

Manual

BORING MACHINE



Mortising Machine

For your safety , please read this manual carefully before operation

Before any repair , switch the machine off and wait until it stops .

WARNING ; When using electric tools , basic safety

precautions should be followed to reduce risk of fire , electric shock , and personal injury , including the following :

It is necessary to exchange damaged cables and plugs immediately . Do not switch on the machine without active safety components . Damaged safety equipment has to be exchanged immediately . People younger than 16 years are not allowed to work with the combined machine .

SAFETY INSTRUCTIONS

- 1) KEEP WORK AREA CLEAN -Cluttered areas and benches invite injuries .
- 2) CONSIDER WORK AREA ENVIRONMENT -Do not expose power tools to rain . Do not use power tools in damp or wet locations . Keep work area well lit . Do not use tools in the presence of flammable liquids or gases .
- 3) KEEP CHILDREN AWAY -All visitors should be kept away from work areas .
- 4) STORE IDLE TOOLS -When not in use , tools should be stored in dry , and high or locked up places out of reach of children .
- 5) DO NOT FORCE THE TOOL -It will do the job better and safer at the rate for which it was intended .
- 6) USE THE RIGHT TOOL -Do not force DIY chisels to do the job of professional chisels . Always use a chisel for its intended use only .
- 7) DRESS PROPERLY -Do not wear loose clothing or jewelry as they can be caught in moving parts . Wear protective hair covering to contain long hair .
- 8) USE SAFETY GLASSES -Also use face or dust mask when operations are dusty . A vacuum cleaner or dust extractor is strongly recommended .
- 9) SECURE THE MACHINE -The machine should be bolted down to the floorstand on a level and stable floor .
- 10) DO NOT OVERREACH -Keep proper footing and balance at all times .
- 11) MAINTAIN CUTTERS WITH CARE -Keep cutters sharp and clean for better and safer performance .
- 12) DISCONNECT FROM MAINS -When not in use and before changing or adjusting chisels .
- 13) CHECK DAMAGED PARTS -Always inspect chisels before use for signs of wear or damage . Do not use cracked or broken chisels .
- 14) STAY ALERT -Use common sense . Do not operate power tools when you are tired or under the influence of drugs , alcohol or medication .

Machine safety

Whenever you want to provide maintenance or adjustment of the machine , do not forget to switch off the main switch and lock it up !

MANIPULATION , INSTALLATION OF MACHINE

Working Conditions

Machine must operate in workshop surroundings within temperature range 5°C - 40°C , relative air humidity 30% - 90% non condensing and altitude 1000 m above the sea in , surrounding classified fire danger of combustible dusts (E2N2) .

The machine does not pollute or negatively influence the environment .

Transport and Stocking

During the transport and stocking it is necessary to protect the machine from excessive vibrations and excessive humidity . The machine can be stocked under roof at temperature range between 25°C and $+55^{\circ}\text{C}$.

Manipulation with the Machine

To facilitate the transport , the machine is delivered in a wooden crating completely assembled . When handling with the machine , use the certified lifting equipment and safe instruments . The best handling can be done with a transport pallet and a self propelling lift truck . For lifting you can use the steel wire rope SEAL of a min . diameter 5 mm .

Before you switch on the machine , remove protecting film by using kerosene .

THE POWER SUPPLY

Connection of the machine to the electric network can be done only by a specialist with electrotechnical qualification . Before you start with connecting - make sure that there is no voltage in the supply lead .

Connect the protective conductor (yellow-green) to the clamp PE and the central conductor (pale blue) to the clamp N , if it is required . Cross-sections of the phase conductors and that of the protective conductor have to be conformable with the legal standards .

A competent specialist has to exchange the defective electrical line at once .

Operation of machine with damaged supply cables is very dangerous and therefore it is forbidden .

Operating at the machine is forbidden for youngsters . Make sure that the voltage and the frequency mentioned in the type card of the motor agrees with the value of the used network .

A five -ply cable with a socket CEE 16 amp . and the plug CEE 16 amp . Are used for the power supply . The socket for the power supply of the machine has to be grounded (or neutralized) according to the instructions and ensured by at least 16 ampere fuse or the L type safety fuse .

WARNING !

Disconnect the line connector from network by the main switch before adjusting or exchanging the mortising drill and before maintenance or repair . It is possible to change the rotation direction by exchanging (switch over) the wires (black and / or brown) for three phase motors .

ATTENTION !

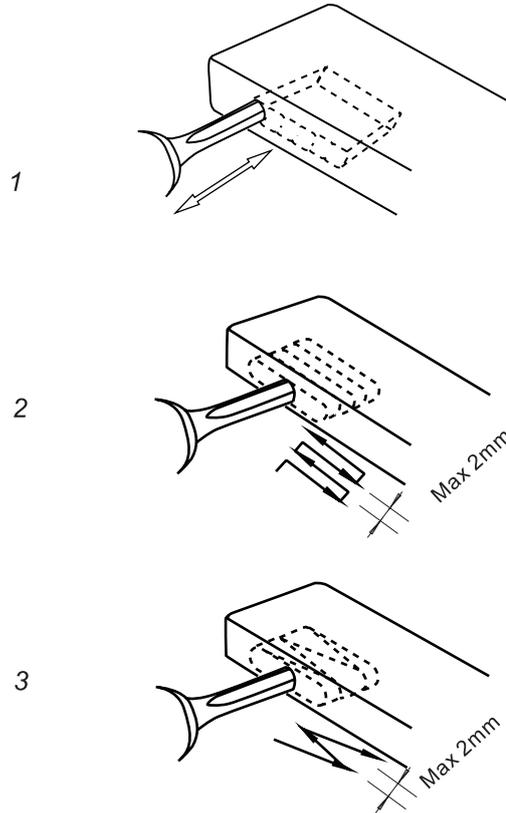
Avoid of exchanging the yellow -green wire with the phase . Entirely a qualified electrician is allowed to plug it in .

The protection against the dangerous contact of inanimate parts is carried out by a selfacting disconnection from the supply , according to the article 6 3 .1 of the norm EN 60 204 -1 .

Switch

The switch cannot be turned on until the machine is connected to network . The switch is turned off automatically by way of neutral protection with outage , it means that it is necessary to switch on the machine again after restoring of the current .

