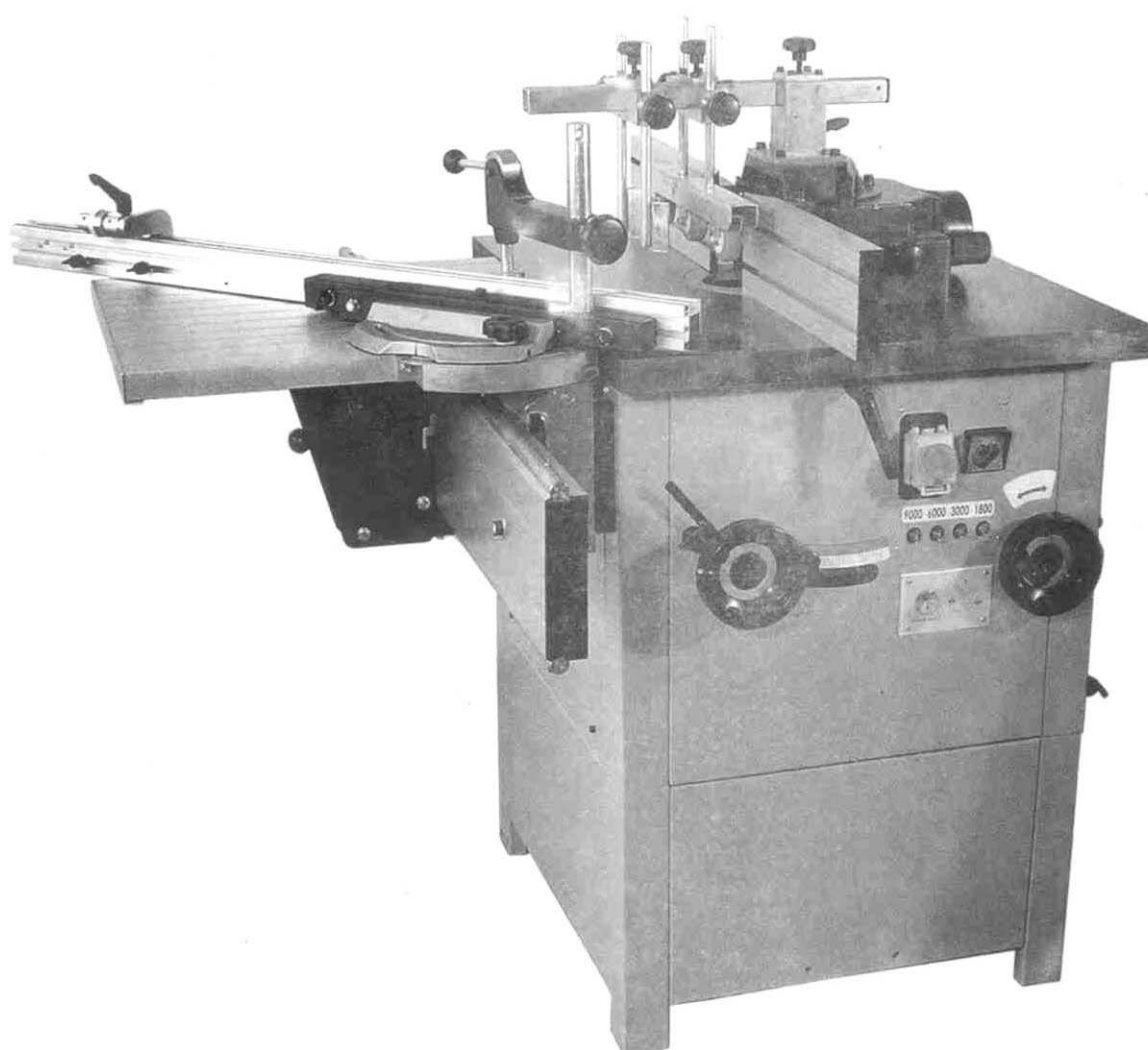


# Manual

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## Spindle Moulder w/Tilting Shaft



## CONTENT

|   |     |
|---|-----|
| 1. Specification.....                                       | P1  |
| 2. Safety Instructions.....                                 | P1  |
| 2.1 Safety Instructions for Power Tools.....                | P1  |
| 2.2 Additional Safety Instructions for Spindle Moulder..... | P2  |
| 3. Getting to Know Your Machine.....                        | P3  |
| 4. Assembly.....  | P4  |
| 4.1 Unpacking.....  | P4  |
| 4.2 Installing the Work Stand.....                          | P4  |
| 4.3 Installing the Machine Housing onto Work Stand.....     | P4  |
| 4.4 Installing the Cutting Tools.....                       | P4  |
| 4.5 Installing the Safer Guard.....                         | P4  |
| 4.6 Installing the Feeder Ass'y.....                        | P5  |
| 4.7 Installing the Sliding Carriage(optional)...            | P5  |
| 4.8 Installing the Mobile Wheel Kit(optional).....          | P7  |
| 5. Adjustment & Operation.....                              | P8  |
| 5.1 Speed Change.....                                       | P8  |
| 5.2 Replace V-belt.....                                     | P8  |
| 5.3 Adjust the Height of Spindle.....                       | P8  |
| 5.4 Spindle Tilt Setting.....                               | P8  |
| 5.5 Rotation.....   | P9  |
| 5.6 Fence Adjustment.....                                   | P9  |
| 5.7 Adjust the Feed Roller.....                             | P9  |
| 5.8 Sanding.....  | P9  |
| 6. Dust Collection.....                                     | P10 |
| 7. Wiring Diagram.....                                      | P10 |
| 8. Maintenance.....   | P10 |
| 9. Trouble Shooting.....                                    | P11 |
| 10. Diagram & Parts List.....                               | P12 |

## 1. SPECIFICATION

|                    |              |                       |
|--------------------|--------------|-----------------------|
| Motor power        | 2800W        |                       |
| Motor speed        | R.P.M.       | 2800(50Hz);3360(60Hz) |
| Motor Protection   | Thermal link |                       |
| Table size         | mm           | 640x710               |
| Table height       | mm           | 900                   |
| Spindle diameter   | mm           | 30                    |
| Spindle travel     | mm           | 100                   |
| Table opening      | mm           | 200                   |
| Table tilt         |              | -5°-+30°              |
| Table ring         | mm(Φ)        | 190                   |
| Tool diameter Max. | mm           | 200                   |
| Speed              | R.P.M.       | 1800/3000/6000/9000   |
| Suction nozzle     | mm           | 100                   |

## 2. SAFETY INSTRUCTIONS

### ⚠WARNING

**For Your Own Safety Read Instruction Manual Before Operating This Equipment**

#### 2.1 Safety Instructions For Power Tools

- 1. KEEP GUARDS IN PLACE** and in working order.
- 2. REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
- 3. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 4. NEVER USE IN DANGEROUS ENVIRONMENT.** Do not use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
- 5. KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
- 6. MAKE WORKSHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
- 7. NEVER FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
- 8. USE RIGHT TOOL.** Do not force tool or attachment to do a job for which it was not designed.
- 9. USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. Conductor size should be in accordance with the amperage rating listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and over-heating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.
- 10. WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- 11. ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are **NOT** safety glasses.
- 12. SECURE WORK.** Use clamps or a vise to hold work when practical. It is safer than using your hand and frees both hands to operate tool.
- 13. NEVER OVERREACH.** Keep proper footing and balance at all times.
- 14. MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 15. DISCONNECT TOOLS** before servicing and changing accessories, such as blades, bits, cutters, and the like.
- 16. REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.

17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.
18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
19. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Do not leave tool until it comes to a complete stop.
20. **NEVER USE UNDER THE INFLUENCE** of alcohol or drugs, or when tired.
21. **NEVER ALLOW UNSUPERVISED OR UNTRAINED PERSONNEL TO OPERATE THE MACHINE.** Make sure any instructions you give in regards to the operation of the machine are approved, correct, safe, and clearly understood.

## 2.2 Additional Safety Instructions For Spindle Moulder

### **⚠WARNING**

*Like all power tools, there is danger associated with spindle moulder. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.*

### **⚠CAUTION**

*No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment or poor work results.*

1. **NEVER ALLOW YOUR HANDS** to come within 12 inches of the cutters. Never pass your hands directly over or in front of the cutter.
2. **BLIND CUT WHENEVER POSSIBLE.** This keeps the knives on the underside of the workpiece and provides a distance guard for the operator.
3. **WHEN SHAPING CONTOURED WORK** and using a rub collar, **NEVER** start out at a corner. See the "Rub Collar" instructions further on in the manual.
4. **WITH THE MACHINE UNPLUGGED,** always rotate the spindle by hand with any new setup, to ensure proper cutter clearance before starting the machine.
5. **DO NOT SHAPE STOCK SHORTER** than 12 inches without special fixtures or jigs. Where practical, shape longer stock and cut to size.
6. **NEVER ATTEMPT** to remove too much material in one pass. You are far more likely to enjoy safer and higher quality results if you allow the cutter to remove material in multiple passes.
7. **THE DANGER OF** kickback is increased when the stock has knots, holes, or foreign objects in it. Warped stock should be run through a jointer before attempting to run it through a shaper.

8. **KEEP THE UNUSED PORTION** of the cutter below the table surface.
9. **THE USE OF PUSH STICKS** as safety devices in some applications is smart; in others it can be quite dangerous. If the push stick comes in contact with the cutter on the end grain, it can fly out of your hand like a bullet—potentially causing serious injury. We recommend using some type of fixture, jig, or hold-down device as a safer alternative. Always use the guard as described in the manual.
10. **NEVER FORCE MATERIALS** through the shaper. Let the cutters do the work. Excessive force is likely to result in poor cutting results and will cause dangerous kickback conditions.
11. **ALWAYS** ensure that the cutters, fence, and spindle elevator knob have been tightened properly before beginning any operation.
12. **ALWAYS** feed the work toward the cutters in the direction opposite of the cutter rotation. Also, using and maintaining a sharp cutterhead will greatly reduce the chance of kickback.
13. **NEVER REACH BEHIND CUTTER** to grab the workpiece. Your hand may suddenly be pulled into the cutter in the event of a kickback.
14. **IF AT ANY TIME YOU ARE EXPERIENCING DIFFICULTIES PERFORMING THE INTENDED OPERATION, STOP USING THE SPINDLE MOULDER!** Then contact our service department or ask a qualified expert how the operation should be performed.

## 1.3 Site Considerations

### Working Clearances

Working clearances can be thought of as the distances between machines and obstacles that allow safe operation of every machine without limitation. Consider existing and anticipated machine needs, size of material to be processed through each machine, and space for auxiliary stands and/or work tables. Also consider the relative position of each machine to one another for efficient material handling. Be sure to allow yourself sufficient room to safely run your machines in any foreseeable operation.

