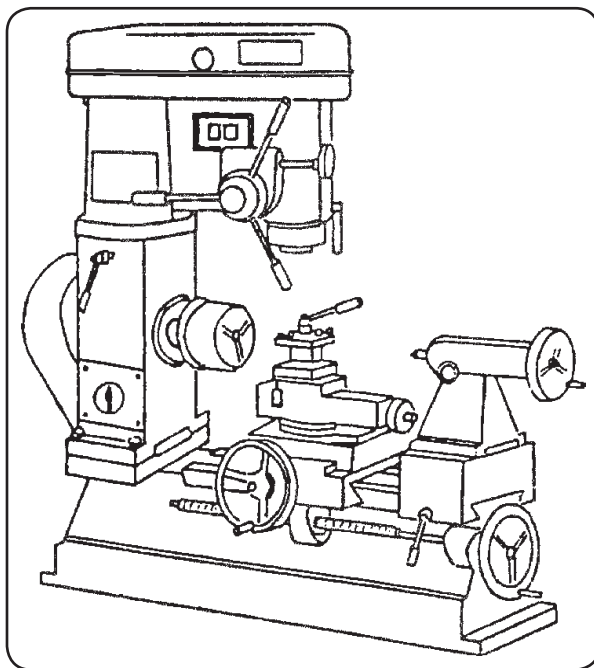


# **CENTRAL MACHINERY<sup>®</sup>**

# **MULTIPURPOSE MACHINE**

**Model 5980**

## **ASSEMBLY AND SAFETY INFORMATION**



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.**  
**Failure to do so can result in serious injury.**

**SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

Revised Manual 10a

## SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, parts list, and assembly diagrams. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

### GENERAL SAFETY WARNINGS AND PRECAUTIONS

1. **KEEP WORK AREA CLEAN AND DRY.** Cluttered, damp or wet work areas invite injuries.
2. **KEEP CHILDREN AWAY FROM WORK AREA.** Do not allow children to handle this product.
3. **STORE IDLE EQUIPMENT.** When not in use, tools and equipment should be stored in a dry location to inhibit rust. Always lock up tools and equipment and keep out of reach of children.
4. **DO NOT USE THIS PRODUCT IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not attempt to use this product.
5. **USE EYE, FACE, AND HEARING PROTECTION.** Wear ANSI approved safety impact eye glasses, full face shield, and ANSI approved hearing protection when using this product. ANSI approved safety impact eye glasses, face shield, and hearing protection are available from Harbor Freight Tools.
6. **DRESS SAFELY.** Nonskid footwear or safety shoes should be used when working with this product. Do not wear loose clothing or jewelry as they can become caught in moving parts. Wear a protective hair covering to prevent long hair from becoming caught in moving parts. If wearing a long-sleeve shirt, roll sleeves up above elbows.
7. **INDUSTRIAL APPLICATIONS MUST FOLLOW OSHA REQUIREMENTS.**
8. **DO NOT OVERREACH.** Keep proper footing and balance at all times to prevent tripping, falling, back injury, etcetera.
9. **STAY ALERT.** Watch what you are doing at all times. Use common sense. Do not use this product when you are tired or distracted from the job at hand.
10. **CHECK FOR DAMAGED PARTS.** Before using this product, carefully check that it will operate properly and perform its intended function. Check for damaged parts and any other conditions that may affect the operation of this product. Replace or repair damaged or worn parts immediately.
11. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Only use accessories intended for use with this product. Approved accessories are available from Harbor Freight Tools.

12. **MAINTAIN THIS PRODUCT WITH CARE.** Keep this tool clean and dry for better and safer performance.
13. **MAINTENANCE:** For your safety, service and maintenance should be performed regularly by a qualified technician.
14. **USE THE RIGHT PRODUCT FOR THE RIGHT JOB.** There are certain applications for which this product was designed. Do not use small equipment, tools or attachments to do the work of larger industrial equipment, tools or attachments. Do not use this product for a purpose for which it was not intended.
15. **WARNING:** The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

## SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS

1. **GROUND THIS PRODUCT.** The electrical power cord for this product is equipped with a grounded 3-prong plug. Never remove the grounding prong or modify the plug in any way. Do not use adapter plugs with this product. When in use, make sure this product is always plugged into a grounded 3-hole electrical receptacle with an appropriate breaker switch inline.
2. **MAKE SURE THE POWER SWITCH IS IN THE “OFF” POSITION BEFORE PLUGGING IN THE POWER CORD.**
3. **DO NOT ABUSE THE POWER CORD.** Do not use the cord to pull the 3-prong plug from a power outlet. Keep cord away from heat, oil, sharp edges, and moving parts. Replace damaged cord immediately. Route the power cord safely. Protect it from being damaged by other equipment in the shop. Do not route the cord where it can be walked on or tripped over.

| RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)                    |                       |         |         |          |          |
|---|-----------------------|---------|---------|----------|----------|
| NAMEPLATE<br>AMPERES<br>(at full load)  | EXTENSION CORD LENGTH |         |         |          |          |
|   | 25 Feet               | 50 Feet | 75 Feet | 100 Feet | 150 Feet |
| 0 – 5.0   | 18                    | 18      | 16      | 14       | 12       |
| 5.1 – 7.0   | 18                    | 16      | 14      | 12       | 12       |
| 7.1 – 12.0  | 18                    | 14      | 12      | 10       | -        |
| 12.1 – 16.0   | 14                    | 12      | 10      | -        | -        |
| 16.1 – 20.0   | 12                    | 10      | -       | -        | -        |
| * Based on limiting the line voltage drop to five volts at 150% of the rated amperes. |                       |         |         |          |          |

4. **IF YOU USE AN EXTENSION CORD, MAKE SURE TO USE ONLY UL LISTED CORDS HAVING THE CORRECT GAUGE AND LENGTH. (SEE ABOVE.)**

5. **MAINTAIN A SAFE WORK ENVIRONMENT.** Do not use this product in or near damp or wet areas. Do not expose this product to rain. Keep work area well lit. Make sure there is adequate surrounding work space. Use this product in a well ventilated area. Do not operate this product in the presence of flammable liquids, gases, or dust. To avoid accidental electric shock, do not let your body come in contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.
6. **DO NOT FORCE THE EQUIPMENT.** The Multi-Purpose Machine will do the work better and safer at the speed and capacity for which it was designed.
7. **KEEP ALL GUARDS IN PLACE AND IN WORKING ORDER.**
8. **REMOVE ALL ADJUSTING WRENCHES FROM THE MULTIPURPOSE MACHINE BEFORE TURNING IT ON.**
9. **AVOID UNINTENTIONAL STARTING.** Make sure you are prepared to begin work before turning the START switch on.
10. **ALLOW THE MULTIPURPOSE MACHINE TO SPIN UP TO FULL SPEED BEFORE DRILLING OR CUTTING.** When turning it off, allow the unit to spin down and stop on its own. Do not press against the drill bit or other cutting accessory to stop it.
11. **DO NOT FORCE THE MATERIAL INTO THE DRILL BIT OR OTHER CUTTING ACCESSORY WHEN DRILLING OR CUTTING.** Apply moderate pressure, allowing the drill bit or cutting accessory to function without being forced.
12. **NEVER ATTEMPT TO REMOVE MATERIAL STUCK IN THE MOVING PARTS OF THE MULTIPURPOSE MACHINE WHILE IT IS PLUGGED IN AND RUNNING.**
13. **ALWAYS DISCONNECT THE MULTIPURPOSE MACHINE FROM ITS ELECTRICAL SUPPLY SOURCE BEFORE PERFORMING ANY SERVICES OR MAINTENANCE** such as leaving the work area, changing workpieces, drill bits and other cutting accessories, cleaning metal shavings from the unit, etcetera.
14. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks and cement or other masonry products, arsenic and chromium from chemical treated lumber. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.  
(California Health & Safety Code § 25249.5, *et seq.*)

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## LIMITED 90 DAY WARRANTY

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353**

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### 1. Purpose and Application Scope

This is a multi-purpose bench type machine, which is capable of turning, drilling and milling, and suitable for processing metal and other materials. Processable diameters of steel and cast iron workpieces are not more than 40mm for turning, and 63mm for face milling. It can be widely used in small scale enterprises and repairing shops, also in schools, hospitals, research institutes and families for making teaching aids, testing instructions and handicrafts.

### 2. Main Structure and Feature

This machine consists of bed, headstock, drilling-milling box, bench, tailstock and motors, which is characterized by compact structure, easy operation and multi-purpose in one.