If the motor is overloaded , the inbuilt safety fuse of the motor will switch off the machine . If the machine is switched off frequently in a sequence (twice or threefold) ,check up the machine (motor functions , tool sharpness etc .) A socket with a plug serves as the main switch .



Working area

The working place of the machine is situated at the side from which the mortising drill head is operated .

Safety instruments

When working with the mortiser , you have to wear short strengthened cloths and safety goggles . It is suitable to use adequate protection of hearing and recommended working footwear . It is forbidden to use any working mantle .

Workers qualification

Only an authorized worker , specialized in woodworking branche (or worker instructed by this specialist) is allowed to work with machine . The operator is liable to abide with all safety instructions and regulations , valid in the country in question .

TOOLS

For this accessory there are suitable mortising bits (left and right) and countersinking bits with cylindrical shank from materials HSS .

Chisel mortise device for square and right angle chisels . When slotting and tenoning, the slot does not have to be rounded off any more as the slot was chiseled square . Chuck enables clamping of tools with shank diameter from 1mm to 20mm .

Process of clamping - tool WESTCOT

Loosen the hexagonal screw by spanner from accessory and open jaws on required dimension according to the dimension of the tool . Intromit the tool and tighten the jaws by rotating with hexagonal screw .

OPERATION AND ADJUSTMENT

Machine intention

The machine is intended to drilling and mortising works in a small -series production , eventually to works of maintenance purpose or that of technical education .

Description of the machine

Main parts of boring machine , i . e . main able, head support are made of iron casting. machine body is made of steel plate .

Vertical movement of machine head is operated by a hand wheel placed on the front side of machine. Horizontal movement is operated by a handle .

The processed workpiece is clamped by an eccentric fixture on the adjustable arm . The mortising tool is clamped into a special chuck , which is screwed at the end of the motor spindle .

Operation

Take care so as the tool would be clamped and sharpened well . You will increase the safety of operating and the quality of processed surface .

MAINTENANCE

The accessory has a very simple construction and does not require a special maintenance .

CLEANING AND LUBRICATING

It is necessary to switch off the machine and wait until it stops - before beginning with cleaning or oiling .

The machine requires only a minimal maintenance . We recommend to protect it from humidity . Wipe at times all accessible beddings and worms with an oiled clout . Leading screw of the height adjusting requires to be cleaned with kerosene regularly . Wipe the spindle and its bedding firmly with suitable oil .

Clean regularly cooling ribs of the electric motor once a week because otherwise an effective cooling could not work .

It is needy to clean the machine regularly , to grease bars , hinges , windings and other parts liable to rust with available oil . The interval of this activity depends on the way of working , but do it minimally once a month .

The bearings of the electric motor have permanent grease filling , are hermetically closed and need no lubricating .

Clean the table from resin with proper solvent e . g . turpentine or kerosene , eventually with another proper medium according to the need .

Using of a vacuum cleaner is the best for cleaning the machine from dust . Do it regularly once a week .

FAULTS , REMEDY

NO defect should arise if you operate the machine in the right way and make suitable maintenance regularly . In case that the saw dust sticks on the mortiser drill or the exhausting hose is filled up - switch off the electric motor before you start any repair , otherwise it could be damaged . Also switch off the electric motor immediately , if the workpiece is getting to be jammed .

A blunt mortising drill can bring about a hang of the electric motor of the machine . If the drill is blunt , the seared blacks start to appear on the cut of the workpiece !

Exchange them immediately in such a case ! If the machine embodies increased vibrations , check its placing , fixing , or fixing and balance of tools .

The machine does not work .

Check the electrical installation and connection to the network .

The output of the machine is insufficient .

Too thick chip You have to work according to the depth of mortise and hardness of the wood .

The electric motor does not have a sufficient output ? it is necessary to call a qualified electrician .

The machine vibrates .

The machine was installed on an uneven surface .

SPARE PARTS

Spare parts are supplied and the service provided by the seller . When ordering spare parts or asking for a repair -do not forget to mention the production number and production year , stated at the rating plate of mortiser .

SPECIAL ACCESSORIES

Pin point adapter ,
Angular ruler

SPECIFICATIONS

| | | |
|--|---|--|
| Motor power | 230V~ ,50HZ ,3000W ; 400V ,3~ ,50Hz , 3800W | |
| Max.drill bit diameter/ square chisel bit | 20mm/12.7mm | |
| Max . vertical travel of the table | 140mm | |
| Max . latitudinal travel of the table | 290mm | |
| Max . cross travel of the table | 155mm | |
| Table size | 570x300mm | |
| Exten.table size | 600x300mm | |
| Packing size | 855x600x1160mm | |
| Weight | 140/160kg | |

Above stated values are those of emissions and need not represent the safe working values . Although there exists a correlation between emissions values and levels of exposition , these values cannot be used for a reliable statement whether other precautions are necessary or not . Agents , influencing a real exposure of workers , include other working space attributes , other sources of noise , etc . e . g . the number of machines and other from neighbourhood influencing processes . The most permissible exposition levels can differ according to country in question , too . This information will serve for machine user to a better astimation of risks .

