oil ball 6	1
627	HQ400-24-019	Cover	1
628	CT500-05-007	Volute spring box	1
629	GB/78-85	Screw M8×20	1
630	GB/73-85	Screw M8×12	1

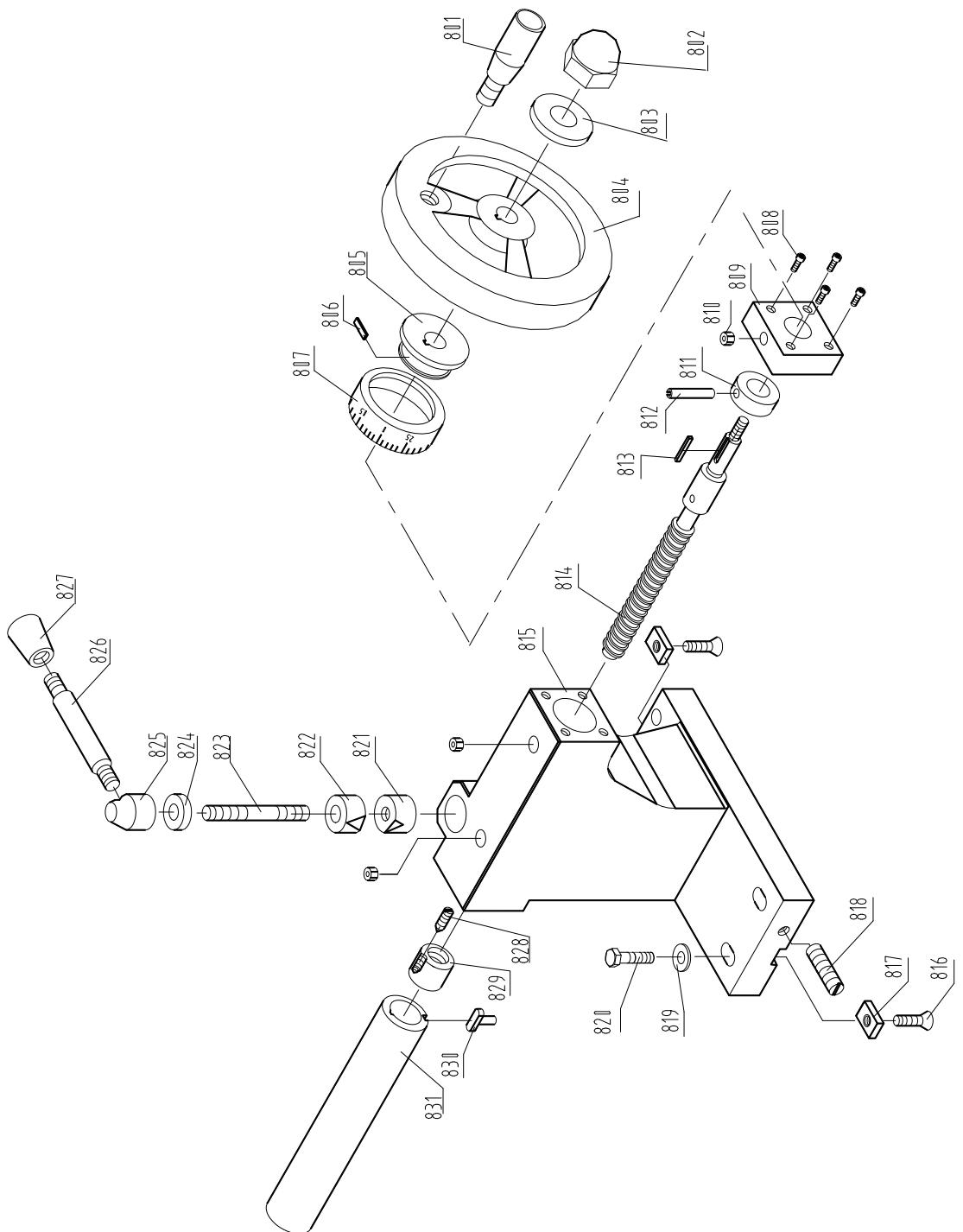
SPINDLE FEEDING ASSEMBLY



## SPINDLE FEEDING ASSEMBLY

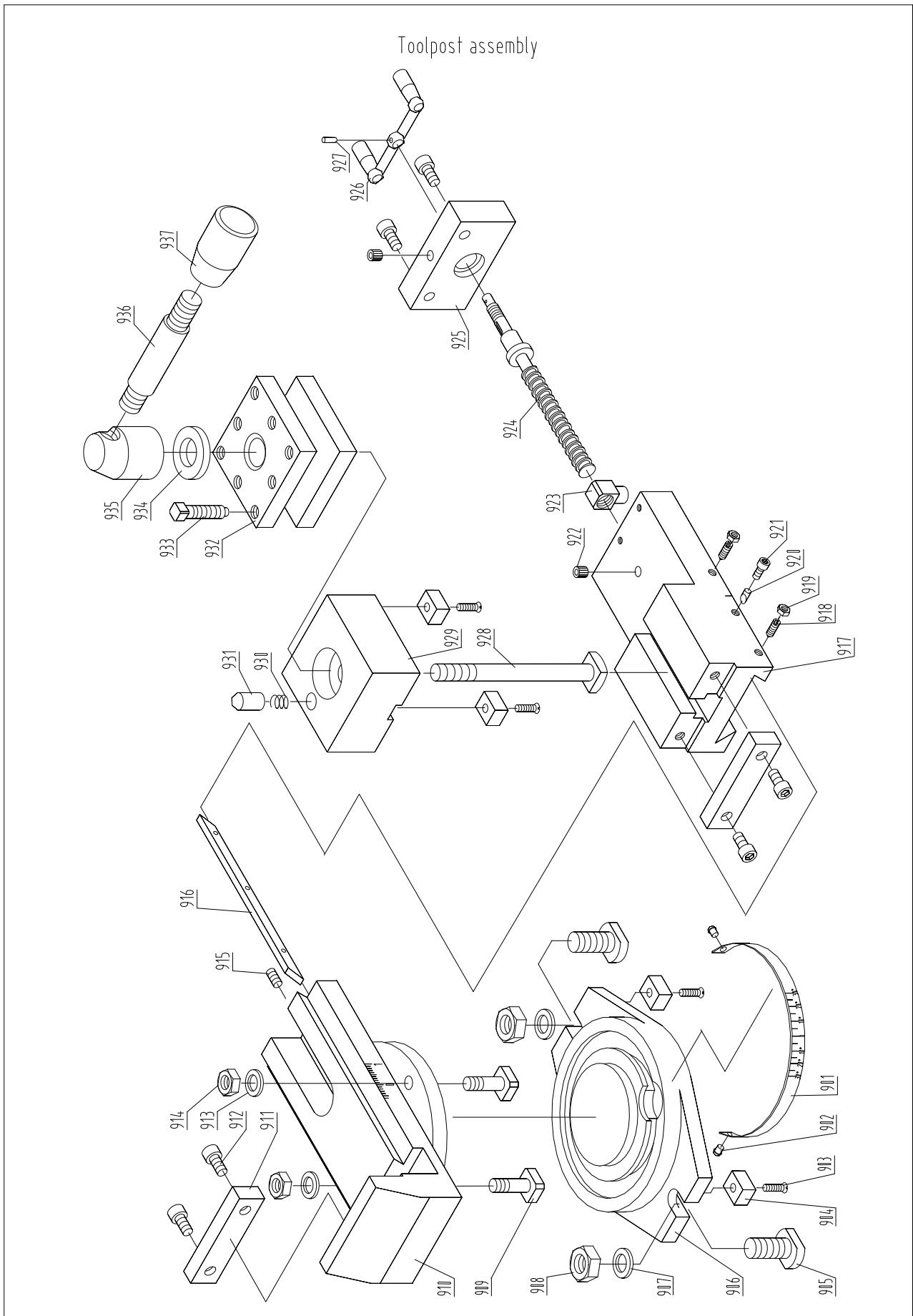
Index No.	Part No.	Description	QTY.
701	CT500-07-002	Feeding box	1
702	CT500-07-001	Gear shaft	1
703	GB1096-79	Key A6×14	1
704	GB/T71	Screw M6×8	2
705	HQ400-23-005	Worm wheel	1
706	HQ400-23-006	Clutch	1
707	GB/T879	Pin 5×28	1
708	HQ400-23-009	Shaft	1
709	HQ400-23-007	Dial	1
710	HQ400-23-008	Spring piece	1
711	HQ400-23-013	Dial seat	1
712	HQ400-23-001	Handle	2
713	GB/T4141.14	Handle knob BM8×40	2
714	GB/T71	Screw M6×10	1
715	GB/T4141.27	Handle BM10×40	1
716	HQ400-23-004	Worm	1
717	HQ400-23-010	Bushing	2
718	JB7274.4	Handle 12×50	1
719	GB/T73	Screw M6×8	1
720	CT500-07-003A	Worm handle	1
721	GB/T879	Spring pin 4×20	1
722	CT500-05-006	Volute spring	1
723	GB/T879	Spring pin 4×28	1
724	GB/T71	Screw M5×25	1
725	GB/T879	Spring pin 5×35	1
726	GB/T1155	Oil ball 6	1
727	HQ400-24-019	Cover	1
728	CT500-05-007	Volute spring box	1
729	GB/78-85	Screw M8×20	1
730	GB/73-85	Screw M8×12	1
731	CT500-07-005	Dial	1
732	CT500-10-026	Spring piece	1