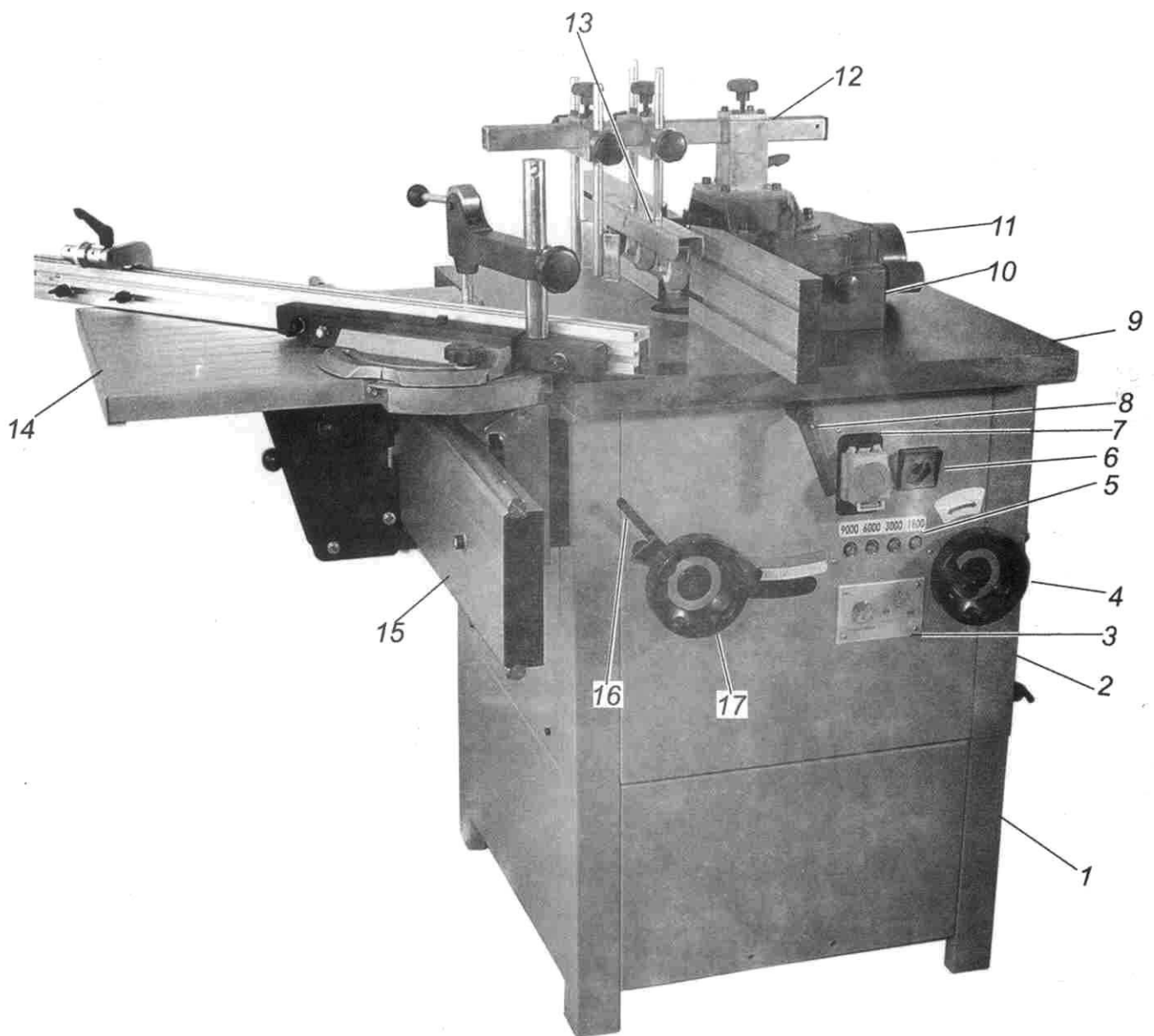
### Lighting and outlets

Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle combined motor amp loads. Outlets should be located near each machine so power or extension cords are not obstructing high-traffic areas. Be sure to observe local electrical codes for proper installation of new lighting, outlets, or circuits.

### **⚠WARNING**

**Read the manual before assembly and operation. Become familiar with the machine and its operation before beginning any work. Serious personal injury may result if safety or operational information is not understood or followed.**

### 3. GETTING TO KNOW YOUR MACHINE



- |                                  |                                     |
|----------------------------------|-------------------------------------|
| 1. Workstand                     | 10. Safer guard                     |
| 2. Machine housing               | 11. Dust outlet                     |
| 3. Spindle height display        | 12. Feeder ass'y                    |
| 4. Spindle tilt handwheel        | 13. Feed roller                     |
| 5. Spindle speed display         | 14. Sliding bench (optional)        |
| 6. Reversing switch              | 15. Sliding carriage(optional)      |
| 7. Main switch (No-volt release) | 16. Spindle height lock             |
| 8. Spindle tilt lock             | 17. Spindle height adjust handwheel |
| 9. Table                         |                                     |

## 4. ASSEMBLY

### 4.1 Unpacking

The spindle moulder is shipped from the manufacturer in a carefully packed carton. If you discover the machine is damaged, you will need to file a freight claim. Save the containers and all packing materials. If you need assistance determining, please contact our Customer Service.

After all the parts have been removed from the carton, you should have:

- Spindle Moulder Machine Housing Ass'y
- Workstand panel (4) Column (4) & hardware (1 bag)
- Safer Guard Ass'y
- Feeder Ass'y
- Fence Extrusion (2)
- Tools & Hardware

Most of your spindle moulder has been assembled at the factory, but some parts must be assembled or installed after delivery. We have organized the assembly process into steps.

Please follow along in the order presented in this section.

### 4.2 Installing the work stand

1. Take 4 panels and 4 columns from main carton.
2. Take the following hardware from the workstand hardware bag.
  - 16-Hex head screw M8x20
  - 32-8mm Flat washer
  - 16-Hex Nut
3. Assemble the work stand as shown in **Figure 1**.

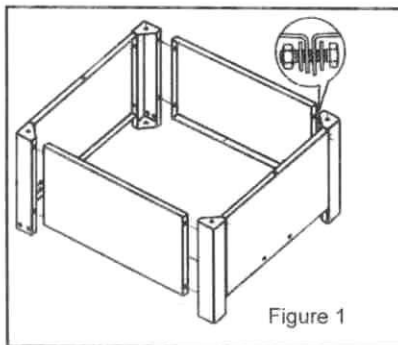


Figure 1

### 4.3 Installing the machine housing onto work stand

#### ⚠ WARNING

**Do not lift the machine housing without help.**  
This machine housing is over 70 Kg, customers should seek assistance from staff to lift this item.

1. Place the machine housing over the thread holes on the work stand.
2. Loosen 2-Startype Screw to open the machine housing door and remove 6-Allen Bolt to remove the sidepanel.
3. Take the following hardware from the workstand hardware bag.
  - 4-Hex head screw M8x20
  - 8-8mm Flat washer
  - 4-Hex Nut
4. Secure all screws as shown in **Figure 2**.

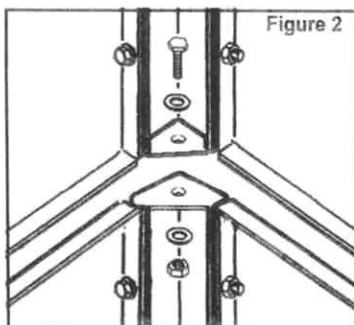


Figure 2

### 4.4 Installing the Cutting Tools

#### ⚠ CAUTION

Install tool on the spindle as low as possible. It should turn freely in the lowest spindle position. Make sure that tool does not make contact with the table ring or fence extrusion when the spindle tilted.

#### ⚠ DANGER

##### Danger of personal injury!

Form habit of turning tool by hand before switching machine on to be sure tool runs clear.

1. Lay the table ring flat into table plate.  
The table ring, when mounted, should not stand out over the table surface, in order to allow workpiece to be pushed smoothly over the table surface.  
When doing milling work with the raising mill, take the table ring out of the table part.
2. Position the moulding tool with the spindle ring onto the spindle and secure the lock flange with Allen bolt M12x25. See **Figure 3**.

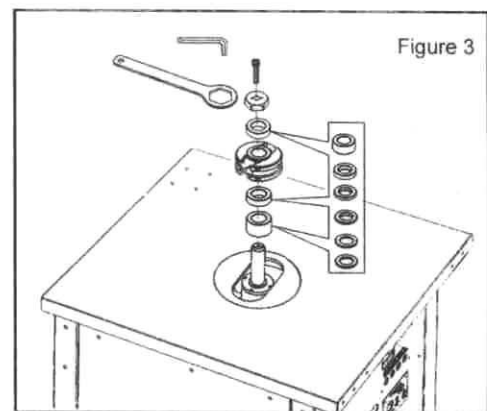


Figure 3

3. Adjust the moulding tool height on shaft, using other thickness spindle ring or rings. The thickness of spindle ring is 30, 25, 15, 10, 5, 2 & 1 mm.

### 4.5 Installing the Safer Guard

1. Place the safer guard over the threaded holes on the table.

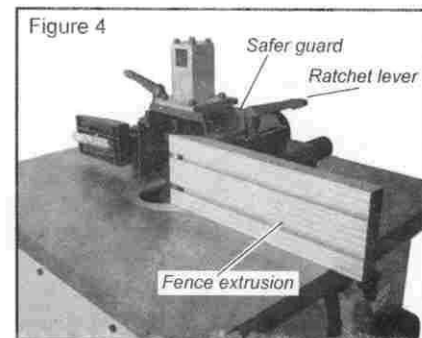
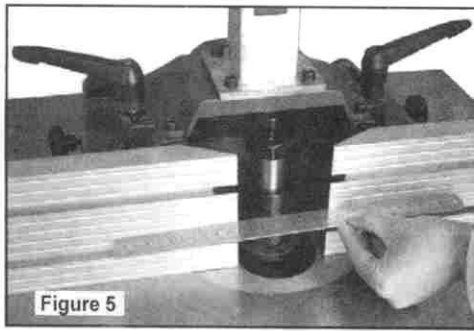


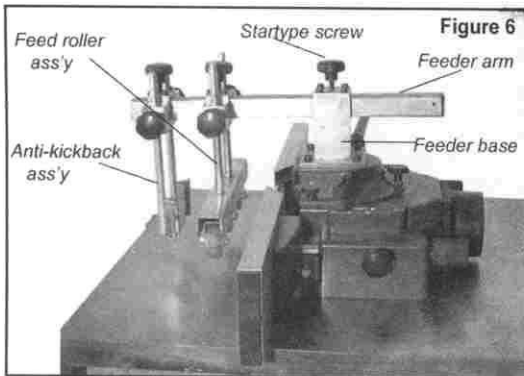
Figure 4

2. Insert the ratchet lever M8x150 with a 8mm large washer into the safer guard as shown in **Figure 4**, and thread the ratchet lever clockwise to secure to the table.
3. Slide the fence extrusion onto the fence extrusion carriage, and secure it.
4. To align the fence extrusion, adjust one or both fence so they are in close alignment. Check the alignment with a straightedge as shown in **Figure 5**.