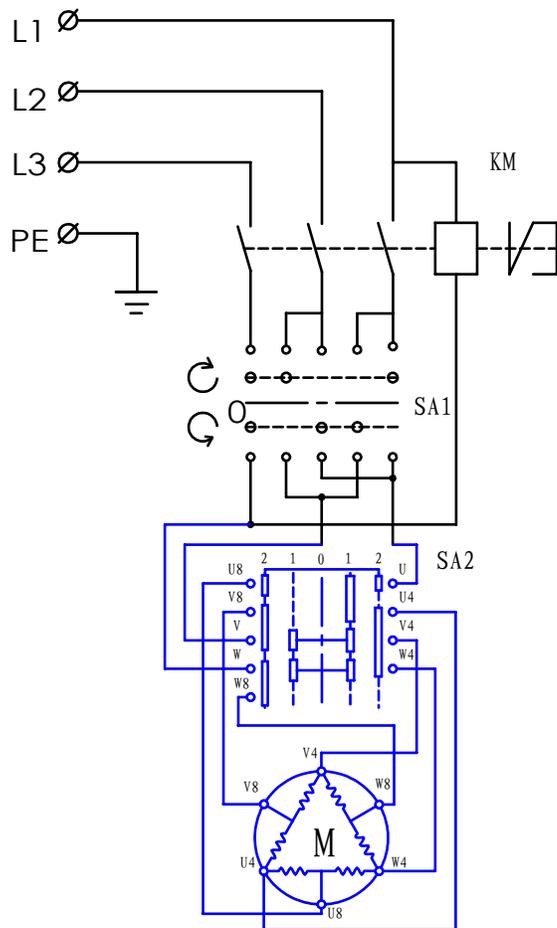
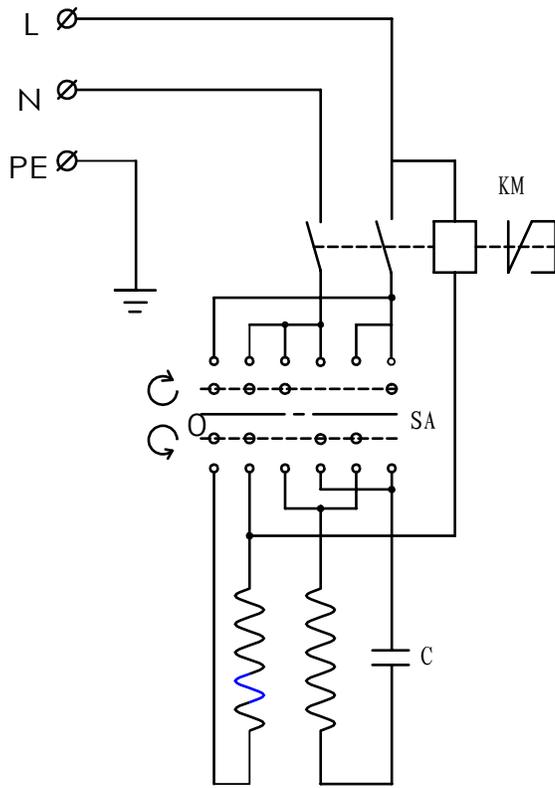
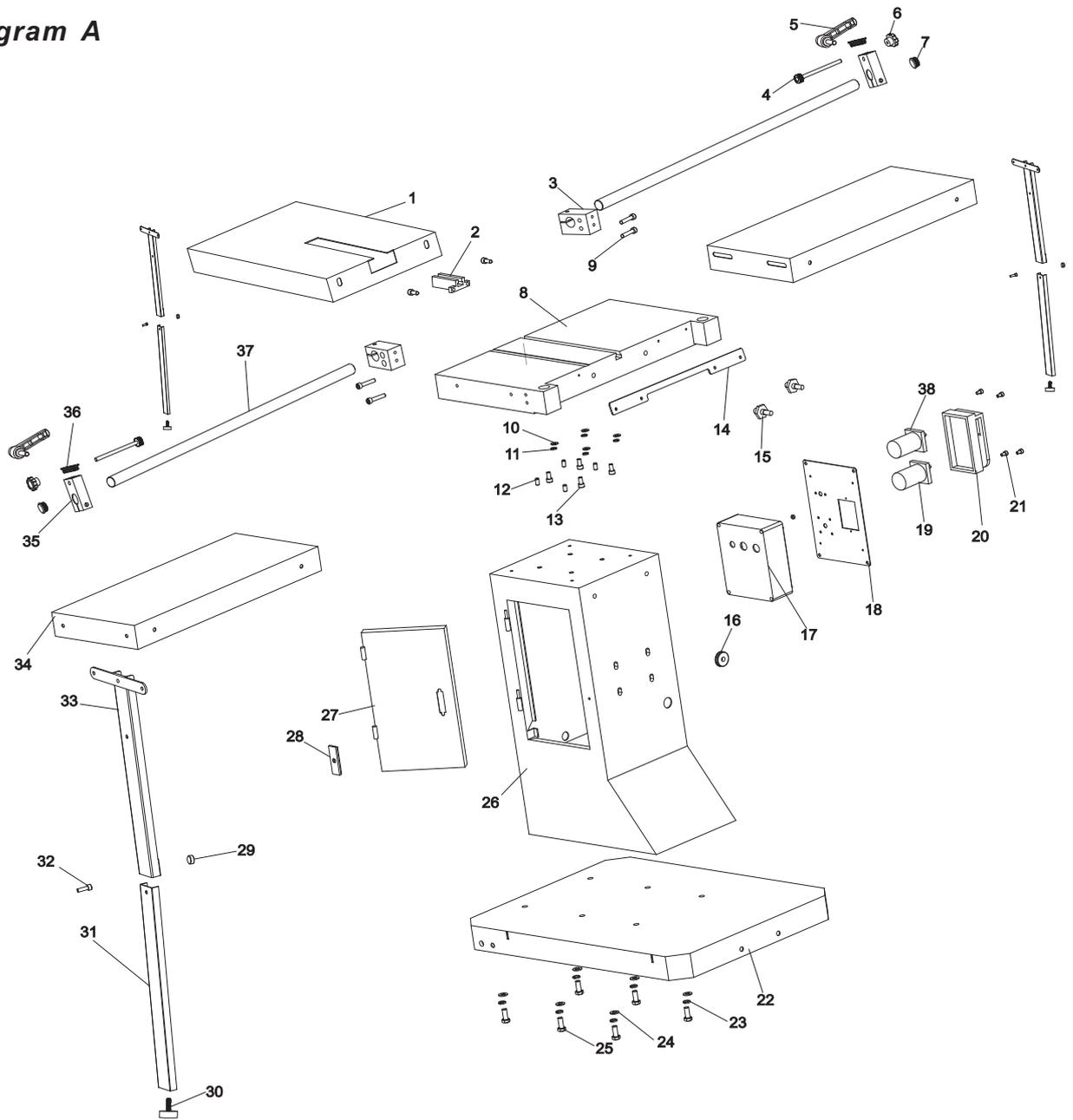


