



T 120

Manual

RS ROBLAND®
MADE IN BELGIUM

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General information

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Declaration of Conformity CE

Geachte Klant - Sehr Geehrter Kunde - Dear Customer - Cher Client,
Gelieve hieronder onze CE-homologatienummer te willen vinden voor onze machines
Bitte finden Sie anbei unsere CE-Homologationsnummern für unsere Maschinen
Please find herewith our CE-homologation numbers for our machines
Nous prions de trouver ci-après nos numéros d'homologation CE pour nos machines

EG Conformiteitsverklaring - EG Konformitätserklärung
EC Declaration of Conformity - Déclaration de Conformité CE

NV WERKHUIZEN LANDUYT
Kolvestraat 44
8000 BRUGGE - BELGIE

verklaren hierbij dat de bouwwijze van de machines - erklären dass die Bauart der Maschinen - herewith
declare that the construction of the machines - certifions par la présente que la fabrication des machines
ROBLAND

voldoen aan de volgende richtlijnen / folgende Bestimmungen entsprechen / comply with the following rele-
vant regulations / sont conformes aux Normes suivantes:

Machine Directive CE 98/37/EEC amended by 98/79/EEC Directive
2006/95/EC Low Tension CE Directive
EMC89/336/EEC Directive amended by Directive 93/68/EEC
In production and manufacturing the machines, the following standards are observed:
EN 12100- Part 1 and Part 2 / EN 294 / EN349 /EN 418 /EN 60204 Part 1 / EN 861

Type examination was carried out by the following approved body
Die Baumusterprüfung wurde von folgender Stelle durchgeführt
Le modèle a été examiné par l'organisme suivant:
Het typeonderzoek werd door volgende instelling uitgevoerd:

Vinçotte International Holding
Bollebergen 2/B
B-9052 Zwijnaarde
België

T120
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Yves Damman



Safety and maintenance instructions

Working wood with machines is a pleasant job that will give you a lot of satisfaction. Nevertheless, working with a machine requires constant attention and care. Therefore, for your own safety, pay attention to the instructions summarised in this chapter.

- The machine can only be used safely if the operator strictly follows the operating and safety instructions.
- It is absolutely necessary to read this manual before using the machine in order to know how the machine works and what its limitations are.
- Always make sure that all protections are mounted on the machine and that the machine is connected to a dust extraction installation. Also provide sufficient space around the machine and a good lighting in the workshop.
- When changing the tools or when doing a maintenance job, the machine must always be disconnected from its power supply.
- Knives and tools which are not correctly sharpened or are in a bad condition not only diminish the quality of the work provided, but also increase the risk of accidents.
- Always wear suitable clothing, loose or torn clothes are very dangerous.
- Keep away children from the machine and the workshop.
- To avoid ear damage it is recommended to wear ear protection when working with the machine.

Danger list

This list was based on parts 1 and 2 of EN 292 and annexe A of part 2.

Operating instructions

The following recommendations for a safe working routine are given as an example, on top of all information characteristic of this machine.

- When working with the spindle fence or the spindle, when working between 2 fixed stops and when tenoning, safety equipment must be used.
- Nevertheless, the user must also follow the operating instructions in order to avoid accidents.

1 Training of machine users

It is absolutely necessary that the spindle-moulder user receives a serious training regarding operating and adjusting the machine.

In particular:

- a) the risks involved in working with the machine;
- b) the operating principles, the correct usage and adjustment of the machine;
- c) the correct choice of the tools for each treatment;
- d) the safe handling of parts to be treated;
- e) the position of the hands in relation to the cutterblock;
- f) storing the pieces in a safe way before and after treating them.

2 Stability

In order to be able to use the machine in a safe way, it is absolutely necessary to place it stably on the ground or another stable surface.

3 Adjustment and installation

- a) Disconnect the machine from its power supply before every adjustment.
- b) The recommendations of the manufacturer must be followed when adjusting and installing the tools.
- c) The tools must be adapted to the material which has to be worked in order to assure a safe and efficient usage.

The tools must be correctly sharpened and installed, with toolholders that are carefully balanced.

4 Handling of tools

In order to avoid severe cuts, safety measures must be taken when handling tools.

5 Installing tools

Special equipment, such as tool setting gauges, must be used when the machine does not work.

Table insert rings must be used in order to reduce to a minimum the space between the table and the spindle shaft.

6 Adjustment spindle guard fences

- a) Spindle guard fences must be used when working with the spindle fence.
- b) In order to reduce the gap between cutterblock and guard fences, it is highly recommended to use existing safety devices which are mounted on the fences and which can be adjusted in such a manner that only the cutting edge (in function of the depth of pass) is visible. It is thus virtually impossible for the operator to get trapped inside the spindle guard with his hands.
- c) Use as often as possible a spindle guard fence.
- d) A woodpusher and the spindle guard fence must be used when pushing the piece manually.
- e) Long pieces must be supported with a roller support.

7 Rotation sens and choice of speeds

It is very important that the chosen tool turns into the right direction. When the piece is presented, the operator must take care that the workpiece has the correct feeding direction, that the correct speed has been chosen; the speed must also be adapted to the tool chosen on the machine.

8 Functioning of the machine, choice of safety equipment and adjustment

Because of the various tasks that can be carried out with the vertical spindle-moulder by means of the various types of spindle shafts, spindle holders and cutterblocks, different types of safety equipment must be used.

Every operation must be examined separately, then the adapted protection must be chosen.

The minimal opening in the table also depends on the type of cutterblock, diameter of the knives and height in which the cutterblock is adjusted. This can be done by using the table insert rings which are delivered with the machine. In that way, the opening is as small as possible, and the piece can no longer flip over and hit the knives.

Using a power feeder can prevent most serious accidents involving the hands. Such feeders can easily be adjusted and adapted to the size of the pieces.

When no power feeder is used, the woodpushers must be used, the horizontal and vertical springs making a tunnel in which the piece can be slid.

This pusher, together with other safety equipment, reduces the gap between the cutting tool and the guiding fences.

9 Working with the spindle fence when the total length of the piece has to be machined

In most cases a straight spindle guard fence is used. The pieces thus can be guided in the angle made by the table and the fence.

The vertical and horizontal pushers can be placed in such a way that they make a tunnel in which the first piece can be pushed. The second piece is then used to push the first one, the last piece is pushed forward with a woodpusher.

Special blocks must be used in function of the dimensions of the piece.

When working panels of little thickness, only the top of the spring may be used, on condition that the thickness matches.

On a vertical spindle-moulder, the distance between the 2 extremities of the spindle guard fence must be large enough to leave enough space for the cutter block. Thus the knives, the cutter block and the spindle shaft may be exposed unnecessarily, and the extremity of the piece may come in contact with the nose of the exit spindle guard fence.

These risks can be avoided by using a false fence between the 2 spindle guard fences thus limiting the opening between the fences.

10 Working with the spindle fence when only a part of the piece is machined

When working with the spindle fence, and this between 2 stops fixed onto the machine table or fences, only a part of the workpiece is machined.

By doing so, the cutting tool starts to machine the wood in the full section of the wood, and does not start at the front, where the cutting action is more gradually, and less severe.

The cutting action is stopped before the workpiece end is reached. This action is very dangerous and needs special care and attention. A stop, solidly fixed at the front and back, must be used, see the example further in this manual.

!!! A piece may only be guided by hand when it is sufficiently large, in all other cases a gauge or a support with protection must be used in order to avoid serious accidents. By means of the gauge, the piece can quickly and precisely be put into place and firmly held there.

A quick clamping system, working with tumblers or with cams, is the most practical system to hold the piece.

With the front and backstops which are fixed to the spindle guard fence or to the table, a better control of the gauge is possible.

11 Working with the ring guard

When working with the ring guard, a support must be used, except when a certain treatment does not allow this, i.e. when the piece is too large to make the use of the support practicle, or when the piece is so small or so difficult to treat that it cannot be held in the support without danger.

The final shape is obtained by holding the gauge against a guidance bearing which is fixed to the spindle while the piece is held against the tool. The gauge can be part of the support.

12 Chamfering

When chamfering, a solid support or a tiltable adjustable spindle guard fence must be used. A woodpusher must be used at the end of each treatment.

13 Working in the same direction as the tools

It is extremely dangerous to work in the same direction as the tools, as the operator cannot use force to try to resist to the brutal movement of the piece as the tool comes into contact with the piece.

This treatment must absolutely be forbidden, even when a support is used.

14 Other treatments

For other types of work, like e.g. tenoning, special gauges or supports can be used in order to avoid accidents.

Usage of safety accesories

Following safety accesories can be used to help the operator during his work :

- supports
- woodpushers
- power feeders
- rollers
- stops

15 Noise reduction

- a) The condition of the tools is important to keep the noise level as low as possible.
- b) The material and the position of the protections is important to reduce the noise level.
- c) Using the correct speed will reduce the noise level.
- d) What is mentioned above does not take away the fact that separate safety equipment still must be used.

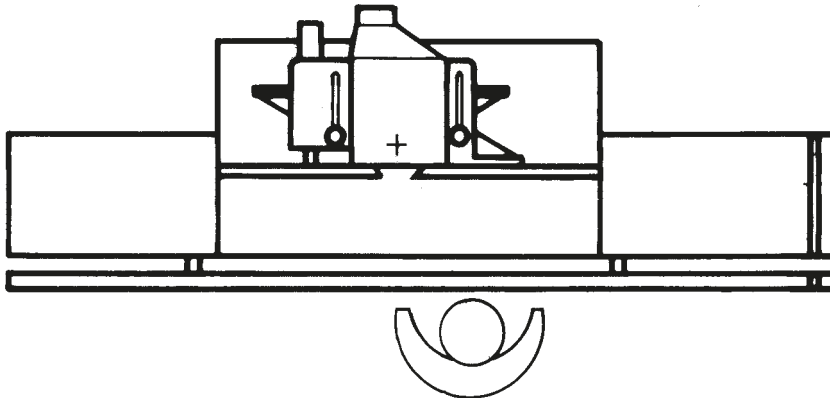
Normal use and contra-indications

Normale use : with the T120 spindle-moulder, the operator can mould and form straight and curved pieces, and almost every task in woodworking, furniture making and designing can be executed, but only in massive wood, woodbased panels, and certain plastics.

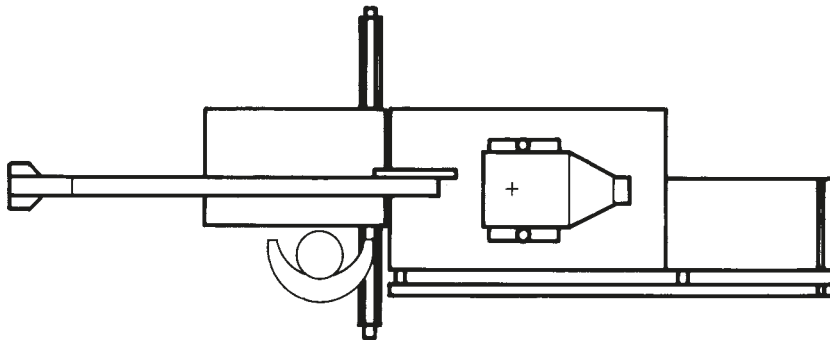
Contra-indications : it is strictly forbidden to process ferro and non ferro materials. It is also forbidden to make changes to the machine in order to execute other tasks than those described above (normal use).

Operator's place at the workpost

A) For all executions with the spindle fence, and for use of the ring guard fence:



B) When tenoning:



Explanation acoustic levels

The values given are the emission levels; these are not necessarily the levels on which the operator can work safely.

Although there is a link between the emission values and the exposition level, it cannot be used in a reliable way to determine whether supplementary measures should be taken.

NOISE INFORMATION

- measurements: as per ISO norm 7960
- as per annexe D

Workpost. under load	Level continuous acoustic pressure as per index A dB (A)	Level accoust. power dB(A) (MW)	Max.value accoust. pressure as per index C (instantaneous) dB
Moulding	85	92 (1,6)	< 130
Tenoning	85	92 (1,6)	< 130

Use

With the T120 spindle-moulder, the operator can mould and form straight and curved pieces. With the spindle and the spindle fence, every task in woodworking, furniture making and designing can be executed.

In order to use the machine in a safe way, special knowlegde and skills are required.

This does not mean that accidents (sometimes very serious) can completely be avoided.

It is recommended to use systematically the protections mounted on the machine, and to read this manual carefully.

Attention

Please bear into mind that the T-120 in the S and L versions cannot be adapted to a P version, i.e. with tenoning table.

Because of the various adjustments to be made, it is impossible to mount the tenoning table on the basic versions S and L.

The S version however can easily be adapted to an L version simply by mounting 2 table extensions and a telescopic extension at the front of the machine.

Types of tools

Cutter blocks and toolholders with changeable knives are frequently used when moulding.

The cutter blocks can be made in 1 piece, the cutting part being fitted in a body of hard steel, mostly chromium steel. The toolholders consist of a part on which the knives are fitted mechanically, and their cutting part is made out of hardmetal (HSS) or calcium-carbide, as it is the case for the cutter blocks.

IMPORTANT

for each tool and for each diameter, the correct speed must be chosen. Please check the INRS sticker on the inside of the machine access door.