#### 4.6 Installing the feeder ass'y

1. Insert the feeder arm into feeder base and secure it with startype screw M8x25.



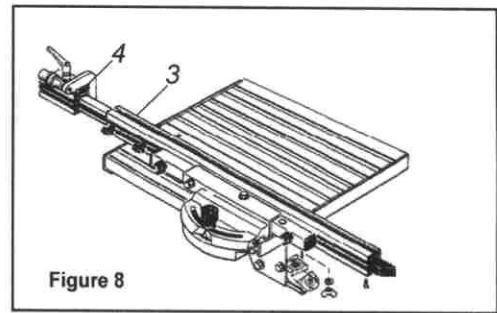
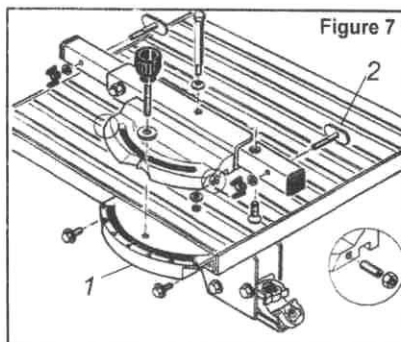
2. Place the Feeder Ass'y and Anti-kickback Ass'y onto the Feeder Arm and secure it.

#### 4.7 Installing the Sliding Carriage (optional)

##### 4.7.1 Installing the sliding bench

1. Fit the scale mount (1) to the sliding bench.  
2 allen bolts M6x16
2. Insert the intermediate plates (2) into the stop tube do not tighten the screws.  
2 washers 6mm  
2 thumbscrew M6
3. Fit the stop tube on the sliding bench.  
1 swing bolt  
2 washers 8mm  
1 Wave washer 8mm  
1 hex nut M8

The wave washer must be between the stop tube and the sliding bench.



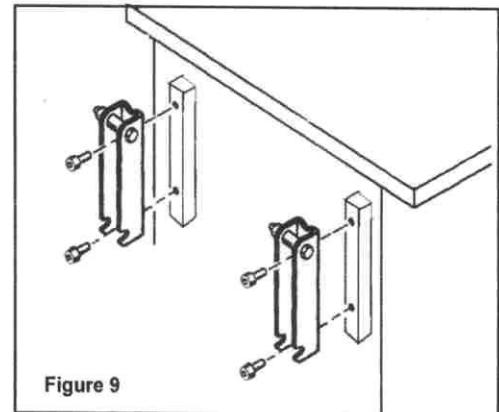
##### 4.7.2 Adjust the scale mount

1. Release the 2x allen bolts M6x16 and shift the scale mount to the left or to right make sure the pointer with the "0" scale. then tighter the 2x allen bolts
2. Slide the guide rail (3) over the intermediate plates (2) and tighten the thumbscrews .
3. Insert the folding stop (4) into the end stop and tighten the T-screw.

##### 4.7.3 Mounting bracket

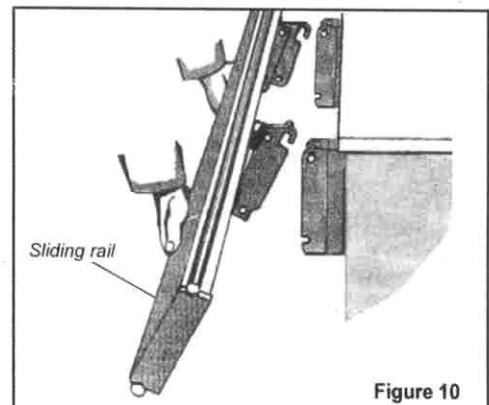
Fit the two mounting brackets with two "I" shape insert block to machine housing.

4 allen bolts M8x45



##### 4.7.4 Mounting the sliding rail

Insert the Sliding rail from above at a slight angle into the mounting brackets and tighten the wing nuts.





#### 4.7.5 Mounting the sliding bench

1. To mount the sliding bench on the sliding rail, unlock the stop bolt.
2. Pull out the ball knob and turn clockwise or counter-clockwise (1/4 turn).
3. Slide the bench on the sliding rail, ensuring that the bearings line up correctly and the bench runs smoothly.
4. Turn the ball knob until it is in its original position to prevent the bench from falling from the rail unintentionally.

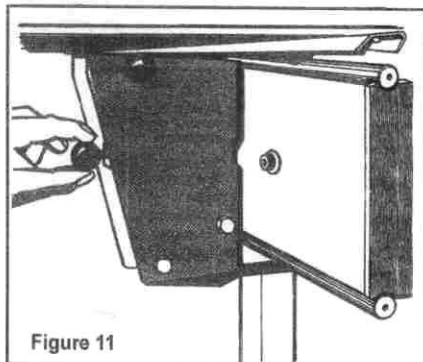


Figure 11

#### 4.7.6 Adjusting the sliding bench

Adjust the sliding table so that it is flush with the main table of the machine. To assist with the alignment, use the main ripfence (inverted) from the machine. Lay it across both the sliding table and fixed main table and adjust the height / angle until both are completely level.

The adjustment is made at the left and right rail fixture.

1. Loosen the two hexagon screw (5) slightly.
2. By alternately adjusting the height adjustment screw (6) and the angle adjustment screw (7), align the slide bench so that it is at the same height as the cutting table.

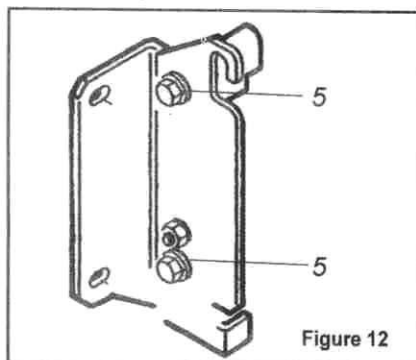


Figure 12

3. Test and measure the parallel motion of the slide bench to the cutting bench.
4. Measure in front and back positions.
5. If necessary, release 4x allen bolts on two mounting bracket to measure the parallel motion.
6. Tighten the hexagon nuts (5).

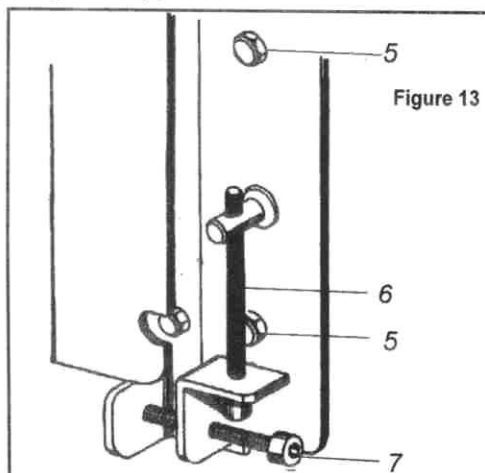


Figure 13

#### 4.7.7 Workpiece stop angle correction

1. After making a test cut, check the 90° angle.
2. Loosen the cap nut to make the necessary correction.
3. Swing back the stop tube a short way and set the adjusting nut (8) by hand.
4. Tighten the cap nut again and make a further test cut.
5. Repeat the correction procedure if necessary.

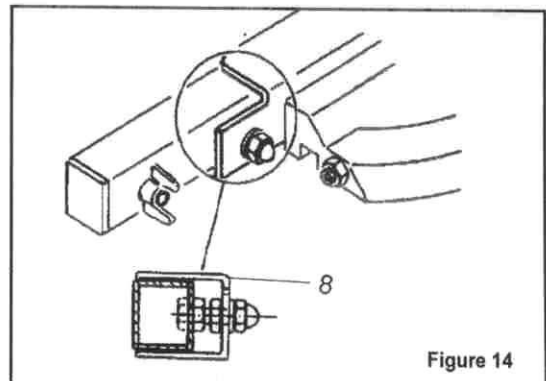


Figure 14

#### 4.7.8 Installing the stop rail.

The stop rail is 1500 mm long when it is fully pulled out.

1. Adjust the folding stop on the end stop to exactly 900 mm. when pulling out the end stop rail, read the length on the scale.
2. Fine adjustment can be made using the knurled screw on the folding stop.  
1 division = 0.1 mm  
1 turn = 2 mm
3. Tighten the screw (9) onto the axle of the stop lever (10) so that the stop lever does not drop down when folding.

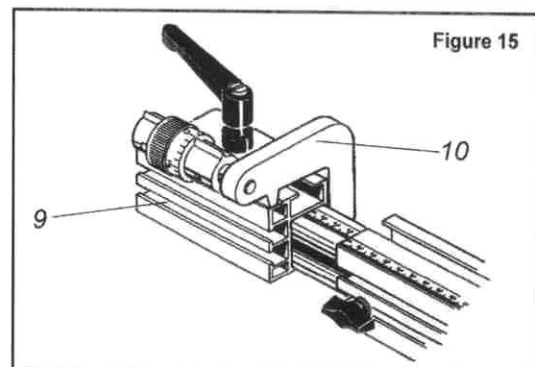


Figure 15

#### 4.7.9 Mounting the angle stop

The angle stop can swing to 45° either side of 0°.

1. Loosen the handwheel on the swing segment, pull out and turn the ball knob (situated under the slide bench) 1/4 of a turn, the desired angle between 45° either side of 0° can now be set, re-tighten the handwheel to lock in place.
2. When swinging the angle stop back, lock the ball knob back into place below the slide bench by hand.

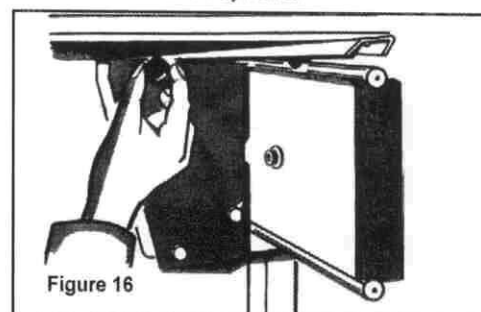


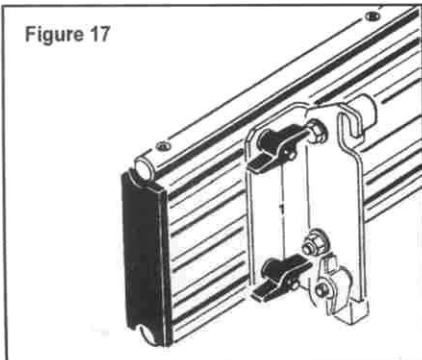
Figure 16

#### 4.7.10 Installing the sliding rail

*The sliding rail can be moved forwards or backwards.*

1. Loosen the 2 wing nuts on the left and right hand mounting brackets.
2. Depending on the size of the workpiece, move the sliding rail into the ideal position relative to the main table, then tighten both sets of wingnuts.

