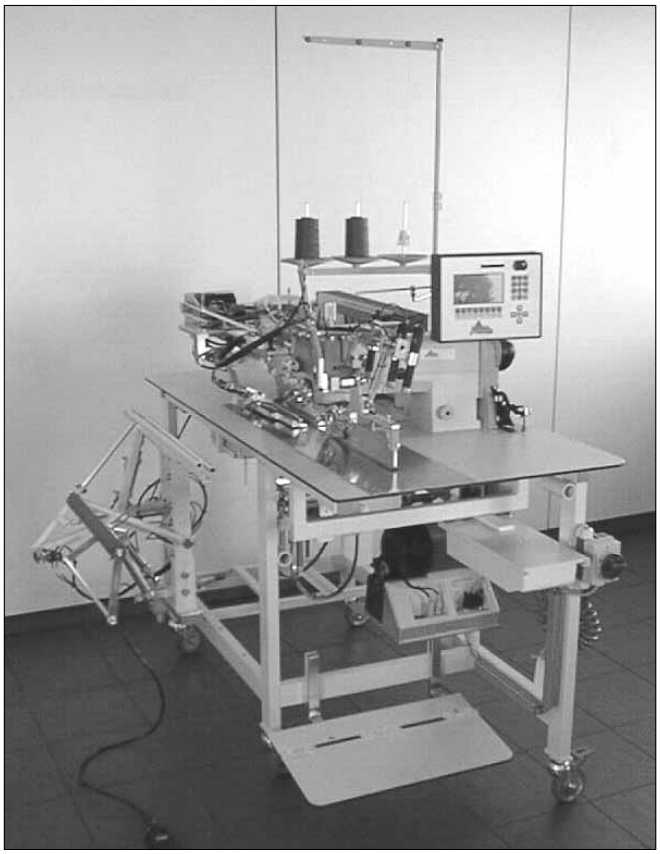
BEISLER
NÄHAUTOMATION
advanced sewing equipment

Universal-Flap-Pocket-Machine 100/58



Operating instructions

Version 2.1, 11-18-98

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These operating instructions contain the following parts:

Part 1: **Operating instructions** (pages 1-xx)

adresses to the operator of the machine, that means the person who works at and with the machine

Part 2: **Mechanics manual** (pages 2-xx)

is used for the putting into operation, adjustment, troubleshooting and maintenance of the machine and adresses to qualified staff only

Part 3: **Technical manual** (pages 3-xx)

contains information on the further adjustment, maintenance, troubleshooting and repair of this machine and adresses to especially trained and experienced staff only.

Please obtain all safety, warning and other hints and regulations in this manual.

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Part 1 Operating instructions



Hint

These operating instructions contain all information required for the operation of the machine. It adresses to the operator of the machine, that is the person that works at and with the machine. Please obtain all rules and regulations.

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1 Security advice and warning hints

1.1 Classification

Three different types of hints are used in this manual, which are indicated with different symbols and signalling words:



DANGER

This indicates a possibly dangerous situation or action, which may cause injuries to persons or severe damage to the machine.



ATTENTION

This indicates a situation or action, which may cause damage to the machine.



Hint

This indicates hints for a better use and other helpful information or hints.

Please obey all rules and regulations.

1.2 Range of validity

This operating manual is valid for Pocket-Piping-Automatons manufactured by Beisler named ‘Universal-Pocket-Piping-Automaton 100/58’.

This operating manual is not valid for the sewing head applied in the machine. Please refer to the operating manual of the sewing head delivered with the machine, for which we don’t take any liability.

Further security advice (verbal and written) for this machine or the components will not be repealed by this manual.

1.3 Authorized person



Danger

Danger might arise for persons, things and environment by inappropriate operation of this machine. Installation and maintenance duties may only be carried out by authorized staff.

Persons are regarded as authorized, who are able to recognize possible danger and judge the assigned duties from their technical education and experience.

1.4 General security advice and warning hints



Danger

Danger might arise for persons, things and environment by inappropriate operation of this machine. Installation and maintenance duties may only be carried out by authorized staff.

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Danger

Danger of injuries in the range of the sewing head! Don't grasp into the affected area of the needle during the sewing process!



Danger

Before any operations at or with the machine (putting into operation, operation, maintenance, repair, etc.) the person carrying out has to read and understand this manual with each appendix completely.



Danger

Before carrying out maintenance or repair duties, the mains supply must be cut off. Additionally pressure must be released from the pneu-matical system.



Attention

The machine will be destroyed by a connection to a wrong mains voltage! See the section 'Technical data' before connecting the power supply.

1.5 Copyright

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Pocket-Piping-Automaton

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The general conditions of sales and delivery of the Beisler GmbH are valid.

Do you have questions or problems with installation or putting into operation? Don't hesitate to call us.

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2 Preliminary remarks

2.1 Introduction

This operating manual adresses to the operator of the machine, that is the person that works with the machine. It is not a technical manual. Please ask questions exceeding the contents of this operating manual to our service staff.



Attention

All service and maintenance duties at this Pocket-Piping-Automaton may only be carried out by qualified staff (qualified electrical employee or electro-technical instructed person according to IEC 364 and DIN EN 60204-1). Machine operation may only be carried out by an instructed person, who had read and understood this operating manual completely.



Attention

Any structural changes to the machine, either electrically, mechanically or regarding the machine control, are suspect to the responsibility of the machine owner.

The following documents are part of the documentation of the Universal-Pocket-Piping-Automaton 100/58:

1. Electrical wiring plans
2. Parts list

Please check the documents delivered with the machine for completeness.

2.2 Limitation of liability

We guarantee the faultless functioning of our product in accordance with our advertising, the product informations edited by the Beisler GmbH and this manual. Further product-features are not guaranteed. We take no liability for the economy and faultless function if the product is used for a different purpose then that described in the chapter „Use as agreed“.

Compensation claims are generally impossible, except if intention or culpable negligence by the Beisler GmbH is proved, or if assured product-features are not provided. If this machine is used in environments, for which it is not suited or which do not represent the technical standard, we are not responsible for the consequences.

We don’t accept responsibility for damages at installations and systems in the surroundings of this machine, which are caused by a fault of the product or an error in this manual.

We are not responsible for the violation of patents and/or other rights of third persons outside the Federal Republic of Germany.

We are not liable for damages, which result from improper operations according to this manual. We are not liable for missed profit and for consecuting damages due to non-regardance of security advices and warning hints. We don’t accept liability for damages which resulted from the use of tools and accessoires which are not delivered and/or approved by the Beisler GmbH.

The prdocuts of the Beisler GmbH are designed for a long life. They represent the standard of technique and science and were checked on all functions individually before delivery. The electrical construction corresponds to the current norms and regulations, particularly DIN 5713 / VDE 0113. Beisler GmbH is doing product and market research for the further

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development and permanent improvement of their products. In the case of faults and/or technical trouble please contact the Beisler GmbH service staff. We assure that suitable measures will be done immediately.

The Beisler GmbH guarantee regualtions are valid, which we will send to you on demand.

2.3 Guarantee regulations

We guarantee the fault-free functioning of the Universal-Pocket-Piping-Automaton 100/58 according to this operating manual except the tools for a time range of six months after delivery. If the machine is used in double- or triple-shift operation, the term of guarantee is reduced to three or two months.

The term of guarantee starts with the date of delivery to the customer, independant from the time of putting into operation. Guarantee will be spoiled, if the machine isn't installed and operated according to this operating manual and the regulations given by the Beisler GmbH staff. A cost-free repair is only possible, if all regulations considering storage, transportation and putting into operations have been obeyed.

Customers and third persons may only mesh with the machine after getting a written approval by the Beisler GmbH. The Beisler GmbH takes no responsibility for injuries and damages arising from non-obeyance of this stipulation. All warranty will be spoiled in this case.

The Beisler GmbH takes no responsibility for faults of the machine as consequence of defective or functional faulty equipment in the surrounding of the machine or by the use of accessoires, which were not delivered by the Beisler GmbH.

The general conditions of sale and delivery of the Beisler GmbH are valid.

2.4 Use as agreed

The Universal-Pocket-Piping-Automaton 100/58 has been developed for the piping of pockets and the sewing in of pocket bags.



Danger

This machine has been developed and build for a certain purpose. Adaptions may influence security equipments negatively. We recommend to contact our service staff in such a case.

2.5 Description of the machine

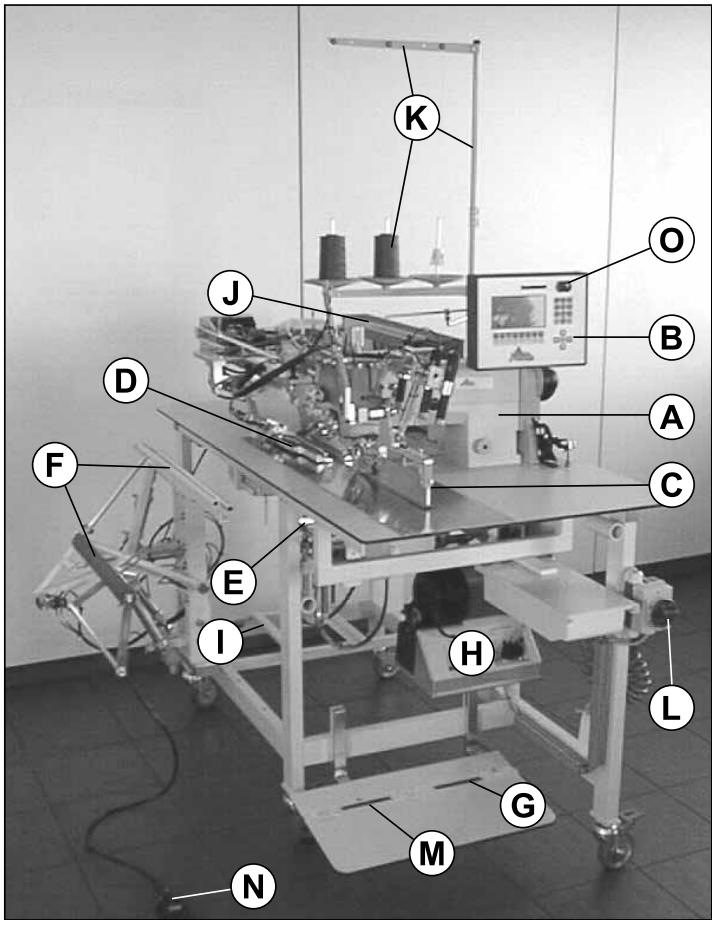
The Universal-Pocket-Piping-Automaton 100/58 allows the automatic piping of pockets. The machine is equipped with a cutting device, a clamp transportation system, a sewing head and a stacking system for the produced pieces.

