



FOUR SIDE PLANING MACHINE

CHF 18

Instructions for use
updated 4/2002



ROJEK

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1.0 Machine signification

ROJEK			
WOODWORKING MACHINES			
517 50 _ASTOLOVICE			
CZECH REPUBLIC, Europe			
CHF 18	<input type="text"/>	<input type="text"/>	
MACHINE TYPE	PRODUCTION YEAR	PRODUCTION NUMBER	
VOLTAGE	3X400V	POWER	16,1kW
FREQUENCY	50Hz	CURRENT	32,1A

This instructions manual contains general information about model CHF 18. The explicit identification shield is fixed at rear part of the machine stand.

2.0 Machine

intention

The 4-side planing machine is intended for processing of dry wood or materials of similar physical characteristics.

It is used mainly for processing of profiles from 4 sides upright one to another, but the possibility of planing only two sides is not excluded.

Dimensions of processed profiles are stated in chapter Technical data of the machine.

3.0 Transport, storage and manipulation

3.1 Working conditions

The machine is intended for working indoor under conditions made good to :

Air temperature 5°C to 40°C,
Relative humidity 30% to 95% noncondensing,
Altitude until 1000 m above the sea,
Dusty surroundings of woodworks.

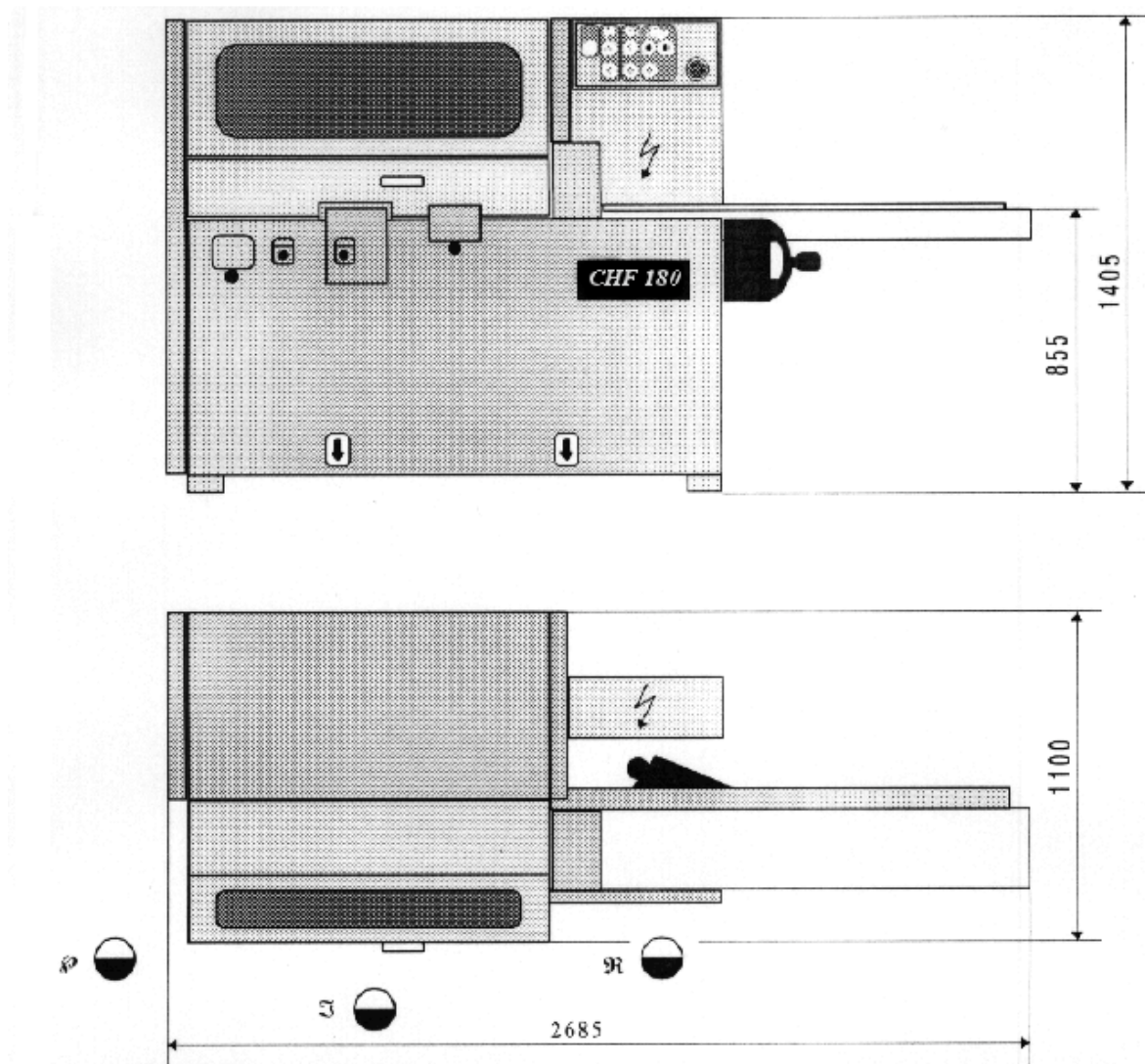
The bottom for installing the machine should be hard, solid and aligned enough.

Working place should be well lit – minimally 500 lx.

It is necessary to assure a sufficient space – minimally 1000mm around the machine.

At the output of material from the machine it is necessary to provide free space equal to maximal length of processed material + 500 mm.

Neither the machine nor its activity has any negative influence onto surrounding environment.

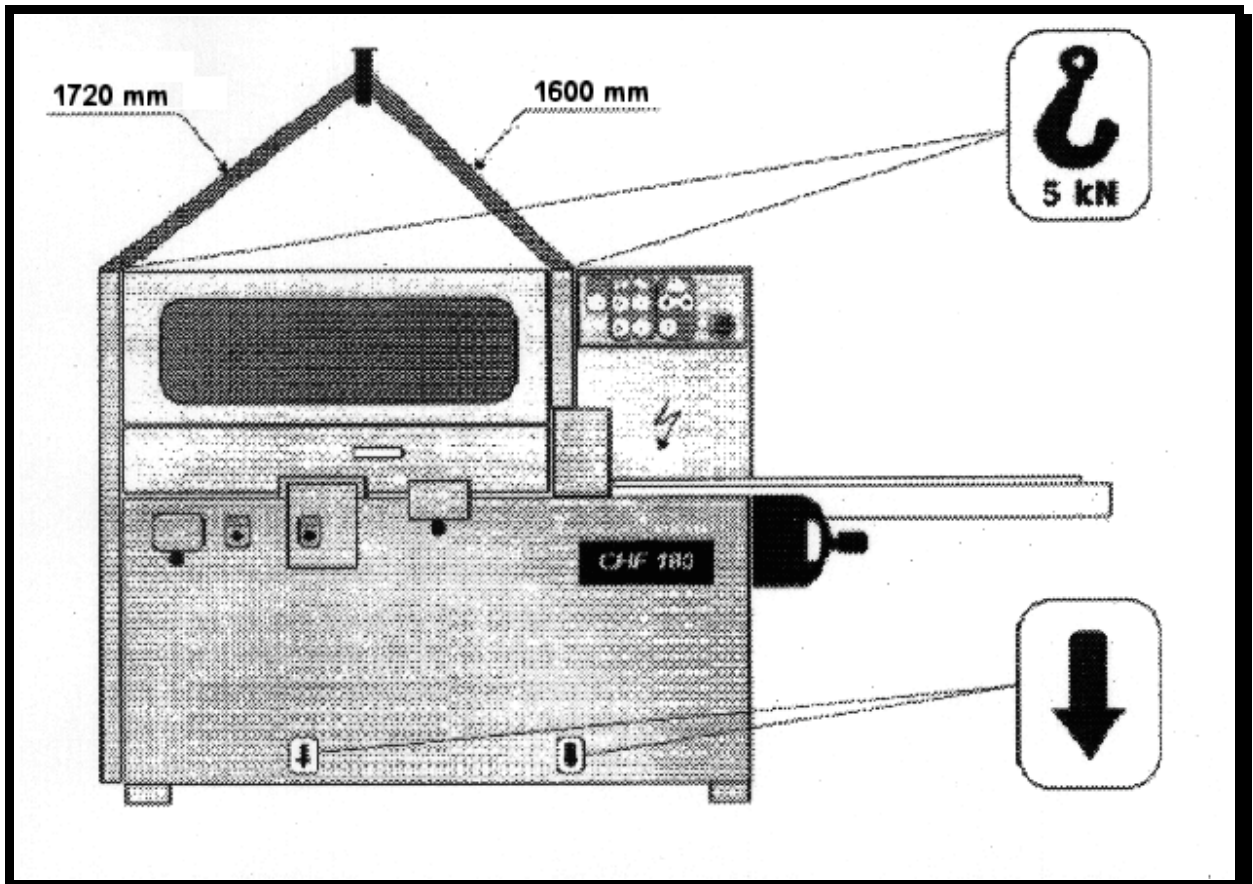


3.2 Transport, storage

During transport and stocking the machine must be protected against excessive vibrations and humidity. Stocking must be done under roof in temperature range between (minus) -25°C and $+55^{\circ}\text{C}$.

Before unloading – remove all packings and shifts fixing the machine during transport. Lift up the machine with a crane or another suitable lifting appliance. Slide hooks of ropes into openings (see picture). Notice a specific length of seal. Vyzdvihn_{te} stroj je_{ábem} nebo jin_m vhod_m zvedacím za_{ízením}. Vsu_{te} háky lan do otvor _(viz. obr.) V_{imn_{te}} si specifické délky lana.

When unloading with a high lift truck adjust the pitch between forks so that it is equal to the distance between plates, marked with arrows (see picture). Make sure that machine weight does not reach the carrying capacity of crane or the electric carriage (high lift truck).



3.3 Removing of protecting conservation coat

Some parts of the machine are covered with a conservation coat against effecting of rust during transport. This coat must be carefully removed before starting of the machine with a suitable solvent.