Figure 17

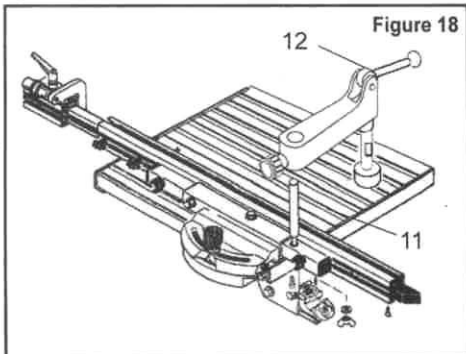


#### 4.7.11 Installing the Workpiece Clamp

*Safe workpiece guidance is a precondition for accurate and safe working. It is therefore important that you use the workpiece correctly.*

1. Fit the pulling rod into its locating hole situated on the stop tube (see Figure 18). Hold the rod in place with the supplied counter sunk screw (from below).
2. Attach the workpiece clamp (12) to the pulling rod; the desired height can be held with the handwheel.

Figure 18



3. Place the workpiece on the bench.
4. Apply the workpiece clamp with the lever in position(a) to the pulling rod.
3. Loosen the height adjusting handwheel and place the lever in position (b), lower the clamp until it is touching the workpiece, re-tighten the handwheel to secure.
4. To clamp the workpiece, move the clamp into position(c).

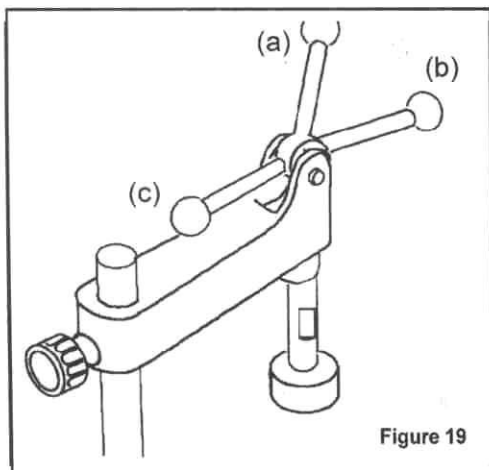
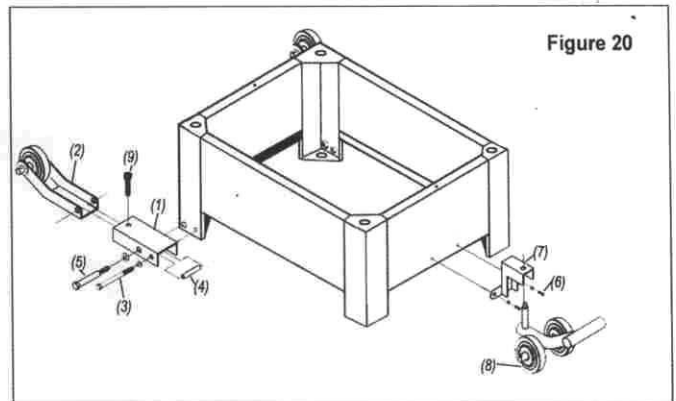


Figure 19

#### 4.8 Installing Mobile Wheel Kit (optional)

1. Place "U" Shape Bracket(1) onto Front Wheel Kit Ass'y(2).
2. Insert Hex Head Screw M10x70(3), secure Front Wheel Kit and Sleeve(4) to work stand.
3. Insert Special Thread(5) and secure Front wheel kit.
4. Secure Rear Castor Frame(7) to workstand with two Hex Head Screw M10x20 & washer.
5. When move the machine adjust the Allen Bolt M12x50, and raise the machine about 5mm above floor. Insert the Rear Castor Ass'y, push the lever down and pull the machine round the workshop.

Figure 20





## 5. ADJUSTMENT & OPERATION

### ⚠ CAUTION

Read the manual before assembly and operation. Become familiar with the machine and its operation before beginning any work. Serious personal injury may result if safety or operational information is not understood or followed.

### 5.1 Speed Changes

This machine is equipped with a V-belt drive system that controls the speeds. To change spindle speeds:

1. Unplug the machine.
2. Loosen the two Startype Screw M6x30, open the Machine Housing Door.
3. Loosen the Allen Bolt M12x40(a) with allen wrench, Pull the Motor Tension Lever(b) out.

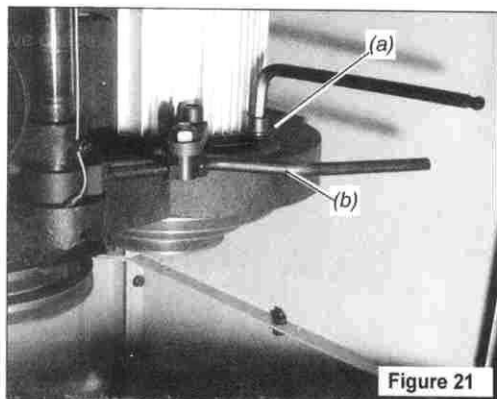


Figure 21

4. Select the desired speed. There are four speeds: 1800 R.P.M., 3000 R.P.M., 6000 R.P.M., 9000 R.P.M. Figure 22 shows the belt positions for each available speed.

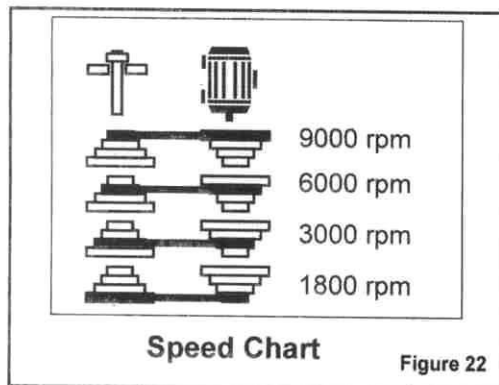


Figure 22

5. Align the belt along the appropriate pulley grooves.
6. Push up the Motor Tension Lever(b) and tighten the Allen Bolt(a).  
*When the belt is properly tensioned, there should be approximately 1/4" of deflection in the center of the belt when you press it with moderate pressure.*
7. Tighten all the adjusting bolts.
8. Spin the pulley by hand to ensure proper tracking.
9. Close the door.

### 5.2 Replace V-belt

See above chapter.

### 5.3 Adjust the height of Spindle

#### ⚠ WARNING

Perform this adjustment must switch off the power first.

1. Loosen the Spindle Height Lock(a).
2. Make sure the fence & table cleaning with milling tool.
3. Move the spindle up or down with the Spindle Height Handwheel(b) until the desired position is obtained.

*To raise = turn counter-clockwise*

*To lower = turn clockwise*

Any height adjustment can be read directly from the scale(c).

4. Secure the Spindle Height Lock(a).

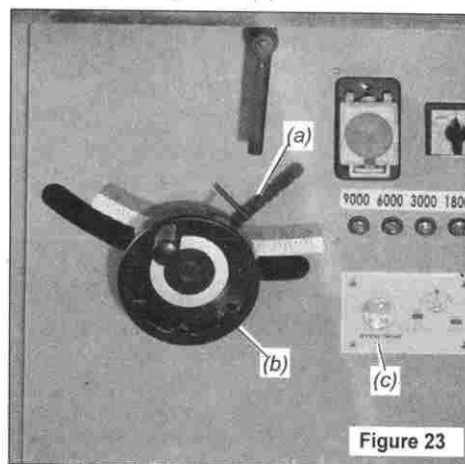


Figure 23

### 5.4 Spindle Tilt Setting

#### ⚠ WARNING

Perform this adjustment must switch off the power first. Using the Tilting table ring!

1. Loosen the Spindle Bevel Lock(a).  
*To loosen = turn counter-clockwise*  
*To lock = turn clockwise*
2. Make sure the fence & table cleaning with milling tool. And secure that if the spindle tilted, it can touch the fence and table ring.
3. Move the spindle bevel with the Spindle Tilting Handwheel(b) until the desired position is obtained.  
*To right = turn leftside*  
*To left = turn rightside*
3. Secure the Spindle tilt Lock(a).

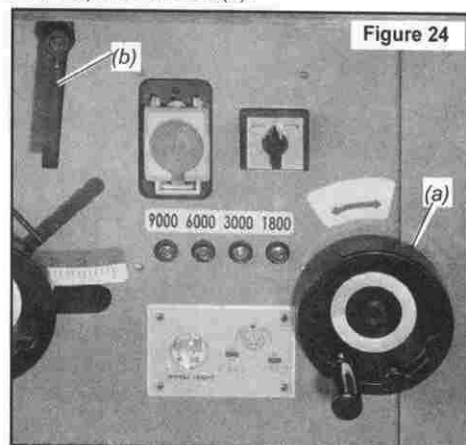


Figure 24

## 5.5 Rotation

### ⚠CAUTION

Always check the direction of cutter rotation before beginning any milling operation.

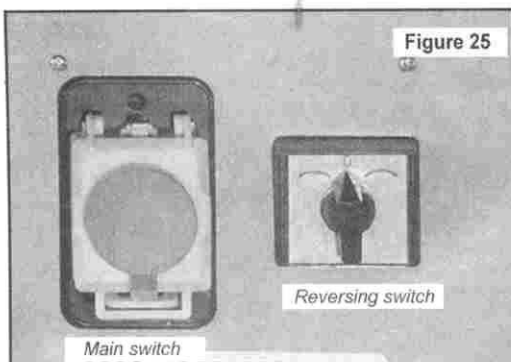
### ! NOTICE

This machine was designed to be started and stopped with the Main Switch(No-volt Release)—not the reversing switch.

This machine is equipped with a FORWARD/REVERSE switch as shown in **Figure 25**. In many instances, you will find it necessary to flip the cutter over and reverse cutter rotation. Whenever possible, mount the cutter so the board is milled on the bottom side. This method does a better job and is safer for the operator.

### ⚠CAUTION

Before turning the Reversing Switch, must switch off the power and wait the machine standstill.



