holzstar
Holzbearbeitungsmaschinen

Operating instructions

Table router

- TF 190 E (230V/400V)
- TF 190 SE (230V/400V)

TF 190 SE

TF 190 - SERIE

Imprint

Product identification

Table router	Item No.
TF 190 E (230 V)	5901921
TF 190 E (400V)	5901923
TF 190 SE (230 V)	5901931
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Manufacturer

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Indications regarding the operating instructions

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Indications regarding the copyright

Content

1 Introduction

Congratulations on purchasing your HOLZSTAR Table router.

Please read the operating instructions carefully before commissioning.

They inform you about proper commissioning, intended use as well as safe and efficient operation and maintenance of your Table router.

The operating instructions form part of the Table router. Always keep these operating instructions at the place where you use your Table router. Please also observe the local accident prevention regulations and general safety regulations relating to the different application areas of your Table router.

1.1 Copyright

The contents of these instructions are protected by copyright and are the sole property of Stürmer Maschinen GmbH. Use of these instructions is permitted within the scope of table router use. An application beyond the described application is not allowed without written approval of the manufacturer.

Passing on as well as copying of this document, the use and distribution of its content are prohibited if not explicitly permitted. Contraventions are liable to compensation. We register trademark, patent and design rights to protect our products, insofar as this is possible in individual cases. We strongly oppose any infringement of our intellectual property.

1.2 Customer service

If you have any questions about your Table router or need technical advice, please contact your specialist dealer. They will help you with specialist information and expert advice.

Germany:
Stürmer Maschinen GmbH
Dr. Robert-Pfleger-Str. 26
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Repair service:
Fax: 0049 (0)951 96555-111
Email: service@stuermer-maschinen.de
Internet: www.holzstar.de

Spare part order:
Fax: 0049 (0)951 96555-119
Email: ersatzteile@stuermer-maschinen.de

We are always interested in information and experiences that result from the application and can be valuable for the improvement of our products.

1.3 Limitation of liability

All information and notes in these operating instructions were summarised while taking applicable standards and rules, the state-of-the-art technology and our long-term knowledge and experiences into consideration.

In the following cases the manufacturer is not liable for damages:

- Non-observance of these operating instructions
- Inappropriate use
- Use of incompetent or unqualified personnel
- Unauthorised modifications
- Technical changes
- Use of not allowed spare parts

The actual scope of delivery may deviate from the explanations and presentations described here in case of special models, when using additional ordering options or due to latest technical modifications.

The obligations agreed in the delivery contract, the general terms and conditions as well as the delivery conditions of the manufacturer and the legal regulations at the time of the conclusion of the contract are applicable.

2 Safety

This section gives an overview of all the important safety packages for protecting personnel and for safe, trouble-free operation. Other task-based safety notes are included in the individual chapters.

2.1 Symbol explanation

Safety instructions

The safety notes in these operating instructions are highlighted by symbols. The safety notes are introduced by signal words which express the concern of the risk.

DANGER!

This combination of symbol and signal word indicates an imminently hazardous situation which will result in death or serious injury if not avoided.

WARNING!

This combination of symbol and signal word indicates a potentially dangerous situation that will result in death or serious injury if not avoided.

CAUTION!

This combination of symbol and signal word indicates a potentially hazardous situation which may result in minor or slight injury if not avoided.

ATTENTION!

This combination of symbol and signal word indicates a potentially hazardous situation which may result in damage to property and the environment if not avoided.

NOTE!

This combination of symbol and signal word indicates a potentially hazardous situation which may result in damage to property and the environment if not avoided.

Tips and recommendations

Tips and recommendations

This symbol highlights useful tips and recommendations as well as information for an efficient and trouble-free operation.

It is necessary to observe the safety notes quoted in these operating instructions in order to reduce the risks for personal injuries and damages to property.

2.2 Obligations of the operating company

The operating company or operator is the person who independently operates the machine for commercial reasons, or leaves it to a third party for use or application, and who bears the legal product responsibility for the protection of the user, the staff or for third parties.

Obligations of the operating company:

If the machine is used for commercial purposes, the operating company must comply with the legal working safety regulations. Therefore, the safety notes in this operating manual, as well as the safety, accident prevention and environment protection regulations applying for the area of application of the machine must be met. The following applies in particular:

- The operating company must be informed about the applicable industrial safety regulations and conduct a risk assessment to identify additional hazards resulting from the special working conditions at the machine's place of use. The company must include this information in operating manuals for operating the machine.
- Throughout the lifetime of the machine, the operating company must verify whether the operating manuals it has prepared correspond to the latest regulations, and adapt them, if necessary.
- The operating company must unambiguously regulate and determine the responsibilities for installation, operation, troubleshooting, maintenance and cleaning.
- The operating company must ensure that all persons who work with the machine have read and understood this manual. Furthermore, the company must instruct the staff and inform them about hazards at regular intervals.
- The operator must provide the necessary protective equipment to the staff and order the use of the necessary protective equipment in a binding way.

Furthermore, the operating company is responsible for maintaining the machine in a technically flawless state. Thus, the following applies:

- The operator must ensure that the maintenance intervals described in this manual are observed.
- The operator must have all safety devices checked regularly for their good working order and their integrity.

2.3 Qualification of personnel

The different tasks described in this manual represent different requirements to the qualification of the persons entrusted with these tasks.

WARNING!

Danger in case of insufficient qualification of the staff!

Insufficiently qualified persons cannot estimate the risks while using der Maschine and expose themselves and others to the danger of severe or lethal injuries.

- Have all works only performed by qualified persons.
- Keep insufficiently qualified persons out of the working area.

Only persons reliable working procedures can be expected from, are allowed to perform all works. Persons the responsiveness of which is affected by e. g. drugs, alcohol or medication, are not allowed to work with the machine.

The qualifications of the personnel for the different tasks are mentioned below:

Operator:

The operator is instructed by the operating company about the assigned tasks and possible risks in case of improper behaviour. Any tasks which need to be performed beyond the operation in the standard mode must only be performed by the operator if it is indicated in these instructions and if the operating company expressively commissioned the operator.

Electrical specialist:

With professional training, knowledge and experience as well as knowledge of respective standards and regulations, qualified electricians are able to perform work on the electrical system and recognise and avoid any possible dangers.

Qualified personnel:

Due to their professional training, knowledge and experience as well as their knowledge of relevant regulations the specialist staff is able to perform the assigned tasks and to recognise and avoid any possible dangers themselves.

Manufacturer:

Certain works may only be performed by specialist personnel of the manufacturer. Other personnel is not authorized to perform these works. Please contact our customer service for the execution of all arising work.

2.4 Personal protective equipment

The personal protective equipment serves to protect persons against impairments of safety and health while working. The staff member has to wear personal protective equipment while performing different tasks on and with the machine which are indicated in the individual paragraphs of these instructions.

The personal protective equipment is explained in the following paragraph:

Head protection

The industrial helmet protects the head against falling objects and hitting on fixed objects.

Ear protection

The hearing protection protects against damages of hearing due to noise.

Safety goggles

The safety goggles are used to protect the eyes from flying parts.

Suitable protective gloves

Protective gloves suitable for the application serve to protect the hands against sharp components as well as against friction, abrasions or deep injuries.

Safety boots

Safety boots protect the feet against crushing, falling parts and slipping over on slippery ground.

Protective work clothing

Protective work clothing is close-fitting work clothing, without protruding parts, with low tear resistance.

2.5 Safety markings on the Table router

The following safety markings affixed to the Table router (Fig. 1) must be observed and followed.

1

2

Fig. 1: Safety markings

The safety markings which are applied on the machine must not be removed. Damaged or missing safety markings may lead to errors, personal and material damages. Immediately replace them.

Decommission the machine if the security symbols cannot be recognised nor understood at the first glance, until the new security symbols are applied.

2.6 General safety notes

This machine is equipped with various safety devices designed to protect both the operator and the machine. However, the devices cannot cover all safety aspects and absolve the operator of his responsibilities. Before operating the machine, you must have read and fully understood this chapter. The operator must also consider other aspects of the hazard relating to environmental conditions and the material.

Please observe the following points:

Before connecting the machine to the mains power supply, make sure that all the safety devices are placed in their active positions and are functioning correctly. Should you ever need to remove the protective covers, always switch off the machine and disconnect the plug beforehand.

- Do not connect the machine to the mains power supply if the door or protective cover has been removed.
- In order to avoid operating errors, familiarise yourself with the location of the switches before turning on the machine.
- Avoid contact with the rotating tool.
- Switch off the machine when not in use and disconnect the mains plug.
- Do not modify the machine in any way that jeopardises safe operation.
- Always carry out regular inspections according to the instructions for use.
- Do not soil, damage, modify or remove the safety devices.
- Keep the working area clear. Cluttered areas can lead to injuries.
- Do not use the table router in flammable, explosive, damp, or unclean environments. Never use tools in a damp or wet environment.
- Ensure that the working area is well illuminated.
- The table router cannot be used to machine curved workpieces.
- Before starting work, remove items such as rings, watches, bracelets, ties, etc., as they may become entangled in different parts of the machine.
- Protect and tie up long hair to prevent it from becoming entangled in moving machine parts.
- Always wear the necessary safety equipment (protective mask, work clothing, safety goggles, safety shoes, ear protection, etc.).
- Wear a helmet when working in the vicinity of overhead obstacles.
- Wear a protective mask when handling materials that will generate dust during the working process.
- Do not wear loose work clothing.
- Keep children and persons who are not familiar with the table router away from your working environment.
- Always secure workpieces adequately with a suitable clamping tool. Always press the workpiece firmly against the work table and fence to prevent the workpiece from wobbling or twisting.
- Keep your cutting tools sharp and clean.
- Only remove loose splinters, chips or trapped pieces of wood when the machine is switched off.
- Never work under the influence of illnesses that affect concentration, drugs, alcohol or medication, or when suffering from fatigue.
- Before switching on the machine, make sure that any wrenches and adjustment tools have been removed.

2.7 Safety devices

Motor protection switch

The Table router motor is equipped with a thermal circuit breaker that switches off the motor automatically in the event of thermal overload.
The motor can be restarted once the cause of the overload has been rectified and the motor has cooled down completely.

2.8 Safety data sheets

Safety data sheets for hazardous materials can be obtained from your specialist dealer or by calling +49 (0)951/96555-0. Specialist dealers can find safety data sheets in the download area of the partner portal.

3 Intended use

The Table router TF 190 - Serie is used for cutting wooden boards and strips, and offers a wide range of angle adjustment options. The router is also suitable for machining solid wood, chipboard, panels and profiles. The machine is designed for private use and must always be operated together with a suitable extraction system.

The proper use also includes observing all indications in these operating instructions.

3.1 Residual risks

Even if all safety regulations are observed and the die Tischfräse is operated properly, there are residual risks which are listed as follows:

- Risk of injury to upper limbs (e.g. hands and fingers) from the rotating milling spindle.
- Hot components can cause burns and other injuries.
- Danger from inhaling wood dust.

Electrical hazard from touching high-voltage parts (direct contact) or parts that become live due to a fault on the device (indirect contact).

3.2 Reasonably foreseeable misuse

Any use beyond the proper use or any other use is regarded as misuse.

WARNING!

Danger in case of misuse!

Misuse of the Table router can result in dangerous situations.

- Die Tischfräse may only be used when in perfect condition and operated in accordance with the technical data specified.
- Any use of the der Tischfräse contrary to the intended use, such as machining metal, must be avoided.
- Safety devices must be fully functional and never bypassed or disabled.
- Only one person is permitted to operate the machine. Never machine more than one workpiece at any one time.

Stürmer Maschinen GmbH is not liable for any design and technical modifications to the Table router.

Any claims due to damages because of intended use are excluded.

4 Technical data

Model	TF 190 E	TF 190 SE
Dimensions [LxWxH] (without extension table)	730 x 500 x 1200 mm	750 x 660 x 1200 mm
Connection voltage (230 V or 400 V, depending on device model)	See rating plate	See rating plate
Current type	AC	AC
Mains frequency	50Hz	50Hz
Table dimensions	690 x 480 x 900 mm	710 x 640 x 900 mm
Sliding table dimensions	-----	900 x 1200 x 700 mm
Spindle diameter	Ø 30mm	Ø 30mm
Spindle stroke	100 mm	100 mm
Adjustable spindle inclination	no	Yes
Spindle inclination	-----	-5° to +30°
Spindle speeds * [rpm]	1800/3000/ 6000/9000	1800/3000/ 6000/9000
Useful spindle length	100 mm	100 mm
Max. tool diameter	Ø 200 mm	Ø 200 mm
Approx.weight (net)	140 kg	174 kg
Extraction connection diameter	Ø 100mm	Ø 100mm
Drive motor power	2.2 kW	2.2 kW
Rated input	2.8 kW	2.8 kW
Drive motor protection class	IP54	IP54
Drive motor nominal operating mode	S1	S1

* Transmission ratio mechanically adjustable via belt.

4.1 Rating plate

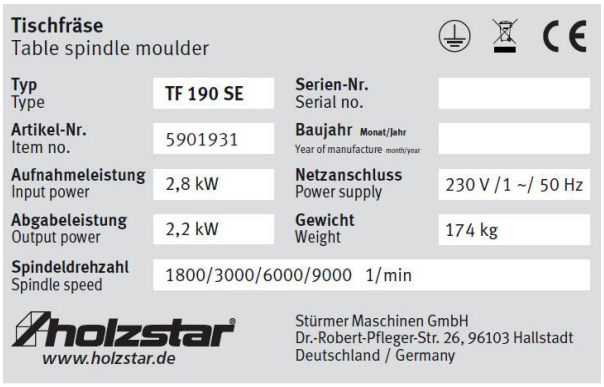

Fig. 2: Rating plate TF 190 SE (230 V)

5 Transport, packaging, storage

5.1 Delivery and transport

Delivery

Check the Table router for visible transport damage immediately after delivery. If you notice any damage on the Table router, please inform the carrier or distributor immediately.

Transport

The improper transport is liable to cause damage or malfunctions on the machine, for which we cannot assume liability or provide any guarantee.

Transport the scope of delivery secured against shifting or tilting with a sufficiently dimensioned industrial truck or crane to the installation site.

WARNING!

Serious or fatal injuries from machine parts falling over or falling from a forklift, pallet truck or transport vehicle. Follow the instructions and information on the transport box.

Note the total weight of the machine. The weight of the machine is indicated in the "Technical data" of the machine When the machine is unpacked, the weight of the machine can also be seen on the rating plate.

Only use transport devices and load suspension gear that can hold the total weight of the machine.

WARNING!

Lifting and load suspension gear that is damaged or has an insufficient load-carrying capacity may break under load and cause severe or even fatal injuries. Check that the lifting and load suspension gear has a sufficient load-bearing capacity and is in perfect condition.

Observe the accident prevention regulations of the trade association responsible for your company, or other supervisory authorities.
Secure the load carefully.

General risks during internal transport

WARNING TIPPING HAZARD

Only lift the load just off the ground, i.e. no contact with the ground.

Employees must remain outside the danger zone and out of range of the load.

Warn employees and advise them of the hazard.

Machines may only be transported by authorized and qualified persons. Act responsibly during transport and always consider the consequences. Refrain from daring and risky actions.