Tailstock assembly



## TAILSTOCK ASSEMBLY

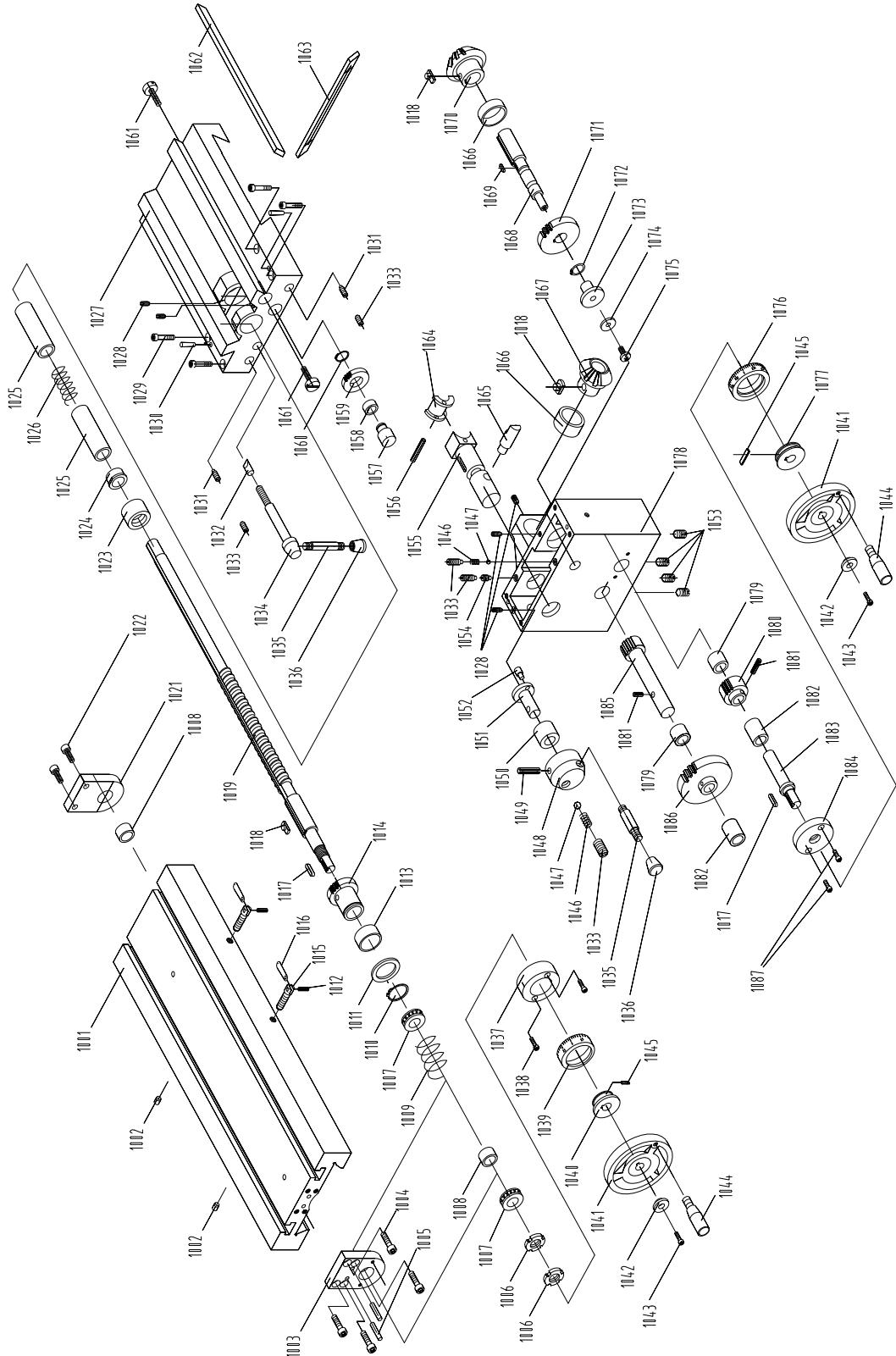
Index No.	Part No.	Description	QTY.
801	JB/T7270.5-94	Handle M6×50	1
802	GB/T923-88	Acorn Nut M10	1
803	GB/T97-85	Flat Washer 10	1
804	JB/T7273.3-94	Hand Wheel B12×100	1
805	HQ400/4-10-015	Scale ring base	1
806	CT500-10-016	Spring piece	1
807	HQ400-13-010	Scale ring	1
808	GB/T70-85	Screw M4×20	4
809	HQ400-13-009	Feed Screw Socket	1
810	JB/T7940.4-95	Oiler	3
811	HQ400-13-008	Bracket	1
812	GB/T879-86	Pin 5×22	1
813	GB/T1096-79	Key C4×18	1
814	HQ400-13-006	Feed Screw	1
815	HQ400-13-001	Tail Stock Body	1
816	GB/T819-85	Screw M5×14	2
817	HQ400-13-004	Key	2
818	GB/T73-85	Screw M10×50	2
819	GB/T97.2-85	Washer 10	4
820	GB/T5780-86	Screw M10×40	4
821	HQ400-13-011	Locking block (Bottom)	1
822	HQ400-13-012	Locking block (Top)	1
823	GB/T899-85	Double-Screw Bolt AM10×40	1
824	HQ400-13-013	Washer	1
825	HQ400-13-004	Locking Nut	1
826	HQ400-13-005	Locking Lever	1
827	JB/T7271.3-94	Knob M10×32	1
828	GB/T71-85	Set Screw M4×8	1
829	HQ400-13-007	Feed Nut	1
830	HQ400-13-003	T-Key	1
831	HQ400-13-002	Tail Stock Barrel	1