### 3. Main Technical Data

|  |                                  |
|--|----------------------------------|
| Max. swing dia. over bed                   | 360mm                            |
| Max. dia. of turning (middle carbon steel) | 40mm                             |
| Max. distance between centers              | 330mm                            |
| Max. longitudinal stroke                   | 210mm                            |
| Max. transverse stroke                     | 145mm                            |
| Morse taper of spindle hole                | No. 3                            |
| Bore dia of spindle                        | 20mm                             |
| Morse taper of tailstock hole              | No. 2                            |
| Spindle speeds                             | 500, 900, 1600r/min              |
| Turning motor                              | 370W                             |
| Max. drilling dia.                         | 16mm                             |
| Morse taper of milling spindle hole        | No. 2                            |
| Max. dia. of end mill                      | 12mm                             |
| Max. dia. of face                          | 63mm                             |
| Max. stroke of milling quill               | 75mm                             |
| Spindle speeds                             | 5 steps 430~2000r/min(220v/380v) |
|  | 4 steps 430~1500r/min(110v)      |
| Milling motor                              | 250~370w                         |
| Area of bench (LxW)                        | 155mm x 200mm                    |
| Turn - round of drilling - milling box     | +/- 90°                          |

Overall dimension(L x W x H)

890mm x 580mm x 810mm

Net Weight

148kg

#### 4. The Transmission System

A diagram and a table as shown below

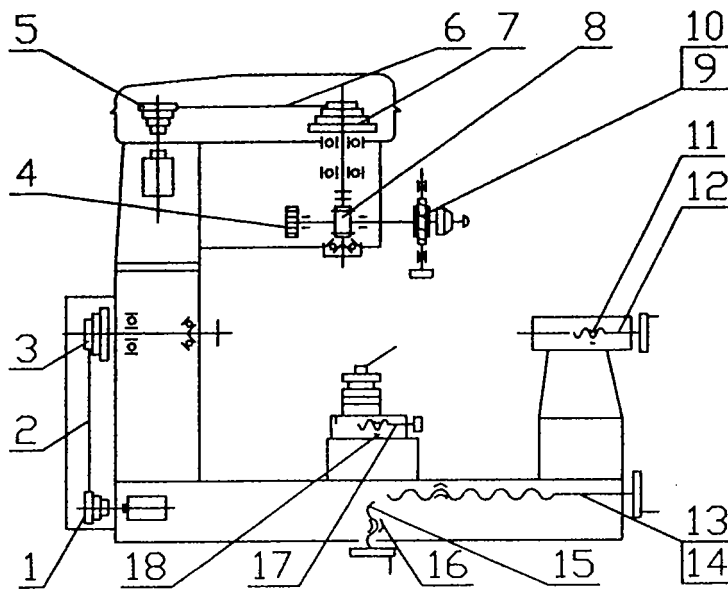


Table of Main transmission Parts

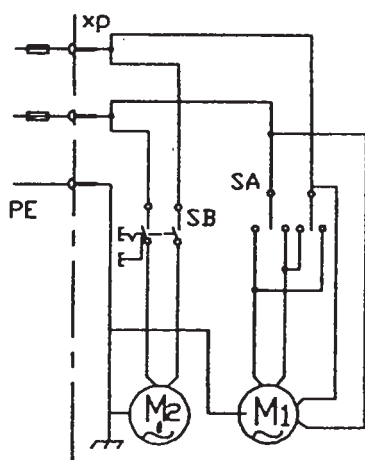
| Series No. | Description   | Series No. | Description         |
|------------|---------------|------------|---------------------|
| 1          | Motor pulley  | 10         | Worm                |
| 2          | V-belt A-1000 | 11         | Nut                 |
| 3          | Pulley        | 12         | Tailstock thread    |
| 4          | Coiled spring | 13         | Longitudinal thread |
| 5          | Motor pulley  | 14         | Longitudinal nut    |
| 6          | V-belt 0-710  | 15         | Transverse thread   |
| 7          | Big pulley    | 16         | Transverse nut      |
| 8          | Gear          | 17         | Toolpost thread     |
| 9          | Worm gear     | 18         | Nut                 |



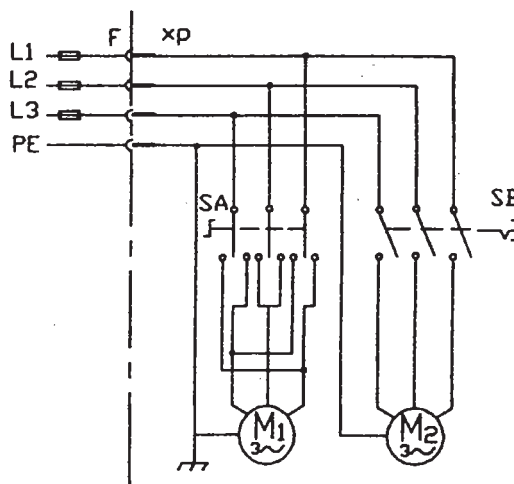
## 5. The Electric System

This machine is powered by two separate motors (AC 220v or 380v or 110v 60Hz, 1400r/min). The motion of turning motor is controlled by a combination switch SA, and the motion of drilling-milling motor by a button switch SR. It's safe and easy to operate.

Fuse: 10A should be fixed in front of the supply socket to maintain short circuit protection.



Single phase



3 phases

## 6. Lubrication of Machine

All oil points should be oiled manually with engine oil, and the surfaces of rails, quill, and leading thread be oiled according to operation condition. All bearings should be cleaned and oiled one time per year.

## 7. Installation, Operation and Adjustment

This machine has been inspected and tested before delivery. It must be installed properly, otherwise its accuracy and durability will be affected. Please pay more attention to this. Place the machine on a flat and strong platform, fix four clamping screws on the platform according to the positions of the clamping holes on bed. Confirming to the Go item in the certificate, test the machine with a level to make sure that it is level. Place metal plate with appropriate thickness near the clamping screws under the bed.

Precisely adjust this machine, keep it in horizontal stage and tighten the screws diagonally, until it conforms to the requirement. The foot screws should be locked evenly in order to keep the machine level.

After being switched on, the machine should be run without load. It can not be operated until this kind of check with good result.

The rotation of spindles of turning and milling is controlled separately by SA and SB, so the two switches should not be turned on at the same time. Open the coverts and adjust position of v-belts as the speeds need to change.

The feeding motions are all realized manually. Rapid - feed and fine - feed are accepted for vertical direction, and separately realized by pulling and pushing clutch handle 5.

At operation, the correlative locking handles should be locked. As slide, bench and tailstock being moved, set screws and locking handles should be adjusted to proper positions so that the sliding parts move well and the handwheels run easily.

When the jaws of the tool post are used to clamp workpiece, remove the square turret assembly (including items #T06, T10, etc.), turn the tool post hand wheel (item #T39) and use the handle lever (item #T38, included in the accessories assembly) to hold the workpiece firmly.

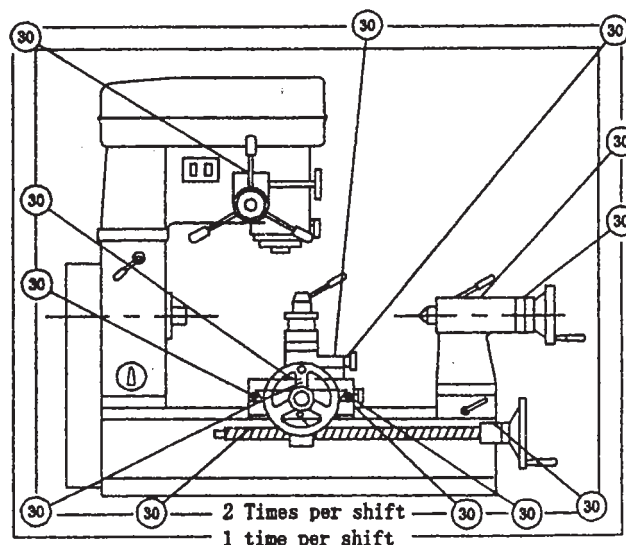


Diagram of Lubrication

After a long time at operation, the spindles should be adjusted. Open the protection cover, loose the set screws on a round nut, adjust the round nut to make the spindle rotate freely, then re-lock the screw. That is all right. But when the drilling-milling spindle being adjusted, a big pulley and a spilne sleeve should be pulled out.

