

SC 1600 - SC 320 - SC 3200 - SC 3200B

PANEL SAW

3650090 GB 003

INSTRUCTIONS

SPARE PARTS



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WOODWORKING MACHINERY

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ENCLOSURES TO THE INSTRUCTION MANUAL:

- SPARE PARTS DIAGRAMS
- DRAWINGS AND PICTURES



These symbols are applied on the machine and contained in this manual to indicate where there is danger of accident.

1 - SKILLED PERSONNEL



By skilled personnel we mean people who know the procedures for installation, assembly, repair and maintenance of the product and who are in possession of the respective technical qualifications as required by law, for example:

- technical training or instruction authorizing them to install and dismantle, to make earth connections and to mark circuits and electrical appliances in conformity with the technical safety standards.
- technical training or instruction, in compliance with technical protection standards, concerning the maintenance and use of safety appliances.

IMPORTANT

Read this instruction manual thoroughly before starting to set up the machine. Do not stop learning these concepts until you are working and do not allow unskilled or unsuitably trained people work with the machine.

For future reference the documents containing the instructions for use must be kept in a place where they may be easily found for consultation.

2 - MACHINE IDENTIFICATION

This instruction manual for use and maintenance refers to
SQUARING CIRCULAR SAWS

with a MAX diameter of 400.

The machine identification plate, stating name and address of the manufacturer, serial number, technical data on the motors installed, model, MAX weight is fixed to the rear base of the machine.

3 - GUARANTEE



It is advisable not to carry out any repair or job not stated in this instruction manual.

All operations (e.g. disassembly - repair of parts of the machine) marked by the symbol under the title must be carried out only either by the manufacturer's technicians or by technicians appointed by the manufacturer.

The manufacturer offers a six-month guarantee, which starts from the time when the machine is started up on the user's premises.

The manufacturer's guarantee does not cover any electrical part.

4 - TECHNICAL DATA

4.1 - TECHNICAL FEATURES

SC 1600 - CE

SQUARING CIRCULAR SAW WITH TILTING BLADE

- CARRIAGE DIMENSIONS	385 X 1600 mm
- CARRIAGE STROKE	1800 mm
- SQUARING CAPACITY WITH CUTTER	1660 X 2700 mm
- MINIMUM DIMENSIONS OF PART TO BE WORKED	50 X 300, 2 mm THICK
- BLADE ANGLE	90°-45°
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 90°	130 mm
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 45°	90 mm
- CUTTING WIDTH BETWEEN BLADE AND SQUARE	1050 mm
- MAX. BLADE DIAMETER	400 mm
- MIN. BLADE DIAMETER	250 mm
- BLADE SHAFT DIAMETER	30 mm
- BLADE ROTATION SPEED	3200 - 4000 - 6000 RPM
- MOTOR POWER	4 KW (5.5 HP)
- NET WEIGHT	KG. 705

MACHINE COMPLETE WITH:

- ALUMINIUM ALLOY CARRIAGE
- CARRIAGE AND ANODIZED PROFILES
- SQUARING CARRIAGE WITH TELESCOPIC EXTENSION AND RAPID PROFILE POSITIONING AT 90-15-22.5-30-45 DEGREES
- ELECTRICAL MOVEMENTS FOR BLADE LIFTING AND TILTING
- ELECTRONIC BLADE TILTING DISPLAY
- AUTOMATIC DELTA STAR START
- PARALLELOGRAM WITH PROTECTION HOOD COMPLETE WITH EXTRACTION MOUTH DIAM. 80 mm, EASY TO USE WITH THE MAIN BLADE AND CUTTING BLADE POSITIONED AT 90° AND 45°.
- 3 DIVIDING KNIVES FOR USE WITH BLADE DIAM. 250 mm, DIAM. 300 mm AND DIAM. 350-400 mm
- WORKTOP EXTENSION
- SPEED DISPLAY WITH PILOT LIGHTS
- MICROSWITCH ON THE SPEED CHANGE PLANE
- MICROSWITCH ON THE BLADE PROTECTIVE CASING
- 1 PART PUSHER
- 1 HANDLE FOR BOARD
- MAIN BLADE SHAFT WITH ANTI-ROTATION PINS
- SELF-BRAKING MOTOR
- LOW VOLTAGE ELECTRIC SYSTEM WITH FUSES
- SLIDE FOR BLOCKING IRREGULARLY SHAPED PARTS

ON REQUEST:

- CUTTING UNIT:
- * BLADE DIAMETER 125 mm
- * BLADE SHAFT DIAMETER 20 mm
- * ROTATION SPEED 8000 RPM
- * MOTOR POWER 0.5 KW (0.75 HP)
- EXTERNAL CUTTING ADJUSTMENT
- ADJUSTABLE PROTRACTOR SQUARE 0° - 45°
- WOOD PRESSING DEVICE WITH ECCENTRIC MOVEMENTS
- WOOD PRESSING DEVICE WITH SCREW AND ECCENTRIC MOVEMENTS
- PLANE FOR PARALLEL CUTS
- DOUBLE PRECISION METRIC SQUARE FOR ANGLE CUTS
- SQUARE OPENING ON THE PLANE INCREASED TO 1250 mm OR 1500 mm
- ELECTRONIC DISPLAY OF SQUARE POSITION ON THE PLANE
- ALUMINIUM ALLOY CARRIAGE SLIDING ON HIGH-PRECISION HARDENED STEEL GUIDES L=1800 mm
- PROTRACTOR SQUARE ON CARRIAGE +30°/-45°
- RECTIFIED PLANE
- CONNECTION FOR EXTRACTION SYSTEM WITH SINGLE COUPLING DIAM. 140
- LASER UNIT
- HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- ADJUSTABLE DOUBLE HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- HARD METAL BLADE DIAM. 300 mm
- HARD METAL BLADE DIAM. 350 mm
- HARD METAL BLADE DIAM. 400 mm
- MOTOR 7.5 HP (5.5 KW)
- MOTOR 10 HP (7.5 KW)

SC 320 - CE

SQUARING CIRCULAR SAW WITH TILTING BLADE

- CARRIAGE DIMENSIONS	285 X 3000 mm
- CARRIAGE STROKE	2900 mm
- SQUARING CAPACITY WITH CUTTER	2800 X 3000 mm
- MINIMUM DIMENSIONS OF PART TO BE WORKED	50 X 300, 2 mm THICK
- BLADE ANGLE	90°-45°
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 90°	130 mm
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 45°	90 mm
- CUTTING WIDTH BETWEEN BLADE AND SQUARE	1050 mm
- MAX. BLADE DIAMETER	400 mm
- MIN. BLADE DIAMETER	250 mm
- BLADE SHAFT DIAMETER	30 mm
- BLADE ROTATION SPEED	3200 - 4000 - 6000 RPM
- MOTOR POWER	4 KW (5.5 HP)
- NET WEIGHT	KG.790

MACHINE COMPLETE WITH:

- ALUMINIUM ALLOY CARRIAGE SLIDING ON HARDENED STEEL GUIDES
- CARRIAGE AND ANODIZED PROFILES
- SQUARING CARRIAGE WITH TELESCOPIC EXTENSION
- PARALLELOGRAM WITH PROTECTION HOOD
COMPLETE WITH EXTRACTION MOUTH DIAM. 80 mm,
EASY TO USE WITH THE MAIN BLADE AND CUTTING
BLADE POSITIONED AT 90° AND 45°.
- 3 DIVIDING KNIVES FOR USE WITH BLADE
DIAM. 250 mm, DIAM. 300 mm AND DIAM. 350-400 mm
- WORKTOP EXTENSION
- SPEED DISPLAY WITH PILOT LIGHTS
- MICROSWITCH ON THE SPEED CHANGE PLANE
- MICROSWITCH ON THE BLADE PROTECTIVE CASING
- 1 PART PUSHER
- 1 HANDLE FOR BOARD
- MAIN BLADE SHAFT WITH ANTI-ROTATION PINS
- SELF-BRAKING MOTOR
- LOW VOLTAGE ELECTRIC SYSTEM WITH FUSES
- SLIDE FOR BLOCKING IRREGULARLY SHAPED PARTS

ON REQUEST:

- CUTTING UNIT:
- * BLADE DIAMETER 125 mm
- * BLADE SHAFT DIAMETER 20 mm
- * ROTATION SPEED 8000 RPM
- * MOTOR POWER 0.5 KW (0.75 HP)
- EXTERNAL CUTTING ADJUSTMENT
- WOOD PRESSING DEVICE WITH SCREW AND ECCENTRIC MOVEMENTS
- WOOD PRESSING DEVICE WITH ECCENTRIC MOVEMENTS
- PLANE FOR PARALLEL ANGLE CUTS
- UNIT FOR RAPID POSITIONING AT 90-15-22.5-45 DEGREES OF THE SQUARING CARRIAGE PROFILE
- SQUARE OPENING ON THE PLANE INCREASED TO 1250 mm OR 1500 mm
- ELECTRONIC DISPLAY OF SQUARE POSITION ON THE PLANE
- PROTRACTOR SQUARE 0°-45°
- PROTRACTOR SQUARE ON CARRIAGE +30°/-45°
- ALUMINIUM ALLOY CARRIAGE SLIDING ON HARDENED STEEL GUIDES L = 2600 mm
- RECTIFIED PLANE
- CONNECTION FOR EXTRACTION SYSTEM WITH SINGLE COUPLING DIAM. 140
- LASER UNIT
- HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- ADJUSTABLE DOUBLE HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- HARD METAL BLADE DIAM. 300 mm
- HARD METAL BLADE DIAM. 350 mm
- HARD METAL BLADE DIAM. 400 mm
- MOTOR 7.5 HP (5.5 KW)
- MOTOR 10 HP (7.5 KW)

SC 3200B - CE / SC3200 - CE

SQUARING CIRCULAR SAW WITH TILTING BLADE

- CARRIAGE DIMENSIONS	385 X 3200 mm
- CARRIAGE STROKE	3400 mm
- SQUARING CAPACITY WITH CUTTER	3260 X 3000 mm
- MINIMUM DIMENSIONS OF PART TO BE WORKED	50 X 300, 2 mm THICK
- BLADE ANGLE	90°-45°
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 90°	130 mm
- CUTTING HEIGHT WITH BLADE DIAM. 400 AT 45°	90 mm
- CUTTING WIDTH BETWEEN BLADE AND SQUARE	1050 mm
- MAX. BLADE DIAMETER	400 mm
- MIN. BLADE DIAMETER	250 mm
- BLADE SHAFT DIAMETER	30 mm
- BLADE ROTATION SPEED	3200 - 4000 - 6000 RPM
- MOTOR POWER	4 KW (5.5 HP)
- NET WEIGHT	KG. 840

MACHINE COMPLETE WITH:

- ALUMINIUM ALLOY CARRIAGE
- CARRIAGE AND ANODIZED PROFILES
- SQUARING CARRIAGE WITH TELESCOPIC EXTENSION AND RAPID PROFILE POSITIONING AT 90-15-22.5-30-45 DEGREES
- PARALLELOGRAM WITH PROTECTION HOOD COMPLETE WITH EXTRACTION MOUTH DIAM. 80 mm, EASY TO USE WITH THE MAIN BLADE AND CUTTING BLADE POSITIONED AT 90° AND 45°.
- 3 DIVIDING KNIVES FOR USE WITH BLADE DIAM. 250 mm, DIAM. 300 mm AND DIAM. 350-400 mm
- WORKTOP EXTENSION
- SPEED DISPLAY WITH PILOT LIGHTS
- MICROSWITCH ON THE SPEED CHANGE PLANE
- MICROSWITCH ON THE BLADE PROTECTIVE CASING
- 1 PART PUSHER
- 1 HANDLE FOR BOARD
- MAIN BLADE SHAFT WITH ANTI-ROTATION PINS
- SELF-BRAKING MOTOR

ON REQUEST:

- CUTTING UNIT:
- * BLADE DIAMETER 125 mm
- * BLADE SHAFT DIAMETER 20 mm
- * ROTATION SPEED 8000 RPM
- * MOTOR POWER 0.5 KW (0.75 HP)
- EXTERNAL CUTTING ADJUSTMENT
- ADJUSTABLE PROTRACTOR SQUARE 0°- 45°
- WOOD PRESSING DEVICE WITH ECCENTRIC MOVEMENTS
- WOOD PRESSING DEVICE WITH SCREW AND ECCENTRIC MOVEMENTS
- PLANE FOR PARALLEL CUTS
- DOUBLE PRECISION METRIC SQUARE FOR ANGLE CUTS
- SQUARE OPENING ON THE PLANE INCREASED TO 1250 mm OR 1500 mm
- ELECTRONIC DISPLAY OF SQUARE POSITION ON THE PLANE
- WOOD PRESSING DEVICE WITH ECCENTRIC MOVEMENTS
- ADJUSTABLE PROTRACTOR SQUARE 30°- 45°
- ALUMINIUM ALLOY CARRIAGE L=2600 mm
- ALUMINIUM ALLOY CARRIAGE L=3600 mm
- SECOND SQUARING CARRIAGE
- ALUMINIUM ALLOY CARRIAGE SLIDING ON HARDENED STEEL GUIDES L = 2800 mm
- ALUMINIUM ALLOY CARRIAGE SLIDING ON HARDENED STEEL GUIDES L = 3200 mm
- RECTIFIED PLANE
- CONNECTION FOR EXTRACTION SYSTEM WITH SINGLE COUPLING DIAM. 140
- LASER UNIT
- HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- ADJUSTABLE DOUBLE HARD METAL BLADE DIAM. 125 mm FOR CUTTER
- HARD METAL BLADE DIAM. 300 mm
- HARD METAL BLADE DIAM. 350 mm
- HARD METAL BLADE DIAM. 400 mm
- MOTOR 7.5 HP (5.5 KW)
- MOTOR 10 HP (7.5 KW)
- SLIDE FOR BLOCKING IRREGULARLY SHAPED PARTS
- LOW VOLTAGE ELECTRIC SYSTEM WITH FUSES

4.2 - ELECTRICAL CONNECTION



The connection of the machine to the main power must be carried out by a skilled electrician in accordance with the specifications of the standards in force.

Turn the main switch to "0".

Ensure that the main power line is not under tension before starting to connect the machine.

The manufacturer of the machine is not responsible for general protection against short circuit.

The user must connect the machine to the power line, fitting a set of three fuses. For this purpose the following table shows the recommended values of the fuses which had better be of the type SIEMENS 5SB NEOZED, depending on the power absorbed by the machine and the line voltage.

The same table recommends the minimum wire section to be used for connection. The wire entry is on the rear of the machine.

- The conductors must be connected to the terminals marked:

L1 - L2 - L3

and the yellow and green earth wire to the terminal:

PE

A good earth socket is recommended.

The neutral lead is not connected.

MOTOR		FUSES A		WIRE SECTION	
KW	HP	220 V	380 V	220 V 50 HZ	380 V 50 HZ
4	5,5	35	25	4 mm ²	4 mm ²
5,5	7,5	50	35	4 mm ²	4 mm ²
7,5	10	80	50	6 mm ²	4 mm ²

Start the machine for a few seconds to ensure that the tool is turning in the direction indicated by the arrows on the plate of the casing. If not, switch off the machine, disconnect the power and invert the two phases.

4.3 - SUCTION

Before the machine is started up it must be connected to a suction hood. Make this connection in such a way that the machine itself automatically connects the suction hood.

This may be accomplished, for example, by fitting on the power cable an induction coil suitably connected to the electric system of the suction hood. This alteration to the system is at the user's expense and must be performed by a skilled electrician.

Connect the two extraction mouths diam. 120 mm and diam. 80 mm. to a single point with diameter 138 mm. and connect a flexible pipe with diam. 140 of a type that resists fire.

The suction plant must be able to ensure a capacity of no less than 1200 m³/h with a speed of at least 20 m/sec. The fall in pressure inside the pipe is about 800 Pa.

4.4 - NOISE PRODUCTION VALUES

The noise production values have been measured according to standard CE 1870-1.

- NOISE PRODUCTION LEVEL:

* IDLING

101.1 dB (A)

* WORKING

104.3 dB (A)

- NOISE PRODUCTION VALUES IN THE WORK ENVIRONMENT:

* IDLING

89.9 dB (A)

* WORKING

93.6 dB (A)

- ENVIRONMENTAL FACTOR

K = 4 dB

Attention!

Prolonged exposure to a level higher than 85 dB (A) may cause damage to your health; users are always recommended to make use of suitable personal protection systems (e.g. headphones, ear plugs).

The values shown are production levels and are not necessarily levels for safe working. While there is a relationship between production levels and exposure levels, this may not be used reliably to determine whether any further precautions are necessary. Factors which influence the real level of exposure for workers include the duration of exposure, the characteristics of the buildings, other sources of dust and noise etc., for example the number of machines and other processes being carried out in the vicinity. The allowed level of exposure may also vary from one country to another. However, this information will enable to machine user to make a better assessment of the dangers and risks involved.

5 - DUST PRODUCTION

In this type of machine the only material harmful health is sawdust.

Dust production has been checked by Fachausschluss Holz and is clearly below the currently allowed limit value of 2 mg/m^3 .

- DUST CHECK $< 2 \text{ mg/m}^3$.

6 - UNLOADING AND POSITIONING



Before unloading the machine, check the weights to be lifted by consulting the table of technical features (see index), then remove everything that is on top of the machine which could hamper the operation.

The machine must be unloaded with a crane and slung with strong ropes (better with steel cables) as indicated in (Fig. 1 - 2), or by a fork-lift truck inserting the forks below the base (Fig. 2A). These vehicles must have a lifting capacity higher than the total weight to be unloaded, therefore before proceeding with unloading, check the weights to be lifted in the technical features table (see index). To protect the paint against rubbing, place rags between the ropes or cables and the machine.

Lift the machine slowly, checking balancing, and lay it down gently.

If you do not have access to a crane or other suitable vehicles, or when the loads and dimensions of the machine are not high, it may be unloaded using a chute (Fig. 2B) made of sufficiently strong tables or beams, well anchored to the ground and supported in the middle by trestles. Ensure that the brakes of the truck are firmly applied and check the descent of the machine with cables held constantly taut from the bed of the truck.

Use rollers to transport the machine to its working position.

Place the machine in the indicated position in the work area, see (Fig. 2C), locating it in the place where it is easiest to connect it to the power line and close to a connector for the chipping extraction system.

When working with long pieces you must be sure that there is no danger of crushing the operator between the machine and the fixed parts in the environment around it.

Check levelling, ensuring that the base is evenly laid on the floor, if necessary inserting a rubber strip between the base and the floor to cut down the transmission of vibrations.

Secure the machine to the floor, using the holes provided in the work places, using expansion screws.

In machines of this type there are three working positions:

- position "A" for cutting and squaring with the carriage and the squaring carriage,
- position "B" for cutting with the plane square,
- position "C" with a work place for a second person when cutting long pieces.

7 - ADVICE FOR USE

Squaring circular saws must be used only by people who have been trained in the safe and correct use of the protection devices. These people must also be informed of the risks involved in jobs carried out with squaring circular saws.

- ◆ Our machine has been built exclusively for working with solid wood, panels, laminates and similar materials, for example plastic.
- ◆ All other uses are not covered by the standard. In this case the manufacturer does not accept liability for any damages; the user alone is responsible for the risks involved.
- ◆ The manufacturer's instructions for safety, work and maintenance and the measurements stated in the technical data must be complied with.
- ◆ The appropriate accident-prevention procedures, and the other generally acknowledged technical rules for safety, must be observed.
- ◆ The machine must be used and maintenance and repairs must be carried out only by people who are skilled and are aware of the risks involved. Arbitrary modifications of the machine exclude the manufacturer's liability for any damage that may ensue.
- ◆ The machine must be used only with the manufacturer's original accessories.
- ◆ Despite all the precautions taken, there may still be some risks, such as:
 - overalls or various items of clothing may catch in tools or in other moving parts of the machine;
 - risk of injury with tools;
 - accidental crushing between the guides and the workpieces, or other moving parts of the machine;
 - injuries caused by fragments of tools which may fly through the air as a result of breakage;
 - injuries caused by fragments of workpieces that fly off;
 - injuries caused by the existing pneumatic devices;
 - risk of fire;
 - risks in working on the electrical system;
 - risks due to noise production;
 - risks due to dust.

8 - SAFETY WARNINGS



Failure to observe the safety warnings or improper use of the machine may cause the risk of accident for you and for other people.

- ◆ This machine has been built for normal use in a building for structural work and to offer maximum safety together

with the best performance, but the greatest safety is in your hands.

- ◆ Certain risks are involved in using any machine tools; always bear this in mind.
- ◆ In the event of fire, do not throw jets of water but use powder-based extinguishers.
- ◆ Take the greatest care before starting any job.
- ◆ Work only with all the protection devices in their proper place and in perfect working order.
- ◆ If you stop the machine to regulate it or to remove any part, turn the main switch **Q1** to position "0".
- ◆ Stop the machine completely before cleaning it and before removing any protective guards for maintenance.
- ◆ General cleaning of the machine, of the work top and of the floor around it constitute an important safety factor. Particular care must be taken when cleaning the carriage sliding guides. The chapter on cleaning and lubrication gives details of the operations necessary to ensure good operation of the machine.
- ◆ From your own experience you know that there are various objects on your person that can cause accidents: take off your ring, watch or bracelet; fasten your sleeves firmly at the wrists, take off your tie which could hang down and get caught in various places; long hair must be tied back with suitable accessories; wear sturdy footwear as required and recommended by accident-prevention standards all over the world.
- ◆ Always wear goggles or a protective visor to protect your eyes.
- ◆ Never work on pieces that are too small or too large for the machine capacity, but only on pieces that can rest firmly and be guided safely.
- ◆ Start the work cycle once the tool shaft has reached full speed.
- ◆ If problems arise, stop the machine immediately.
- ◆ Never push away chipping or splinters during work.
- ◆ When cutting short or narrow pieces, use the board or piece pushing device provided.
- ◆ The use of saw blades made of HSS material is not allowed.
- ◆ Never use blades or tools that are cracked or deformed.
- ◆ Never use tools beyond the speed limit marked on them and/or on the tables on the machine.
- ◆ Ensure that all rotating tools are perfectly balanced, well sharpened, accurately keyed on and well secured.
- ◆ Before fitting any tool into its seat or onto the shaft, ensure that the contact surfaces on each face are clean, without dents, and perfectly smooth.
- ◆ Never start the machine without having correctly installed all the protective covers on the tools, the belts, the chains, etc.
- ◆ Fasten the screws, bolts or ring nuts of each tool at the prescribed torque setting, without exceeding the normal values and without using levers or hammering on the spanners.
- ◆ The use of the circular saw for cutting down, tenoning or grooving is prohibited, unless the part of the blade above the table is protected. When it is not possible to perform these operations with the dividing knife and the top protection in position, alternative guards and equipment are required. Inserted cuts and stopped cuts can be made only using machines on which the blade can be raised and lowered with respect to the table and on which suitable stops are provided, fixed onto the table and the guide. The guard must be in position and in contact with the workpiece. The blade must be lifted up through the piece as far as the desired height, the cut is then made and the blade must be lowered before the piece is removed.
- ◆ When the diameter of the shaft is smaller than the diameter of the hole in the saw, flanges supplied by the manufacturer must be used to make up the difference. The use of loose rings or bushes is not allowed.

SAFETY INDICATIONS

- ◆ The machine must be connected to the electric power network by a skilled technician.
- ◆ Work on the electrical system must be carried out only by an electrical technician.
- ◆ All regulating or fitting of tools must be carried out with the tools at a standstill.
- ◆ To eliminate sticking of the workpiece, turn the main switch to "zero" and wait for the tools to stop.
- ◆ Machines with self-braking motors are provided with a long-lasting brake device. If the braking time is longer than the prescribed time, see the chapter on the self-braking motor to adjust it.
- ◆ To ensure safe and effective working, the tool used must be suitable for the material that it is working on.
- ◆ It is of the utmost importance that the tool should turn in the correct direction. The operator must ensure that the material is advancing in the direction opposite the rotation of the blade of the saw.
- ◆ Tools must always be covered up to the cutting edge.
- ◆ The dividing knife and the blade protection must always be used.
- ◆ If the bakelite insert on the worktop is damaged it must be replaced. The usable space between the blade and the carriage and between the blade and the bakelite insert must always be as provided by the manufacturer.
- ◆ When working on the machine a safe guide for working the piece must be provided (see the chapter on examples of working).
- ◆ Accurately check the conditions of each piece of wood before working. There is a risk of the piece coming back if the wood has knots, splits or foreign bodies, such as nails.
- ◆ Never lean your hand at the other side of the blade, there is the risk that the piece of wood might come back, drawing your hand towards the tool.
- ◆ In all cutting jobs where there is the possibility of pieces coming back, anti-return devices must be used.

9 - CHOOSING THE BLADES

The tools to be used must be built in compliance with European standard prEN 847-1. Considering the characteristics of the machine, we advise always using blades with tungsten carbide teeth.

- Maximum external blade diameter 400 mm.
- Minimum 250 mm.
- Hole diameter 30 mm.
- Cutter external diameter 125 mm.

- Hole diameter 20 mm. or 22 mm.

When choosing the number of teeth on the blade, consider the type of material to be cut, its thickness and the desired finish.

A medium or low number of teeth is suitable for cutting solid material with large dimensions; a high number of teeth is suitable for cutting thin and highly resistant material (veneered panels).

High speed gives a good finish but it needs fast material advance, otherwise the blade may get overheated.

The cutter is used to obtain an excellent finish at the bottom of veneered panels and plastic laminates.

To obtain maximum blade performance, follow this advice:

- carefully clean the contact surfaces on the blades and flanges before assembling them: dust and dirt can cause vibrations;
- when washing the blades use specific products or water and soda to remove encrustations of sawdust and resin: these encrustations get overheated and decrease cutting precision;
- never exceed the maximum tools speeds recommended by the manufacturer and by the law;
- always work with at least two or three teeth in cutting position;
- never use cracked or damaged blades;
- do not pull the piece away while it is being cut;
- do not knock the blades against metal objects and always put them away in their containers after use;
- use low-noise blades.

10 - FITTING THE BLADES

- Raise the blade shaft to maximum height.
- Release the motor brake.
- Free the carriage, pulling the locking device (1) downwards (Fig. 3 - 4- 4/A).
- To assemble the saw blade and the cutter, push the mobile carriage all the way to the right and then unscrew the interlocking pin located at bottom right of the protective casing under the table (Fig. 5)(1 PIN)(2 CASING), lift the two locking devices (Fig. 5)(3) and open the casing.
- Press the spring button through the hole (2) (Fig. 6) and turn the shaft by hand until it is blocked. Unscrew the left retaining nut with a spanner.
- Fit the blade between the flanges; holding down the spring button, lightly tighten the retaining nut.
- To fit the cutting blade with a 10 mm. spanner, stop the shaft and unscrew the retaining nut with a right-handed thread using a 27 mm. spanner.
- Fit the cutting blade between the flanges and lightly tighten the retaining nut (Fig. 7).
- Close the blade protective casing with the two blocking devices and screw in the pin.

Fixing the blade to the shaft:

When the diameter of the shaft is smaller than the diameter of the hole in the saw, flanges supplied by the manufacturer must be used to make up the difference.

The use of loose rings or bushes is not allowed.

11 - ADJUSTING THE SAW BLADE

(Fig.8-8A)

To release the tilting and lifting handwheels, turn the ball grips (1).

To adjust the height of the saw blade, turn the handwheel (2) until the required height is obtained and block in position.

To tilt the blade turn the handwheel (3) until the tilt desired is read either on the scale or graduated disc (4), and block in position.

12 - USING THE CUTTING BLADE

A cutting blade is used to obtain a better finish when cutting panels or planks.

Various types of cutting blades are available; you can obtain information on them from tool suppliers or dealers.

13 - MANUAL ADJUSTMENT OF THE CUTTING BLADE

The cutter must be released before each adjustment. Fit an 8 mm hexagonal spanner (Fig.9) through the holes on the worktop to release and adjust the lateral alignment of the cutting blade.

Slacken the retaining screw (1) (Fig.9/A).

Turn the screw (2) to align the cutting blade.

Height adjustment is controlled with the screw (3).

After alignment, block the cutter with the retaining screw (1).

14 - ADJUSTING THE CUTTING BLADE WITH EXTERNAL CONTROL

Before each adjustment the cutter must be released by slackening the retaining screw through the hole on the worktop using an 8 mm hexagonal spanner (Fig. 9).

For horizontal and vertical adjustment, turn the handwheels (4) and (5) respectively (Fig. 10). On completing alignment, block the cutter with the retaining screw.

15 - USE AND ASSEMBLY OF THE DIVIDING KNIFE

The circular saw must be equipped with a dividing knife; this is an obligatory tool which may vary according to the minimum and maximum diameter of the blade that can be installed and the cutting width of the tooth.

This performs the following functions:

it guides the workpiece and prevents the parts already cut from closing over the saw blade while it is turning.

This prevents sticking and return of the piece.

The dividing knife must be used as a safety device even when an advance device is fitted.

The dividing knife must be fixed to the front of the saw blade with the retaining screw (1) (Fig. 11). Each time the blade diameter is closed, adjust the dividing knife by sliding it vertically on the two screwed-on pins (2) and horizontally along the support groove (3); if necessary, change the support too, referring to the minimum and maximum diameter marked on it.

The same dividing knife must allow vertical adjustment, so that its end can reach the same position or a position higher than the highest point of the blade. It must also be fitted and adjusted in such a way that the point closest to the blade is at least 3 mm away from it and the farthest part no more than 8 mm away, measuring these distances radially on the straight line starting from the centre of the chuck.

The device for securing the dividing knife must ensure that the knife remains on the same plane as the blade.

The dividing knife is chosen according to the blade diameter and the cutting width of the tooth, as its thickness (A) must be between the thickness of the body of the blade itself (B) and the cutting thickness of the tooth (C) (Fig. 12).

To choose the dividing knife, see the following table.

Only original dividing knives produced by the manufacturer must be used.

THICKNESS OF DIVIDING KNIVES

BLADE	SERIES 1	SERIES 2
	A	A
250	2.0 mm 2.5 mm	1.4 mm 2.2 mm 3.2 mm
250 350	1.8 mm 2.2 mm 2.8 mm	1.6 mm 3.2 mm 3.6 mm
350	2.5 mm 3.2 mm	2.0 mm 4.0 mm

Preferably, dividing knives with "Series 1" thicknesses should be used.

16 - CHOOSING THE WORK SPEED

- A) Solid wood.
- B) Hard wood and soft wood.
- C) Chipboard and hard fibre slabs.
- D) Plastic laminates.

BLADE	SPEED RPM			
	A	B	C	D
400 mm.	3200	3200 4000	3200	3200
350 mm.	3200 4000	3200 4000	3200 4000	3200 4000
300 mm.	4000	4000 6000	3200 4000	4000
250 mm.	4000 6000	6000	4000 6000	6000

17 - CHANGING SPEED - BELT REPLACEMENT AND TENSION

Three speeds may be used, depending on the diameter of the blades, the type of material and the degree of finishing desired: 3200 - 4000 - 6000

To change speed, proceed as follows:

- lift the blade shaft completely;
- turn the main switch **Q1** to "1";
- switch off the machine by means of the switch **SQ1**;
- remove the cover on the access to the belt changing compartment;
- turn down the lever with cam (1) (Fig. 13) located near the chuck unit;
- position the belt according to the desired speed;
- return the lever (1) to the original position;
- on machines provided with a speed pilot light, slacken the knob (2), shift the axis (3) together with the belts and secure them in position;
- replace the cover.