4.0 Safety directions

4.1 Basic safety rules

Breaking of following safety instructions means a danger of injury for you and for other persons as well.

- 1) This machine is designed so that maximum safety at an optimal output would be sure. The safety depends however largely on you personally.
- 2) When using whatever kind of woodworking machine there exist some risks, those must be kept on mind permanently.
- 3) When preparing whatever work – come on with maximal care.
- 4) Read thoroughly this operation manual before putting the machine to operation.

- 5) Start the work only after adjusting of all safety elements to active position and checking their function. If a standard safety equipment would not do for some special works – make a special safety aid for this kind of work.
- 6) Before beginning with cleaning, before removing of safety elements - the machine must necessarily be in a full still stand (fully stopped before).
- 7) Make sure whether the metal bodies of electric motors are connected to a copper cable for this purpose intended and whether the connection with protecting conductor is done properly.
- 8) When switching off the machine for purpose of adjustment or dismantling some its part overswitch the main switch onto zero and lock it or disconnect the machine from mains by towing the plug out from the socket.
- 9) General cleanliness of machine, working table and surrounding floor is an important condition of safety.
- 10) The experience proves that many injuries are often caused by personally worn subjects (ringlets, strap watches, wristbands). Remove all before you start to work, secure your sleeves, remove ties or scarves that might get caught by various parts of operating machine. Cover or restrain your hair so that it would not float around and wear suitable shoes as recommended or prescribed in safety instructions of the country in question.
- 11) Don't work with too big or too small work piece, which could cause overloading of the machine.
- 12) Never use cracked or deformed tools.
- 13) It is forbidden to use tools of maximal rated speed lower than the rated revolutions of working spindles.
- 14) Make sure that all rotating tools are perfectly balanced, sharp, adjusted and chucked.
- 15) Make sure that the fitting areas on both sides are cleaning, unbroken and perfectly plane before chucking the tool to the spindle.
- 16) Don't switch on the machine before all safety coverings of tools, belts, chains are in active position.
- 17) Fix screws, pins or connectors at every tool according to setting down freezing without exceeding of commonly used measures and above all without using levers or beating.
- 18) The machine is equipped with all necessary protective elements. It is forbidden to adapt, remove or disbar from operation these elements.
- 19) Appropriate free working area and space should be provided around the machine.
- 20) Working place should be well lit – minimally by 500 lx.
- 21) Personal protecting equipment should consist of following parts :
appropriate shoes, dress with sleeves those are not sack, protection of ears, eyes and breathing organs (protecting shield of eyes, glasses, earphones and filters)
- 22) Sleeves should be clasped and hair adequately covered.

It is forbidden to process other materials than wood at the machine.

4.2 Safety of work on the machine



When you want to apply maintenance or adjustment, do not forget to switch off the main switch and lock it up!

Never start the machine without active safety elements.

Work with this machine is forbidden for youngsters and youth.

Damaged cables and plugs must be replaced immediately. Damaged safety devices must be immediately replaced.

The machine must not be left running without operator. In the moment of discovery the defect, caused either by the machine, protective element or tool – Stop immediately the machine run with the pusher of switching off, overswitch the main switch to position “0” (OFF) and let know the responsible person.

For processing of short pieces a special feeding aid must be used.

For planing of a long piece use an auxiliary support.

Never open protective elements before cutting tools got stopped, never stop the cutterblock with any subject.

Material covered with the ice or with nails, wires and other metal objects must NOT be processed.

Directions and instructions of producer must be abided with at working operation, adjusting or repairs of cutting tools.

Before adjusting of tool, cleaning of uncovered machine part or disconnecting of protection element – the machine must always be switched OFF and its main switch in position “0”(OFF).

Never process all at once 2 or more objects one beside or one on another !

Never work at a machine without functionally active protecting elements !

Person working at the machine should wear a protection of ears.

4.3 Instructions of working safety

The cover can be lifted off only if the main switch is in position “0” (OFF).

- The sides of knives those do not plane are under the coat, connected with the exhaustion.

- The shape of feeding rolls is designed especially so as any back throw of workpiece could not emerge.

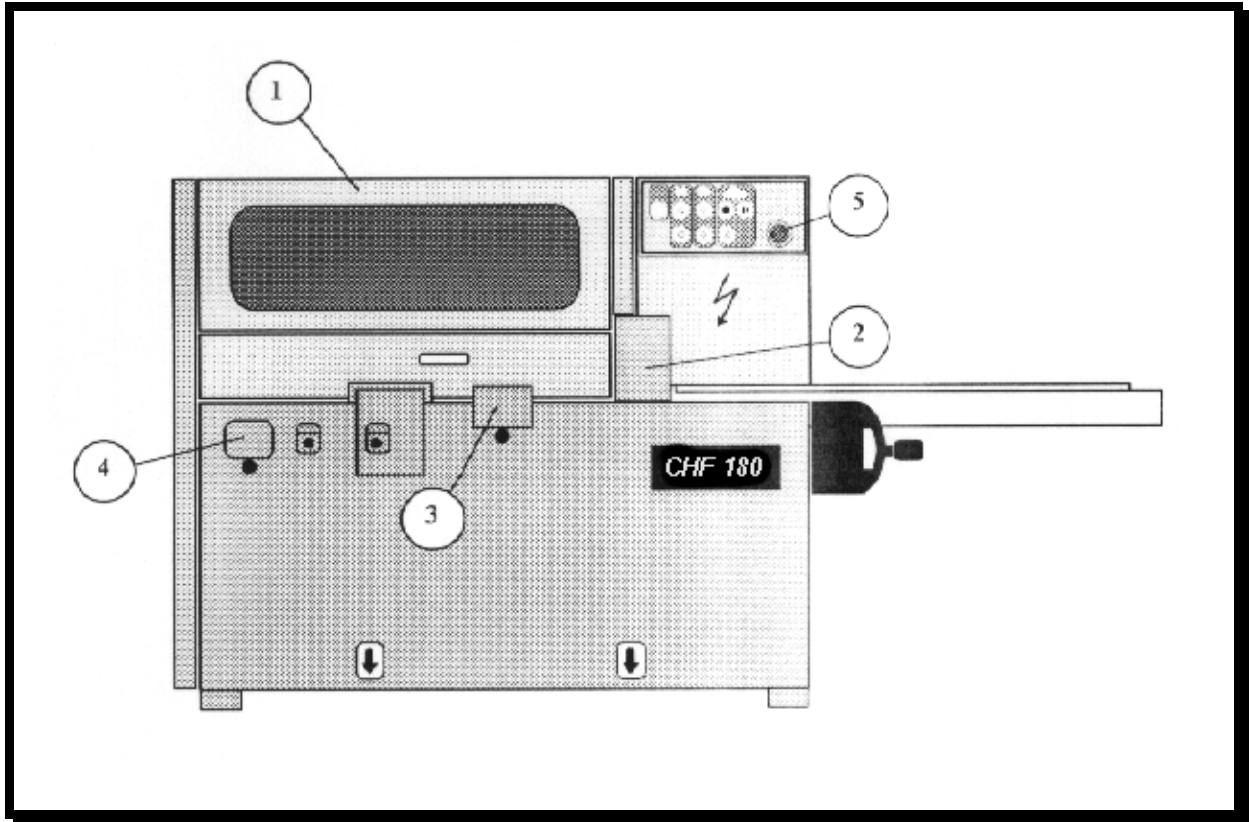
- All electric motors are equipped with a thermal protection, that gets activated in case of overheating and relevant motor gets stopped.

4.4 Protecting elements

The machine is equipped with a number of protective elements as e. g. :

1. The protective housing of all operation space (pos.1 at the picture),
2. Exhaustion protective housings of all cutterblocks,
3. Side frame of machine feed with a limiting device, controlling dimensions of incoming workpieces, so as a too large piece would not be put in (2, pict.)

4. Screws, drawn up with a screw driver, are used for fixing of covering of the lower horizontal cutterblock (3) and of the covering (4). The screws (rossetes), drawable by hand, must not be used.
5. Safety STOP-pusher at machine main control panel.



The machine operator should regularly, always after some time interval, check up the functionality of protecting elements, and immediately inform the responsible person in case of founding whatever damagings or defects .

5.0 Exhaustion

A good exhaustion is a condition for a high accuracy of processing and it reduces the concentration of dust.

5.1 Conditions of dustiness

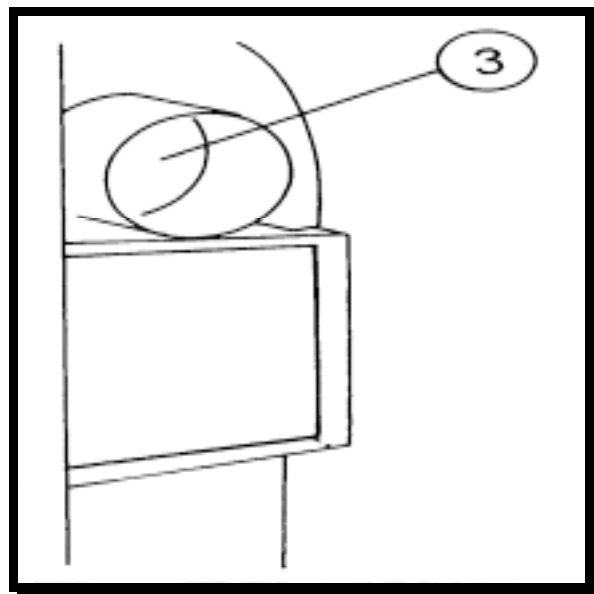
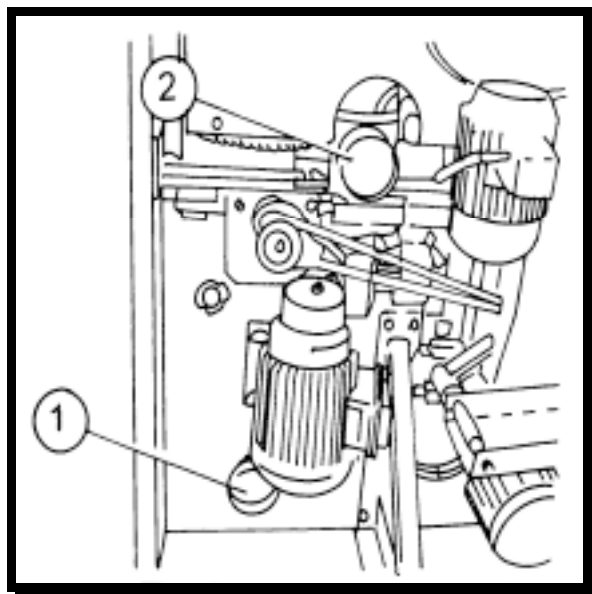
Factors, limiting spreading of wooden dust :

- good maintenance of machine exhaustion system and of planing tools
- proper simulation of cutting speed and feeding speed
- proper adjusting of protective elements.