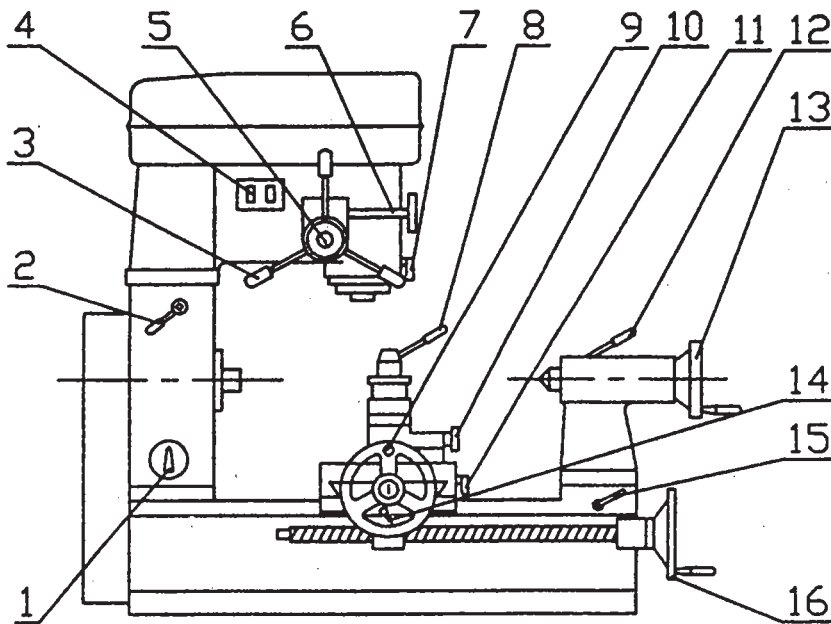


Table of Main Control Parts

| Series No. | Description                  | Series No. | Description                  |
|------------|------------------------------|------------|------------------------------|
| 1          | Combined switch              | 9          | Transverse hand wheel        |
| 2          | Handle for locking box       | 10         | Toolpost handle wheel        |
| 3          | Drilling-milling feed handle | 11         | Transverse lock handle       |
| 4          | Button                       | 12         | Tailstock quill lock handle  |
| 5          | Clutch handle                | 13         | Tailstock hand wheel         |
| 6          | Fine-feed handle             | 14         | Longitudinal lock handle     |
| 7          | Handle for locking quill     | 15         | Handle for locking tailstock |
| 8          | Handle for locking toolpost  | 16         | Longitudinal hand wheel      |

## 8. Maintenance of Machine

It is not allowed to exceed what is mentioned in the manual. The machine should be oiled according to requirements. At operation, if it has any trouble or abnormal noise, it should be stopped immediately, then checked and repaired.

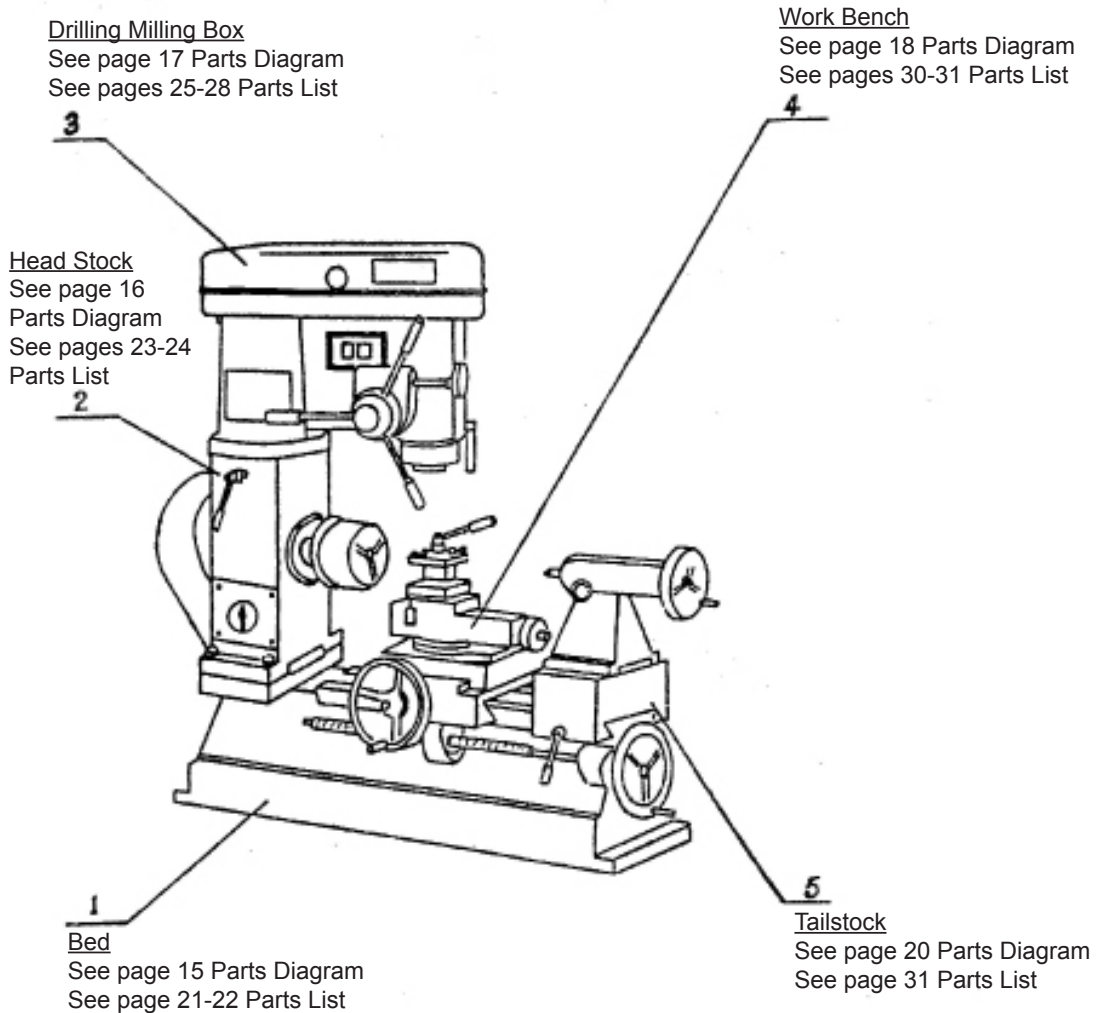
## 9. Accessory Table

| Series No. | Description       | Specification    | QTY        |
|------------|-------------------|------------------|------------|
| 1          | Three-jaw chuck   | Ø100             | 1          |
| 2          | Dead centre       | Morse No.2, No.3 | 1 for each |
| 3          | Wrench            |                  | 1          |
| 4          | Drilling chuck    | JS16             | 1          |
| 5          | Wedge             |                  | 1          |
| 6          | Drawing Bar       |                  | 1          |
| 7          | Drill taper stock |                  | 1          |
| 8          | Flange            |                  | 1          |