Technical data T-120 S

Table dimensions	1200 x 705 mm
Table height	930 mm
Diameter interchangeable shaft	50 mm - option 30/40/1"1/4
Spindle length	180 mm
Useful length spindle	150 mm
Spindle stroke	205 mm
Spindle speeds	3000/4500/6000/7000/10000
Standard motor (HP)	7,5 HP - option 10 HP
Max.diameter and height table opening	320 x 95 mm
Max.diameter tool in spindle fence	250 mm
Net weight	450 kg

Standard equipment

- changeable spindle - diameter 50 mm
- set of tools
- fences in MDF
- 7,5 HP motor

Options

- other changeable spindles, diameter upon request
- 10 HP motor
- fences in aluminum
- electrical connection for feeder

Technical data T-120 L

Table dimensions	1200 x 705 mm
Table height	930 mm
Diameter interchangeable shaft	50 mm - option 30/40/1"1/4
Spindle length	180 mm
Useful length spindle	150 mm
Spindle stroke	205 mm
Spindle speeds	3000/4500/6000/7000/10000
Standard motor (HP)	7,5 HP - option 10 HP
Max.diameter and height table opening	320 x 95 mm
Total length with table extensions	2600 mm
Total length with telesc.extension	1315 mm
Length telescopic extension front	2600 mm
Max.diameter tool in spindle fence	250 mm
Net weight	550 kg

Standard equipment

- changeable spindle - diameter 50 mm
- set of tools
- fences in MDF
- 7,5 HP motor

Options

- other changeable spindles, diameter upon request
- 10 HP motor
- fences in aluminum
- electrical connection for feeder

Technical data T-120 P

Table dimensions	1200 x 705 mm
Sliding table dimensions	760 x 500 mm
Sliding table stroke	1050 mm
Table height	930 mm
Diameter interchangeable shaft	50 mm - option 30/40/1"1/4
Spindle length	180 mm
Useful length spindle	150 mm
Spindle stroke	205 mm
Spindle speeds	3000/4500/6000/7000/10000
Max.allowed speed when tenoning	3000 RPM
Standard motor (HP)	7,5 HP - option 10 HP
Max.diameter and height table opening	320 x 95 mm
Total length with table extensions	2700 mm
Max.diameter tool in spindle fence	. 250 mm
Max.diameter tool in tenoning fence	360 mm
Net weight	800 kg

Standard equipment

- changeable spindle - diameter 50 mm
- set of tools
- fences in MDF
- 7,5 HP motor
- tenoning sliding table

Options

- other changeable spindles, diameter upon request
- 10 HP motor
- fences in aluminum
- electrical connection for feeder

Attention

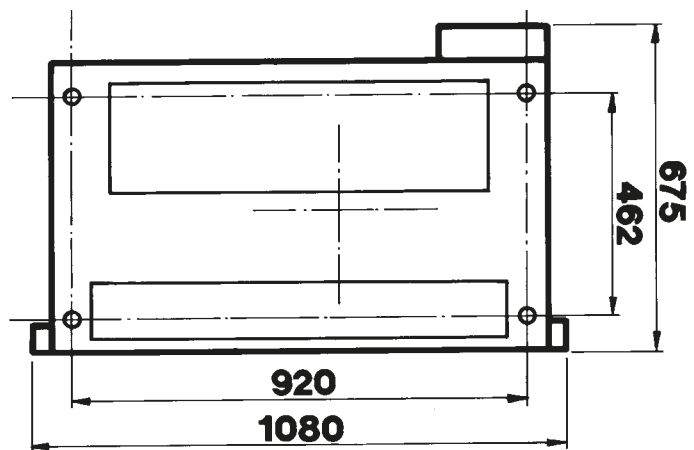
When tenoning, the speed is limited to 3000 RPM, but when working with the spindle fence or ringguard fence, the choice between the 5 speeds is free. This means that when the tenoning guard is mounted onto the machine, RPM has to be set at 3000 in order to be able to start up the machine.

Accomodation

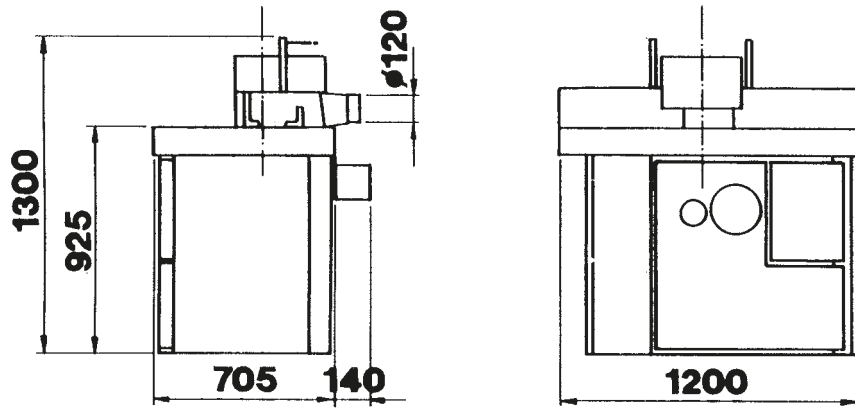
STABILITY

In order to be able to use the machine safely, it is absolutely necessary to place the machine stably and firmly on the ground or on another stable surface. Then it must be levelled in the 2 directions with a water level.

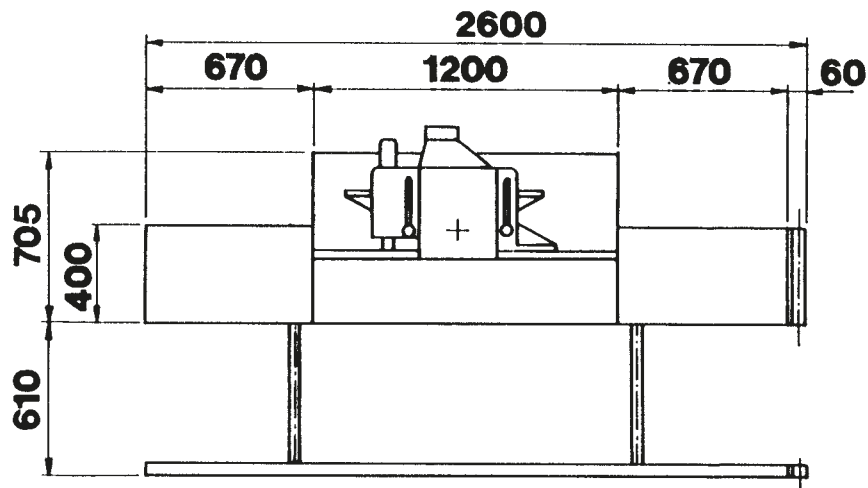
The machine is equipped with 4 height setting bolts which were bored by means of which it is possible to fix the machine to the ground with M12x150 bolts or threaded rod M12 (fig.4).



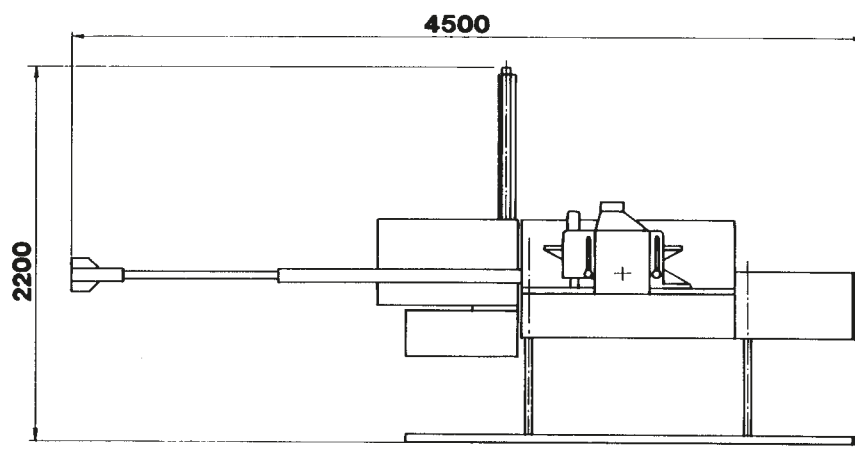
General Dimensions



T-120 S



T-120 L



T-120 P

Transportation and starting up to the machine (Fig.1-2-3-4-5)

Depending on the way of transport or shipping, you will receive the machine in a case or on transport blocks. (Fig 1)

Remove the sides of the case and slide the hoisting equipment (A) under the table.

You can also use 4 hoisting hooks (A), as shown on fig.2. Then the machine can be lifted with a fork-lift truck, but severe shocks must be avoided.

When the machine is placed on the ground, you can remove the 2 transport blocks (B) which are fixed under the machine with the 2 large adjustment bolts(A) (see fig 3-4).

The machine must always be placed on a concrete basis and must be leveled perfectly horizontally in the 2 directions.

It is very important that all working instruments are easily accessible, and that there is enough space around the machine to be able to use it safely.

In order to be able to remove the 2 transportblocks, the machine is equipped with 2 long leveling bolts (fig.3-A). These bolts must both be introduced from the same side (both left or both right), then the machine leans to one side and the transportblocks can be removed.

Now the machine can be placed back until the chassis is on the ground. Repeat this to remove the second transportblock.

Then the 4 height leveling bolts must be introduced and the machine must be leveled in the 2 directions. If possible, the machine must be placed on rubber plates, which can act as shock absorbers.

The machine is constructed in such a manner that it is not necessary to fix it to the ground, but if you wish to do so, fixing bolts must be introduced through the leveling bolts (see fig.5).

Please check the dimensions for the space needed.

When the machine is leveled correctly, the locking nut on the leveling bolt must be well tightened (fig.5 A-B).

Electrical connection (Fig.6)

The electrical connection must be carried out by a qualified electrician who is able to calculate exactly the needed wire section and caliber of the fuses.

- Check that the mains voltage of your machine corresponds with the voltage in your workshop; then open the electrical connection box at the back of the machine (fig.6).
- Connect the 3 phases to the terminals marked L1, L2, L3.
- If there is a neutral conductor (blue), it is connected to the terminal N.
- Connect the earthing (green+yellow) to the terminal marked with the earth symbol PE.

Attention !!

- Check first if the spindle runs free and if all protections are mounted before starting up the machine.
- If the direction of rotation of the spindle is not correct, the wires L1 and L2 must be exchanged (the direction of rotation of the spindle is anticlockwise = left).
- This may only be done without tools on the spindle (safety reasons !).

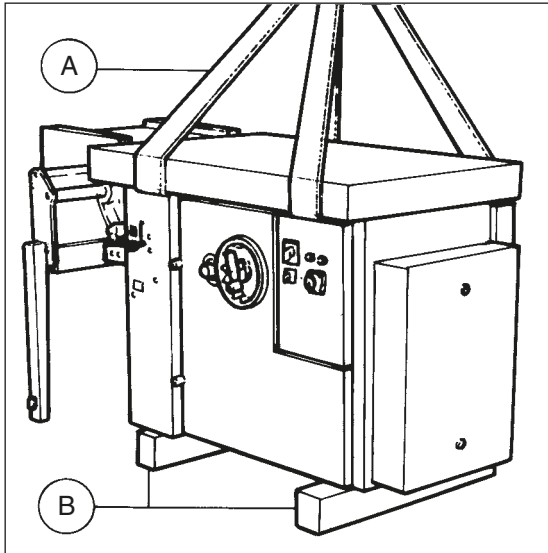


Fig.1

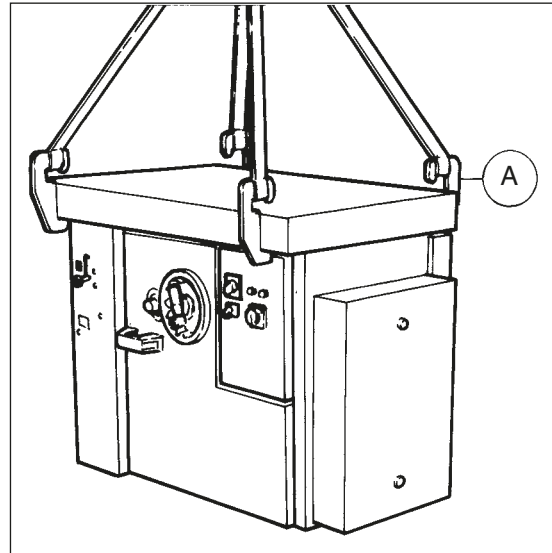


Fig.2

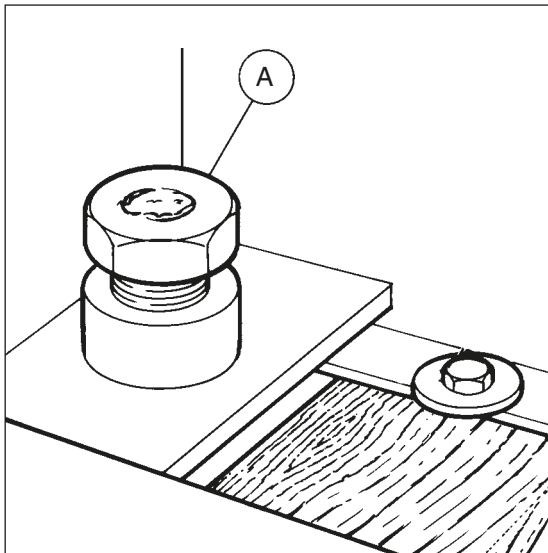


Fig.3

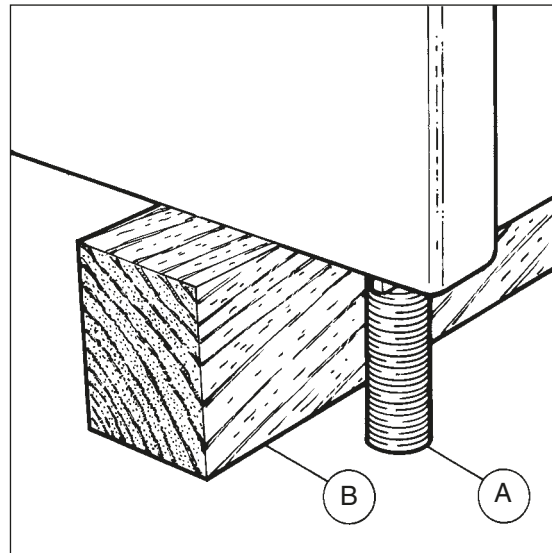


Fig.4

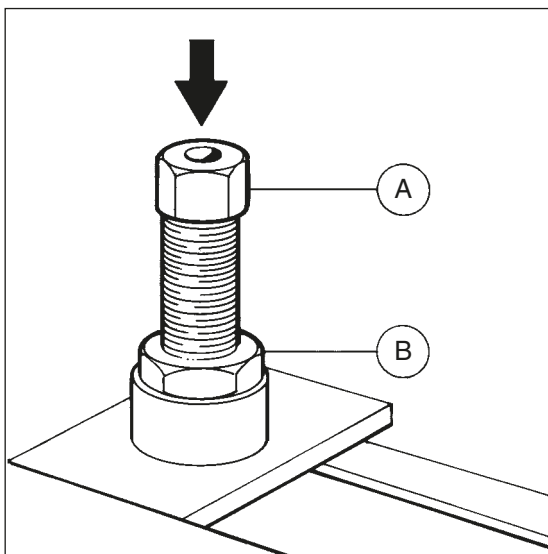


Fig.5

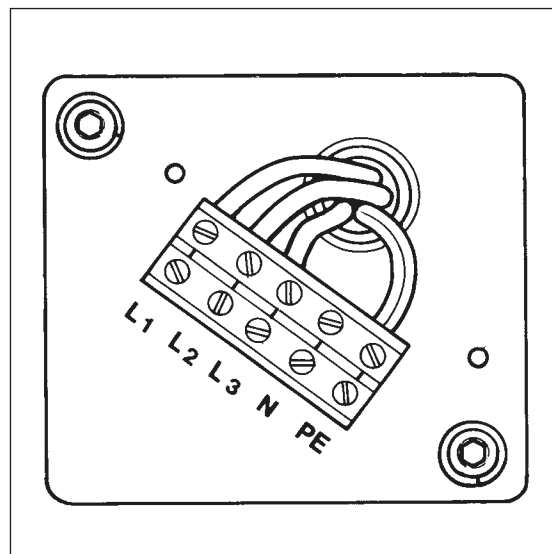


Fig.6

Power supply

Electric potential : 5,5 KW - option 7,5 KW
 Wire section connection wires : 2,5 mm
 Nominal current : 11 Amp/5,5 KW, 15 Amp./7,5 KW
 Connection : 380 V TRI + earth
 Frequency : 50 Hz