## Tool Post Assembly

<b>Index No.</b>	<b>Part No.</b>	<b>Description</b>	<b>Size</b>	<b>Qty</b>
901	HQ400-14T02-002(1)	Angle ruler		1
902	GB/T827-1985	Rivet	2.5×5	2
903	GB/T68-1985	Screw	M4×12	2
904	HQ400-14T02-010	Key		2
905	HQ400-14T02-001	“T”-Bolt		2
906	HQ400-14T02-002	Base		1
907	GB/T97.1-1985	Washer	10	2
908	GB/T6170-2000	Nut	M10	2
909	GB/T37-88	Bolt		2
910	HQ400-14T02-005	Vice base		1
911	HQ400-14T02-006	Vice block		2
912	GB/T70.1-2000	Screw	M5×14	4
913	GB/T97.1-1985	Washer	8	2
914	GB/T6170-2000	Nut	M8	2
915	GB/T77-2000	Screw	M5×6	1
916	HQ400-14T02-014	Gib		1
917	HQ400-14T02-004	Moving vice		1
918	GB/T71-1985	Screw	M5×14	2
919	GB/T6170-2000	Nut	M5	2
920	HQ400-14T02-007	Locking block		1
921	GB/T70.1-2000	Screw	M5×8	1
922	JB/T7940.4-1995	Oiler	6	2
923	HQ400-14T02-011	Nut		1
924	HQ400-14T02-012	Lead screw		1
925	HQ400-14T02-013	Lead screw bracket		1
926	GB/T70	Screw	M6×16	2
927	GB/T117-2000	Pin	3×16	1
928	HQ400-14T02-009	Bolt	M10×100	1
929	HQ400-14T02-008	Tool post base		1
930	GB/T1358-1993	Spring	5×0.6×30	1
931	HQ400-14-007	Set pin		1
932	HQ400-14-003	Tool post		
933	GB/T85-1998	Screw	M8×25	8
934	GB97.2-85	Washer	12	1
935	HQ400-13-004	Nut	M10	1
936	HQ400-14-006	Handle		1
937	JB/T7271.3-1994	Knob	M10×32	1
938	DJ136/2-012	Dial		1
939	DJ136/2-010	Dial seat		1
940	DJ136/2-011	Spring piece		1
941	GB/T810	Slotted round nut	M10×1	2
942	GB/T4141.10	Bi-lever balance handle	8×25	1