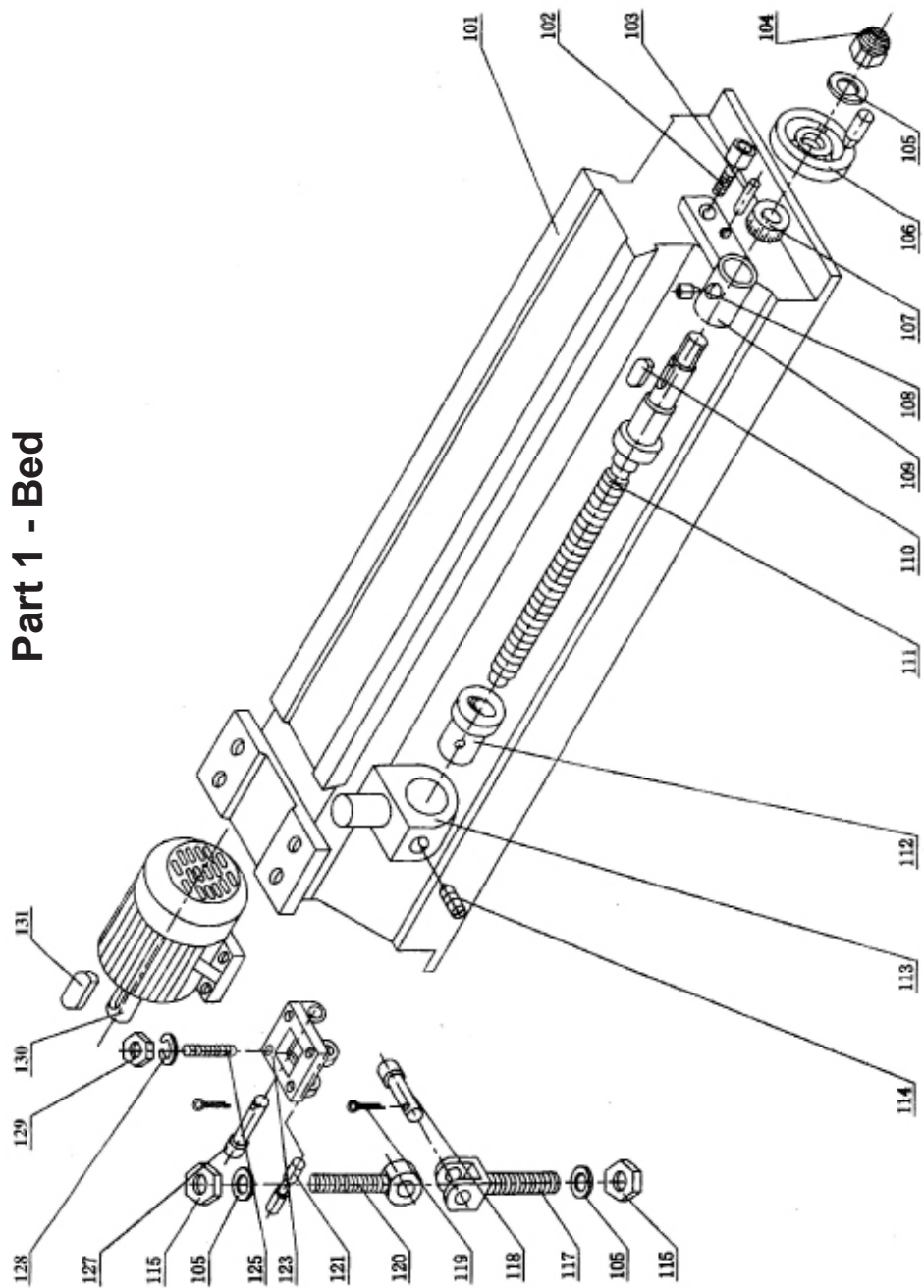
**PLEASE READ THE FOLLOWING CAREFULLY**

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

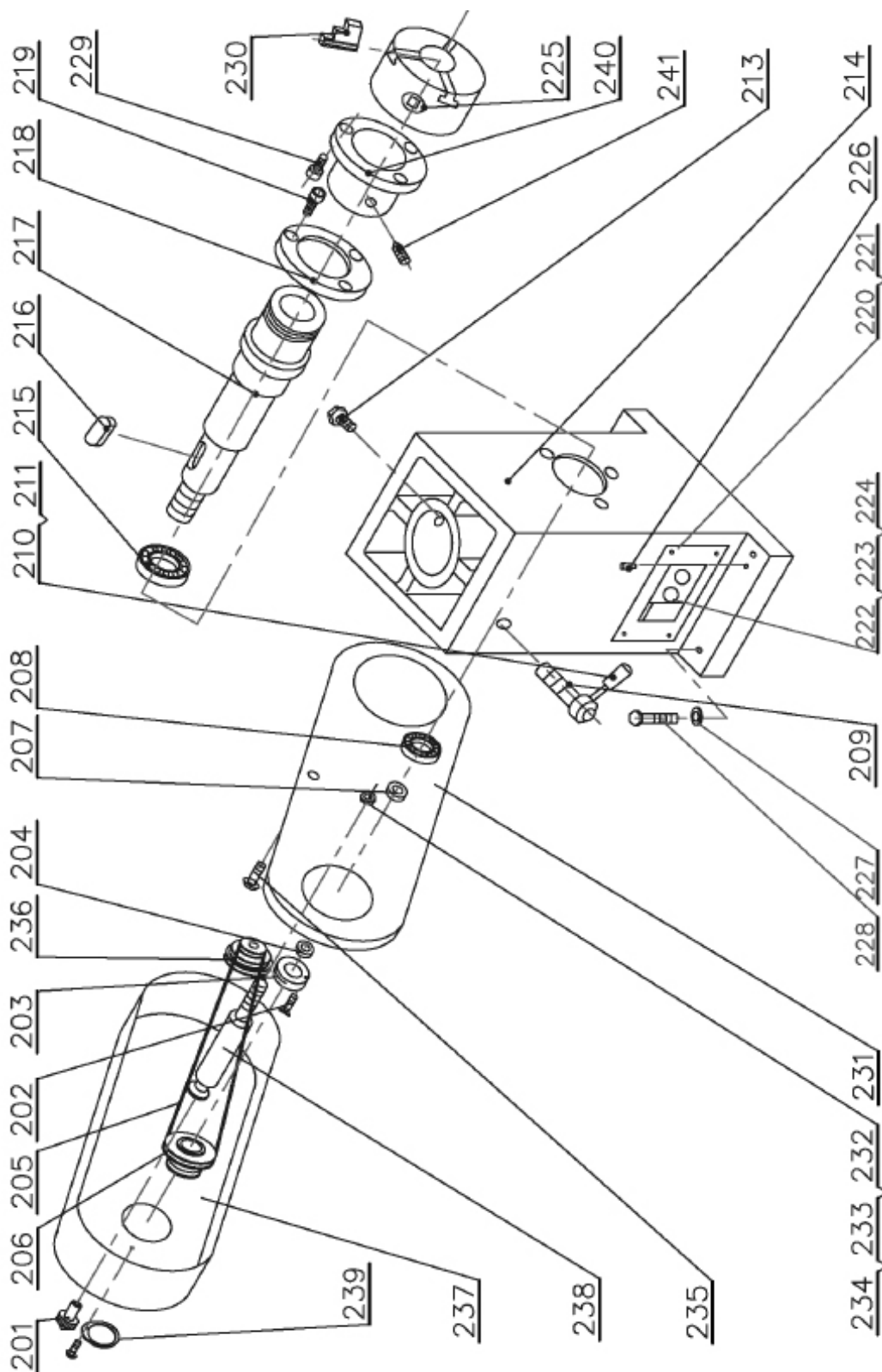
# Multipurpose Machine



## Part 1 - Bed

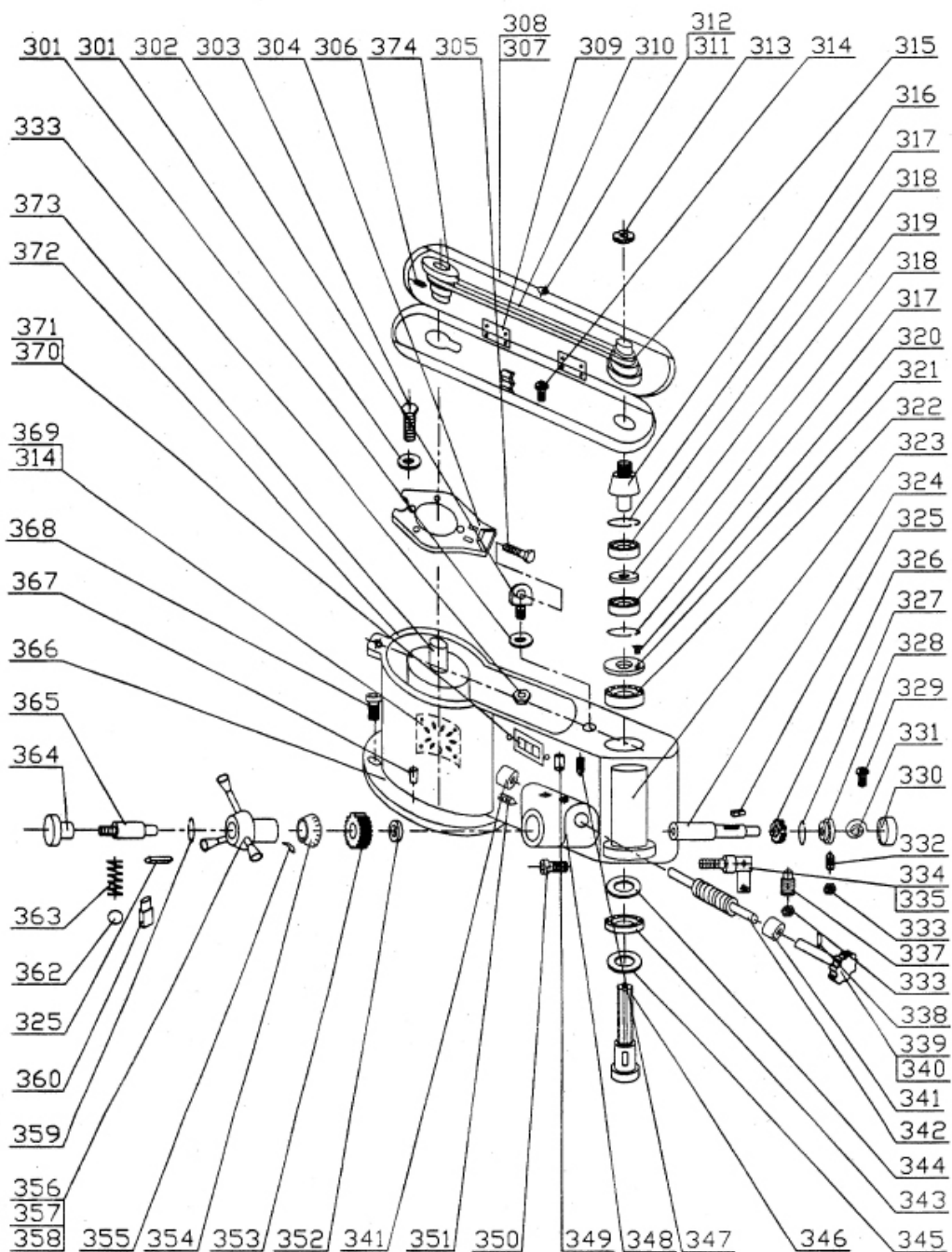


Part 1 Bed

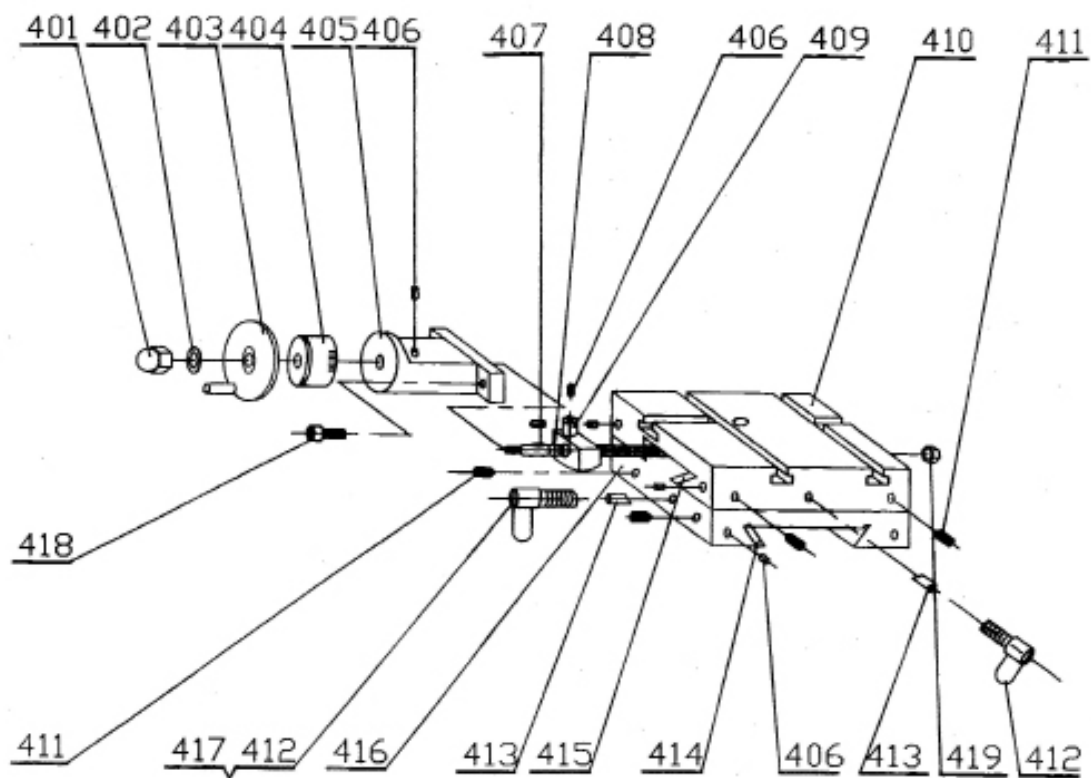


Part 2 - Headstock

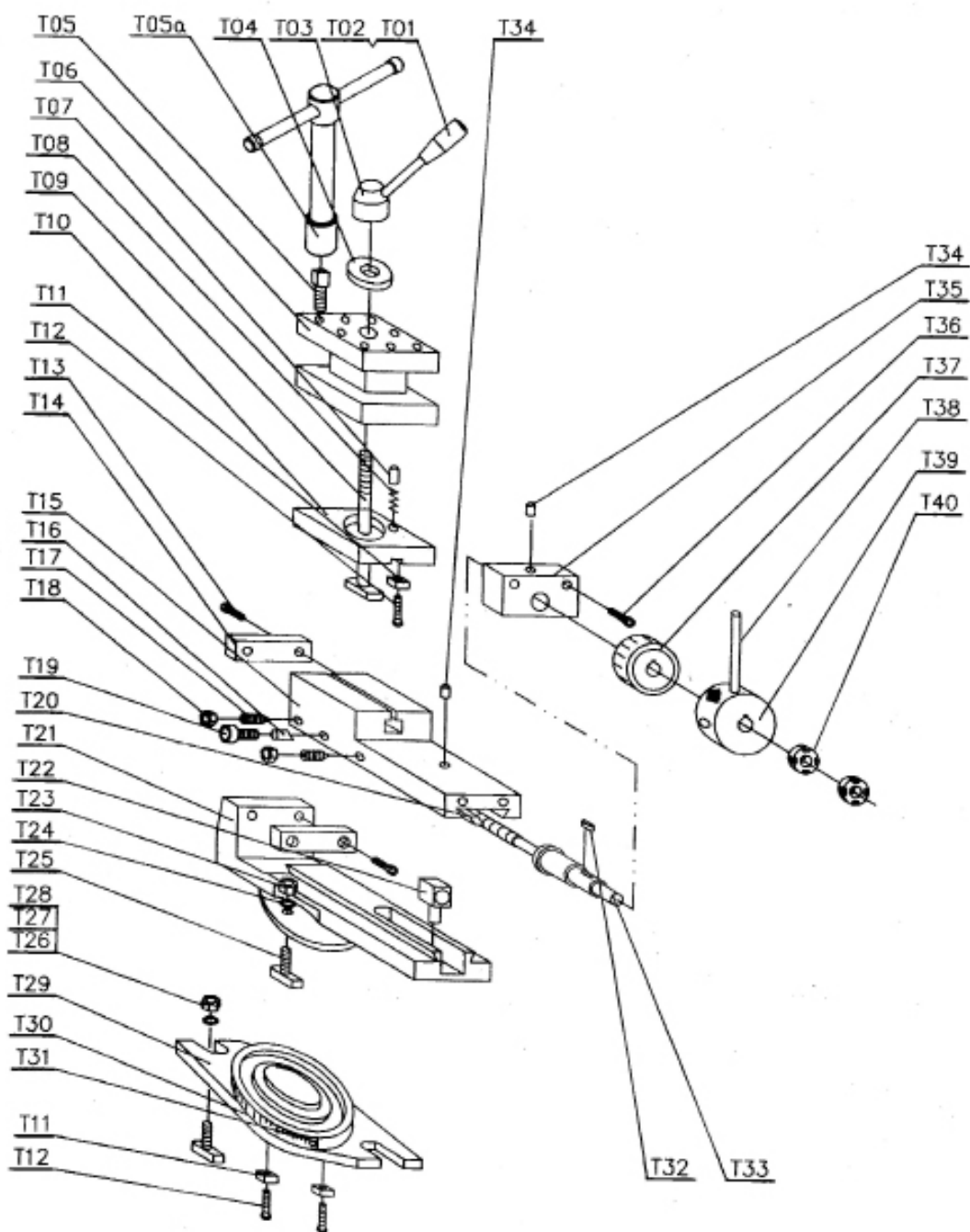




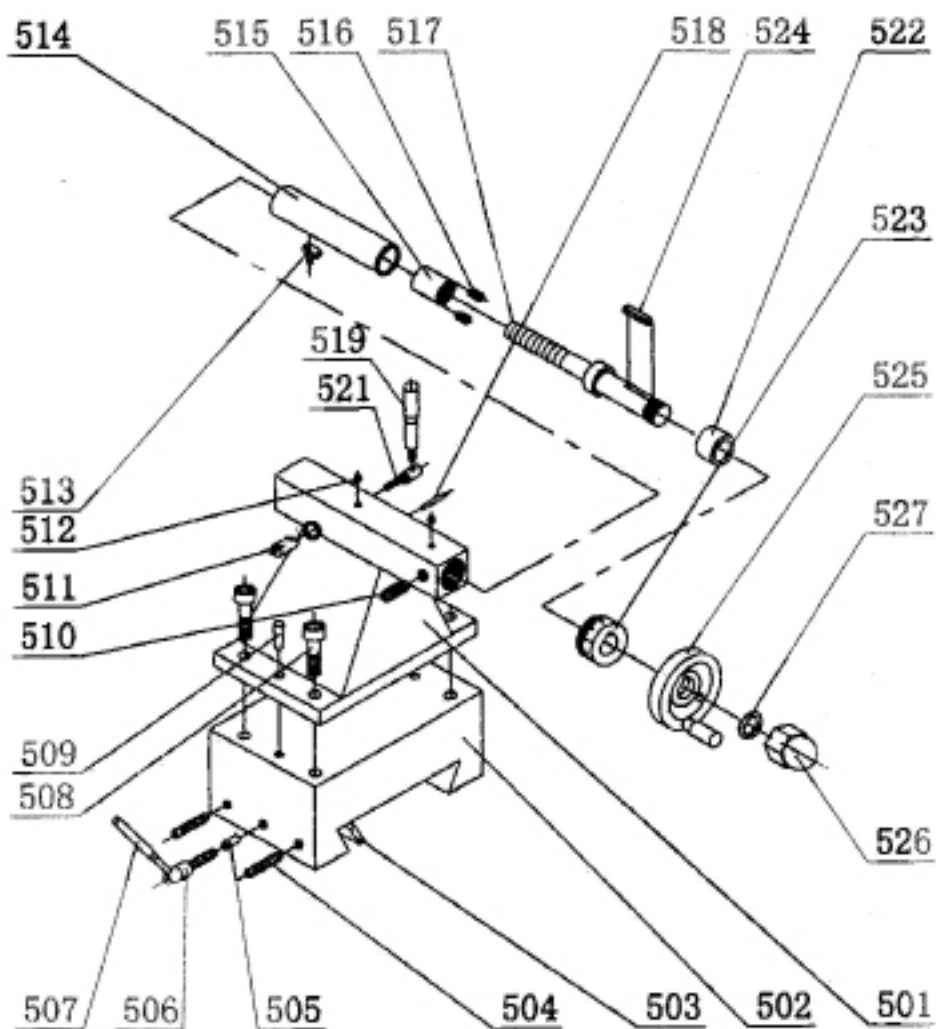
Part 3. Drilling-milling Box



Part 4 Work Bench



Tool Post



Part 5 Tailstock

## BED PARTS LIST

| ITEM | PART NO.     | NAME & SPECIFICATION                    | QTY |
|------|--------------|---|-----|
| 101  | L-H007.1-01  | Bed                                     | 1   |
| 102  | GB70-85      | Socket cap screw M6 x 16                | 2   |
| 103  | GB117-86     | Taper Bolt 3 x 12                       | 2   |
| 104  | GB923-88     | Dome nut M10                            | 1   |
| 105  | GB97-85      | Flat washer 10                          | 3   |
| 106  | GB4141.22-84 | Hand wheel B12 x 125                    | 1   |
| 107  | B-40X12X15   | Graduated disk                          | 1   |
| 108  | GB1155-74    | Oil cup 6                               | 1   |
| 109  | L-H007.1-08  | Lead screw support                      | 1   |
| 110  | GB1096-79    | Flat key 4 x 30                         | 1   |
| 111  | L-H007.1-03  | Lead screw                              | 1   |
| 112  | L-H007.1-05  | Lead screw nut                          | 1   |
| 113  | L-H007.1-04  | Lead screw nut holder                   | 1   |
| 114  | GB71-85      | Conical pointed tightening screw M6 x 8 | 1   |
| 115  | GB6170-85    | Hexagon nut M10                         | 1   |
| 117  | L-H007.1-12  | Holding device                          | 1   |
| 118  | L-H007.1-13  | Pin Belt                                | 1   |
| 119  | GB91-86      | Splint pin 2.5 x 16                     | 1   |
| 120  | L-H007.1-10  | Jog bolt                                | 2   |
| 121  | L-H007.1-09  | Revolving axis                          | 1   |
| 123  | L-H007.1-14  | Motor frame                             | 1   |
| 125  | GB899-88     | Double-end bolt M8x22                   | 4   |
| 127  | L-H007.1-11  | Pin bolt                                | 1   |
| 128  | GB93-87      | Spring washer 8                         | 4   |
| 129  | GB6170-86    | Hexagon nut M8                          | 4   |
| 130  |              | Motor                                   | 1   |
| 131  | GB1096-79    | Flat key 5x30                           | 1   |

## HEADSTOCK PARTS LIST

| ITEM | PART NO.          | NAME & SPECIFICATION            | QTY   |
|------|-------------------|---------------------------------|-------|