Starting up the machine (Fig.7)

- Turn the main switch (1), which can be padlocked, on "1" to put the machine under tension.
- Check if the brake release switch (2) is in the position "0". When the green indicator lights up (3), the machine can not be started up.
- Put the star-delta switch (4) on "star" and push the start button (5). The motor starts up in star, after +/- 10 seconds you have to put the switch on "delta".
- The motor can be stopped with the "STOP" button or with the emergency stop button (7).

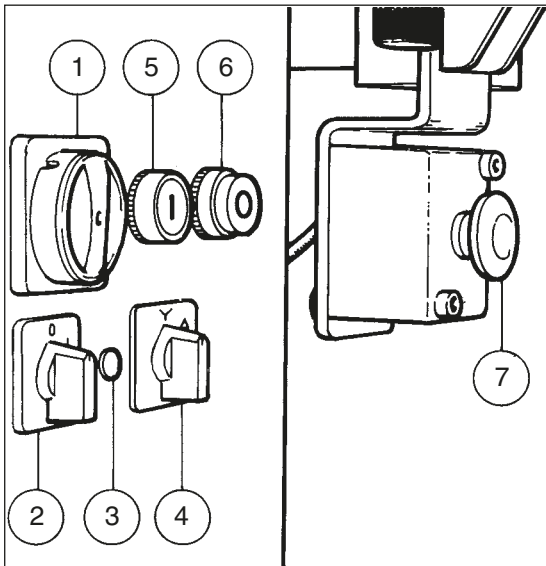


Fig.7

ATTENTION

- If the machine is stopped, the motor automatically brakes.
- It is impossible to start the machine up again if the access door is open or if the brake release switch (2) is on "1" and the green indicator (3) lights up.
 It is also impossible to start the machine up if the spindle lock (fig.16+17) is working.

Adjustment spindle fence (Fig.8-9-10)

The spindle fence body is fixed to the table with 2 bars (6). The spindle fence can be moved over a distance of 170 mm, which is enough to install tools with a max.diameter of 220 mm. For precision work it is recommended to use the micrometer adjustment on the infeed fence (fig.8,1 + fig.9). Loosen the knob (2), turn the micrometer adjustment (1 turn = 1,5 mm), then tighten again the knob. The opening between the fences must be kept as little as possible.

There are also 2 revolver stops with 8 positions allowing a fast adjustment of the spindle fence (fig.8,4-5).

It is highly recommended to connect the spindle fence to a dust extraction system. The spindle fence outlet can be connected to a 120 mm diameter hose. Underneath the table and at the back of the machine, there is a second outlet, dia.120 mm.

The support is equipped with a stop, by means of which it is possible to have a correct aligning of the infeed fence compared to outlet fence. After adjusting the fences, the support must be put in the position as shown on the drawing, then the 2 nuts must be adjusted by thightening them very well (fig.10,A).

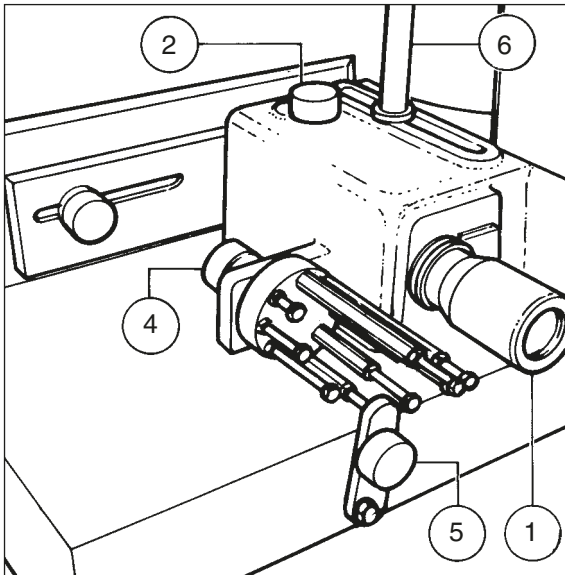


Fig.8

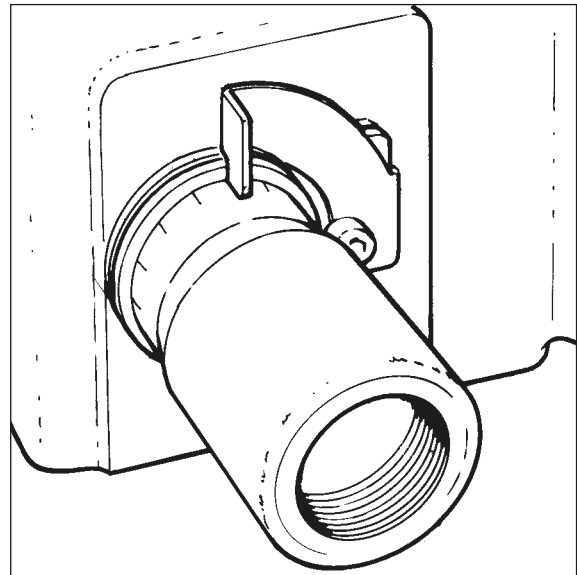


Fig.9

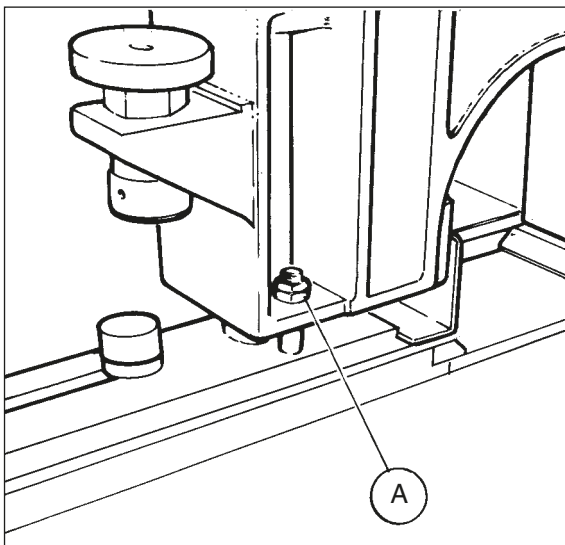


Fig.10

Spindle fence protection (Fig.11)

Adjustments : adjustment of the fences as close as possible to the tools, adjustment of the horizontal woodpusher (2) according to the width of the piece of wood, and adjustment of the vertical woodpusher (3) according to the height of the piece of wood that is machined, but make sure that the wood is placed as close as possible to the fences. When the protection is correctly adjusted, the woodpushers exert enough pressure and the wood can be put against the fences while it is supported between the clamps. It is also possible to use the push-stick while working with the spindle protection. If only a part of the wood is machined (see "operating instructions"-10), it is easier to push the piece of wood against the stop when the horizontal woodpusher screen is turned away. (1)
 To change the tools or the spindle, it is possible to pivot the protection to the left. The knob must be loosened (4) and the complete woodclamp system must be pivoted away. To take away the complete system from the vertical axe, it is necessary to remove the knob.

Take away spindle fence guide (Fig.12)

In order to take away the spindle fence guide, which is rather heavy (+/- 80 kg), a little cart can be delivered with the machine.
 This cart has to be placed in front of the machine - behind the machine if the supply feeder is mounted on the support - and then the spindle fence must be turned 180°, this to avoid lowering the spindle below the table level to be able to pass.
 When the support is not mounted on the machine, it is of course possible to put the cart behind the machine and slide the spindle fence guide onto the cart, which is delivered in kit. To assemble it, please check the exploded views.
 With this cart, it is possible to store parts safely and to work freely, without hindrance from the spindle fence. It is also possible to put a partition on it in order to store other spare parts.

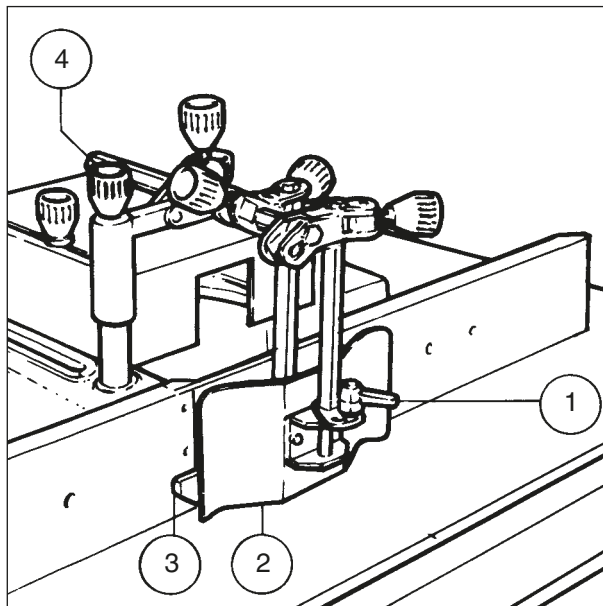


Fig.11

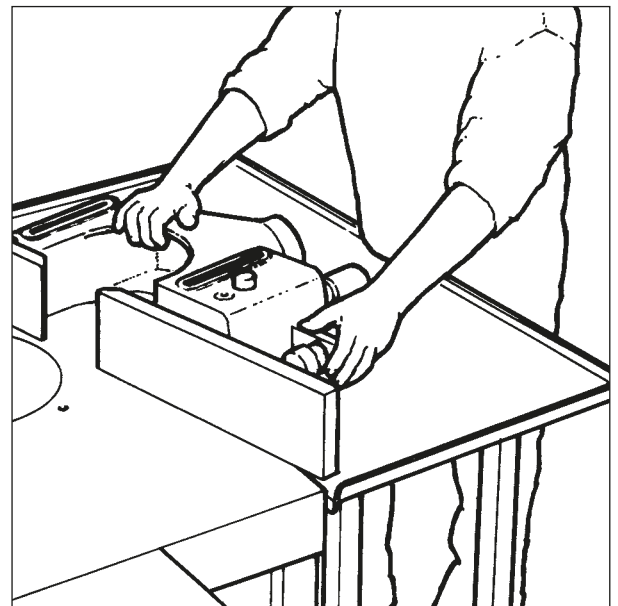
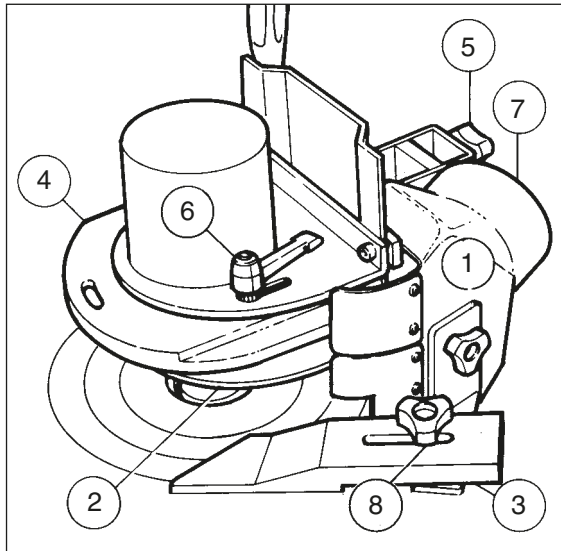


Fig.12

Working with the ring guard fence (Fig.15-16)

Attention : it is obligatory to use a ring guard fence made for tools with a max. diameter of 180 mm.

Description : Ring guard fence for spindle diameter 50 mm.



- 1) Body spindle protection
- 2) Guidance template
- 3) Wood guidance
- 4) Woodpresser - handprotection
- 5) Adjustment button
- 6) Auto release handle
- 7) Dust extraction outlet
- 8) Locking knob

Positioning

The ring guard fence is fixed into the 2 holes in the spindle table.
Please take care both positioning and fixing parts are well introduced in the table.

Adjustments

- Adjust the ring guard fence in height in function of the place of the tool and the thickness of the wood. Fix with the Allen key.
- Adjust the pusher (4) in height in function of the thickness of the wood - a slight pressure of the pusher on the wood is desirable. Fix with the Allen key.
- Horizontally : to maximally protect the working piece following the diameter of the tool : fix with the 2 handles (6).
- After checking the diameter of the tool, the pass has to be adjusted with extreme precision, and this by using the knob (5) at the back of the support. Turn the knob anticlockwise to increase the pass, then fix with the locking knob on the support.