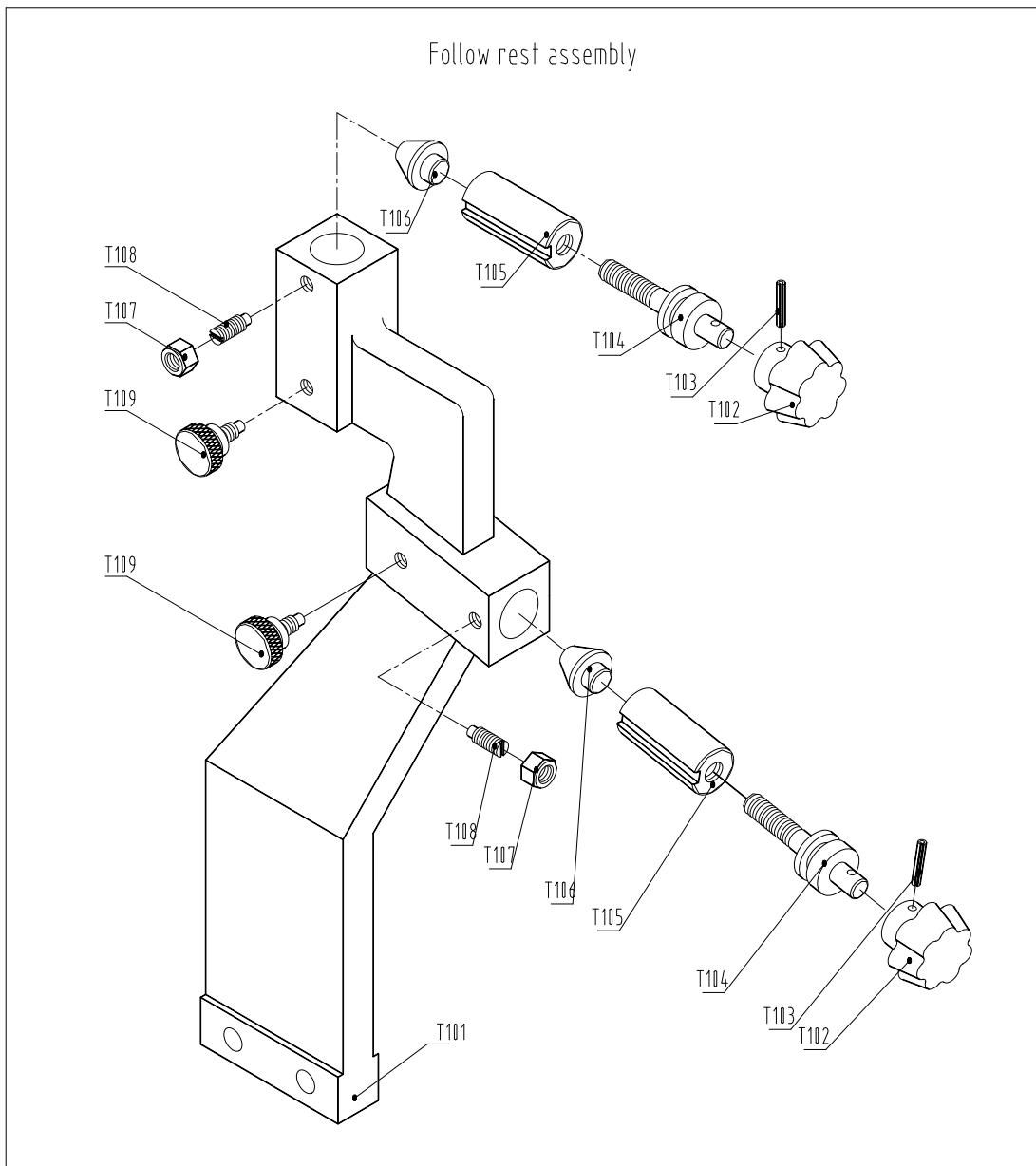
拖板及拖板箱部装



## SADDLE AND APRON ASSEMBLY

Index No.	Part No.	Description	QTY.
1001	CT500-10-003	Table	1
1002	JB/T 7940.4-4	Oil ball 6	6
1003	CT500-10-012	Lead screw seat (B)	1
1004	GB/T 70-85	Screw M5×16	4
1005	GB/T 879	Spring pin 5×22	2
1006	GB/T 810	Spanner nut M14×1.5	2
1007	GB/T 301	Thrust ball bearing 8102(51102)	2
1008	CT500-10-011	Spacer A	2
1009	CT500-10-048	Spring B	1
1010	GB/T 894.1-9	Retain ring (external) 26	1
1011	CT500-10-046	Washer	1
1012	GB/T 879	Spring pin 2×10	2
1013	CT500-10-045	Spacer G	1
1014	CT500-10-010	Gear A	1
1015	CT500-10-006	Locking screw	2
1016	CM1224C-05-022B	Locking lever	2
1017	GB/T 1096-14	Key 4×18	2
1018	CT500-10-030	T-Key	3
1019	CT500-10-008	Cross feeding lead screw	1