All components of the machine are mounted on a base frame made of square steel pipes and controlled by an innovative micro-processor system.

Machine operation is achieved with an operation device. Here you can open several control programs, define new programs and check all machine components individually for maintenance and repair duties.

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2.6 Main parts of the machine



A Sewing head
B Operation device
C Insertion station
D Clamp transportation
E Mitre knife
F Stacker
G Foot pedal sew sequence
H Sew motor
I Power / air supply
J Power distribution
K Spool rack
L Mains / emergency stop switch
M Foot pedal vacuum
N Foot pedal stacker
O Program stop button

The following chapters contain further information on the machine's components.

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3 Security

The topic of this chapter is the security exclusively. Please see chapter 1 for the general security advice and warning hints and the security and warning hints in the other chapters of this operating manual.

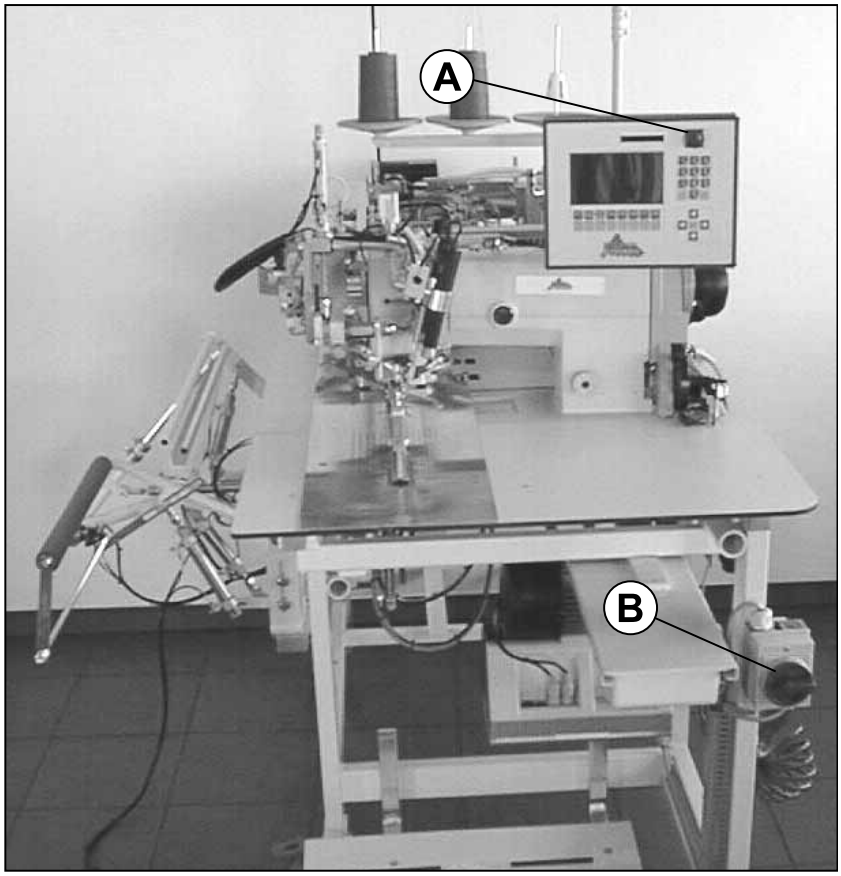
3.1 Available security systems

Danger

Check all security systems daily for functioning and effectivity!

Danger

Changes to the machine may influence function and effectivity of the security systems negatively!



A Program stop button

B Mains / emergency stop button

3.1.1 Program stop button

The program stop button is mounted in the right upper corner of the operation device. After pressing, all movements and the sewing process will be stopped immediately.

Before a re-start the program stop button must be turned to the right to be unlocked. With the release, the reset will be triggered.

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3.1.2 Mains /emergency stop button

The mains / emergency stop switch is mounted on the front side of the machine, right-handed below the working plate. It can be used to cut-off the power supply.

3.2 Security measures of the operator

The security systems of this machine work passively, that means that they can only react on certain incidents. To achieve the required security for your health and that of your collegues, active measures of the operator are required.

Please obey the following general rules for the use of this machine:

1. Always work concetrated and avoid actions with a risk.
2. Don’t try to bridge existing security systems or to disable them in any way.
3. Check all security systems on function and effectivity before starting work.
4. Cut off the power supply before opening the switchbox.
5. Switch off the machine with the mains / emergency stop switch, before executing cleaning and mainetenance duties.

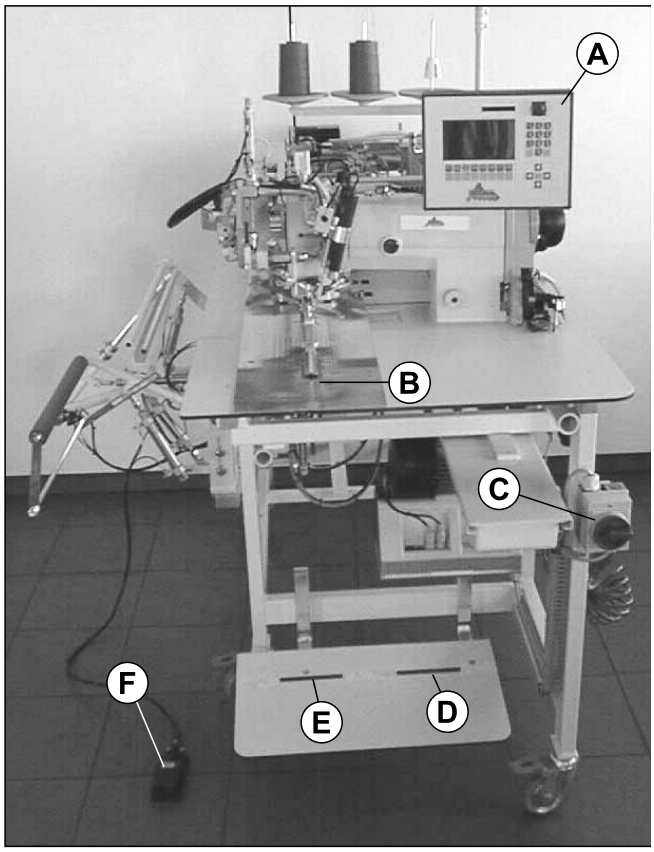
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4 Operation of the machine

Danger

This machine may only be operated by qualified staff, who had read and understood this operating manual completely.

4.1 Controls and indicators

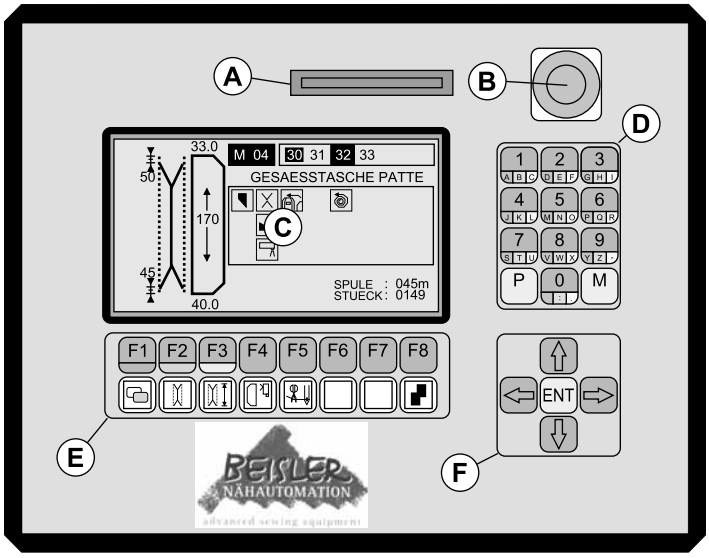


A Operation device
B Insertion station
C Mains / emergency stop button
D Foot pedal machine sequence
E Foot pedal vacuum
F Foot pedal stacker

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4.1.1 Operation device

During production the machine can be operated with the operating device; existing programs can be called and new programmed. You will find the program stop button at the device.



A Slot for the Memory card
B Program stop button
C Display
D Ten key pad with P- and M-key
E Function keys
F Arrow and enter keys

The elements of the operating devices have the following occupations:

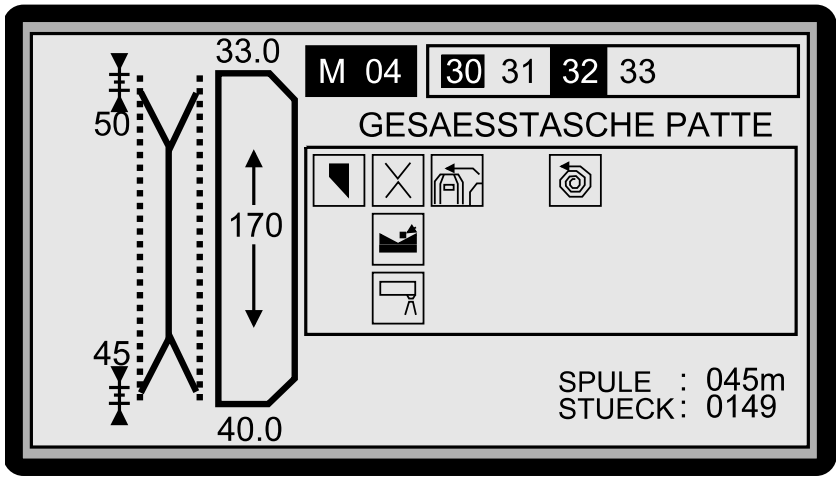
4.1.1.1 Slot for the Memory card

The Memory card is used as a backup memory for software and programs of the machine. You can load programs to the Memory card or read them after a possible data loss into the machine.

4.1.1.2 Program stop button

By pressing the program stop button, all movements of the machine will be stopped immediately. To continue production, you have to turn the button to the right and release it.

4.1.1.3 Display



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All information required for the operation of the machine will be imaged in the display. During normal production the display shows the following (see Pict. 6):

- the graphic on the left side images the mitre cut of the pocket; in the shown example, the mitre cutter cuts the basic value 50 at the seam start and 0.5 mm less at the end, that is the value 45
- the graphic to the right shows the seam or flap lenght of the pocket; the value displayed above the flap (33.0) defines, how far the flap will be pushed behind the needle, after the photocell has recognized the flap (value for the seam start); the value displayed below the flap (40.0) defines, how long the machine continues sewing, after the photocell has recognized the end of the flap
- the most upper line shows the number of the selected program (M01) and the seams assigned to this program (30, 31, 32 and 33); seams 30 and 32 are enabled (32 will be the next seam to be sewed), 31 and 33 are disabled
- the name of the current seam is displayed to the right
- the square below contains the icons of the machine functions assigned to the current seam
- below the square, the stock of bobbin thread (45 m) and the number of produced parts (149) are displayed

4.1.1.4 Ten key pad with P- and M-key



Numerical inputs can be done using the ten key pad.