| 201  | L-H007.2-12       | Round head handle               | 1     |
| 202  | GB68-85           | Countersink screw M5x8          | 1     |
| 203  | JB24-79           | Slotted round nut M33x1.5       | 1     |
| 204  | L-H007.2-07       | Washer                          | 1     |
| 205  | GB1171-76         | V - belt A - 1000               | 1     |
| 206  | L-H007.2-08       | Spindle pulley                  | 1     |
| 207  | L-H007.2-06       | Bearing retainer ring           | 1     |
| 208  | GB297-84          | Bearing E207                    | 1     |
| 209  | L-H007.2-05       | Lock bolt                       | 1     |
| 210  | GB4141.15-84      | Handle Lever BM8x63             | 1     |
| 211  | GB4141.14-84      | Long handle cannula BM8x40      | 1     |
| 213  |                   | Reducer D97-4-16                | 1     |
| 214  | L-H007.2-04       | Headstock housing               | 1     |
| 215  | GB297-84          | Bearing E7208                   | 1     |
| 216  | GB1096-79         | Flat key 10x25                  | 1     |
| 217  | L-H007.2-05       | Spindle                         | 1     |
| 218  | L-H007.2-14       | End cover                       | 1     |
| 219  | GB70-85           | Socket cap screw M6x16          | 3     |
| 220  | L-H007.2-16       | Switch cover                    | 1     |
| 221  | GB68-85           | Countersink screw M5x12         | 4     |
| 222  | GB68-85           | Countersink screw M4x8          | 2     |
| 223  | L-H007.2-13       | Switch Nut                      | 2     |
| 224  | HZ10-10P/4        | Combined switch                 | 1     |
| 225  |                   | three-jaw chuck                 | 1     |
| 226  | GB118-86          | Internal screw conical pin 8x40 | 2     |
| 227  | GB93-87           | Spring Washer 12                | 4     |
| 228  | GB5782-85         | Hexagon bolt M12x45             | 4     |
| 229  | GB70-85           | Socket cap screw M8x20          | 3     |
| 230  |                   | External jaws                   | 3     |
| 231  | L-H007.2-10,.2-09 | Internal cover                  | 1 set |
| 232  | GB1670-86         | Hexagon nut M6                  | 1     |
| 233  | GB93-87           | Spring washer 8                 | 1     |

## HEADSTOCK PARTS LIST-continued

| ITEM | PART NO.    | NAME & SPECIFICATION                   | QTY |
|------|-------------|--|-----|
| 234  | GB97-85     | Flat Washer 8                          | 1   |
| 235  | GB67-85     | Slotted panhead screw M5x8             | 4   |
| 236  | L-H007.1-02 | Motor pulley                           | 1   |
| 237  | L-H007.2-09 | Cover                                  | 1   |
| 238  | L-H007.2-11 | Double screw bolt                      | 1   |