The operator is advised to be careful when changing speed.

- The stretching of the belts of the saw blade and of the cutting blade is made up continuously by means of a system of idle fulcrums and a tightening leaf spring (4). To adjust the tension exerted on the belt it is sufficient to tighten or loosen the spring with the screw (5).

To change the belt, follow the same procedure as for changing speed.

18 - OVERHEAD PROTECTION OF THE SAW AND CUTTER BLADE: ADJUSTMENT AND USE

To fit the overhead parallelogram protection on the machine, fasten the support (1) (Fig. 14) onto the side of the bed with the four screw (2), then fit the hanging unit (3) onto this, complete with the front arm and the protection hood.

Depending on the type of square opening fitted, adjust the unit with the reference pin (4) and secure the levers (5).

Arrange the other two positions of the hood, making use of the existing holes, with the reference pins (6 and 7) and secure the levers (8 and 9). In this way the unit is correctly installed to protect both the saw blade and the cutting glade, as the other adjustments are made at the time of the final inspection of the machine. If necessary, to position the hood parallel to the work top, with tolerances of 1 mm every 100 mm of length, slacken the screw (10), position the hood correctly and then tighten the screw again. To adjust the parallel positioning of the hood with respect to the saw blade, slacken the screws (11), position the hood correctly and then tighten the screws again. The pin (12) is used to adjust the maximum upward travel of the hood so that, when the machine is fitted with the largest blade that can be installed, the bottom of the hood can be raised at the most up to 5 mm above the highest point of the teeth, and lowered to the level of the worktop.

OPERATION

Set the guard (16) leaning it over the woodworking piece by means of the lever (13). The lever (14) allows you to adjust the clutch if the hood does not remain firmly in position while work is being performed. The left side (15) is made of transparent polycarbonate so that the blade is visible while working. The right side (16), made of aluminium, is interchangeable for inclined cuts with a larger side provided (5). To change the blades, rotate the lever (17) through 90°, then lift it.

Important:

KEEP THE PROTECTION DOWN AND RESTING ON THE WORKTOP WHEN THE MACHINE IS TURNED OFF.

MAINTENANCE

Change the wooden strips (19) when they are deteriorated; the same applies to the piece guide (20) if it is not in good condition. It is advisable to keep the protection always perfectly clean and to check its good condition regularly.

19 - MANUAL PARALLEL GUIDE

For transport requirements the guide and its supports, the metric rule and the worktop extension are sent dismantled.

Fasten the extension onto the worktop with the screws (Fig. 15-15/A) (1), checking with a precision rule to ensure that they are quite level; if necessary, adjust with the dowels.

Fasten the aluminium profile and the metric rule to the worktop (2).

Fit the bar (3), inserting the studs in the holes in the table, then locking it in position with the nuts provided (the self-locking adjusting nuts are pre-adjusted in the workshop).









Fit the square and its profile (4 - 5); the profile is removable and may be fitted in either vertical or horizontal position to allow the protection to be lowered to the working cutting height when cutting narrow pieces and to allow the pushing device to pass between the guide and the blade. Adjust the metric rule with the dowels, leaning the square on the saw blade and reading the measurement directly with the aluminium profile (2). To shift the guide, slacken the lever (6) and position the guide manually in the desired position; read the measurement on the millimetre rule next to the worktop..

After shifting the guide, block it with the lever (6) and perform micrometric adjustment, slackening the handwheel (7); then turn the handwheel (8), checking the guide position as described above.

When you have finished adjustment, block the handwheel (7).

20 - MANUAL PARALLEL GUIDE WITH ELECTRONIC DISPLAY

Keyboard description



	DESCRIPTION
	If pressed for two secs. it enables the introduction of one value on the counting
	Enables the relative counting, or it resets the absolute counting
	Increases the figure selected on the display (the blinking one)
	- Enables to change the unit of measure from millimetres into inches and vice versa - Shift rightwards the selection of the figure on display
	ON during instrument programming
	ON during the validation of the relevant counting
	ON when the unit of measure is displayed in inches
	Not used

Instrument HB 237.13 installed on the machine is a dimension indicator, measuring the distance between the blade and the parallel square fence. It is possible to display the dimension in millimetres or in inches, and to create a relative dimension in whatever point of the absolute dimension. The absolute counting and the programming data are stored on EEPROM and therefore kept in memory even with the machine off. If the parallel square fence is not displaced with the instrument off, it should not be necessary to reset the instrument.


INSTRUMENT RESET


If for any reason the measure indicated should not exactly correspond with the distance between blade and parallel square fence, do the following operations:

- Work a panel on two opposite sides at any distance, then measure it with a precision instrument.


- Press  and record this measure through keys **+** and **-**. Confirm with  (Fig. 37). Now the instrument displays the absolute dimension.

RELATIVE DIMENSION

If for any working reason, you should need to create a relative dimension at any point of the absolute dimension, press key . Now the instrument displays the new relative 0. By shifting the parallel square towards the blade, the displayed figure is negative, while by moving it away from the blade, the figure becomes positive (Fig. 38).

- To display the new absolute dimension, corresponding to the effective position of the square fence, press again .

INCHES DISPLAYING

To change the dimensions expressed from millimetres into inches, press key **IN**. To restore the dimensions in millimetres, press again key **MM**. Led  on, indicates that the current measure is expressed in inches.

21 - POSITIONING AND ASSEMBLY OF THE MOVING CARRIAGE

In some cases the mobile carriage is sent dismantled from the machine for transport reasons.

To assemble it, proceed as follows:

- put the carriage into position;
- release the carriage brake;
- slide the top part of the carriage to the right, insert and lightly secure the first screw at the end of the carriage base and the machine bed;
- slide the top part of the carriage to the left and repeat the operation described above;
- position the carriage next to the stops which are pre-set in the workshop (Fig. 17)(7) - (Fig. 18)(6) - (Fig. 18/A)(5);
- secure the screws of the carriage base to the machine bed.

22 - DESCRIPTION OF CARRIAGE WITH BEARINGS

The carriage is composed of the bottom part (1) fixed to the machine body and the upper profile (2) (Fig. 17), perfectly machined to obtain maximum precision and smooth running of work.

The upper profile (2) slides on 2 rollers (3) supported by the pulling body (4); the profile is also held in place by 12 bearings (5) mounted on eccentric pins (6).

The eccentric pins are adjusted in order to allow the upper profile (2) to slide on the zero of the working line.

23 - DESCRIPTION OF CARRIAGE WITH BALLS

The carriage is composed of the bottom part (1), fixed to the machine, and the upper profile (2) (Fig. 18-18/A) which runs by means of a cage of ball bearings (3) and (4), allowing maximum smooth movements.

24 - ASSEMBLY OF MOVING CARRIAGE ACCESSORIES

(Fig. 19)

- 1) Sliding handle
- 2) Wood pressing device
- 3) Locking slide
- 4) Worktop for parallel cuts with mobile stop.

25 - SQUARING CARRIAGE: ASSEMBLY - DESCRIPTION - ADJUSTMENT

For transport requirements the squaring carriage is despatched disassembled.

To assemble it, proceed as follows:

- lay the grooves of the squaring carriage on the guide (1) (Fig. 20) of the mobile carriage and fit the squaring carriage into the support pin (2) at the end of the projecting support;

- block the squaring carriage with the lever (3); by releasing this lever it is possible to position the squaring carriage at any point of the mobile carriage;
 - lightly rest the two latches on the guide of the mobile carriage and secure them with the handwheels (4).
- The extendible guide (5) may be adjusted in any position between 0° and 45°, by turning the handwheel (6), or positioned rapidly at 15° - 22°30' - 30° - 45° by means of the pin (7).
- The extendible guide is extended by slackening the handwheel (8) and shifting the whole thing outwards. Next to the handwheel is the lens which acts as an indicator, allowing you to read the measurement at which the stop (9) is set. If the cut piece is not squared at 90° you must square the extendible guide with the saw blade by slackening the retaining dowel (10) and adjusting the cam (11).
- Secure the dowel, make a trial cut and check for perpendicularity.

26 - LASER

The LASER unit is a useful device for seeing the cutting line so as to obtain the least possible waste from the workpiece.

This is fitted on a support hanging above the machine bench (Fig. 21)(1) and it is sufficient to position it by means of the pin (Fig. 21)(2) since its direction and alignment are already set during inspection.

To switch on the laser, insert the plug in the socket located in the base and turn the switch on the control panel from position "0" to position "1".

The following manoeuvres are strictly forbidden:

- changing the assembly set-up;
- performing maintenance, unless by approved technicians;
- replacing the laser with a model by another manufacturer;
- looking into the LASER beam;
- using additional optical appliances, for example lenses or glasses;
- placing reflecting surfaces within the field of action; of the beam.

27 - WORK EXAMPLES AND ACCIDENT-PREVENTION DEVICES



a) WORKING WITH THE ADVANCE DEVICE (Fig. 22-23)

When working with the advance devices the dividing knife must be used as a protection against the return of the piece. The advance device must be adjusted in such a way as to cover the saw blade completely from above in case it is not possible to use the parallelogram protection with covering from above.

Work cycles: adjust the advance device so that the forward movement pushes the workpiece against the parallel guide (worktop square). The guide must be secured against horizontal deviations. Lay the piece against the parallel guide and accompany it by hand until it is caught up by the rollers of the advance device.

b) WORKING WITH BENCH CIRCULAR SAWS (Fig. 24)

Tools: use only circular saw blades that have been uniformly sharpened.

Work cycle: adjust the dividing knife and fix it securely. Adjust the protection cover according to the thickness of the piece.

Work position as shown in the figure: body outside the danger zone (1).

c) SQUARING CIRCULAR SAWS (Fig. 25)

Edging and dividing.

Tool: circular saw blade for lengthwise cuts.

Work cycle: adjust the bottom support of the piece (slide with clamp) according to the length of the workpiece and fix it securely. Put the piece in position and slot it under the bottom support. Press the piece firmly down on the carriage with your right hand; move the carriage forward uniformly with your left hand. Always check the adjustment of the dividing knife and ensure it is securely fixed; use the upper protection or the protection cover, adjusting it to suit the thickness of the parts.

d) CUTTING NARROW PIECES (Fig. 26)

(width of the pieces ready for processing: less than 120 mm.)

Tool: circular saw blade for long cuts.

Work cycle: adjust the parallel guide device to the size of the workpiece and block the group to avoid horizontal deviations. Move the piece forward with both hands. In the vicinity of the saw blade it is absolutely essential to use a pushing device until the piece has got past the dividing knife. When working with short pieces the pushing device must be used right from the start of processing.

e) CUTTING NARROW PIECES (Fig. 27)

To cut sections on narrow workpieces, two pushing devices must be used.

f) CUTTING THIN PIECES (Fig. 28)

To cut thin pieces you must place the guide in a horizontal position to allow the protection to come down to the height of the piece that is to be cut.

g) OBLIQUE CUTS ON THIN PIECES (Fig. 29)

Tool: circular saw blade for thin cuts.

Work cycle: adjust the strips so that the parts of the piece cannot touch the top of the saw blade.

To guide the piece use only the oblique stop device.

Do not touch the discarded pieces near the tool with your hands.

h) OBLIQUE CUTS ON SHORT PIECES (Fig. 30)

Tool: circular saw blade with thin teeth.

Work cycle: adjust the parallel or auxiliary guide device so that the piece rests on it only until the saw starts making the cut. To guide the piece use only the pushing device or the oblique stop device. Secure the upward moving part of the crown gear with the return strip.

i) COVERED CUTS, INDENTS (Fig. 31)

Tool: circular saw blade for thin cuts.

Work cycle: for indents, calculate the series of cuts so that the strip to be cut is on the opposite side of the saw blade from the parallel guide. For covered and indented cuts, remove the top protection of the tool and/or rotate the protection hood and lower the dividing knife. Carefully guide the workpiece. Secure and block the parallel guide group to avoid horizontal deviations.

k) COVERED CUTS, GROOVES (Fig. 32)

Work cycle: for grooves too, use the dividing knife to cover the tool at the rear. As it advances, always push the piece down on the worktop (otherwise there is the risk of abnormal working). For oblique grooves on narrow pieces, always use the oblique stop devices or pushing devices.

l) STOPPED CUTS ON SHORT PIECES (Fig. 33)

Work cycle: remove the dividing knife and the top cover of the tool and/or rotate the protection hood. Fasten the support of the dividing knife securely. Adjust the parallel guide device to the size to be inserted and block the group to avoid horizontal deviations. Adjust the stop block and fix it with two clamps, lay the piece against the parallel guide and move forward regularly. Shift the piece as far as the external slit or as far as the stop devices, then eject it.

After applying this process, immediately put back the dividing knife and the top cover.

m) STOPPED CUTS ON LONG PIECES (Fig. 34)

Work cycle: remove the dividing knife and the top cover of the tool. Fasten the support of the dividing knife securely. Fix the inserting equipment on the parallel guide device. Adjust the stop block and the limit block. Lay the piece against the stop block and move forward regularly, push forward as far as the end of the limit block and eject in a safer position.

After applying this process, immediately put back the dividing knife and the top cover.

n) OBLIQUE CUTS ON BROAD PIECES (Fig. 35)

Tool: circular saw blade for oblique cuts.

Work cycle: lay the piece against the extendible guide; press firmly against the guide with your left hand and push forward to make the cut. After the stops of the extendible guide have been used they must be folded away immediately after cutting and before returning the carriage to the original position, so as to be able to move the piece away from the saw blade.

28 - MAINTENANCE AND REPLACEMENT OF BEARINGS

The bearings of the blade chuck and the cutter chuck are of the watertight type, sealed for life, so they need no maintenance or lubrication. If they have to be replaced, follow these instructions carefully:

- They should be fitted preferably in a dry, dust-free area, far from machines that produce chippings;
- before assembly of the bearings, all the necessary parts, tools and equipment must be within hand's reach; the various components must be assembled in the same order in which they were disassembled;
- all the components of the part on which the bearings are to be installed (shafts, housings) must be accurately cleaned;
- the bearings must be removed from their original package only at the time of assembly, to prevent them from getting dirty.

Once installation has been completed the bearings must be run in before you start using the machine again, allowing them to run without a load for at least an hour.

A working temperature of 70° +80°C near the bearing housing is to be considered normal.

29 - CLEANING AND LUBRICATION

Frequently:

Clean the machine to prevent the formation of encrustation, particularly the worktop, mobile carriage, sliding guides and all the parts that may be exposed to resin and dust, using a suitable solvent; make sure that the motor compartment is free from sawdust or shavings.

Clean the sliding guides of the mobile carriage (if the carriage has ball bearings, clean and oil them).

Clean and lubricate the sliding bars.

Carefully clean the pulley races with kerosene or turpentine and dry them. If there is oil on the belt it must be cleaned, using only a dry cloth or paper.

The belt must never come into contact with solvents or lubricants.

Weekly:

Grease the toothed sectors and the screws for tilting and lifting the blade.

As well as these points, clean and oil all the moving parts, rods, threaded bars, pins and any part that may be subject to oxidation.

In the machine the shaft bearings are watertight, sealed for life, so they never need any lubrication during their working life.

Grease to use: "MOBILUX EP2" by MOBIL or "LOK CEASE" by Certified.

30 - STARTING AND STOPPING THE MACHINE

STARTING OF THE SAW BLADE

- Select the rotation speed.
- Ensure that no emergency mushroom switch has been pressed; otherwise give the head of the mushroom a quarter of a turn to the left.
- Ensure that the cover of the belt changing compartment on the worktop is correctly in place.
- Ensure that the protection interlocking handwheel under the worktop is screwed in.
- Turn the main switch to position "1".
- turn the switch **Q2** (see diagram) to the right to the (Y) position (star), once the revolution speed has been reached turn the switch to the (Δ) position (delta).
- To switch off the motor, turn the same switch **Q2** to position **0**
- The motor is protected by the motor-protector **F4** which will intervene in the case of malfunction. This protection is calibrated in the workshop at the time of inspection and should not normally need any further adjustment.
- If this protection intervenes, turn the main switch **Q1** to position "0", wait for about ten/twenty seconds until the protection is automatically reset, and repeat the starting operation.

STARTING OF THE CUTTING BLADE

The cutting blade is started and stopped with the switch **SQ3**. For safety reasons the cutter chuck cannot be rotated until the saw blade has been started; when the saw blade switches off, the cutter switches off too. If the machine is shutdown by an emergency switch or a protection microswitch, the switch **Q2** must be reset to position **0**.

EMERGENCY STOP

In cases of danger the machine can be stopped with the emergency mushroom button **S0** in the front working position and the main switch **Q1** in the right-hand working position.

LASER

The laser is switched on and off using the selector **SQ5**. Consult the enclosed pamphlet for further information.

31 - SELF-BRAKING MOTOR

Adjusting the self-braking motor (Fig. 36)

Before carrying out any jobs on the electric motor, turn the main switch to "0" and padlock it.

Periodically check the performance of the braking system: every six months or whenever the stop ping time is above 10". In case it is necessary adjust it according

- insert 5 mm allen wrench (1) into hole (2) and unscrew screw (3) at the limit stop, then unscrew of 2/3 of a turn, this will put the brake lining in the correct position (4).

Releasing the self-braking motor

It is indispensable to release the self-braking motor when carrying out jobs such as changing the belts, changing speed, changing tools, etc.

- Turn the main switch to "1" and wait about 12 seconds.

32 - INSTALLATION OF THE ADVANCE SYSTEM



A motor-driven advance system must be used whenever it is reasonably practical because it reduces the risk of contact with the blade.

An advance system does not substitute the dividing knife, so the dividing knife must always be kept in position. The manufacturer is not responsible for any damage ensuing if the advance system is installed by non-authorized personnel. The advance system must be fixed onto the same work surface as the machine tool.

The electrical connection must be provided by the manufacturer by means of a socket located at the rear of the machine. The advance system must work only when the saw blade is operating and it must be connected in such a way that, when the shaft motor stops accidentally, the advance stops at the same time. Before starting any jobs, ensure that the regulating and fixing levers are correctly closed.

33 - WIRING DIAGRAMS

The set-up of the control panel may have different configurations.

To consult the wiring diagrams, see the enclosures.

34 - TROUBLE-SHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
The machine does not start.	1) No voltage in line. 2) Main switch in position "0". 3) Emergency mushroom button pressed. 4) Motor protection or thermal protection switched off. 5) Fuses broken. 6) Cover of belt changing compartment on worktop out of position.. 7) Handwheel under the worktop is not screwed in. 8) Suction system is not working.	Check voltage in line with instrument. Turn main switch to position "1". Reset emergency button. Reset the motor protection or thermal protection. Check the fuses and replace if necessary. Put the cover correctly in position... Screw in the handwheel. Start the suction system
The shaft does not stop within 10"	1) Worn brake.	Adjust the brake following the indications.
The shaft turns very slowly	1) The motor brake is working badly.	Check that the diode jumper inside the motor is working properly, replace it if necessary. If the problem persists, change the motor brake.
Decreased shaft revs.	1) Loose belt.. 2) Worn belt. 3) Traces of lubricant on the belt and pulleys.	Adjust the belt tightening device. Change it. Clean carefully with a cloth or paper.
Vibrations in the shaft.	1) Resin on the flanges and blades. 2) Blade incorrectly balanced. 3) Encrustations of sawdust on the pulleys. 4) Belt is worn or faulty.	Clean the flanges and blades accurately before assembly. Be sure to tighten firmly the nut for securing the tools Broken plate or tooth on the blade. Check and clean. Change it.
The cutting blade does not stay in position.	1) The retaining screw is loose. 2) Steel cable is loose or broken.	Adjust the cutting blade with the machine switched off. Tighten the cable with the adjusting devices provided or change it.
The panels are not squared.	1) Panel extendible guide off-square.	Adjust the position of the cam on the squaring carriage.
The panel tends to close after cutting, that is the blade is following the cut. The panels are not cut parallel.	1) The parallel guide is not slightly open, at the rear, with respect to the saw blade.	With the machine switched off, lay the parallel guide against the saw blade. If the teeth of the saw rest on the aluminium guide at both front and rear, or only at the rear, the position of the parallel guide must be adjusted as follows: - slightly slacken the nuts that fasten the round bar supports onto the worktop; - shifting it slowly, turn the group until the aluminium guide touches only the "front" teeth of the saw blade. At the rear there must be a max. clearance of 0.10 mm between the saw blade and the aluminium guide.

**35 - RICHIESTA DEI PEZZI DI RICAMBIO • SPARE PART REQUEST • DEMANDE DE
PIECES DETACHEES • ERSATZTEILBESTELLUNG • PEDIDO REPUESTOS**

ATTENZIONE! COMPILARE DETTAGLIATAMENTE IL PRESENTE MODULO

ATTENTION! FILL UP THIS FORM IN DETAIL**ATTENTION! REMPLIR EN DETAIL CETTE FORMULE**

ACHTUNG! BITTE, DIESES FORMULAR AUSFÜHRLICH AUSFÜLLEN

ATTENZIONE! COMPLETARE QUESTA FORMULA IN DETTAGLIO

Cliente / Customer / Client / Kunde / Cliente Indirizzo / Address / Adresse / Adresse / Direccion	Data / Date / Datum / Fecha..... Telefono / Tel. / Telephone / Telefon / Telefono Telefax / Telefax / Telecopie / Telefax / Fax
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Note / Notes / Remarques / Anmerkung / Notas

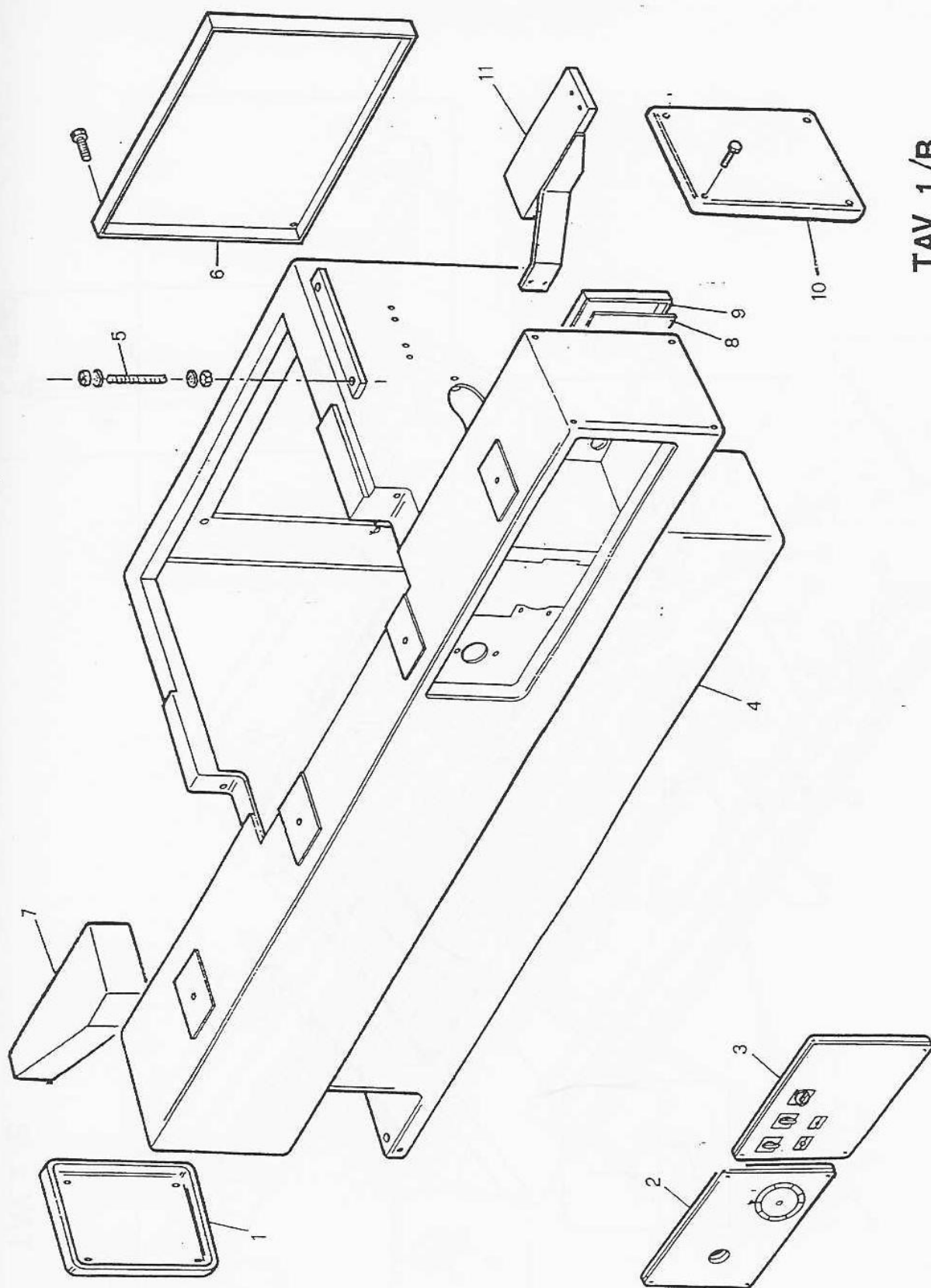
N.B: Allegare una fotocopia di ogni tavola nella quale si trova il particolare richiesto.

Please attach a photocopy of the picture, where you have found the requested item.

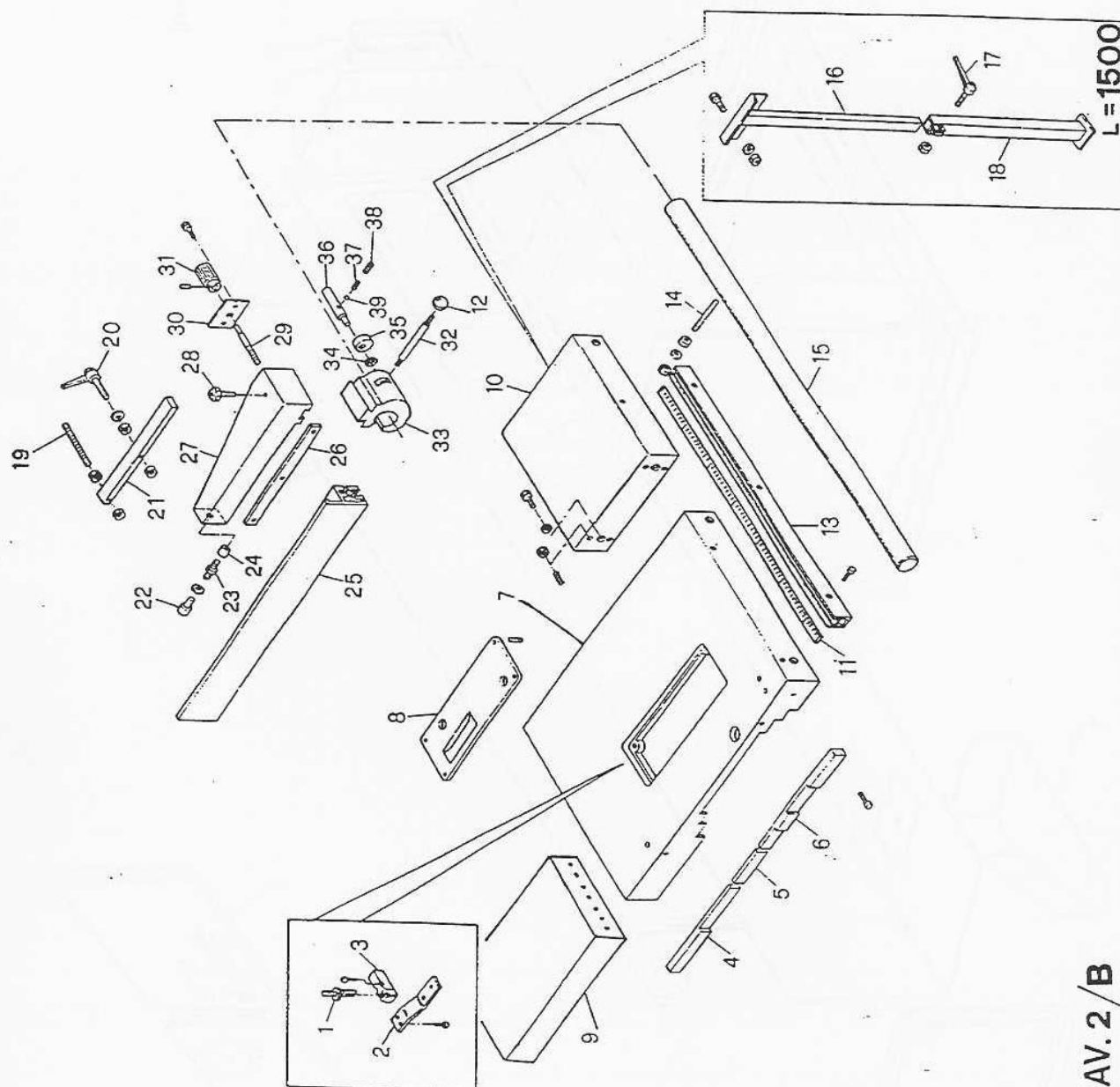
Joindre ci-inclus une photocopie de chaque table concernant la pièce demandée.

Bitte fügen Sie Ihre Bestellung eine Fotokopie der Seite bei, auf der das gefragte Teil abgebildet ist.