The exhausting facility must have a sufficient capacity and provide a minimum speed of streaming air 20 m/s in a hose.

5.2 Connecting of exhaustion

The machine is connected to the exhaustion unit with special elastic hoses. Their diameter is the same as that of exhausting nozzles of the machine.



1. lower cutterblock - nozzle 1 (pict.) - diameter 120 mm
2. right cutterblock - nozzle 2 (pict.) - diameter 120 mm
3. left vertical and a upper horizontal cutterblock 3 (pict.) - diameter 150 mm

The exhausting system must always be switched on even if only single pieces are processed !

6.0 Connection to the mains

6.1 Making of installation

Connect the machine to the mains with a four or five wire cable with the socket CEE 32 Ampere and the plug CEE 32 Ampere.

The mains connection, from which the machine is supplied, must be made according to regulations and safeguarded with melting fuses 50 Ampere (50 A). Allowed voltage is 400 V.

The cross section of anyone from supplying conductors must not be smaller than 10 mm² . The protective conductor (green-yellow) must be connected to the PE binder. If a central wire is lead, it should be connected to the binder N in terminal box.

A damaged supplying leading must be replaced by a specialist immediately.

Operating of machine with damaged supplying cables is dangerous and therefore forbidden.

The admission to machine control is forbidden for youth and children !

Before putting the machine to operation make sure that the voltage and frequency stated at the motor rating plate corresponds with values of the mains and that the electric instalment of the the workshop corresponds with the machine input.



Disconnect the machine from mains with the main switch and assure it before any adjustment and maintenance works at the electric instalment of the four side planer.

The protection against dangerous contact of inanimate parts is assured with a self acting disconnecting from the mains according to article 6.3.1 of norm EN 60 204-1.

6.2 Operation switch of emergency stopping

The emergency switch will stay secured in position OFF after being used and it is necessary to release it by turning of the "mushroom" head.

Without this releasing the machine cannot be started again !

6.3 Rotating direction of tools

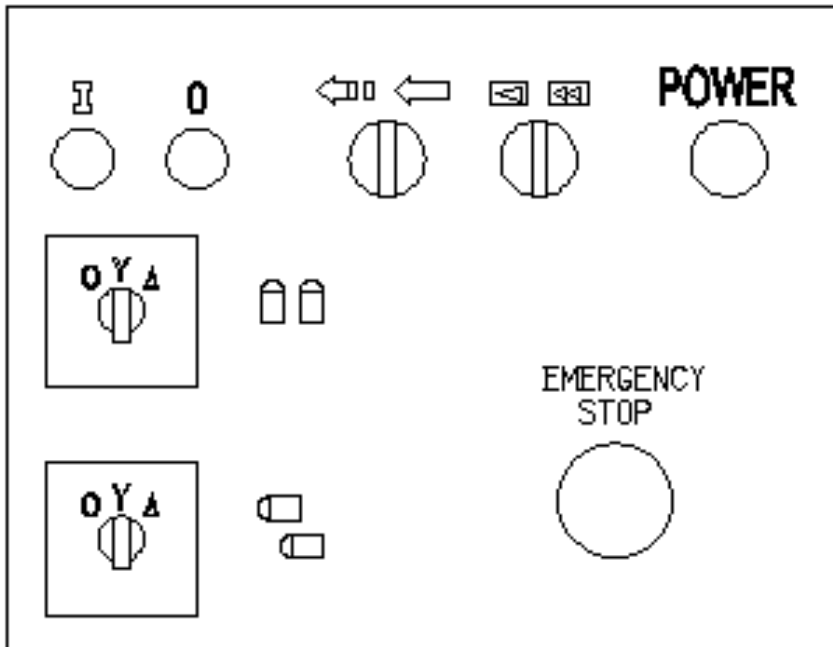
Start the machine and check up whether cutterblocks rotate in a correct direction sense as indicated at the motors.

If motors do not rotate properly, do following :

1. Disconnect the machine from the mains.
2. Exchange connection of two supplying phase conductors.
3. Check up the rotating direction again..

6.4 Electric control panel

Following control pushers are placed at the Control pannel :
"ON" indicating lamp HLO,



switch of vertical cutter-block QS2,
switch of horizontal cutter-block QS1,
over switch of feeding speed QS3,
switch of feeding SB3
switch of emergency stopping SB0.

6.5 Internal electric panel

The entry into the inside part of electric control panel is possible only as follows :

P_ístup do vnú_ň_ásti elektrického rozvodného panelu je mo_n_ jen takto :

1. Set the main switch into position "0" (OFF).
2. Unlock the both locks with relevant key.
3. Open the door.

There are following elements in the inside part of control panel :

At the control board there are control pushers :

"ON" indicating lamp HLO

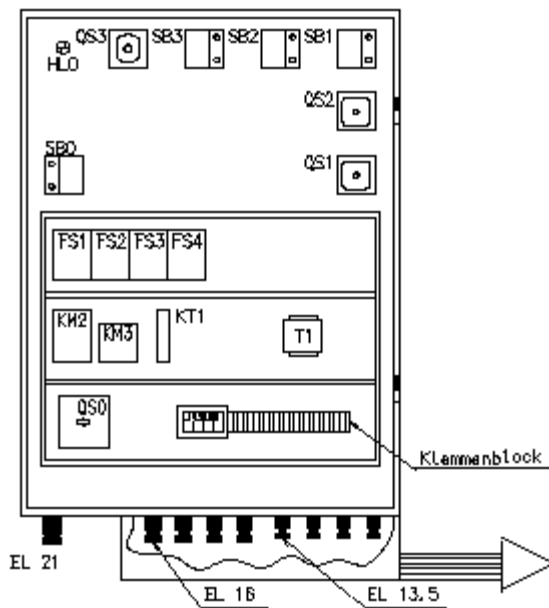
switch of vertical cutterblock QS2

switch of horizontal cutterblock QS1

overswitch of feeding speed QS3

switch of feeding SB3

switch of emergency stopping SB0



Main switch QS

Thermal protection FS 1, FS 2, FS 3

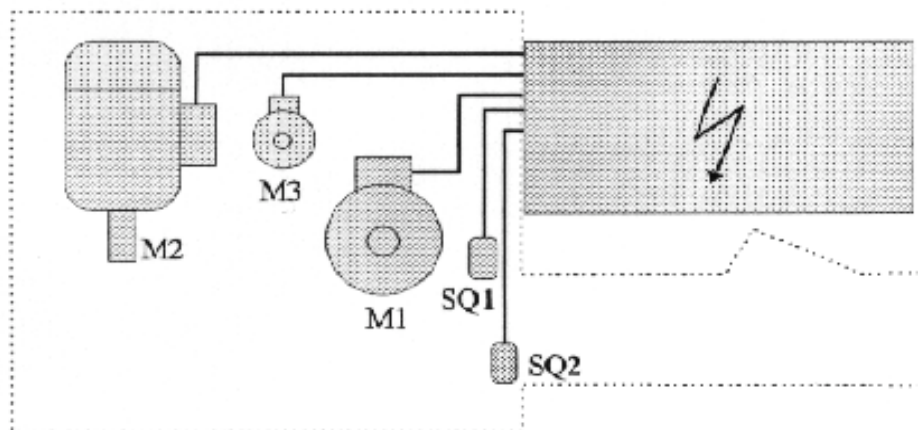
Automatic circuit breaker FS 4

Transformer T1 (POZOR, NAP_TÍ 110 V !)

Connector KM 2, KM 3

Timing relay KT 4

6.6 Internal machine installation



7.0 Machine operation and adjustment

7.1 Putting the machine in operation

- Check up whether both tools are fixed.
- Check up whether protective devices are well adjusted.

- Set the main switch to position "1" (switched ON) = under voltage - indicates HLO „ON“.
- Make sure, that the pusher of emergency switch is not pushed.
- Protective housing is locked (interlock activated with the position switch SQ 1).

The protective housing cannot be open, when cutterblocks are working !

The opening is possible only after stopping of cutterblocks and running out of time interval at the time relay KT 4 (7-8 seconds) so as to improve the safety of the work.

- Push the button START (SB 1) of the vertical cutterblock and start the turning.
- Push the button START (SB 3) so as the horizontal cutterblock starts to turn.
- Choose a proper speed with the overswitch of feeding speed.
- With the mode – overswitch „TEST/AUTO“ (SB 7) choose either impulsive (TEST) or regular (AUTO) feeding.
- Maximal workpiece thickness is limited by the end switch SQ 2 (switches off the feeding by its getting activated).
- Push the emergency STOP-pusher, the motion of all machine parts will stop.

The run out (stopping) of tools' motion after an emergency stopping takes some time (the value of breaking current gets adjusted with the first and time necessary for stopping with the second potentiometer of electronic brake IB 1). The time relay KT 4 is a safety element,

protecting from a bigger exceeding the time of machine run stopping with the electronic brake.

ATTENTION !

The emergency stopping immoderately charges mechanical parts and electric motors and it should be used only in case of emergency !