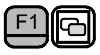
The letters displayed below the digits can be entered, after the function key with the corresponding color indication has been pressed before.

The P-key is used in several steps of the machine programming.

Sewing programs can be selected after pressing the M-key.

4.1.1.5 Function keys – lower occupation

The function keys are occupied as follows



switches to the upper occupation of the function keys



Mitre knife correction; press this key once to change the mitre knife position at the seam start; press F1 and the cursor stands on the seam start; press twice to change the position at the seam end; after pressing F1, enter the new value using the ten key pad, which will be displayed in the left-handed graphic; 50 = middle value; the higher the value, the more far the mitre knife cuts to the outside
e.g. old value 50, new value 56 and the mitre knife cuts 0.6 mm more to the outside
e.g. old value 50, new value 22, the mitre knife cuts 2.8 mm more to the inside

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Change pocket length; press F3 and enter the new value for the length to be sewed; when producing with flap, this sets the photo cell security length, too; e.g. security length 140 mm allows the sewing of a flap length between 130 and 150 mm; when producing flaps it is possible to disable the security length by entering 999 here.



Sewing-over at seam start and end (only valid when sewing with flap); press once to set the sewing-over at seam start, twice to set it at seam end; enter the new value using the ten key pad Seam start: the smaller the set value, the more the flap will be sewed over; seam end: the bigger the set value, the more the flap will be sewed over



Pick needle thread manually; after the first pressing, the main clamp drives to end position, with the second pressing the needle thread catcher will be enabled; it remains enabled, until the key is released



Push interface forward manually (option); after changing the interface roll, the interface will be cut with a key pressure and then be pushed in position (only available if interface mode is enabled)



reserved



Reset key; use this key to reset the program sequence step by step; sets the clamp into starting position

4.1.1.6 Function keys – upper occupation

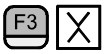
The function keys are double occupied. Press F1 to switch to the upper key occupation. The icons will be displayed in the lower line.



switches back to the lower key occupation



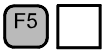
Switch middle knife on/off; the knife is switched off, until it will be switched on here; together with the middle knife, the mitre knife is switched off



Switch mitre knife on/off; it remains switched off, until it will be switched on here



Switch stacker on/off; it remains switched off until it will be switched on here



Here without function



Sets counter to zero



Manual spooling; the sewing head runs with low revs, after a second key press, it stops in the upper needle position



Attention

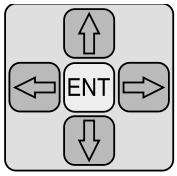
At machines with insertion station, the station must be swung out first (see chapter 4.1.6); in any case, both threads must be removed from the needles and the spools from the pickers.

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Reset spool thread length; when removing a half-full and inserting a full spool, you can display the whole thread length by pressing this key

4.1.1.7 Arrow and Enter-keys



Use the arrow keys to move the flashing cursor between the different sections of a display. Confirm inputs using the Enter key.

4.1.2 Insertion station

The parts to be manufactured are inserted at the insertion station. Use the marking lamps to align the parts exactly.

4.1.3 Mains / emergency stop button

With the mains / emergency stop button, you can cut-off the power supply of the machine.

4.1.4 Foot pedal machine sequence

Use this foot pedal to trigger the steps of the machine sequence (see further below).

4.1.5 Foot pedal vacuum

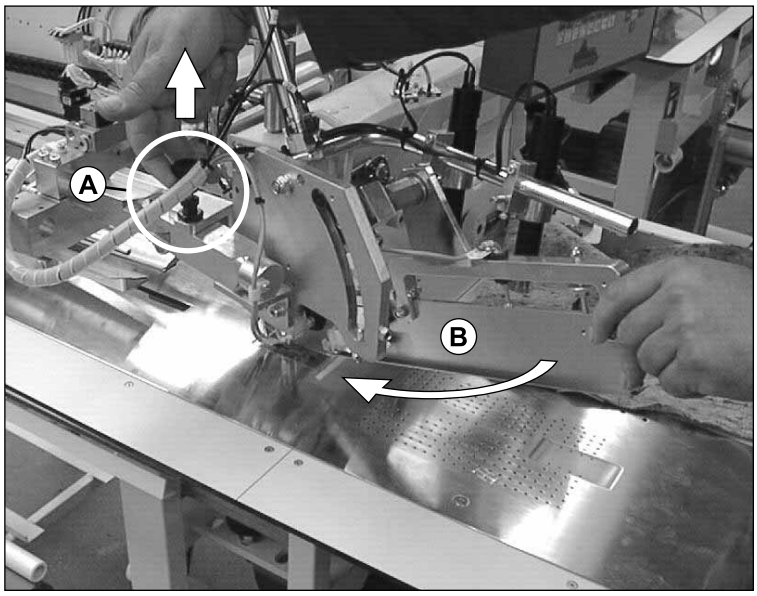
Press this foot pedal to enable the vacuum. The parts inserted at the insertion station are fixed by the vacuum which will be disabled automatically, after the main clamp has picked up the parts.

4.1.6 Foot pedal stacker

Press the foot pedal stacker to open the stacker to be able to take out the stacked parts.

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4.1.7 Swing out the folder



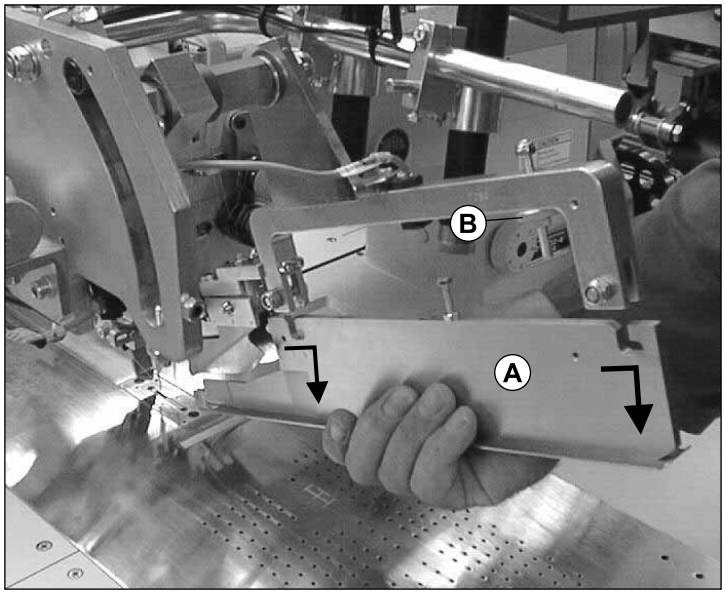
For several reasons (e.g. manual spooling), the folder must be swung out to get access to the sewing head. Pull out the locking pin (A) and swing the folder (B) to the left.

When swinging back, move the folder slowly to the right until the locking pin inserts feelable.

Attention

The folder and the lamps of the crosshair attached to it are adjusted exactly and are sensitive against violence. Therefore, swing the folder slowly and without the use of power.

4.1.8 Change folder



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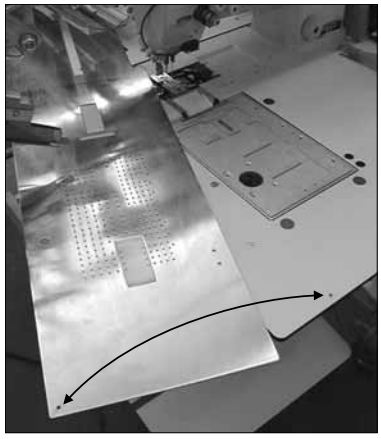
Different folders are needed for different pocket shapes (e.g. double/single piping):

1. Open the locking (B) of the folder (A).
2. Pull the folder towards yourself and downwards to remove it.
3. Push in the new folder from the bottom side into the two attachments and then push it forward.
4. Fix the locking (B).

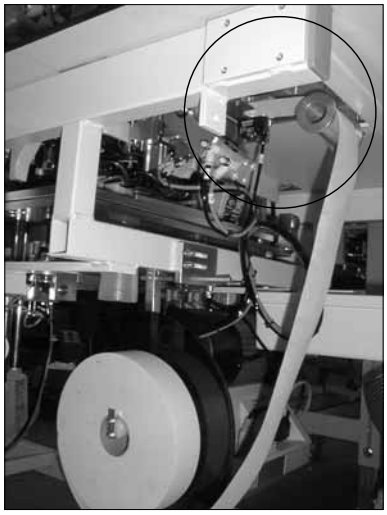
4.1.9 Change interface roll

The interface roll is placed below the working plate and can be changed this way:

1. Lift the insertion plate at the front side and push it to the left.



2. Remove all rests of the interface in the machine.
3. Insert the new interface roll.



4. Insert the interface over the roll into the interface guiding.



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5. Press F6 repeatedly, until the interface appears above the working plate.
6. Mount the insertion plate; be sure that the positioning pins are inserted into the drill holes.

4.1.10 Empty the stacker

Press the foot pedal of the stacker, if it is full. The stacker will open and you can remove the parts. Release the foot pedal to close the stacker.

4.2 Operation

4.2.1 Machine sequence

The production sequence is divided into several parts:

1. Machine sequence can start, if the machine is in starting position.
2. Insert the parts to be sewed and align them exactly.
3. Press the foot pedal machine sequence and the clamp comes forward.
4. Press the foot pedal again, the clamp will be lowered.
5. Press foot pedal, the folder is lowered and the fold pushers are driven to the front.
6. Press foot pedal, the flap clamp closes.
7. Press foot pedal, the clamp pushes the part under the sewing head, it will be sewed there, the mitres will be cut, the clamp opens and the sewed part will be stacked.

The operator can trigger each step with a short pressing of the foot pedal, or run an automatic process by keeping the foot pedal pressed.

Depending on the programming, different machine sequences might occur.

4.2.2 Program operation

The machine is operated with programs, which can be selected by the operator. A program is stored at a memory location (e.g. ‘M01’) and contains one or several seams (max. number is six).

The selected program and the assigned seams are imaged in the upper line of the display. The machine executes all enabled seams of a program sequentially. An enabled seam is displayed inverted (white on black).