| 239  | L-H009.2-20 | Bore cover                             | 1   |
| 240  | L-H006F-02  | Flange                                 | 1   |
| 241  | GB71-85     | Conical pointed tightening screw M8x12 | 2   |

## DRILLING & MILLING BOX

| ITEM | PART NO.    | NAME & SPECIFICATION                         | QTY |
|------|-------------|--|-----|
| 301  | GB97-85     | Flat Washer 10                               | 4   |
| 302  | L-H007.3-08 | Adjuster                                     | 1   |
| 303  | GB5783-86   | Hexagon bolt M8x25                           | 3   |
| 304  | L-H007.3-04 | Adjusting plate for supporting motor         | 1   |
| 305  | GB5783-86   | Hexagon bolt M10x35                          | 3   |
| 306  | GB75-85     | Long cylindrical head tightening screw M6x16 | 1   |
| 307  | L-H007.3-05 | Lower cover                                  | 1   |
| 308  | L-H007.3-06 | Upper cover                                  | 1   |
| 309  |             | Cross Linking 40                             | 2   |
| 310  | GB1171-74   | V-belt O-710                                 | 1   |
| 311  | ZQ4124-57   | Handle                                       | 1   |
| 312  | GB818-88    | Cross recess panhead screw M6x15             | 1   |
| 313  | GB812-88    | Round nut M30x1.5                            | 1   |
| 314  | GB67-85     | Slotted panhead screw M5x8                   | 10  |
| 315  | L-H007.3-09 | Big pulley                                   | 1   |
| 316  | L-H007.3-10 | Spline housing                               | 1   |
| 317  | GB893-87    | Circlip 62                                   | 2   |
| 318  | GB276-84    | Bearing 206                                  | 2   |
| 319  | L-H06-117   | Bearing spacer ring                          | 1   |
| 320  | GB68-85     | Countersink screw M4x8                       | 1   |
| 321  | GB24-79     | Slotted round nut M24x1.5                    | 1   |
| 322  | GB276-84    | Bearing 205                                  | 1   |
| 323  | L-H06-24    | Spindle sliding bush                         | 1   |
| 324  | L-H007.3-12 | Spindle                                      | 1   |
| 325  | GB1096-79   | Flat key 8x25                                | 2   |
| 326  | L-H06-50    | Cylindrical gear                             | 1   |
| 327  | GB894-87    | Circlip for shaft 25                         | 1   |
| 328  | L-H06-52    | Spring base                                  | 1   |
| 329  | GB67-85     | Panhead screw M5x8                           | 1   |
| 330  | ZQ4124-59   | Spring - box cover                           | 1   |
| 331  | L-H06-53    | Pan - shaped spring                          | 1   |
| 332  | GB71-85     | Conical pointed tightening screw M10x30      | 1   |