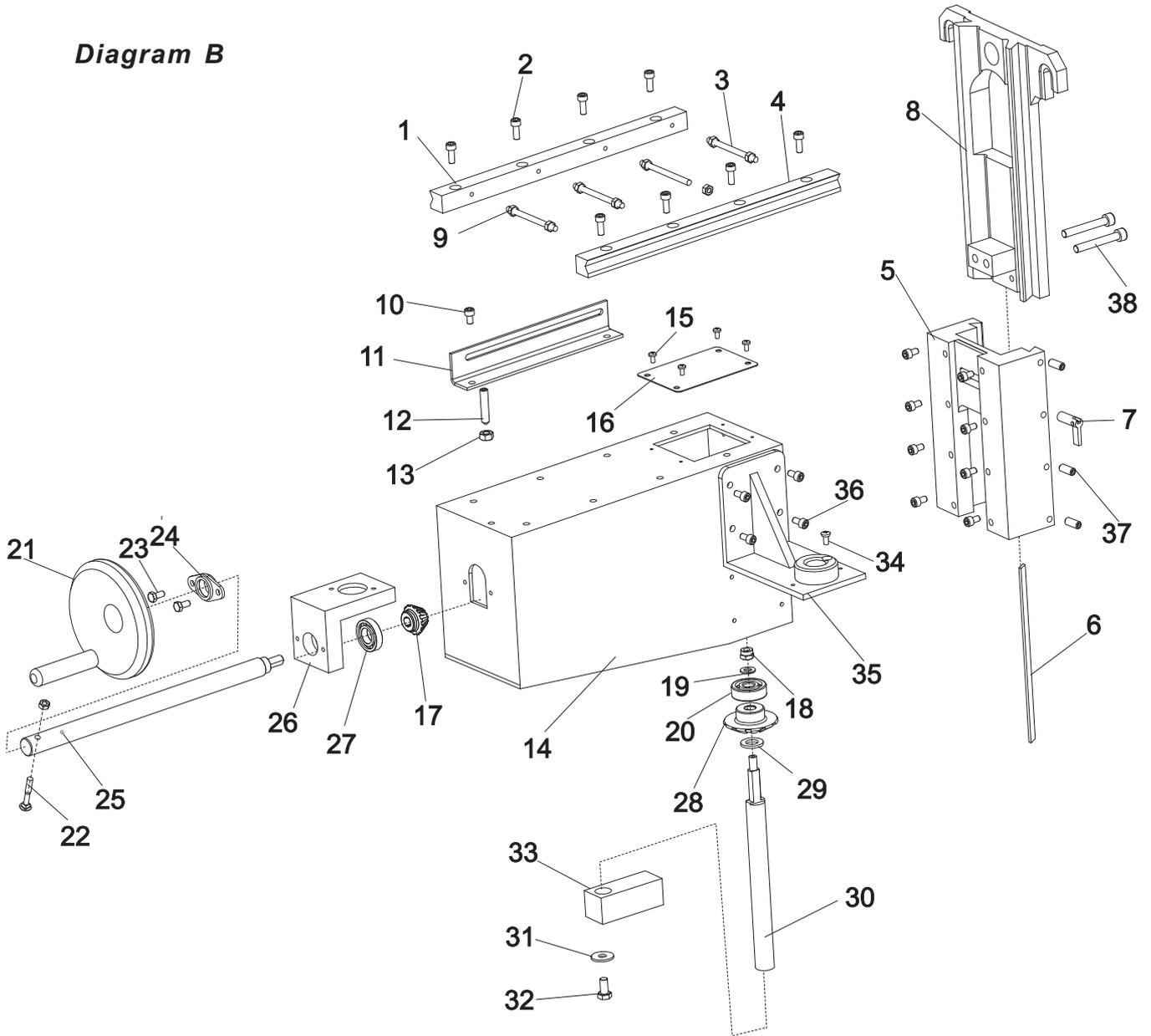
Diagram A



Parts List Diagram A

| No | Description | Qty | No | Description | Qty |
|----|---------------------|-----|----|--------------------|-----|
| 1 | Ancillary table2 | 1 | 20 | Power switch | 1 |
| 2 | T-Block | 1 | 21 | Allen screw M6x10 | 1 |
| 3 | Locating piece | 2 | 22 | Base | 1 |
| 4 | Shaft | 2 | 23 | Washer 10mm | 6 |
| 5 | Ratchet lever M6x46 | 2 | 24 | Spring washer 10mm | 6 |
| 6 | Star-type knob M8 | 2 | 25 | Allen screw M10x25 | 6 |
| 7 | End cap | 2 | 26 | Box stand | 1 |
| 8 | Table | 1 | 27 | Door | 1 |
| 9 | Allen screw M8x40 | 4 | 28 | Door lock | 1 |
| 10 | Washer 8mm | 4 | 29 | Seat pad | 3 |
| 11 | Spring washer 8mm | 4 | 30 | Foot with screw | 3 |
| 12 | Set screw M8x16 | 4 | 31 | Lower leg | 3 |
| 13 | Allen screw M8x16 | 10 | 32 | Allen screw M8x25 | 3 |
| 14 | Panel | 1 | 33 | Leg | 3 |
| 15 | Two head screw | 2 | 34 | Ancillary table | 2 |
| 16 | Rubber sheath | 1 | 35 | Locating support | 2 |
| 17 | Switch box | 1 | 36 | End cap | 2 |
| 18 | Switch box cover | 2 | 37 | Long shaft | 2 |
| 19 | Change-over switch | 1 | 38 | Change-over switch | 1 |