You can produce several pocket shapes and lengths sequentially, without changing the sewing program. This allows to sew several pockets of a jacket part.

The following operational actions are explained in this chapter:

- select a sewing program
- enable/disable seams
- change seam lengths
- change sewing programs
- create new sewing programs
- program new seams

4.2.3 Select a sewing program

The current sewing program is displayed in the upper line of the display. How to select a program:

1. Press M-key.
2. Enter the number of the desired program using the ten key pad.
3. Press ENT-key.

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4.2.4 Enable/disable seams

Seams are assigned to every sewing program. All enabled seams are sewed sequentially. Enabled seams are displayed inverted (white on black).

If a seams shall be skipped, it must be disabled. How to enable/disable a seam:

1. Move the cursor on the desired seam using the arrow keys.
2. Press the ENT-key to enable/disable the seam.

4.2.5 Change seam length

Several parameters of the current seam are imaged in the left half of the display (e.g. seam length, mitre knife position). You can change these settings individually using the function keys.

All changes executed with the function keys are stored for all seams with the same number, even if they are used in different programs.

Further information are contained in the chapter ‘4.1.1.5 Function keys’.

4.2.6 Remove and add seams

You can add seams to and remove them from sewing programs:

4.2.6.1 Remove seams

1. Select the sewing program to be changed.
2. Press the P-key.
3. Press F1.
4. Move the cursor on the seam to be removed using the arrow keys.
5. Press the M-key.
6. Repeat steps 4. and 5. for all seams to be removed.

4.2.6.2 Add seams

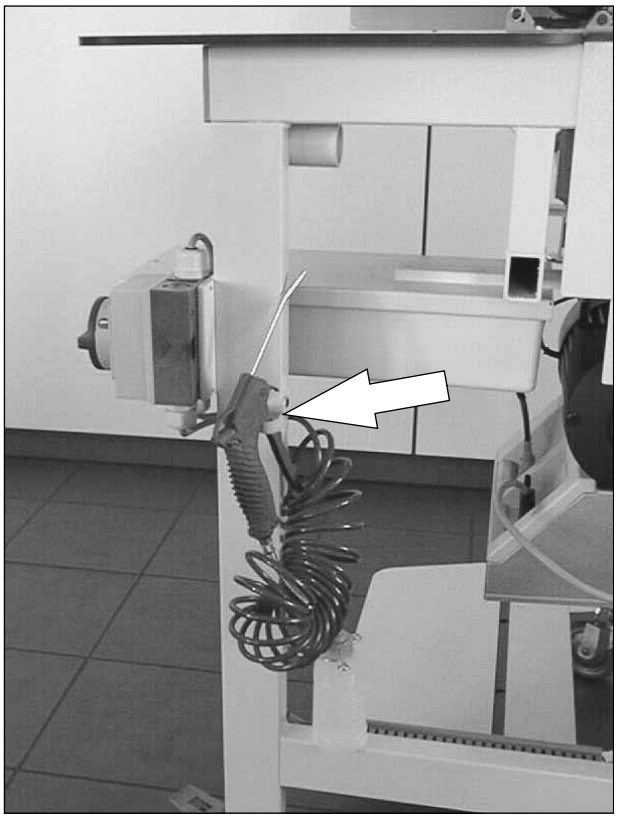
1. Select the sewing program to be changed.
2. Press the P-key.
3. Press F1.
4. Use the arrow keys to move the cursor to the place, where you want to add a seam.
5. Press the ENT-key.
6. Enter the number of the desired seam.
7. Repeat steps 4. to 6. for all seams to be added to the current sewing program.
8. Press the P-key to store the settings and leave the submenu.

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5 Required cleanings

To achieve the value and function of the machine, we recommend to keep it always clean and free of spare materials and waste.

Blow off threats and cloth rests daily from the machine using the air pistol.Below the air pistol you see a supply bottle for the oil needed in the sewing head.



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Part 2 Mechanics manual

Hint

This part of the operating instructions contains all information required to put the machine into operation and to do programming, troubleshooting and maintenance. It adresses to trained technical personnel, which is able to overview their tasks and recognize possible danger at an early moment. The operating instructions given in part 1 of this manual are to be considered as part of this mechanics manual.

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1 Delivery, transportation, storage

1.1 Delivery



Hint

Check right after receiving the machine, whether all parts according to the parts list are complete and without damage. Later claims can't be accepted.

If you see damage to the transportation packing of the machine, which indicates a possible damage to the delivered parts, don't hesitate to claim this to the transportation company.

1.2 Transportation

Generally it is possible to move the machine. Obey the following hints:

1. Cut off the power supply, release the pneumatical pressure.
2. Fix movable and loose parts.
3. Lift the base with a hoisting device and be sure to lift possible additional devices (e.g. stacker). If the machine is equipped with transportation casters (option), you will have to release the brakes at every caster.
4. Move the machine carefully to the new location.



Attention

Attention when moving the machine on sloping areas! Enormous pull power arises from the machine weight.

1.3 Storage

If no other agreement is fixed, the following limitations have to be kept:

1. In closed rooms only.
2. Temperature range -10 ... +45 °C.
3. Humidity max. 80% non-condensing.



Attention

If stored or transported in improper environments, the machine can be damaged severely. Damages may not be visible from the outside.

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2 Installation



Attention

Installation and putting into operation may only be carried out by mechanically and electrically qualified staff. These people must read and understand the complete operating manual before starting.

2.1 Technical data

Dimensions	1.600 x 750 x 1.300mm (LxWxH)
Table height	830 mm
Weight	220 kg
Mains power	220 V AC
Power consumption	0,7 kW
Fuse	10 A
Req. air pressure	6 bar
Req. air quality	oil-free
Air consumption	5 NL/WD

2.2 Mechanical installation



Attention

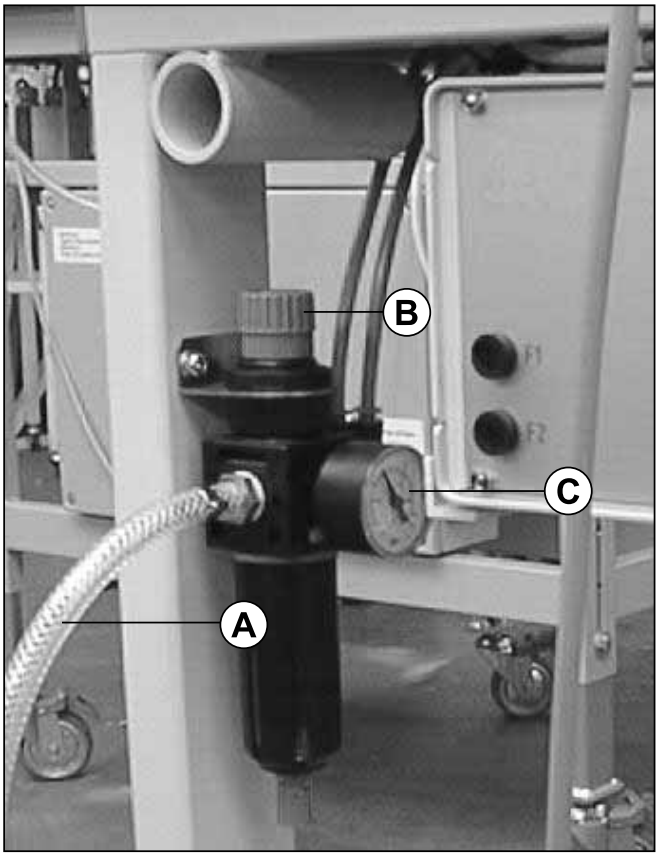
Check before starting the installation, whether the desired location meets the requirements (see chapter 2.1, technical data). This is very important regarding the stability of the ground.

2.2.1 Unpack and put up

1. Remove the packing material and possible transportation protections.
2. Position the machine on a solid and horizontal ground.
3. Level the machine to a horizontal stand using the adjustable frame feet.

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2.2.2 Connection of air supply



1. Connect the air pipe (A) to your air system.
2. Open the air supply of your air system.
3. Level the air pressure to 6 bar using the control (B); the air pressure can be read at the scale (C).

Attention

We recommend to switch off the air supply when the machine is not in duty. Use the black control (B).

2.3 Elektrical installation

Hint

All work at the electrical components of the machine may only be carried by qualified staff (qualified electrical employee or instructed person according to IEC 364 and DIN EN 60204-1).

Danger

Parts under electrical current! Without cutting off the power supply, you might be injured severely. Please obey the security advice given in chapter 1.

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Attention

The machine will be destroyed by connecting to a wrong mains voltage! Check, whether the requirements from chapter ‘Technical data’ meet the local conditions.

1. Use the power cord located at the backside of the machine.
2. Plug it into a socket.
3. Lay the cord in a way, that the danger of stumbling is avoided.



Danger

Danger to life from unsufficient grounding! Do a grounding according to DIN EN 60204-1.

2.4 First putting into operation

This machine has been configured to the individual requirements of the customer. The first putting into operation can be done easily:

1. Adjust the machine to a horizontal stand.
2. Connect power and air supply.
3. Switch on the machine using the mains / emergency stop switch at the front side of the machine.
4. Check all security systems for function and efficiency.



Danger

The machine may only be used for production purposes, after the security systems have been checked. If a security doesn’t work adequately, it must be repaired first.

As a factory setting, several production programs are contained in the buffer of the machine. You may use one of them or create your own programs.

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3 Programming instructions

3.1 Create new sewing programs

The following steps are required to create a new sewing program:

1. Select memory location (Mxx).
2. Add or copy seams.
3. Adjust the seams.

3.1.1 Select a M-memory location

Due to customer-specific configuration, several M-memory locations are occupied by sewing programs. There are enough memory locations available for new sewing programs.

Select an available memory locationz:

1. Press the M-key.
2. Enter the number of the desired memory location (e.g. 09).

If the memory location is available, seam No. 50 is assigned six times.

3.1.2 Add seams

If existing seams shall be used in the new program, you can remove the seams of the memory location and add the desired seams like described in part 1 of this manual.

If you want to create new seams, you will first have to assign new numbers to the seams, which are not used in another program.

3.1.3 Copy seams

If existing seams shall be manipulated for the new program, the seams can be copied to a new seam number. This allows to keep the original seams unchanged:

1. Move the cursor to the seam number, where you want to copy another seam to (e.g. No. 45).
2. Press the P-key.
3. Press F1.
4. Press F2.
5. Enter the number of the seam, which you want to copy (e.g. 10).
6. Press the ENT-key.