Operation

Normally the wood is treated with the tool mounted underneath the guiding template. Before starting, check the blocking of all handles.

The wood is guided along the straight part of the template. The treatment is carried out progressively, with a maximum on the index of the template (that index is visible throughout the horizontal pusher). The wood guidance (3), connected to the fence, replaces the gauge when calibrating with a bearing stop. The operator is obliged to use this guidance (3) which is delivered with the fence. It is thus advisable to adjust the wood pusher (4) on the wood and to put it on maximum frontal cover.

Moving the sliding table (Fig.13)

The table extension for profiling and calibrating is mounted on the sliding table and is on the same level as the spindle table itself.

In order to protect the operator when tenoning, there is a supplementary emergency stop on the support of the sliding table. The tenoning table (4) slides above the spindle table and can be moved by loosening the handle (3) 1/2 turn.

After that, the tenoning table (4) has to be placed as close as possible to the tool, then be blocked with the handle (3). The whole system can be locked by means of the knob (2)

The 2 support legs of the sliding table carriage can be adjusted in height after setting the course of the sliding table.

Unlock the bolt which holds the adjustment pad and put it on the floor, then lock the bolt.

This operation has to be repeated each time the course of the sliding table carriage is altered.

By means of the 2 handles (1), the first one at the front of the sliding table, the second one at the back, the sliding table bars themselves can be moved to the front and back, this to alter the course of the sliding table. These handles have to be loosened 1/2 turn, then the sliding carriage has to be pushed to the front or the back in function of the piece of wood to be machined.

Clamping system (Fig.14)

The clamping system works as follows :

Loosen the clamping handles (1) in order to free the horizontal bridge, then the woodpusher can be adjusted in height by turning the knob (2).

After adjusting in height, the clamping handles (1) must be well tightened. The wood, or the piece to be machined itself, is pushed downwards with the eccentric pusher. To do this, just push the handle (3) downwards.

In order to use the table extension when working with the spindle fence, the elbowprotection must be tilted away as follows : lift the protection in order to loosen it from the lock, then pivot it 90°, then put it back on the bolt with the opening in the protection.

Now the elbowprotection does not hinder anymore when tenoning.

Spindle arbor lock (Fig.15-16-17)

It is obligatory to wait until the spindle has come to a complete stop before locking the spindle arbor (see warning on the machine).

- Put the brake release switch (fig.15, 2) on "1" in order to release the spindle arbor from the brake motor.
- Then the handle (fig.16, 1) has to be pushed downwards into the stop groove on the frame (B).
- Turn the spindle manually to bring the spindle in locking position. (fig. 17, A-B)
- 2 electrical contacts prevent the motor from being started up when the spindle or another tool is being replaced.
- To make the machine ready for use, it is important to check if the handle is in upward position (fig.16, A) and if the brake release switch is on "0" (fig.15, 2).

Braking of the motor

The brake motor on the machine is automatically put into action when the emergency stop or the stop button (fig.16, 6+7) is pushed.

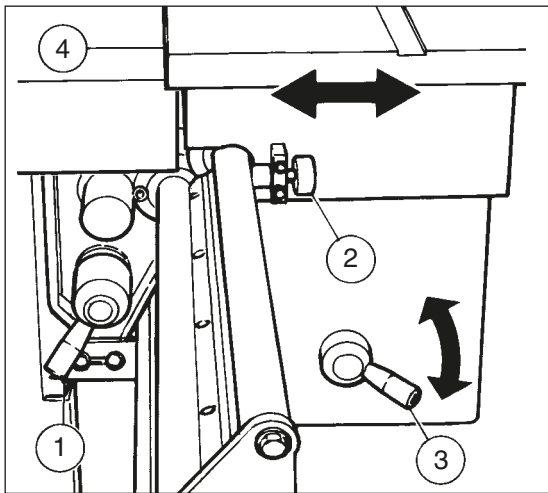


Fig. 13

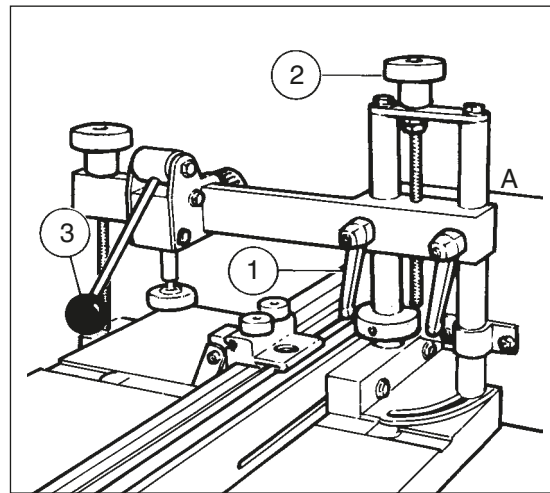


Fig. 14

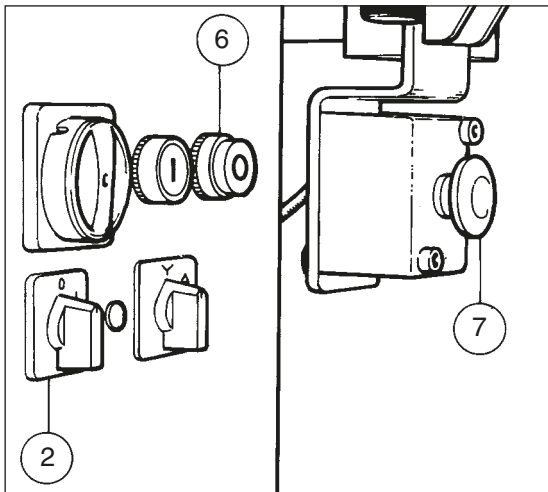


Fig. 15

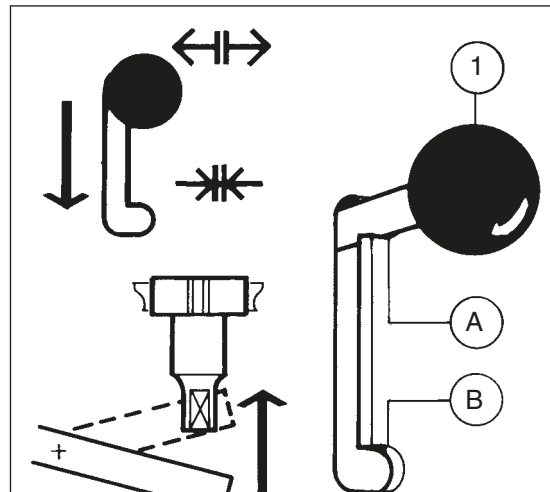


Fig. 16

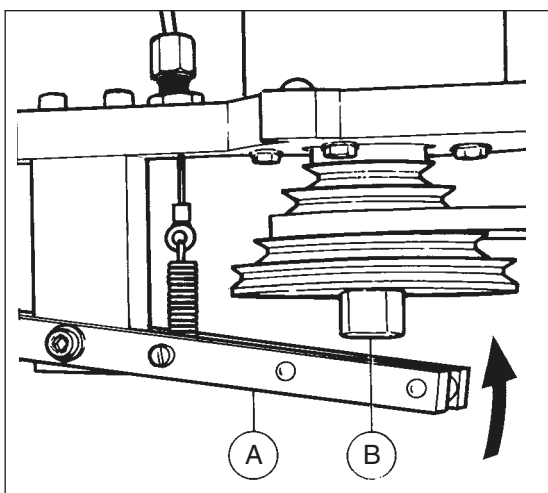


Fig. 17

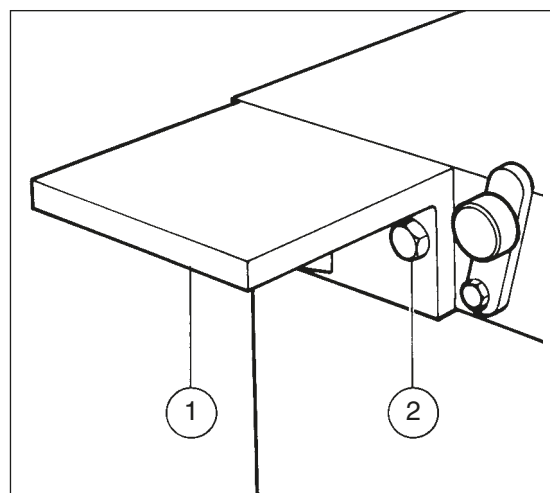


Fig. 18

Installation of a feeder (fig.18)

The T120 is equipped with a support (1) that is installed on the leftside or rightside of the machine. Please see to it that the 2 bolts are well tightened (2).

Depending on the base of the feeder which is placed on the support, the operator himself must drill and tap the feeder fixing holes.

The feeder can be used as protection when tenoning. Such feeders can easily be adjusted to the size of the pieces to be machined.

An electrical connection for the feeder can be delivered in option. It is a thermo-magnet which can be installed at the inside of the electrical panel, with a CEE connection plug on the outside of the machine.

The feeder must simply be connected to the power supply. When the toolholder is stopped, the feeder is automatically stopped.

Cross cut fence (fig.19,20,21)

In order to compensate the thickness of the stops and to avoid splinters, the cross cut fence is equipped with a wooden splinter protection (fig.19,1).

By loosening the handle (3), and thus releasing the clamp, (4) the splinter protection can be moved to the front or to the back. The ruler can be moved by loosening the screw (2).

In order to move the cross cut fence to the front or to the back compared to the spindle, the 2 bolts (fig.21,A) must be loosened.

In order to make positive and negative cuts with the fence on the sliding table, the axis (fig.21,1) and the handle under the spindle fence (fig.20,2) must be unlocked. Then the 90° stop for the fence must be pushed down, in order to overrule it. (fig. 20,1)

The angle of inclination can be read at the front of the tenoning table on the index in the table (fig.21,2).

To put the telescopic cross cut fence in a right angle on the movement of the sliding table, the fence must be pushed against the stop (fig.20,1), then the vertical woodpusher axe must be tightened again (fig.21,1), as well as the handle (fig. 20,2)

Independent stops and programmable drawer (fig.22,23,24)

The cross cut fence is equipped with 2 independent stops. The stop must be placed on the cross cut fence in function of the type of work to be executed. By turning the locking nut (1) 1/2 turn, the body of the stop is pushed against the fence and a possible tolerance between stop and fence is avoided.

Then the locking nut must be tightened to fix the stop to the cross cut fence (fig. 22,2)

The measures can be read directly through the magnifying glass on the index.

The wood to be machined must be well pushed against the stops (3 - 4) before fixing it with the eccentric woodpusher.

When the locking nut is not fixed (always 1/2 turn in one or another direction), there is always the risk of having a difference between the splinter protection and the stop (which have the same thickness), thus forming a false angle, or that the wood is not well in line against the stop and splinter protection.

In order to use the telescopic fence, the knob (fig.24,1) must be loosened and the fence must be pulled backwards. The measures can be read on the magnifying glass (2).

To use the drawer (fig. 23) please refer to above.