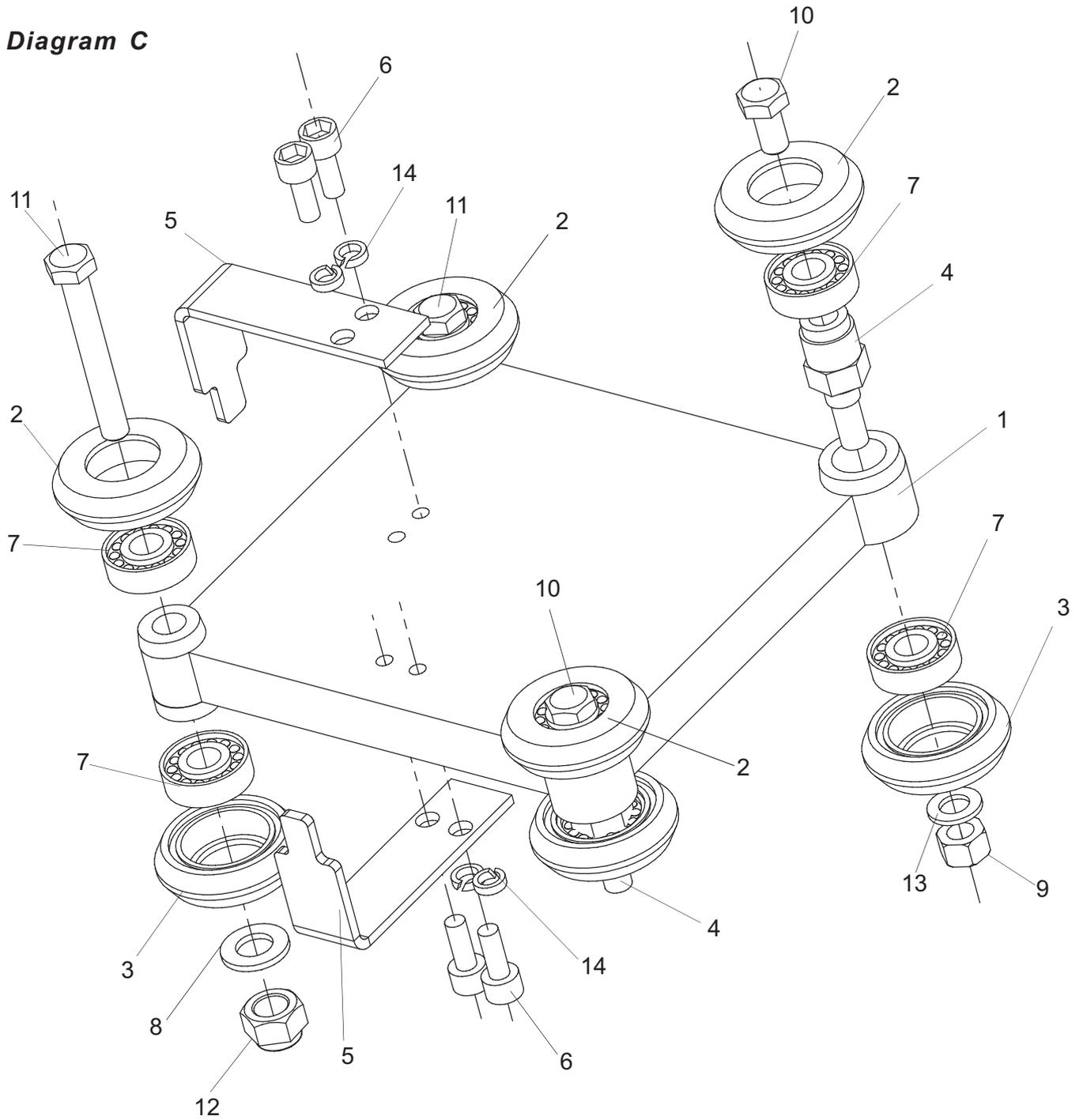
Diagram B



Parts List Diagram B

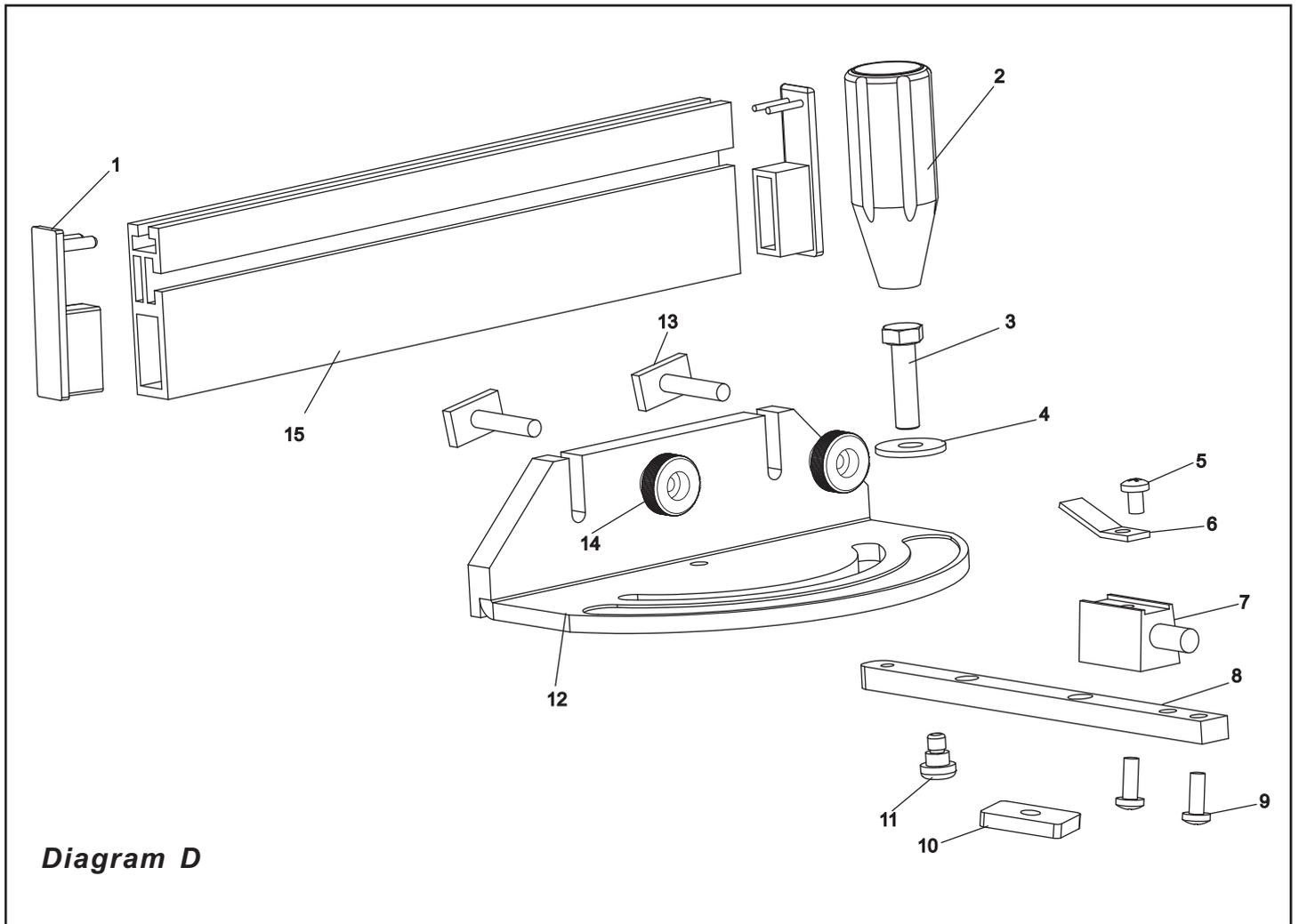
| No | Description | Qty | No | Description | Qty |
|----|----------------------|-----|----|----------------------|-----|
| 1 | Moveable rail | 1 | 20 | Ball bearing 6301 | 1 |
| 2 | Allen screw M6x16 | 8 | 21 | Hand wheel | 1 |
| 3 | Two head screw M6x16 | 4 | 22 | Carriage bolt M6x40 | 1 |
| 4 | Fixed rail | 1 | 23 | Hex screw M6x10 | 2 |
| 5 | Guide rail | 1 | 24 | Ball bearing | 1 |
| 6 | Wedge | 1 | 25 | Control shaft | 1 |
| 7 | Handle | 1 | 26 | Support | 1 |
| 8 | Guide rail base | 1 | 27 | Ball bearing 16003 | 1 |
| 9 | Hex nut M6 | 9 | 28 | Gear | 1 |
| 10 | Allen screw M6x10 | 12 | 29 | Big washer 12mm | 1 |
| 11 | Angle iron | 1 | 30 | Thread rod | 1 |
| 12 | Set screw M8x40 | 1 | 31 | Big washer 8mm | 1 |
| 13 | Hex nut M8 | 1 | 32 | Hex head screw M8x16 | 1 |
| 14 | Base | 1 | 33 | Special nut | 1 |
| 15 | Pan head screw M4x8 | 10 | 34 | "V" head screw M4x8 | 1 |
| 16 | Cover | 1 | 35 | Control support | 1 |
| 17 | Gear | 1 | 36 | Allen screw M6x10 | 4 |
| 18 | Hex lock nut M8 | 1 | 37 | Set screw M8x20 | 3 |
| 19 | Washer 8mm | 1 | 38 | Allen screw M8x55 | 2 |