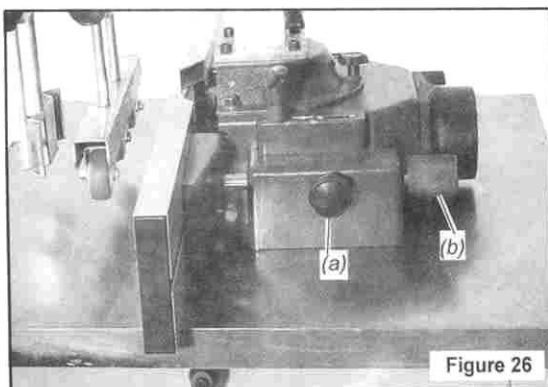
The reversing switch turns left, the machine is running at forward mode, the spindle is running counter-clockwise.

The reversing switch turns right, the machine is running at reverse mode, the spindle is running clockwise.

## 5.6 Fence adjustment

The fence is a two-piece adjusting system. Each fence is independently adjustable to compensate for different cutting thicknesses and special milling applications. To adjust the fence:

1. Loosen the fence lock handle(Startype Screw M8x25 a).
2. Turn the Spindle Latch Setting Knob(b) until the fence is set to the desired position.
3. Tighten the fence lock handle.



### ⚠CAUTION

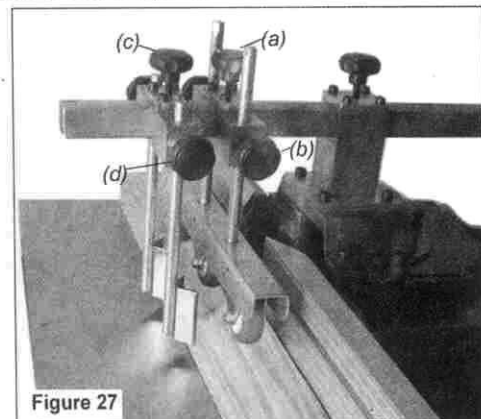
Perform this adjustment, must wait the spindle and milling tool standstill.

## 5.7 Adjust the Feed Roller

### ⚠WARNING

Perform this adjustment must switch off the power first.

1. Loosen the Startype Screw M8x25(a) and (b).
2. Move the Feed Roller above the workpiece.
3. Lock the Startype Screw M8x25(a), make feed roller on the center line of workpiece.
4. Lock the Startype Screw M8x25(b), make secure the roller as close as possible to workpiece.
5. Loosen the Startype Screw M8x25(c) and (d).
6. Move the Anti-kickback Plate near the workpiece.
7. Lock the Startype Screw M8x25(c), make the Plate is 5-10mm above work table.
8. Lock the Startype Screw M8x25(d), make the plate is as close as possible to the work piece.

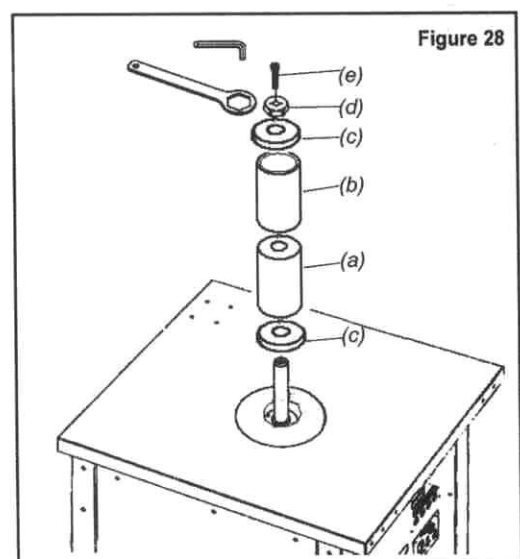


## 5.8 Sanding

### ⚠WARNING

Perform this operation must at 1800 R.P.M. spindle speed.

1. Remove the Safer Guard and Feed Roller.
2. Adjust the spindle to **Highest Position**.
3. Insert the Sanding Drum(a) to Sanding Sleeve(b).
4. Place Support Disc(c) and Sanding Drum Ass'y onto spindle.
5. Secure the Lock Flange(d) with Allen Bolt M12x25(e).



## 6. DUST COLLECTION

This spindle moulder is operated indoors, it needs to be connected to a dust collector of suitable capacity, i.e. having a minimum flow rate of 20 mtr/sec. Connection should be made with a flexible suction hose of 100mm nominal diameter.

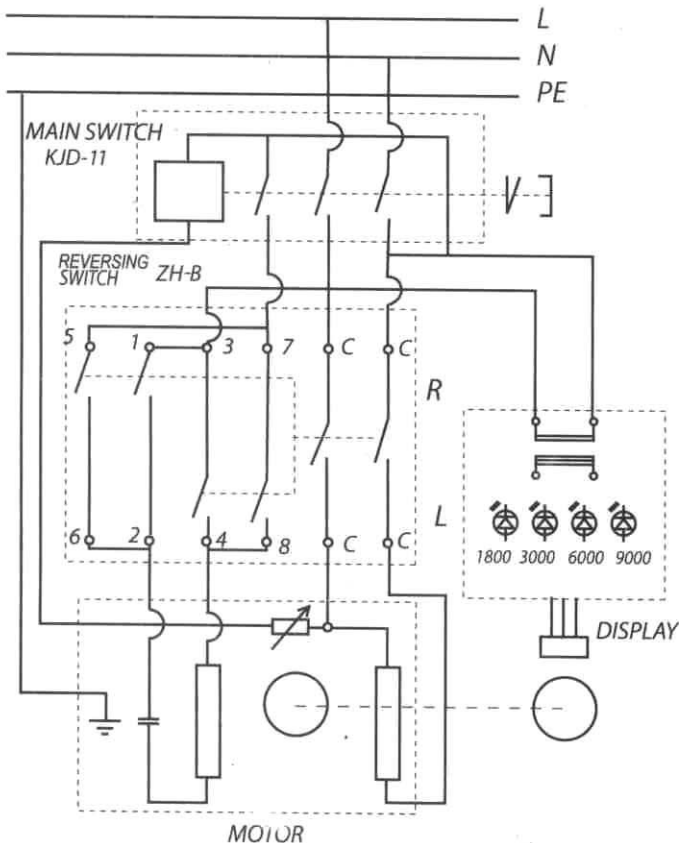
## 7. WIRING DIAGRAM

The electric motor is designed for the S6 40% operating mode. And the motor is equipped with a thermal protect system, therefore the motor is automatically switched off in the event of an overload. The motor can be switched on again after a cooling down period that can vary.

### ⚠ WARNING

Electrical connection cables often suffer insulation damage. Such defective electrical connection cable must not be used as the insulation damaged makes them extremely hazardous.

Check electrical connection cables regularly for damage. Make sure the cable is disconnected from the mains when checking. Electrical connection cables must comply with the regulations applicable in your country.



## 8. MAINTENANCE

### ⚠ WARNING

Always switch off the motor and disconnect the plug from the power supply prior to any maintenance and cleaning work.

#### Before operation:

1. Visual check distance which is 3-8mm, between the milling tool and fence extrusion, between milling tool and table.
2. Visual check of power cable and power cable plug for damage; if necessary have damage parts replaced by a qualified electrician.

#### General maintenance:

Check for the following conditions and repair or replace when necessary.

1. Loose mounting bolts.
2. Worn switch.
3. Worn or damaged cords and plugs.
4. Damaged V-belt.
5. Any other condition that could hamper the safe operation of this machine.

#### Table

Tables can be kept rust-free with regular applications of light grease.

#### Lubrication

The only parts on this machine that require periodic lubrication are the ways where the cartridge slide rides on the machine housing and where the worm gear and bushing are located. Use a light grease or anti-seizing compound on the ways and worm gear, and give the shaft mount a shot of light oil.

#### V-Belt

Avoid getting grease or oil on the V-belt or pulleys. Check the V-belt, as part of a monthly inspection for proper tension and belt condition. Cracking and glazing could result in belt failure. Replace the belt if such conditions appear.

#### Schedule

**Regularly** blow out air vents with compressed air and keep the exhaust port clear. Always wear a dust mask during this operation. For every 1 hour of use, clean and wipe down with light grease:

- Table and miter gauge slide
- Fence faces

For every 5 hours of use, clean and oil:

- Spindle column and cartridge
- Offset adjustment mechanisms on fence
- All worm drive and other gears

Once a year, replace the V-belt.

## 9. TROUBLE SHOOTING



Before carrying out any fault service or maintenance work always:

1. Switch machine OFF
2. Unplug power cable
3. Wait for spindle moulder to come to standstill.

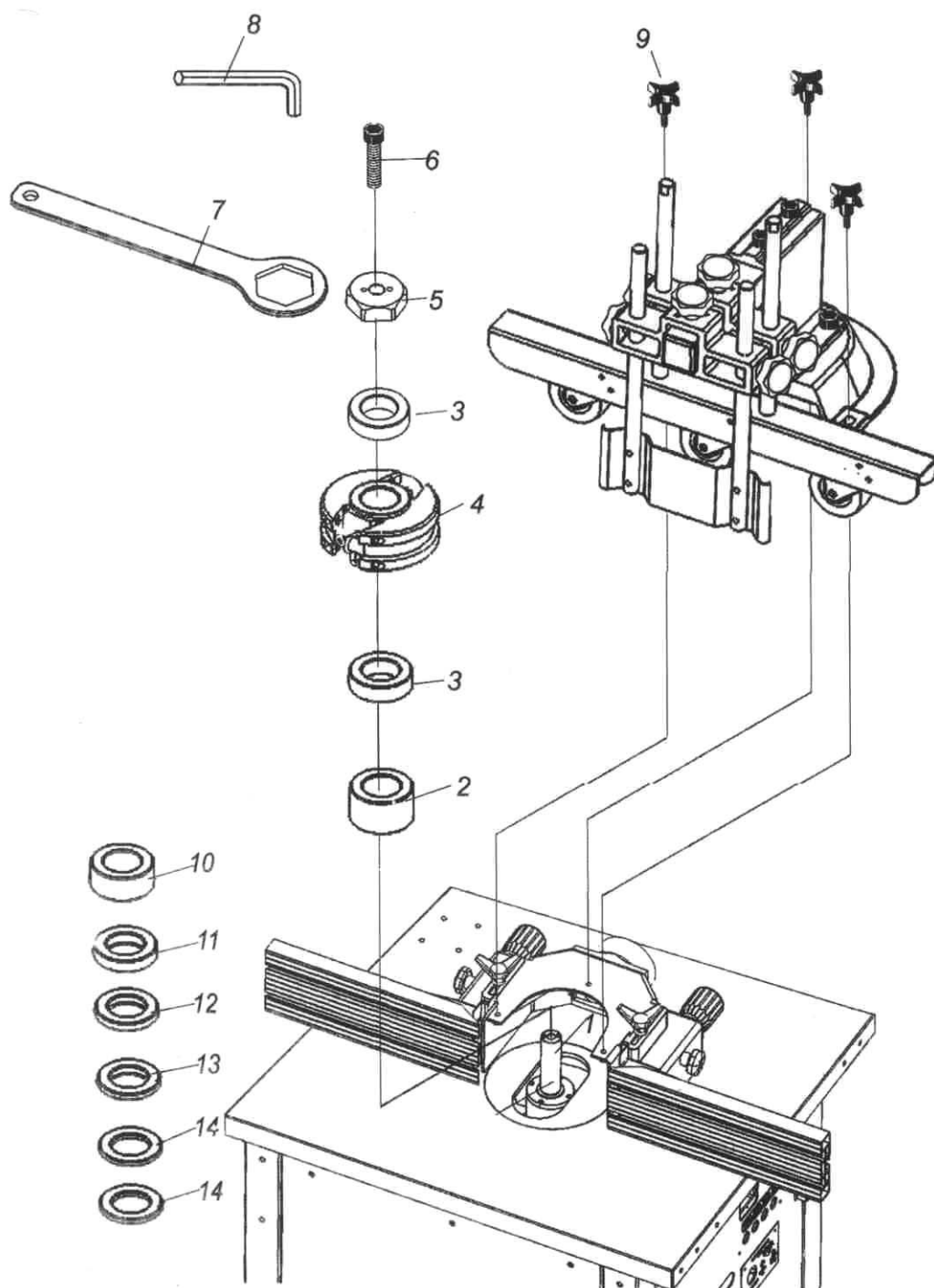
### Trouble Shooting Guide

| Problem   | Cause  | Solution  |
|---|--|---|
| Motor is slow or weak   | Voltage from source is low.<br>Windings are burned out or open.<br>Power Switch is defective.<br>Circuit is overloaded with appliances, lights, or other electrically powered equipment. | Request a voltage check from local power company.<br>Have the Motor checked / repaired.<br>Have the Power Switch replaced.<br>Do not use other appliances or electrically powered equipment on the same circuit when using the Table Saw. |
| Motor overheats.  | Motor is overloaded.<br>Dull milling tool.   | Request a voltage check from the local power company.<br>Replace the milling tool.  |
| When milling, the cut burns the work-piece, or stalls the motor.  | Milling tool is dull.<br>Work-piece is warped.   | Sharpen or replace the milling tool.<br>Replace the work-piece.   |
| Bevel & Height Handles are hard to turn.  | Dust has collected on the mechanisms inside the base.  | Clean and lubricate the mechanisms inside the base.   |
| The spindle does not bevel or does not lower or higher.   | Bevel Lock Handle is not fully released.<br>Height Lock Handle is not fully released.  | Fully release the Bevel Lock Handle.<br>Fully release the height Lock Handle.   |
| Spindle moulder vibrates excessively.   | Floor surface is uneven.<br>V-belt is damaged.<br>Milling tool is damaged.<br>Loose bolt, Screws, Nuts.  | Readjust the Leveling Feet.<br>Replace the V-belt.<br>Replace the milling tool.<br>Tighten all Hardware.  |
| Spindle moulder does not start.   | Motor Cord is not plugged in.<br>Circuit fuse is blown.<br>Circuit breaker is tripped.<br>Motor Cord or Switch is damaged.   | Plug in Motor Cord to volt electrical outlet.<br>Replace circuit fuse.<br>Reset circuit breaker.<br>Have the Motor Cord or Switch replaced.   |
| Power Switch does not operate.  | Power Switch contacts are burned out.<br>Capacitor is defective.<br>Wiring connections are loose or damaged.   | Have the Power Switch replaced.<br>Request a voltage check from the local power company.<br>Have the Capacitor replaced.<br>Have the wiring connections checked / repaired.   |
| Fuses or circuit breakers open frequently.  | Motor is overloaded.<br>Fuses or circuit breakers are wrong size or defective.<br>Dull milling tool.<br>Power Switch is defective.   | Feed work-piece more slowly.<br>Replace fuses or circuit breakers.<br>Replace the milling tool.<br>Have the Power Switch replaced.  |
| Motor stalls, blows fuses, or trips circuit breakers.   | Motor is overloaded.<br>Dull milling tool.<br>Fuses or circuit breakers are wrong size or defective.<br>Feeding work-piece too rapidly.  | Request a voltage check from the local power company.<br>Replace the milling tool.<br>Replace fuses or circuit breakers.<br>Feed work-piece more slowly.  |
| Spindle moulder is noisy when running.  | Motor is loose or defective.   | Have the Motor checked/repared  |
| <b>Warning: To prevent personal injury and/or damage to the spindle moulder, maintenance and repairs should be done only by a qualified technician.</b> |  |   |

## 10. DIAGRAM & PARTS LIST( part A)

| No. | DESCRIPTION  | Q'ty |
|-----|--|------|
| A-1 | Spindle shaft  | 1    |
| A-2 | Spindle ring $\Phi 50 \times 30 \times 30 \text{mm}$ | 1    |
| A-3 | Spindle ring $\Phi 50 \times 30 \times 15 \text{mm}$ | 1    |
| A-4 | Cutting tool   | 1    |
| A-5 | Lock flange  | 1    |
| A-6 | Allen bolt M12x25                                    | 1    |
| A-7 | Wrench 45mm  | 1    |
| A-8 | Allen wrench 10mm                                    | 1    |

| No.  | DESCRIPTION  | Q'ty |
|------|--|------|
| A-9  | Starknob screw M8x25                                 | 3    |
| A-10 | Spindle ring $\Phi 50 \times 30 \times 25 \text{mm}$ | 1    |
| A-11 | Spindle ring $\Phi 50 \times 30 \times 10 \text{mm}$ | 1    |
| A-12 | Spindle ring $\Phi 50 \times 30 \times 5 \text{mm}$  | 1    |
| A-13 | Spindle ring $\Phi 50 \times 30 \times 2 \text{mm}$  | 1    |
| A-14 | Spindle ring $\Phi 50 \times 30 \times 1 \text{mm}$  | 2    |

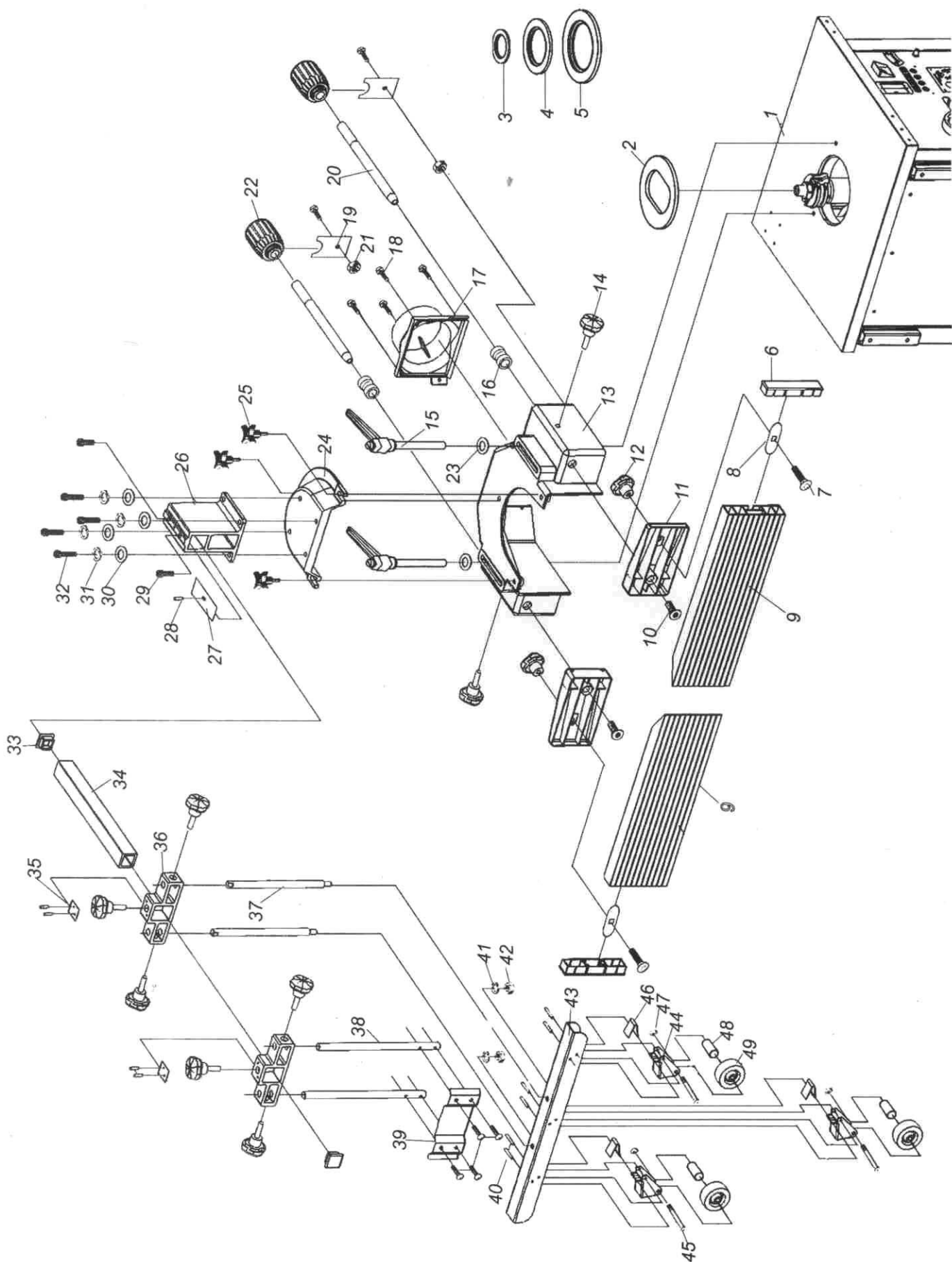


# 10. DIAGRAM & PARTS LIST( cont. - part B)

| No.  | DESCRIPTION                         | Q'ty |
|------|-------------------------------------|------|
| B-1  | Table                               | 1    |
| B-2  | Table ring 200mm for tilt           | 1    |
| B-3  | Table ring 200/150mm                | 1    |
| B-4  | Table ring 150/110mm                | 1    |
| B-5  | Table ring 110/80mm                 | 1    |
| B-6  | End cap, fence                      | 2    |
| B-7  | Carriage bolt, M8x40                | 2    |
| B-8  | Guide, bolt                         | 2    |
| B-9  | Fence extrusion                     | 2    |
| B-10 | Countersunk head screw M8x20        | 2    |
| B-11 | Fence extrusion carriage            | 2    |
| B-12 | Flower nut                          | 2    |
| B-13 | Safer guard                         | 1    |
| B-14 | Flower screw M8x25                  | 8    |
| B-15 | Ratchet lever M8x150                | 2    |
| B-16 | Lock spacer                         | 2    |
| B-17 | Dust outlet                         | 1    |
| B-18 | Cross recessed pan head screw M5x12 | 6    |
| B-19 | Lock piece, handle                  | 2    |
| B-20 | Guide spindle, spindle latch        | 2    |
| B-21 | Hex nut M5                          | 2    |
| B-22 | Setting knob, spindle latch         | 2    |
| B-23 | Large washer                        | 2    |
| B-24 | Cover, safer guard                  | 1    |
| B-25 | Starknob screw M8x25                | 3    |