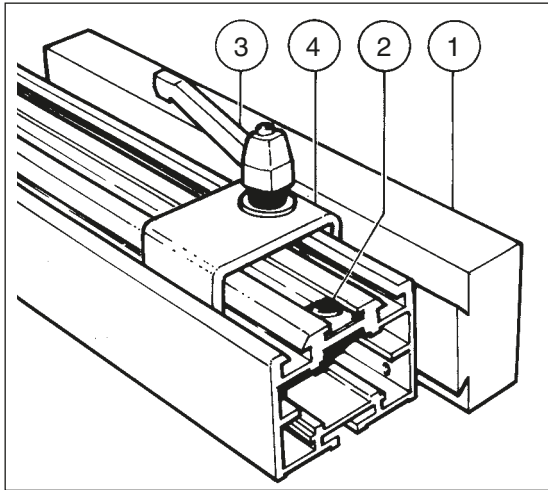


Fig. 18

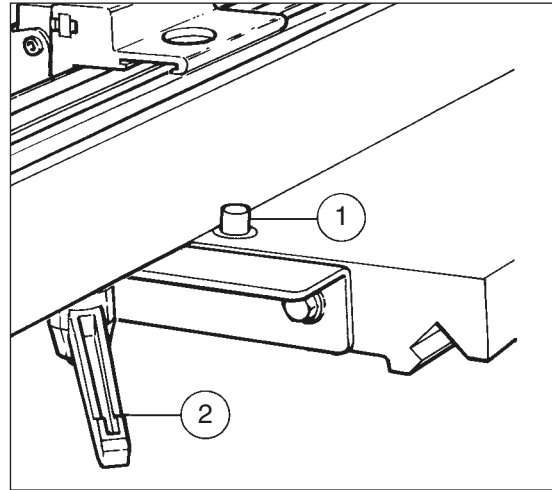


Fig. 19

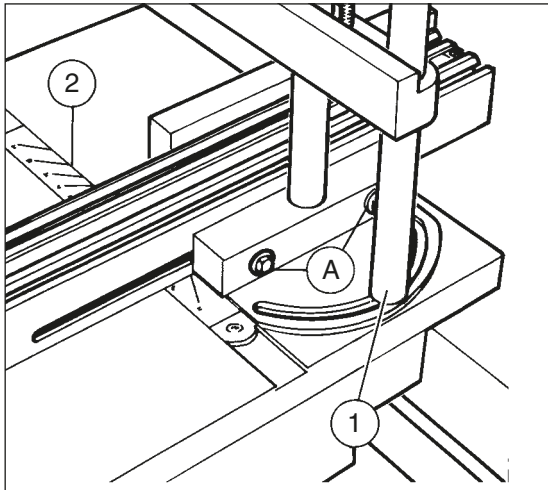


Fig. 20

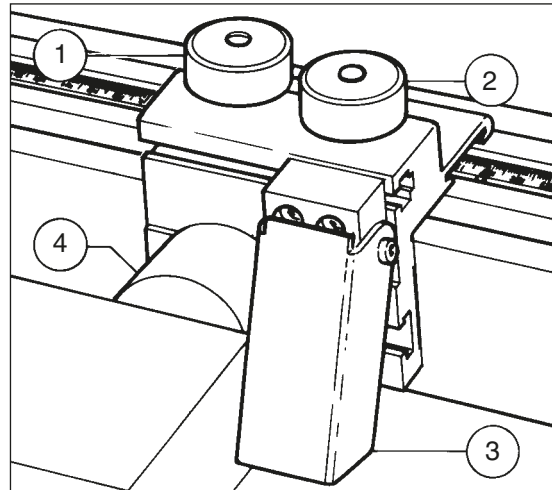


Fig. 21

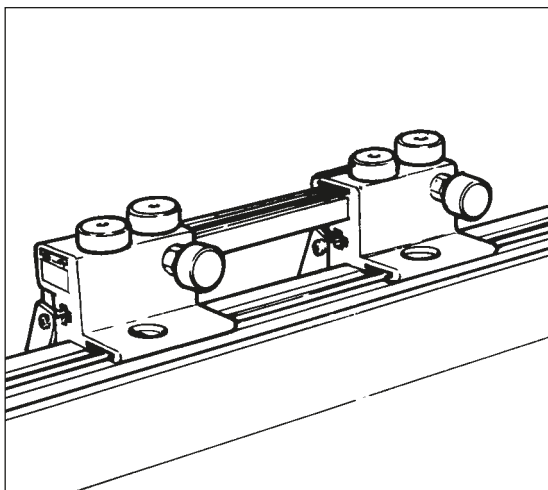


Fig. 22

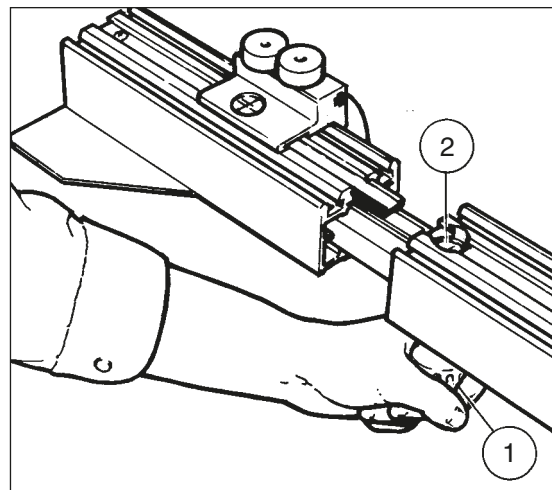


Fig. 23

Changeable spindle (Fig.25-26-27-28)

The installation of the spindle arbor must be carried out in a clean way and with the utmost care. It is absolutely necessary to clean the spindle before mounting, and to oil it slightly before installation. Please proceed as follows : put switch 2 (fig.15) on "1", push the lever (fig.28,1) on "B". Then the spindle must be manually turned in order to be clicked into its lock.

It is imperative to wait until the spindle has come to a complete stop before pushing down the locking lever (fig.28). The spindle is free when the handle is put on "A", locked when put on "B". By turning the nut (fig.26,1) - right thread !! - anticlockwise with the hookspanner, the spindle can be loosened. Always check that the nut is well tightened. Before starting up the machine, the brake release switch (fig.15,2) must be put on "0" and the lever (fig.16,1) on A". Also check whether the spindle runs freely.

Installation of tools

Always put the tool as low as possible on the spindle, this in order to minimize flexion and to obtain a higher quality of work. By means of rings with different thicknesses, it is possible to precisely adjust the height compared to the table; this is also the case for tools that are installed above the table. It is important that the rings and the arbor itself are perfectly clean. After mounting the tools, tighten the bolt (fig.27,1).

Important !!

Please take care that the top ring with the safety bolt is well installed (fitted) into the spindle groove, this to avoid the tools from loosening accidentally. To secure the spindle when changing or installing tools, please check chapter "Spindle arbor lock".

Tension and changing the speed (Fig.29-30)

Changing the speed

It is possible to change the speed by pulling the lever (1) towards yourself, thus loosening the belt. Then choose the correct speed (see sticker on the outside of the accessdoor) and turn the handle (2) in the chosen position (see sticker with speeds (3) on handle + speed indicator window on the frame). Now push the handle (1) back to initial position to obtain a correct belt tension. After having worked with the machine for a while, and after a trial run with the belt, it is possible to have a decrease in tension. To rectify this, adjust the 2 nuts (4) in order to obtain a normal tension. To check the correct tension of the belt, please push in the middle between the 2 pulleys with an average pressure of 3 kg. If the belt bends 5 to 6 mm, it has the right tension. You can check this manually.
Do not over-tension the belt, it will damage it.

Changing of the belt (Fig.30)

Loosen the belt with the lever (fig.29,1), then loosen the nut (fig.30,2) while holding the bolt (1). When the nut (2) is turned completely downwards, then the bolt (1) must be turned in the threaded rod in order to obtain a gap between the bolt and the support plate (3). After having changed the belt, the bolt must be turned in its initial position, but please take care that this bolt (1) is turned just against the support (3) without too much pressure. Then turn the nut (2) upwards to the threaded rod and lock.
Please check whether the fork is in the correct position that corresponds to the chosen speed, to the indicator (fig.29,3) and to the speed indication on the machine.

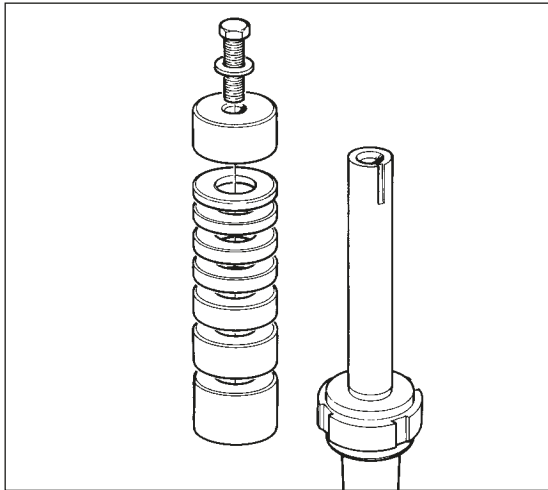


Fig.25

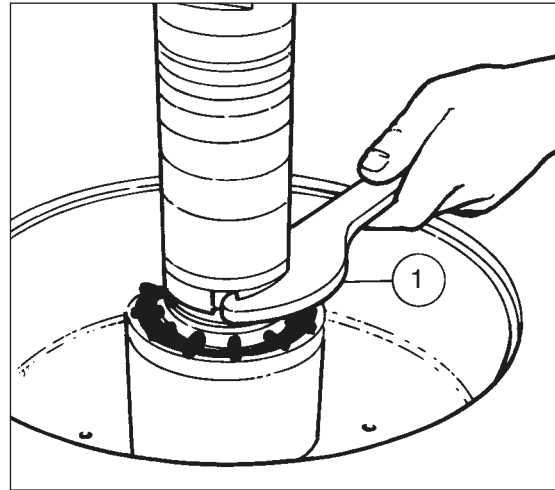


Fig.26

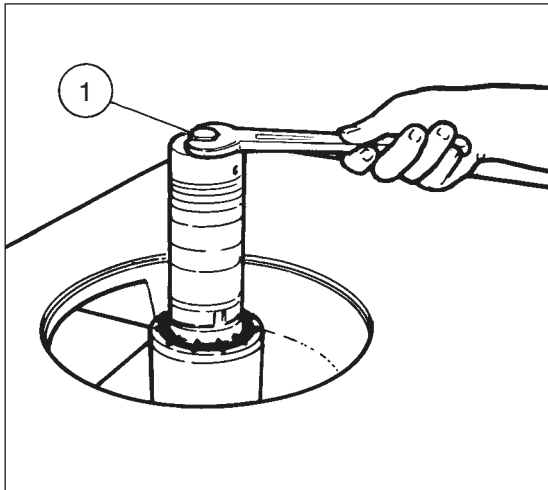


Fig.27

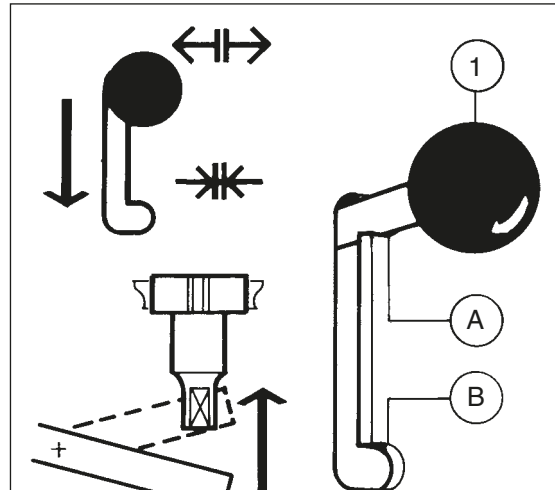


Fig.28

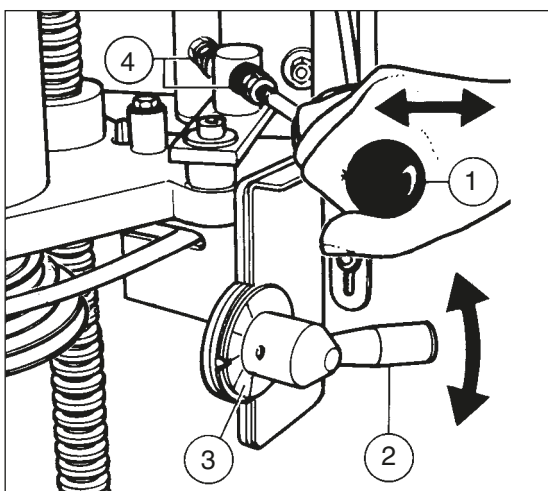


Fig.29

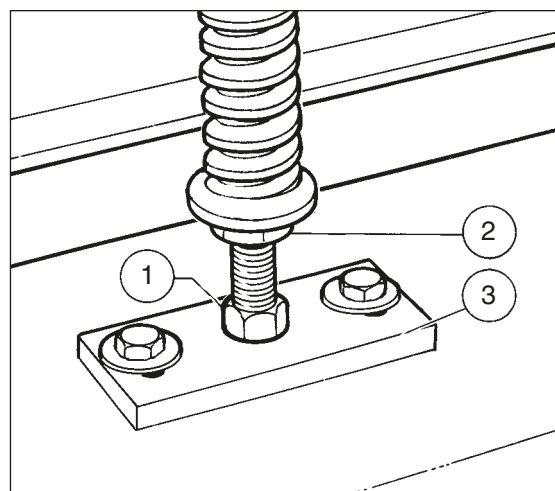


Fig.30

Maintenance

Attention : Always disconnect the machine from its power supply before starting all maintenance works !!

The interior and exterior part of the machine must be cleaned regularly in order to avoid an accumulation of dust and woodchips.

Any possible deposition of resin on the sliding bars (a.o. sliding table) must be taken away with a piece of cloth and a little solvent (petrol, kerosene or another product).

Never smoke during cleaning the machine : fire hazard and risk of serious fire burns for the operator !!

All bearings in the T120 are protected and lubricated for life, they need no maintenance.

The spindle column must be cleaned regularly (once a month), and a little oil must be put on.

Also the threaded rod for raise and fall on the column has to be oiled regularly.

Dust extraction : for your own health and to avoid fire risk and dust explosion, it is recommended to connect the machine to a dust extraction system.

Problems: Causes and solutions

1 The machine does not start when the start button is activated

- The spindle arbor lock, which is connected to a safety switch, is still turned on : free locking.
- Switches in wrong positions, e.g."star-delta" or brake release switch: put them in correct position.
- Access door is still open: close the door correctly.
- Emergency stop is engaged: release emergency stop.
- Main fuse is switched off: motor overload, power shortage or power cut.
- Check fuses, also the one on the transformer, and replace when necessary.

2 Reduction of speed when working:

belt tension is too low, belt is worn out, tools are blunt: tighten or replace the belt, sharpen the tools (respect original angles).

3 Vibrations when working with tools mounted on the machine:

check balance (equilibration) of the tools necessary.

4 Thermal protection is activated, due to motor overload :

switch off the machine so the thermal protection, which rearms itself automatically, can cool down.

Kick back of the workpiece

DEFINITION

A piece of wood can be rejected in the direction of rotation of the tool in a brutal and unexpected manner. This can happen when only a part of the wood is machined, when feeding direction and rotation direction are identical, and in several other cases.

CAUSES:

This problem is mainly due to the design of the tool body which, by its construction, enables the operator to take big passes. Following causes can also have an influence:

- number of inserts on the tool;
- cutting speed
- inserts sticking out compared to the tool body
- type of wood
- adjustments (cutting depth)

Independent of the above mentioned, following factors have to be taken into account :

- working conditions : starting to cut in the middle of a piece of wood, machine running, working in the same direction as the rotation sense of the tool, working without stops fixed to the table or spindle fences.
- speed not adapted to the type and diameter of tool
- maintenance of the tools : blunt tools, bad installing of the knives on the toolholder.

When the wood is rejected, this happens suddenly and fiercely. An exemple : a piece of wood with a square of 50 mm and a length of 1 m can be rejected with a speed that varies between 20 and 30 m/sec. (i.e. 70 to 110 km/h).

It is important to know that, in the above mentioned case, the average speed of 100 km/h is already attained after +/- 30 thousandth of a second (0.030) after rejection.

POSSIBLE SOLUTIONS

In all cases:

- use toolholders; nowadays there is a new generation of cutting tools which is equipped with a limited pass. Although the rejection of a piece of wood is not ruled out completely, it is nevertheless better controllable for the operator.
- check wether the tools are correctly sharpened.
- respect speed of the tools as to type and diameter. The sticker on the machine indicates the optimal speed to be chosen, taking into account the type of tool and the diameter.
- never exceed the maximum speed that is indicated on the tool.

Last but not least, always install various protections when working with the machine.

The vertical and horizontal woodpushers must be adjusted so that there is complete freedom of movement to put the piece of wood into place and to machine it without the risk of hands coming into contact with the tool.

The INRS has designed a table extension which can be tilted away. In order to make and install this indispensable safety element, please follow the drawing below.