## DRILLING & MILLING BOX-continued

| ITEM | PART NO.     | NAME & SPECIFICATION                   | QTY |
|------|--------------|--|-----|
| 333  | GB6170-85    | Hexagon nut M10                        | 3   |
| 334  | ZQ4124-38    | Clamping rod                           | 1   |
| 335  | ZQ4124-39    | Clamping lever                         | 1   |
| 337  | GB72-85      | Conical pointed dog screw M10x40       | 1   |
| 338  | GB117-85     | Taper Bolt 3x20                        | 2   |
| 339  | L-H06-37     | Fitting lever                          | 1   |
| 340  | GB4141.20-84 | Hand wheel 8x63                        | 1   |
| 341  | L-H007.3-21  | Shaft sleeve                           | 2   |
| 342  | L-H06-32     | Worm                                   | 1   |
| 343  | GB297-84     | Single-row taper roller bearing E7207  | 1   |
| 344  | L-H06-26     | Dust ring                              | 1   |
| 345  | L-H06-25     | Rubber washer                          | 1   |
| 346  | L-H06-27     | Shaft for drilling & milling           | 1   |
| 347  | GB71-85      | Conical pointed tightening             | 1   |
| 348  | L-H007.3-17  | Worm-gear case                         | 1   |
| 349  | GB1155-74    | Oil cup 6                              | 1   |
| 350  | GB70-85      | Socket cap screw M6x16                 | 3   |
| 351  | GB73-85      | Slotted flat-end tightening screw M4x6 | 1   |
| 352  | L-H06-47     | Washer                                 | 1   |
| 353  | L-H007.3-14  | Gear                                   | 1   |
| 354  | L-H06-42     | Scale Ring                             | 1   |
| 355  | L-H06-43     | Plate spring                           | 1   |
| 356  | L-H007.3-19  | Handle body                            | 1   |
| 357  | L-H007.3-20  | Handle lever                           | 3   |
| 358  | GB4141.14-84 | Long handle cannula BM10x50            | 3   |
| 359  | GB894-87     | Circlip for shaft 32                   | 1   |
| 360  | L-H007.3-15  | Banking pin                            | 1   |
| 362  | GB308-74     | Steel ball 6                           | 1   |
| 363  | L-H06-31     | Spring                                 | 1   |
| 364  | GB1358-73    | Clutch handle HM10x40                  | 1   |
| 365  | L-H007.3-16  | Banking Shaft                          | 1   |
| 366  | L-H007.3-01  | Connecting swivel plate                | 1   |

## DRILLING & MILLING BOX-continued

| ITEM | PART NO.    | NAME & SPECIFICATION                   | QTY |
|------|-------------|--|-----|
| 367  | GB117-85    | Taper bolt 6x40                        | 1   |
| 368  | GB70-85     | Socket cap screw M6x20                 | 6   |
| 369  | L-H007.3-02 | Cover sheet                            | 1   |
| 370  | KAO-5       | Push button                            | 1   |
| 371  | GB818-85    | Cross recess panhead screw M4x10       | 2   |
| 372  | L-H007.3-03 | Drilling & milling box                 | 1   |
| 373  | TZD-370     | Motor                                  | 1   |
| 374  | L-H007.3-07 | Motor pulley                           | 1   |
| 375  | Z7020.2-14  | eccentric shaft                        | 1   |
| 376  | GB71-85     | Conical pointed tightening screw M6x10 | 1   |

## TOOL POST

| ITEM | PART NO.     | NAME & SPECIFICATION                      | QTY |
|------|--------------|---|-----|
| T01  | GB4141.15-84 | Handle Lever BM8x75                       | 1   |
| T02  | GB4141.14-84 | Handle sleeve BM8x40                      | 1   |
| T03  |              | Handle locking holder                     | 1   |
| T04  |              | Washer                                    | 1   |
| T05a |              | T shaped wrench (pressing cutter wrench)  | 1   |
| T05  | GB83-88      | Square pressing screw M8x22               | 8   |
| T06  |              | Tool apron                                | 1   |
| T07  |              | Positioning cap                           | 1   |
| T08  |              | Spring                                    | 1   |
| T09  |              | Locking shaft                             | 1   |
| T10  |              | Tool aprong backer                        | 1   |
| T11  |              | Positioning block                         | 3   |
| T12  | GB819-85     | Cross recess head countersink screw M4x10 | 3   |
| T13  | GB70-85      | Socket cap screw M5x10                    | 4   |
| T14  |              | Clamping block                            | 2   |
| T15  |              | Movable clamp                             | 1   |
| T16  |              | Sloping block                             | 1   |
| T17  | GB71-85      | Conical pointed tightening screw M5x15    | 2   |

## TOOL POST

| ITEM | PART NO.  | NAME & SPECIFICATION       | QTY |
|------|-----------|----------------------------|-----|
| T18  | GB6170-86 | Nut M5                     | 2   |
| T19  | GB70-85   | Socket cap screw M5x10     | 1   |
| T20  |           | Spacer block               | 1   |
| T21  |           | Fixed clamp                | 1   |
| T22  |           | Nut                        | 1   |
| T23  | GB6172    | Nut M8                     | 2   |
| T24  | GB97      | flat washer 8              | 2   |
| T25  | GB37      | T-shaped screw bolt M8x26  | 2   |
| T26  | GB6170    | Nut M10                    | 2   |
| T27  | GB97      | Flat Washer 10             | 2   |
| T28  | GB37      | T-shaped screw bolt M10x26 | 2   |
| T29  |           | Basement                   | 1   |
| T30  |           | Graduated staff guage      | 1   |
| T31  | GB876-86  | Hollow rivet               | 2   |
| T32  | GB1096-79 | Flat key 4x20              | 1   |
| T33  |           | Lead Screw                 | 1   |
| T34  | GB115-74  | Oil cup 6                  | 2   |
| T35  |           | Lead screw base            | 1   |
| T36  | GB70-85   | Socket cap screw M6x16     | 2   |
| T37  |           | Scale ring                 | 1   |
| T38  |           | Locking lever              | 1   |
| T39  |           | Hand wheel                 | 1   |
| T40  | GB812-88  | Round nut                  | 2   |

**TABLE**

| <b>ITEM</b> | <b>PART NO.</b> | <b>NAME &amp; SPECIFICATION</b>        | <b>QTY</b> |
|-------------|-----------------|--|------------|
| 401         | GB923-84        | Capped nut M10                         | 1          |
| 402         | GB97-85         | Flat washer 10                         | 1          |
| 403         | GB4141.22-84    | Hand wheel B12x125                     | 1          |
| 404         | B-50X12X50      | Graduated disk                         | 1          |
| 405         | L-H007.4-16     | Lead screw post                        | 1          |
| 406         | GB1155-74       | Oil cup 6                              | 4          |
| 407         | GB1096-79       | Flat key 4x30                          | 1          |
| 408         | L-H007.4-21     | Lead screw                             | 1          |
| 409         | L-H007.4-20     | Nut                                    | 1          |
| 410         | L-H007.4-02     | Table                                  | 1          |
| 411         | GB72-85         | Conical pointed tightening screw M8x20 | 1          |
| 412         | ZQ4124-48       | Locking handle                         | 2          |
| 413         | L-H007.4-18     | Sloping block                          | 2          |
| 414         | L-H007.4-19     | Spacer block                           | 1          |
| 415         | L-H007.4-22     | Spacer block                           | 1          |
| 416         | L-H007.4-01     | Lower slide plate                      | 1          |
| 417         | ZQ4124-48       | Locking handle lever                   | 2          |
| 418         | GB70-85         | Socket cap screw M16x16                | 2          |
| 419         | GB6172-86       | Hexage thin nut M102                   | 1          |