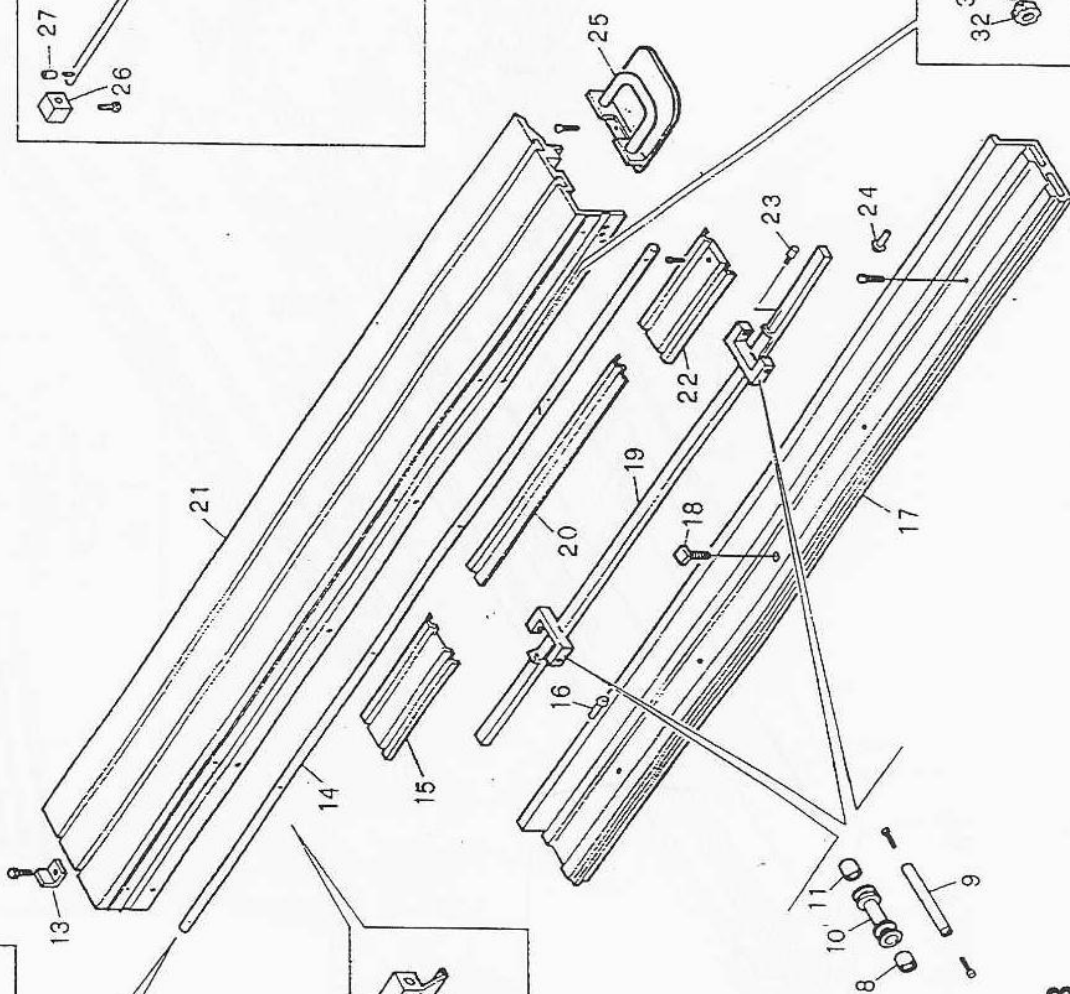
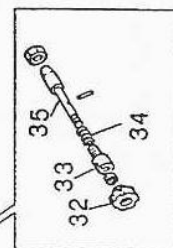
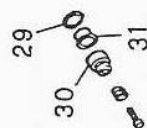
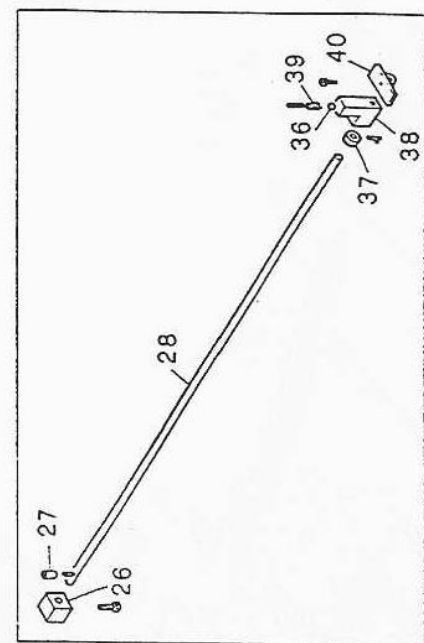
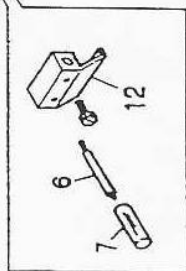
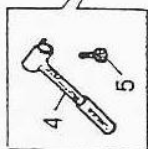
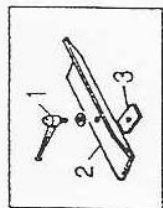
OJO! Envira en adjunto una copia de cada tabla donde se rencuentra la pieza pedida.