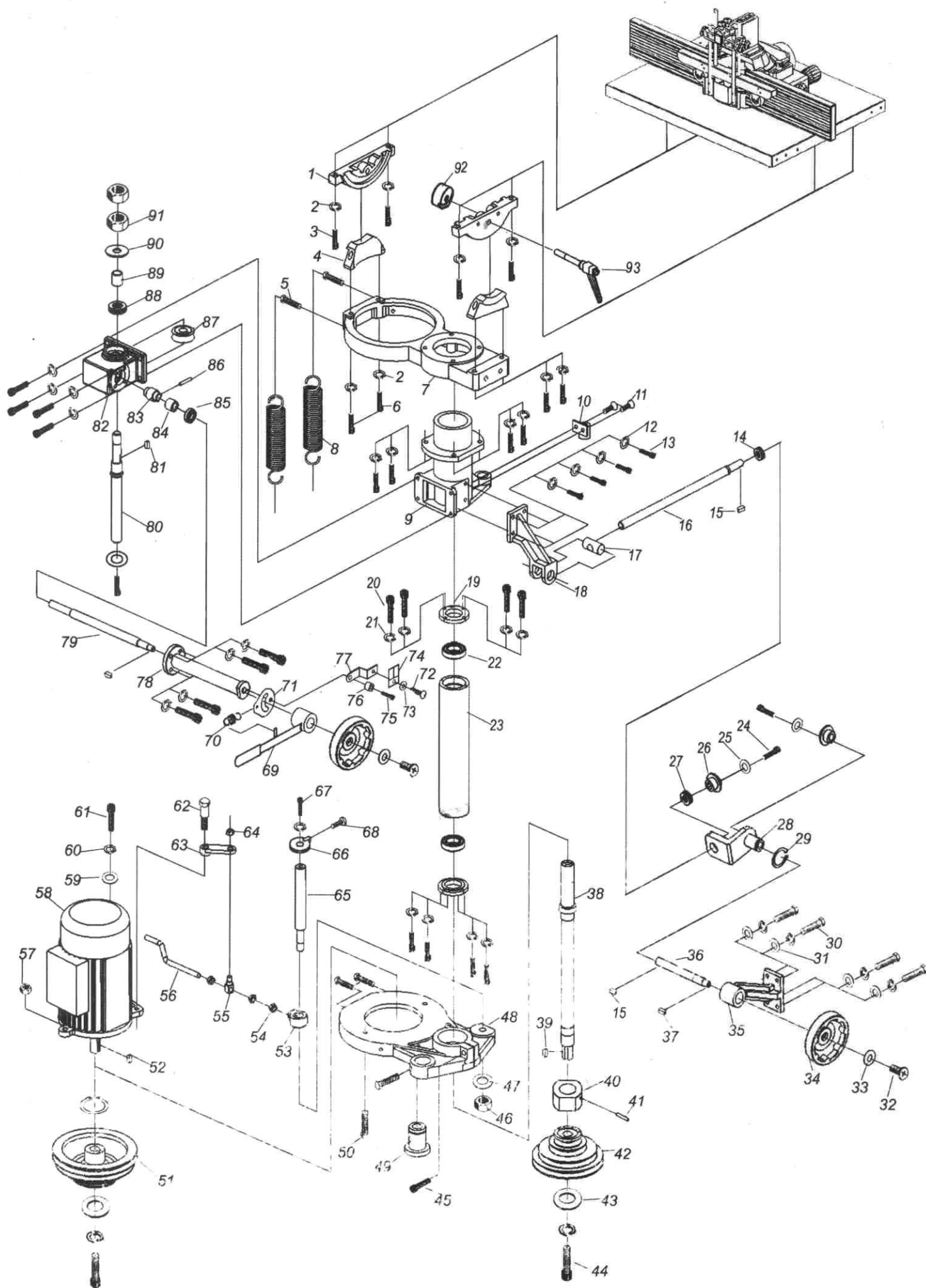
| No.  | DESCRIPTION          | Q'ty |
|------|----------------------|------|
| B-26 | Feeder base          | 1    |
| B-27 | Block, feeder base   | 1    |
| B-28 | Roll pin 3x10        | 5    |
| B-29 | Allen bolt M8x20     | 2    |
| B-30 | Flat washer 8mm      | 4    |
| B-31 | Spring washer 8mm    | 6    |
| B-32 | Allen bolt M8x25     | 4    |
| B-33 | End cap, feeder arm  | 2    |
| B-34 | Feed arm             | 1    |
| B-35 | Insert, feed arm     | 2    |
| B-36 | Feeder joint         | 2    |
| B-37 | Rod, roller          | 2    |
| B-38 | Rod, roller          | 2    |
| B-39 | Plate, anti-kickback | 1    |
| B-40 | Pin, roller          | 6    |
| B-41 | Spring washer 8mm    | 2    |
| B-42 | Hex nut M8           | 2    |
| B-43 | Roller frame         | 1    |
| B-44 | Roller house         | 3    |
| B-45 | Hex head screw M6x35 | 3    |
| B-46 | Plate spring         | 3    |
| B-47 | Lock nut M6          | 3    |
| B-48 | Roller bushing       | 3    |
| B-49 | Roller               | 3    |





**10. DIAGRAM & PARTS LIST( cont. - part C)**

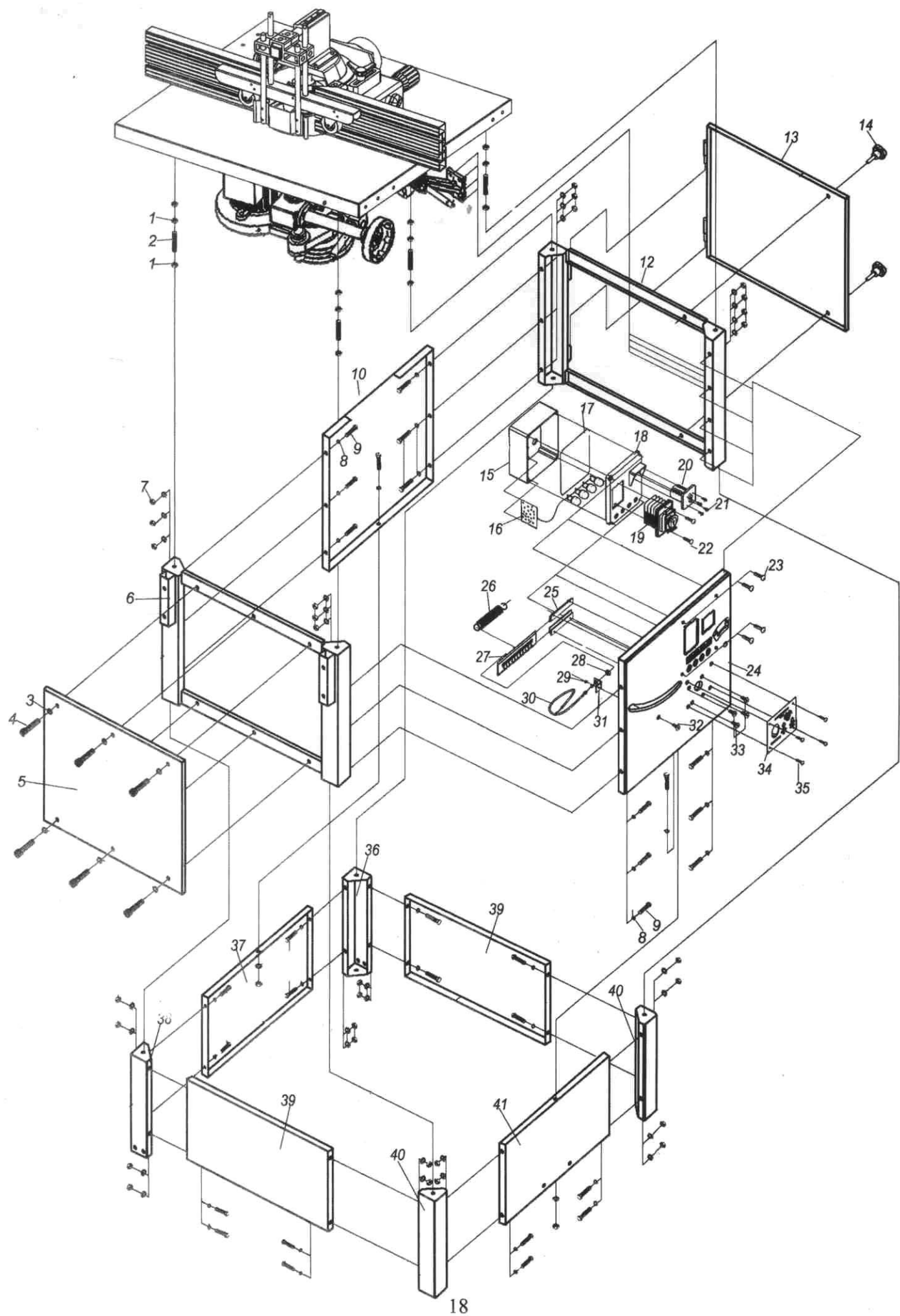
| No.  | DESCRIPTION                  | Q'ty | No.  | DESCRIPTION                         | Q'ty |
|------|------------------------------|------|------|-------------------------------------|------|
| C-1  | Swivel, turnion              | 2    | C-48 | Mount, motor                        | 1    |
| C-2  | Spring washer 10mm           | 15   | C-49 | Special nut, 24mm                   | 1    |
| C-3  | Allen bolt M10x30            | 4    | C-50 | Hex head screw M12x40               | 1    |
| C-4  | Support, swivel turnion      | 2    | C-51 | Motor pulley                        | 1    |
| C-5  | Hex head bolt M10x30         | 4    | C-52 | Flat key 8x8x40                     | 1    |
| C-6  | Allen bolt M10x40            | 8    | C-53 | Joint, tension                      | 1    |
| C-7  | Swivel guide                 | 1    | C-54 | Hex nut M10                         | 3    |
| C-8  | Spring                       | 2    | C-55 | Thread, tension                     | 1    |
| C-9  | Swivel head                  | 1    | C-56 | Lever, tension                      | 1    |
| C-10 | Scale wire mount             | 1    | C-57 | Lock nut M10                        | 1    |
| C-11 | Countersunk head screw M4x6  | 2    | C-58 | Motor                               | 1    |
| C-12 | Spring washer 8mm            | 16   | C-59 | Flat washer 12mm                    | 1    |
| C-13 | Allen bolt M8x25             | 12   | C-60 | Spring washer 12mm                  | 1    |
| C-14 | Trust bearing 8102           | 1    | C-61 | Allen bolt M12x30                   | 1    |
| C-15 | Flat key 5x5x14              | 2    | C-62 | Thread, joint                       | 1    |
| C-16 | Swivel rod                   | 1    | C-63 | Joint, motor tension                | 1    |
| C-17 | Nut, swivel rod              | 1    | C-64 | Lock nut M10                        | 1    |
| C-18 | Joint, swivel rod            | 1    | C-65 | Guide bar                           | 1    |
| C-19 | Cup, Spindle guide tube      | 2    | C-66 | End stop, guide                     | 1    |
| C-20 | Allen bolt M4x16             | 8    | C-67 | Allen bolt M10x15                   | 2    |
| C-21 | Spring washer 4mm            | 8    | C-68 | Cross recessed pan head screw M4x12 | 1    |
| C-22 | Ball bearing 80106           | 2    | C-69 | Lock lever, rise                    | 1    |
| C-23 | Spindle guide tube           | 1    | C-70 | Spring, lock lever                  | 1    |
| C-24 | Allen bolt M6x12             | 2    | C-71 | Pear plate, lock lever              | 1    |
| C-25 | Large washer 6mm             | 2    | C-72 | Cross recessed pan head screw M4x6  | 1    |
| C-26 | Cone gear                    | 2    | C-73 | Flat washer 4mm                     | 1    |
| C-27 | Ball bearing 80102           | 1    | C-74 | Pointer                             | 1    |
| C-28 | Gear base                    | 1    | C-75 | Allen bolt M6x25                    | 1    |
| C-29 | Circle 24mm                  | 2    | C-76 | Bushing, pointer                    | 1    |
| C-30 | Hex head screw M8x20         | 5    | C-77 | Bracket, pointer                    | 1    |
| C-31 | Flat washer 8mm              | 4    | C-78 | Housing, rise shaft                 | 1    |
| C-32 | Countersunk head screw M5x12 | 2    | C-79 | Rise shaft                          | 1    |
| C-33 | Large washer 6mm             | 2    | C-80 | Rising spindle                      | 1    |
| C-34 | Wheelhandle                  | 2    | C-81 | Flat key 6x6x14                     | 1    |
| C-35 | Mount, wheelhandle           | 1    | C-82 | Carrier, rise gear                  | 1    |
| C-36 | Pin, cone gear               | 1    | C-83 | Worm                                | 1    |
| C-37 | Flat key 4x4x12              | 2    | C-84 | Bushing, worm                       | 1    |
| C-38 | Spindle shaft                | 1    | C-85 | Ball bearing 80202                  | 1    |
| C-39 | Flat key 8x8x25              | 1    | C-86 | Roll pin 4x20                       | 1    |
| C-40 | Lock nut M30                 | 1    | C-87 | Gear-helical                        | 1    |
| C-41 | Set screw M6x8               | 1    | C-88 | Thrust bearing 8105                 | 1    |
| C-42 | Spindle pulley               | 1    | C-89 | Bushing, spindle                    | 1    |
| C-43 | Large washer 10mm            | 3    | C-90 | Special washer                      | 1    |
| C-44 | Allen bolt M10x20            | 2    | C-91 | Thin hex nut M20                    | 2    |
| C-45 | Allen bolt M12x40            | 1    | C-92 | Tilt locking block                  | 1    |
| C-46 | Hex nut m16                  | 1    | C-93 | Tilt locking lever                  | 1    |
| C-47 | Flat washer 16mm             | 1    |      |                                     |      |