7.2 Description of construction scheme

Basic groups and mechanisms :

- groups of cutterblocks
 - group 1 - lower cutterblock
 - 2 - right cutterblock
 - 3 - left vertical cutterblock
 - 4 - upper cutterblock
- group of workpiece feeding
- group of table and ruler
- setting and mounting of cutterblocks

7.3 Important groups and mechanisms

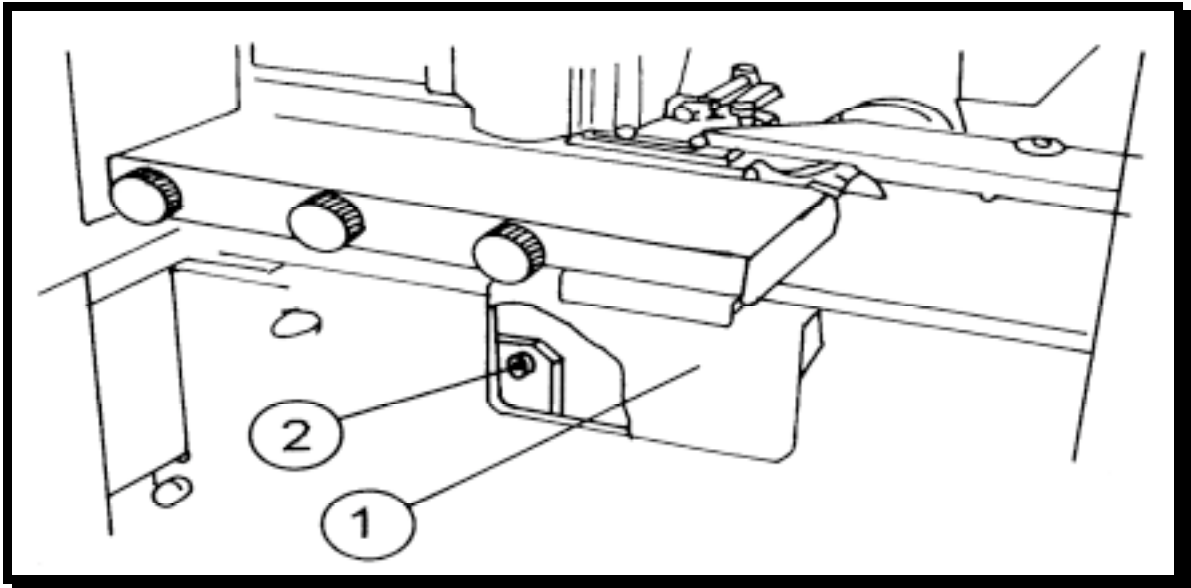
The machine consists of following important parts :

Frame, adjustable table, along that the workpiece is shifted, groups of cutterblocks, group of feeding, lifting mechanisms, electric controlling pannel and distribution board .

The first planing cutterblock is adjusted so, that the blade of cutterblock knife is in the flat of the solid table.

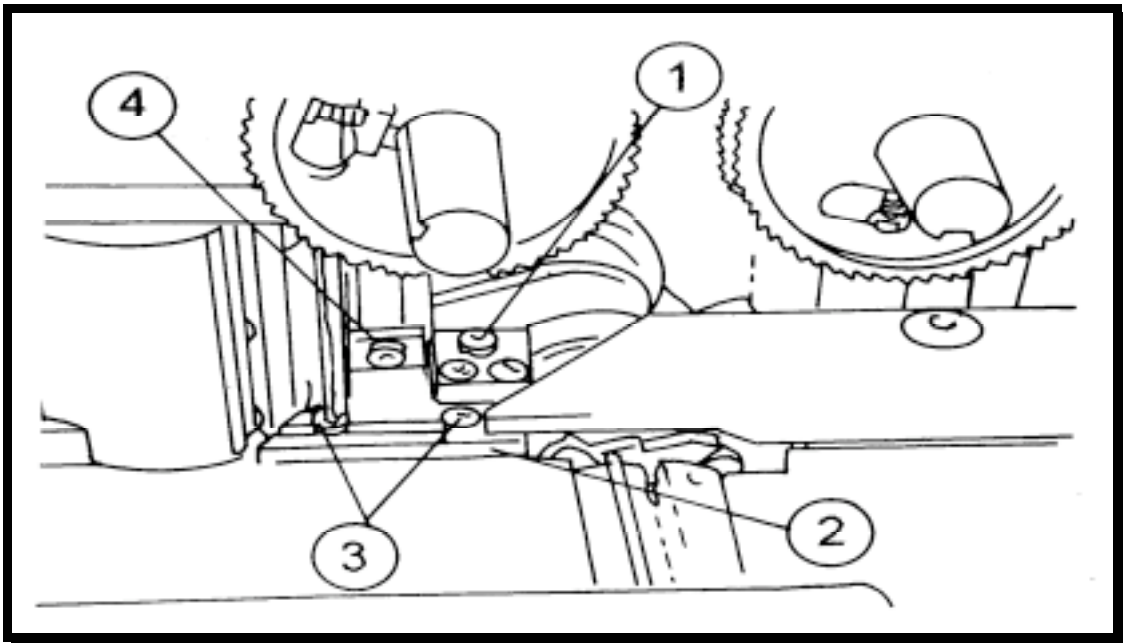
The second cutterblock is adjusted in the same way, its knives are set in the side flat of the fixed ruler. Position 3. and 4. of cutterblock is set according to required final dimensions of the workpiece.

7.3.1 Group of cutterblock nr. 1 (lower horizontal)



Before beginning of work make sure that the protective covering (1) is closed well. The lower horizontal cutterblock is vertically adjustable. For this reason at first take out protective covering (1), screw out the screw (2) and make the adjusting with the setting screw. Close the protective covering (1). Check up, whether knives are set to position dedicated by the feeding table.

For a more accurate leading of processed piece you can mount a milling cutter to the lower horizontal spindle at the side to the ruler. It helps to an advanced cleaning of the lower part of workpiece right side and herewith to a correct suborning of workpiece to the gauge. When using a profile knife set the gauge (2) to position, determined by profile knife as follows :

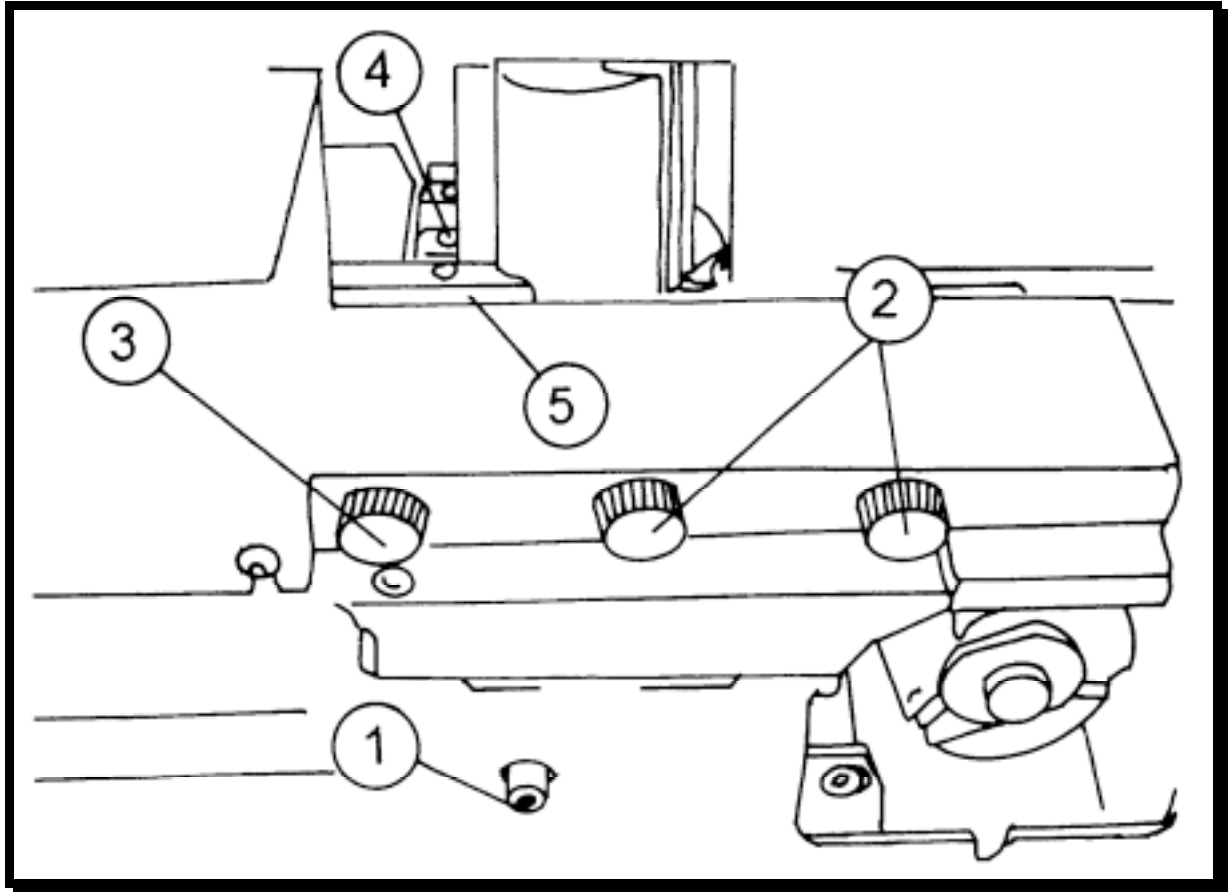


1. Release both screws (3).
2. Set up the gauge by help of setting screws (4).
3. Draw up the screws (3).

When the miller cutter gets blunt, it must be turned over or sharpened. After every taking out of cutterblock the leading gauge should be set up in the above described way.

7.3.2 Group of cutterblock nr. 2 (right horizontal)

Right vertical cutterblock gets adjusted with the setting screw 1 (pict.) after releasing of



screw 4 (pict.). After this adjusting check up whether knife blades are set to position, determined by ruler 5 (pict).