Now seam No. 10 has been copied to No. 45, a new number has been assigned. Seam No. 10 and 45 are identic. If you need more new seams, you can assign further seam number to the program (e.g. 46, 47, 48, a.s.o.) and copy existing seams to these numbers.

3.1.4 Adjust seams

The seams copied to the seam number 45, ... can now be manipulated without changing the original seams (which are used in other programs).

The following items can be adjusted:

- mitre knife position, seam length, a.s.o.
- seam functions
- seam parameters
- seam name

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3.1.5 Name seams

To be able to distinguish seams, it is possible to define seam names. Follow this procedure:

1. Press the P-key (opens the menu levels).
2. Press the key F5 (INIT-Parameter).
3. Press the key F1 (enter seam name).
4. The keys of the ten-key pad are occupied with letters, too. Each letter is shown on its key with a color (blue, orange, green). Press one of the keys F1...F3 together with a number key, to enter the desired letter (F1 blue, F2 orange, F3 green). Examples: A = F1 + 1; N = F2 + 5; U = F3 + 7.
5. Press the arrow keys to switch to the next or prior letter.
6. Press the P-key to terminate the entering and save the seam name.

3.1.6 Delete seams

An existing seam can be deleted.



ATTENTION

If a seam is used in several programs, it will be deleted in all programs. The deletion of a seam can not be undone.

1. Press the P-key.
2. Press F5.
3. Press F5.
4. Enter the number of the seam to be deleted.
5. Press the P-key to delete the seam.

3.2 Seam functions

Several machine functions can be enabled/disabled for single seams. Follow this procedure to enable/disable a machine function:

1. Select the seam number using the arrow keys.
2. Press the P-key.
3. Press F2.
4. Select the desired function using the arrow keys.
5. Press the ENT-key to enable/disable the function.
6. Repeat steps 4. and 5. for all desired functions.
7. Press the P-key to leave the menu.

An enabled function is displayed inverted (white on black), a disabled function black on white.

The functions are visualized with icons:



Center knife

cuts the pocket between the seams; if the center knife is disabled, the mitre knife will be disabled automatically



Mitre knife

cuts the pocket edges; if the center knife is disabled, the mitre knife will be disabled, too



Stacker

stacks the sewed parts automatically

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Vacuum

keeps the parts in the insertion station, until the main clamp is closed



Vylene

automatic supply with vylene



Stamp (option)

fixes the parts in the insertion station (3rd hand)



Piping blowing

piping is blown to the folder, to prevent a snapping during insertion; should be enabled sewing thin parts



Folder up after seam end

increase of the production speed; earlier insertion of new parts is possible



Flap clamp left

necessary if additional parts to the piping are inserted (e.g. pocket bag, facing strips)



Flap clamp right

like flap clamp left (see above)



Seam shape trapeze jacket

breast welt production; left seam longer than right one



Seam form parallel

both needles work parallel



Seam shape trapeze troucers

left needle shorter than right one



Seam shape sloping pocket right

left seam with offset to the right one



Seam shape sloping pocket left

left seam with offset to the right one; mirrored to the right sloping



Piping pulling through (option)

turns the overlap of the piping (only during piping)



Photo cell left

necessary during sewing of left flap

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Photo cell right

necessary during sewing of right flap



Positioning point front

calculation point for the seam start during sewing without flap



Positioning point middle

calculation point for the seam start during sewing without flap



Positioning point rear

calculation point for the seam start during sewing without flap



Zipper scissor (option)

during sewing an endless zipper, this function gives a stop-command to the machine to allow the cutting of the zipper

3.3 Seam parameters

Several seam-depending machine processes can be set:

1. Press the P-key.
2. Press F3.
3. Select the desired seam parameter using the arrow keys.
4. Press ENT-key.
5. Enter the desired value.
6. Repeat steps 3. to 5. for all desired seam parameters.
7. Press the P-key to leave the submenu.

During the selection of the parameters, you can scroll line per line using the vertical arrow keys. You can also select the pages directly:

- Key 0: seam parameters 01 - 14
- Key 1: seam parameters 10 - 23
- Key 2: seam parameters 20 - 33
- Key 3: seam parameters 30 - 40

The seam parameters listed below can be changed. The factory-set default configuration are shown in square brackets [ ], the possible settings in rounded brackets ( ).

1 **Change positioning point** 135/225/315 mm
the set value defines the relation point of the seam

2 **Insertion speed** [60%] (10-90%)
clamp speed from the insertion position to the sew start position; when photo cell is active, speed will be halved to allow a more exact scanning; when producing with vylene, reduction to 1/3

3 **Revs seam start** [1500 rpm] (500 - 2000 rpm)
sewing head revs freely selectable, depending on needle- and center knife setting

4 **Revs during seam** [2500 rpm] (500 - 3000 rpm)
freely programmable

5 **Revs at seam end** [1500 rpm] (500 - 2000 rpm)
freely programmable

6 **Distance of seam start revs** [5 mm] (0 - 99 mm)
distance with the revs of parameter 3

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7 **Distance of seam end revs** [5 mm] (0 - 99 mm)
distance with the revs of parameter 5

8 **Stitch length seam start** [1,5 mm] (0,5 - 3 mm)
stitch length at seam start for tack or stitch condensation

9 **Stitch length in the seam** [2,4 mm] (0,5 - 3,5 mm)

10 **Stitch length seam end** [1,5 mm] (0,5 - 3,0 mm)
freely selectable, effects on tack and stitch condensation at seam end

11 **Distance stitch length seam start** [10 mm] (0,5 - 99 mm)
distance with stitch length of parameter 8

12 **Distance stitch length seam end** [10 mm] (0,5 - 99 mm)
distance with stitch length of parameter 10

13 **Tack length seam start** [10 mm] (0 - 20 mm)
if this value is set to 0, stitch condensation will be sewed automatically

14 **Tack length seam end** [10 mm] (0 - 20 mm)
if this value is set to 0, stitch condensation will be sewed automatically

15 **Slope at seam start** [3 mm] (0 - 10 mm)
seam offset (difference left/right needle) at seam start

16 **Slope at seam end** [3 mm] (0 - 10 mm)
seam offset at seam end

17 **Enable center knife** [17 mm] (0 - 30 mm)
depending on seam and knife width, the center knife should cut est. 1 mm further than the mitre knife

18 **Disable center knife** [0 mm] (0 - 30 mm)
depending on seam and knife width, the center knife should cut est. 1 mm further than the mitre knife

19 **Thread monitor on after** [30 mm] (0 - 99 mm)
distance after which the thread monitor will be enabled; change this parameter if seam length < 30 mm

20 **Thread monitor filter** [07] (00 - 99)
the smaller the digit, the more sensitive the upper thread monitor reacts; 99: thread monitor disabled

21 **Length vylene seam start** [60 mm] (0 - 99 mm)
vylene overlay at seam start

22 **Length vylene seam end** [80 mm] (0 - 99 mm)
vylene overlay at seam end

23 **Duration final roller** [0,5 Sek.] (0 - 99 Sek.)
exact positioning of the work piece to be stacked

24 **Intermediate stop selection + pos.** [0 cm] (0 - 48 cm]
enter a position, where the main clamp shall be driven to after stacking; 01 cm = main clamp is driven to the insertion station

25 **Pick up part selection + pos.** [0 cm] (0 - 48 mm)
if a value is defined, the main clamp pressure is released after mitre cutting automatically and the work piece will be driven to the set position; 01 cm = work piece is driven to the insertion station

26 **Revs center knife** [40%] (10 - 99%)
definition of the cutting speed

27 **Revs final roller** [99%] (10 - 99%)
a reduction achieves an optimized positioning for the stacking

30 **Flap clamp mode** >> see further below

31 **Folding slide mode**
00: left + right fold slider enabled
01: left fold slider enabled
02: right fold slider enabled

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32 **Vacuum mode** (option)
00: vacuum disabled
01: vacuum on with foot pedal vacuum (with display ‘enable vacuum’ if not enabled with foot pedal)
02: vacuum on automatically if main clamp at insertion position
03: vacuum on with foot pedal advance

33 **Main clamp mode**
00: main clamp left/right down and tight
01: main clamp left down and tigh
02: main clamp right down and tight
03: main clamp both weak, before insertion both tight

35 **Stacker mode**
01: only final roller
02: only folding stacker
03: folding stacker and final roller

36 **Push-back locking off**
00: Push-back locking enabled
01: Push-back locking disabled

37 **Folder as stamp** [00] (00 - 01)
00: normal insertion process enabled
01: with the first step on the foot pedal, the folder is lowered and fixes the work piece; next step drives main clamp to insertion position; after clamp is closed, the folder is pushed up to allow the insertion of the vylene; only required for trouser production with pocket automaton 100/58 without stamp

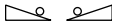
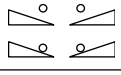
38 **Flap clam mode**
00: flap clamp active with foot pedal
01: flap clamp automatically active

39 **Breast welt mode**
the breast welt will swing in together with the flap station
00: folder down after flap clamp closed
01: folder down when left flap clamp closed

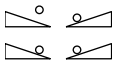
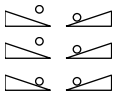
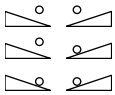
3.3.1 Seam parameter 30: Flap clamp mode

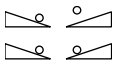
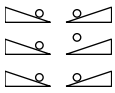
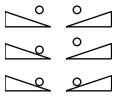
In the control, you can switch on/off the left or right flap clamp and select one of eight modes additionally; dependant on the selection, the flap clamp behave different. In the following table, the mode number is shown in the first column, the behaviour of the flap clamps is indicated with graphics.

 left clamp closed
 right clamp closed
 left clamp open
 right clamp open

Left and right flap clamp switched on: 		
00:	Insertion position	
01:	like 00	
02:	like 00	
03:	like 00	
04:	Insertion position automatic with folding slide	
05:	like 04	
06:	like 04	
07:	like 04	

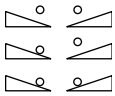
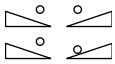
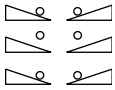
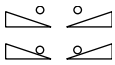
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Left flap clamp switched on, right switched off:		
00:	Insertion position with foot pedal pressure	
01:	like 00	
02:	Insertion position automatic with folding slide with foot pedal pressure	
03:	like 02	
04:	Insertion position automatic with folding slide with foot pedal pressure	
05:	like 04	
06:	like 04	
07:	like 04	

Left flap clamp switched off, right switched on:		
00:	Insertion position with foot pedal pressure	
01:	like 00	
02:	Insertion position automatic with folding slide with foot pedal pressure	
03:	like 02	
04:	Insertion position automatic with folding slide with foot pedal pressure	
05:	like 04	
06:	like 04	
07:	like 04	

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Both flap clamps switched on: 

00:	Insertion position with foot pedal pressure with 2nd foot pedal pressure	
01:	Insertion position with foot pedal pressure	
02:	Insertion position automatic with folding slide with foot pedal pressure	
03:	like 02	
04:	like 00	
05:	like 01	
06:	Insertion position with foot pedal pressure	
07:	like 06	

3.3.2 Working WITHOUT automatic clamp push-back

Seam parameter 24 INTERMEDIATE STOP SELECTION + POS.