Gradients and descents (e.g. driveways, ramps and the like) are particularly dangerous. If such passages are unavoidable, special caution is required.

Before starting the transport check the transport route for possible danger points, unevenness and disturbances as well as for sufficient strength and load capacity.

Danger points, unevenness and disturbances must be inspected prior to transportation. The removal of danger spots, unevenness, and obstacles by other employees at the time of transport presents a major risk. Careful planning of internal transport is therefore essential.

Transport with a forklift/pallet truck:

The machine is packaged in a wooden crate and delivered on a pallet so that it can be transported with a forklift or pallet truck.

5.2 Packaging

All packaging materials and packaging aids used for the Table router are recyclable and must therefore always be recycled.

The delivery packaging is made of cardboard, so please dispose carefully by having it chopped up and given to the recycling collection.

The films are made of polyethylene (PE) and the upholstery parts are made of polystyrene (PS). Deliver these substances to a collection point for recyclable materials or to the waste disposal company which looks after your region.

5.3 Storage

The Table router must be cleaned thoroughly prior to storage in a clean, dry, frost-free environment. Cover the machine with a protective tarpaulin.
Ambient temperature range: –25 °C to +55 °C.

6 Description of the device

6.1 Machine

Illustrations in these operating instructions may deviate from the original.

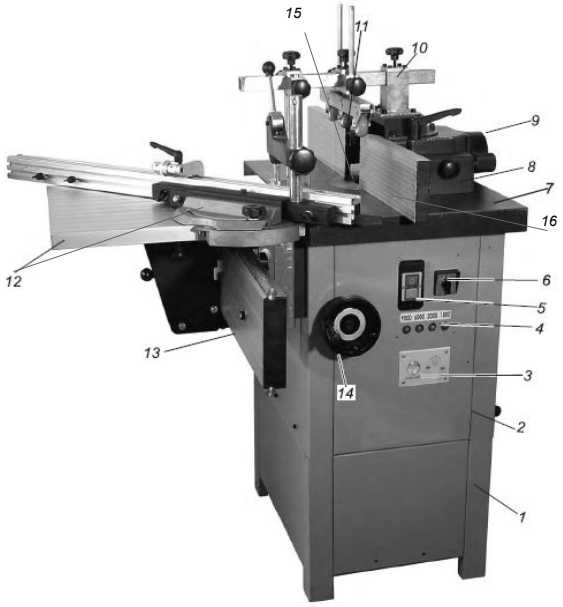

Fig. 3: Table router TF 190 E

1 Base frame

2 Machine housing

3 Spindle height indicator

4 Spindle speed indicator

5 ON and OFF switch

6 Rotational direction switch

7 Working table

8 Cover hood

9 Suction nozzle

10 Pressure device

11 Pressure rollers

12 Sliding table with angle fence (optional)

13 Sliding rail

14 Handwheel for adjusting the cutter height

15 Cutter spindle (see Fig. 5)

16 Workpiece stop

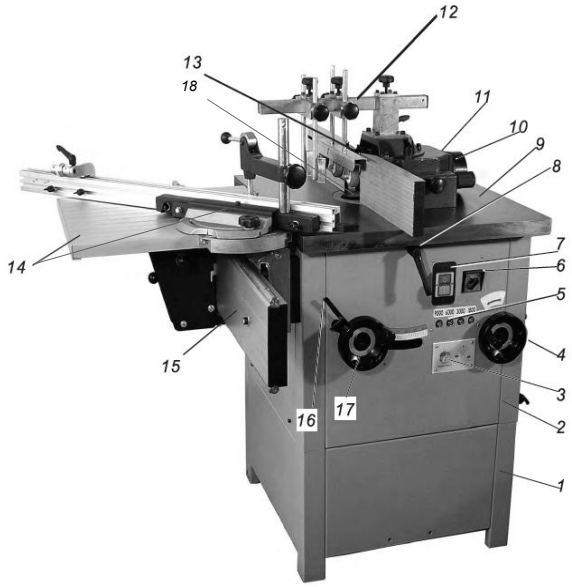

Fig. 4: Table router TF 190 SE

1 Base frame

2 Machine housing

3 Spindle height indicator

4 Handwheel for adjusting the cutter height

5 Spindle speed indicator

6 Rotational direction switch

7 ON and OFF switch

8 Clamping lever for fixing the spindle inclination

9 Working table

10 Cover hood

11 Suction nozzle

12 Pressure device

13 Pressure rollers

14 Sliding table with angle fence (optional)

15 Sliding rail (optional)

16 Clamping lever for fixing the spindle height

17 Handwheel for adjusting the spindle height

18 Cutter spindle (see Fig. 5)

Fig. 5: Cutter spindle

6.2 Scope of delivery

- Tabletop milling machine
- Tool kit
- Hold-down clamps
- Spindle fence

6.3 Optional accessories

- Moving device **(item no. 5911921)**
- Sliding table with angle fence **(item no. 5911920)**

The sliding table is easy to retrofit to the machine.

7 Setting up and connecting

7.1 Installation site requirements

The following criteria must be taken into account when setting up the machine:

- The Table router must be set up securely on a solid, level surface that is free of vibrations.
- Make sure that there is adequate space to work, transport materials and perform adjustment and maintenance tasks.
- The ground underneath the machine must be impermeable and not allow any liquids or lubricants to seep through.
- The installation room or workspace must always be dry, tidy, and well ventilated.
- Machines that produce dust or chips should not be operated near the machine without an extraction system.
- The installation site must be well illuminated.
- An extraction system with a minimum suction capacity of 690 m^3/h at a minimum flow rate of 20 m/s at the extraction connection must be available on site; hose diameter 100 mm, max. hose length 4 m.

7.2 Setting up the Table router

CAUTION!

Risk of injury from an unstable machine! Set up the machine on a stable surface and check that it is stable. The machine should be bolted to the floor to guarantee adequate stability. There are 4 holes in the feet of the machine frame for this purpose.

CAUTION!

Do not attempt to lift the heavy machine housing by yourself. Ask a competent person to assist you. Check that the auxiliary equipment is large enough and has a sufficient load-bearing capacity for the task in hand.

Die Tischfräse is delivered in a wooden box almost completely assembled. Only a few parts need to be assembled after delivery.

Perform the following steps to prepare the machine for operation:

Assembling the base frame

Step 1: Remove the 4 side walls and 4 frame feet from the wooden box.

Step 2: Remove the following elements from the bag:
- 16 x M8x20 hexagon bolts
- 32 x 8 mm washers
- 16 x M8 hexagon nuts

Step 3: Assemble the base frame as shown in the illustration below.

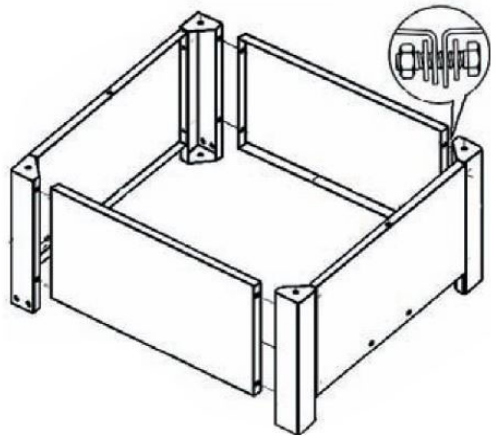

Fig. 6: Assembling the base frame

Assembling the machine housing

Step 1: Lift the machine housing assembly onto the base frame. Align the assembly exactly over the holes.

Step 2: Loosen the two bolts to open the side door on the machine housing and remove the hexagon bolts from the side panel.

Step 3: Remove the following elements from the bag:

- 4 x M8x20 hexagon bolts
- 8 x 8 mm washers
- 4 x M8 hexagon nuts

Step 4: Assemble the machine housing from the inside as shown in the illustration below.

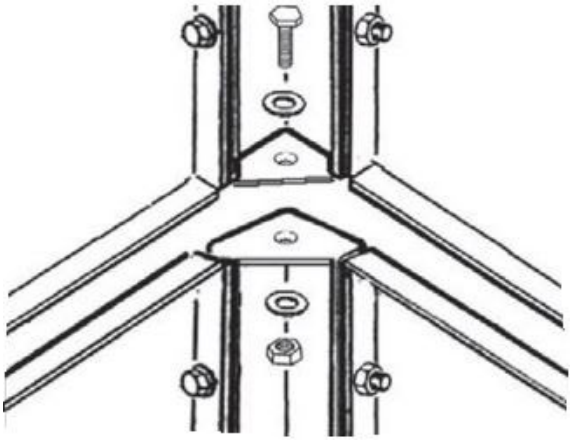

Fig. 7: Assembling the machine housing

Fitting the milling tool

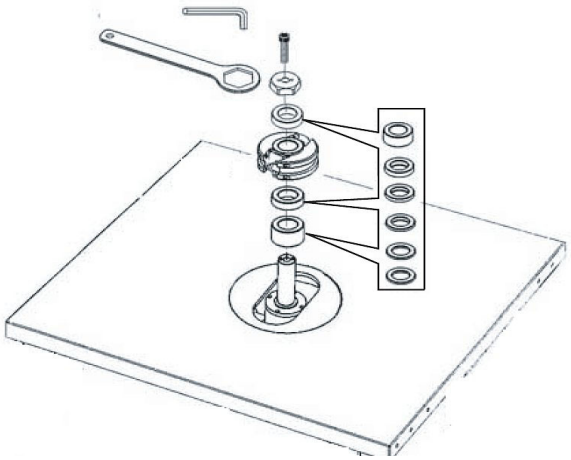

Fig. 8: Fitting the milling tool

ATTENTION!

Fit the milling tool as low as possible on the spindle. It should be able to rotate freely in the lowest position.

When angling the cutter, make sure it does not come into contact with the cover ring on the table or with the fence.

Step 1: Place the cover ring in the opening on the tabletop. The cover ring must be flush with the tabletop so that it does not obstruct the workpiece during machining.

Certain milling tasks may require you to remove the ring from the tabletop.

Step 2: Place the milling head and spindle spacer rings onto the spindle and secure the end flange in position using the M12x25 hexagon socket bolt (Fig. 8).

Step 3: Different spacer rings can be used to set the cutter at different heights on the spindle. Rings provided: 30 mm, 25 mm, 15 mm, 10 mm, 5 mm, 2 mm, 1 mm.

Fitting the cover hood

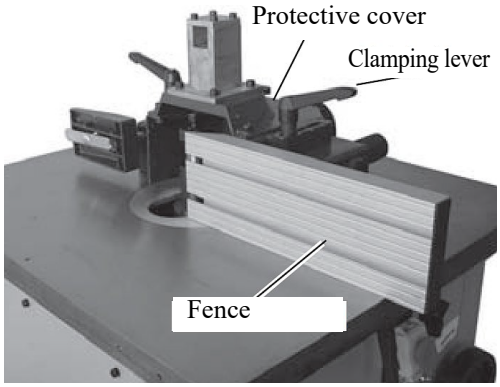

Fig. 9: Cover hood and fence

Step 1: Place the cover hood over the two threaded holes in the working table.

Step 2: Insert the two M8x150 clamping levers with 8 mm washer into the hood and secure the hood by turning the levers clockwise.

Step 3: Slide the milling fence onto the guide and secure in position.

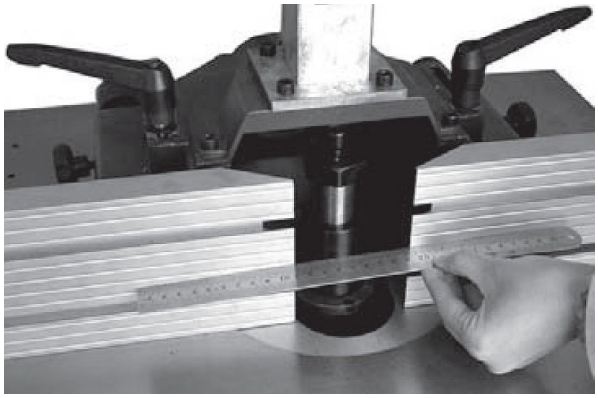

Fig. 10: Checking the alignment of the fence

Step 4: Use a ruler to check that the fence is aligned correctly.

Fitting the pressure device

Step 1: Insert the arm on the pressure device into the holder and secure with the clamping screw.

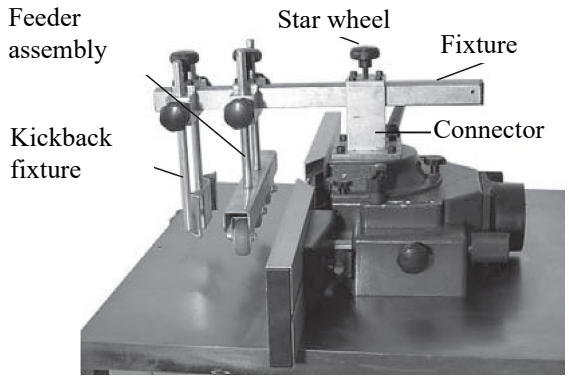

Fig. 11: Fitting the pressure device

Step 2: Secure the pressure rollers and workpiece stop to the support arm using the clamping screws.

Installing the sliding table (optional)

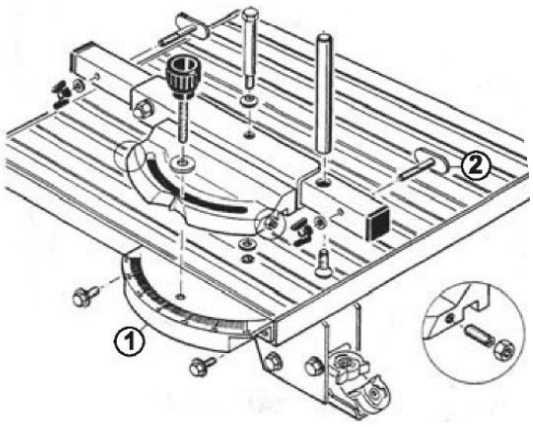

Fig. 12: Sliding table assembly with angle fence

Step 1: Fit the scale holder (item 1, Fig. 12) to the sliding table.
2 x M6x16 hexagon socket bolts

Step 2: Insert the two hammer-head bolts (item 2, Fig. 12) into the fence tube and secure in position. Do not yet tighten the bolts completely!
2 x hammer-head bolts,
2 x 6 mm washers
2 x M6 wind nuts

Step 3: Secure the fence to the table as shown in the illustration.
Make sure that the shaft washer is located between the fence tube and sliding plate.

Adjusting the scale holder

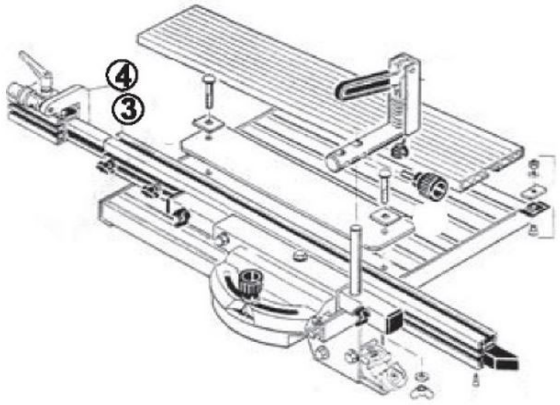

Fig. 13: Adjusting the scale holder

Step 1: Loosen the two M6x16 hexagon socket bolts and move the scale holder to the left or right until the pointer is aligned with "0" on the scale.
Then tighten the two hexagon socket bolts.