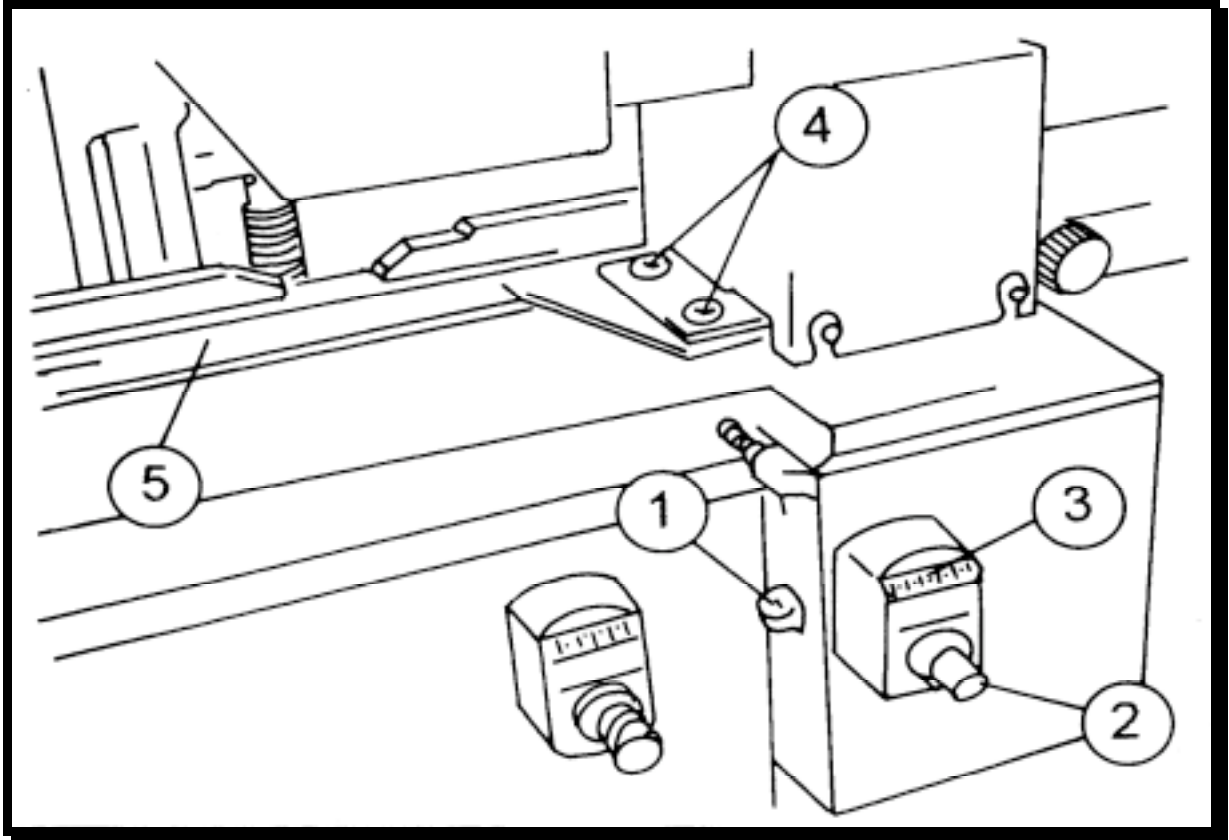
7.3.3 Group of cutterblock nr. 3 (left vertical)

Required width of worked piece is reached by the side shift of the left vertical spindle, done by releasing of handle (1) and turning with screw (2).

Digital indicator of position (3) shows the extent of shifting.

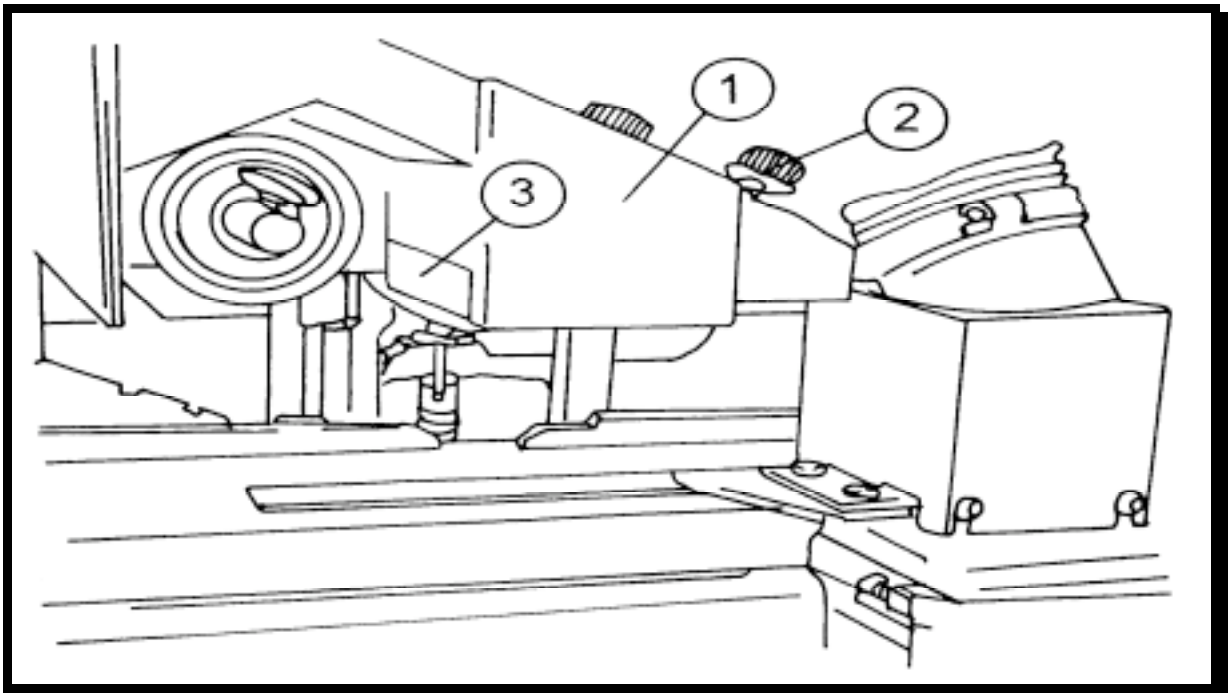
The machine design comprises a lot of leading and pressing elements, serving to a better leading, and protects from vibrating of workpiece.

The workpiece is, during inciting, pressed to the leading rule with pushing pulleys until it reaches the left vertical spindle. The pushing force is influenced by 2 rosettes (2). The third rosette is used for the pressure setting of chips deflector of the left guiding roller.



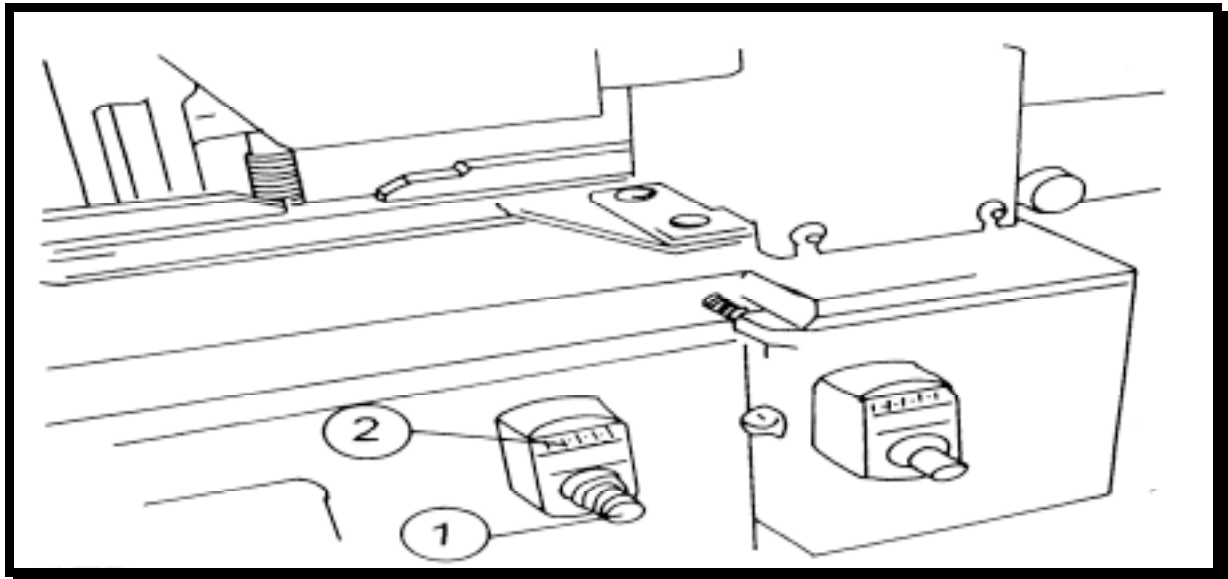
There follows setting of limiting drawing square (5) placed beyond left vertical cutterblock. For this purpose the product stops in the moment of reaching the end of the pressure flat. Release both screws (4), set the pressure flat to touch the workpiece surface and draw up the screws.