1021	CT500-10-007	Lead screw (A)	1
1022	GB/T 70-85	Screw M6×16	2
1023	CT500-10-009	Cross feeding lead nut	1
1024	CT500-10-051	Spacer	1
1025	CT500-10-049	Spacer	2
1026	CT500-10-047	Spring A	1
1027	CT500-10-002	Saddle	1
1028	GB/T 71-85	Screw M6×8	10
1029	GB/T 70-85	Screw M6×35	4
1030	GB/T 117	Tap pin A5×25	2
1031	GB/T 75-85	Screw M8×16	2
1032	HQ400-11-014	Locking washer	1
1033	GB/T 77-85	Screw M8×12	2
1034	CT500-10-025	Locking screw	1
1035	JB/T7271.6	Handle rod M6×50	2
1036	JB/T 7271.3-23	Handle knob M6×20	2
1037	CT500-10-013	Fixing sleeve (A)	1
1038	GB/T 70-85	Screw M4×16	2
1039	CT500-10-014	Dial	1
1040	CT500-10-015	Dial seat (A)	1
1041	JB/T 7273.3	Hand wheel B12×100	2
1042	GB5287-85	Washer 5	2
1043	GB/T 70-15	Screw M4×12	2
1044	JB/T 7270.4	Handle M6×50	2