Diagram C



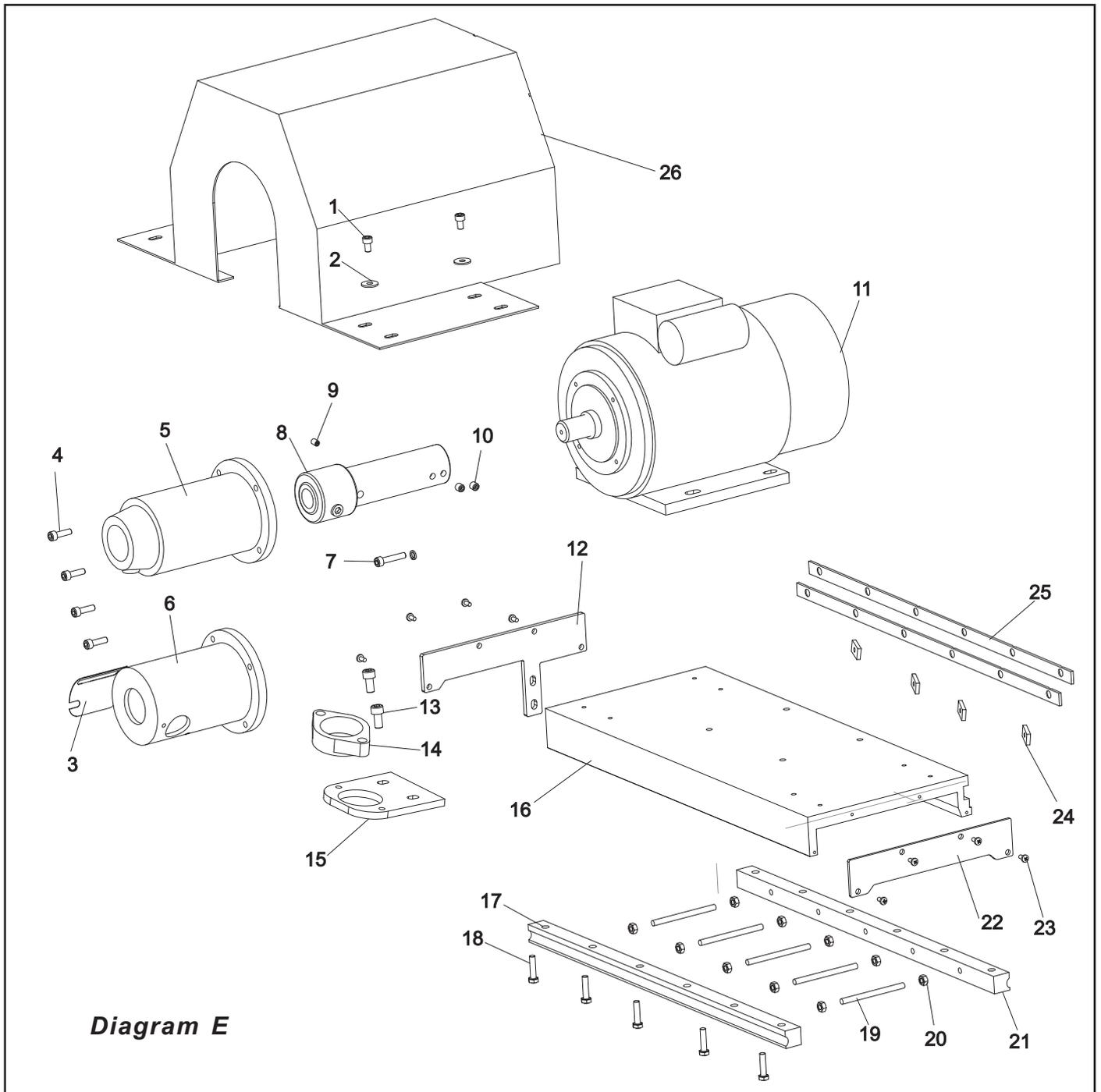
Parts List Diagram C

| <u>No</u> | <u>Description</u> | <u>Qty</u> | <u>No</u> | <u>Description</u> | <u>Qty</u> |
|-----------|-----------------------|------------|-----------|-----------------------|------------|
| 1 | Frame, control roller | 1 | 8 | Washer 10mm | 2 |
| 2 | Annulus | 4 | 9 | Hex lock nut M8 | 2 |
| 3 | Annulus | 4 | 10 | Hex head screw M8x20 | 2 |
| 4 | Eccentric shaft | 2 | 11 | Hex head screw M10x65 | 2 |
| 5 | Stop plate | 2 | 12 | Hex lock nut M19 | 2 |
| 6 | Allen screw M6x10 | 4 | 13 | Washer 8mm | 2 |
| 7 | ball bearing 6000 | 8 | 14 | Spring washer 6mm | 4 |