This parameter allows to define the positioning of the main clamp after stacking.

Seam parameter 24 = 0 cm.

This setting causes the main clamp to wait on the mitre knife position, until the foot pedal seam process is pressed.

3.3.3 Working WITH automatic clamp push back

Seam parameter 24 INTERMEDIATE STOP SELECTION + POS.

Seam parameter 24 = 01 cm

With this setting the main clamp will be driven to the insertion position after stacking. Pressing the foot pedal seam process closes the main clamp.

3.3.4 Working with INTERMEDIATE STOP of the main clamp

Seam parameter 24 = 20 cm

With this setting the main clamp will be driven until 20 cm before the insertion position after stacking. Press the foot pedal seam process to drive the main clamp to the insertion position.

If a different intermediate position of the main clamp is required, it can be achieved by changing the SP 24. The higher the value the larger is the distance between intermediate and insertion position.

3.3.5 Working with automatic PICK UP PART using the main clamp

Seam parameter 25 = PICK UP PART + POS.

Seam parameter 25 = 00 cm

Pick up part using the main clamp is disabled.

Seam parameter 25 = 01 cm

Pick up part using the main clamp until the insertion position.

The main clamps will be lifted after mitre cutting and SP 23 (duration final roller) is carried out. The final roller pulls the work piece a little out of the open main clamp. Now the main clamp is lowered after the time of basic parameter 28 and drives with the work piece to the insertion position.

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Seam parameter 25 = 01 cm

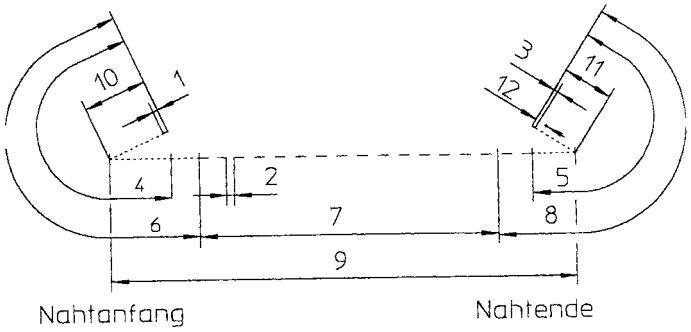
When defining SP 23 (duration final roller) = 00 and NSP 23 = 00 sec., the final roller won't get active; the main clamp remains closed and drives without clamp pressure to the insertion position.

Seam parameter 25 = 20 cm

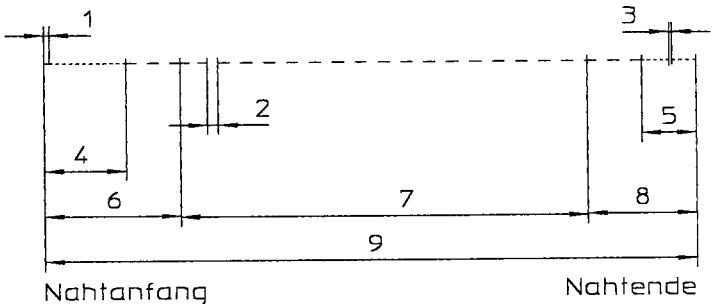
Pic up parts with the main clamp until 20 cm before the insertion position.

3.4 Seam images

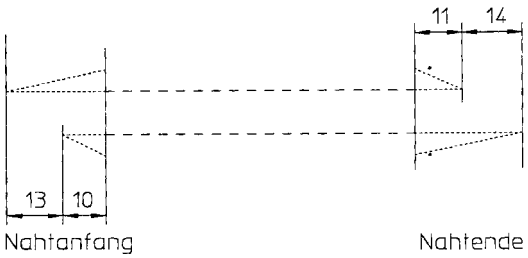
3.4.1 Sewing with catch



3.4.2 Sewing with stitch condensation



3.4.3 Sewing with stowing



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3.5 Basic parameters

The basic parameters contain the general settings of the machine. Changes effect all programmed seams.



Attention

As a factory setting, the basic parameters are optimized. Improper changes may cause faults in the machine process, which may lead to a reduction of quality and damages to the machine.

Follow this procedure to changes basic parameters:

1. Press the P-key.
2. Press F4.
3. Select the desired basic parameter using the arrow keys.
4. Press ENT-key.
5. Enter the desired value.
6. Repeat steps 3. to 5. for all desired basic parameters.
7. Press the P-key to leave the submenu.

During the selection of the parameters, you can scroll line per line using the vertical arrow keys. You can also select the pages directly:

- Key 0: basic parameters 01 - 14
- Key 1: basic parameters 10 - 23
- Key 2: basic parameters 20 - 33
- Key 3: basic parameters 30 - 40

The following basic parameters can be changed [factory-set values in square brackets]:

01 **Front positioning point** [135 mm]
distance between insertion position and seam start; if seam length is changed only the seam end is varied

02 **Middle positioning point** [225 mm]
with this setting the seam start is calculated that if the seam length is changed, seam start and end are delayed the same; is used for back pocket with dart, if dart shall be positioned in the middle of the pocket

03 **Rear positioning point** [315 mm]
distance between insertion position and seam end; if seam length is changed, only the seam start is varied

Length of main clamp	165 mm	set value	205 mm
	245 mm		285 mm
	290 mm		330 mm



Attention

This parameter defines the end of the main clamp. If this parameter is set too large, there may be sewing problems while sewing flaps.

04 **Folder up after** [335 mm]
time of the folder lifting after the seam; if distance too short, folder gets caught by the fold pushers

05 **Thread length full spool** [57 m]
a wrong thread length leads to incorrect values in the display of remaining thread

08 **Clamp down automatically**
if defined, the main clamp closes after reaching the insertion position and the set time

09 **Time after clamp down**
time delay between clamp down and next operation

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11 **Before zipper** (zipper clamp) **clamp lateral** (option)

16 **Time before insertion**
after the set time the main clamp drives from the insertion position to sewing start (foot pedal machine process pressed)

17 **Piping blowing off**
piping and flap are blown to the folder, to prevent a tilt movement of the piping; time may not be too long, since otherwise the thread will be blown to the needle

18 **'Thread clamp open' at seam start** (Beisler sewing head)
after the first two stitches the upper threads should be released from the thread clamp; after the time defined here, the thread clamp opens

19 **'Thread clamp open' - duration**
duration of 'thread clamp open' at seam start

20 **Point stitches during sewing**
allows one or several stitches at seam start and end to meet the end point exactly

21 **Cut til upper thread**
time for catching and cutting of the upper thread

22 **Upper thread cutting time**
length of the threads after upper threads picked up

23 **Scissor cutting time**
influences the zipper scissor to cut the zipper completely before moving to the end position

24 **Drive to cutting**
percentage of the clamp speed used by the main clamp to drive to the mitre knifes

25 **Mitre knife distance**
distance between the mitre knifes

26 **Mitre knifes cutting time**
cutting time of the mitre knifes

27 **Main clamp open**
open the main clamp after mitre cutting; if time's too short, the work piece may slip out of the machine before taken by the stacker

28 **Taking parts**
when taking parts with weak clamp (inner pocket production) the main clamp opens after mitre cutting, the final roller moves the part lateral from the clamp; then the clamp is switched with this parameter, that the main clamp detects the work piece faster and brings it to the insertion position

29 **Turn til final roller** [0.1 sec.]
time for the start of the final roller

30 **Time til final roller up** [0.5 sec.]
keeping the work piece after rolling, until the stacker has taken the work piece

31 **Clamp speed** [90%]
speed of the main clamp to the insertion position

32 **Process step-by-step** [00]
enter >01 to enable the switching of all machine functions

33 **Remaining thread counter on/off** [00] (option)
function can be enabled and disabled; 01 = remaining thread monitoring on; this disables the spool thread counter

34 **Thread cutter revs** [250 Rpm]
positioning revs for threat cutting systems:

Beisler sewing head	250 Rpm
Pfaff sewing head	180 Rpm
Singer sewing head	250 Rpm

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35 **Thread cutter position** [45] (01 - 59)
start correction threat cutter impulse; the smaller the number, the earlier the bobbin threat cutter is started

36 **Threat cutter duration** [0,1 Sek.]
duration of bobbin threat cutter should be minimized, otherwise the main clamp is already driving

37 **Piping turn delay** [00 mm]
37: after the mitre cutting, the main clamp drives the distance set here in mm.

38 **Piping turn duration** [0,0 Sek.]
05: impulse duration for the piping turn

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4 Troubleshooting hints

The following tables show possible error messages and the recommended reactions of the operator. Error messages are imaged in the display of the operating device.



Attention

Please obey the recommended actions in case of errors. Otherwise you could damage the machine. In this case, producer's warranty would be spoiled. We won't accept any liability for caused damage.