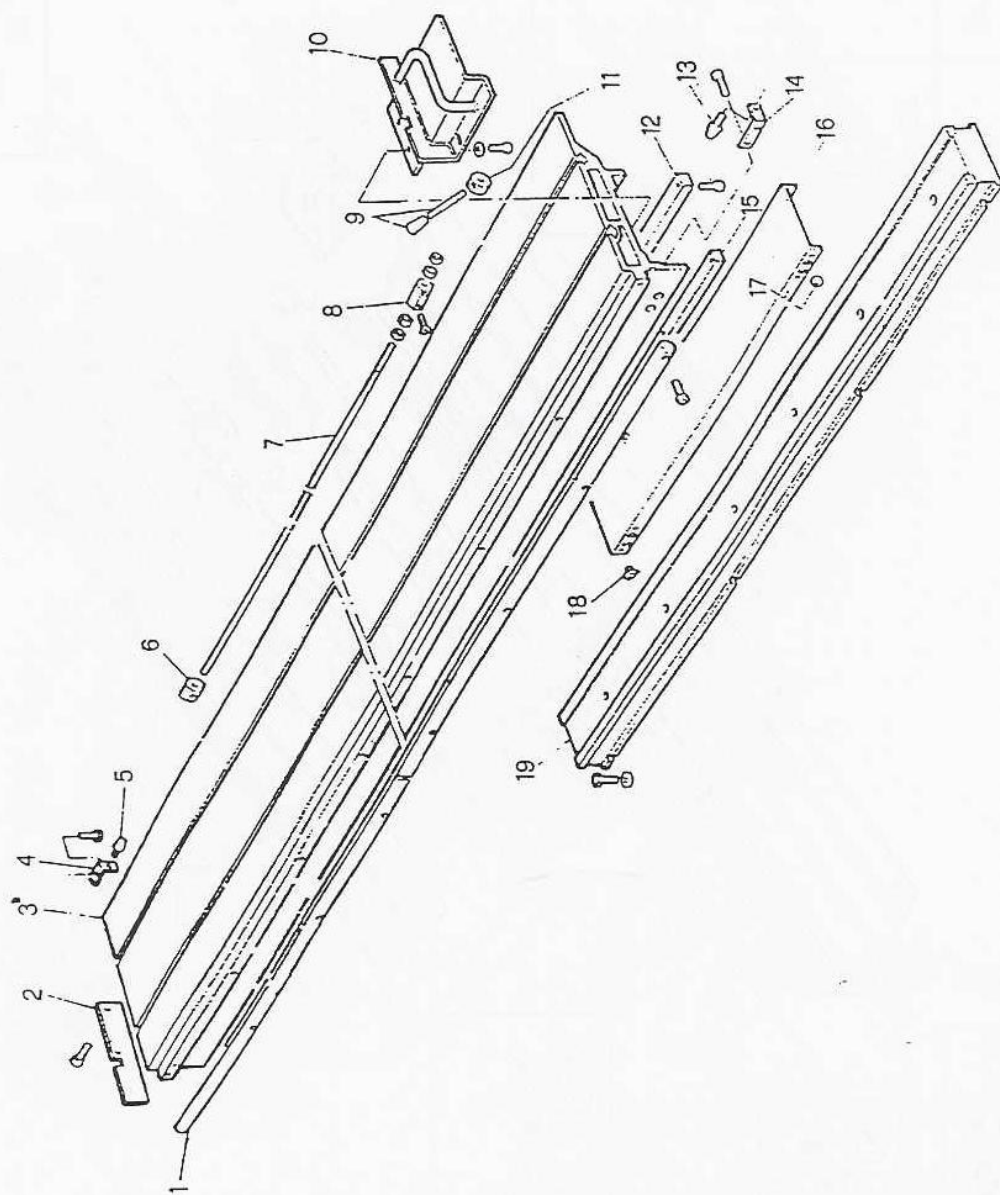
TAV. 1/B

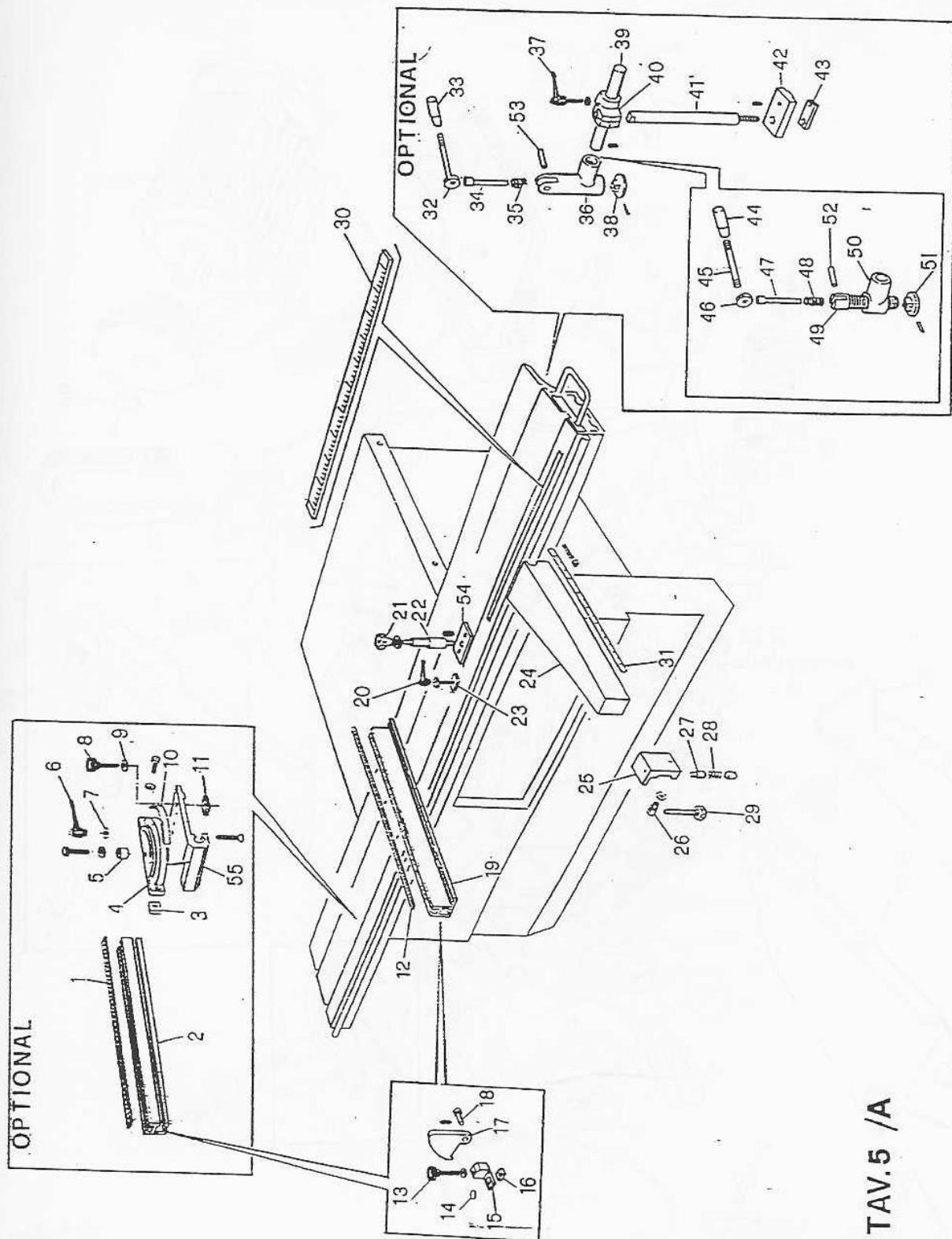


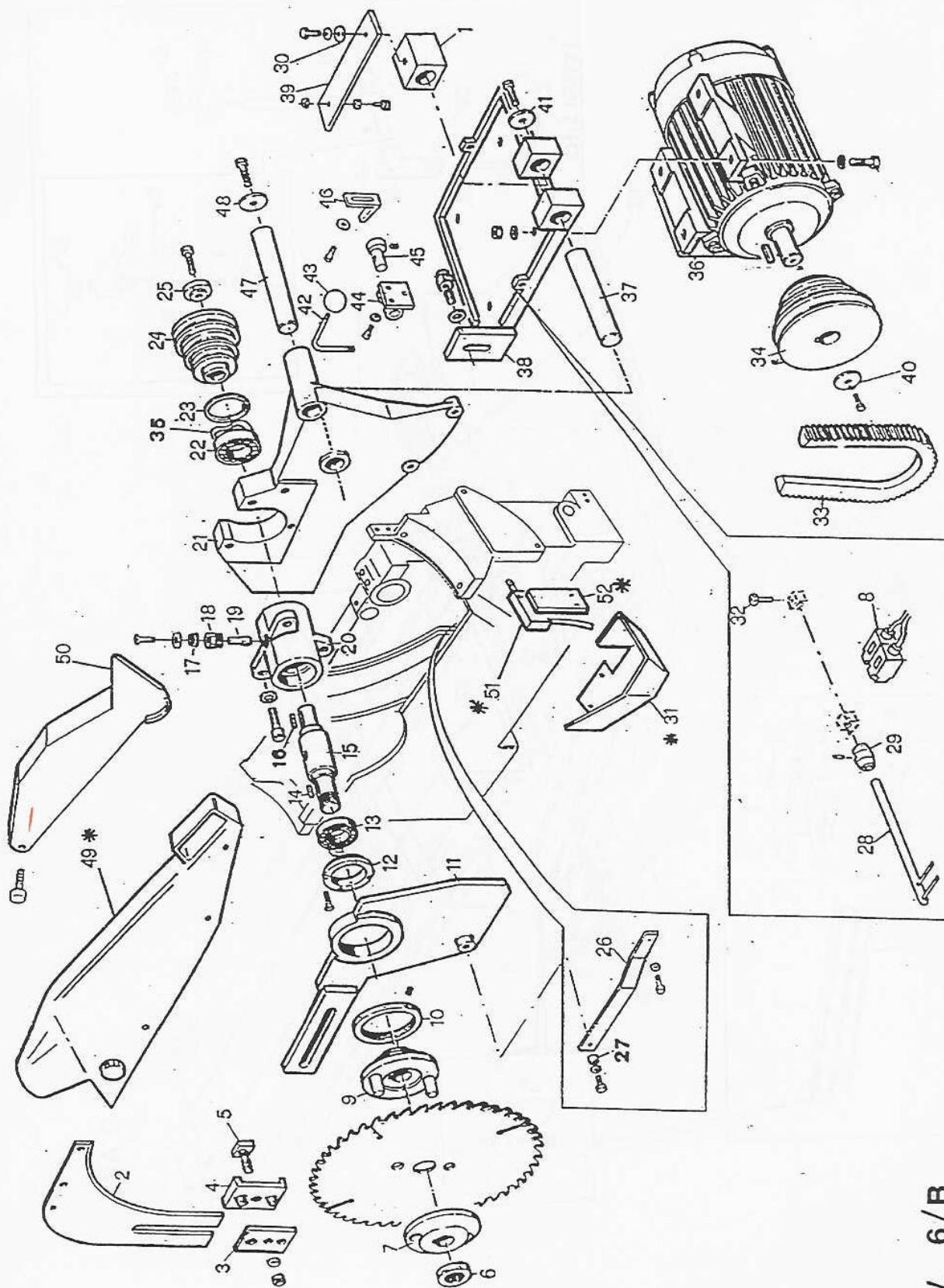
TAV.2/B



TAV. 3/B

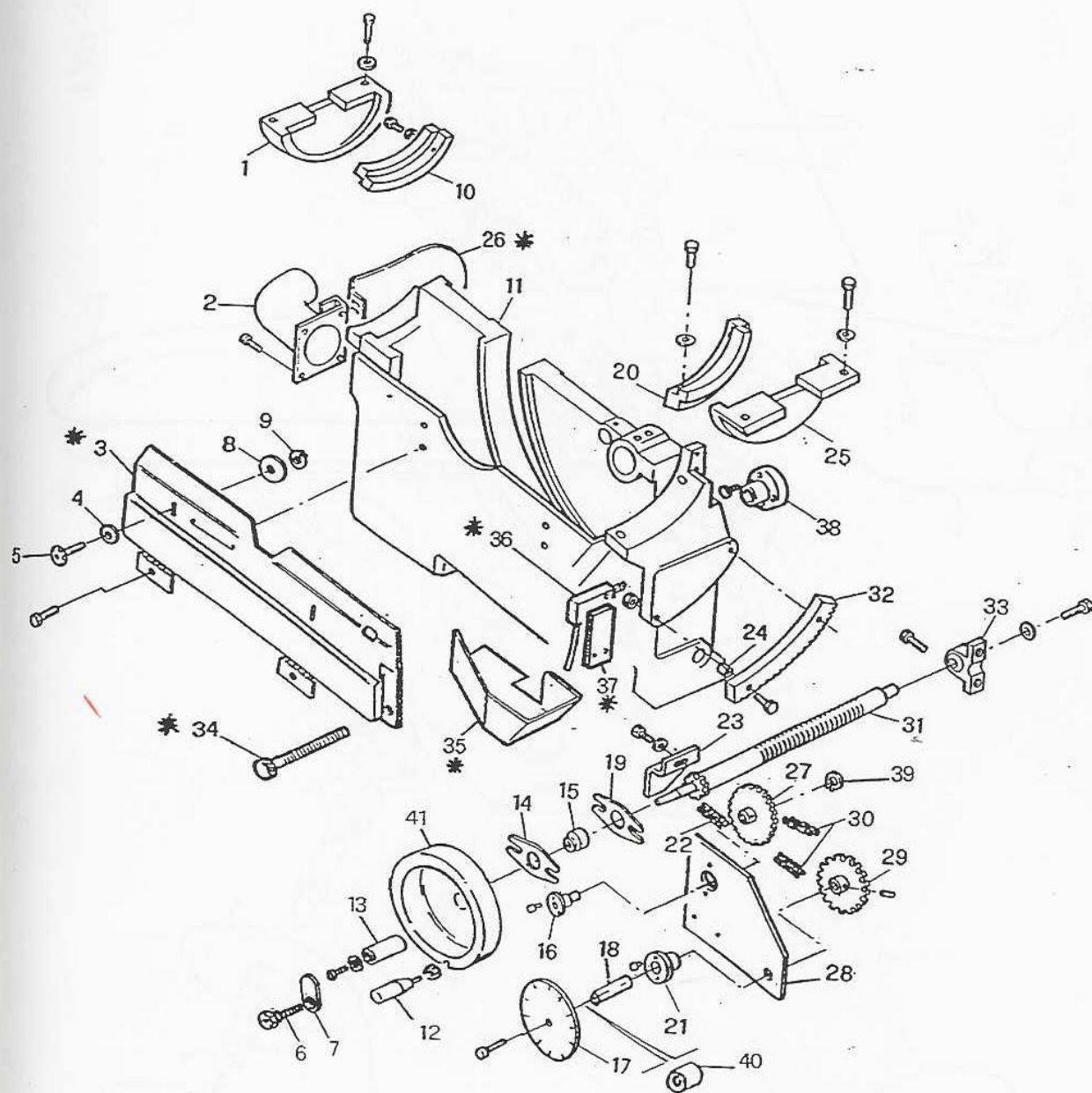






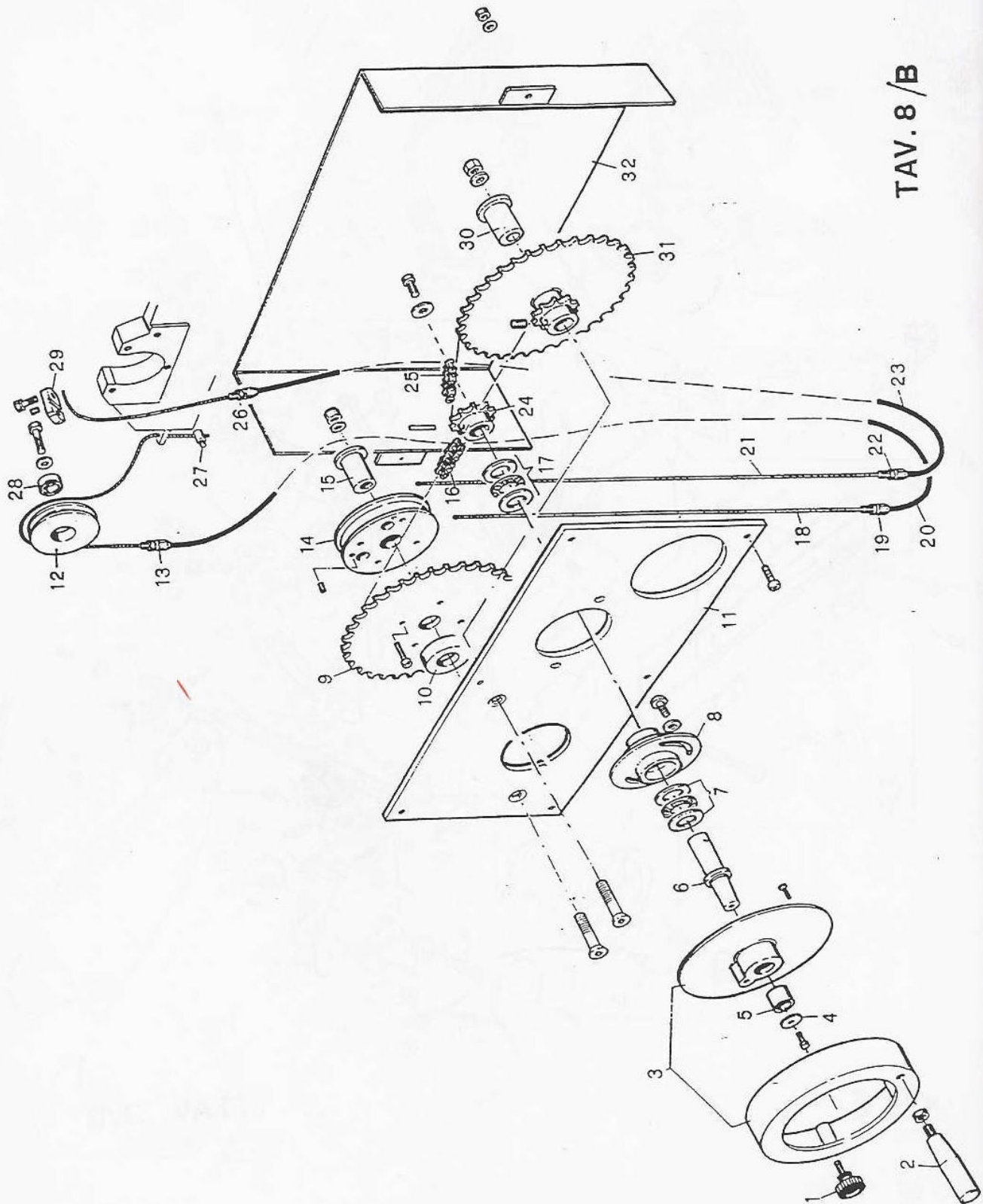
TAV. 6/B

* = CE

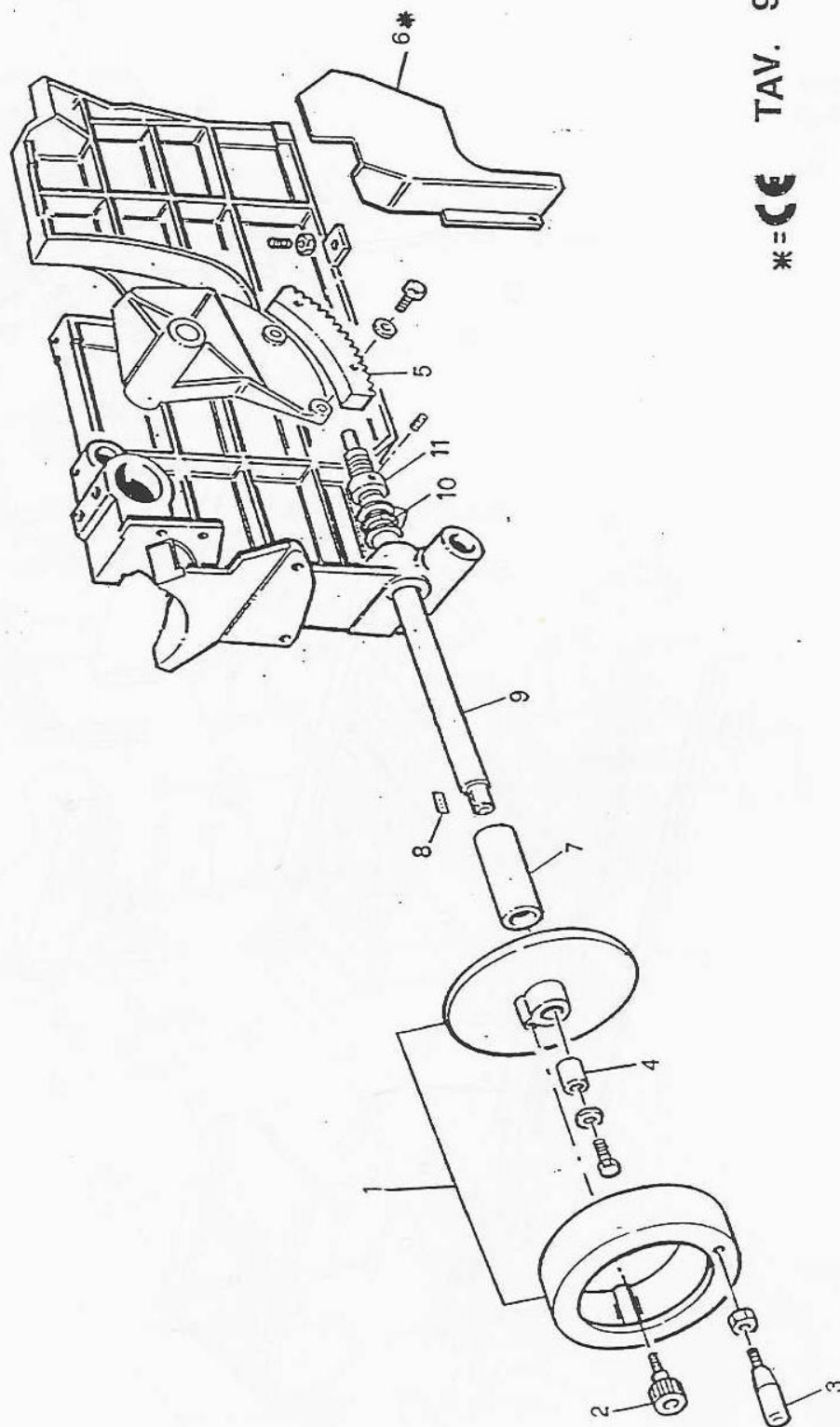


*=CE

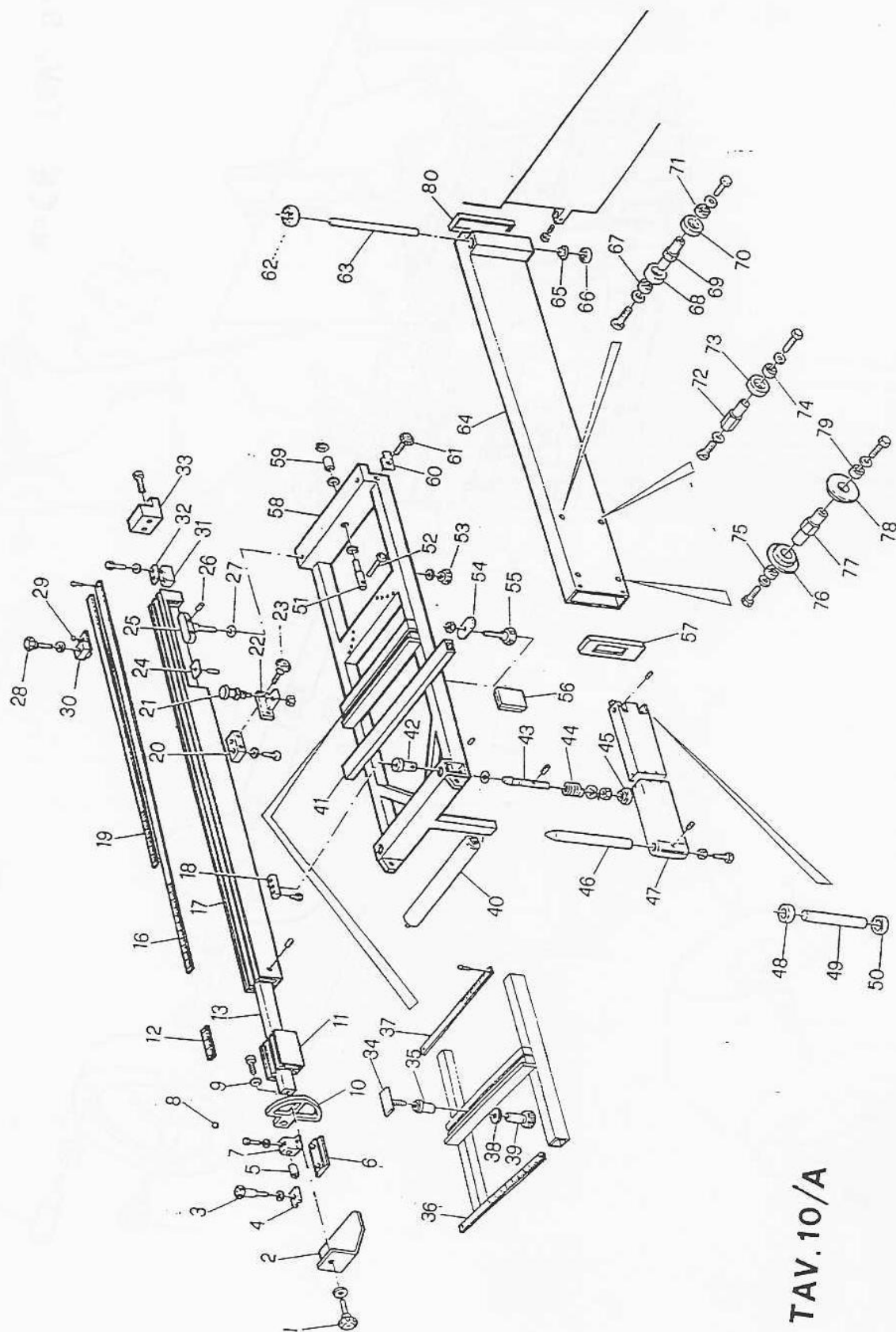
TAV. 7/B



TAV. 8/B

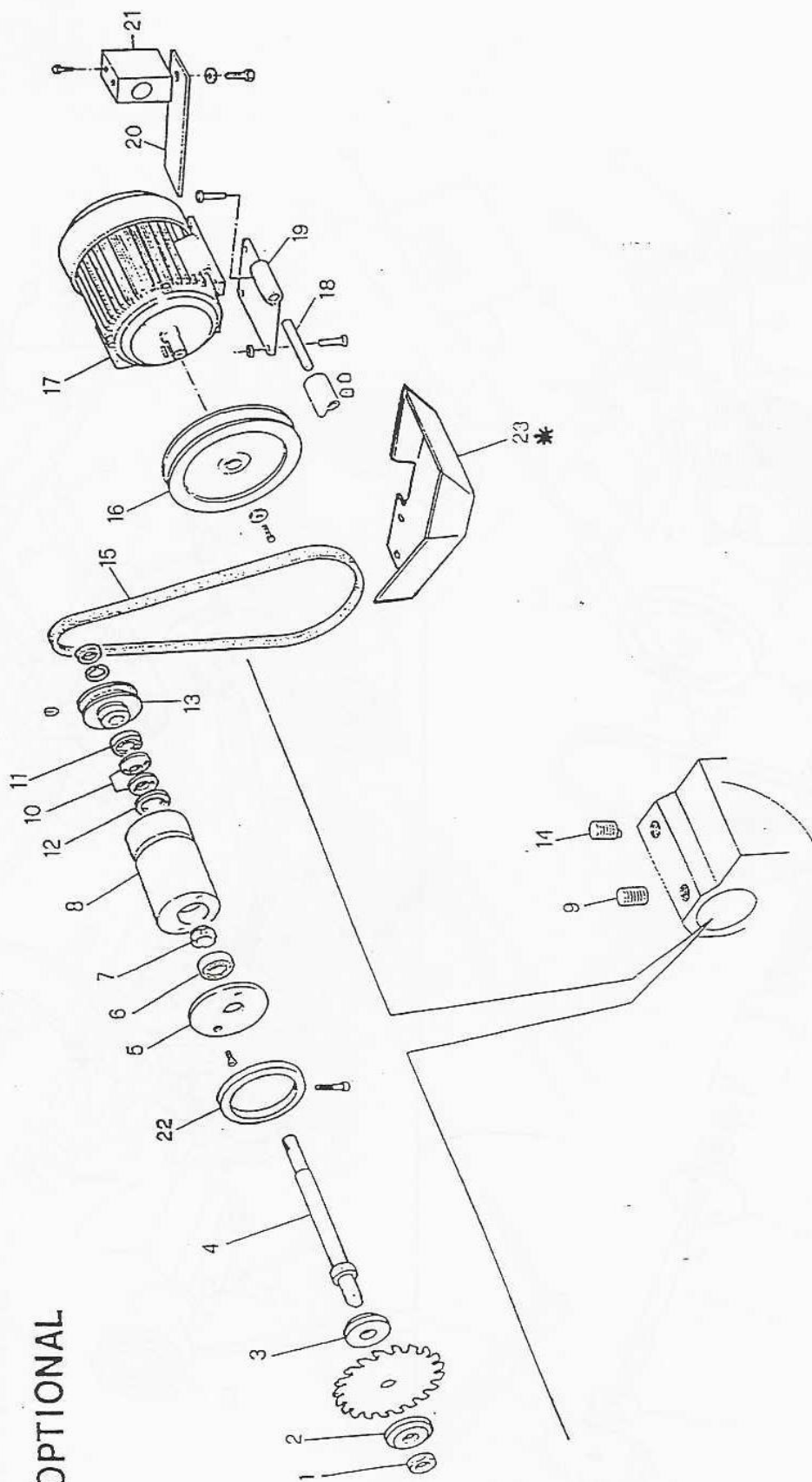


*=C€ TAV. 9/B



TAV.10/A

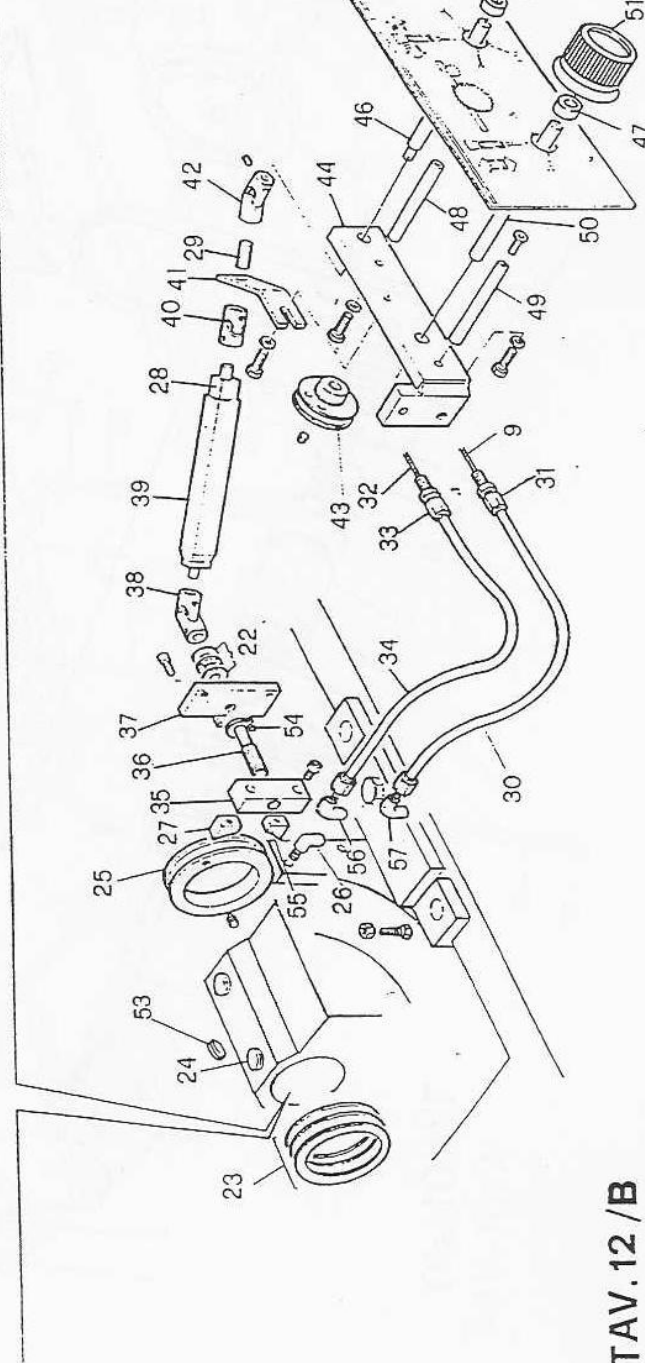
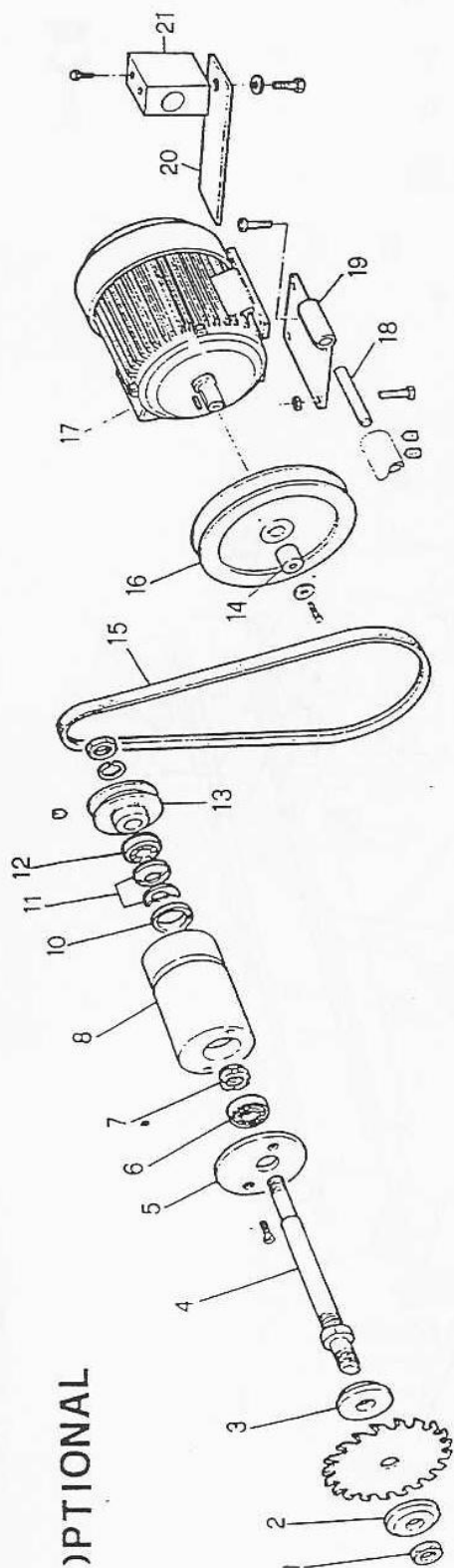
OPTIONAL