Different positions safety switches

In order to understand the effect and the function of the different safety switches, you must read this chapter very carefully.

T-120S AND T-120L

These 2 version are equipped with 2 safety switches surveying the different safety conditions.

1. Safety switch surveying the access door: door open : machine cannot be started.
2. Safety switch surveying the spindle lock: spindle lock lever in downward position (fig.16,B): machine cannot be started.

T-120P VERSION

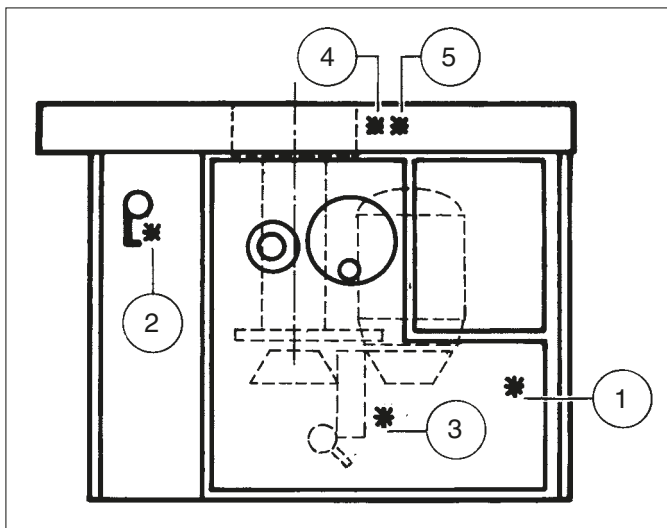
This version has 5 safety switches.

1. 2 switches as for the T120S+L versions
2. On top of these 2 switches, there is a safety switch on the fork (fig.28) which surveys that the maximum speed of 3000 RPM is chosen when tenoning.
3. 2 safety switches to detect spindle guard and ring guard position.

In case no protection (spindle and ring guard) is installed, i.e. when tenoning, it is absolutely necessary to put the belt in the groove that corresponds to the speed of 3000 RPM, and the handle (fig.28,2) on "3000 RPM", in order to be able to start the machine.

So when the spindle guard and ring guard protection is installed on the machine, you can choose between the 5 speeds.

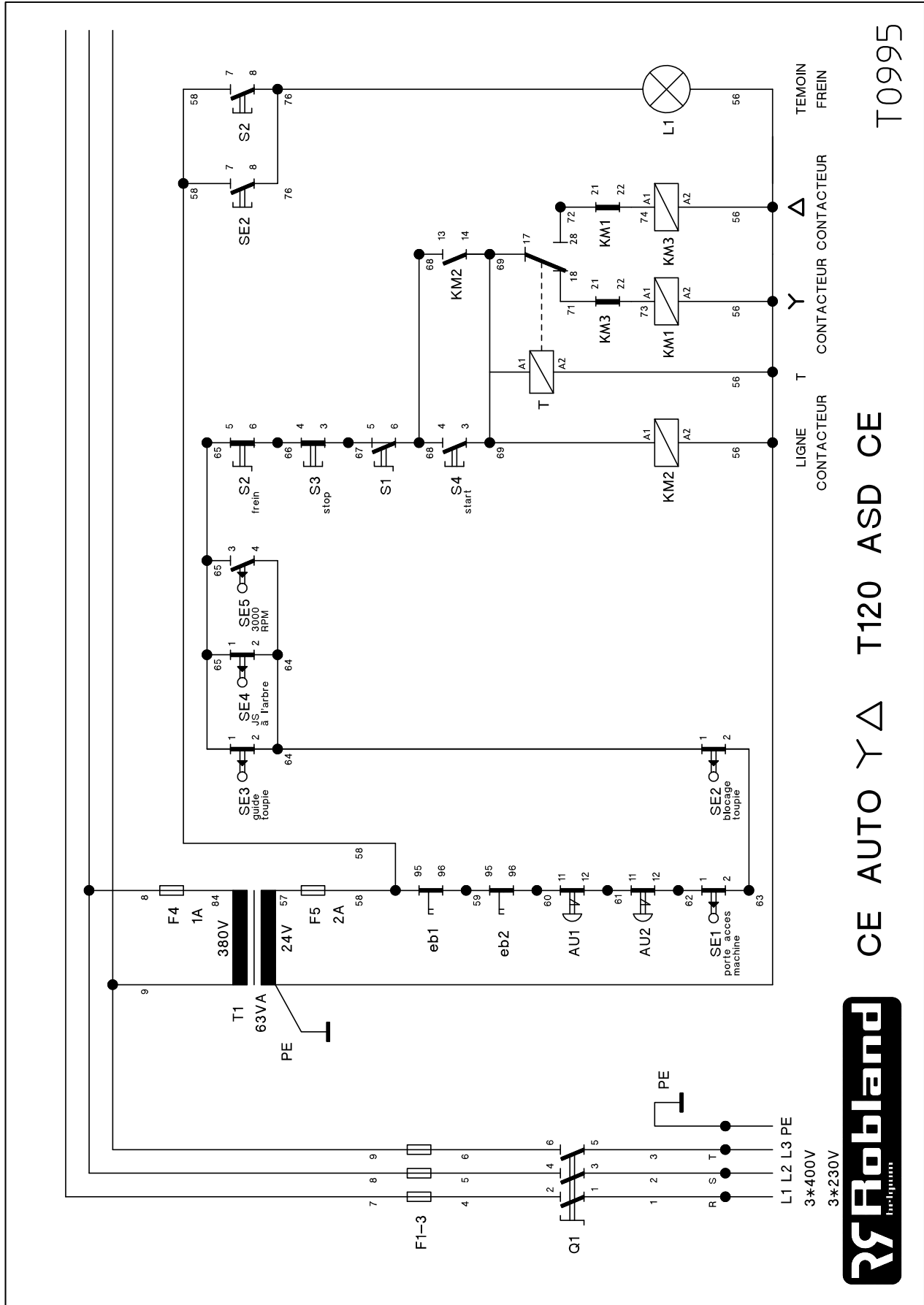
When tenoning only 3000 RPM !!!

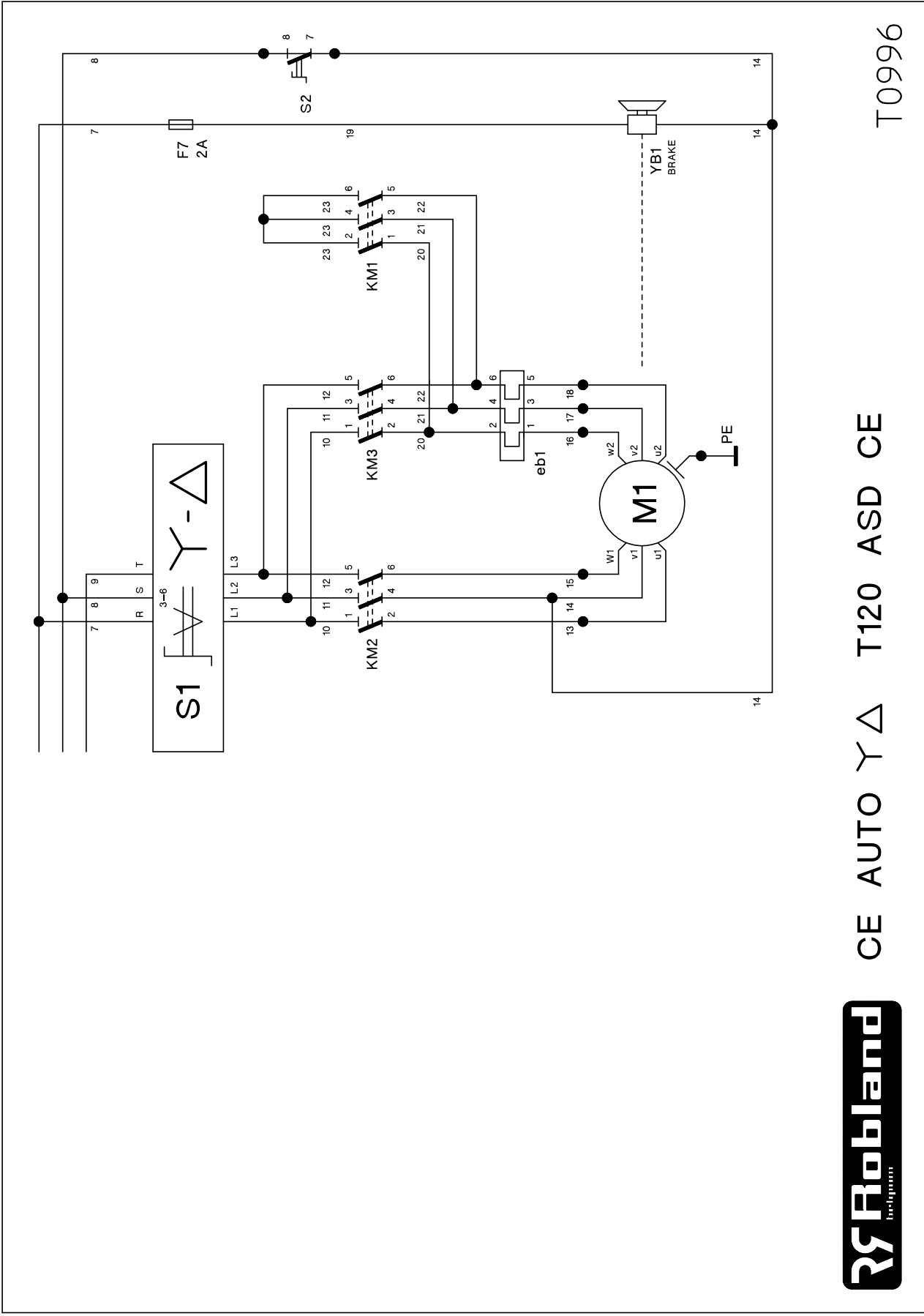


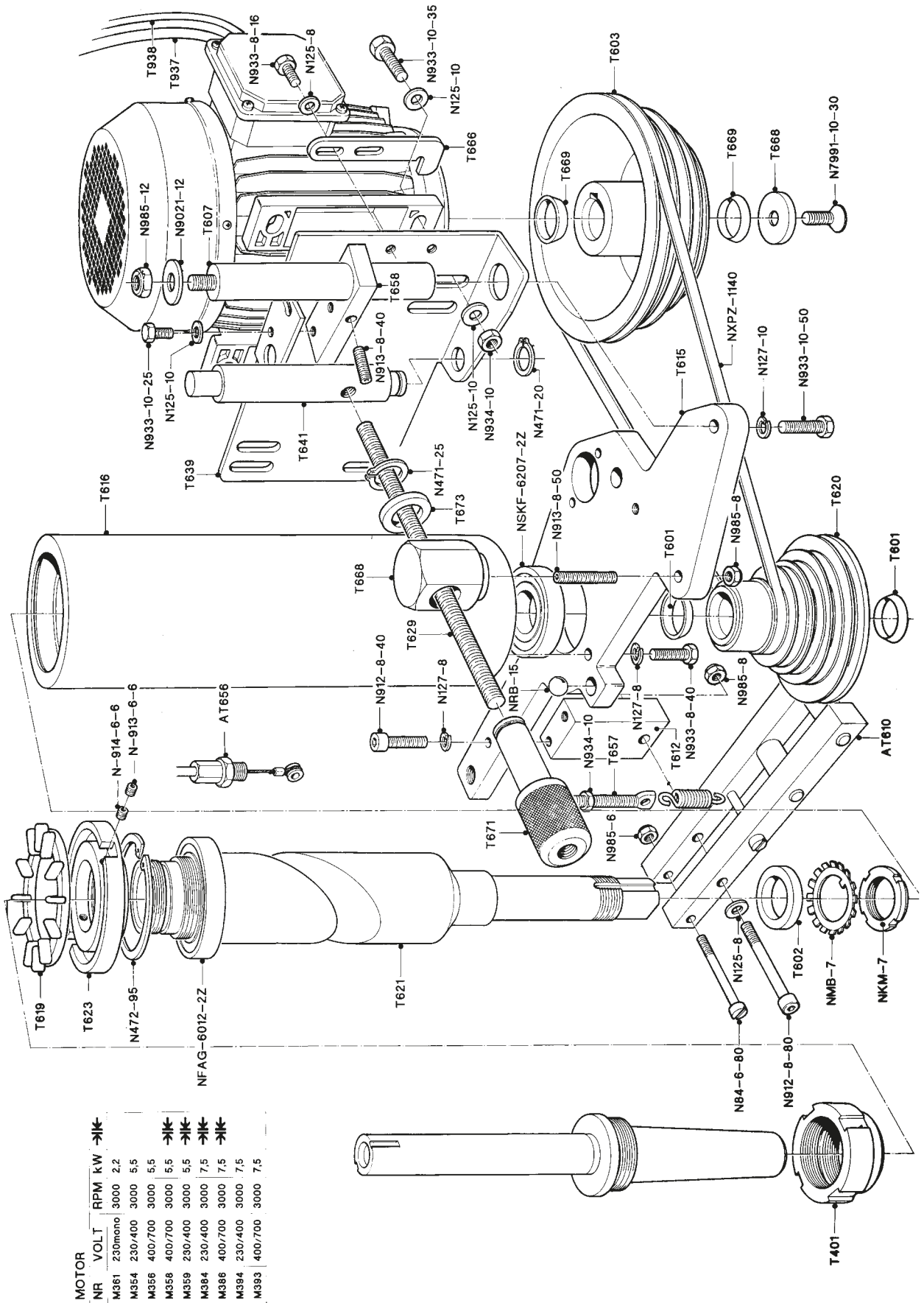
1. Acces door switch
2. Spindle lock switch
3. 3000 RPM detection
4. Spindle guard detection
5. Ring guard Fence detection