7.3.4 Group of cutterblock nr. 4 (upper horizontal)

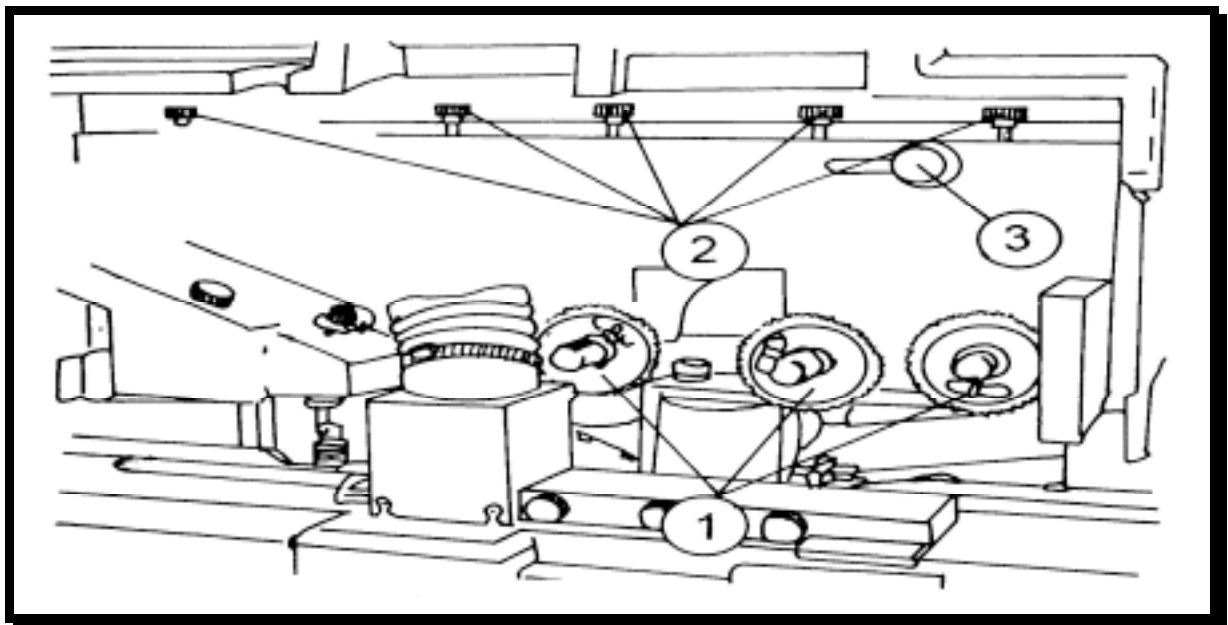


The upper horizontal group is fit on the vertical leading bar. The arm of workpiece feeding assembly is fit on it. It makes more easy the setting of required final workpiece thickness by shifting the arm up or downward. The access to cutterblock is possible after taking out the protective covering.(1). The height of the upper horizontal group gets adjusted by

turning with the screw (1) in required sense. The value of shift can be seen at the digital indicator.
To avoid eventual vibrations when processing, the assembly is equipped with pressure elements :



1. pressing plate, leading material before it is processed with the upper vertical cutterblock. Pressure force gets adjusted by the handle (2).
2. pressing plate, shifting the final workpiece after being processed with the upper cutterblock. The position of the plate gets adjusted after releasing of both screws. We recommend the distance between the plate and cutterblock above to be about 0.2 mm.



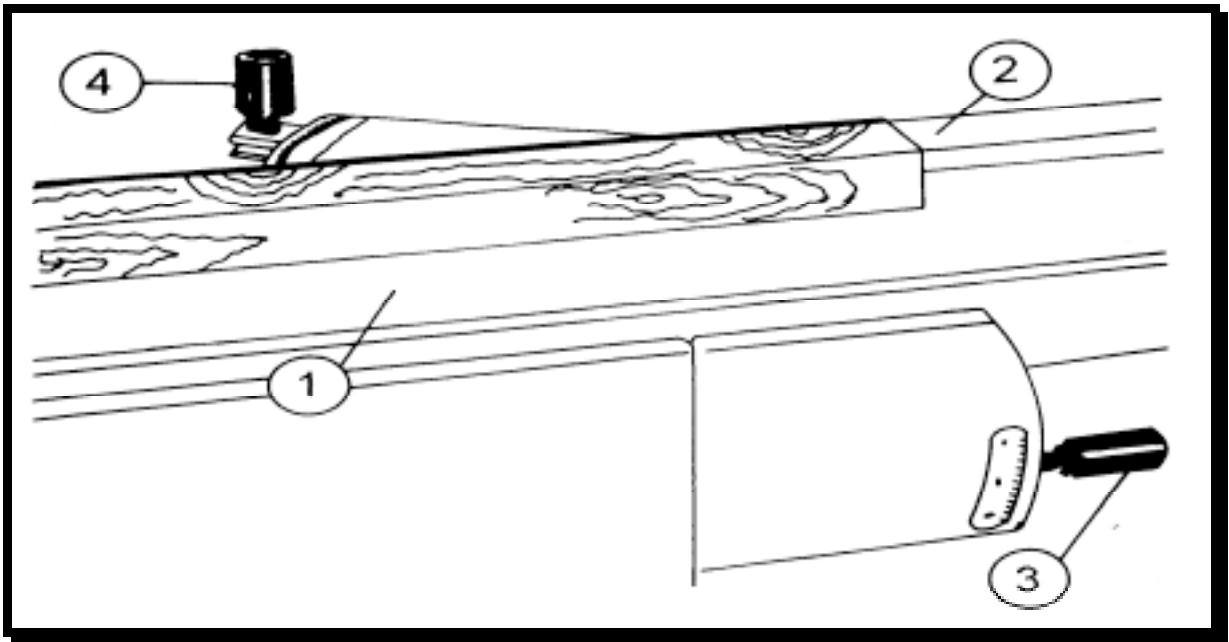
7.4 Group of feeding

Machine feeding group shifts the material being processed. It consists of 5 driven spindles the 4 of those are fit with cog-wheels (1). The fifth wheel is rubbered not to damage finished workpiece. Pressing force gets adjusted with 5 rosettes (2), each wheel independently always

with another one. Sometimes it is not necessary so as the first cog-wheel in front of lower horizontal to share at shifting of the workpiece. In such case disable it by turning the handel (3).

7.5 Adjusting table and ruler

Adjusting table (1) and the back side limiting rule (2) are fit with rosettes for a fast and easy setting of chip thickness, taken from below and from the right side of workpiece. Maximum removed chip thickness is 10 mm. This is especially advantageous at a need to change



the size and dimensions of workpieces quite often.

Feeding table gets adjusted as following :

1. release the rosette
2. set the table on required dimension
3. draw up the rosette

The ruler gets adjusted with a rosette (4) in the same way. The measure shows the thickness of chip removed from the right and lower workpiece side. The distance between neighbouring scale lines represents nearly 1 mm. Accuracy of measuring scales is assured by a correct adjusting of mechanisms at the parallelogram, used for designing of the machine.

These mechanisms can be programmed additionally.

7.6 Working place

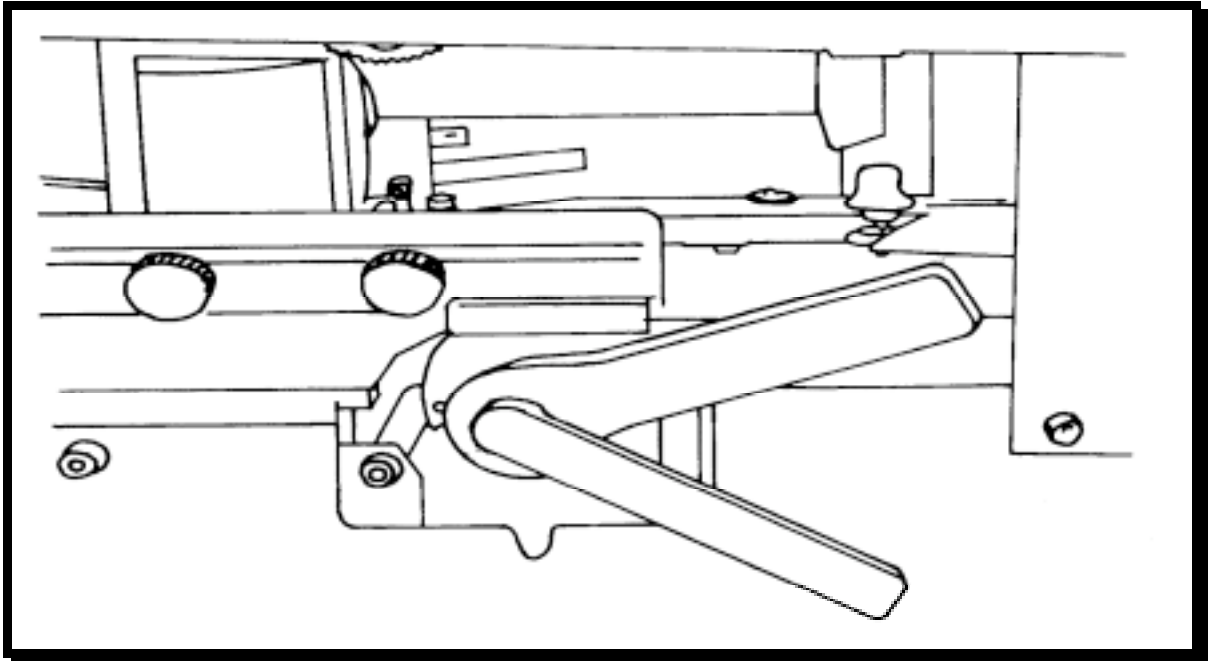
Working places of machine operator are at the input and output of processed material from the machine.

7.7 Qualification of workers

Only a qualified specialist trained in branch of woodworking or worker taught in by such a specialist can operate the machine. The operator is obliged to abide all safety regulations and rules, valid in the country in question.