※ ≡ ≡

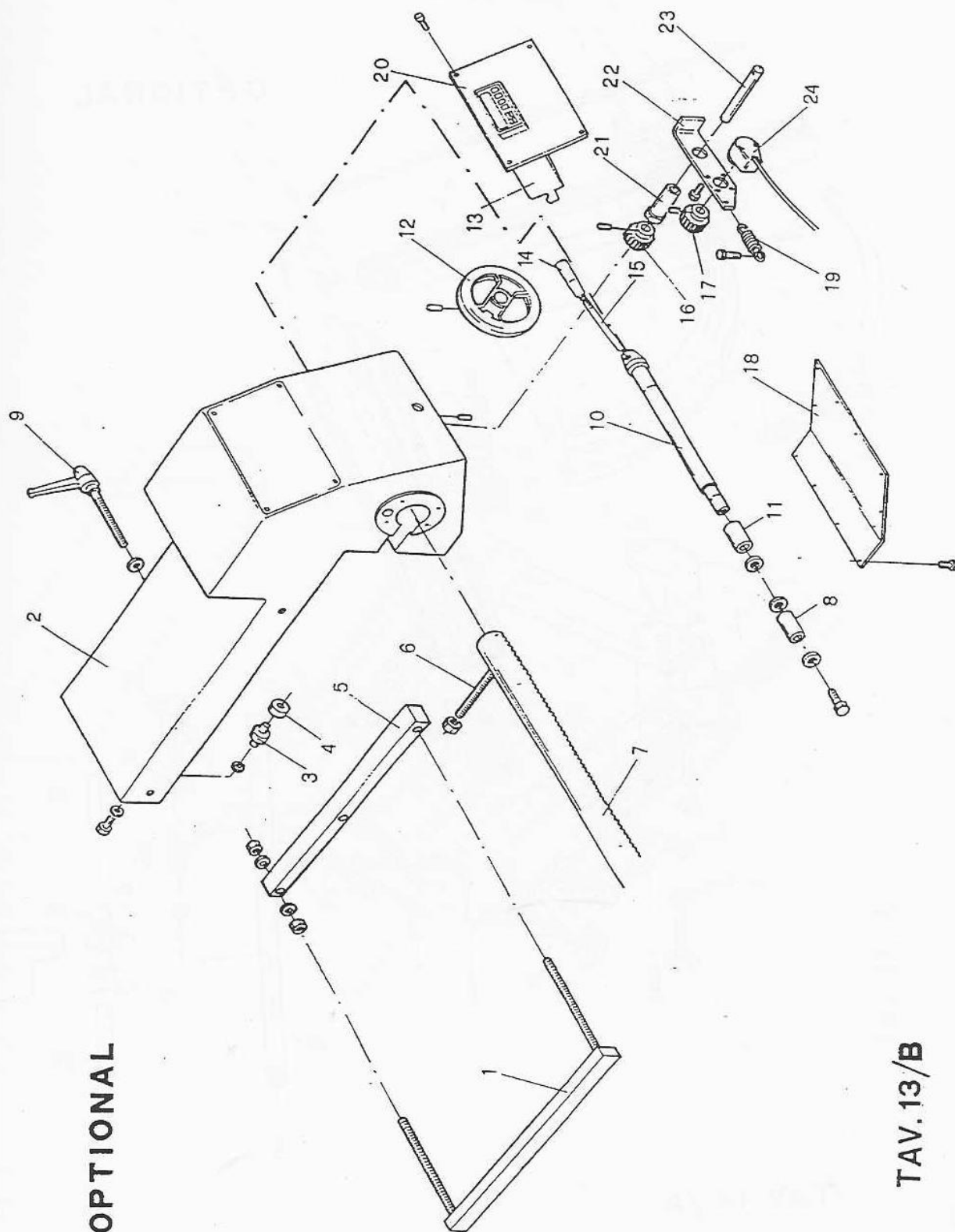
TAV.11 / B

OPTIONAL



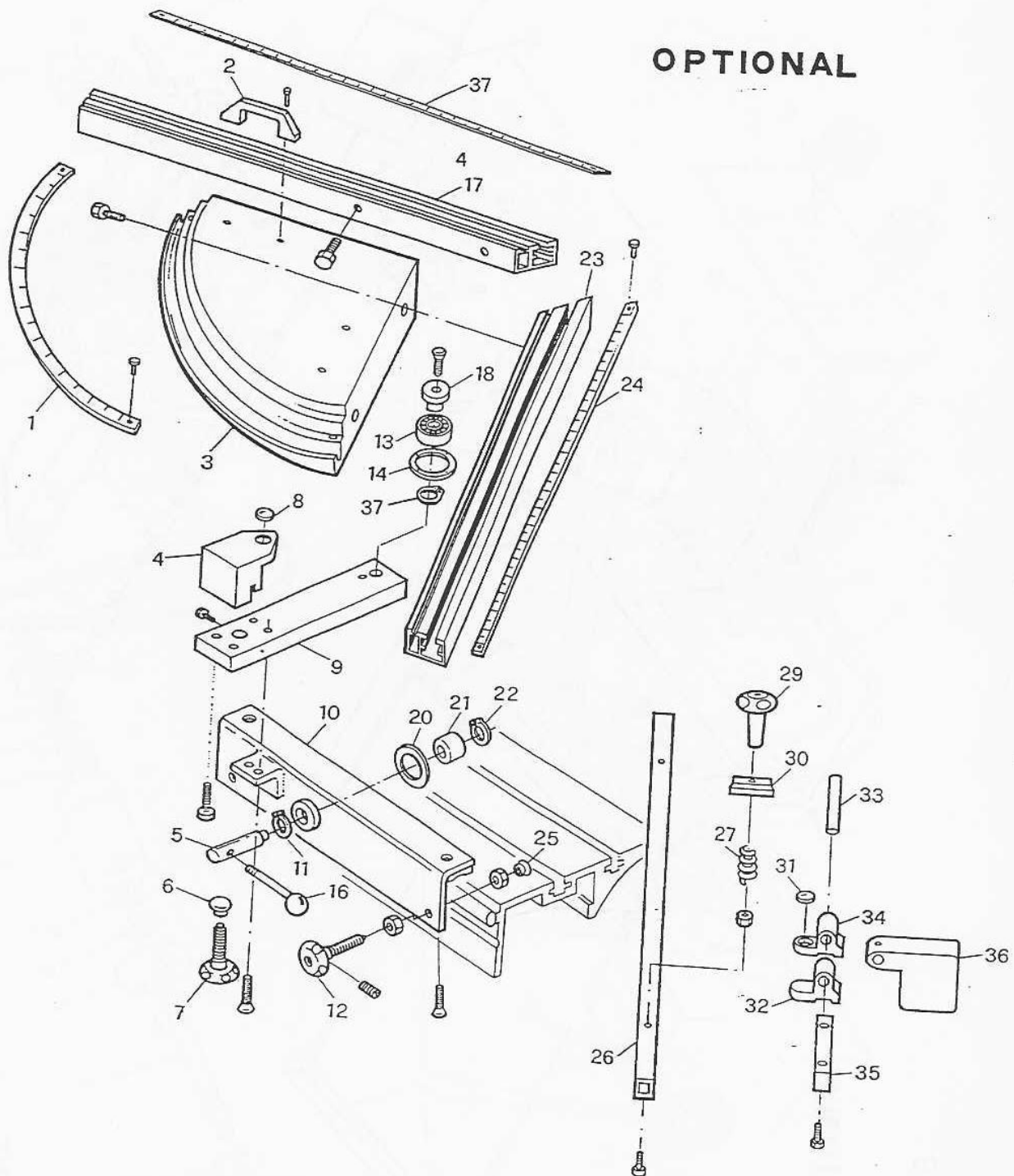
TAV.12 /B

OPTIONAL

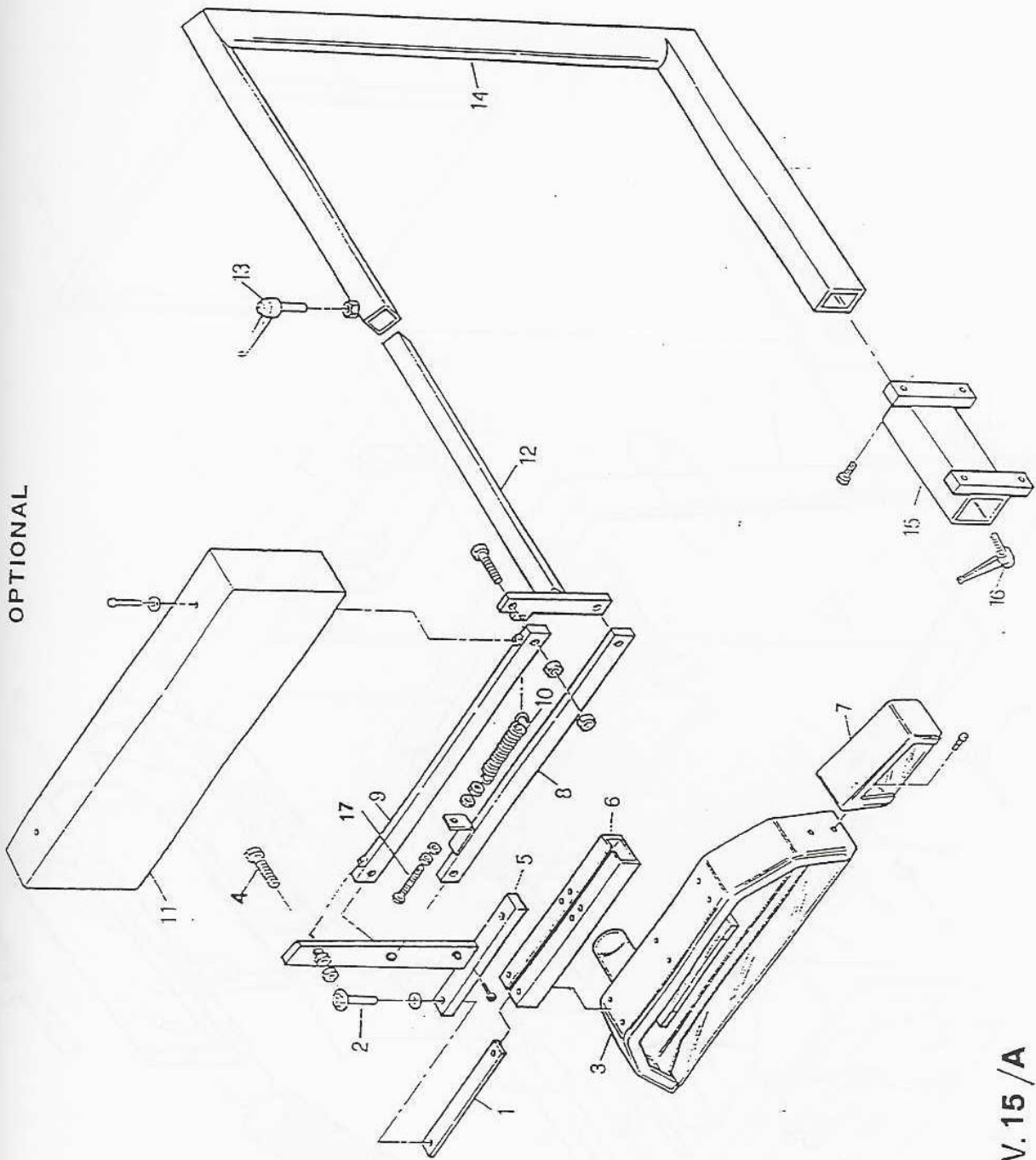


TAV. 13/B

OPTIONAL



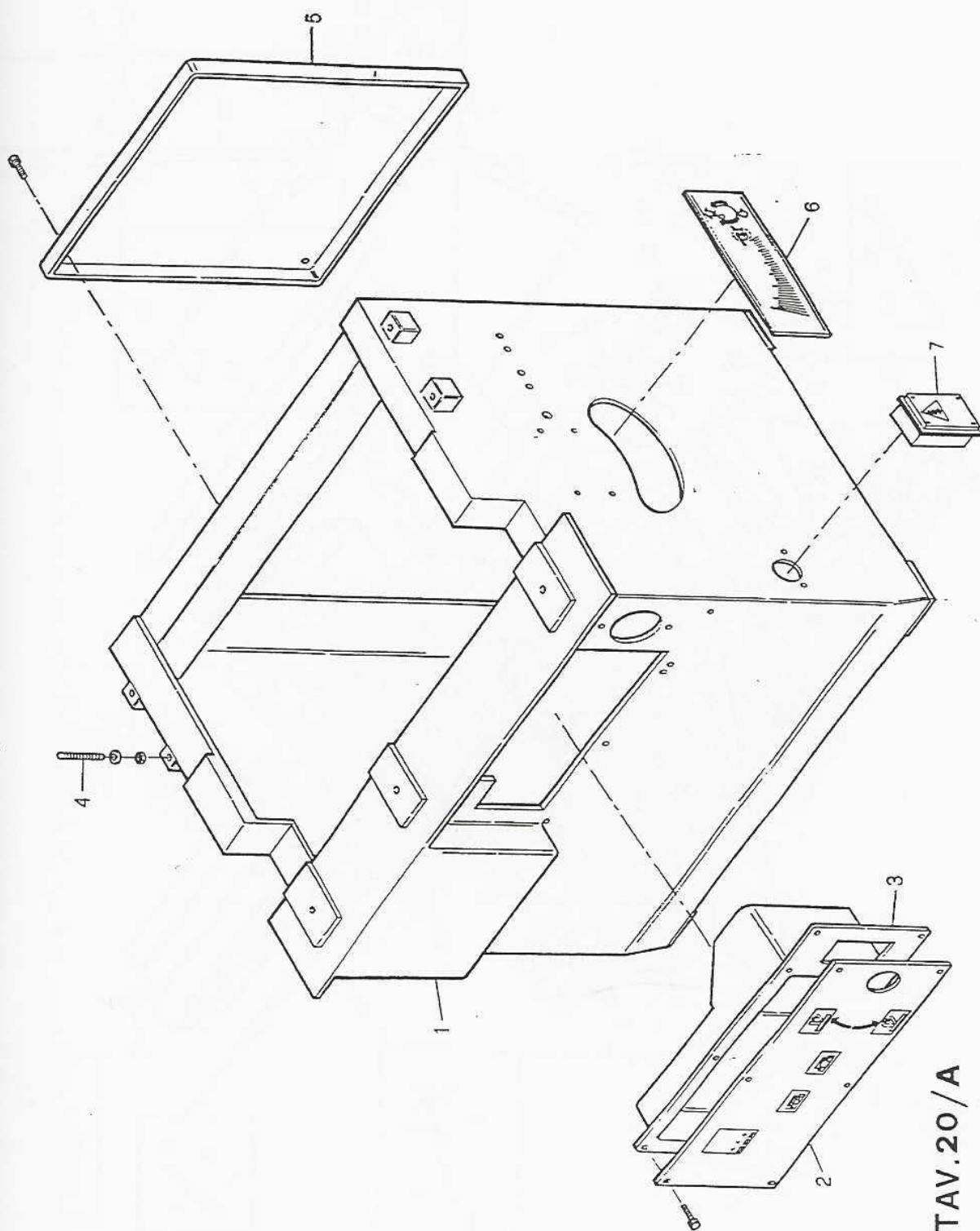
TAV.14 /A



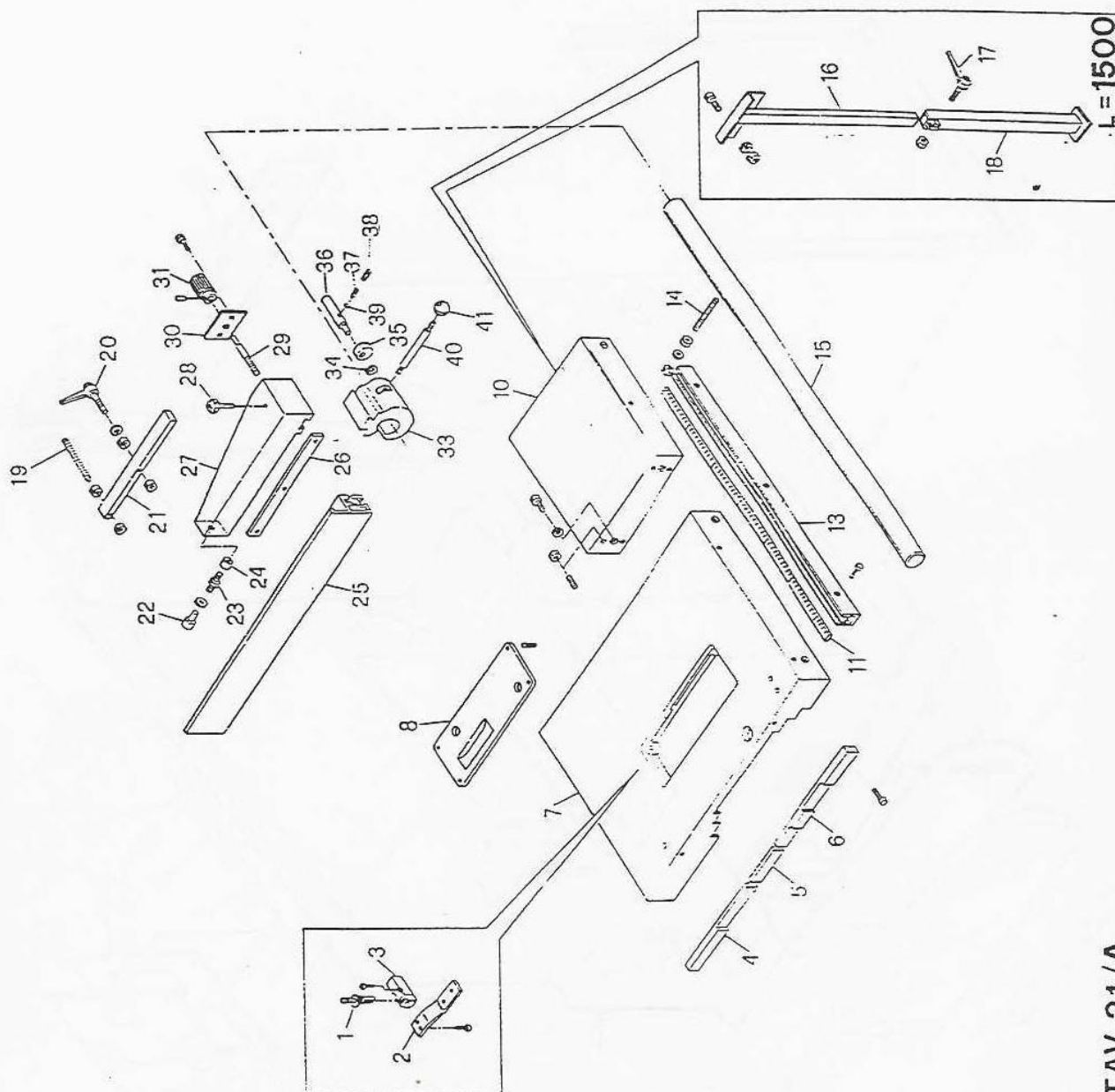
OPTIONAL

TAV. 15 / A

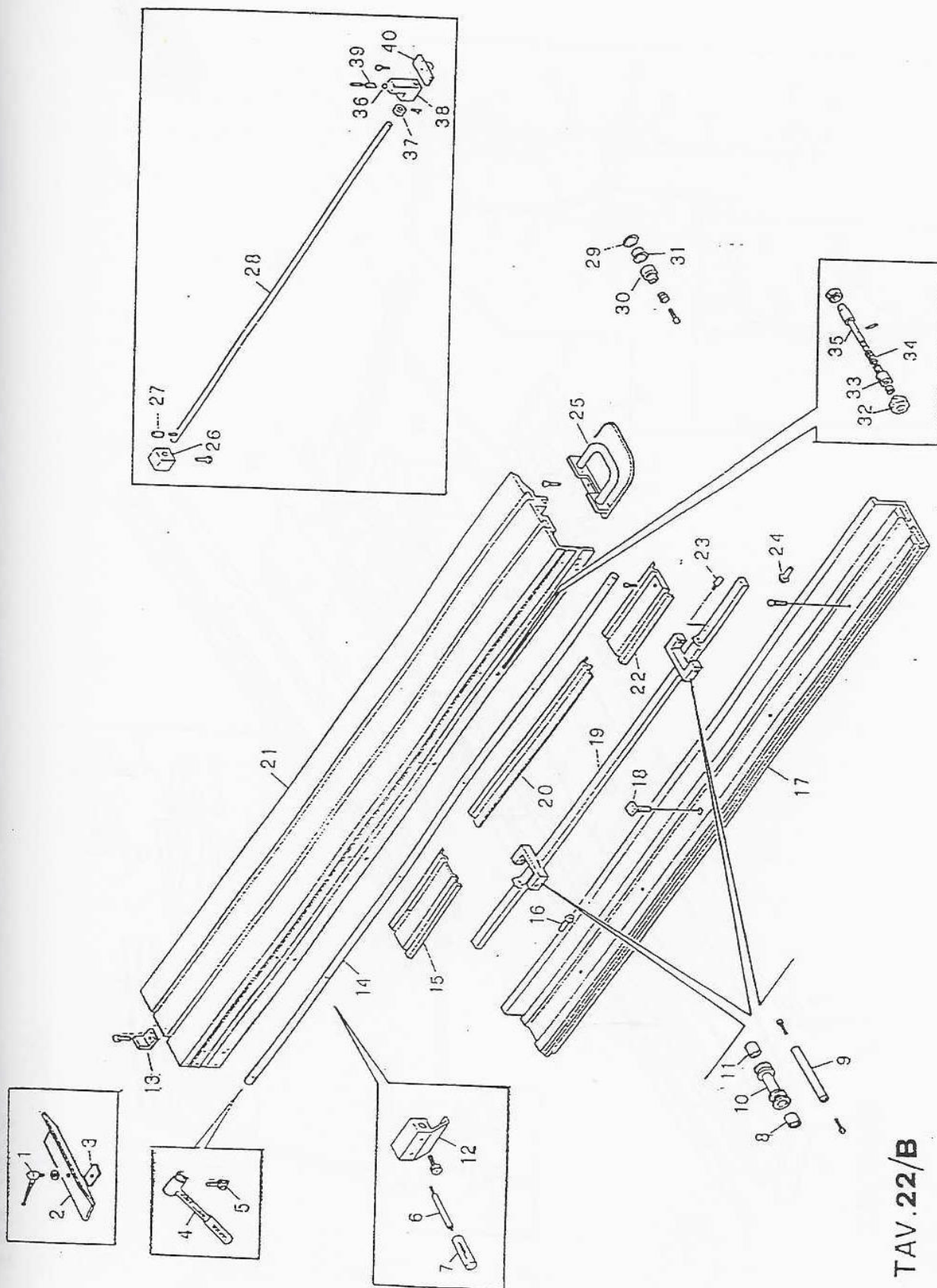




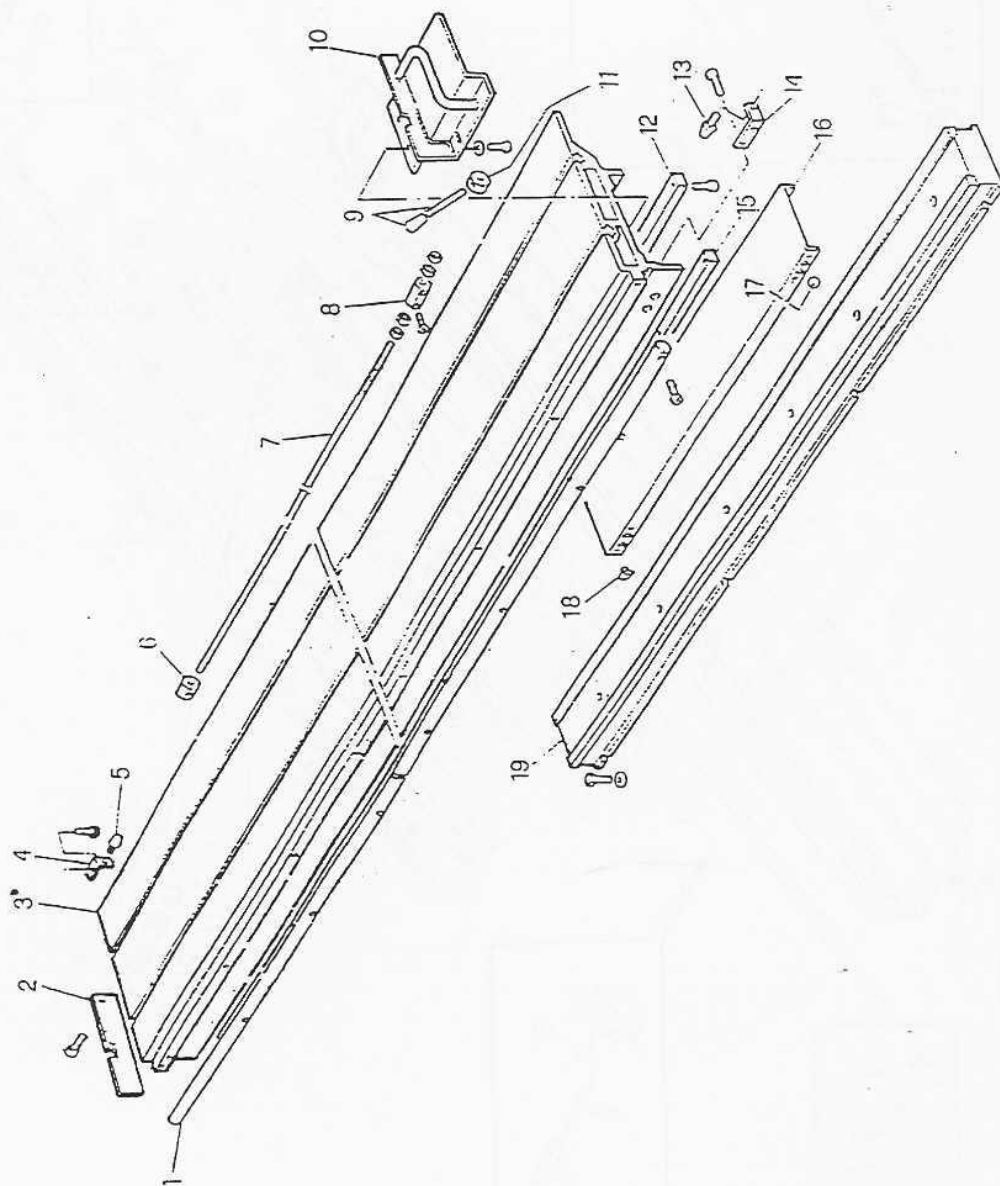
TAV.20/A



TAV.21/A

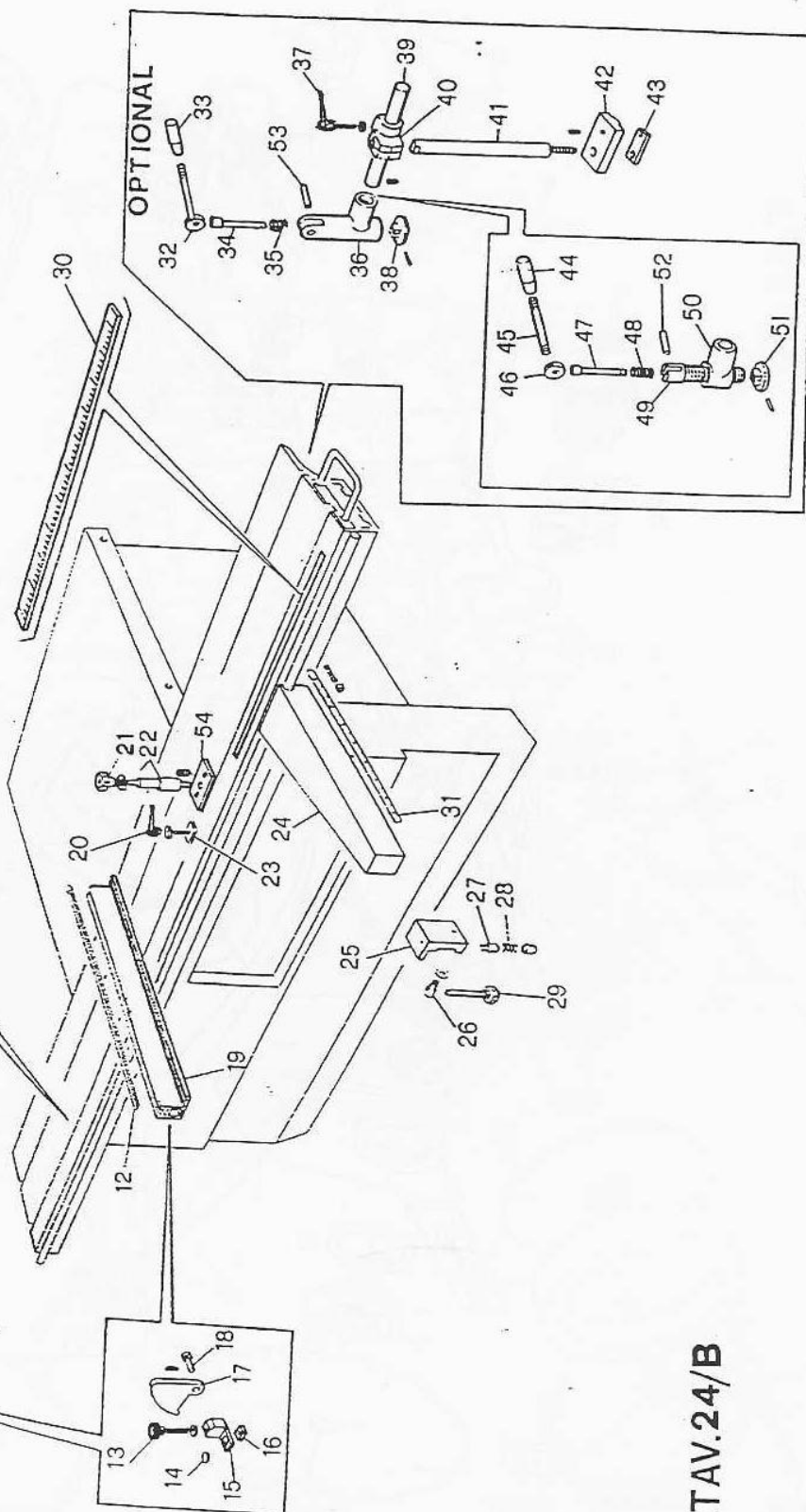
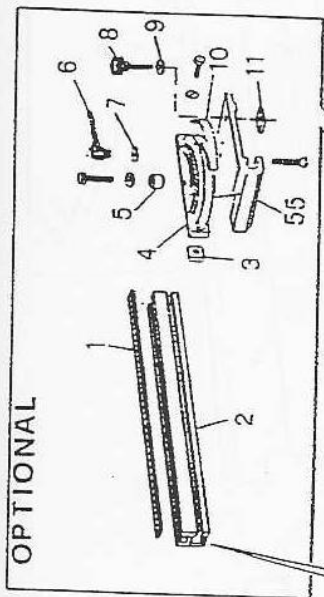


TAV.22/B



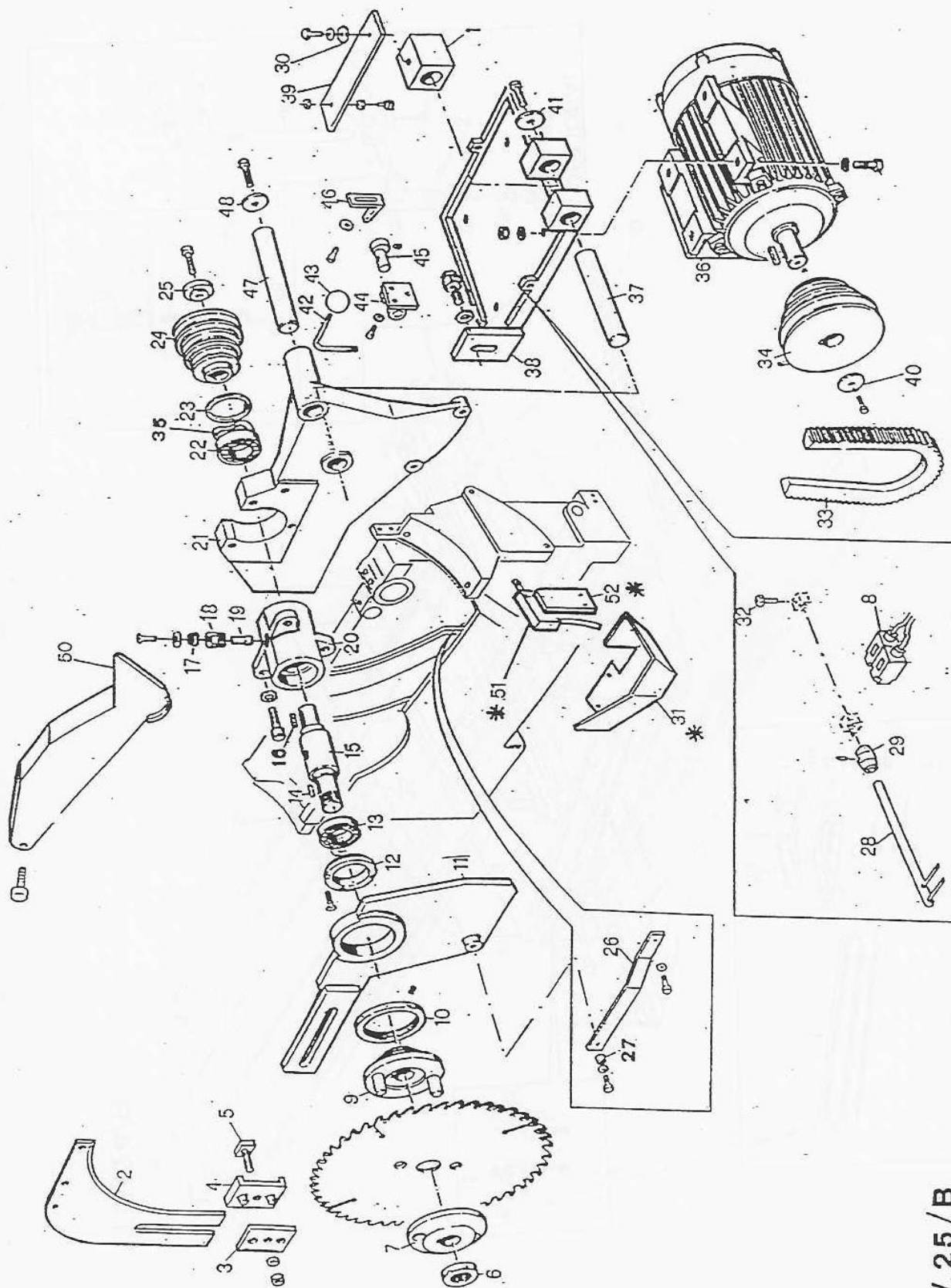
TAV. 23/A

OPTIONAL



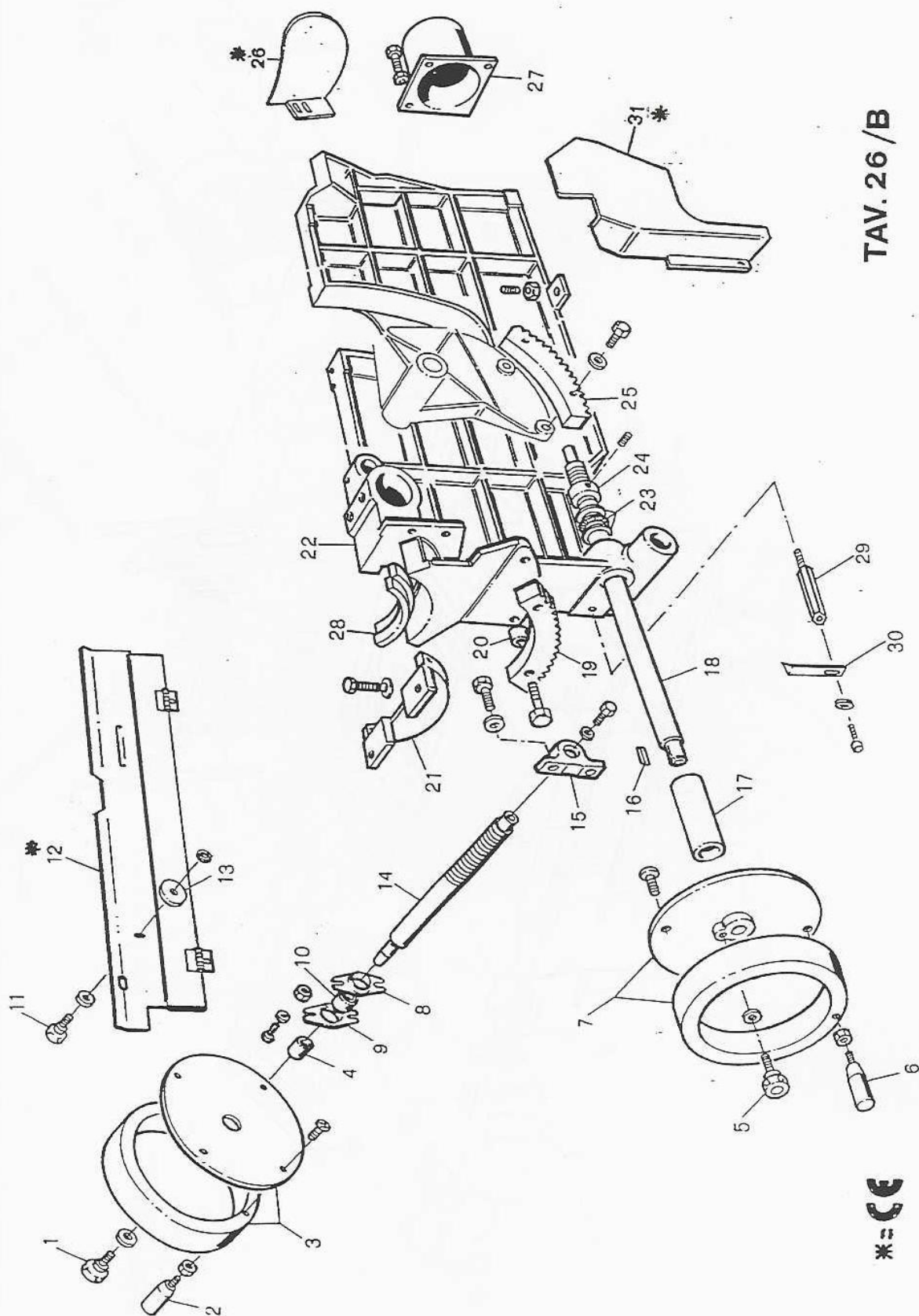
OPTIONAL

TAV.24/B



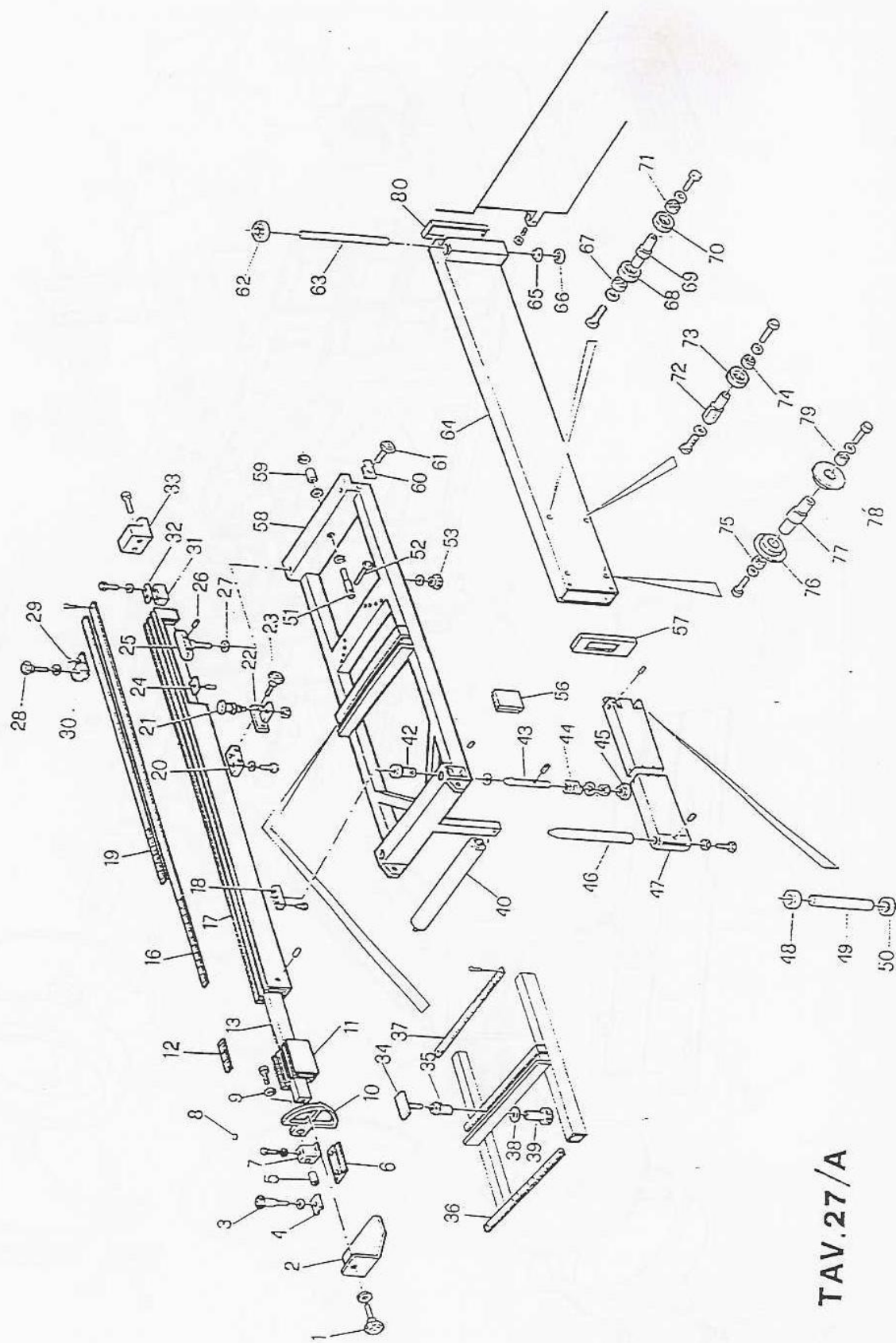
TAV.25/B

* = CE



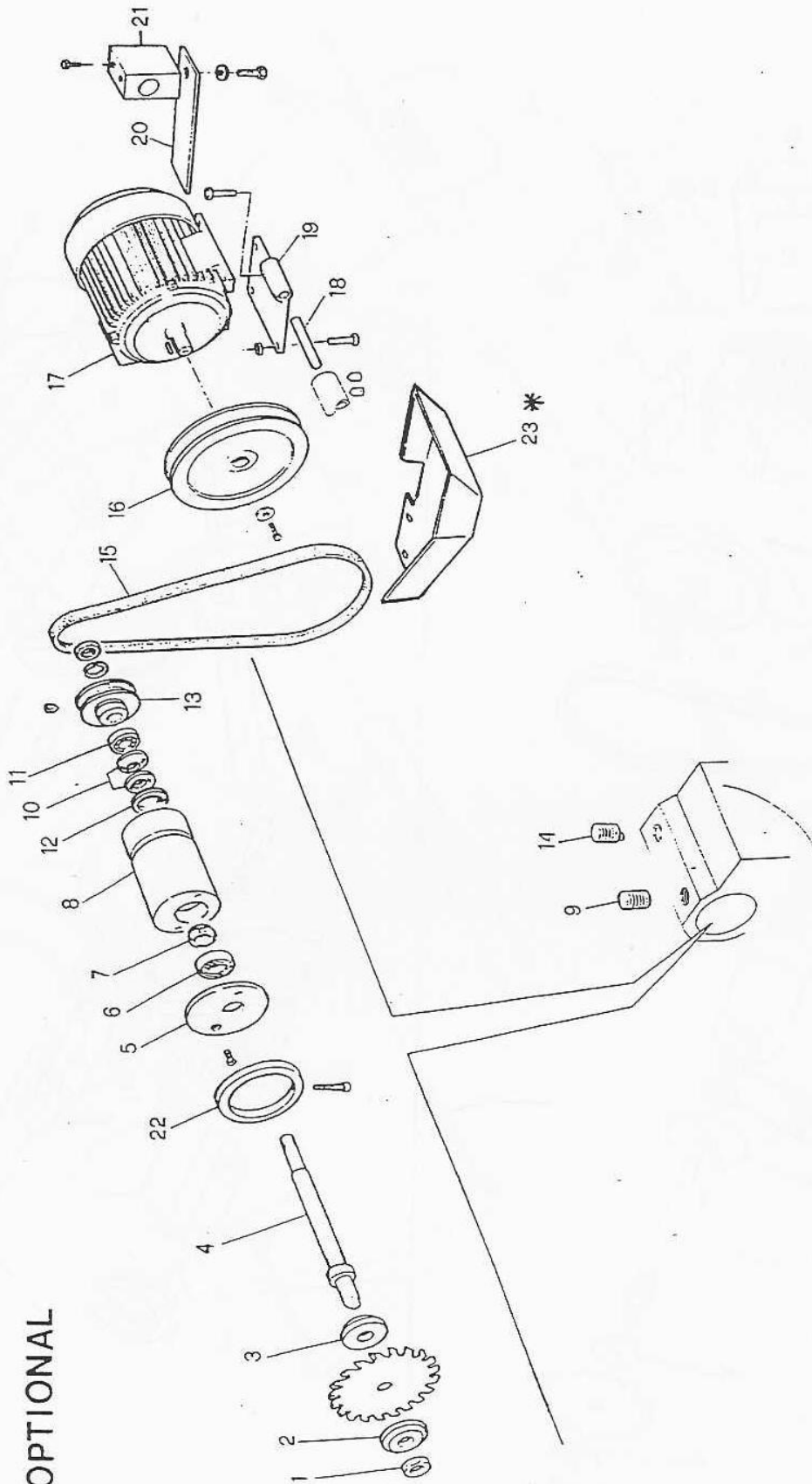
TAV. 26/B

※CE



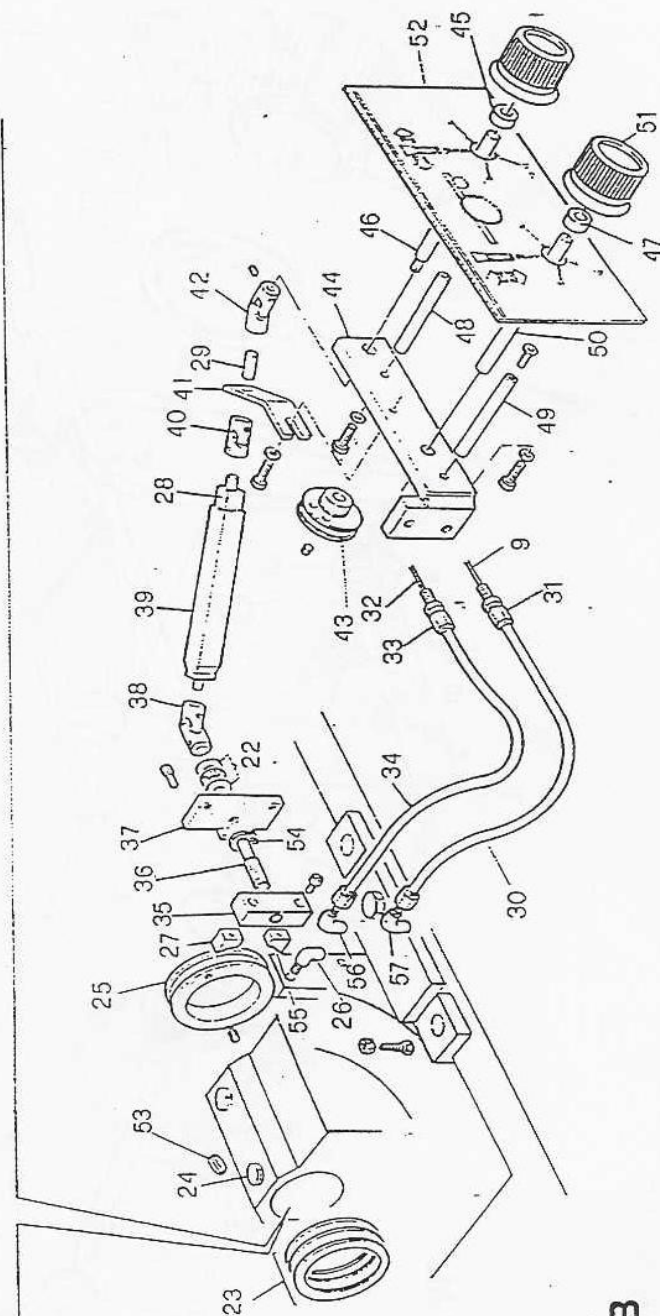
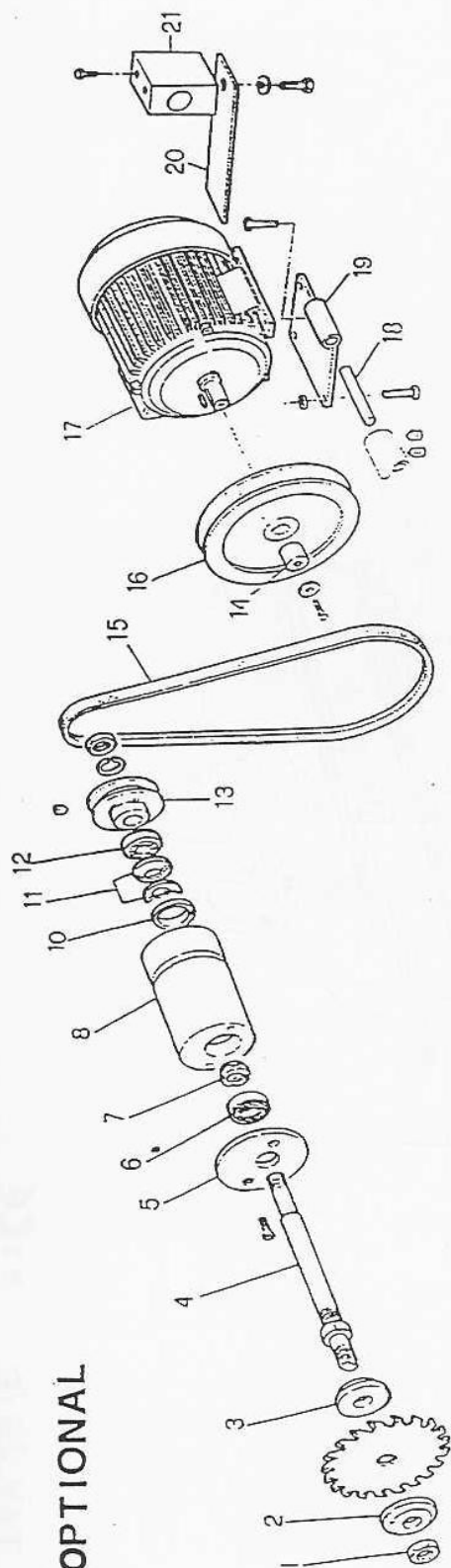
TAV.27/A