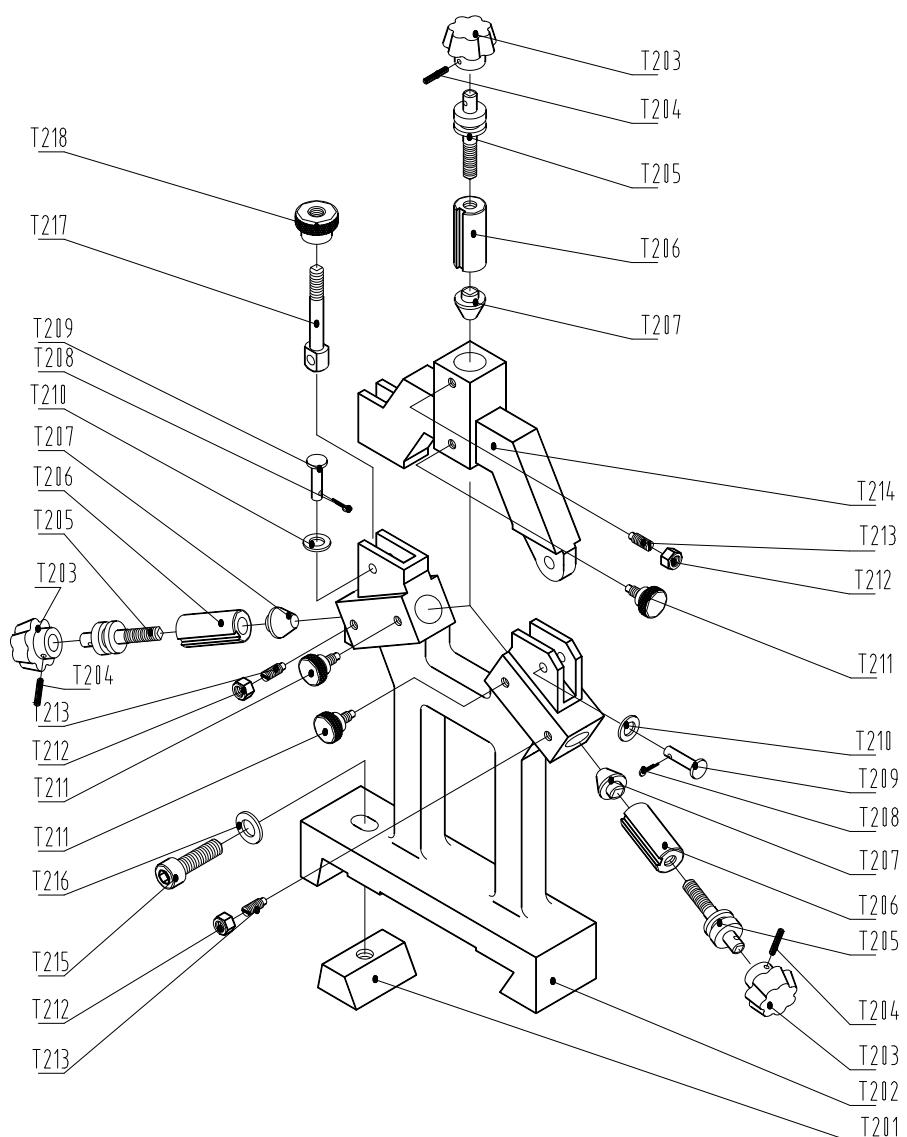
Index No.	Part No.	Description	QTY.
1045	CT500-10-016	Spring piece	2
1046	CM1224C-06-007	Spring	2
1047	GB/T 308	Steel ball 6.5	2
1048	CT500-10-036	Handle seat	1
1049	GB/T 879-86	Pin 4×40	1
1050	CT500-10-035	Spacer (E)	1
1051	CT500-10-034	Eccentric wheel	1
1052	HQ400/3-06-003	Arm	1
1054	GB75-85	Screw M8×16	1
1055	CT500-10-033	Half nut seat	1
1056	GB/T 879-25	Spring pin 4×30	1
1057	CT500-10-043	Shaft	1
1058	CT500-10-037	Spacer (F)	1
1059	CT500-10-042	Gear T32	1
1060	GB/T 894.1-27	Retain ring (external) 12	1
1061	CT500-10-004	Screw	2
1062	CT500-10-005	Table gib	1
1063	CT500-10-026	Saddle gib	1
1064	HQ400/3-06-002B	Half nut	1
1065	CT500-10-032	Stop pin	1
1066	CT500-10-031	Spacer (D)	2
1067	CT500-10-029	Bevel gear	1
1068	CT500-10-017	Shaft	1
1069	GB/T 1096-29	Key A5×8	1
1070	CT500-10-029	Gear	1
1071	CT500-10-027	Gear T48	1
1072	GB/T 894.1-27	Retain ring (external) 14	1
1073	CT500-10-038	Pull-push knob	1
1074	GB/T 96-85	Washer 6	1
1075	GB/T 818-19	Screw M6×8	1
1076	CT500-10-041	Dial	1
1077	CT500-10-019	Dial seat (B)	1
1078	CT500-10-028	Apron	1
1079	CT500-10-024	Spacer (C)	2
1080	CT500-10-023	Gear T25	1
1081	GB/T 879-21	Spring pin 4×20	2
1082	CT500-10-022	Spacer (B)	2
1083	CT500-10-020	Shaft	1
1084	CT500-10-021	Fixing sleeve B)	1
1085	CT500-10-040	Shaft gear T21	1
1086	CT500-10-039	Gear T65	1
1087	GB/T 70-85	Screw M4×12	4