Step 2: Insert the guide rail (item 3, Fig. 13) into the groove on the work surface and tighten the knurled screws.

Step 3: Insert the folding stop (item 4, Fig. 13) into the guide on the end stop and secure the clamping lever.

Fitting the brackets

Fit the two brackets on the machine housing together with the two spacer blocks.
(4 x M8x45 hexagon socket bolts)

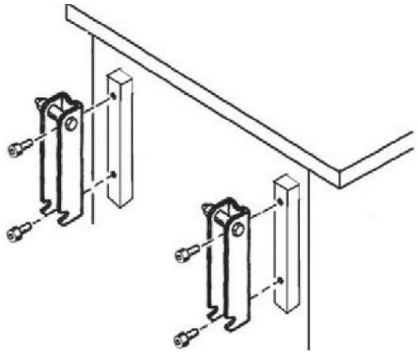

Fig. 14: Fitting the brackets

Fitting the sliding rail

Hang the sliding rail onto the holder at a slight angle from above and tighten the wing nuts.

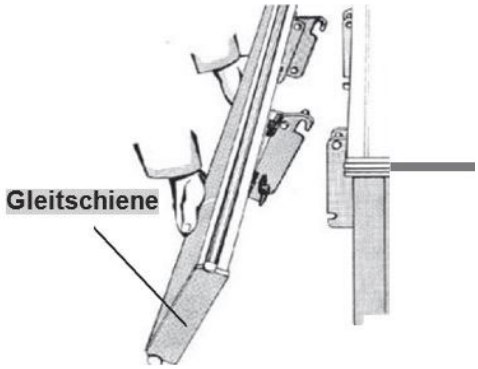

Fig. 15: Fitting the sliding rail

Fitting the sliding plate

Step 1: The stop bolt must be unlocked before the sliding plate can be attached to the slide rail.
Pull back the ball knob and turn 1/4 turn (clockwise or anti-clockwise).

Step 2: Slide the plate onto the slide rail, making sure that the bearings are aligned properly and the plate glides smoothly.

Step 3: Turn the ball knob back to its original position (pin engages) to secure the sliding plate.

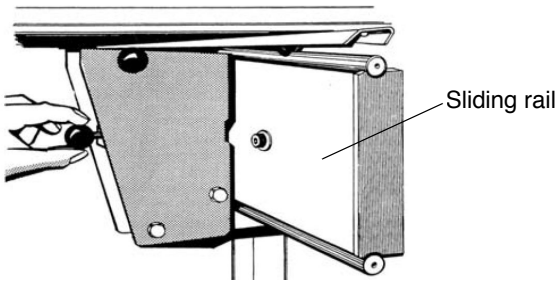

Fig. 16: Fitting the sliding plate

Adjusting the sliding plate

Adjust the sliding table until it is flush with the main table on the machine. Use a spirit level to help you align the sliding table correctly.

Adjustments are made on the left and right rail attachment.

Step 1: Loosen the two hexagon bolts (item 5).

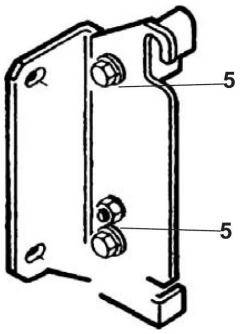

Fig. 17: Rail attachment

Step 2: Align the sliding table by adjusting the height adjustment bolt (item 6) and the angle adjustment bolt (item 7) until the sliding table is flush with the main table. Avoid tilting the plate by turning the adjusting bolts alternately at the front and back.

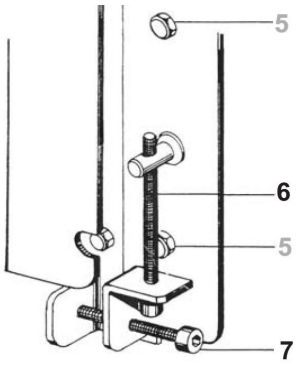

Fig. 18: Aligning the sliding plate

Step 3: Make sure that the tabletops are aligned perfectly with one another at every position. Check the alignment of the tabletop using a spirit level.

Step 4: If necessary, loosen the 4 hexagon bolts on the two brackets.

Step 5: Tighten the hexagon bolts again (item 5, Fig.18)

Adjusting the workpiece stop angle

Step 1: Make a test cut and then check the 90° angle.

Step 2: Loosen the nut to release the stop from its angle position.

Step 3: Adjust the workpiece stop correctly (item 8), then tighten the nut by hand to fix the angle position.

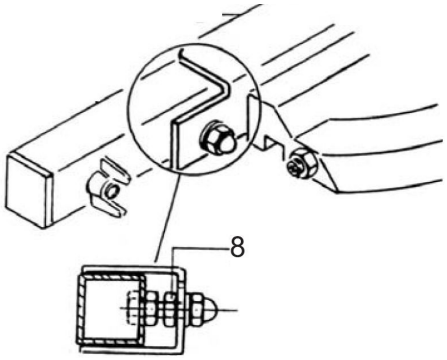

Fig. 19: Adjusting the workpiece stop angle

Step 4: Tighten the nut and then make another test cut. If necessary, repeat the previous steps for adjusting the angle.

Fitting the stop rail

The stop rail is 1500 mm in length when fully extended.

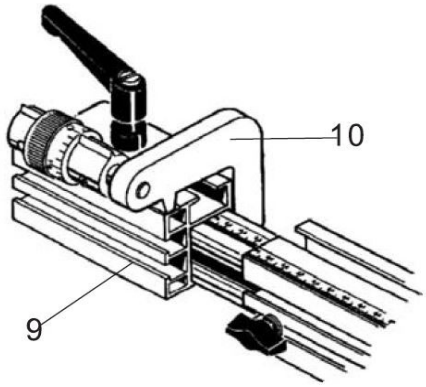

Fig. 20: Fitting the stop rail

Step 1: Set the folding stop at the end stop to exactly 900 mm. When pulling out the end stop rail, read off the length on the scale.

Step 2: Use the knurled screw on the folding stop (1 turn = 2 mm; distance between lines = 0.1mm) to make fine adjustments

Step 3: Tighten the screw (item 9, Fig. 20) on the axis of the stop lever (item 10, Fig. 20) and make sure that the stop lever does not drop down when folded.

Adjusting the stop angle

The stop angle can be set between -45° and +45°.

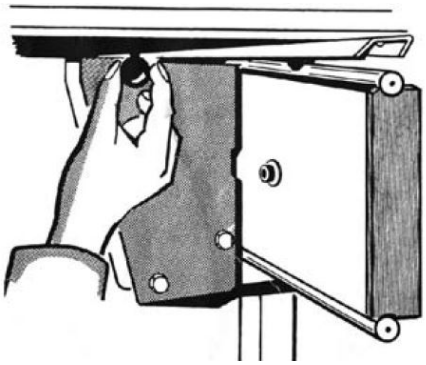

Fig. 21: Adjusting the stop angle

Step 1: Pull out the ball knob (under the slide plate) and turn 1/4 of a turn. The angle on the swivel segment can now be adjusted without the knob engaging again.

Step 2: After adjusting the angle, tighten the clamp. Make sure that the ball knob has engaged again.

Adjusting the sliding rail

The sliding rail can be moved forwards and backwards.

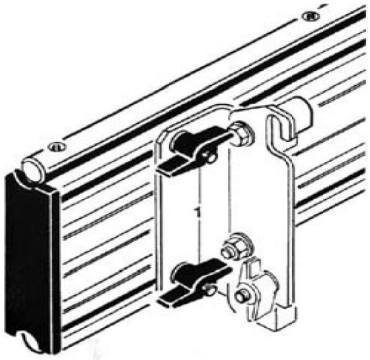

Fig. 22: Adjusting the sliding rail

Step 1: Loosen the two wing nuts on the left and right of the bracket (Fig. 22).

Step 2: Based on the size of the workpiece, move the sliding rail to the correct position in relation to the main table and then tighten the wing nuts again.

Fitting the workpiece clamping device

A firmly secured workpiece is essential in achieving precision working results safely.

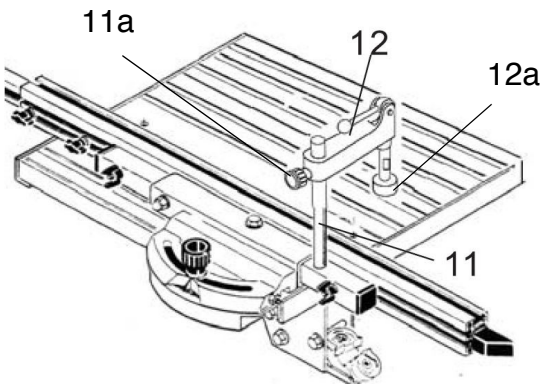

Fig. 23: Fitting the workpiece clamping device

Step 1: Insert the rod into the retaining hole on the fence tube (see Fig. 23). The rod is secured from below using the countersunk screw provided.

Step 2: Attach the workpiece clamp (item 12) to the pull rod. Secure at the required height using the adjusting screw (item 11a).

Step 3: Place the workpiece on the working table.

Step 4: Loosen the height adjustment bolt (item 11a) and place the clamping device in position. Lower the clamping foot (item 12a) until it makes contact with the workpiece. Then tighten the adjusting screw (item 11a) again to secure the clamping device in position.

Step 5: Clamp the workpiece by shifting the clamping lever from position "b" to "c" (Fig. 24).

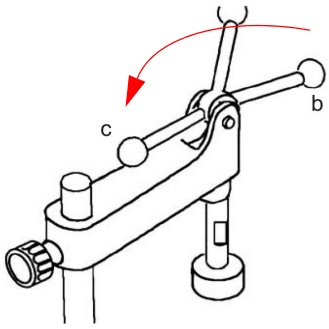

Fig. 24: Moving the clamping lever into position

NOTE!

A certain force must be exerted on the lever in order to ensure that the workpiece is secured correctly. The maximum clamping force can only be achieved if the clamp foot is resting on the workpiece before the lever is moved!

Fitting the moving device (optional)

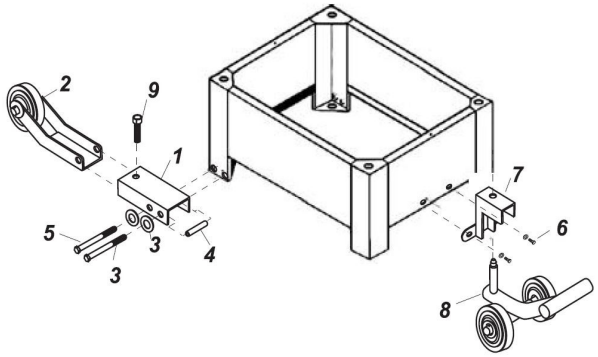

Fig. 25: Fitting the moving device

Step 1: Place the "U" profile (item 1) onto the front wheel assembly (item 2) so that the holes are aligned.

Step 2: Place the collar (item 4) between the two holes and attach the individual parts mentioned to the frame foot of the machine using the M10x70 hexagon bolt (item 3).

Step 3: Fit the mounting bolt (item 5) to secure the front wheel assembly.
Carry out the same assembly steps on the opposite side to install the other front wheel.

Step 4: Attach the bracket for the rear wheels (item 7) to the rear panel on the machine using the two M10x20 hexagon bolts (item 6) and washers.

Step 5: In order to move the table router, the machine must be lifted and the rear wheel axle (item 8) engaged in the holder (item 7).

Fitting the suction hose

Tips and recommendations

The chip and dust extraction system must guarantee a minimum capacity of 690 m^3/h at a minimum flow speed of 20 m/s.

Step 1: Secure the suction hose to the extraction connection on the machine housing using a hose clamp. Secure the other end of the suction hose to the intake nozzle on the extraction system using a hose clamp.

7.3 Electrical connection

DANGER!

Risk of death from electric shock!

There is a danger of life in case of contact with current running through components. Switched on electrical components can execute uncontrolled movements and lead to severe injuries.

- Work on the electrical installation must always be carried out by a qualified electrician.
- Check the electrical connection cables regularly for damage. Make sure that the machine is disconnected from the power supply before performing any maintenance work!
- Electrical connection cables must comply with the regulations applicable in the relevant country.

ATTENTION!

The three phases must be connected in such a way that the cutter moves in the rotational direction indicated on the housing.

If you wish to change the rotational direction, the phase sequence of the motor must be changed by an authorised electrician.

When connecting the cable to the power supply, make sure that the cable properties (voltage, mains frequency, fuse protection) match the information on the rating plate and for the motor.

Step 1: Make sure that the Table router is switched off.

Step 2: Connect the machine to the mains power supply and check the rotational direction of the motor. If the rotational direction is incorrect, two phases must be exchanged.

The motor is equipped with a thermal protection system that switches off the motor automatically in the event of an overload. The motor can be switched on again after a suitable cooling period.

8 Operating the Table router

WARNING!

- Only instructed and experienced personnel are allowed to operate the Table router.
- The operator must not work on the machine when under the influence of alcohol, drugs or medication.
- The operator must not work on the machine when overtired or suffering from fatigue or illnesses that affect concentration.
- The machine must only ever by operated by one person at any one time. Other persons must not enter the working area during operation.

CAUTION!

Risk of crushing!

Working on the machine improperly poses a risk of injury to the upper limbs.

CAUTION!

The table router must always be operated in conjunction with an extraction system (see "Fitting the suction hose" in Chapter 7.2).

Wear ear protection!

Wear safety goggles!

Wear safety shoes!

Wear protective clothes!

8.1 Setting the cutter speed

The machine is equipped with a belt drive. In order to change the cutter speed, the drive belt can be routed over different belt pulleys.

Step 1: Make sure that the machine is switched off and the mains plug is disconnected.

Step 2: Open the housing door on the machine by loosening the two bolts.

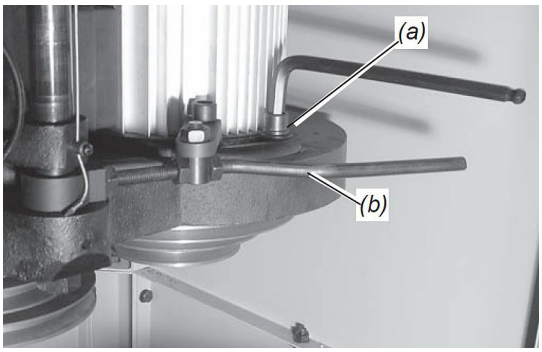

Fig. 26: Slackening the belt tension

Step 3: Loosen the M12x40 hexagon socket bolt (item a, Fig. 31) and slacken the belt tension using the lever (b).

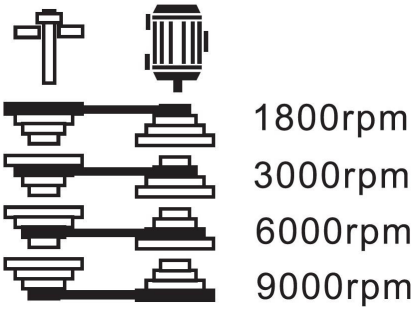

Fig. 27: Belt configurations for different cutter speeds

Step 4: Place the belt over the pulley combination that achieves the required cutter speed.
The following speeds are possible:
1800 rpm, 3000 rpm, 6000 rpm, 9000 rpm.
The corresponding belt positions are shown in Fig. 27.