Parts List Diagram D

| No | Description | Qty | No | Description | Qty |
|----|----------------------|-----|----|----------------------|-----|
| 1 | End cap, gauge fence | 2 | 9 | Pan head screw M5x10 | 2 |
| 2 | Miter gauge knob | 1 | 10 | Special nut | 2 |
| 3 | Hex head screw M8x15 | 1 | 11 | Guide pin | 1 |
| 4 | Flat washer 8mm | 1 | 12 | Miter gauge base | 1 |
| 5 | Pan head screw M5x10 | 1 | 13 | Carriage bolt M6x35 | 2 |
| 6 | Indicator | 1 | 14 | Knurled nut M6 | 2 |
| 7 | Block indicator | 1 | 15 | Gauge fence | 1 |
| 8 | Gauge rod | 1 | | | |



Parts List Diagram E

| <u>No</u> | <u>Description</u> | <u>Qty</u> | <u>No</u> | <u>Description</u> | <u>Qty</u> |
|-----------|--------------------------------|------------|-----------|-------------------------|------------|
| 1 | Allen screw M6x10 | 8 | 14 | Ball bearing w/pedestal | 1 |
| 2 | Big washer 6 mm | 8 | 15 | Plate | 1 |
| 3 | Fender apron | 1 | 16 | Work table | 1 |
| 4 | Allen screw M6x20 | 4 | 17 | Fixed rail | 1 |
| 5 | Guard for square tenon knife | 1 | 18 | Hex head screw M6x25 | 12 |
| 6 | Guard for circular tenon knife | 1 | 19 | Two head screw M6x80 | 12 |
| 7 | Allen screw M6x10 | 1 | 20 | Hex nut M6 | 1 |
| 8 | Chuck | 1 | 21 | Moveable rail | 1 |
| 9 | Set screw M6x10 | 1 | 22 | Stop plate | 1 |
| 10 | Set screw M8x10 | 1 | 23 | Pan head screw M4x8 | 8 |
| 11 | Motor | 1 | 24 | Square nut | 4 |
| 12 | Stop plate | 1 | 25 | T-panel | 2 |
| 13 | Set screw M8x10 | 2 | 26 | Motor cover | 1 |