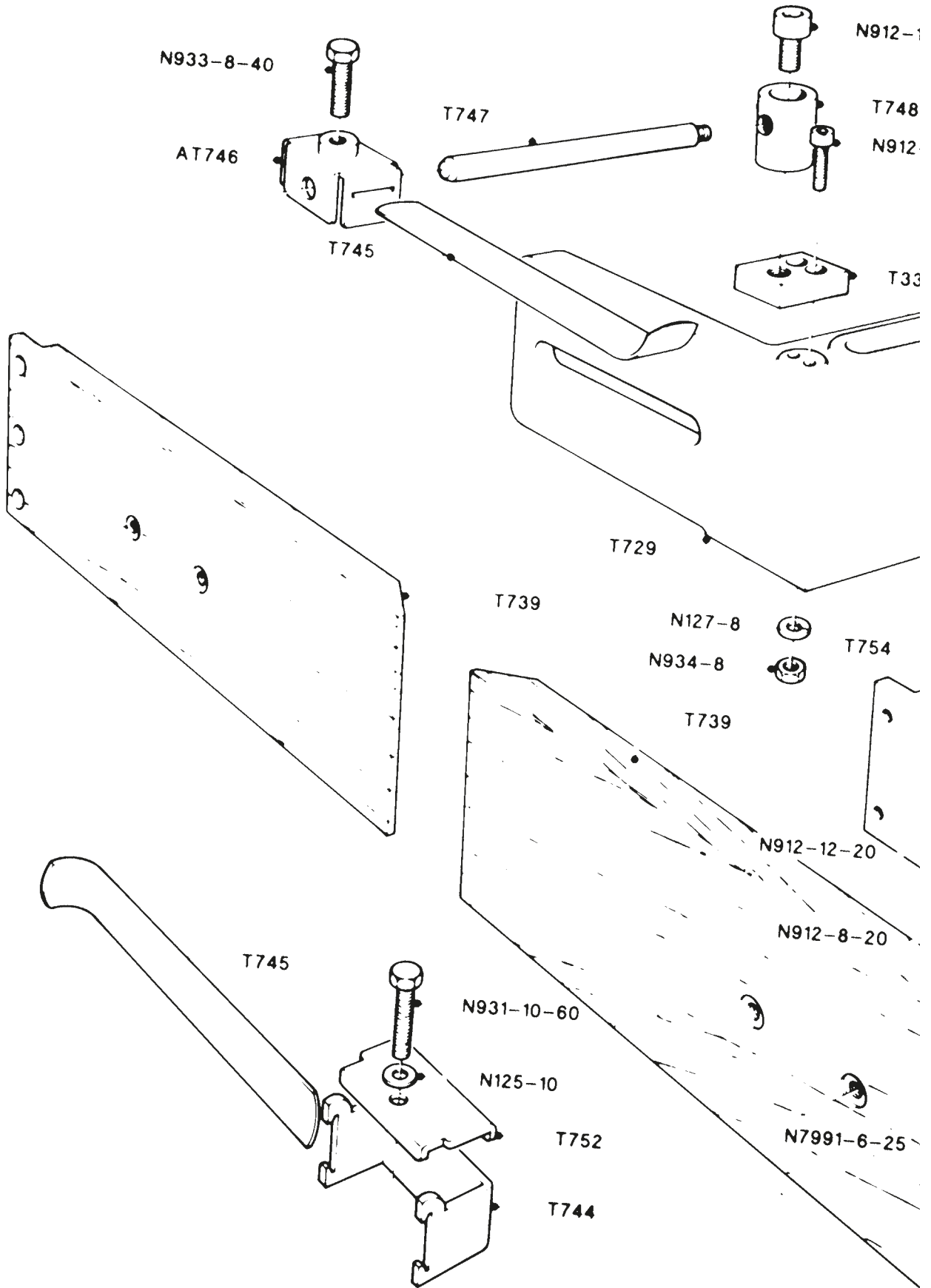
Terminology

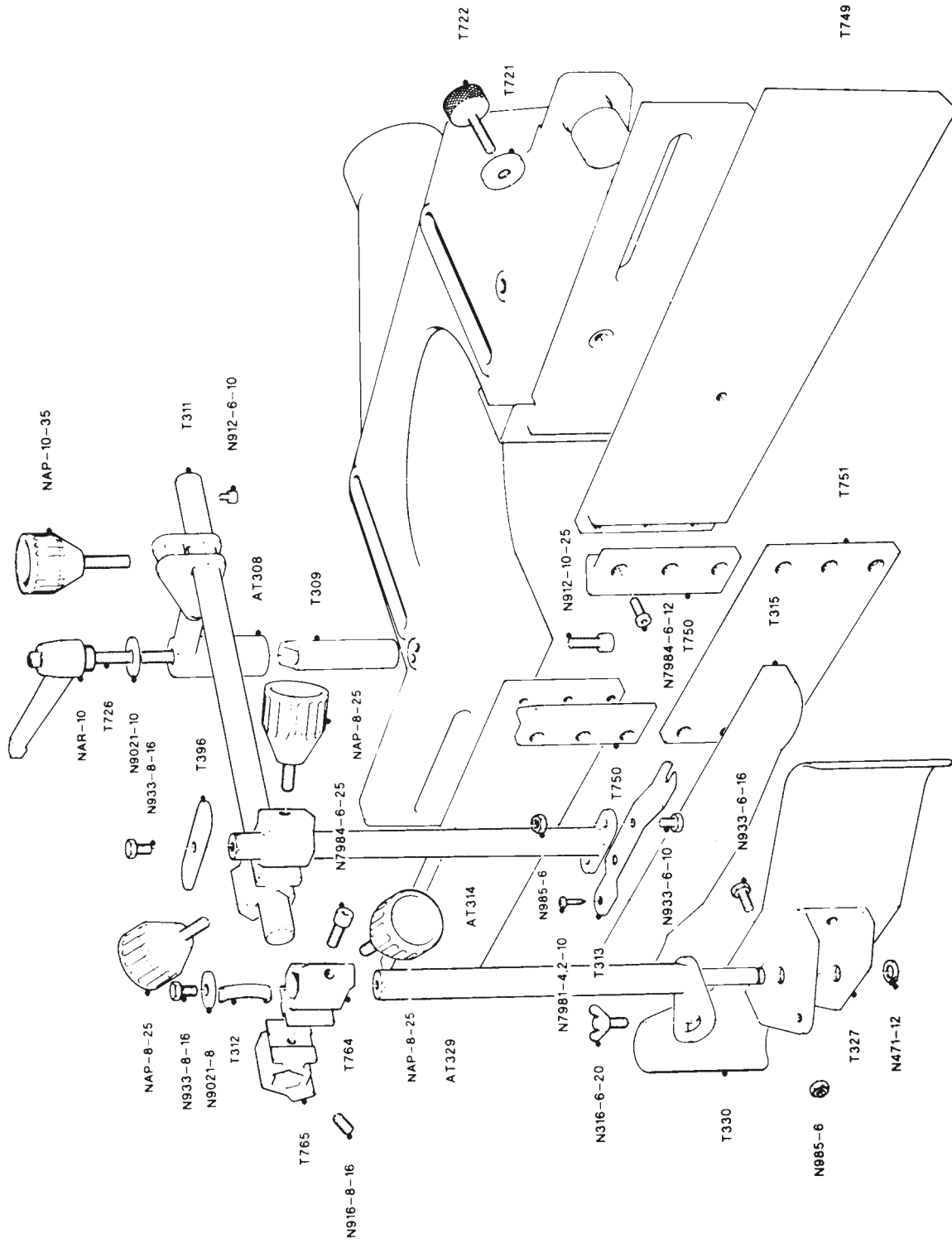
Symb.	Description	Norm	Quantity
Q1	Main switch Elektra Taifing D2 00/HS	947-5-1	1
K1	Magnetic switch Telemecanique 24 V LC1 D0910	947	1
cb1	Thermal protection Telemecanique 9-13 Amp LR1D11231	947	1
T1	Transformer 380V-24V Erea E 19 TP 146	742	1
KT1	Time relay 120 sec. Foxtam YRKP 24 V	255-23	1
F1-F7	Fuse holder Legrand 01127	63 210	7
F1-2-3	Fuse 10 x 38 mm Socomec 20A aM	63 210	3
F4-5	Fuse 10 x 38 mm prim. T1 A1 aM	63 210	2
F6	Fuse 10 x 38 mm sec. T1 2A HPC	63 210	1
F7	Fuse 10 x 38 mm brake motor 2A HPC	63 210	1
STOP	Stop button Telemecanique ZB2 BE 102	947-5-1	1
START	Start button Telemecanique ZB2 BE 101	947-5-1	1
S1	switch Salzer T225 947-5-1 1		
S2	Brake release switch Elektra Taifing	947-5-1	1
L1	Brake release indicator Meinert 24V (yellow)		1
SE	Micro switch Telemecanique XCK-P102	947-5-1	5
AU1	Emergency stop extension Vynckier P9XER4RA	947-5-1	1
AU2	Emergency stop sliding table Vynckier P9XER4RA	947-5-1	1(Only P version)
M1	Brake motor 5,5 KW 380V/660V Seipee MO358	51-115	1