Step 5: Tension the belt using the lever (b) and then tighten the hexagon socket bolt (a).

Step 6: Check the belt tension by gently pressing the centre of the belt. The belt should not deflect more than 1/4 of the pulley diameter. Re-tighten the belt, if necessary.

Step 7: Close the door on the machine housing and tighten the bolts.

8.2 Adjusting the spindle height

Step 1: Check that the machine is switched off and the mains plug is disconnected.

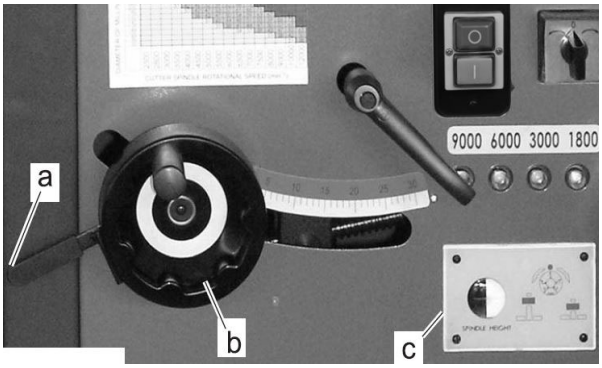

Fig. 28: Adjusting the spindle height

Step 2: Release the clamping lever (a) on the handwheel for adjusting the spindle height.

Step 3: Make sure the working environment is clean. The fence, table and milling tool must be cleaned.

Step 4: Use the handwheel (b) (Fig. 28) to adjust the vertical position of the cutter.
Raise = turn anti-clockwise
Lower = turn clockwise

Make sure that the cutter does not come into contact with the cover or fence. The scale (c) (Fig. 28) to the right of the handwheel indicates the position of the cutter.

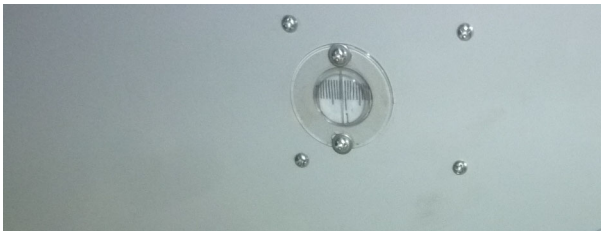

Fig. 29: Scale for adjusting the cutter height

Step 5: Tighten the clamping lever (a) again to secure the spindle at the selected height.

8.3 Adjusting the spindle inclination

Step 1: Check that the machine is switched off and the mains plug is disconnected.

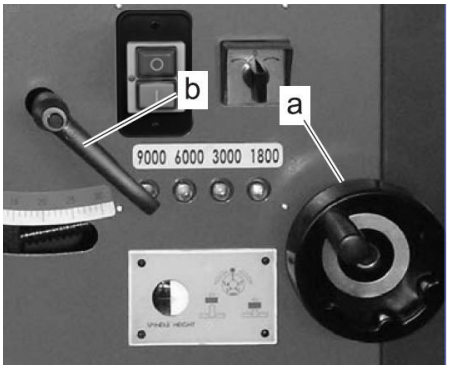

Fig. 30: Adjusting the inclination of the spindle

Step 2: Release the clamping lever (b) (Fig. 30).

Step 3: Make sure the working environment is clean. The fence, table and milling tool must be cleaned.

Step 4: Use the handwheel (b) (Fig. 30) to adjust the inclination of the spindle.

Make sure that the cutter does not come into contact with the cover or fence. The scale (Fig. 31) above the height adjustment handwheel indicates the inclination of the cutter.

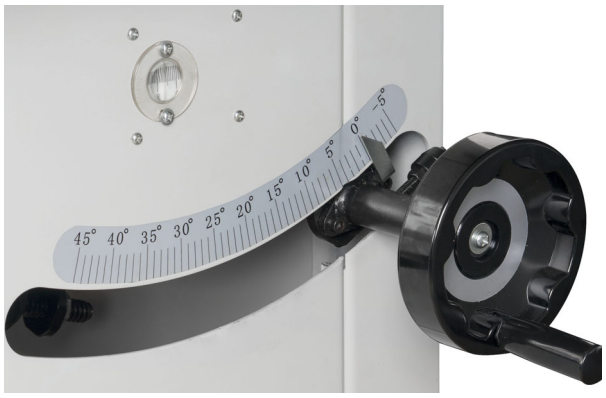

Fig. 31: Scale for adjusting the inclination

Step 5: Tighten the clamping lever (b) again.

8.4 Selecting the rotational direction of the cutter

The rotational direction of the cutter can be selected using the rotational direction switch. Always feed the workpiece in the opposite direction to the rotational direction of the milling tool.

The switch has an interlocking mechanism that prevents the switch from changing the rotational direction directly.

Fig. 32: Rotational direction switch

Before the switch (item A, Fig. 32) can be used, the lock (item B, Fig. 32) must be moved in the direction of the required switch position. This unlocks the switch position for the other rotational direction and prevents the switch from moving to the position of the original rotational direction.

ATTENTION!

Before changing the rotational direction, switch off the machine and stop the motor.

Step 1: Check the rotational direction of the milling tool. The default rotational direction is anti-clockwise when viewing the tool from above. The corresponding switch position is indicated by the anti-clockwise rotational direction arrow.

Step 2: Before the rotational direction can be changed, the lock must be moved in the direction of the relevant switch position.

Step 3: Set the switch to the relevant position.

8.5 Adjusting the fence

The fence consists of two sections. Each section of the fence can be adjusted individually.

Step 1: Check that the machine is switched off and the mains plug is disconnected.

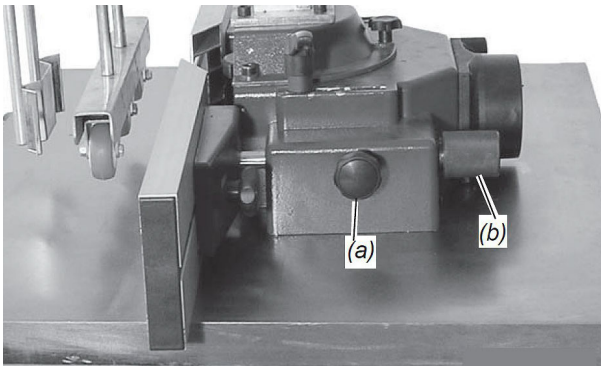

Fig. 33: Adjusting the fence

Step 2: Loosen the M8x25 clamping screw (a) (Fig. 33) and adjust the fence to the required position using the screw (b).

Step 3: Tighten the clamping screw (a) once the fence is in the correct position.

8.6 Adjusting the pressure rollers

The pressure rollers and fence hold the workpiece in position during the cutting process.

Step 1: Check that the machine is switched off and the mains plug is disconnected.

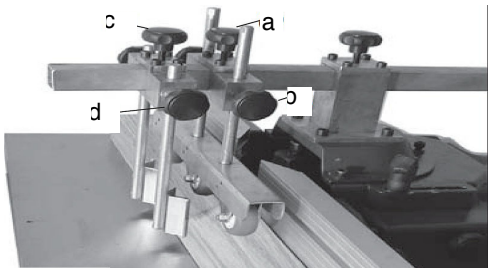

Fig. 34: Adjusting the pressure rollers and fence

Step 2: Loosen clamping screws (a) and (b), place the pressure rollers on the workpiece and align them centrally.

Step 3: Tighten clamping screw (a), push the rollers down onto the workpiece and then tighten clamping screw (b).

Step 4: Loosen clamping screws (c) and (d), and guide the fence towards the workpiece.

Step 5: Tighten clamping screws (c) and (d).

8.7 Working procedure

CAUTION!

- Before starting work, check that the distance between the milling cutters and the fence/work table is approx. 4 mm to 8 mm.
- Do not machine short workpieces of less than 30 cm without using special fixtures. You must always make absolutely sure that the workpiece is secured properly.
- Perform multiple short passes and avoid removing too much material in one pass.

Step 1: Make all the adjustments on the machine required for the cutting or grinding process and then connect the extraction system.

Step 2: Insert the mains plug into the socket.

Step 3: Switch on the extraction system.

Step 4: Start the machine by pressing the green START button and check the rotational direction of the cutter. If the cutter is rotating in the wrong direction, switch off the machine and change the rotational direction.

Step 5: Place the workpiece in position and carry out the milling process.

Step 6: After completing the milling task, switch off the machine by pressing the red STOP button and disconnect the mains plug. Switch off the extraction system.

8.8 Grinding

CAUTION!

Only perform grinding operations at a spindle speed of 1800 [rpm].

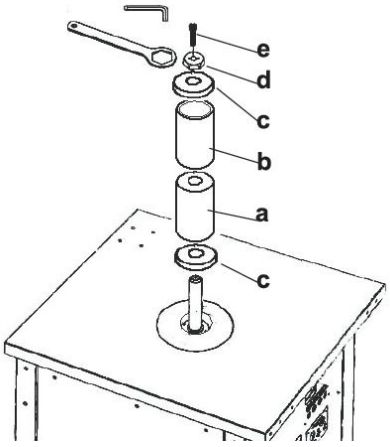

Fig. 35: Grinding

Step 1: Remove the protective cover and the pressure rollers

Step 2: Set the spindle to the highest position.

Step 3: First slide a washer (c) onto the spindle.

Step 4: Insert the grinding drum (a) into the grinding sleeve (b) and slide the two components onto the spindle.

Step 5: Slide the second washer (c) onto the spindle and secure the safety flange (d) with the M12x25 cylinder head screw (e).

9 Care, maintenance and overhaul/ repair

DANGER!

Risk of death from electric shock!

There is a danger of life in case of contact with current running through components. Switched on electrical components can execute uncontrolled movements and lead to severe injuries.

- Before starting any cleaning and maintenance work, switch off the machine and disconnect the mains plug!
- Connections and repairs of the electrical equipment may only be carried out by specialized electrical staff.

9.1 Care at the end of work

Wear suitable protective gloves!

NOTE!

Never use strong cleaning agents in order to clean the device. Such cleaning agents might damage or destroy the device.

Step 1: Disconnect the mains plug from the socket.

Step 2: Empty and clean the extraction system.

Step 3: Clean any chips and milling dust from the machine using compressed air (caution: wear safety goggles and a dust mask!).

Step 4: Protect all unpainted metal surfaces by spraying with anti-rust spray or lubricating accordingly.

Step 5: Oil the shaft, gears and bearings.

Step 6: Check the machine for damage to the safety devices and cutter. If necessary, carry out or arrange for repairs to be carried out according to the safety instructions.

Step 7: Check the machine regularly for the following:

- Appropriate tension of the drive belt
- Loose screws, bolts and nuts
- Worn or damaged switches
- Worn or damaged cutter

Step 8: Check the drive belt every 3 months, or monthly if used daily, and replace if worn or damaged.

9.2 Maintenance and repair

Maintenance and repair works must only be performed by specialists.

If the Table router does not work properly, please contact your specialist dealer.

Immediately reassemble all protective and safety equipment after completing repair and maintenance work on the device.

9.2.1 Functional test

Die Tischfräse is delivered ready for operation.

A functional test should be carried out prior to each use, during which the rotational direction of the milling tool must be checked.

The drive belt must be tensioned sufficiently using the tensioning lever (item 56, Fig. 38 or Fig. 44).

9.2.2 Extraction

Check that the extraction system is functioning correctly on a daily basis. If the extraction system stops working or only functions to a limited extent, it must be repaired. Only then can it be operated with die Tischfräse.

9.2.3 Lubrication

Lubricate the gears, bearings and guides regularly. Lubricate the slide rails with grease and oil the shafts.

9.2.4 Changing the drive belt

The drive belt must not come into contact with oil or grease and must be checked regularly for wear, cracks or brittleness. If necessary, replace the drive belt at least once a year.

Replace the belt as follows:

Step 1: Check that the machine is switched off and the mains plug is disconnected.

Step 2: Open the machine cover.

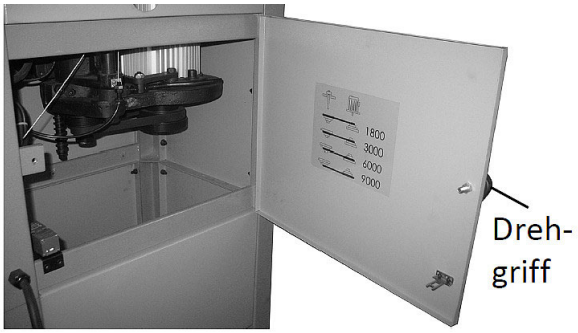

Fig. 36: Opening the cover

Step 3: Loosen the bolt (item a) and pull out the tensioning lever (item b).

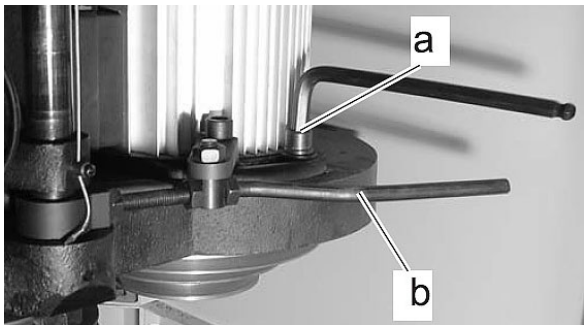

Fig. 37: Loosening the belt

Step 4: Remove the belt.

Step 5: Insert a new belt and align according to the belt pulley grooves.

Step 6: Push the tensioning lever (item b) back in and tighten the bolt (item a).

Step 7: Check if the belt tension is correct. (sag of approx. 1/4")

Step 8: Turn the belt pulley by hand to ensure it is running correctly.

Step 9: Close the cover again.

10 Disposal, recycling of used devices

In your own interest and for the benefit of the environment, please always dispose of any machine components at designated and approved facilities.

10.1 Decommissioning

Immediately decommission used machines in order to avoid later misuse and endangering of the environment or of persons.

Step 1: Eliminate all environmentally hazardous operating materials from the used device.

Step 2: If required, disassemble the machine into easy-to-handle and usable components and parts.

Step 3: Supply the machine components and operating materials to the provided disposal routes.

10.2 Disposing of electrical devices

Please note that electrical devices contain a large number of recyclable materials as well as environmentally hazardous components. Please ensure that these components are disposed of separately and professionally. In case of doubt, please contact your local municipal waste management authority.
If appropriate, call on the help of a specialist waste disposal company for the treatment of the material.

10.3 Disposal of lubricants

The manufacturer of the lubricant makes the disposal instructions for the used lubricants available.
If necessary, request the product-specific data sheets.

10.4 Disposal via municipal collection facilities

Disposal of used electrical and electronic components (Applicable in the countries of the European Union and other European countries with a separate collecting system for those devices).

The sign on the product or on its packing indicates that the product must not be handled as common household waste, but that is needs to be disposed of at a central collection point for recycling. Your contribution to the correct disposal of this product will protect the environment and the health of your fellow humans. Incorrect disposal constitutes a risk to the environment and public health. Recycling of material will help reduce the consumption of raw materials.
For further information about the recycling of this product, please contact your District Office, municipal waste collection centre or the shop where you purchased the product.