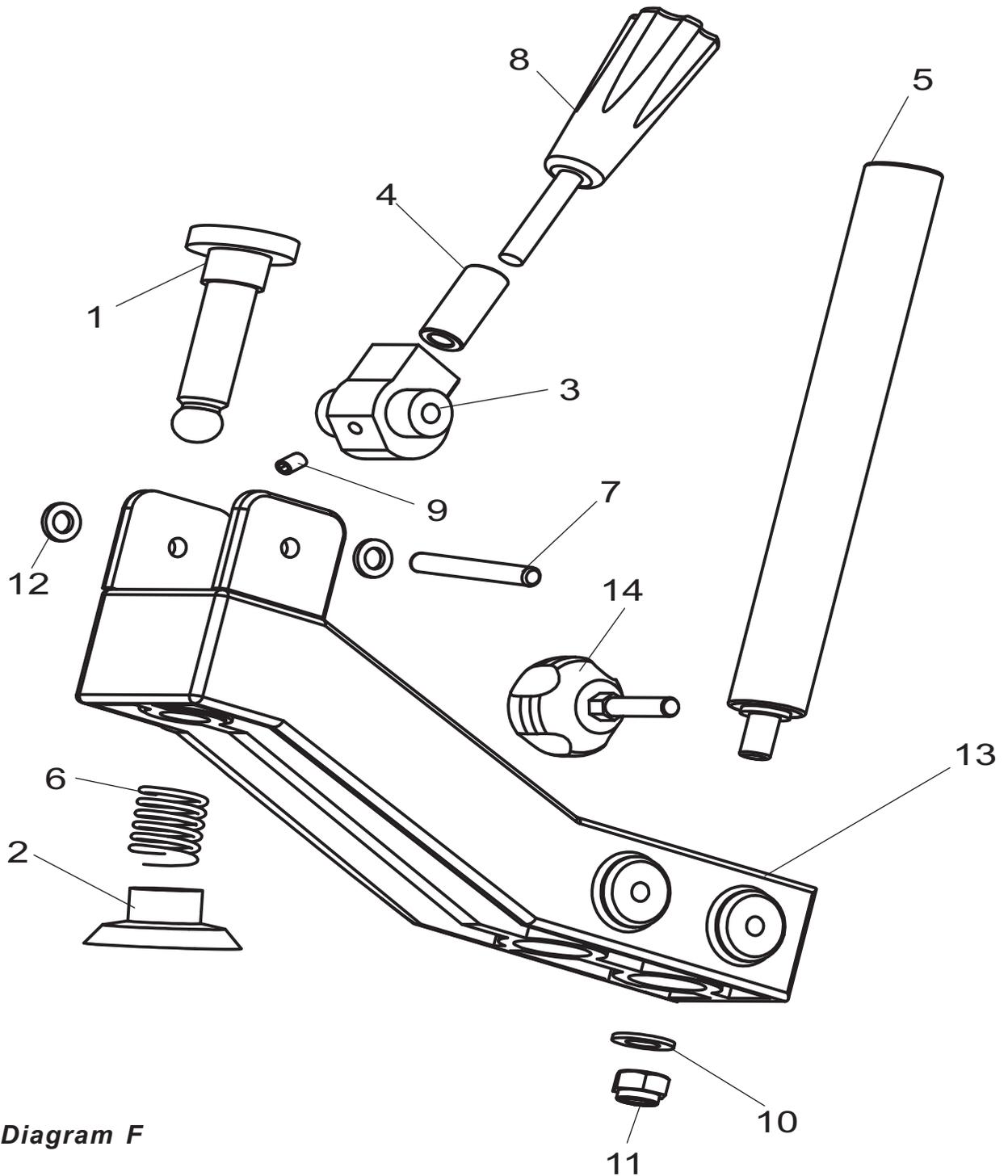
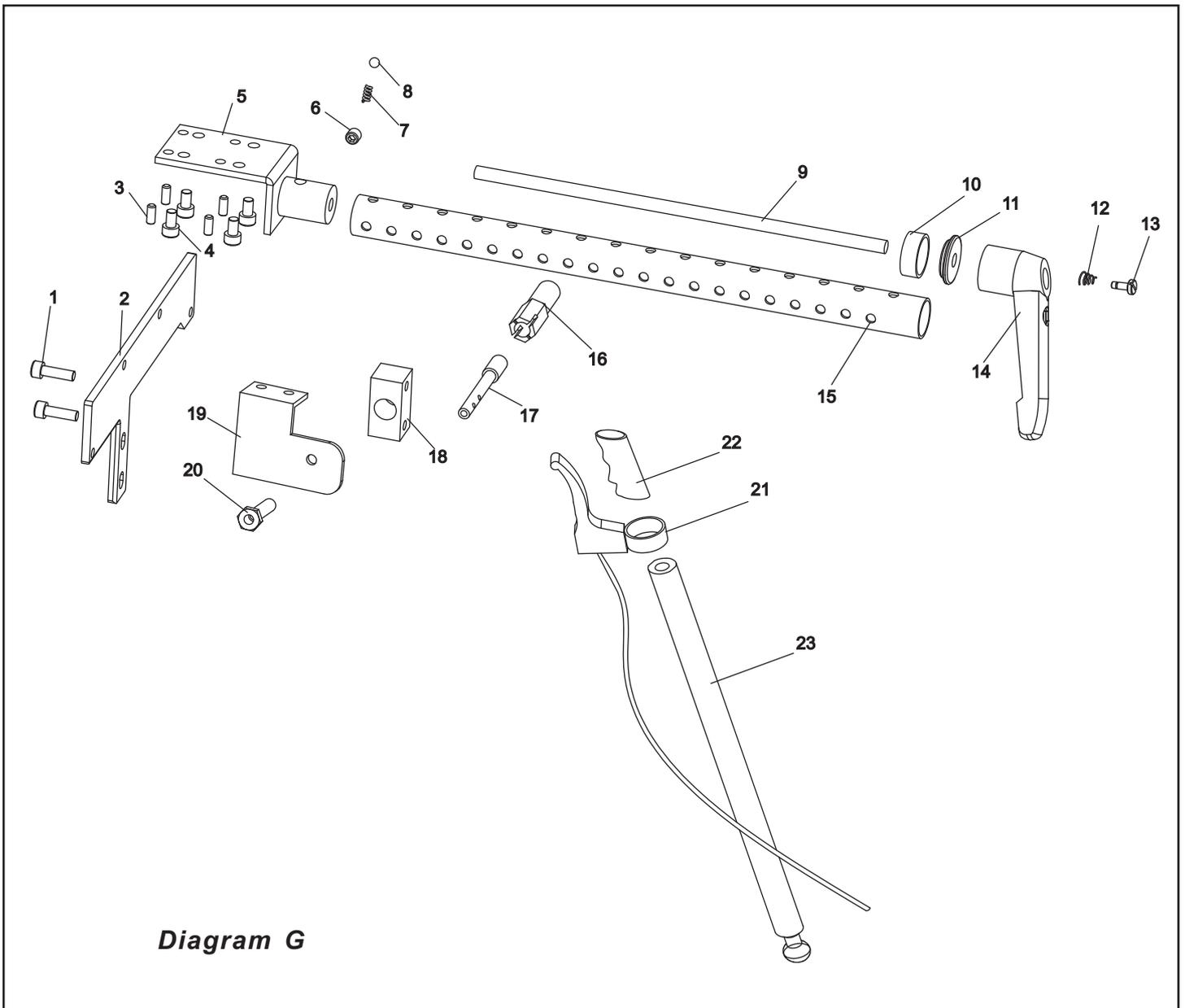


Diagram F

Parts List Diagram F

| No | Description | Qty | No | Description | Qty |
|-----------|--------------------|------------|-----------|--------------------|------------|
| 1 | Press rod | 1 | 8 | Handle, holder | 1 |
| 2 | Disc holder | 1 | 9 | Set screw M6x8 | 1 |
| 3 | Eccentric | 1 | 10 | Washer 10mm | 1 |
| 4 | Bush | 1 | 11 | Hex lock nut M10 | 1 |
| 5 | Holder rod | 1 | 12 | Washer 8mm | 1 |
| 6 | Spring | 1 | 13 | Holder assembly | 1 |
| 7 | Roll pin C8x50 | 1 | 14 | Star-type knob | 1 |



Parts List Diagram G

| No | Description | Qty | No | Description | Qty |
|----|-------------------|-----|----|------------------------|-----|
| 1 | Allen screw M6x20 | 2 | 13 | Special screw | 1 |
| 2 | Stop plate | 1 | 14 | Ratchet lever | 1 |
| 3 | Set screw M5x8 | 4 | 15 | Graduator body | 1 |
| 4 | Allen screw M6x8 | 4 | 16 | Thread rod | 1 |
| 5 | Graduator base | 1 | 17 | Rod | 1 |
| 6 | Set screw M5x6 | 1 | 18 | Rod base | 1 |
| 7 | Spring | 1 | 19 | Cable base | 1 |
| 8 | Ball 6mm | 1 | 20 | Cable adjustable screw | 1 |
| 9 | Long rod | 1 | 21 | Cable | 1 |
| 10 | Spacer | 1 | 22 | Bush | 1 |
| 11 | Locker | 1 | 23 | Control lever | 1 |
| 12 | Spring | 1 | | | |