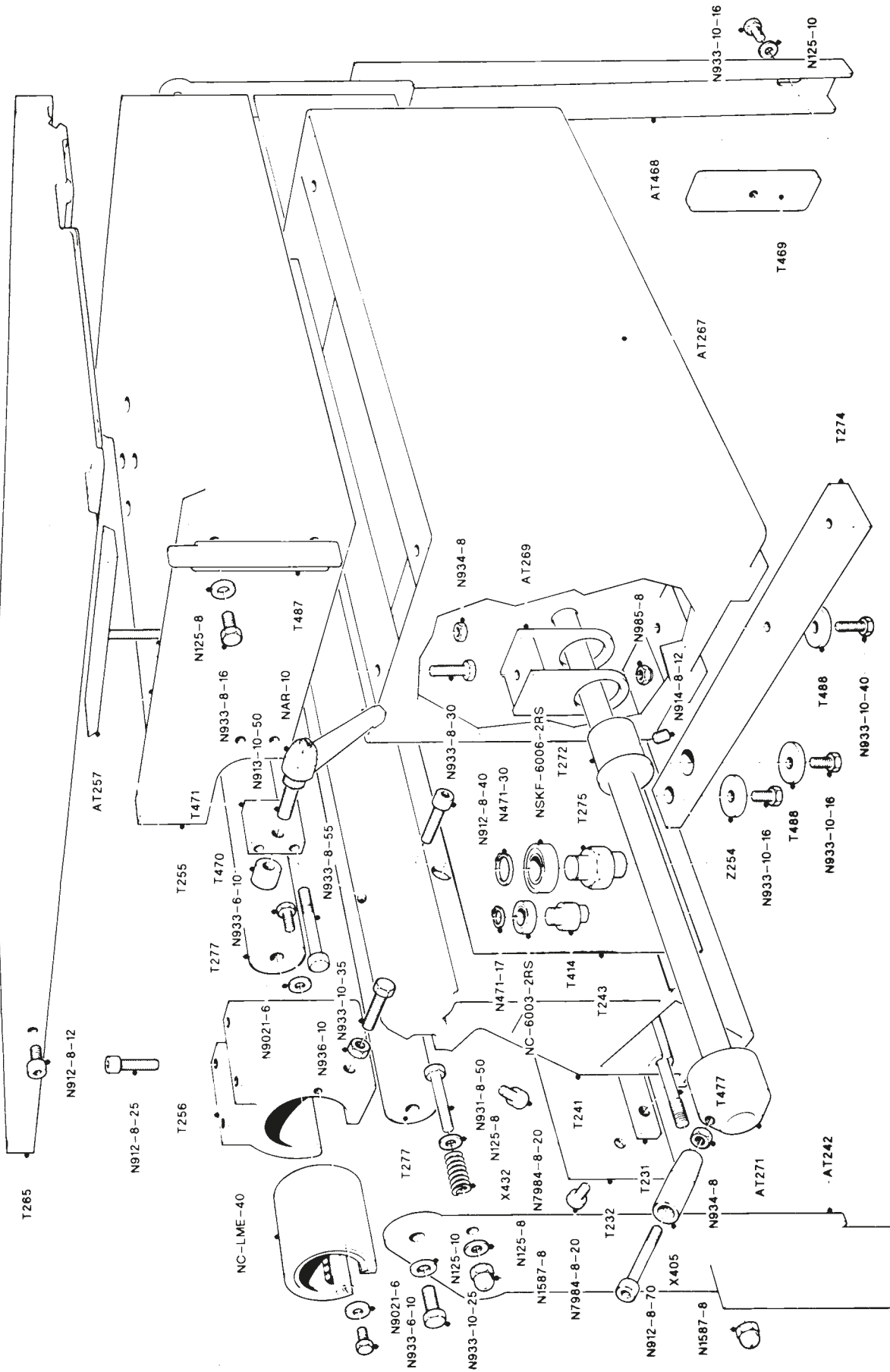


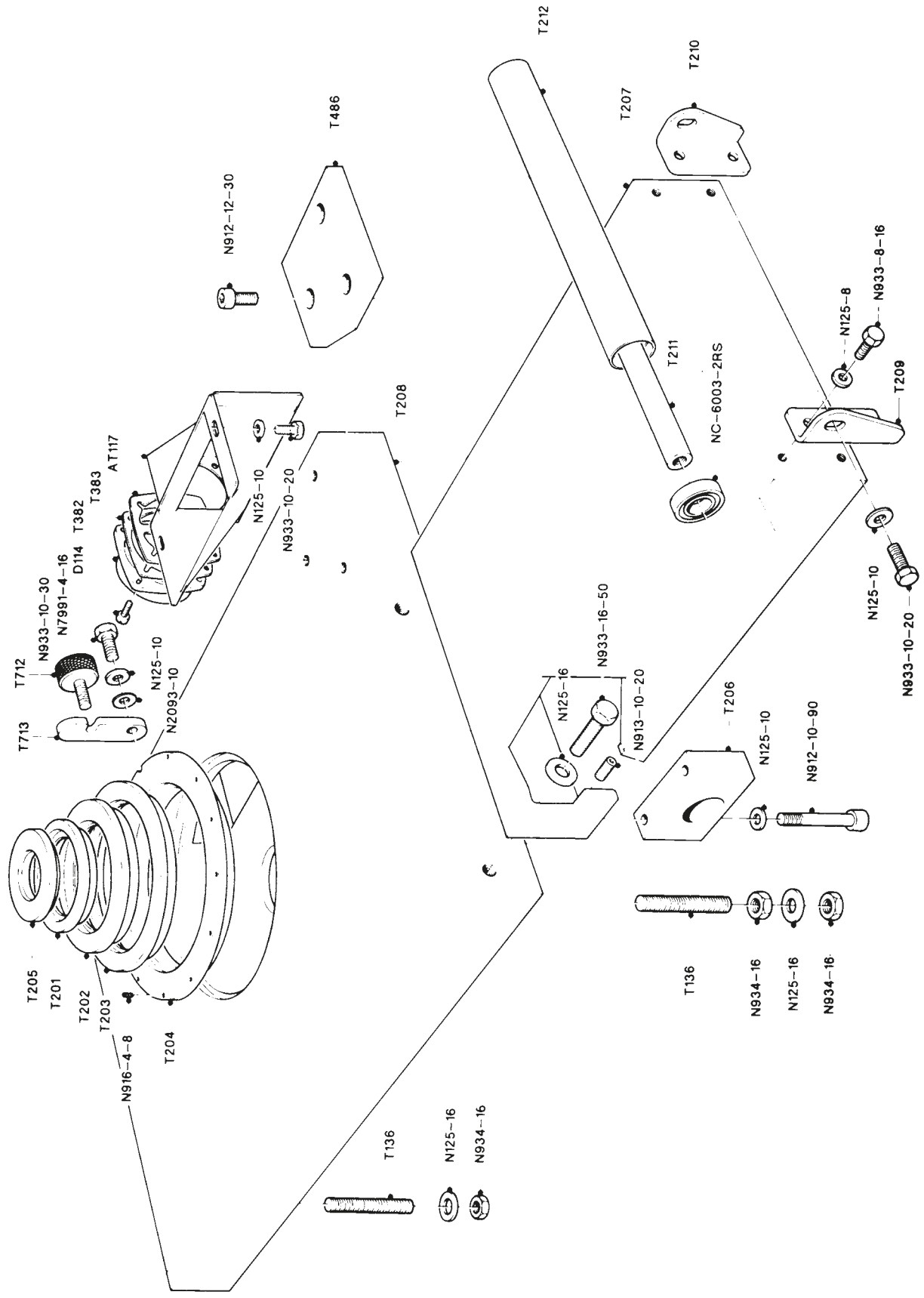


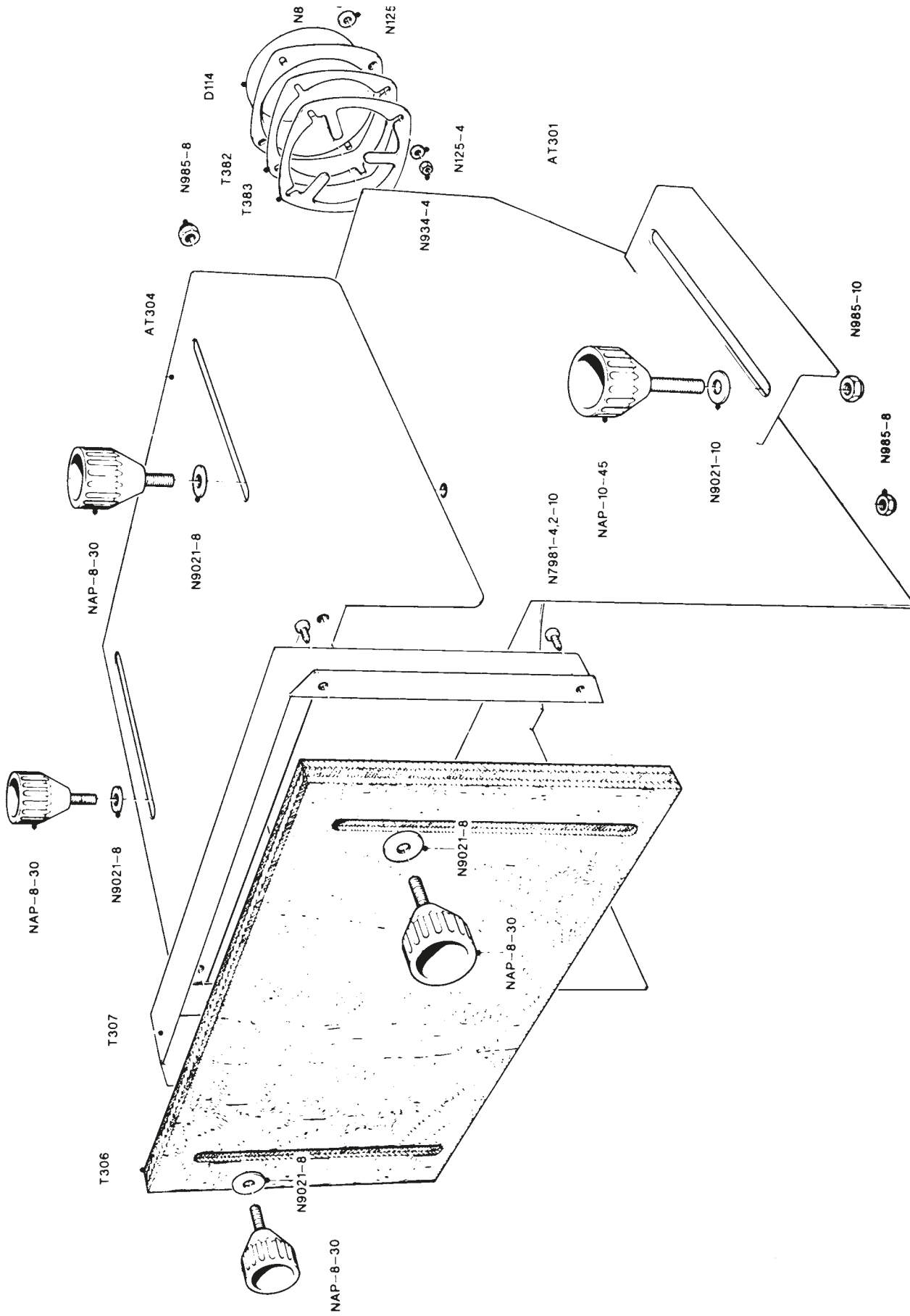


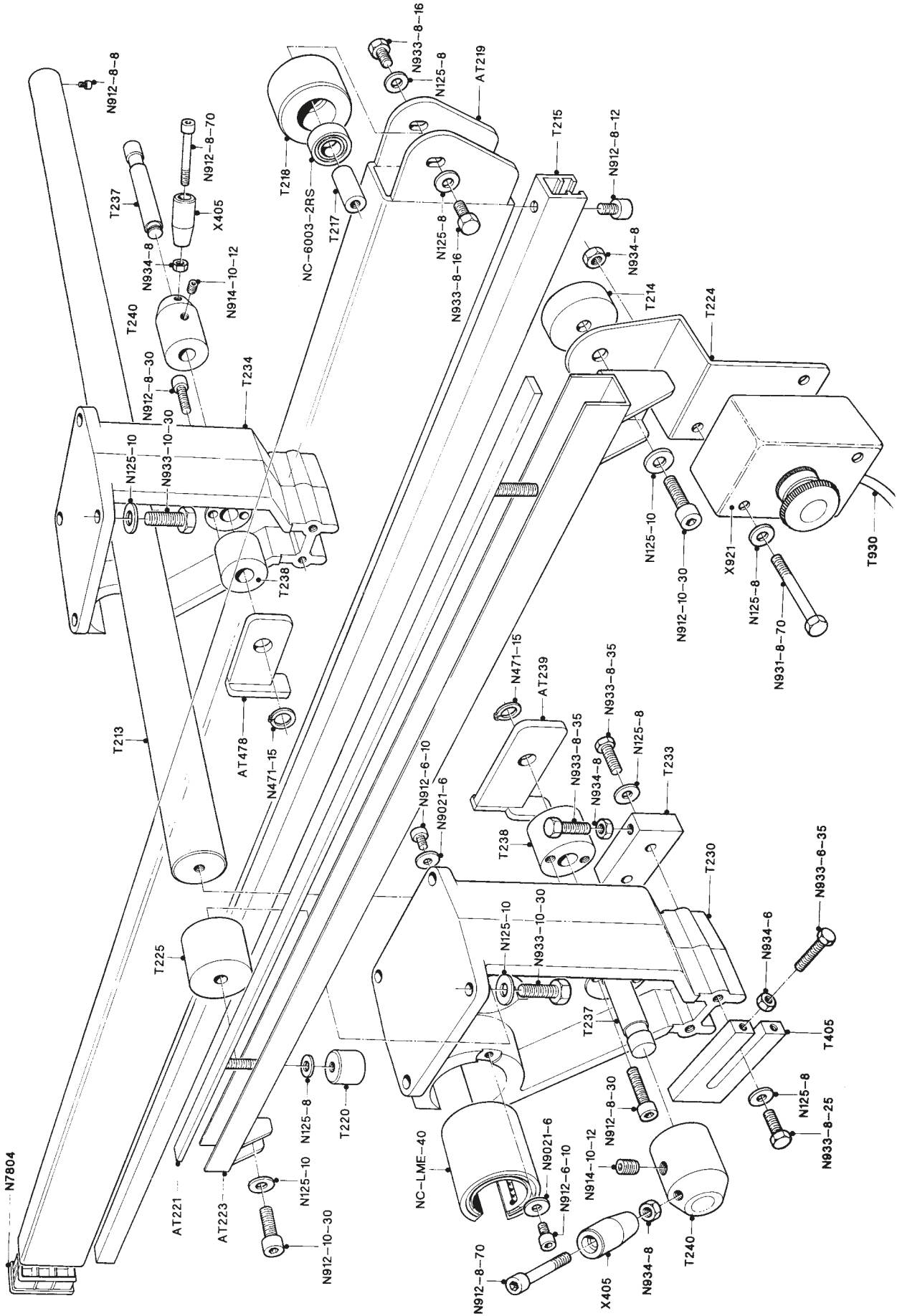


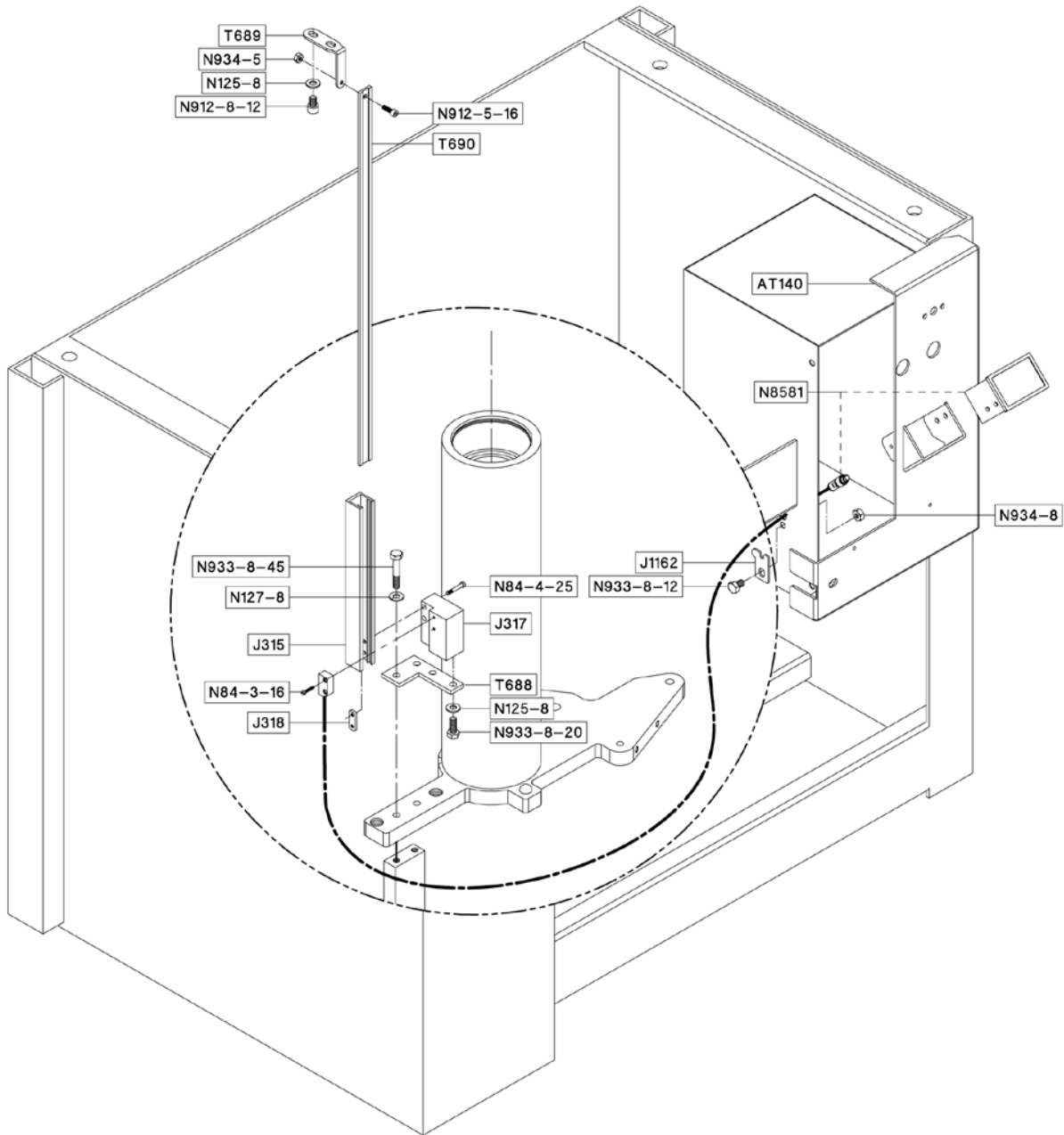












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