11 Troubleshooting

Malfunction	Possible cause	Solution
Motor power inadequate.	1. Power supply inadequate. 2. Damaged/faulty line coils. 3. Fault on the main switch. 4. Mains power supply overloaded.	Disconnect the machine from the power supply, allow the motor to cool down and connect the machine to a different mains power supply. If necessary, have the machine's electrical system checked by qualified personnel.
Motor is getting hot.	1. Motor protection switch is faulty. 2. Motor overload 3. Blunt/damaged milling tool	1. Disconnect the mains plug and have the machine repaired by qualified personnel. 2. Allow the motor to cool and restart at a later time. 3. Sharpen or replace the milling tool.
Reduced motor power, excessive heat development on the workpiece during the cutting process.	1. Blunt, damaged or deformed milling tool	1. Replace the milling tool.
Handwheels are difficult to turn.	1. Dirt or chips have accumulated in the machine or are blocking the handwheel.	1. Clean and lubricate the machine.
Strong machine vibrations.	1. Machine is located on an uneven floor surface. 2. Damaged components, e.g. V-belt or milling tool. 3. Loose components such as bolts, screws, or nuts.	1. Adjust levelling feet on the machine. 2. Replace damaged components. 3. Tighten loose components.
Motor does not start.	1. Faulty fuses. 2. Damaged cable or switch. 3. Motor protection switch has triggered.	1. Have qualified personnel replace the faulty fuses. 2. Have qualified personnel repair the damage. 3. Rectify the cause of the triggering and activate the circuit breaker again.
Machine does not switch on.	1. Faulty condenser. 2. Loose or damaged cable connections. 3. Contacts on the main switch faulty, or possibly burnt through.	Have qualified personnel check the machine's electrical system.
Circuit breaker trips frequently or fuses are repeatedly faulty.	1. Motor overload. 2. Fuses or circuit breakers are faulty or insufficiently dimensioned (e.g. after a repair). 3. Faulty main switch. 4. Blunt, damaged or deformed milling tool	1. Set the feed to a slower setting. 2. Have qualified personnel check the fuses or circuit breakers, and replace them, if necessary. 3. Have repaired by qualified personnel. 4. Replace the milling tool.
Milling tool generates high level of noise.	1. Loose screws, nuts or bolts (possible fault on motor) 2. Milling tool is damaged. 3. Damaged drive belt.	1. Check that motor is seated securely, tighten screws, nuts or bolts. (have the motor repaired or replaced, if necessary) 2. Replace the milling tool. 3. Replace the belt.

12 Spare parts

DANGER!

Danger of injury by the use of wrong spare parts!

Dangers may result for the user and damages as well as malfunctions may be caused by using wrong or damaged spare parts.

- Only use original spare parts of the manufacturer or spare parts admitted by the manufacturer.
- Always contact the manufacturer in case of uncertainties.

Tips and recommendations

The use of non-approved spare parts will void the manufacturer's warranty.

12.1 Ordering spare parts

Spare parts can be purchased from specialist dealers.

Specify the following basic information when ordering or enquiring about spare parts:

- Type of device
- Item No.
- Position No.
- Year of construction:
- Quantity
- Required mode of dispatch (mail, freight, sea, air, express)
- Address of dispatch

Spare part orders which do not include the above indications may not be taken into consideration. If the indications regarding the mode of dispatch are missing, the product is dispatched at the discretion of the supplier.

Refer to the rating plate on the compressor for information on the device type, item number, and year of manufacture.

Example

The front wheel for the Table router TF 190 E must be ordered. In spare parts drawing 6, the number assigned to the front wheel is 2.

When ordering spare parts, send a copy of the spare parts drawing (6) with marked component (front wheel) and marked item number (2) to the authorised dealer or spare parts department together with the following information:

- Device type: **Table router TF 190 E**
- Item number: **5901921**
- Spare parts drawing: **6**
- Position No.: **2**

In case of service, the following drawing shall help to identify the necessary spare parts. Send a copy of the parts drawing with the marked components to your authorised dealer when ordering spare parts.