8.0 Tools

8.1 Mounting and adjustment of cutterblocks

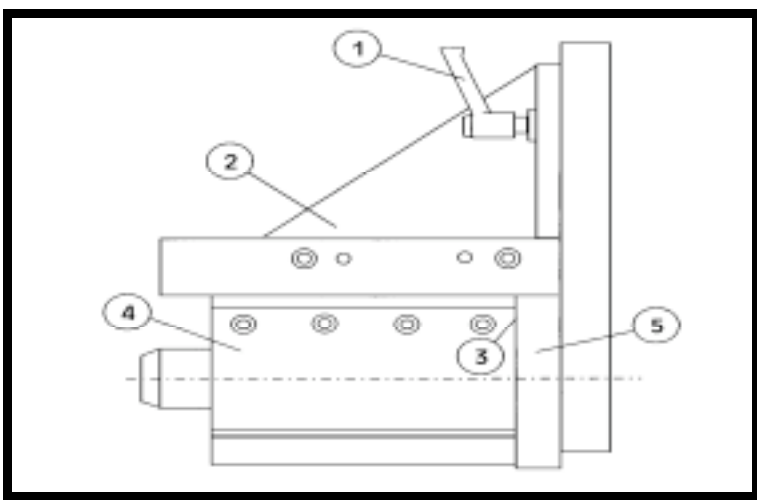


One of the most important conditions of a normal machine run is a good state of cutterblocks. They should be very well adjusted. Knives in position one against another should have the same weight and should be changed always all at once. Whatever weight difference causes strong vibrations at high revolutions. If you want to change or adjust knives in cutterblock, at first get off the cutterblock from the spindle by help of two special wrenches (delivered with the machine) – see the picture. Then take it to pieces clean its parts thoroughly. At last put the knives and fixing wedges inside and check so as they do not protrude away of the cutterblock side plain.

Exchange of components between two cutterblocks is inaccessible.

Cutterblocks are adjusted by help of a delivered device.

When adjusting the cutterblock come on as follows :



1. Release the handle(1) and pull up the square (2), whereby you enable mounting of cutterblock onto the spindle.

Pin (3) should get to one of rills of the cutterblock.

2. Slide the square downward to cutterblock (4) so as it touches the flange (5).

3. Draw up the handle (1)

4. With a hexagon screwdriver release the screws, holding knives in cutterblock except of 2 most

rear.

5. Slightly release both back screws so as springs slightly push onto

knife and its edge touches the square (knife setter).

Herewith it is secured that the knife and flange rotation diameter are the same = 120 mm.

6. Without using of the wrench socket draw up always all screws one after another in sense

of rotating direction, so as to be moderately drawn up.

7. Repeat steps nr. 4 to 6 for other knives in cutterblock.

8. Check up reliability of drawing up of all knife screws.

Repeat above stated step sequence at all cutterblocks.

NOTE : Surface of knives and body of milling cutter must be cleaned before adjusting of cutting elements of the machine.

After adjustment mount the cutterblocks onto relevant spindles by help of 2 special wrenches – see the picture. Do not take knives out from the cutterblocks before taking cutterblocks out from the machine. Pay a special attention to cleaning of table plates with suitable solvent !

9.0 Maintenance



Before beginning with the maintenance or repair works disconnect always the machine from the mains ! Switch off and lock the main switch !

9.1 Machine cleaning

Regular and thorough cleaning is a condition for a long service life and safety of work.

Not even reliable exhaustion does not prevent from setting of dust at the machine. The dust influences negatively the action of a lot of mechanisms.

The machine is to be cleaned daily always at the end of working shift when it is in stillstand and the main switch is locked.

Watch regularly so as dust or chips would not cummulate on working tables, in room of the feeding group and in the motor section. Divide regularly hoses from exhausting nozzles and in case of their getting jammed do unblock it.

9.2 Machine lubricating

Pay attention to machine lubricating especially before putting the machine to operation, before beginning of work and especially when the machine was for some time out of operation.

Look over the whole machine and eventaully lubricate all needy points. Raddle the tables e.g. with paraffin wax.

All used bearings are closed nad filled with the grease with the service life period accordant to that of the machine and do not need to be greased. The couples of screws at the leftvertical and upper horizontal cutterblock, samely as leading bars of lifting mechanism of the upper horizontal cutterblock should be greased once a week and chains of feeding mechanism twice a month.

We recommend to use the grease Shell Alvania 2, Shell Avania 3, FAG Arcanol L 38, - L 71,- L 78 or another equal lubricant.

The oil in gearing boxes must be changed always after 1000 (one thousand) working hours.

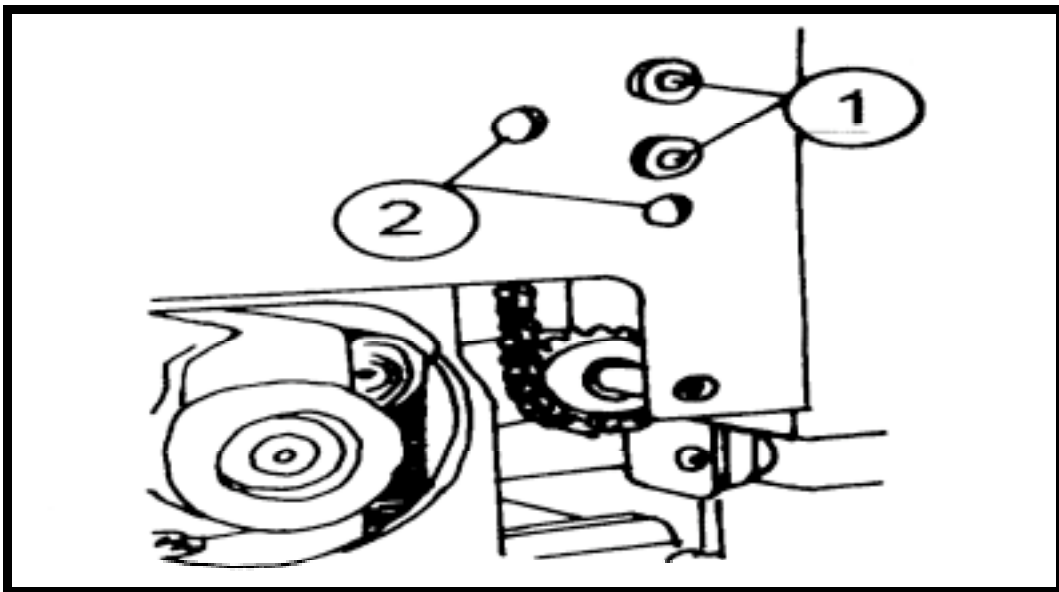
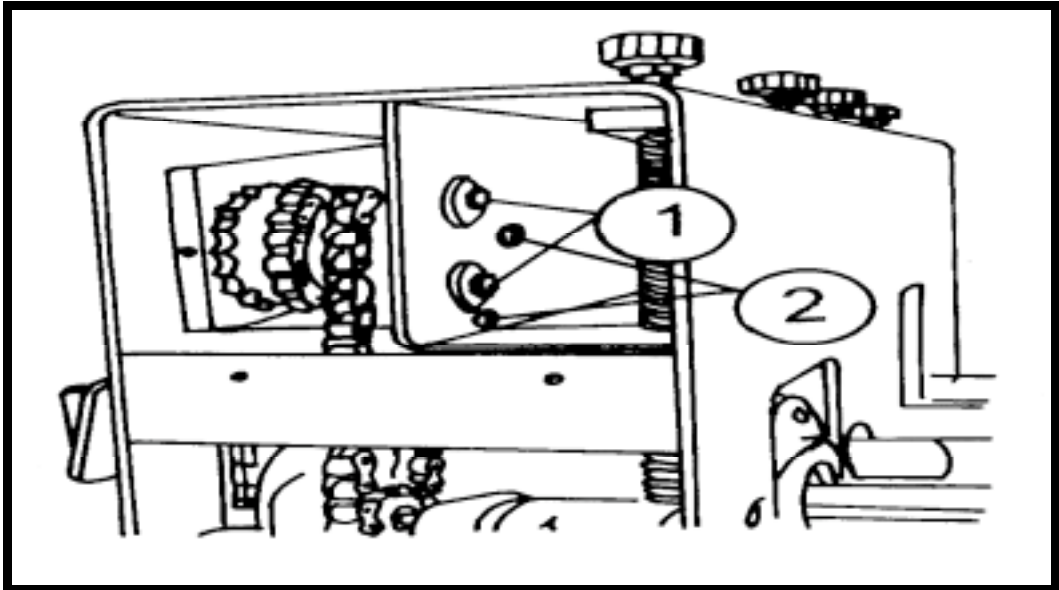
Gear oils SAE 80, SAE 80 WEP or equal to those are the filling.

Leading bars of the left vertical cutterblock are to be oiled once a week. We recommend to use the above mentioned oils.

Regular and careful lubricating of above mentioned parts means a longlasting faultless operating of the machine.

9.3 Taking up the chains

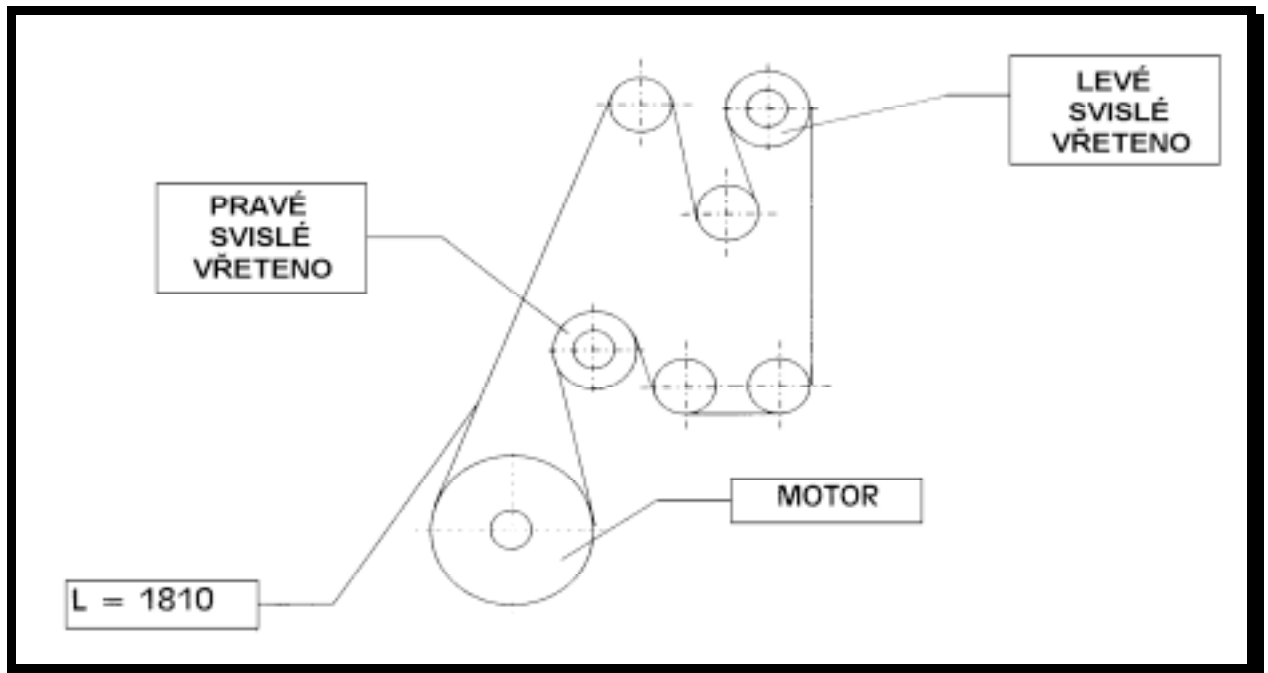
We recommend only a skilled and qualified worker to come on as follows :