OPTIONAL



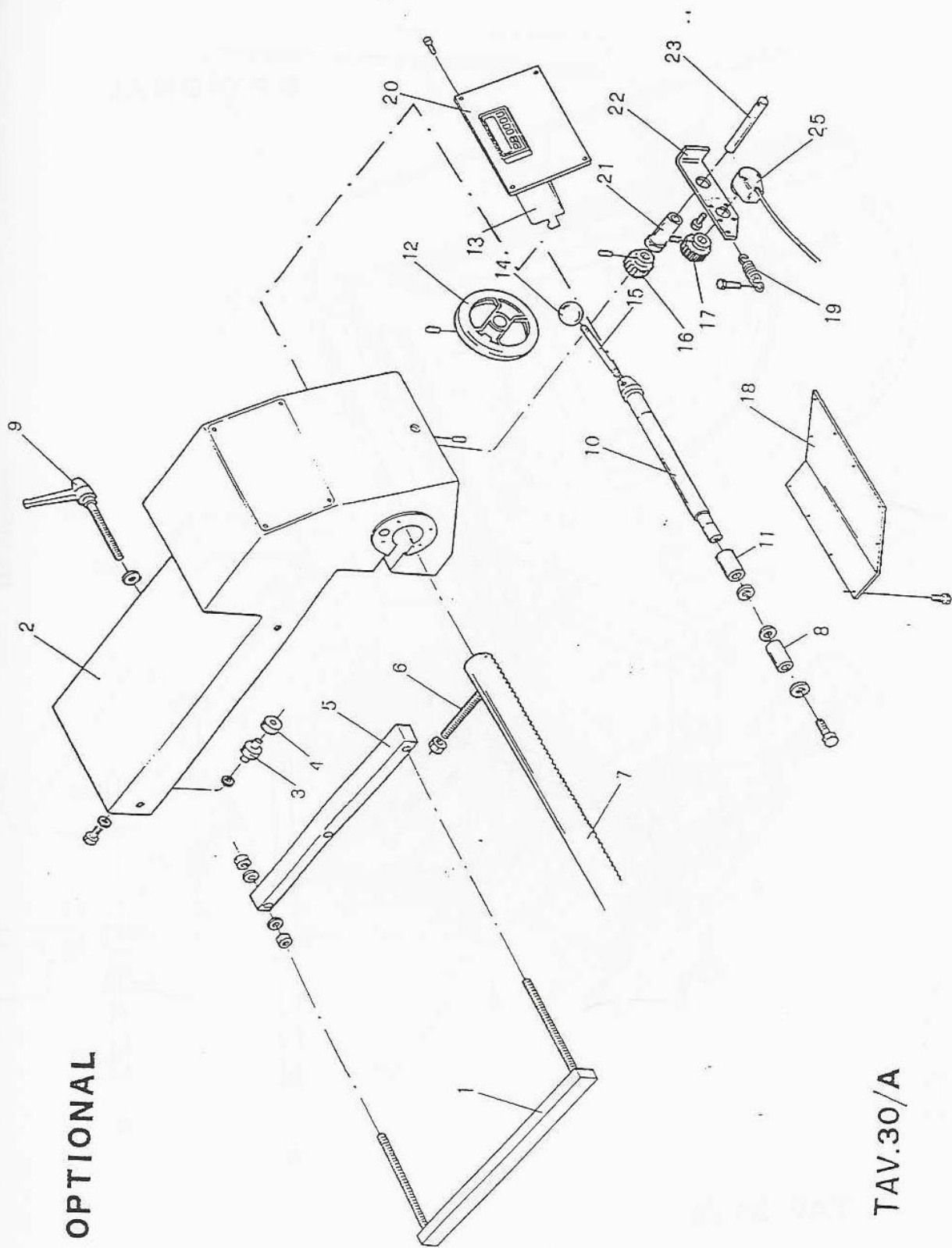
TAV.28/B * = 

OPTIONAL



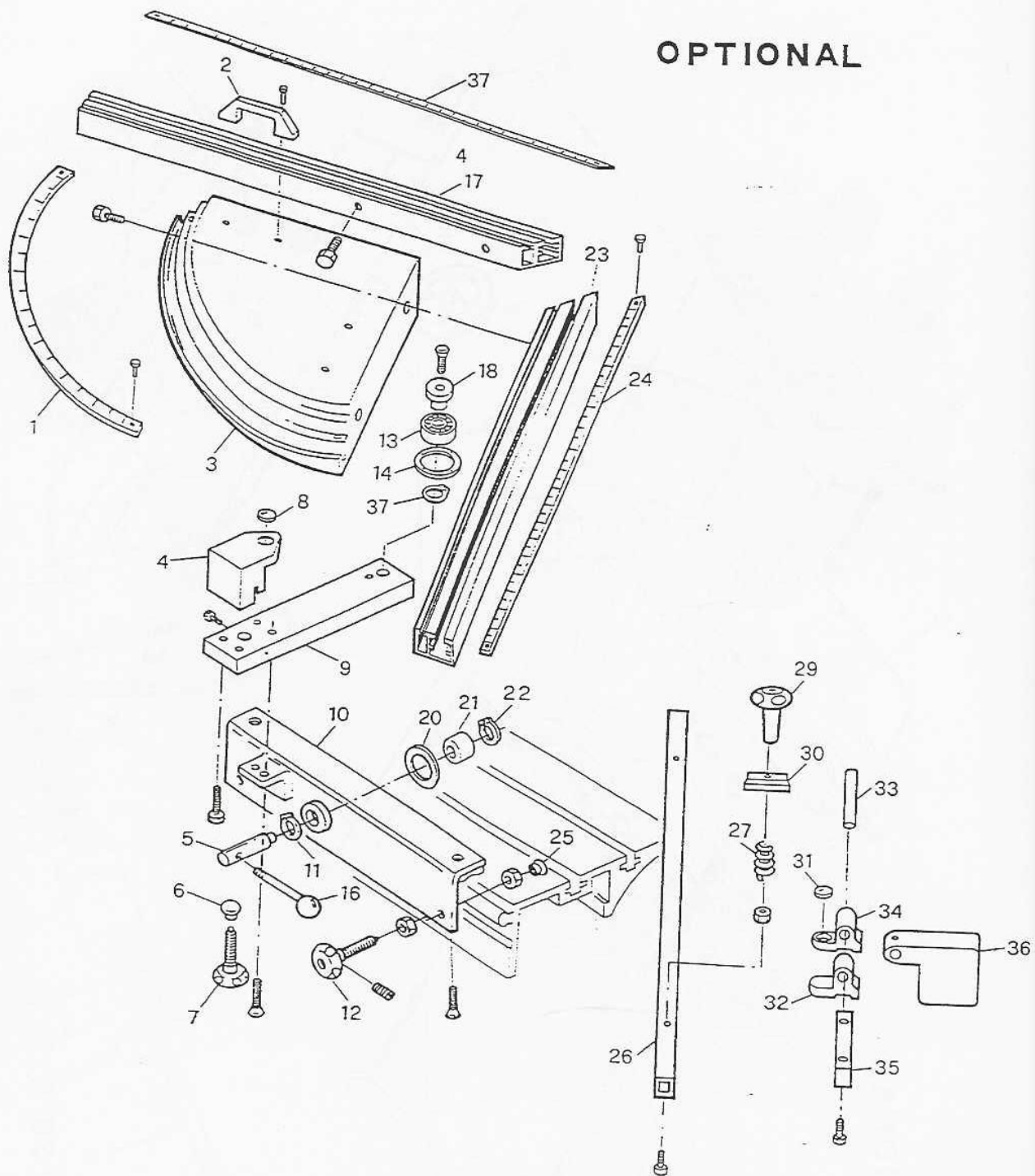
TAV.29/B

OPTIONAL



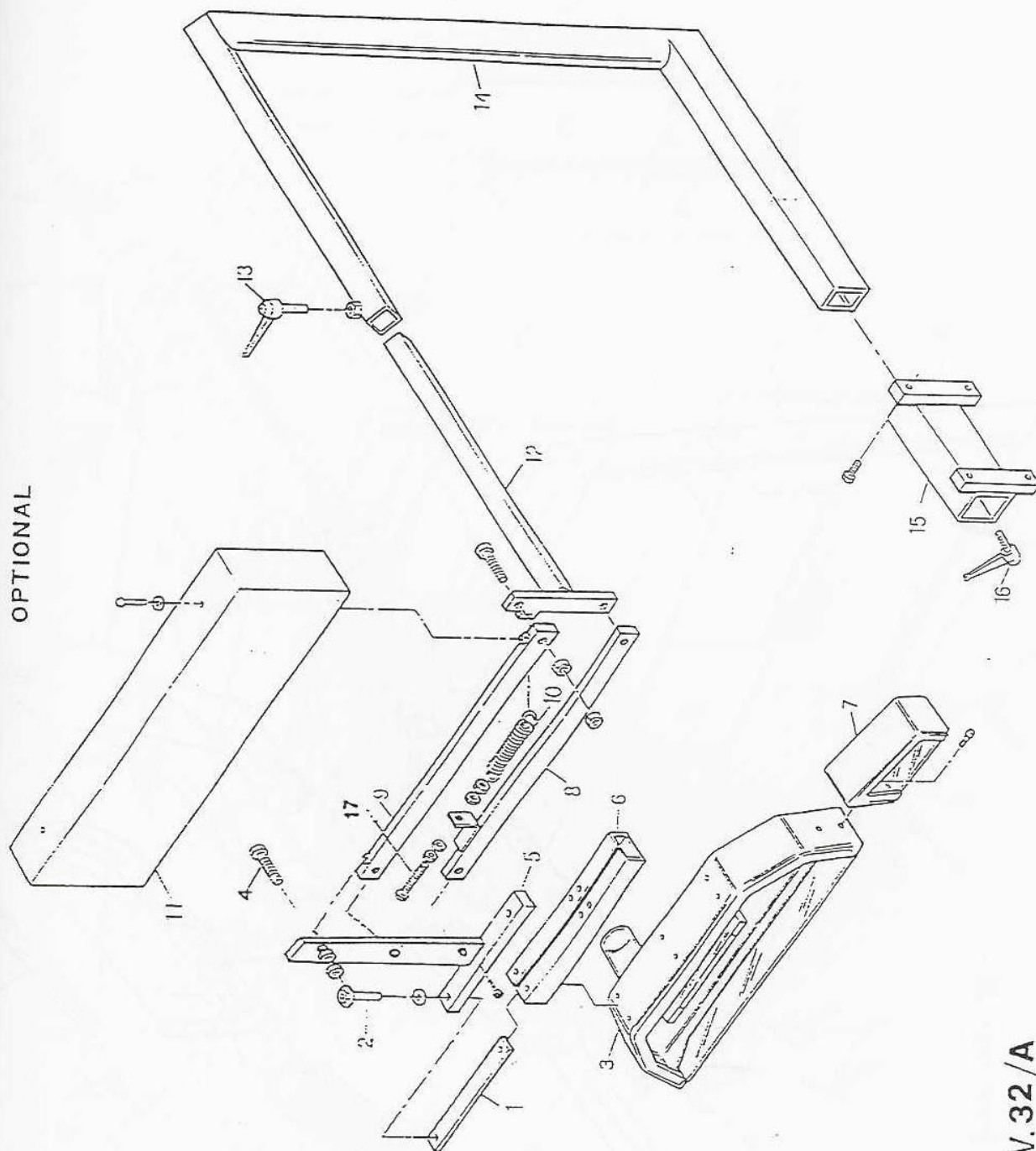
TAV.30/A

OPTIONAL

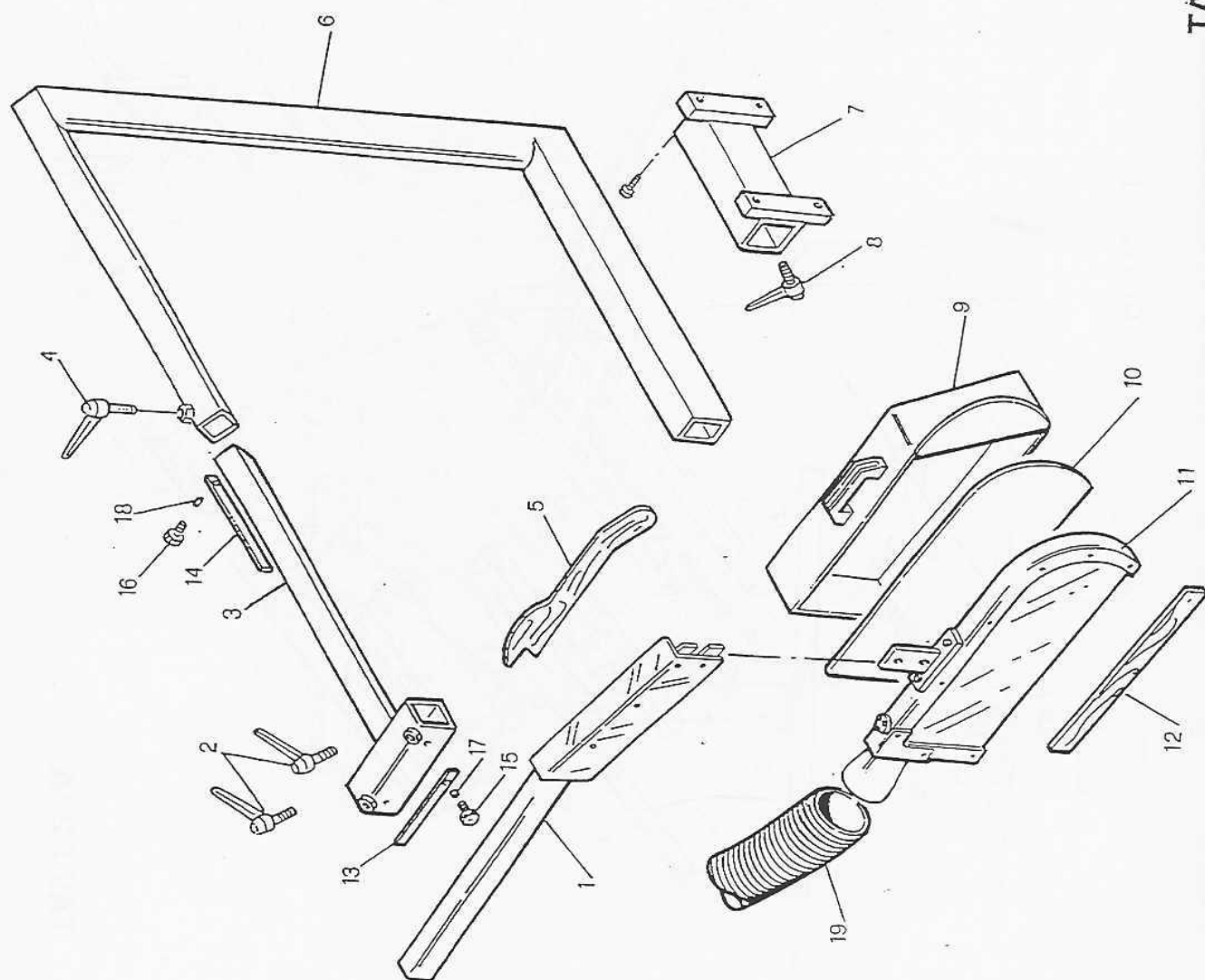


TAV. 31 /A

OPTIONAL

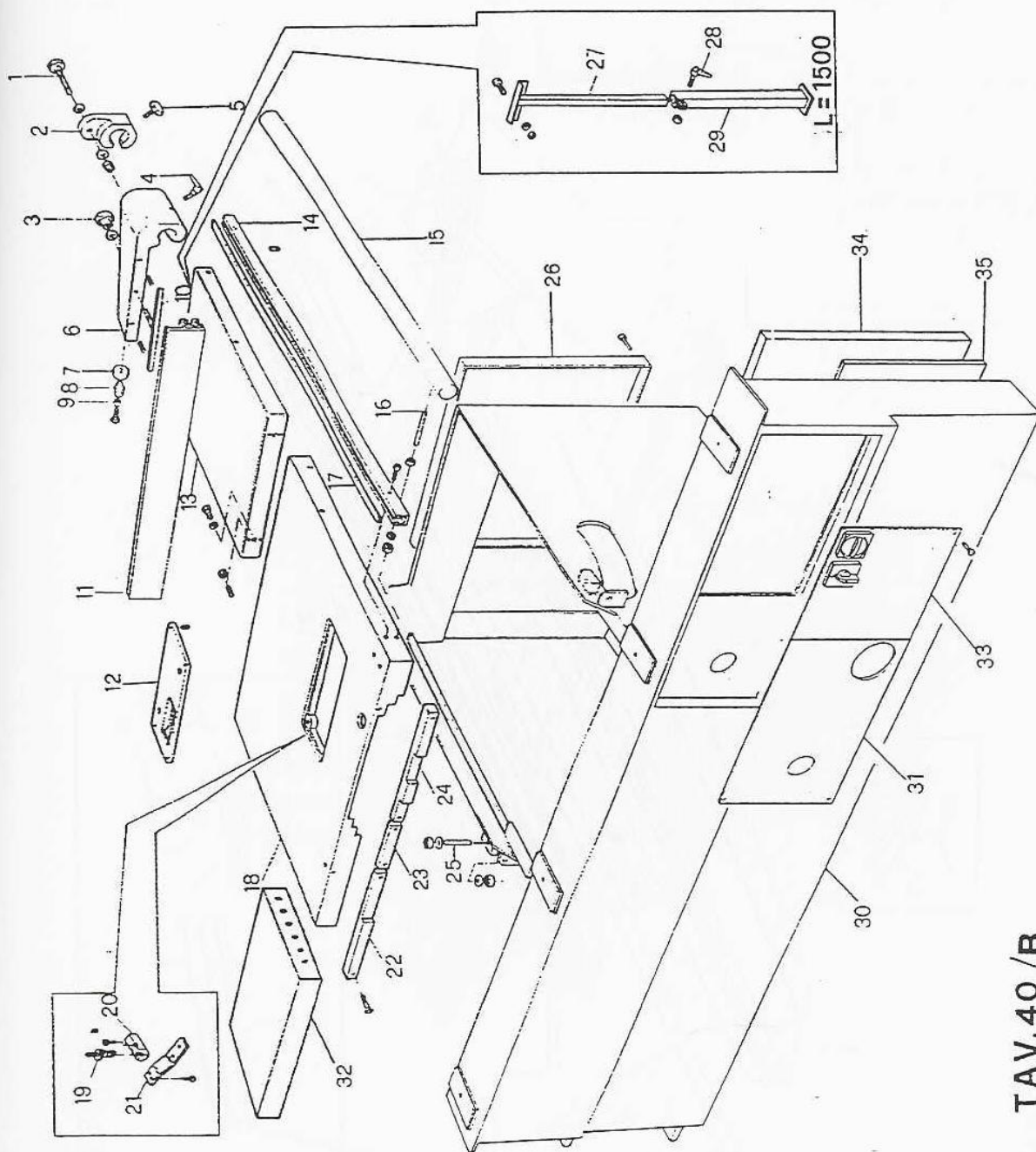


TAV. 32/A

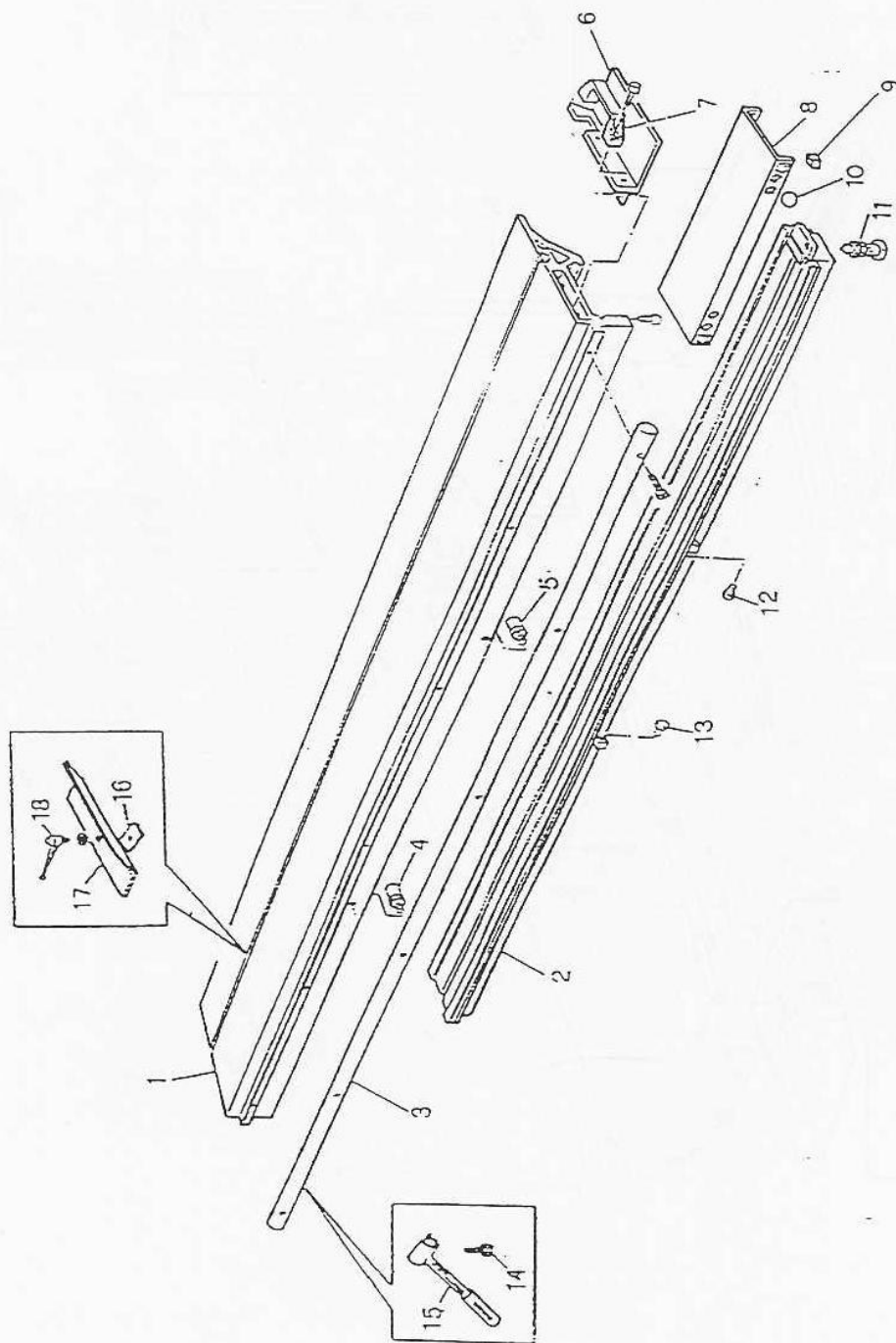


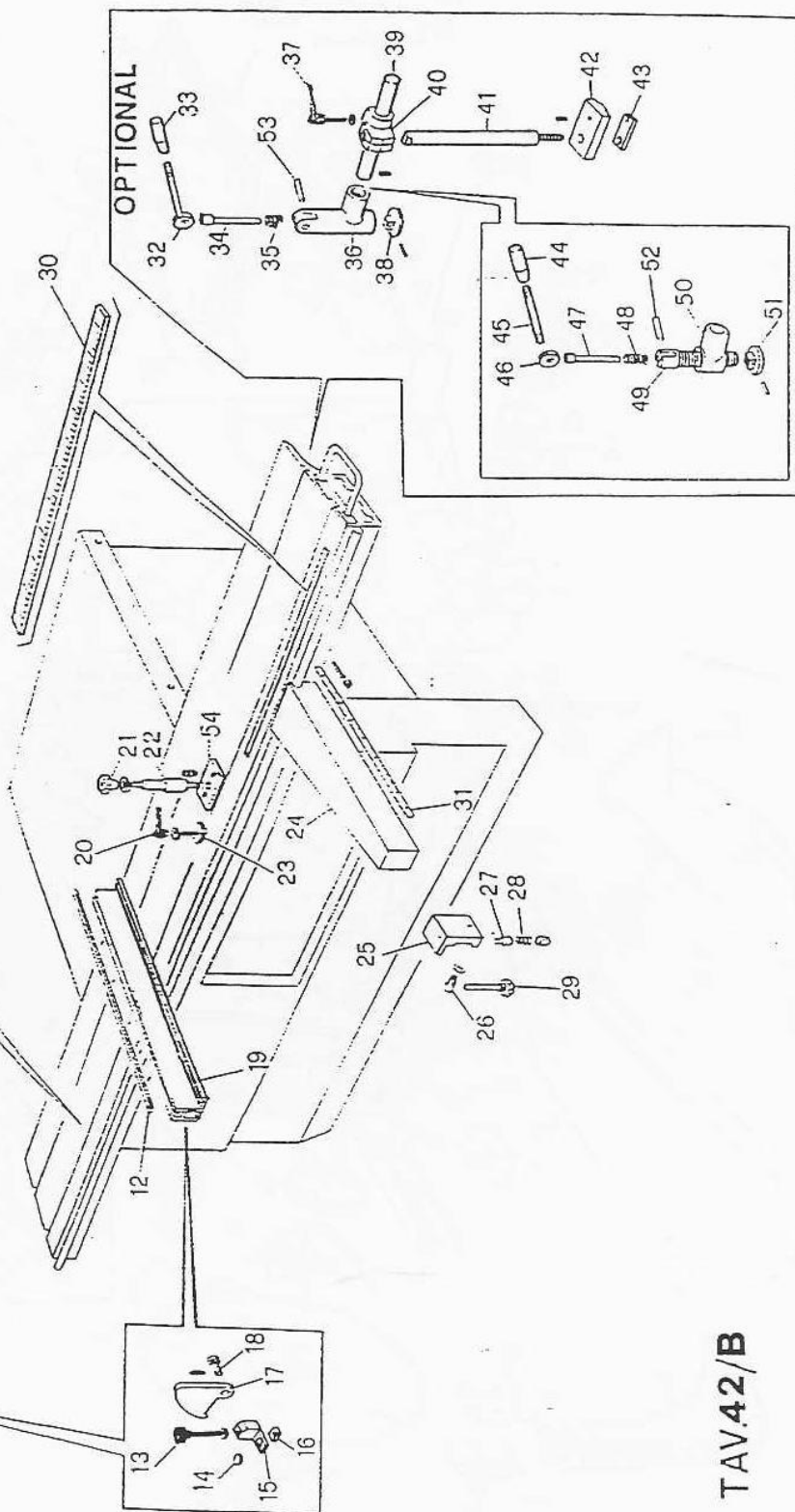
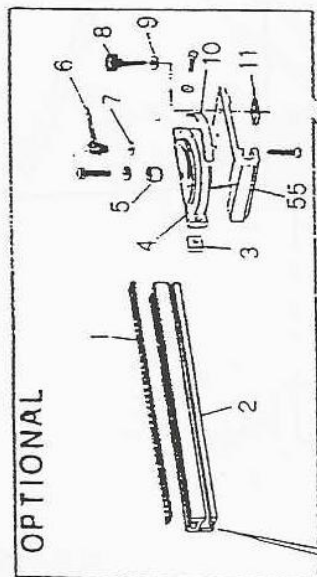
TAV.33/A