12.2 Spare part drawings TF 190 E

Spare parts drawing 1

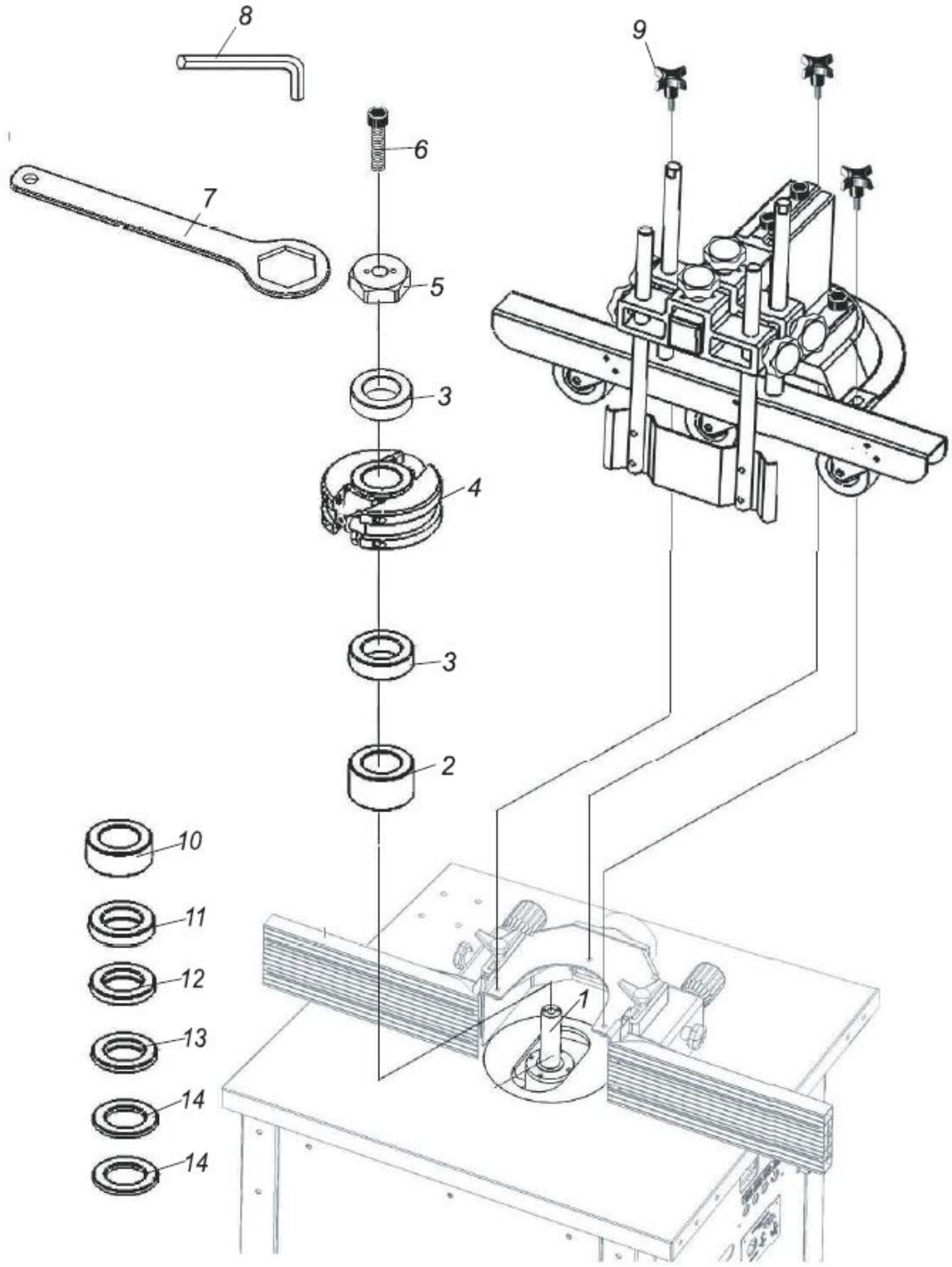

Fig. 38: Spare parts drawing 1 - Table router TF 190 E

Spare parts drawing 2

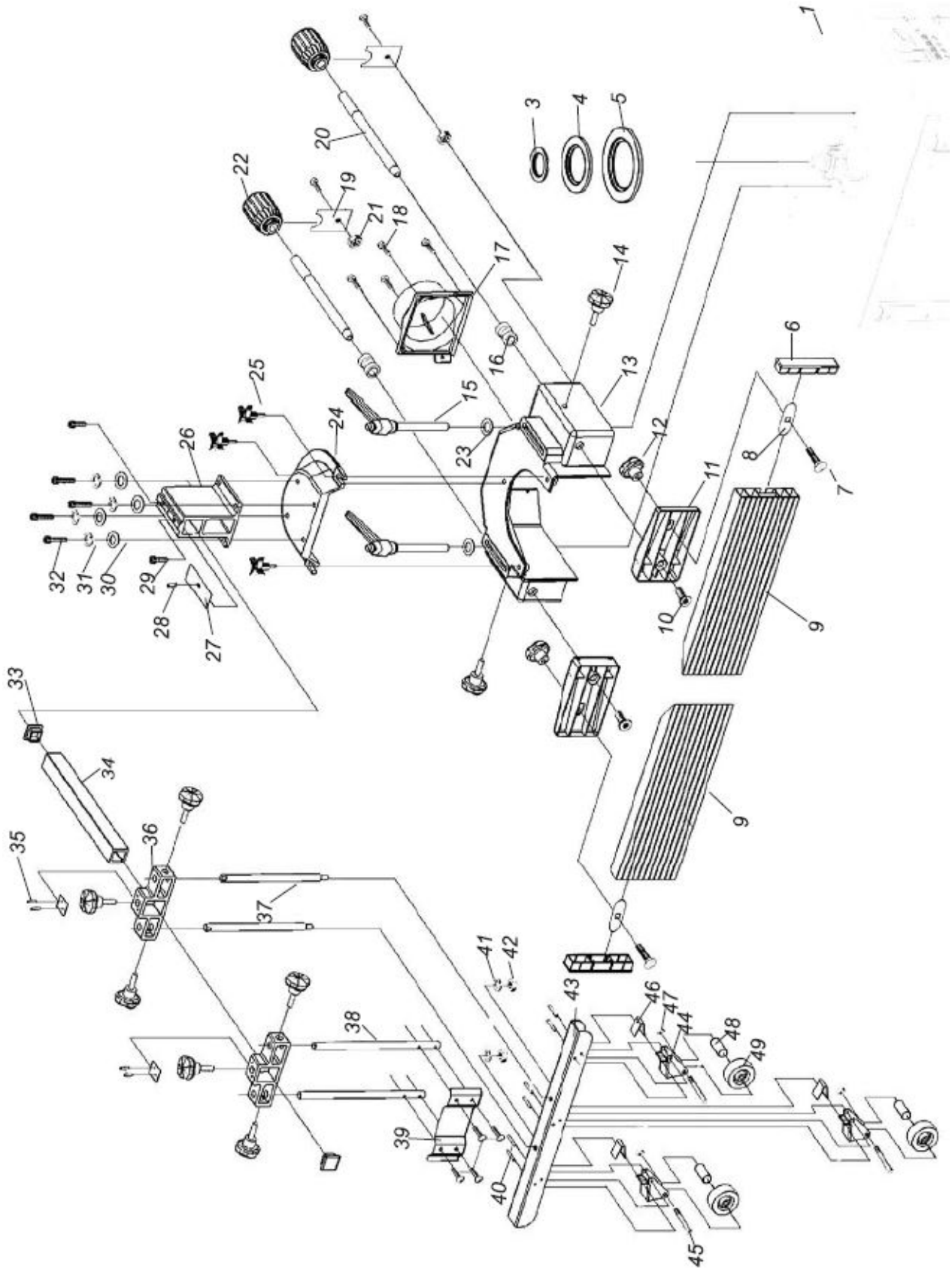

Fig. 39: Spare parts drawing 2 - Table router TF 190 E

Spare parts drawing 3

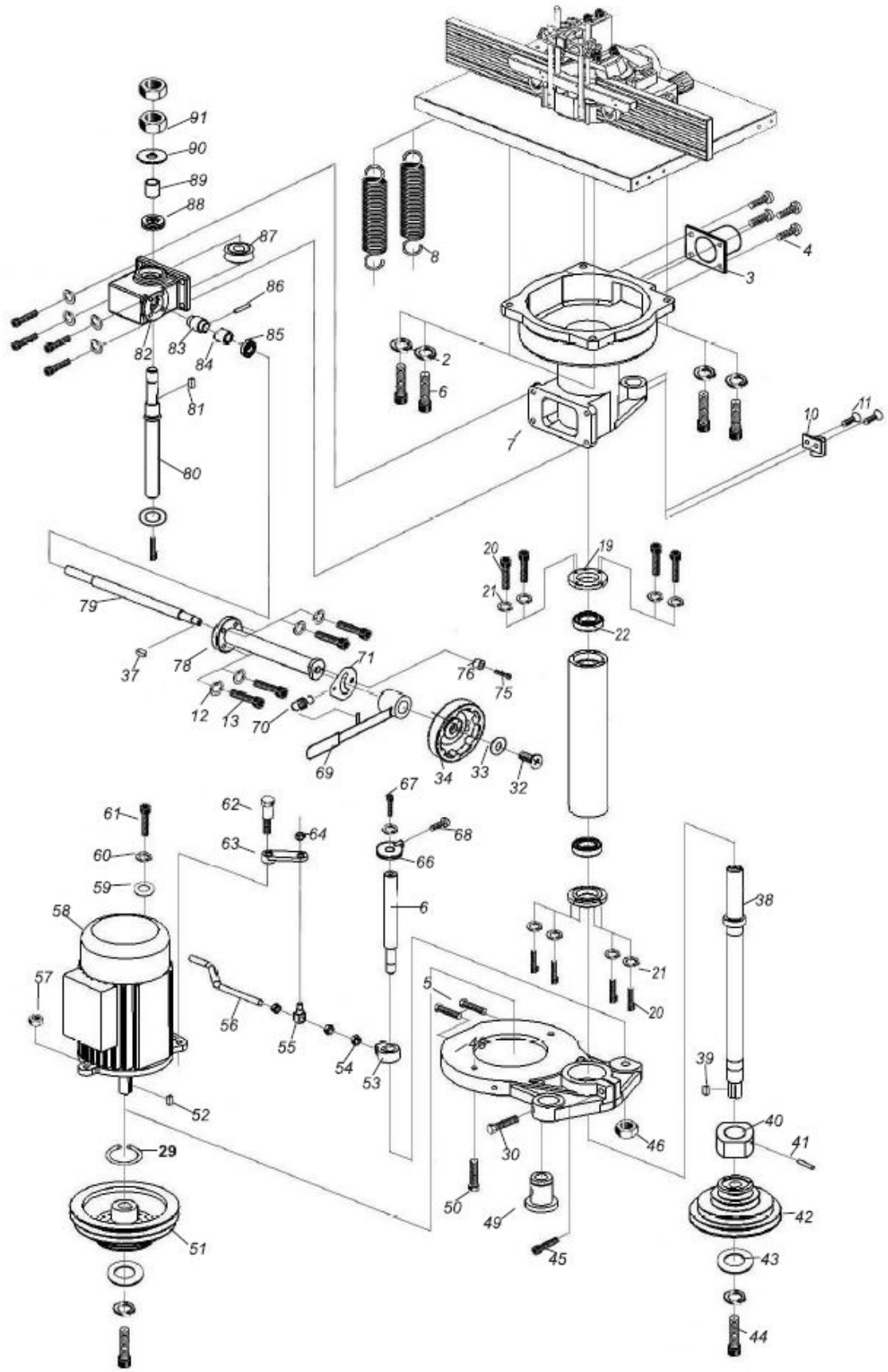

Fig. 40: Spare parts drawing 3 - Table router TF 190 E

Spare parts drawing 4

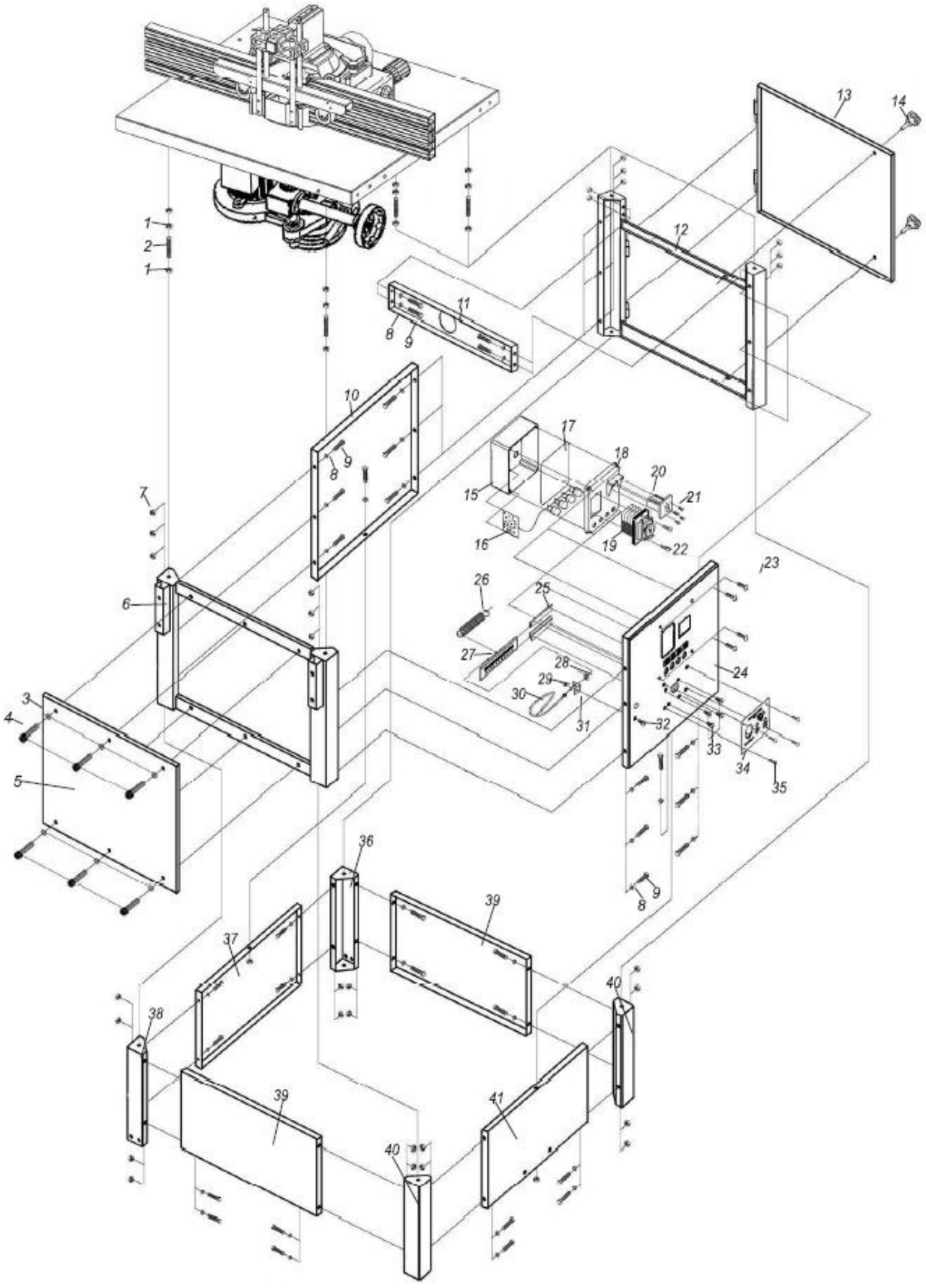

Fig. 41: Spare parts drawing 4 - Table router TF 190 E

Spare parts drawing 5

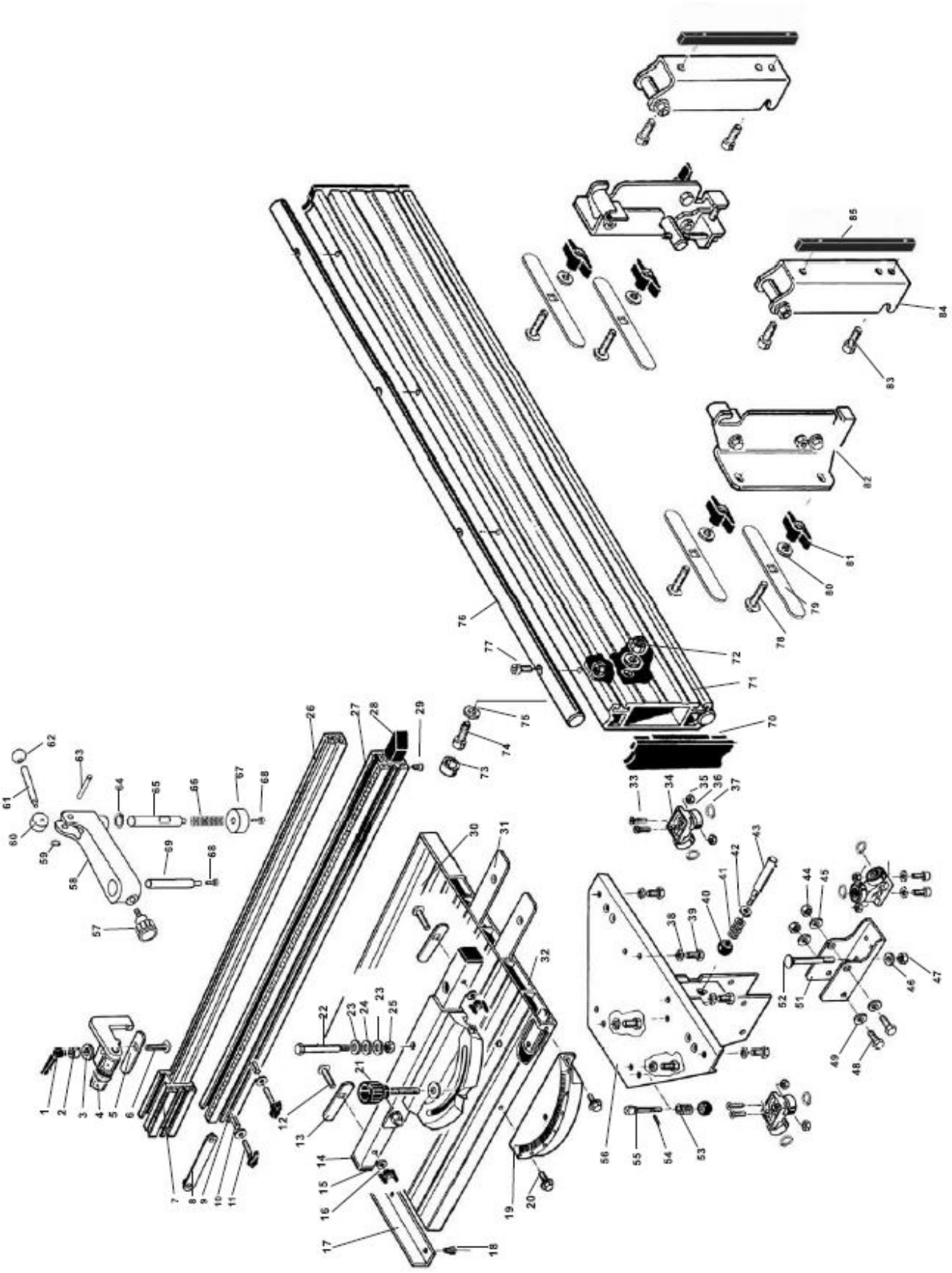

Fig. 42: Spare parts drawing 5 - Table router TF 190 E

Spare parts drawing 6

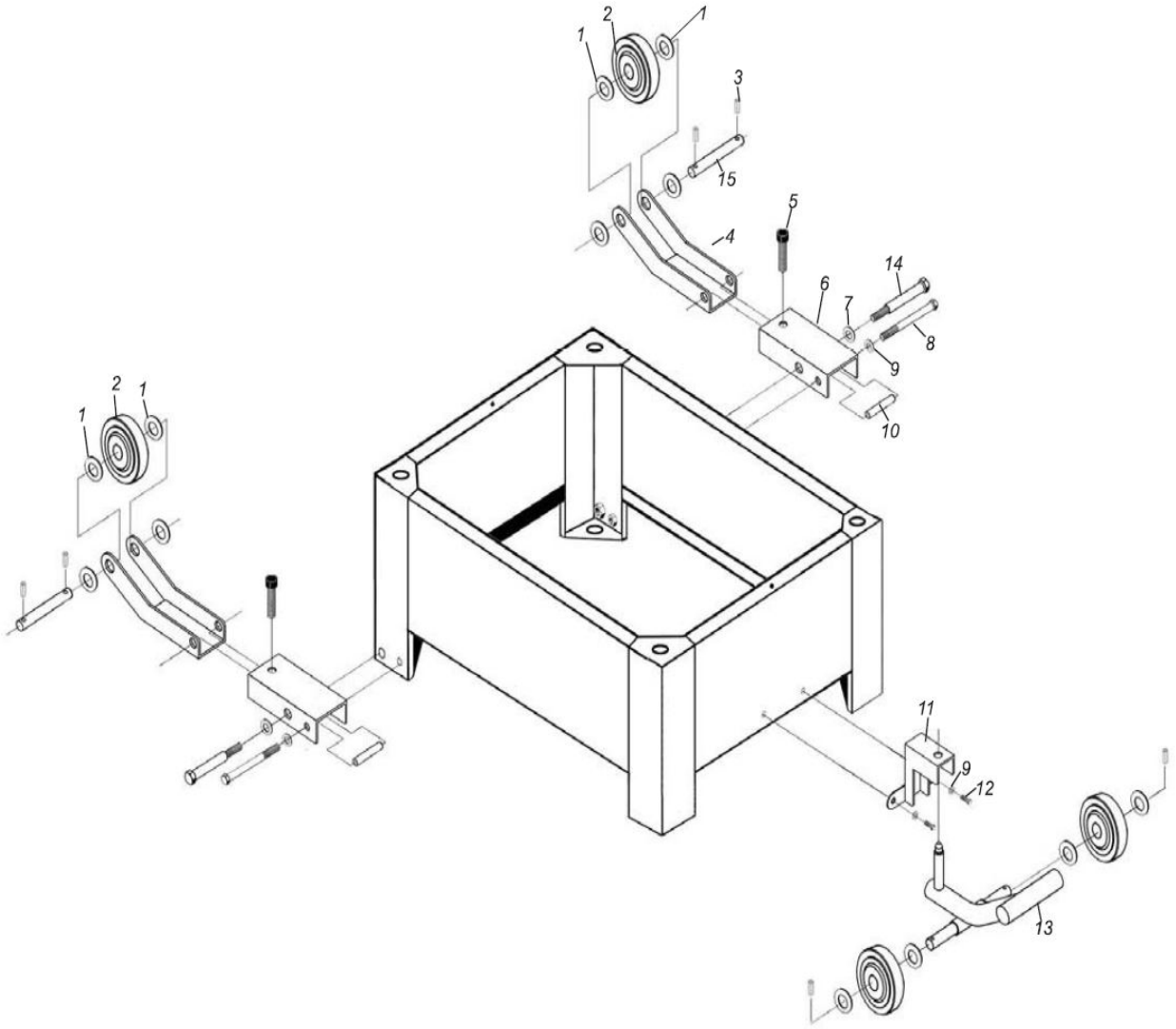

Fig. 43: Spare parts drawing 6 - Table router TF 190 E

12.3 Spare part drawings TF 190 SE

Spare parts drawing 1

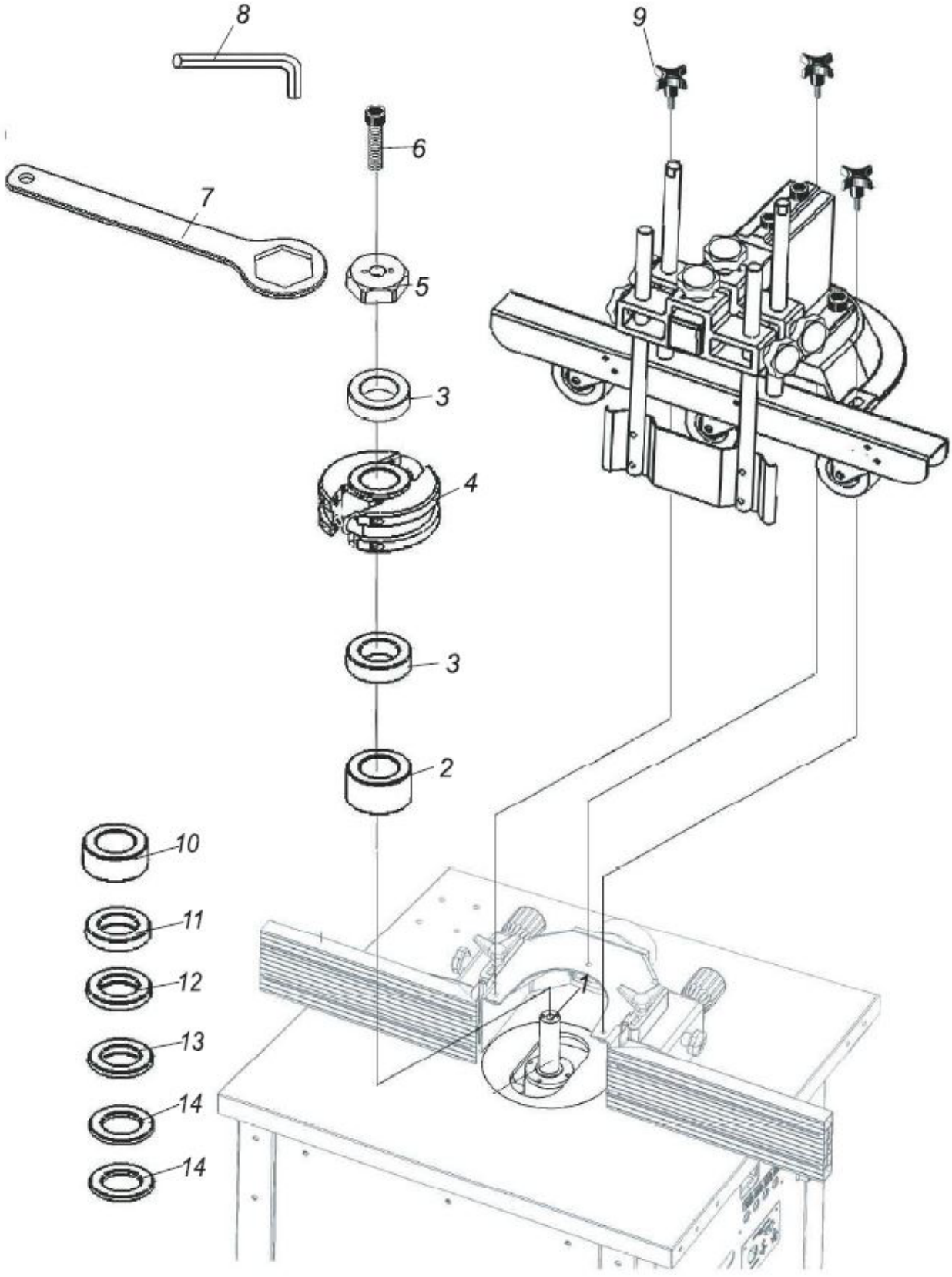

Fig. 44: Spare parts drawing 1 - Table router TF 190 SE

Spare parts drawing 2

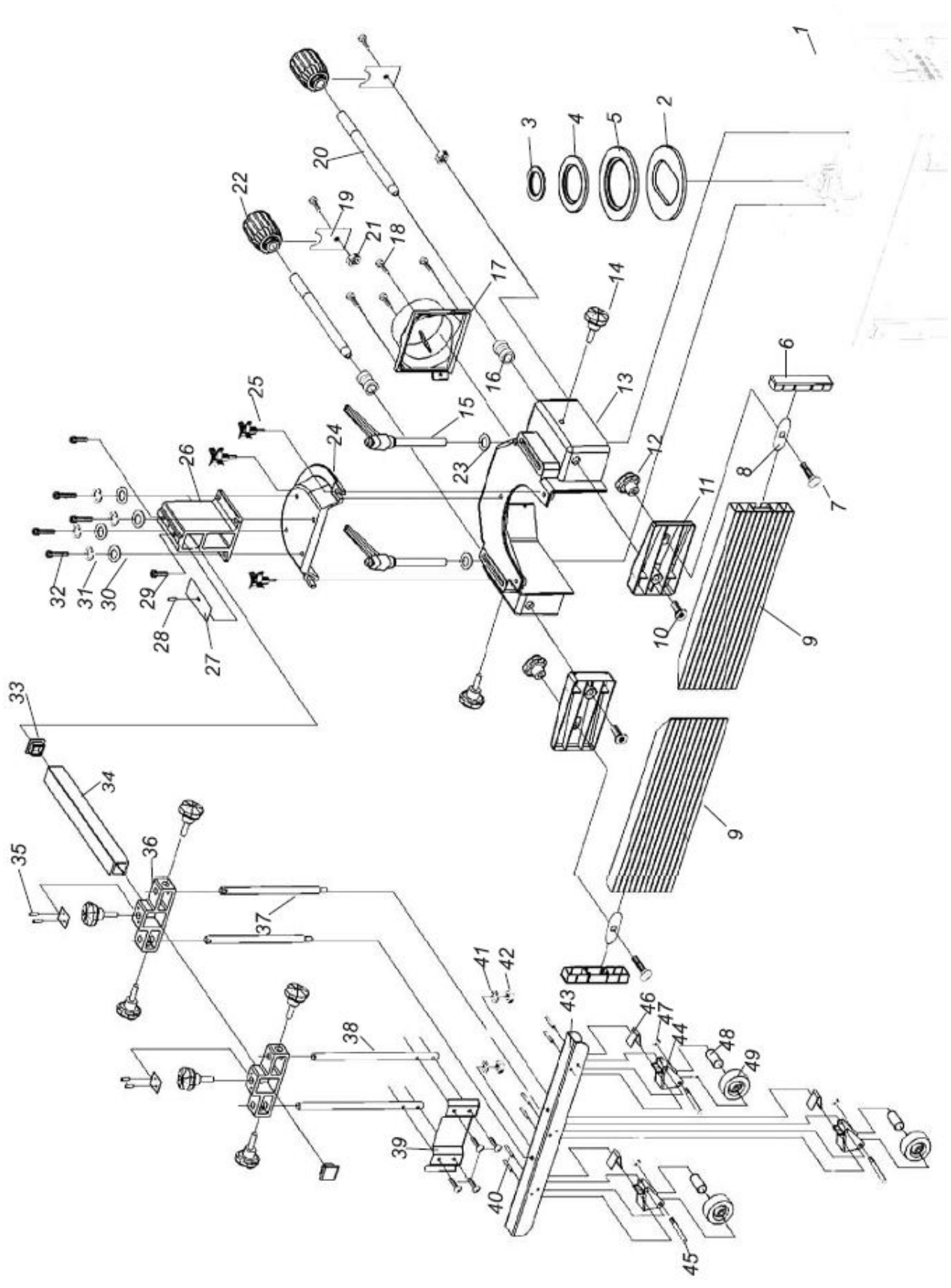

Fig. 45: Spare parts drawing 2 - Table router TF 190 SE

Spare parts drawing 3

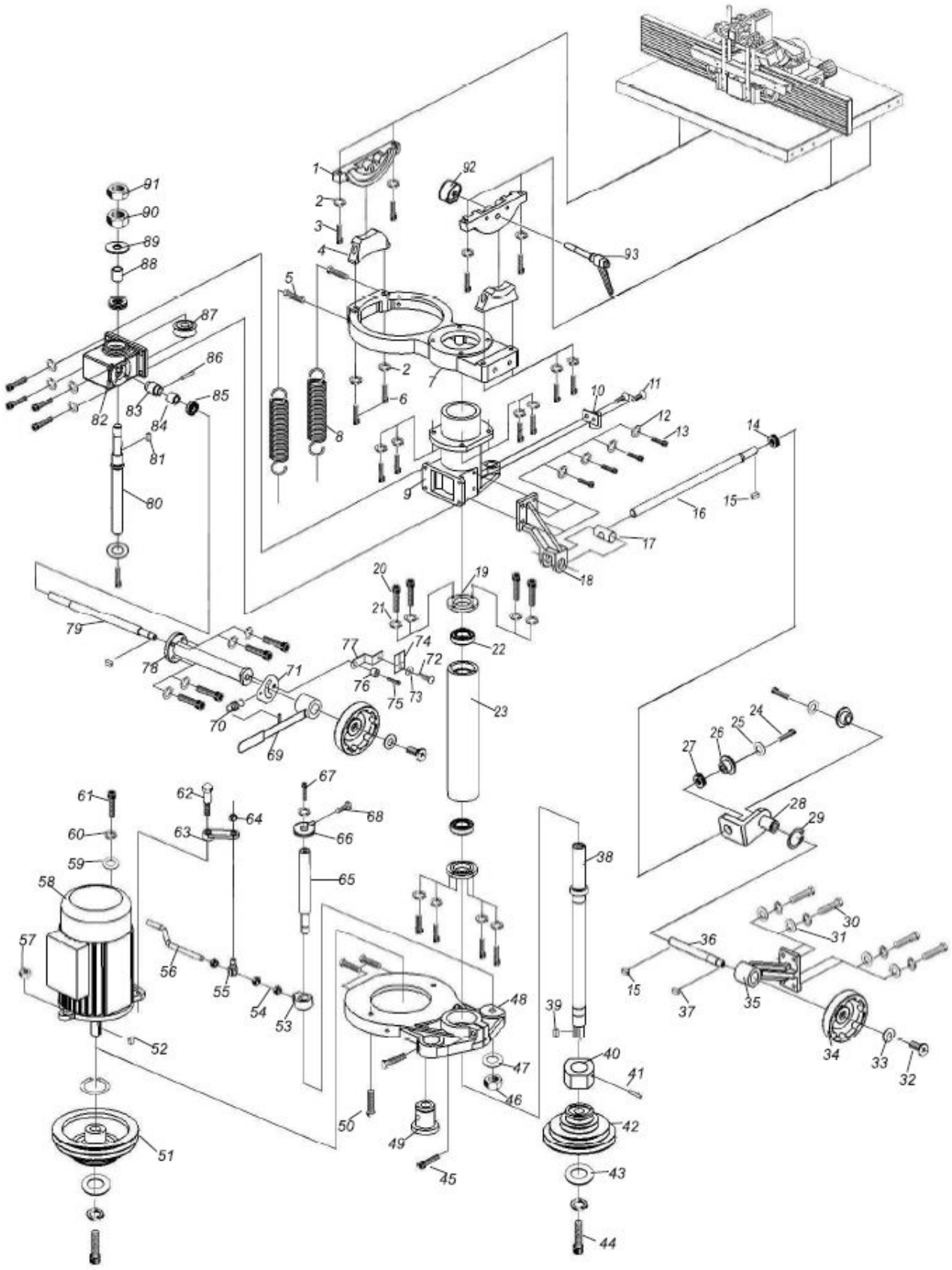

Fig. 46: Spare parts drawing 3 - Table router TF 190 SE

Spare parts drawing 4

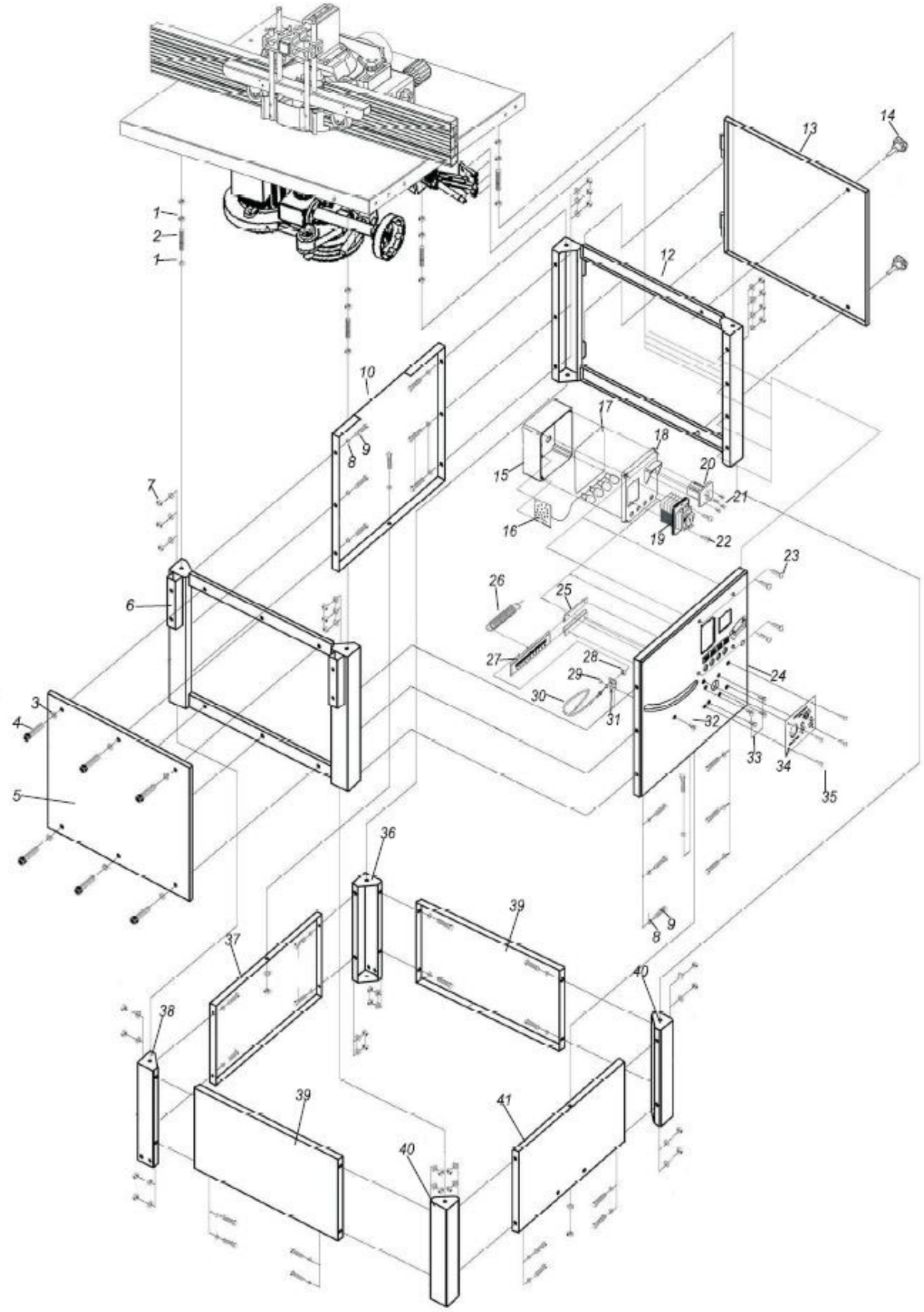