## TAIL STOCK

| ITEM | PART NO.     | NAME & SPECIFICATION                   | QTY   |
|------|--------------|--|-------|
| 501  | L-H007.5-06  | Tailstock                              | 1     |
| 502  | L-H007.5-01  | Tailstock seating                      | 1     |
| 503  | L-H007.5-02  | Spacer block                           | 1     |
| 504  | GB71-85      | Conical pointed tightening screw M8x30 | 2     |
| 505  | L-H007.5-15  | Sloping block                          | 1     |
| 506  | L-H007.5-14  | Clamp Shaft                            | 1     |
| 507  | L-H007.5-16  | Handle                                 | 1     |
| 508  | GB70-85      | Socket cap screw M6x16                 | 4     |
| 509  | GB117-85     | Taper bolt 4x25                        | 2     |
| 510  | GB71-85      | Conical pointed tightening screw M6x10 | 1     |
| 511  | L-H007.5-04  | Clamp block                            | 1     |
| 512  | GB1155-74    | Oil cup                                | 2     |
| 513  | L-H007.5-08  | T-shaped embody flat key               | 1     |
| 514  | L-H007.5-06  | Tailstock core shaft                   | 1     |
| 515  | L-H007.5-09  | Nut                                    | 1     |
| 516  | GB73-85      | Flat end tightenting screw M4x8        | 3     |
| 517  | L-H007.5-12  | Tailstock lead screw                   | 1     |
| 518  | GB119-85     | Cylinder pin 5x20                      | 1     |
| 519  | GB4141.15-84 | Handle lever BM8x65                    | 1 set |
| 521  | L-H007.5-03  | Check lock shaft                       | 1     |
| 522  | L-H007.5-13  | Supporting sleeve                      | 1     |
| 523  | L-H007.5-10  | Graduated disk                         | 1     |
| 524  | GB1096-79    | Flat key 4x20                          | 1     |
| 525  | GB4141.22-84 | Tailstock hand wheel B12x100           | 1     |
| 526  | GB923-88     | Capped nut M10                         | 1     |
| 527  | GB97-86      | Flat washer 10                         | 1     |

# **TEST CERTIFICATION**

**This machine has been tested and found qualified for delivery.**

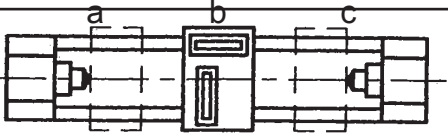
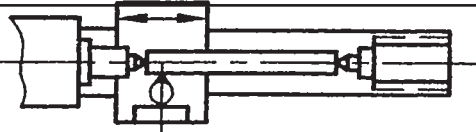
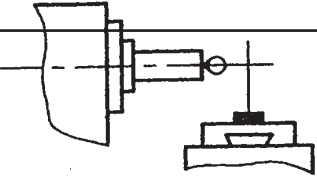
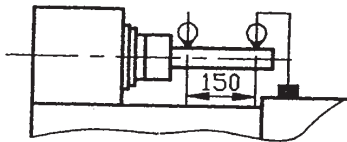
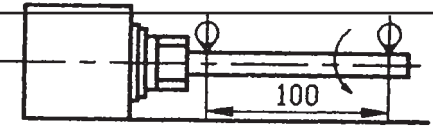
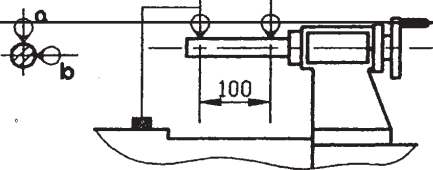
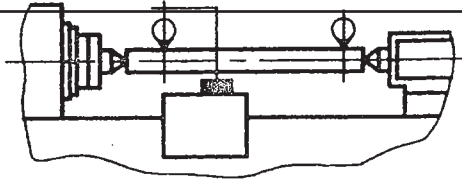
**(Attached with Inspection Accuracy Table)**

**Cheif of Inspection Dept:**


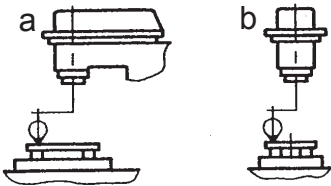
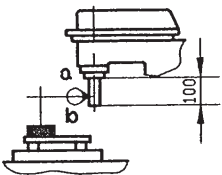
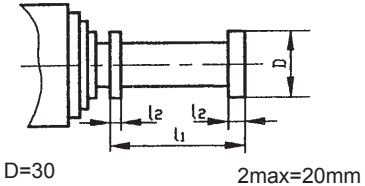
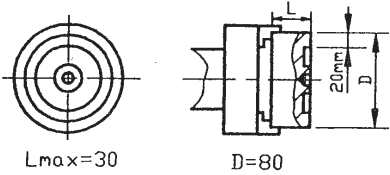
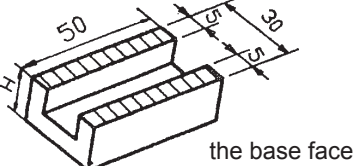
**Date:**

**Plant Director:**

**Date:**

| L-H007                         |  | TEST CERTIFICATION  | PAGE 1 OF 2   |
|--------------------------------|--|---|---|
| INSPECTION ACCURACY TABLE (mm) |  |   |   |
| No.                            | Item   | Inspecting Sketch   | Allowable Tolerance   |
| G <sub>0</sub>                 | Leveling for the Machine   |    | 0.08/1000   |
| G <sub>1</sub>                 | Linearity of carriage moving in the level  |    | 0.08  |
| G <sub>2</sub>                 | Axial float of the spindle   |    | 0.03  |
| G <sub>3</sub>                 | Parallelism of the turning spindle axis to the carriage moving                         |  | a: 0.04<br>b: 0.05<br>Only onward deviation allowed             |
| G <sub>4</sub>                 | Runout of the axis of spindle taper hole of the headstock                              |  | a: 0.03 Near the spindle end<br>b: 0.04 100mm away from the end |
| G <sub>5</sub>                 | Parallelism of the axis of tailstock sleeve to the carriage moving                     |  | a: 0.04<br>b: 0.04  |
| G <sub>6</sub>                 | Equal - height of the axis between the headstock and tailstock centres to the carriage |  | 0.05  |



| L-H007                         |   | TEST CERTIFICATION  | PAGE 2 OF 2   |
|--------------------------------|---|---|---|
| INSPECTION ACCURACY TABLE (mm) |   |   |   |
| No.                            | Item  | Inspecting Sketch   | Allowable Tolerance   |
| G <sub>7</sub>                 | Perpendicularity of lateral moving of the transverse tool post to the spindle axis      |    | 0.07/100  |
| G <sub>8</sub>                 | Perpendicularity of the rotation axis of the drilling-milling spindle to the table face |    | a: 0.15/200<br>b: 0.15/200  |
| G <sub>9</sub>                 | Runout of the axis of the drilling-milling spindle hole                                 |   | a: 0.03<br>near the spindle end<br>b: 0.05<br>100mm away from the end |
| P <sub>1</sub>                 | Cylindricity of excircle finishing  |  | 0.05<br>Measured on a length of 50mm                                  |
| P <sub>2</sub>                 | Flatness of face fine cutting   |  | 0.08  |
| P <sub>3</sub>                 | Parallelism of the milled surface to the base face                                      |  | 0.08  |

|   |                           |                       |            |
|---|---------------------------|-----------------------|------------|
| <b>L-H007</b>   | <b>TEST CERTIFICATION</b> | <b>PAGE 1 OF 1</b>    |            |
| <b>Case No.</b><br><b>Gross Weight: 210kg</b> <b>Net Weight: 148kg</b><br><b>Size of box (LxWxH)</b> <b>115cmx58cmx96cm</b>   |                           |                       |            |
| <b>No.</b>  | <b>Description</b>        | <b>Specification</b>  | <b>QTY</b> |
| 1   | A main machine tool       | L-H007                | 1          |
| 2   | Three-jaw chuck           | Ø100                  | 1          |
| 3   | Dead centre               | Morse No. 2 and No. 3 | 1 for each |
| 4   | Pressing cutter wrench    |                       | 1          |
| 5   | Wedge                     |                       | 1          |
| 6   | Drilling chuck            | JS16                  | 1          |
| 7   | Drawing bar               |                       | 1          |
| 8   | Drill taper stock         |                       | 1          |
| 9   | Flange                    |                       | 1          |
| 10  | Locking lever             |                       | 1          |
| 11  | Technical document        |                       | 1          |
| <div style="text-align: right; margin-bottom: 10px;">Inspector: _____</div> <div style="text-align: right;">Date: _____</div> |                           |                       |            |