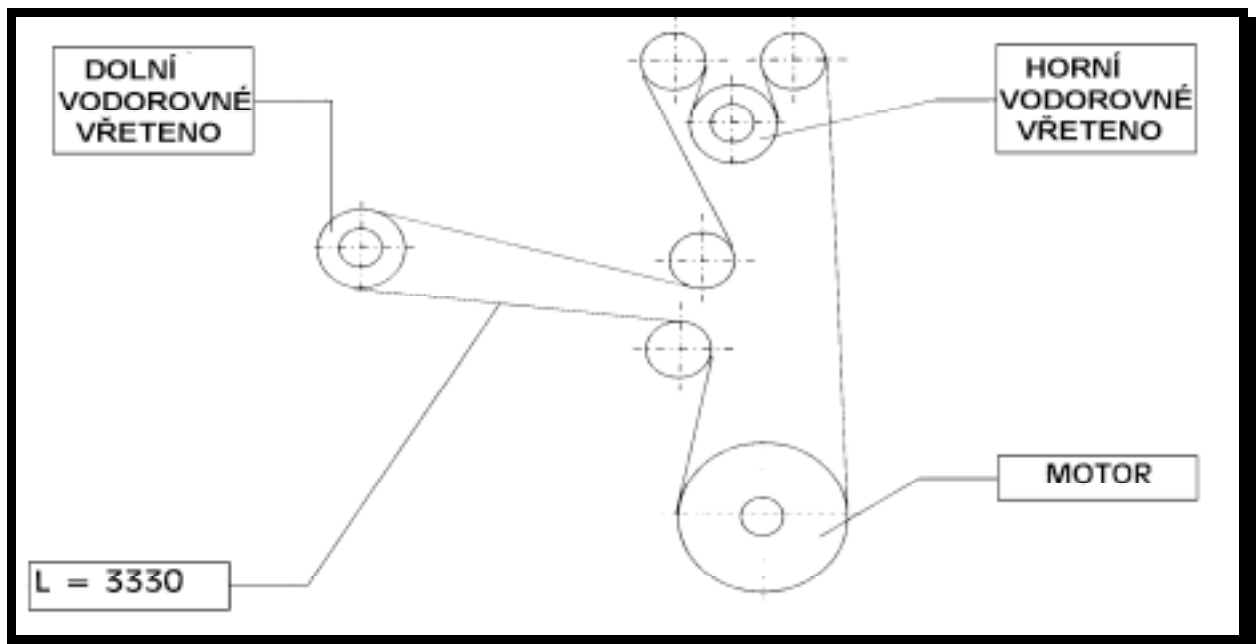
1. Tilt up the rear machine housing.
2. Unscrew the screws (1) tilt up the housing of feeding mechanism.
3. Take up the chain by eccentres, delivered to the machine. Push them to relevant openings (2) and turn them in a needy sense, until the chain is properly tight.
4. Block the support of the chain wheel by help of screws (1, pictures) and take out the eccentres.
5. Get back the housing of feeding mechanism and the rear machine housing to original position.

9.4 Scheme for putting the V-belts

Scheme of V-belt course of vertical cutterblocks



Scheme of V-belt course of horizontal cutterblocks



PRAVÉ SVISLÉ VŘETENO = right vertical spindle LEVÉ SVISLÉ = left vertical
 DOLNÍ VODOROVNÉ = low horizontal spindle HORNÍ VODOROVNÉ = upper horizontal

NOTE : Motion direction, signed at the belt, should agree with rotation sense direction of the wheel driving the belt from the motor.

10.0 Remedy of faults

Machine does not start.

- One or more phases is (are) not connected: Measure the voltage at the phasial conductors supplying the motor.
- Switched emergency STOP pusher. Release the knob NV by turning it.
- Motor breaking elements switched on.: Check up functioning of the break.
- Protective housing opened. : Shut protective housing.

Machine stops from the run.

- One or more phases without voltage : Examine the phases.
- Motor breake switched ON : Check up the action of the break.
- Insufficient motor output : Wait for the motor thermal protection recovery – it gets cooled.
- Sharpen or exchange the blunt knives.

Workpiece feeding stops during processing.

- exceeded max. thickness of workpiece : Stop the machine and take the workpiece out.
- fouled tables : Clean them by suitable solvent.
- workpiece badly slides on the table : Surface the tables with paraffin wax.

Bent lower flat of finished workpiece

- The lower horizontal spindle is higher or lower than adjustable table flat : Adjust lower horizontal cutterblock so that the knives edge would be in the level of the solid table. Put a smooth wooden balk on the table. Turn firmly by hand with the cutterblock and set it so as knives slightly touch the balk.

Uneven workpiece right side

- Right vertical cutterblock is not adjusted according to the fixed ruler : Adjust the right verticalcutterblock so as the edge of knives and the solid rule would be in the same level.

Use wooden balk and do the same operation as at the adjustment of horizontal cutterblock to solid table (see above).

Uneven left workpiece side and faults

- Pressing elements at the left side are not adjusted (5) : Adjust the pressing elements at the left side so as they reliably push the workpiece to the rule and the rear plate would be parallel with the work-piece.

Uneven upper workpiece side and faults

- Pressing plate in front of and behind the upper vertical cutterblock is not correctly adjusted : adjust pressing plates in front of and beyond the upper vertical cutterblock.

11.0 Delivery extent

Accessories with enclosed list,
service instructions manual.

12.0 Technical data

1	Maximal width of worked material	mm	180
2	Minimal width of worked material	mm	23
3	Maximal thickness of worked material	mm	105
4	Minimal thickness of worked material	mm	7.5
5	Minimal length of worked material :		
	Single pieces	mm	350
	Pieces in continuous following	mm	250
6	Number of working spindles	íslo	4
7	Revolutions of spindles	1/min	6000
8	Diameter of spindles	mm	40
9	Diameter of cutterblocks	mm	120
10	Working length of horizontal spindles	mm	190
11	Working length of vertical spindles	mm	120
12	Feeding speed	m/min	6 ; 12
13	Diameter of feeding rolls	mm	120
14	Length of input table	mm	1700
15	Table height from bottom	mm	855
16	Table and rule adjusting extent	mm	10
17	Motor power of horizontal spindles	kW	7.5
18	Motor power of vertical spindles	kW	7.5
19	Motor power of feeding	kW	0.8 / 1.1
20	Maximal installed power	kW	16.1
21	Mains voltage	V	400
22	Mains frequency	Hz	50
23	Exhausting nozzles diameter	mm	120
			150
24	Minimal speed of exhausted air	m/s	min 20
25	Minimal exhausting capacity	m ³ /h	2900
26	Machine dimensions :		
	length	mm	2730
	width	mm	1110

	height	mm	1410
27	nett weight	kg	930

12.1 Machine noise data

Noisiness measured by :Okresní hygienická stanice Trutnov		
Date of measuring : 15.03.1999		
	Idle run without exhaust.	Run with technology
Nois level at working place L_{pAeq} [dB (A)]	89,6	92,4
Acoustic power L_{WA}	98,8	101,7
Measured by basic method „in free field“ according to DIN 45 635.		

Certificate :

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

12.2 Dust nuisance

Material of humidity 20% was used for measuring. Test result was following :

Working place	Concentration of dust
Working place nr..1 – material input	0.56 mg/m ³
Working place nr. 2 – material output	0.58 mg/m ³

13.0 Machine liquidation at service life expiry

Service life of this machine depends particularly on the usage way, working engagement intensity, frequency and kind of applied maintenance. Any way it shouldn't exceed 10 years for those the producer is responsible to user for evident losses caused by the machine.

Machine user is obliged to guarantee an environmentally safe liquidation of the machine according to country's in question laws about leavings – not to endanger the environment.

We recommend to run on as follows :

- 1) Empty the oil from gearing box and commit it to the oil collecting station.
- 2) Demount all plastic parts and consign it to relevant accumulating containers.
- 3) Separate resting iron from non-iron parts and commit it to a specialized company for an apart liquidation.

14.0 Measures against fire

1) Proper extinguishing agents:

All agents usual at the market can be used, fireproof products.

2) Agents improper due to safety : water and tetrachlorum extinguishers.

15.0 Guarantee

Works and operations, not mentioned here, involve a written agreement of the ROJEK Co., Masarykova 16, 5170 50 Castolovice, the Czech Republic. Every machine and equipment is provided with a guarantee certificate. It is important to fill the warranty certificate just during purchasing it with a respect of possibility to set up eventual guarantee claim and for sake

of product's safety. If the machine is not installed in a proper way, it may cause damage on it own or an injury to the operator. In this case we do not bear any responsibility.

Possible guarantee claims have to be asserted at machine seller.

After an expiry of the guarantee period, you can get a machine repaired at any specialized repair shop.

16.0 Electric connections

see enclosures nr. 1 a 2

17.0 Spare parts

In every spare parts order it is necessary to state the machine production number (from rating plate), machine type and production year.

18.0 Special accessories