Fig. 47: Spare parts drawing 4 - Table router TF 190 SE

Spare parts drawing 5

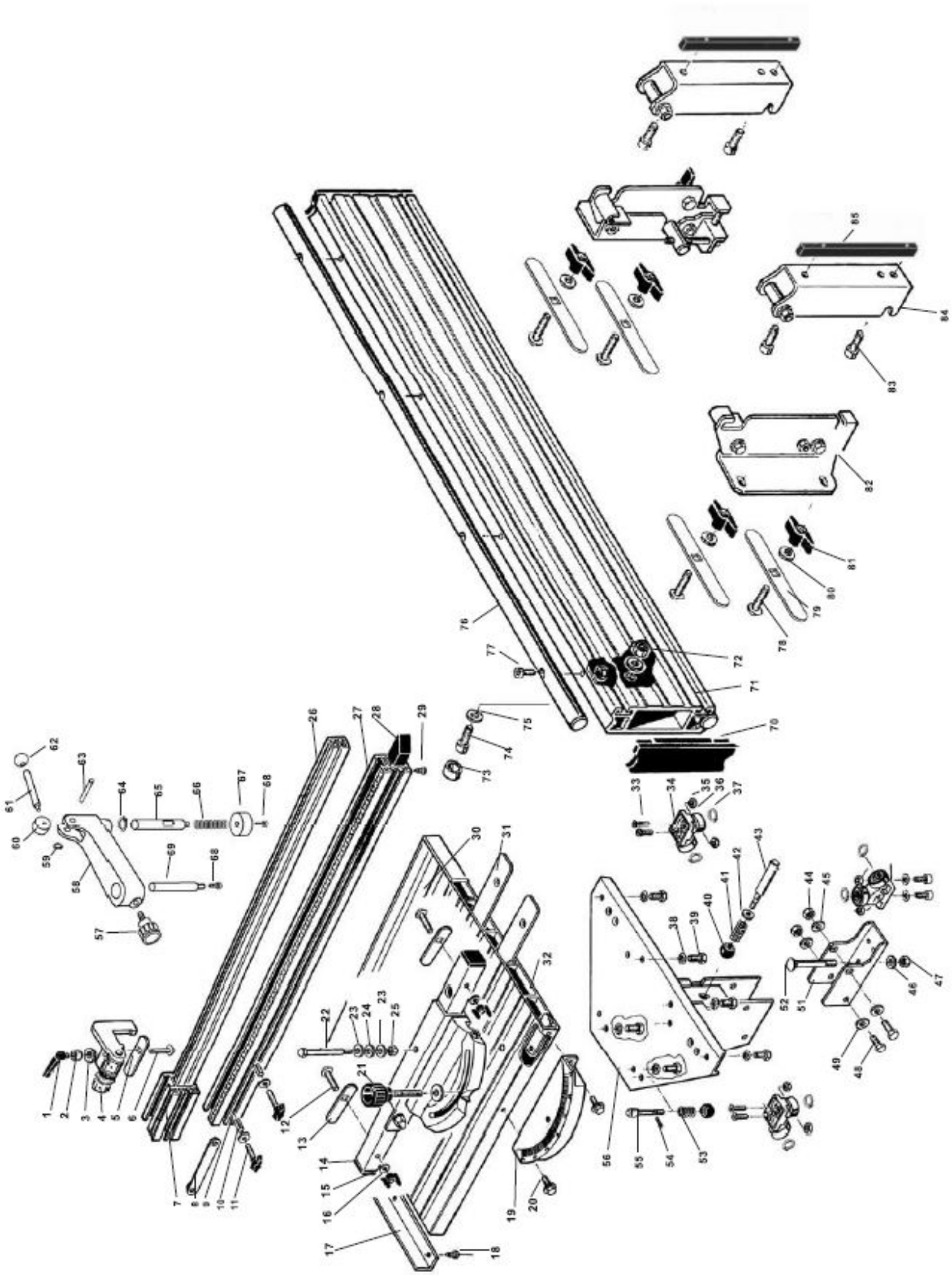

Fig. 48: Spare parts drawing 5 - Table router TF 190 SE

Spare parts drawing 6

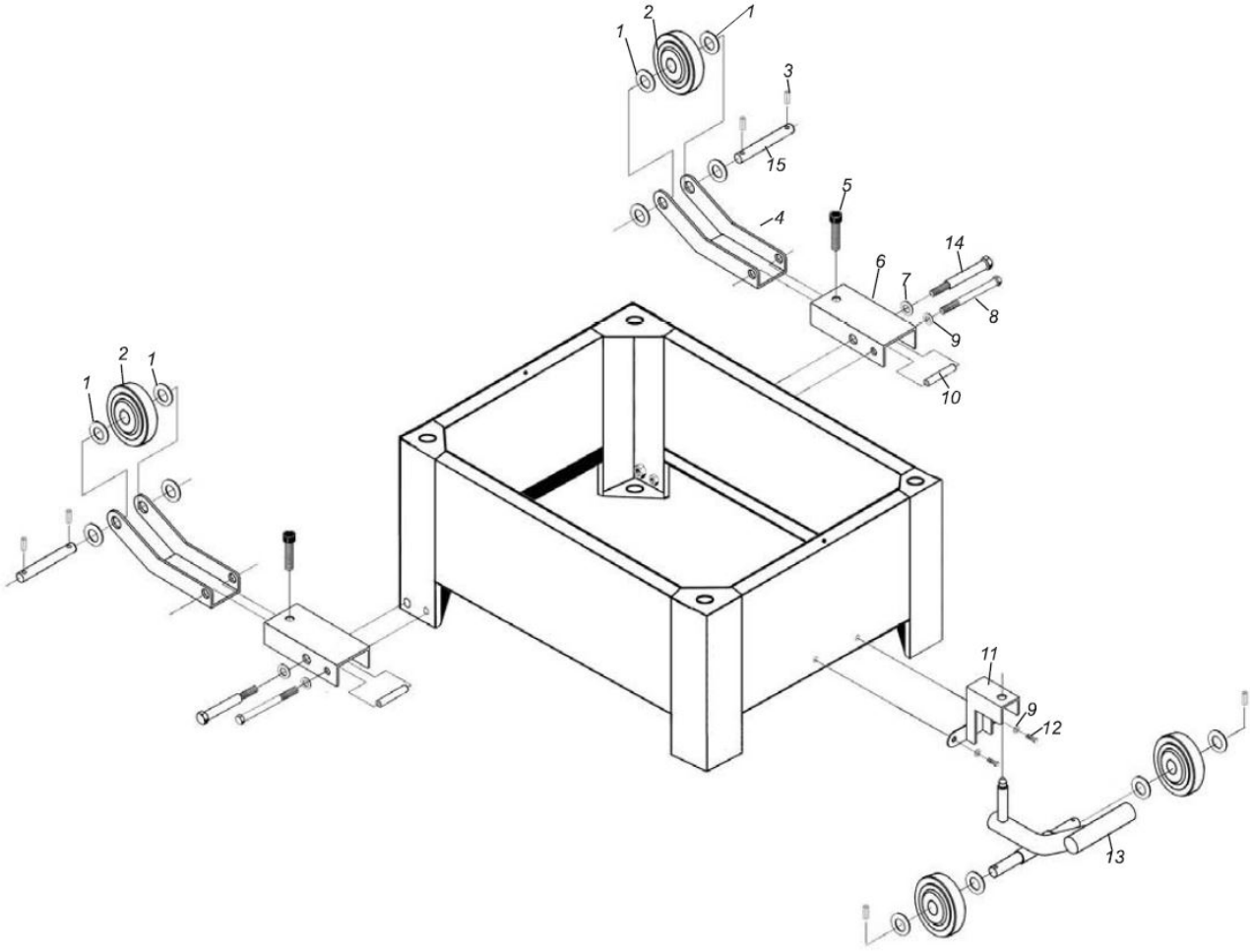

Fig. 49: Spare parts drawing 6 - Table router TF 190 SE

13 Electrical circuit diagrams

13.1 Electrical circuit diagram for 230 V models

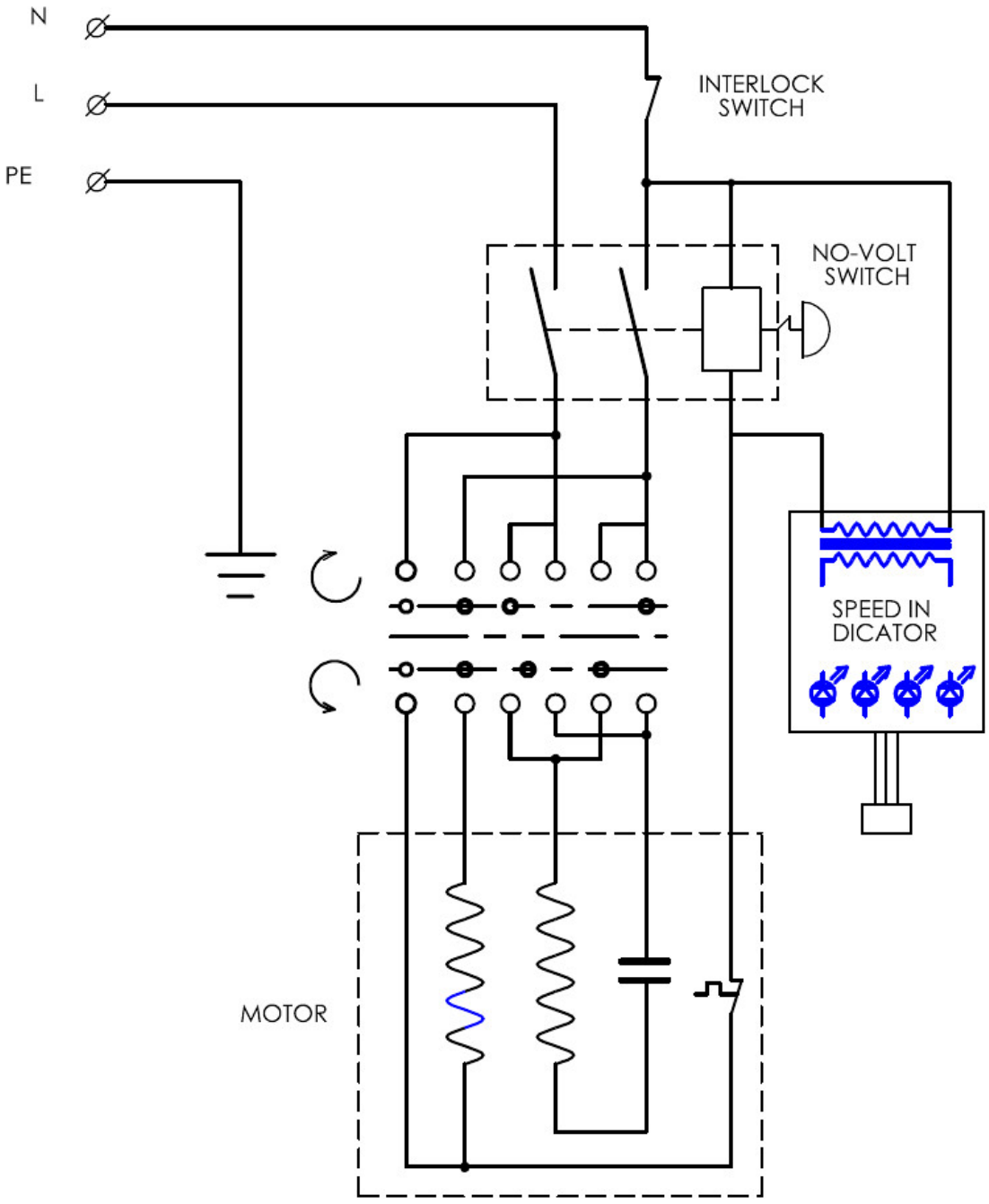

Fig. 50: Electrical circuit diagram for 230 V models

13.2 Electrical circuit diagram for 400 V models

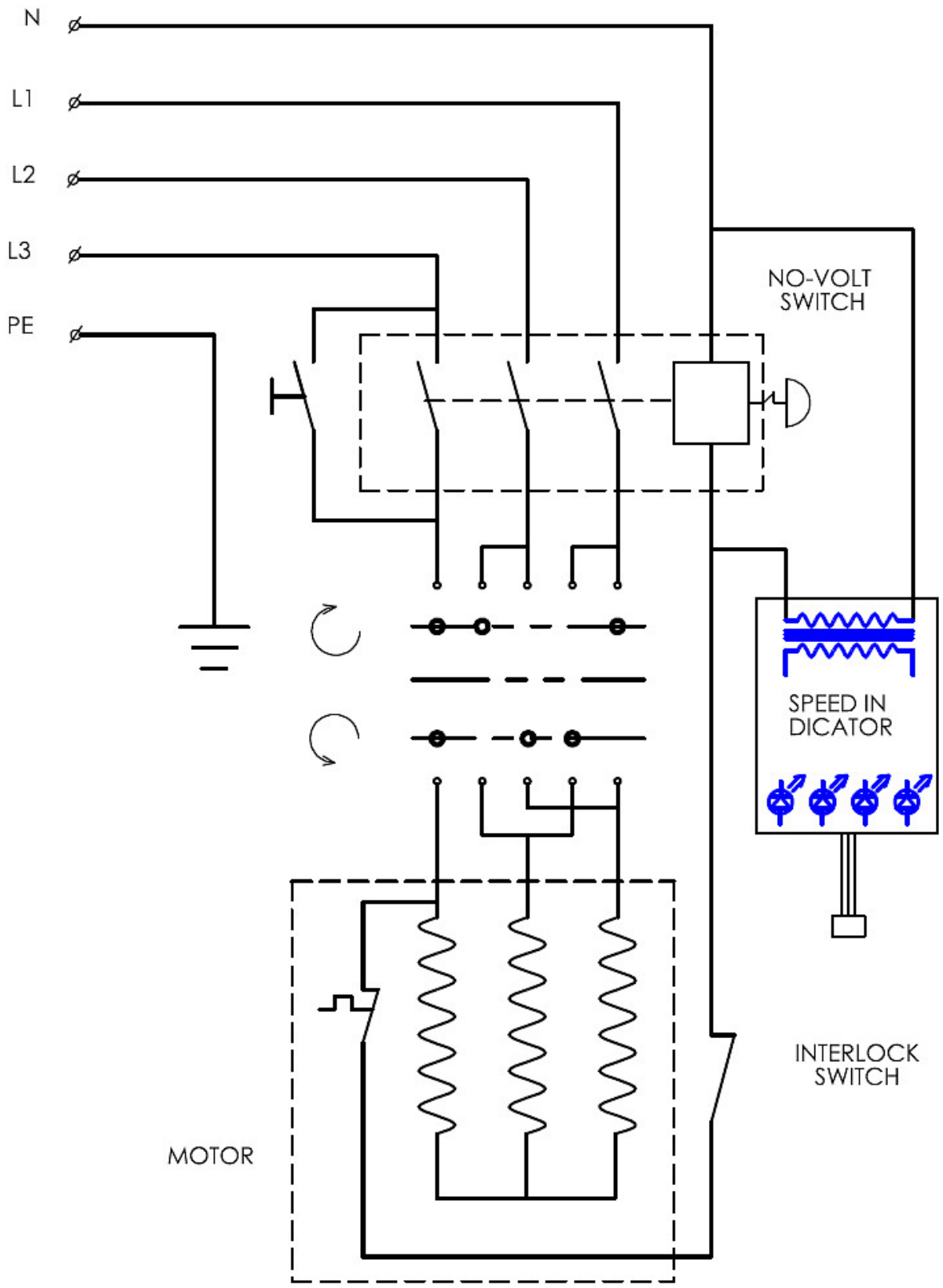

Fig. 51: Electrical circuit diagram for 400 V models

14 EU Declaration of Conformity

According to Machinery Directive 2006/42/EC, Attachment II 1.A

Manufacturer/distributing company: Stürmer Maschinen GmbH
Dr. Robert-Pfleger-Str. 26
D-96103 Hallstadt, Germany

hereby declares that the following product

Product group: Holzstar® woodworking machines

Machine type: Table router

Machine designation *:	**Item number *:**
☐ TF 190 E - 230 V	☐ 5901921
☐ TF 190 E - 400 V	☐ 5901923
☐ TF 190 SE - 230 V	☐ 5901931
☐ TF 190 SE - 400 V	☐ 5901933

Serial number *: _____

Year of manufacture *: 20_____

* Fill in these fields with the information on the rating plate

complies with all relevant provisions of the above mentioned directive as well as the other applied directives (below) - including their applicable modifications at the time of the declaration.

Applicable EU Directives:	2014/30/EU	EMC Directive
	2012/19/EU	WEEE Directive
	2011/65/EU	RoHS Directive
Applicable EU regulations:	1907/2006/EU	REACH regulation

The following harmonised standards were applied:

DIN EN 60204-1:2019-06	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
DIN EN ISO 19085-1:2018-02	Woodworking machines - Safety - Part 1: General requirements
DIN EN ISO 19085-6:2018-04	Woodworking machines - Safety - Part 6: Single spindle vertical moulding machines
DIN EN 55014-1:2018-08	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
DIN EN 55014-2:2016-01	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity
DIN EN IEC 61000-3-2:2019-12	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (input current ≤ 16A per phase)
DIN EN 61000-3-3:2020-07	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

Person responsible for the documentation: Kilian Stürmer, Stürmer Maschinen GmbH,
Dr.-Robert-Pfleger-Str. 26, D-96103 Hallstadt, Germany

Hallstadt, 2021-06-14

Kilian Stürmer
Manager

CE


stürmer
OPTIMUM