# 10. DIAGRAM & PARTS LIST( cont. - part D)

| No.  | DESCRIPTION                          | Q'ty |
|------|--------------------------------------|------|
| D-1  | Hex nut M10                          | 12   |
| D-2  | Set screw M10x70                     | 4    |
| D-3  | Flat washer 6mm                      | 8    |
| D-4  | Allen bolt M6x30                     | 6    |
| D-5  | Left panel, machine housing          | 1    |
| D-6  | Left frame, machine housing          | 1    |
| D-7  | Hex Nut M8                           | 38   |
| D-8  | Flat washer 8mm                      | 114  |
| D-9  | Hex head screw, M8x20                | 38   |
| D-10 | Rear panel, machine housing          | 1    |
| D-12 | Right frame, machine housing         | 1    |
| D-13 | Open door, machine housing           | 1    |
| D-14 | Startype screw M6x30                 | 2    |
| D-15 | Box, switch                          | 1    |
| D-16 | Display ass'y                        | 1    |
| D-17 | Seal                                 | 1    |
| D-18 | Panel,switch                         | 1    |
| D-19 | Main switch(No-volt release)         | 1    |
| D-20 | Reversing switch                     | 1    |
| D-21 | Cross recessed sunk head screw M4x10 | 2    |

| No.  | DESCRIPTION                          | Q'ty |
|------|--------------------------------------|------|
| D-22 | Pan head tapping screw M4x10         | 2    |
| D-23 | Pan head tapping screw M4x30         | 4    |
| D-24 | Front panel, machine housing         | 1    |
| D-25 | Scale holder                         | 2    |
| D-26 | Spring                               | 1    |
| D-27 | Scale                                | 1    |
| D-28 | Nut scale                            | 1    |
| D-29 | Hex nut M4                           | 1    |
| D-30 | Wire scale                           | 1    |
| D-31 | Wire holder                          | 1    |
| D-32 | Cross recessed sunk head screw M4x10 | 1    |
| D-33 | Cross recessed tapping screw M4x10   | 4    |
| D-34 | View glass                           | 1    |
| D-35 | Cross recessed pan head screw M4x10  | 4    |
| D-36 | Column A                             | 1    |
| D-37 | Rear panel, workstand                | 1    |
| D-38 | Column B                             | 1    |
| D-39 | Side panel, workstand                | 2    |
| D-40 | Column C                             | 2    |
| D-41 | Front panel, workstand               | 1    |



# 10. DIAGRAM & PARTS LIST( cont. - part D)(optional)

| No.   | DESCRIPTION              |
|-------|--------------------------|
| D-001 | Ratchet lever M6         |
| D-002 | Bushing                  |
| D-003 | Flat washer 6mm          |
| D-004 | Folding stop             |
| D-005 | Bolt guide               |
| D-006 | Carriage bolt M6x36      |
| D-007 | End stop                 |
| D-008 | Indermediate plate       |
| D-009 | Roll                     |
| D-010 | Washer 6mm               |
| D-011 | Thumbscrew M6x25         |
| D-012 | Carriage bolt M6x50      |
| D-013 | Bolt guide               |
| D-014 | Stop tube                |
| D-015 | Washer 6 mm              |
| D-016 | Wing nut M6              |
| D-017 | End plate, sliding bench |
| D-018 | Taping screw 3.5x13      |
| D-019 | Scale mount              |
| D-020 | Allen bolt M6x16         |
| D-021 | Lock handle M8           |
| D-022 | Swing bolt               |
| D-023 | Flat Washer 8 mm         |
| D-024 | Wave washer 8mm          |
| D-025 | Hex nut M8               |
| D-026 | Stop rail                |
| D-027 | Guide rail               |
| D-028 | End cap                  |
| D-029 | Taping screw 4x13        |
| D-030 | Sliding bench            |
| D-031 | Indermediate plate       |
| D-032 | Indermediate plate       |
| D-033 | Sunk head screw M6x18    |
| D-034 | Roller seat              |
| D-035 | Hex nut M6               |
| D-036 | Ball bearing             |
| D-037 | Circle ring              |
| D-038 | Serrated washer 6mm      |
| D-039 | Hexagon head screw M6x20 |
| D-040 | Ball knob                |
| D-041 | Spring                   |
| D-042 | Flat washer 8mm          |
| D-043 | Shaft                    |
| D-044 | Hex nut M8               |
| D-045 | Flat washer 8mm          |
| D-046 | Flat washer 8mm          |

| No.   | DESCRIPTION                  |
|-------|------------------------------|
| D-047 | Self-locking nut M8          |
| D-048 | Hexagon head screw           |
| D-049 | Flat washer 8mm              |
| D-051 | U bracket                    |
| D-052 | Carriage bolt M8x85          |
| D-053 | Spring                       |
| D-054 | Roll pin 3x30                |
| D-055 | Rotate shaft                 |
| D-056 | Mounting bracket             |
| D-057 | Flower handle                |
| D-058 | Workpiece clamp              |
| D-059 | Circle ring                  |
| D-060 | Cam                          |
| D-061 | Lever                        |
| D-062 | Knob-lever                   |
| D-063 | Pin                          |
| D-064 | Circle ring                  |
| D-065 | Holder rod                   |
| D-066 | Spring                       |
| D-067 | Holder                       |
| D-068 | Countersunk head screw M6x16 |
| D-069 | Pulling rod                  |
| D-070 | End cap, sliding rail        |
| D-071 | Sliding rail                 |
| D-072 | Hex nut M8                   |
| D-073 | Rubber bushing               |
| D-074 | Allen screw M8x20            |
| D-075 | Flat washer 8 mm             |
| D-076 | Rail                         |
| D-077 | Allen screw M6x20            |
| D-078 | Carriage bolt M8X30          |
| D-079 | Bolt guide                   |
| D-080 | Flat washer 8 mm             |
| D-081 | Wing nut M8                  |
| D-082 | Guide carriage               |
| D-083 | Allen screw M8x20            |
| D-084 | Mounting bracket             |
| D-085 | Insert block                 |





## 10. DIAGRAM & PARTS LIST( cont. - part E)(optional)

| No. | DESCRIPTION                | Q'ty |
|-----|----------------------------|------|
| E-1 | Flat washer 16mm           | 12   |
| E-2 | Castor                     | 4    |
| E-3 | Roll pin                   | 6    |
| E-4 | Fork, castor               | 2    |
| E-5 | Allen bolt M12x50          | 2    |
| E-6 | Adjustable U-shape bracket | 2    |
| E-7 | Flat washer 14mm           | 2    |
| E-8 | Hex head screw M10x70      | 2    |

| No.  | DESCRIPTION           | Q'ty |
|------|-----------------------|------|
| E-9  | Flat washer 10mm      | 4    |
| E-10 | Sleeve                | 2    |
| E-11 | Rear castor frame     | 1    |
| E-12 | Hex head screw M10x20 | 2    |
| E-13 | Lever, Wheel kit      | 1    |
| E-14 | Special thread        | 1    |
| E-15 | Pin, castor           | 2    |