## FOLLOW REST ASSEMBLY

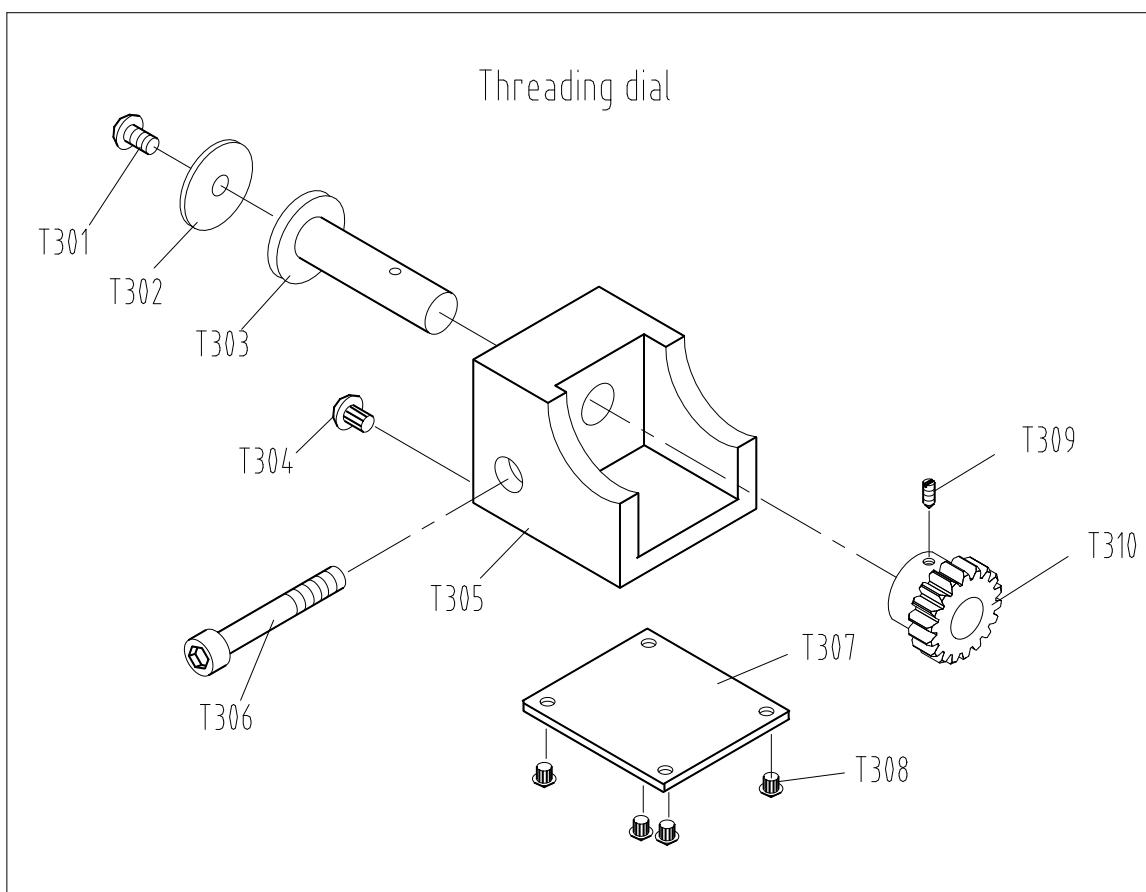
Index No.	Part No.	Description	QTY.
T101	CT500-10T04-005	Follow rest frame	1
T102	JB/T7274.40	Handle 8×32	2
T103	GB/T879	Spring pin 3×16	2
T104	CT500-10T04-001	Adjusting bolt	2
T105	CT500-10T04-003	Sleeve	1
T106	CT500-10T04-004	Brass head	2
T107	GB/T41	Hex nut M6	2
T108	GB/T75	Set screw M6×16	2
T109	CT500-10T04-002	Knurled screw	2

## Steady rest assembly



## STEADY REST ASSEMBLY

Index No.	Part No.	Description	QTY.
T201	CT500-10T05-005	Locking block	1
T202	CT500-10T05-001	Steady rest base	1
T203	JB/T7274.4	Handle 8×32	3
T204	GB/T879	Spring pin 3×16	3
T205	CT500-10T04-001	Adjusting bolt	3
T206	CT500-10T04-003	Sleeve	3
T207	CT500-10T04-004	Brass head	3
T208	GB/T91	Cotter pin 1.6×20	2
T209	GB/T882	Pin A6×26	2
T210	GB/T848	Washer 8	2
T211	CT500-10T04-002	Knurled screw	3
T212	GB/T41	Hex nut M6	3
T213	GB/T75	Set screw M6×16	3
T214	CT500-10T05-004	Steady rest head	1
T215	GB/T70	Screw M10×35	1
T216	GB/T848	Washer 10	1
T217	CT500-10T05-002	Locking bolt	1
T218	CT500-10T05-003	Knob	1



## READING DIAL

Index No.	Part No.	Description	QTY.
T301	GB/T818	Screw M4×12	1
T302	CT500-10T01-004	Indicator plate	1
T303	CT500-10T01-002	Arbor	1
T304	GB/T827	Rivet 2×4	1
T305	CT500-10T01-001	Threading dial seat	1
T306	GB/T70	Screw M6×50	1
T307	CT500-00-017	Threading plate	1
T308	GB/T827	Rivet 2×4	4
T309	GB/T71	Screw M5×8	1
T310	CT500-10T01-003	Gear T24	1



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