Error message	Circumstances	Recommended actions
Error 01: Sewing program empty	current sewing program is empty, possibly distances and values are not entered or the whole program is deleted	enter program values manually if required; copy from other programs or load from the memory (INIT parameter)
Error 02: Seam not enabled	current seam not enabled; No. is shown black on white	Press ENT-key to enable the seam
Error 05: I/O communication error	transfer error between controls and I/O module	check connecting wire; if not successful, change controls and/or I/O module
Error 06: Path pulses not valid	wrong position of the clamp sledge	check generator connection to clamp engine-check flat conductor plug of adaption module 9020020 > 9020013change adaption module 9020020
Error 07: No path pulses from engine	no path pulses from clamp engine; if the clamp engine has done a small movement, the path pulses couldn't be processes adequately	check connection to clamp enginechange clamp enginechange adaption module 9020020
	if the engine doesn't work, the fault is in the activation or the power part of the clamp engine	check condition of the diodes at the power card (Berger); do further examinations according to the Berger engine diagnosticscheck connection to clamp engine (plug)check connection 9020020 > power insert (plug)change adaption module 9020020
Error 08: Main clamp at the stop	limitation switch ES01 or ES17 has switched during clamp move, although the clamp is at a distance	check distance counter using the test program (path steps); if counter defective, change clamp engine or adaption board 9020020if counter OK, check both switches and connections
Error 09: Clamp can't leave the switch	clamp sledge drives to the termination switch after initialisation but cannot leave the switch (no change of direction)	enter a small speed with test program 'Clamp engine control' and change direction using the arrow keys; check if engine doesn't change direction:connection 9020020 > power insert (plug)Berger power partif the engine changes direction, check termination switch ES 17
Error 10: A piece is inserted	push back barrier (photo cell ES27) is not lighted	check photo cell and film
Error 11: Enable vacuum before	vacuum enabled with mode Par32 = 01, but not switched on before sewing start	switch on vacuum or change vacuum mode
Error 12: Interface end	interface monitor (photo cell 21) detects interface end	insert new interface roll or check photo cell

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Error 13: Error clamp position	difference between must and real position (impulses from incremental Gerber) of the clamp sledge is too big; clamp sledge blocked	removed the blocking partcheck clamp sledge for easy goingcheck engine piniontighten transport belt
Error 14: Insertion / seam length wrong	back insertion point is selected; seam length longer than the distance to the back insertion point	program lengths correctly
Error 15: Stamp not up	stamp hasn't reached the top position after switching off	check cylinder, gauge Y20, termination switch ES19
Error 16: Folder not straight	folder hasn't reached middle position within error time	check cylinder, gauge Y15, termination switch ES05
Error 17: Folder not up	folder hasn't reached top position within error time	check cylinder, gauges Y24 Y25, termination switches ES03 ES04
Error 18: Folder not down	folder hasn't reached position within error time	check cylinder, gauges Y24 Y25, termination switches ES03 ES04
Error 19: Folder not sloping	folder hasn't reached position 'sloping' (for picking) within error time	check cylinder, gauge Y15, termination switch ES06
Error 20: Knifes not together	the mitre knife hasn't reached start position before sewing insertion	check termination switch ES20check connection to mitre knife engine (plug)check diodes on Berger power cardcontinue search acc. to Berger engine diagnostics
Error 21: Mitre knife not up	mitre knife couldn't reach top position within error time	check cylinder, gauges Y03 Y48, termination switch ES13
Error 22: Front mitre knife not down	front mitre knifes (seam end) couldn't reach bottom position within error time	check cylinder, gauge Y04, termination switch ES19
Error 23: Rear mitre knife not down	rear mitre knifes (seam start) couldn't reach bottom position within error time	check cylinder, gauge Y04, termination switch ES18
Error 24: Scissor not up	scissor couldn't reach top position within error time	check cylinder, gauges Y21 Y22, termination switch ES14
Error 25: Scissor not down	scissor couldn't reach cutting position within error time	check cylinder, gauges Y21 Y22, termination switch ES15
Error 26: Pinole not up	the pinole for flap turning couldn't reach top position within error time	check cylinder, gauge Y59, termination switch ES41
Error 27: Pinole not down	bottom position not reached within error time	check cylinder, gauge Y59, termination switches ES39 ES40

Insert: see right-handed side

Error 52: Flap station not in starting position	flap station couldn't reach starting position within error time	check cylinder, gauge Y17, termination switch ES07
Error 53: Pocket bag station not in starting position	Pocket bag supply couldn't reach starting position within error time	check cylinder, gauges Y18 Y19, termination switch ES11
Error 54: Station not locked	folder station not locked	lock stationcheck termination switch ES02

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Error 28: No impulses from sewing engine	no impulses from sewing engine after sewing start (engine doesn't work)	check sewing engine and synchronizationcheck connection 9020013 > sewing engineread two upper diodes at 9020013: left lights shortly if needle in top position; right shows synchronizator impulses (512 impulses per turn); if none lights while turning the hand wheel, check power supply; possibly change sewing engine if diodes are working and engine doesn't move before error message, check connection 9020020 > sewing engine; possibly change 9020020 or engineif engine works shortly before error messa-ge, check connection controls > I/O module; possibly change components
Error 29: Sewing engine too fast	during thread cutting the sewing enginge couldn't reach cutting speed within error time	change sewing engine or synchronizator
Error 30: Thread cutter position doesn't come	the sewing engine hasn't reached the position for thread cutting	set a slower cutting speedset an earlier cutting positionchange sewing engine or synchronizator
Error 33: Sewing engine doesn't stop	engine doesn't stop within error time after thread cutting	set a slower cutting speed; set an earlier cutting position; change sewing engine or synchronizator
Error 34: Needle not up	needle couldn't reach the top position; with the error message the control tries to put the needle into the top position again	check sewing engine and synchronizator; check connection 9020013 > sewing engine; read two upper diodes at 9020013: left lights shortly if needle in top position; right shows synchronizator impulses (512 impulses per turn); if none lights while turning the hand wheel, check power supply; possibly change sewing engine if diodes are working and engine doesn't move before error message, check connection 9020020 > sewing engine; possibly change 9020020 or engine
Error 35: Thread broken	threat monitor detects breakage	
Error 36: Spool empty	mode 'Bottom thread counter' enabled; remaining length is zero	
Error 37: Spool only residual	one of the photo cells at the spool capsule is lighted, the spool is empty	if both spools are not empty, one photo cell reflects the thread and must be set smaller
Error 41: No flap	automatic flap legth detection with phot cell is enabled but no flap is detected	insert flapcheck photo cell ES31 and film
Error 42: Photo cell not lighted	automatic flap length detection with photo cell enabled; no flap within the security length detected	program a longer security lengthswitch off super-vision (enter 250 mm as seam length)check photo cell ES31 and film
Error 43: Photo cell lighted too early	automatic flap length detection with photo cell enabled; photo cell detected flap end too early	program a shorter security lengthswitch off supervision (enter 250 mm as seam length); check photo cell ES31 and filmset photo cell sensitivity smaller (reflections?)
Error 45 ... 48: I/O DACI/O ULNI/O 485I/O RES	internal hardware errors during data transfer to adaption board 9020020	change 9020020
Error 51: Flap station doesn't swing	flap station couldn't reach the active position within error time	check cylinder, gauge Y17, termination switch ES08

Continuation: see bottom of left-handed side

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5 Maintenance of the machine

This machine works nearly free of maintenance. To achieve the maximum ability of the machine for a long term, some regular maintenance duties are required.

Danger

Before starting maintenance and repair duties, the following power down procedures are to be executed. Otherwise there could be danger to life!

Cut off mains power

- switch the mains / emergency stop switch to '0' and assure that it can't be switched on
- check whether the machine is without current and that there is no statical loading

Switch off pneumatic system

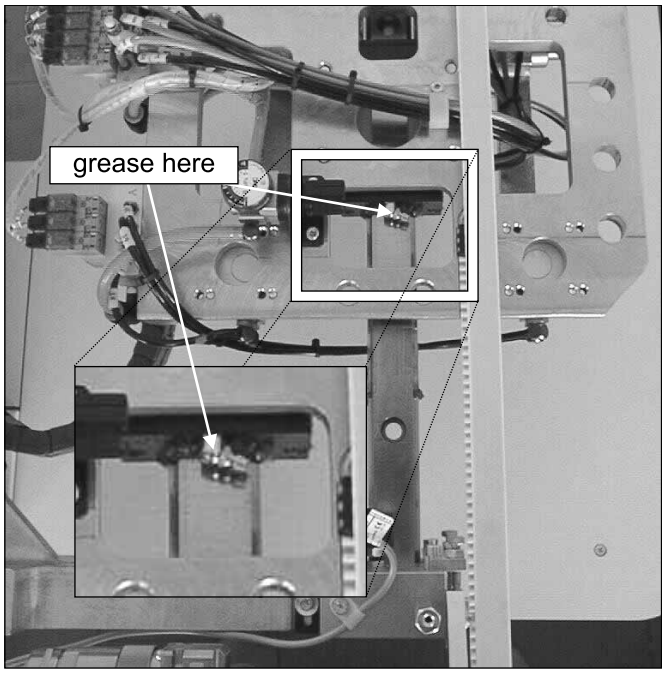
- close the main gauge
- ventilate all pipes and gauges

5.1 Water separator at air connector

The air connector is equipped with an automatic water separator. If the air supply looses pressure, the contained water will be let out automatically.

5.2 Grease linear guiding

At least once a year, the linear guiding must be greased with normal ball-bearing grease:



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5.3 Use of the Memory Card

The Memory Card allows to save created seams and/or seam orders on a removable data cartridge or load them back into the machine.



Hint

We strongly recommend to save own seams or seam orders on the Memory Card, since otherwise they might get lost in case of an defective EPROM or possbile other faults.



ATTENTION

The Memory Card contains a battery which is good for est. 2 to 3 years. If the battery is empty, the saved data will get lost in a short period of time. Don't forget to change the battery in time and then save the machine data on the Memory Card again.

5.3.1 Saving seam data on the Memory Card

1. Insert the Memory Card into the corresponding slot in the front panel of the operating device (see operating instructions).
2. Press the P-key.
3. Press the F6-key.
4. Press the F2-key.
5. Press one of the keys F1, F3 or F5 (see further below).
6. Confirm by pressing the ENT-key.

You can use one of serveral possibilities to save data on the Memory Card. Press the key

F1 to save the active seam (which is currently displayed in the operating device) on the Memory Card;

F3 to save all seam orders;

F5 to save all variables.

If you want to save all your data on the Memory Card, you should press the F5-key.

5.3.2 Loading seam data from the Memory Card



ATTENTION

Seam data from the Memory Card overwrite the data saved in the operating device. If you have changed your seams, you will have to save them on the Memory Card.

1. Insert the Memory Card into the corresponding slot in the front panel of the operating device (see operating instructions).
2. Press the P-key.
3. Press the F6-key.
4. Press the F2-key.
5. Press one of the keys F2, F4 or F6 (see further below).
6. Confirm by pressing the ENT-key.

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You can use one of serveral possibilities to load data from the Memory Card. Press the key

F2 to load the active seam (which is currently displayed in the operating device) from the Memory Card;

F4 to load all seam orders;

F6 to load all variables.

If you want to load all your data from the Memory Card, you should press the F5-key.

5.4 Loading data from the EPROMs

If desired, you can load the factory-set basic and seam parameters from the EPROMs (**not from the Memory Card**). This can be necessary after a complete loss of data.

5.4.1 Loading the basic parameters

1. Press the P-key.
2. Press the F5-key.
3. Press the F3-key.
4. Enter the number ‘1’ and press the ENT-key.

The basic parameters saved in the EPROM will be loaded and overwrite the parameters saved in the operating device. This resets the basic parameters to factory-set conditions.