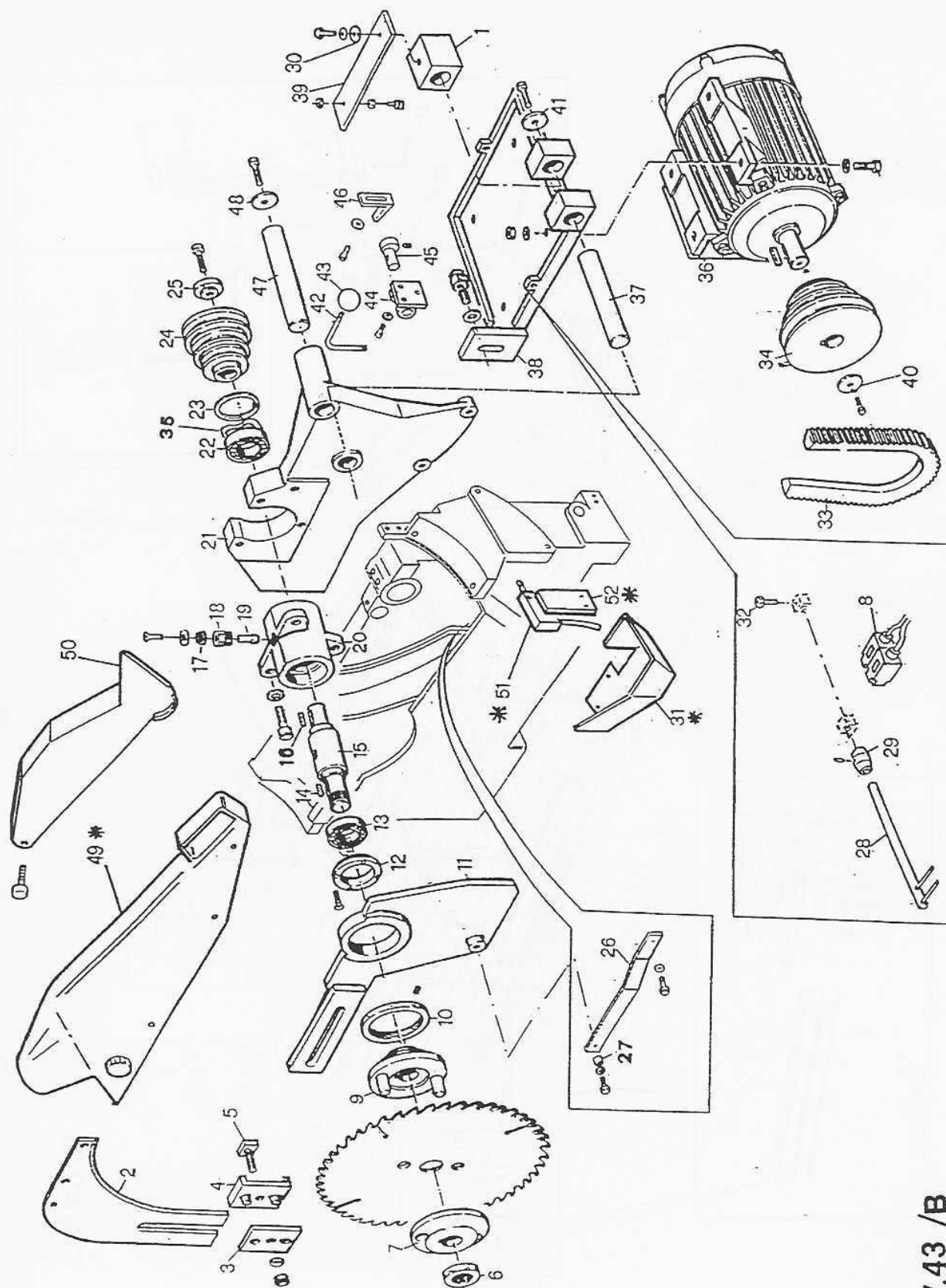


TAV.40 /B

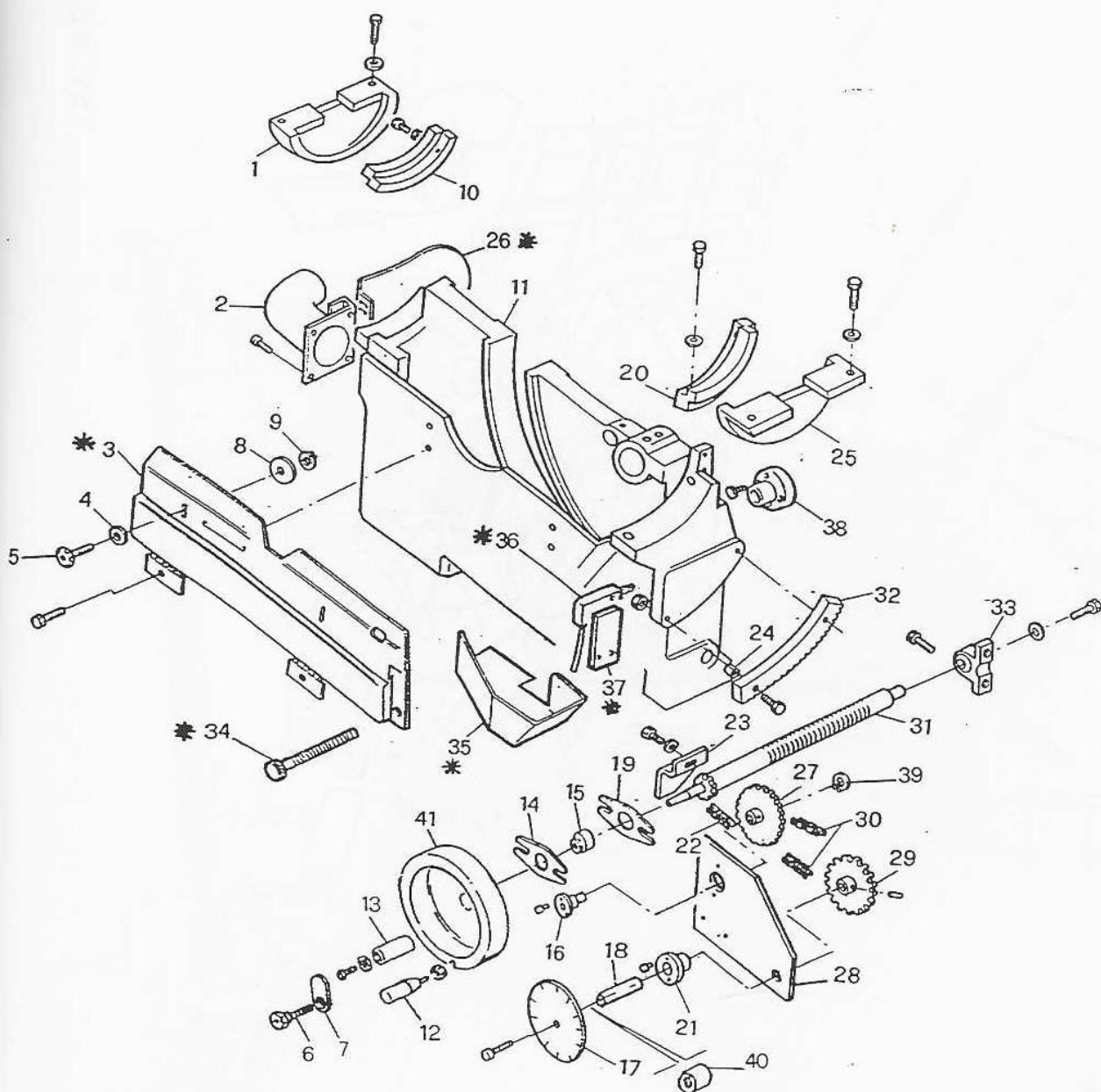




TAV.42/B

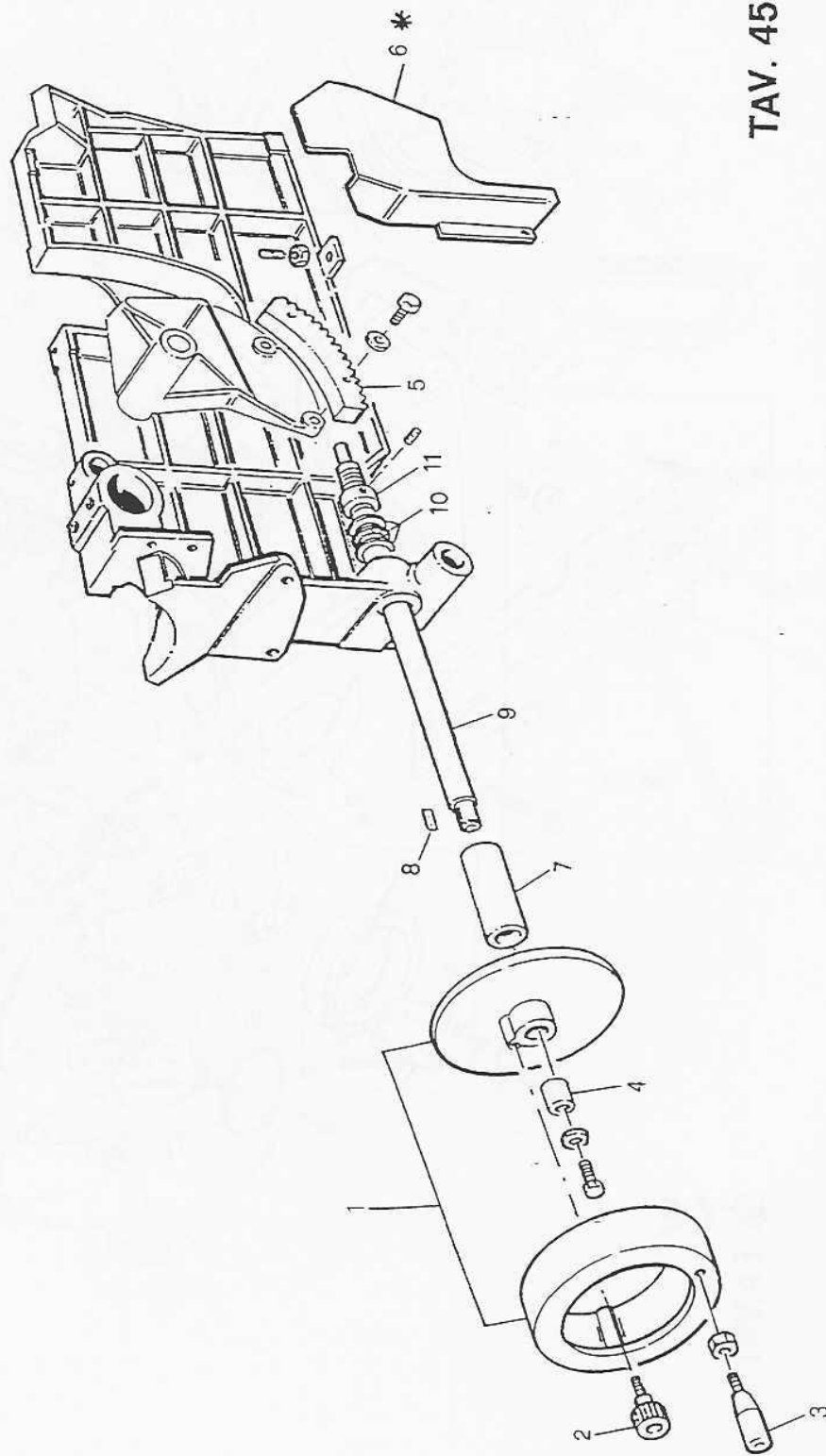


TAV.43 /B



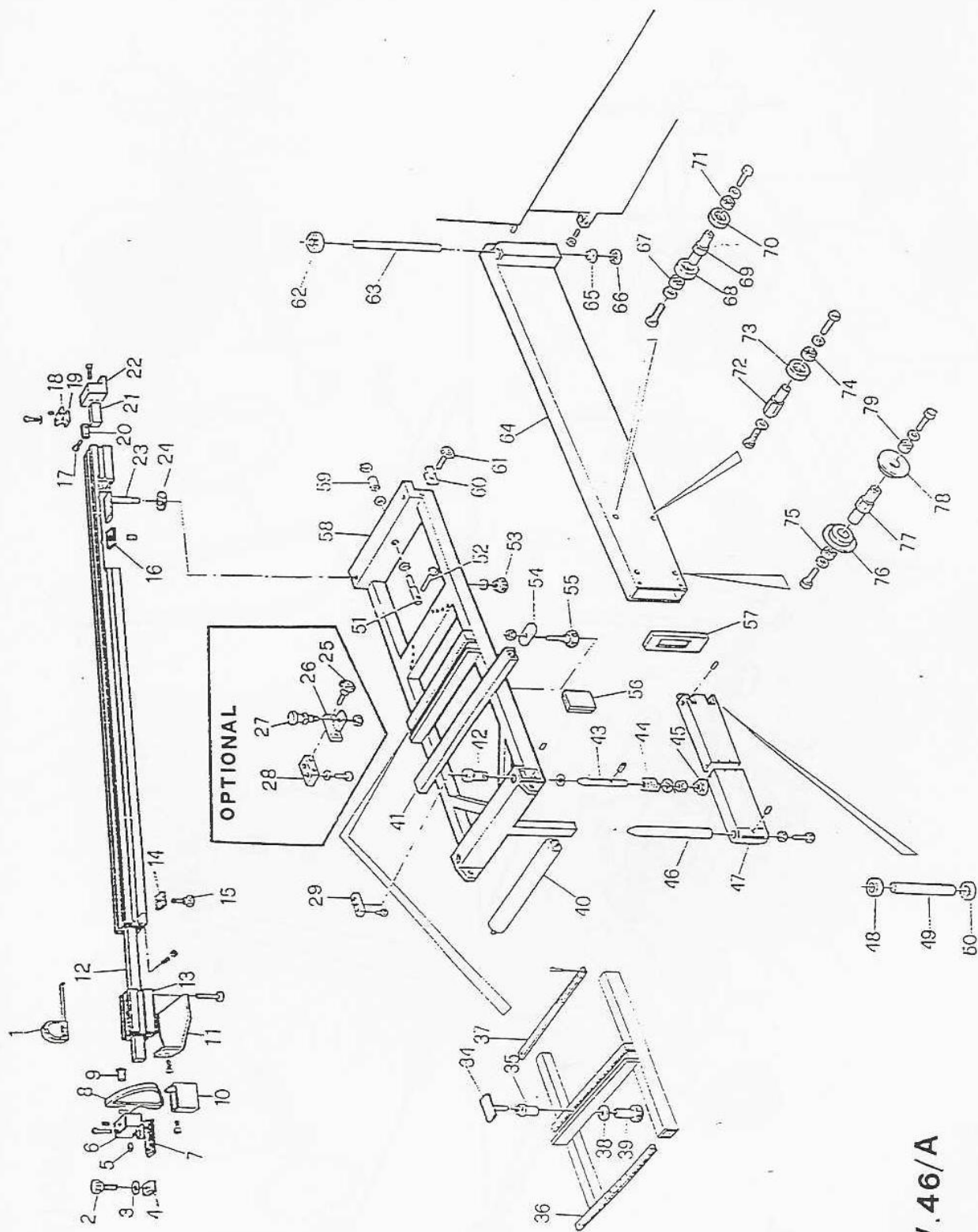
* = CE

TAV.44/B



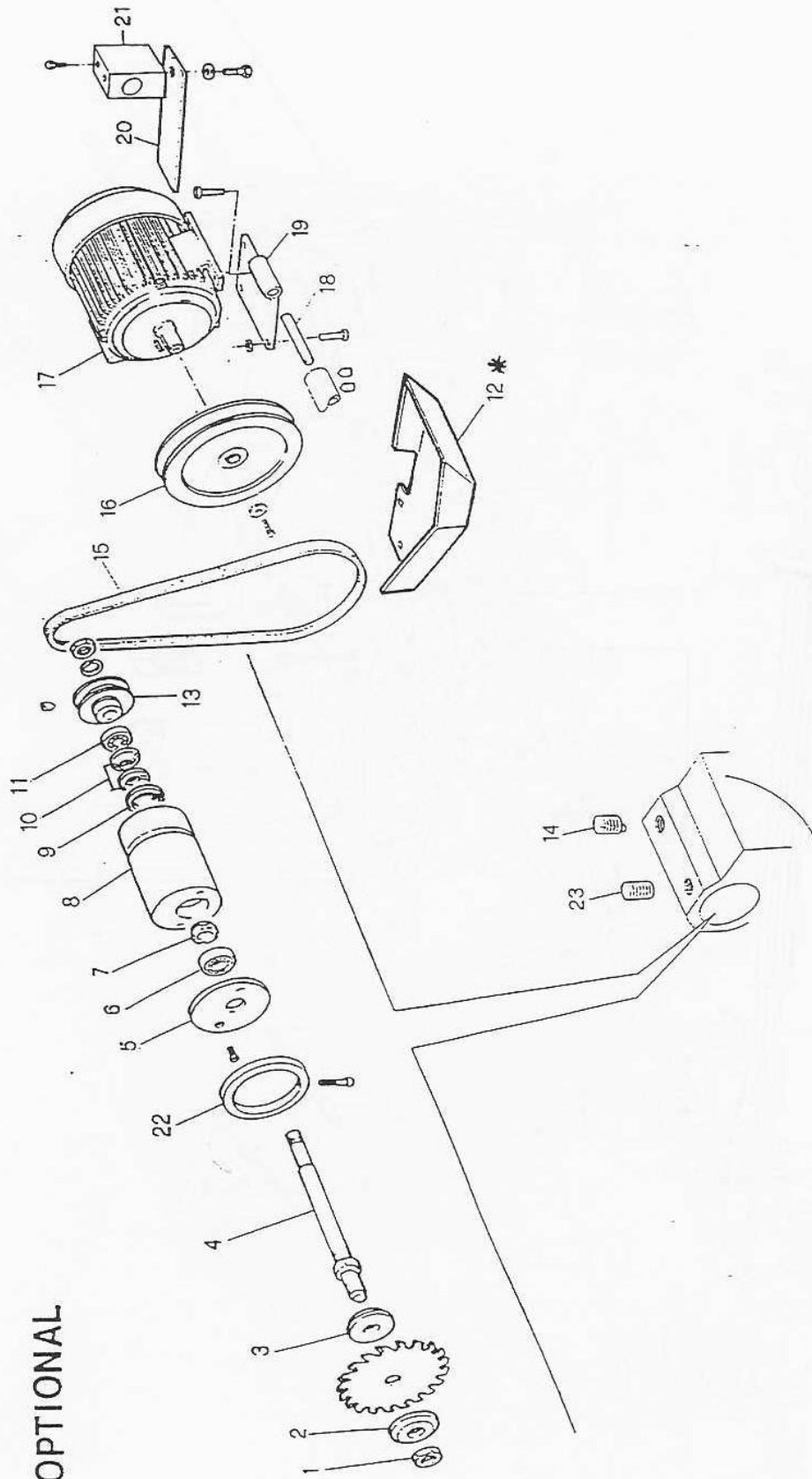
TAV. 45/B

*=C

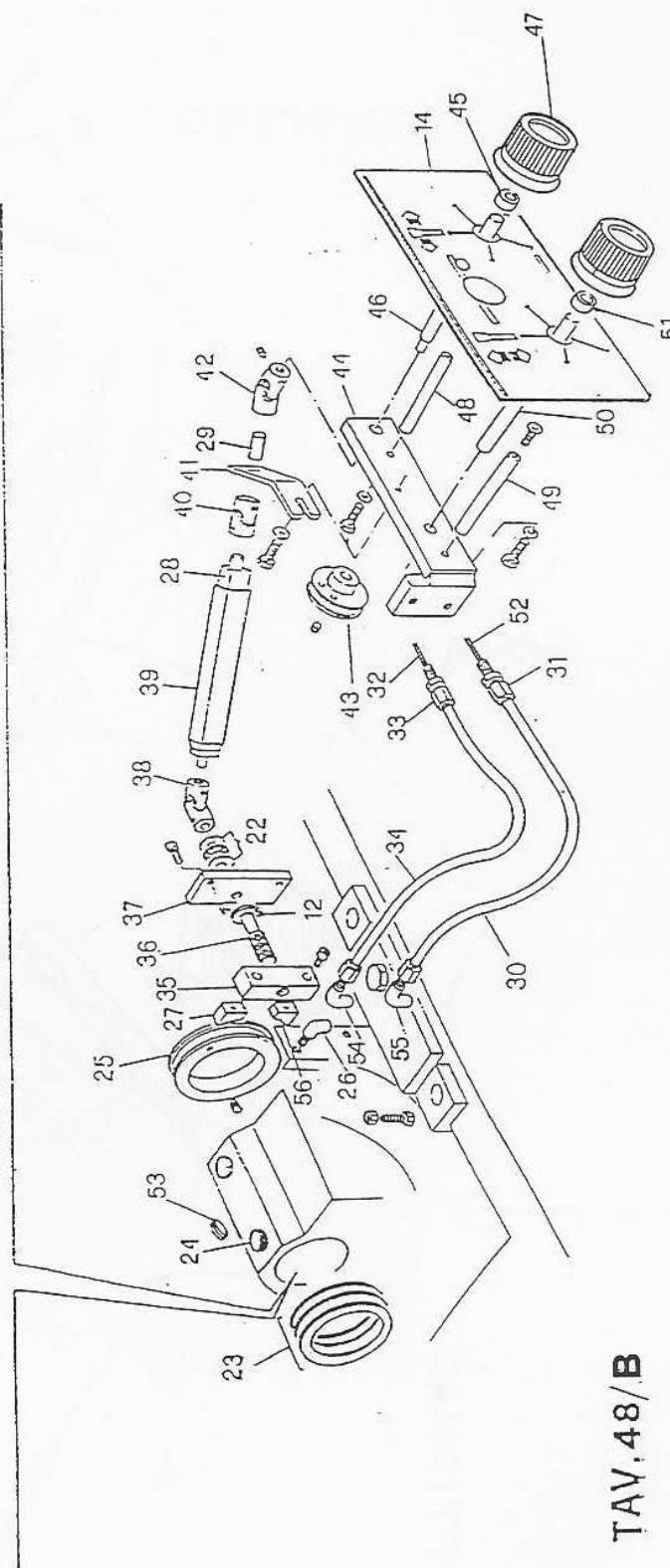
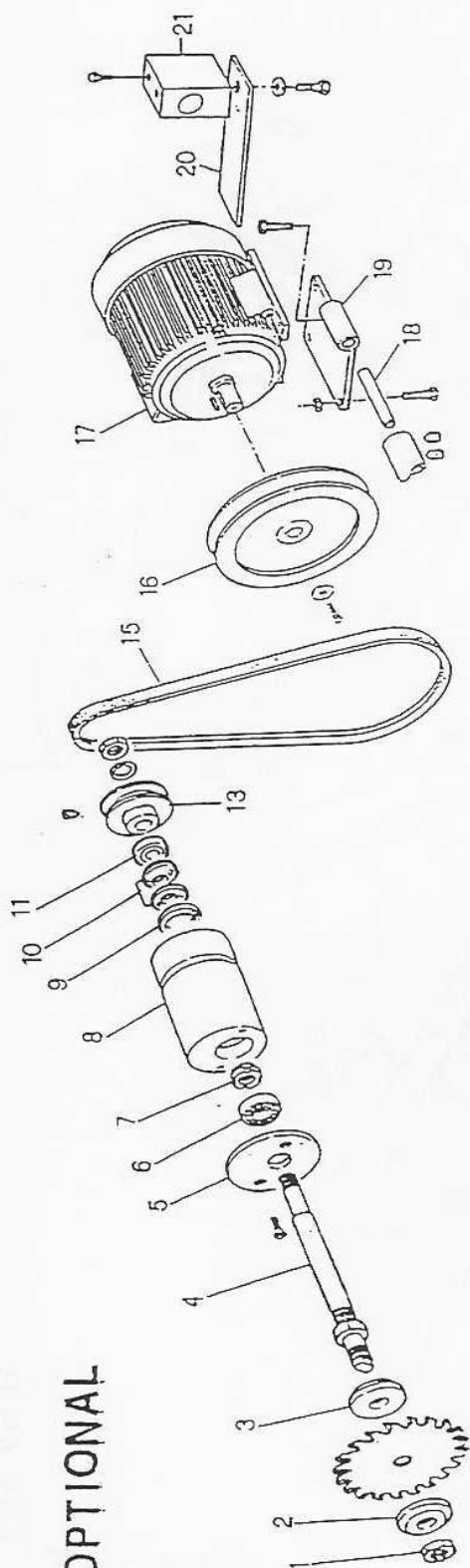


TAV.46/A

OPTIONAL

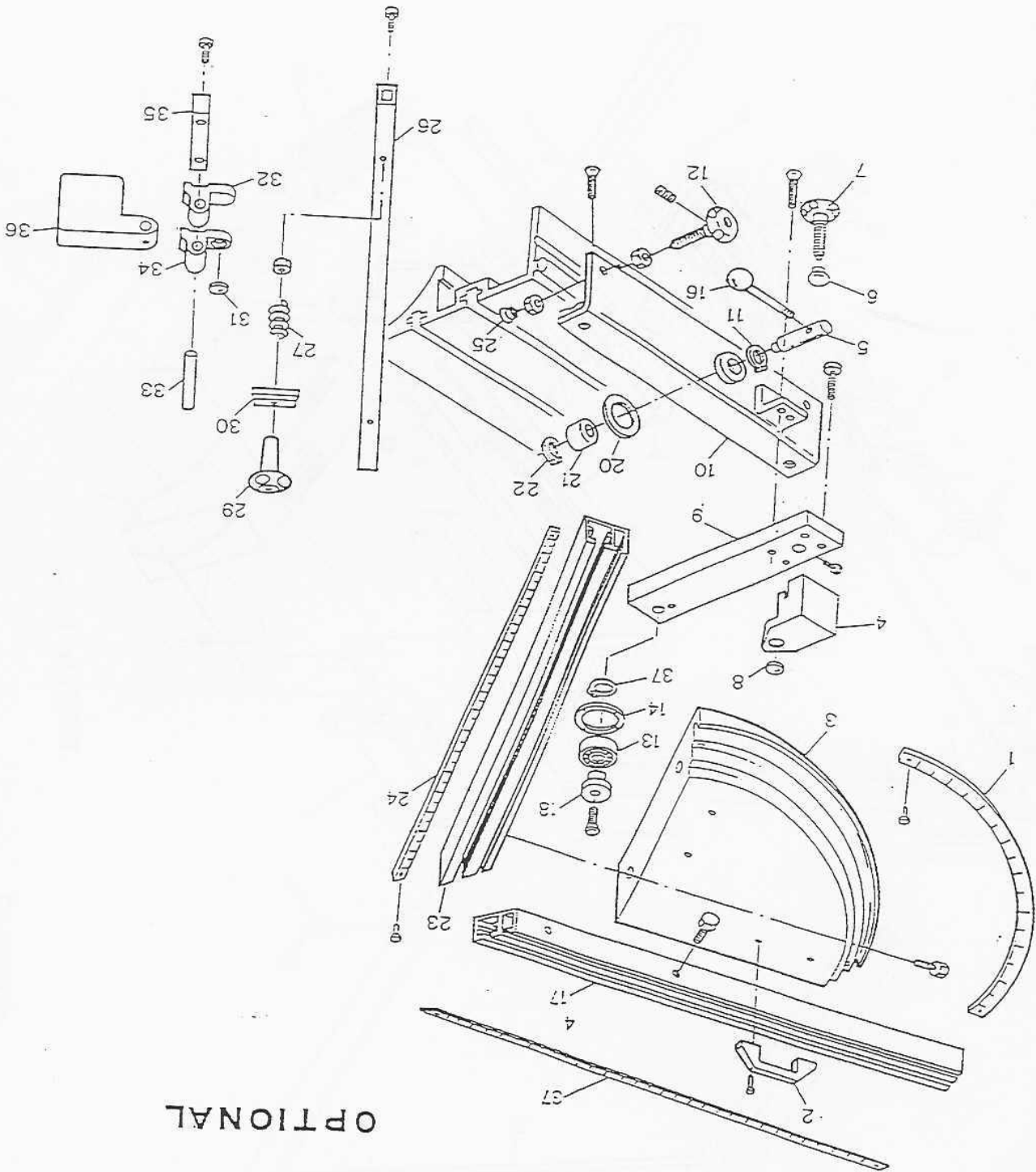


OPTIONAL



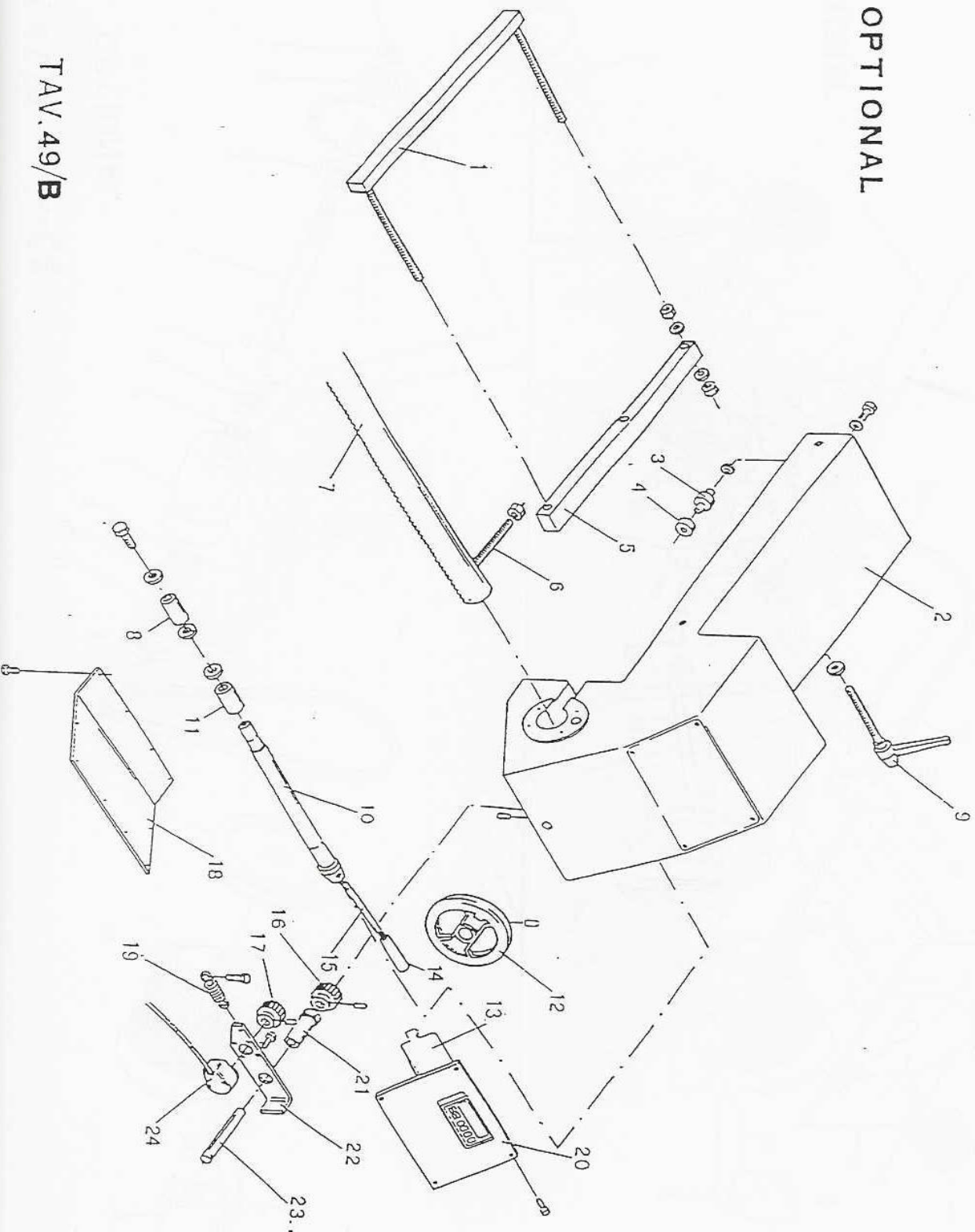
TAV.48/B

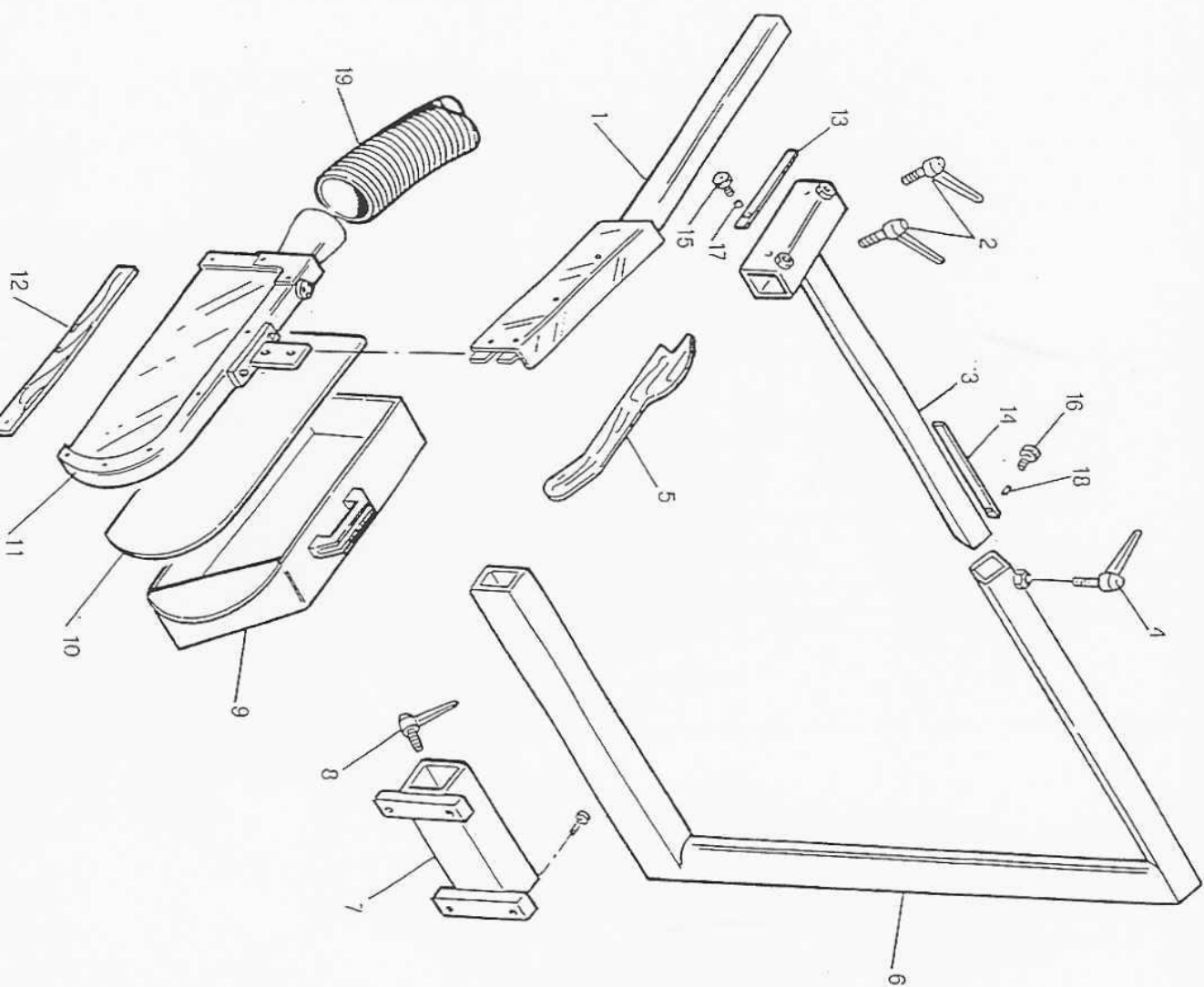
TAV. 50/A



OPTIONAL

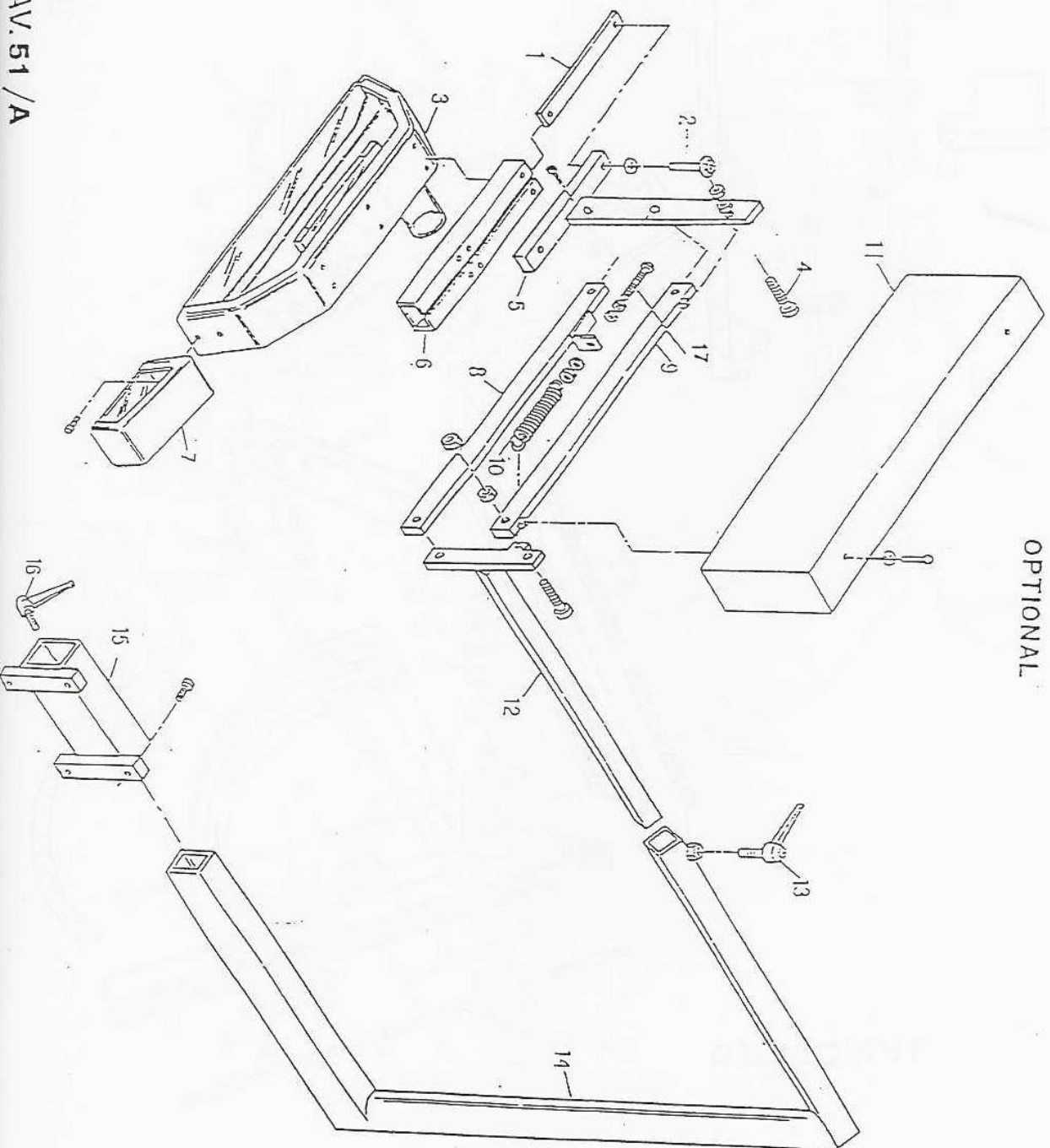
OPTIONAL

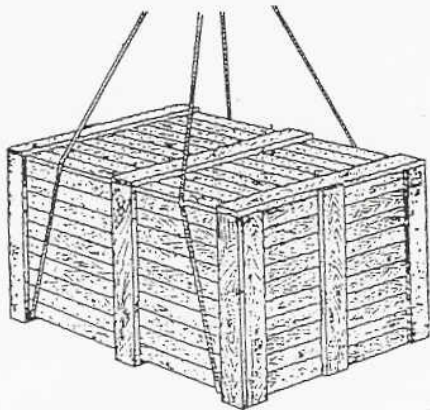




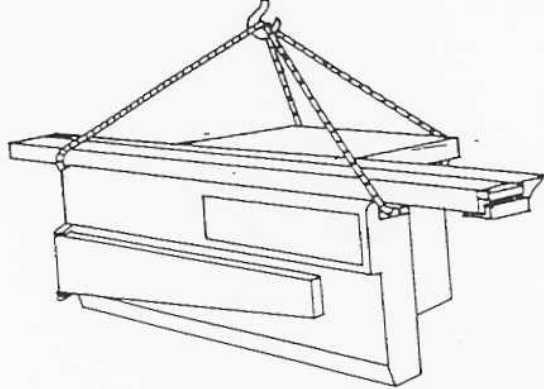
OPTIONAL

TAV.51/A

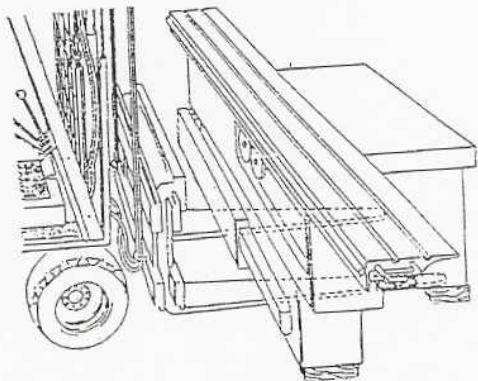




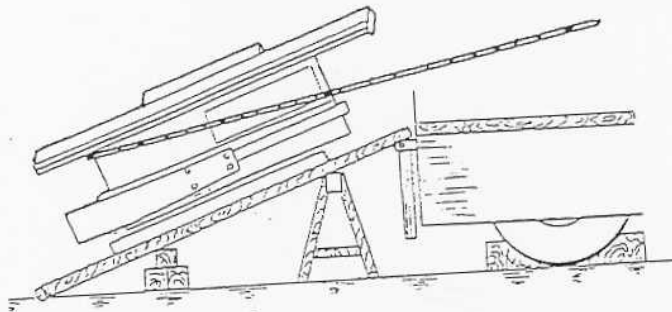
•1•



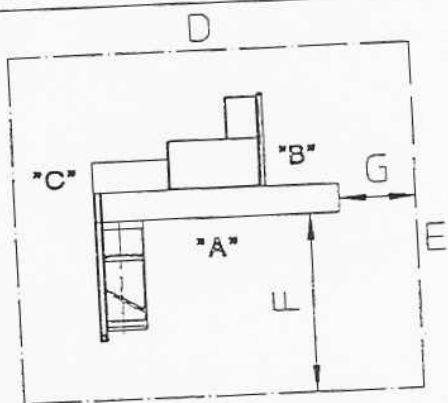
•2•



•2/A•

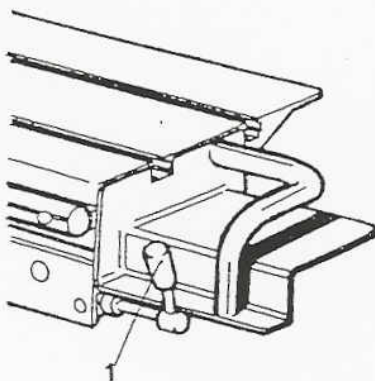


•2/E•

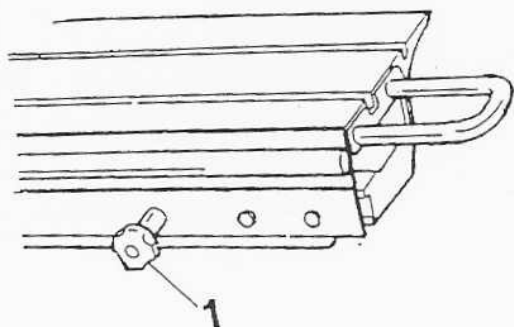
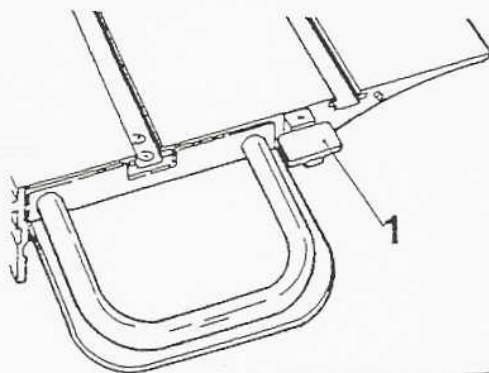


Lunghezza carro Length of sliding table Longueur du chariot Schnittlänge Largo del carro	D	E	F	G
1800	5000	4500	2700	1600
2600	6600	5000	3000	2000
3200	7800	5000	3000	2300
3600	8600	5000	3000	2500

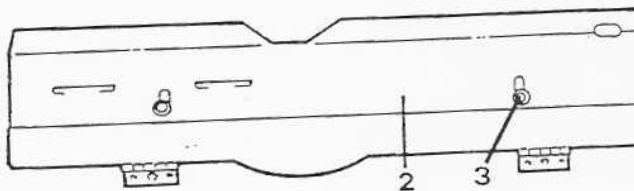
•2•

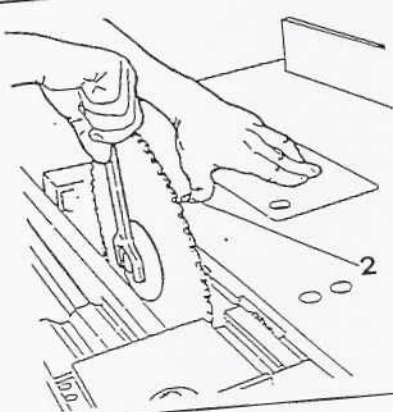


•3•

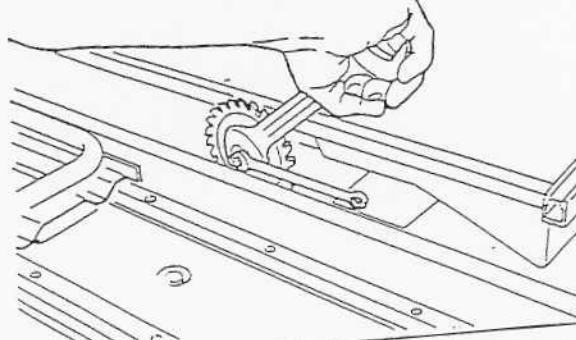


•4/A•

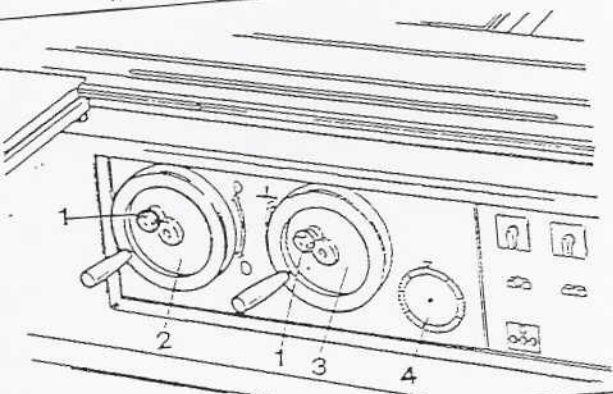




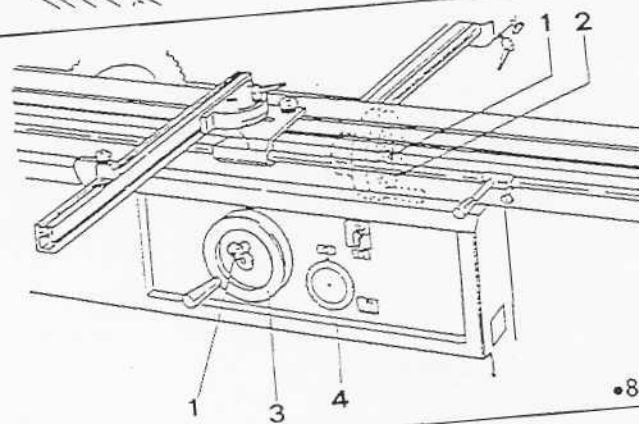
•6•



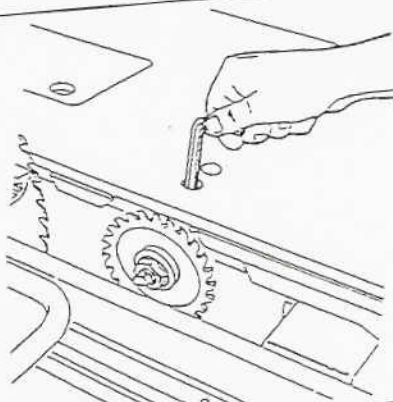
•7•



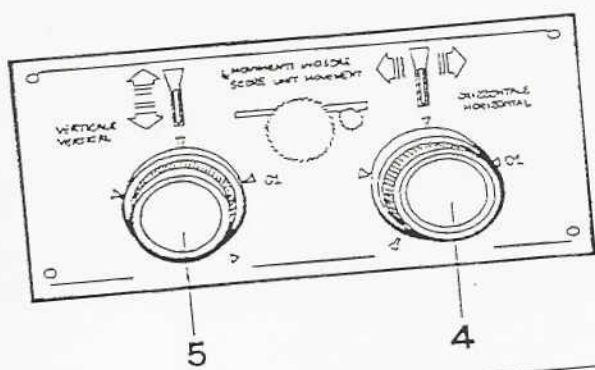
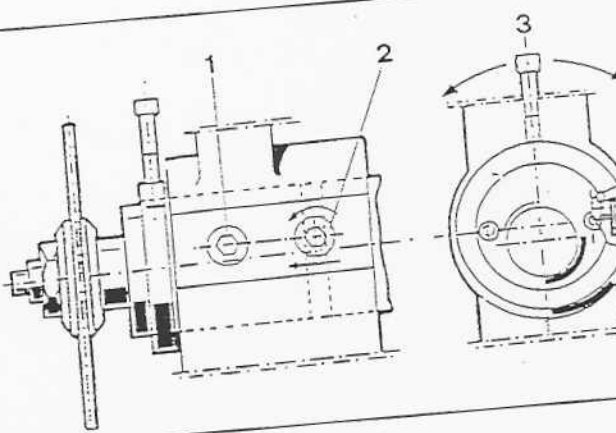
•8•



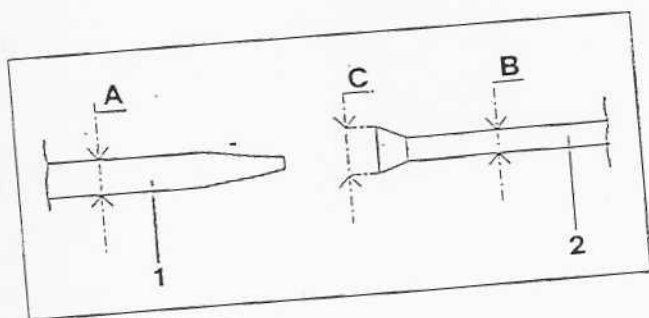
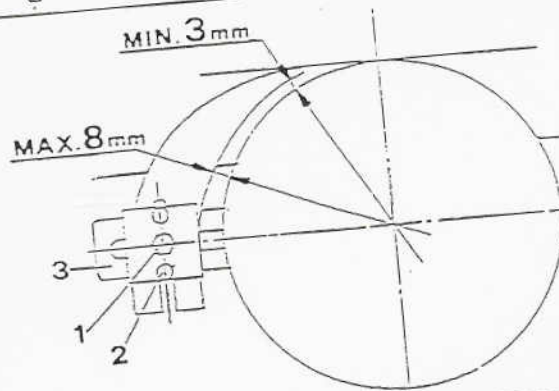
•8•



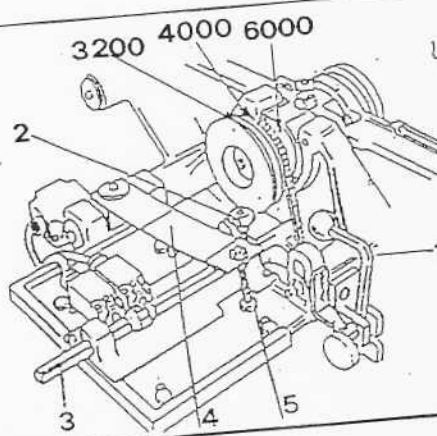
•9•

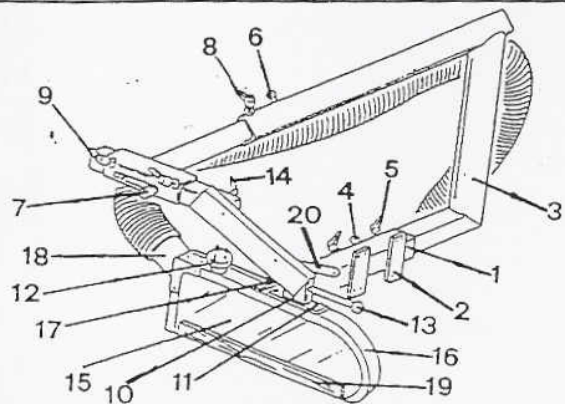


•10•

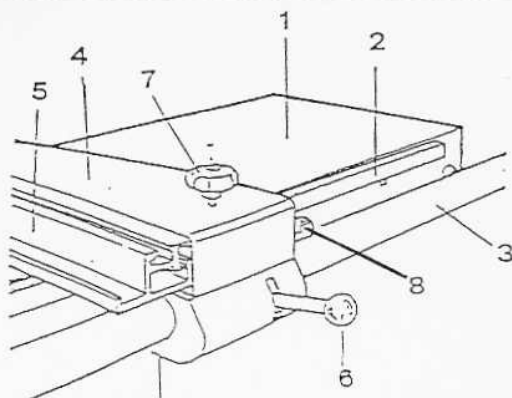


•12•

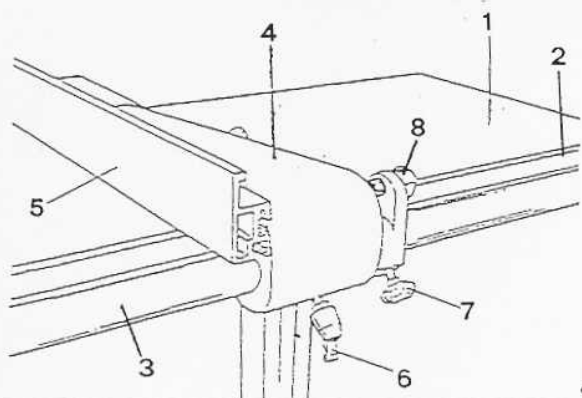




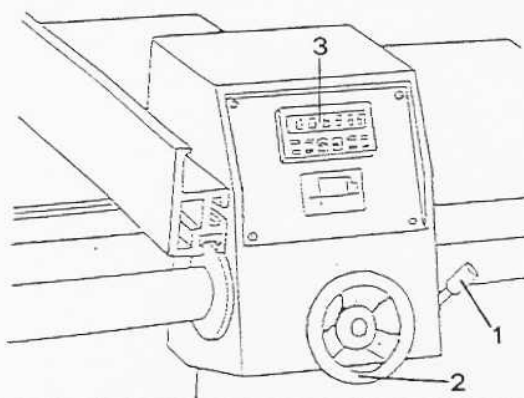
•14•



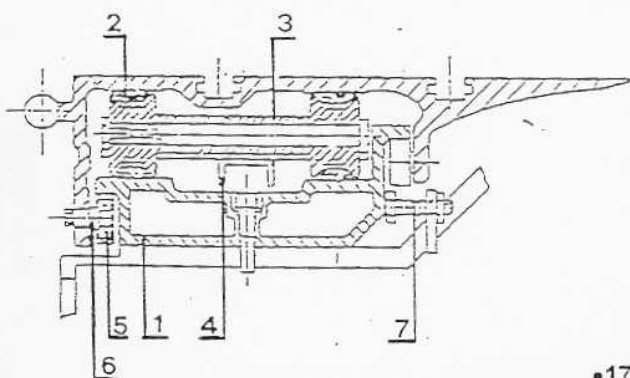
•15•



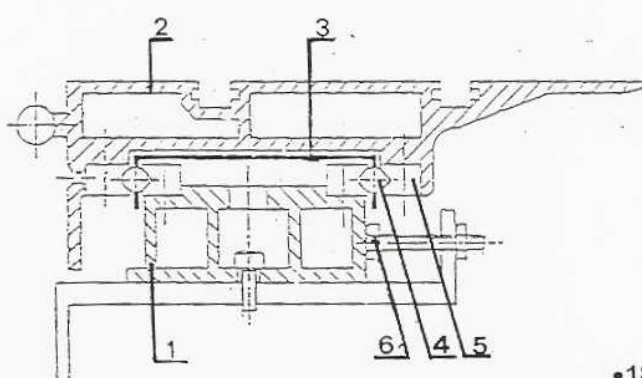
•15/A•



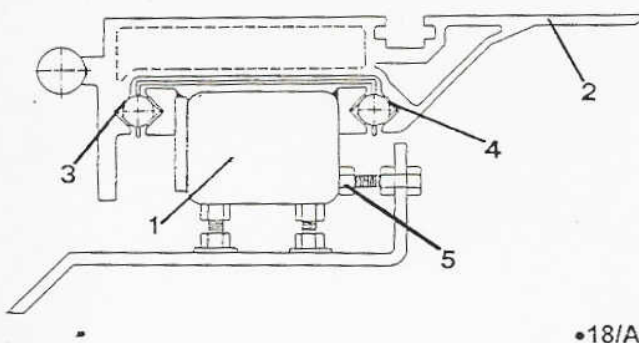
•16•



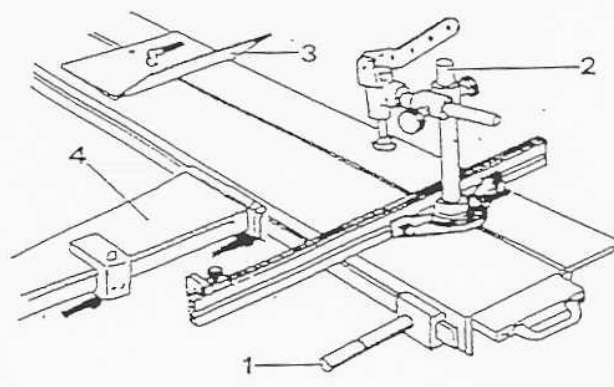
•17•



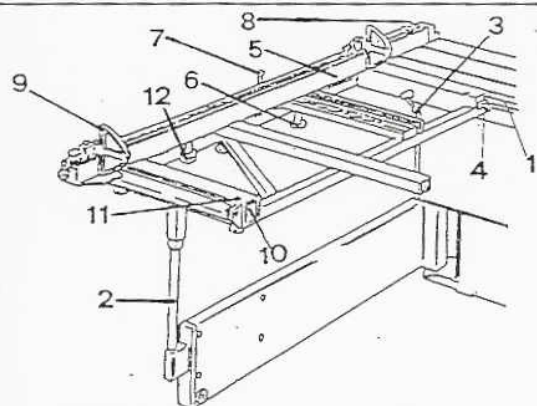
•18•



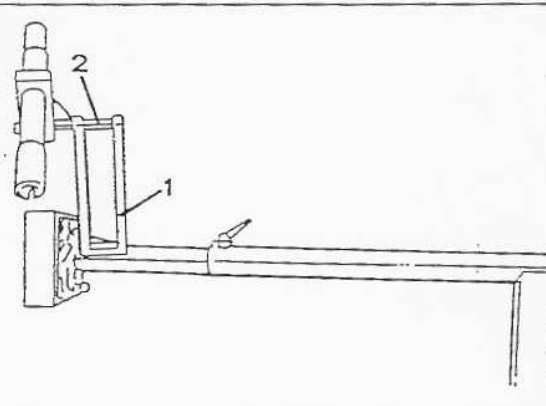
•18/A•



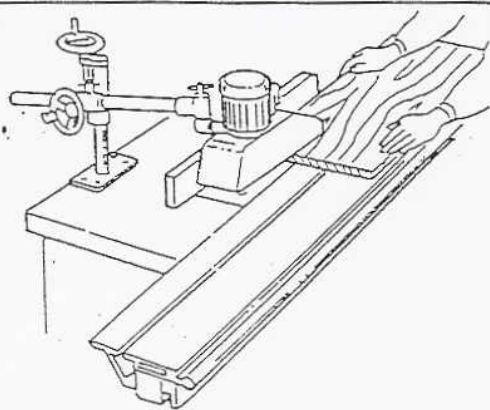
•19•



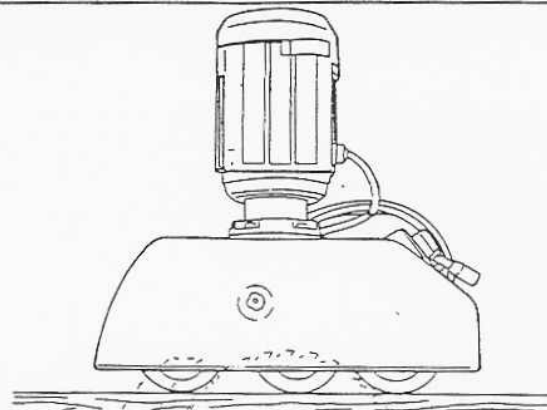
•20•



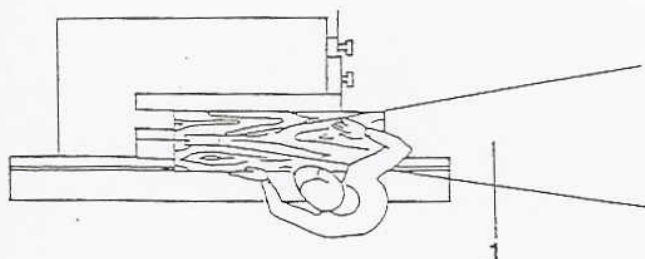
•21•



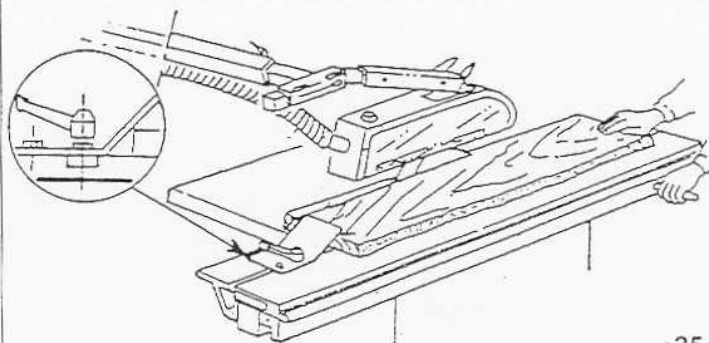
•22•



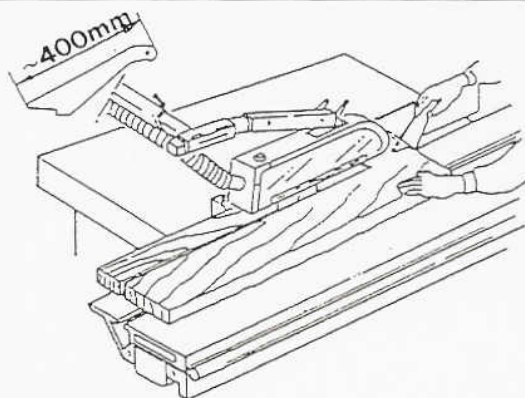
•23•



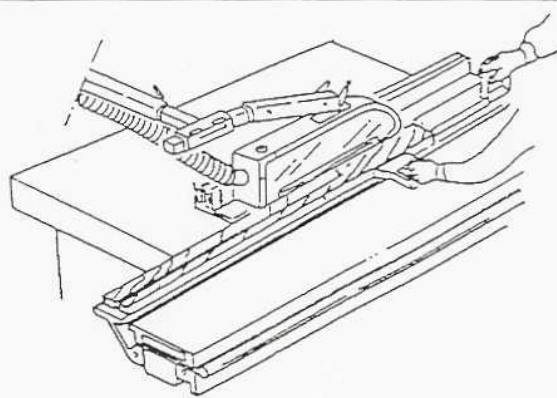
•24•



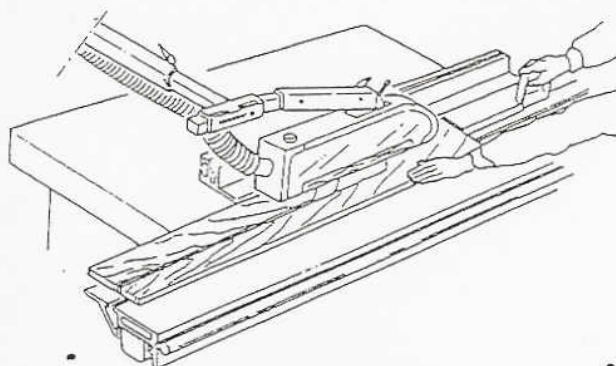
•25•



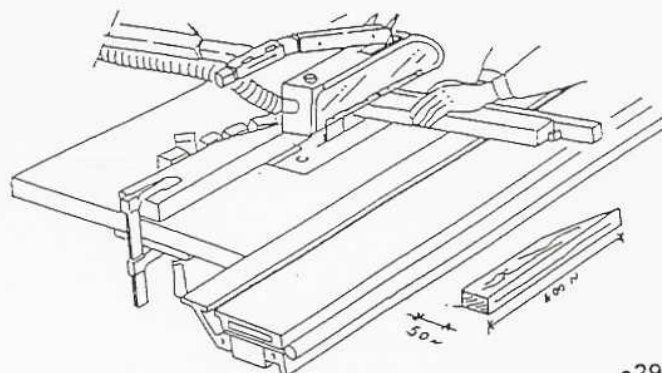
•26•



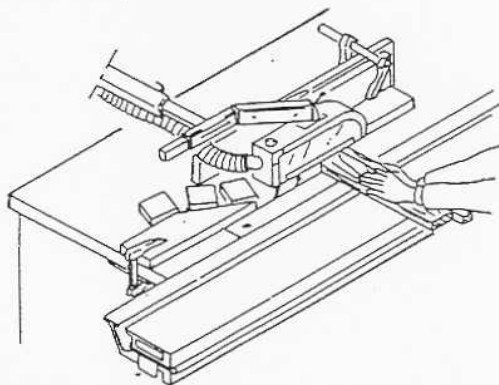
•27•



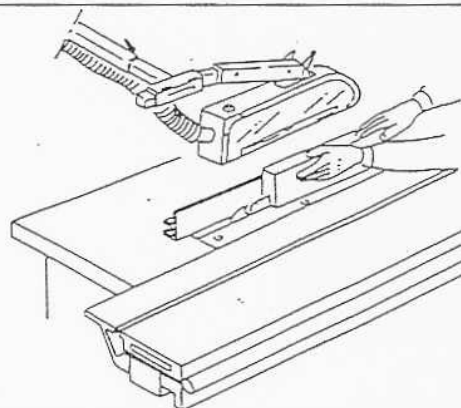
•28•



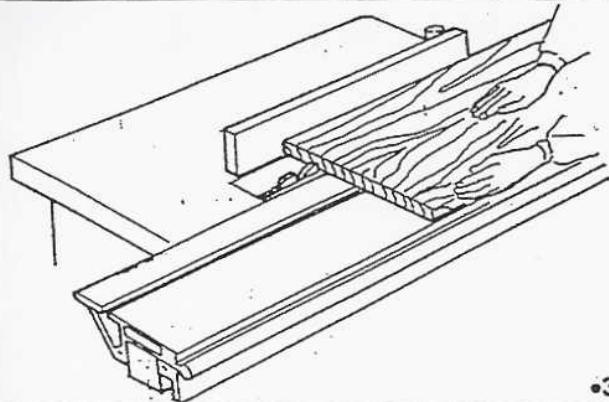
•29•



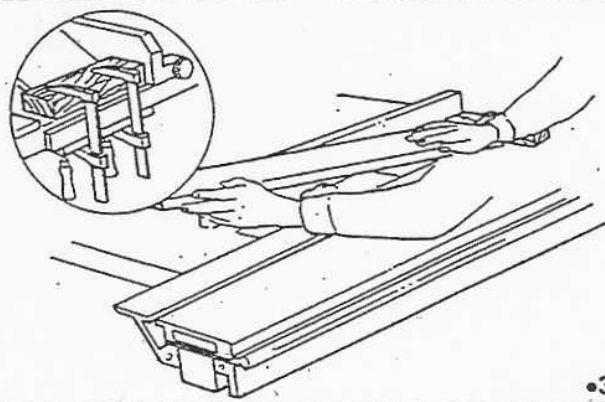
•30•



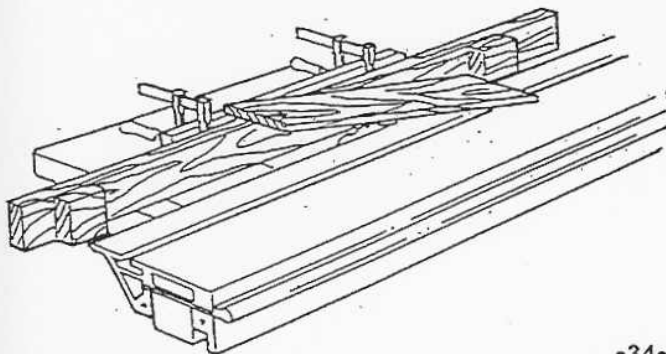
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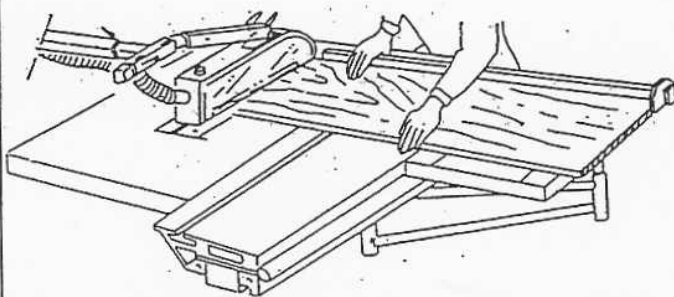
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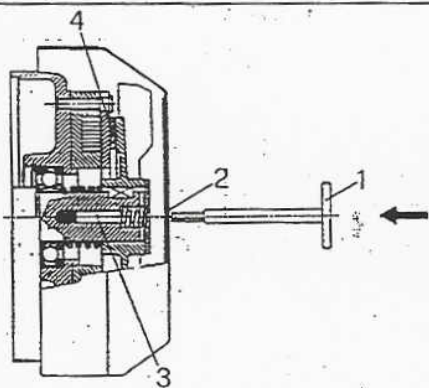
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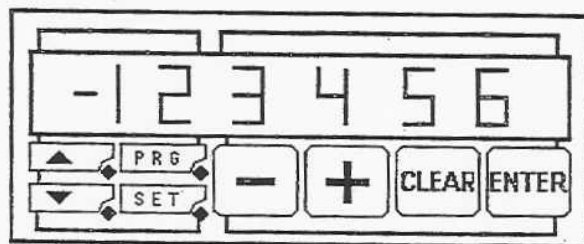
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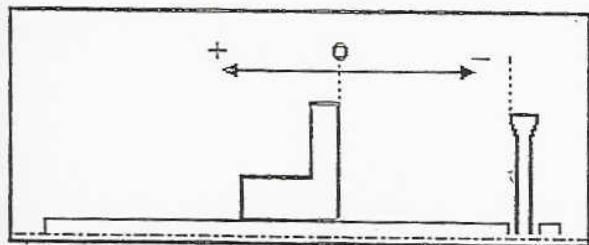
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