5.4.2 Loading seam parameters

1. Press the P-key.
2. Press the F5-key.
3. Press the F4-key.
4. Enter the number ‘1’ and press the ENT-key.

The seam parameters saved in the EPROM will be loaded and overwrite the parameters saved in the operating device. This resets the seam parameters to factory-set conditions.

5.5 Test programs and diagnostics

This machine contains a huge variety of test programs, with which all functions can be individually tested.

5.5.1 I/O-Test

1. Press the P-key.
2. Press the F6-key.
3. Press the F1-key.
4. Execute the desired actions (see further below).
5. Press the P-key to end the test.

All inputs with their numbers will be displayed in the upper half of the display. The inputs displayed inverted are currently active.

All outputs with their numbers are displayed in the lower half of the display. The outputs displayed inverted are currently active.

You can now select an output using the arrow keys and activate or de-activate it by pressing the ENT-key. If you press the ENT-key longer than two seconds, the output switches between active and de-active, unitl you press the ENT-key again (shortly).

The following inputs and outputs are available in this machine.

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5.5.1.1 Available inputs

Inputs pocket welting machine 100-58

Standard equipment

Input	S-No	Description	Type		Connected	Remarks
01	01	Clamp at front	Initiator	Opener	X24 Pin 02	
04	04	Folder down	Initiator	Closer	X24 Pin 05	
13	13	Center knife up	Initiator	Closer	X24 Pin 06	
17	17	Clamp back	Initiator	Opener	X24 Pin 03	
18	18	Mitre knife down NE	Initiator	Closer	X24 Pin 07	
19	19	Mitre knife down NA	Initiator	Closer	X24 Pin 08	
20	20	Mitre knifes together	Initiator	Closer	X24 Pin 09	
22	22	Foot switch forwards	Foot sw.	Closer	X24 Pin 01	

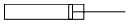
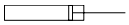
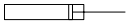
Options

03	03	Folder up	Initiator	Closer	X24 Pin 04	
09	09	Dart stretcher up	Initiator	Closer	X27 Pin 20	
10	10	Clamp quick adjustment	Initiator	Closer	X27 Pin 21	
14	14	Scissor up (home position)	Initiator	Opener	X27 Pin 22	or as folder safety switch
15	15	Scissor cown (cut position)	Initiator	Closer	X27 Pin 23	
21	21	Vylene end	Photocell	Photocell	X27 Pin 24	
23	23	Foot switch vacuum	Foot sw.	Closer	X24 Pin 12	
26	26	Switch reset	Foot sw.	Closer	X24 Pin 13	
27	27	Clamp stop photocell	Photocell	Photocell	X24 Pin 11	
28	31	Photocell left	Photocell	Photocell	X24 Pin 10	
	32	Switching single welt jacket/trouser	Initiator	Closer	direct	
32	33	Photocell right	Photocell	Photocell	X27 Pin 17	
35	35	Thread monitor F&P	Photocell		X27 Pin 25	
	36	Zipper transport	Micro sw.	Closer	direct	
38	38	Bobbin detector	Photocell	Photocell	X27 Pin 29	
39	39	Pocket weltturn dev. down seam start	Initiator	Closer	X27 Pin 30	
40	40	Pocket weltturn dev. down seam end	Initiator	Closer	X27 Pin 31	
41	41	Pocket welt turn dev. up seam start	Initiator	Closer	X27 Pin 32	

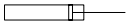
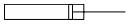
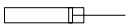
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5.5.1.2 Available outputs

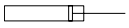
Standard equipment

No.	Description	Valve No.	Cylinder		Occupation
			No.	State	
01	Bobbin threat cutter	Y01	01		X25 Pin 01
03	Center knife motion	Y03	03		X26 Pin 26
04	Mitre knife up	Y04	04/04.1		X25 Pin 16
11	Tension release	Y11	11		X25 Pin 02
24	Folder upwards	Y24	24	no airpressure	X25 Pin 07
25	Folder downwards	Y25	25	no air pressure	X25 Pin 08
	Clamp quick adjustment	Y32	32		
33	Pocket pouch clamp right	Y33	33		X26 Pin 20
34	Folding slide left	Y34	34		X25 Pin 13
35	Folding slide right	Y35	35		X25 Pin 14
36	Pocket pouch clamp left	Y36	36		X26 Pin 19
38	Both main clamps open	Y38	39/40	no air pressure	X25 Pin 04
39	Main clamp left	Y39	39	no air pressure	X25 Pin 05
40	Main clamp right	Y40	40	no air pressure	X25 Pin 06
41	Top threat catcher	Y41	41		X25 Pin 03
48	Center knife actuator	Y48	48		X25 Pin 15

Options

12	Mitre knife middle stop	Y12			X26 Pin 21
05	Mitre knife left seam end	Y05	05.1		X25 Pin 11
06	Mitre knife left seam start	Y06	06		X25 Pin 12
53	Needle switch off right	Y53	53	no air pressure	X26 Pin 22
54	Needle switch off left	Y54	54	no air pressure	X26 Pin 23
09	Vylene cutting	Y09	9		X26 Pin 31
51	Vylene release	Y51	51		X26 Pin 30
60	Vylene feed motion	Y62	60		X26 Pin 29
13	Stacker	Y13			X26 Pin 18
23	Take off roller	Y23	23		X26 Pin 17
20	Dart stretcher	Y20	20		X26 Pin 25
21	Scissor swing in	Y21	21		X26 Pin 28
22	Scissor cut	Y22	22		X26 Pin 27
10	Vacuum	Y10	10		X25 Pin 10
42	Piping blowing system	Y42			X25 Pin 09
	Clamp quick adj. trouser/jacket	Y50	50		
01	Blowing bobbin detector	Y55	56		X25 Pin 01

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02	Main clamp laterally	Y02	2		X35 pin 14
56	Pocket welt turner device bed slide	Y56	56		X26 Pin 22
57	Pocket welt t. device outside seam st.	Y57	57		X25 Pin 12
58	Pocket welt t. device outside seam e.	Y58	58		X25 Pin 11
59	Pocket welt turner device up	Y59	59		X26 Pin 21
31	Zipperfinger move	Y60	60		X26 Pin 23
32	Ziipperfinger up/down	Y61			X26 Pin 24
20	Needle strip big	Y08	08/08.1		X26 Pin 25

5.5.2 Diagnostics

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.

Here you can choose from six different sub-menus, with which you are able to check system components individually.

5.5.2.1 Service Test



ATTENTION

These tests may only be executed by service technicians of the company Beisler. The complete loss of all data can easily occur due to false operations.

5.5.2.2 Sewing motor

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.
4. Press the F2-key.

Here, four tests for the sewing motor are contained. Select the desired test by pressing the corresponding F-key:

F1 Select sewing motor

Here the actual value is compared with the must value of revs of the sewing motor. After opening the test, you can enter the desired revs using the number keys.



ATTENTION

The insertion station must be swung out and all threats and bobbins must be removed from the sewing head before the test can be executed. Beisler sewing heads may only be run with revs up to 2500 Rpm.

Enter the desired revs of the motor and press the ENT-key. The sewing head starts and the measured actual value is displayed.

Press the P-key to terminate the test.

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F2 Threat cutter

ATTENTION

The insertion station must be swung out and all threats and bobbins must be removed from the sewing head before the test can be executed.

Press the 0-key (zero) and the sewing head runs for a short time. After the needle has been positioned, the threat cutter gets active (basic parameter 36: TC duration).

F3 Position actor

ATTENTION

The insertion station must be swung out and all threats and bobbins must be removed from the sewing head before the test can be executed.

After the selection of this test, the ‘Hand wheel increments’ and ‘Hand wheel position’ will be displayed. By turning the hand wheel to the left or right, the increments will be counted. There must be 520 increments per turn.

To check the needle-up-position, press the 0-key (zero) and the needle will be positioned. There should be 510 increments displayed now. This value should not deviate for more than 1 increment.

F4 Sewing motor

This function can be used to transfer the parameters required for the sewing motor from the control. After changing the control or seam motor, the execution of this function is required.

Select the function and press the ENT-key. The data will be transferred automatically. Switch off the machine using the mains switch. After switching on the machine again, the data will be loaded automatically.

5.5.2.3 Clamp motor

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.
4. Press the F3-key.

Here three test functions for the clamp motor are contained:

F1 Clamp motor path steps

This function measures the path steps of the clamp path (see Technical manual, 1.20.2).

F2 Select clamp motor

ATTENTION

This function may only be executed by service technicians of the company Beisler or authorized and especially trained staff.

F3 Clamp motor long-term test

Hint

The main clamp must be driven into starting position (clamp on initiator 17) before this function can be executed.

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Select the function and press the ENT-key. The main clamp moves back and forth with high speed and must change direction at the same position.

5.5.2.4 Mitre knife motor

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.
4. Press the F4-key.

Here two test functions are contained:

F1 Select mitre knife motor



ATTENTION

This function may only be executed by service technicians of the company Beisler or authorized and especially trained staff.

F2 Mitre knife motor long-term test

Before execution, the movable mitre knife must be moved into starting position (on intitiator 20).

Select the function and press the ENT-key. The mitre knife moves back and forth with constant speed and must change direction always at the same position.

Turn the mains/emergency stop switch to terminate the function.

5.5.2.5 Center knife motor

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.
4. Press the F5-key.

Enter a value between 01 ... 99 to check the speed of the center knife motor. Press the ENT-key to switch off the motor again.

If the center knife shall be switched on additionally, press the 0-key (zero). You can also stop the center knife by pressing the ENT-key.

Press the P-key to terminate this function.

5.5.2.6 Final roller

1. Press the P-key.
2. Press the F6-key.
3. Press the F3-key.
4. Press the F6-key.

Enter a value between 01 ... 99 to check the speed of the final roller. Press the ENT-key to switch off the motor again.

Press the P-key to terminate this function.

5.5.3 Service Code

Here two codes are contained, whith which all or only a part of the machine data can be locked.

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5.5.3.1 Machine Code

This is required to copy seam parameters, basic parameters or seam programs and to select a part of the diagnostic programs.

The code number is ‘50190’. If this code is disabled due to safety reasons, ‘00000’ must be entered.

5.5.3.2 Safety Code

This code is required for the execution of most of the diagnostic functions. It can be ordered in written form giving the machine number from the service department of the company Beisler.

5.6 Preset sewing programs

The following shows the factory-set structure of the seams in the memory buffer:

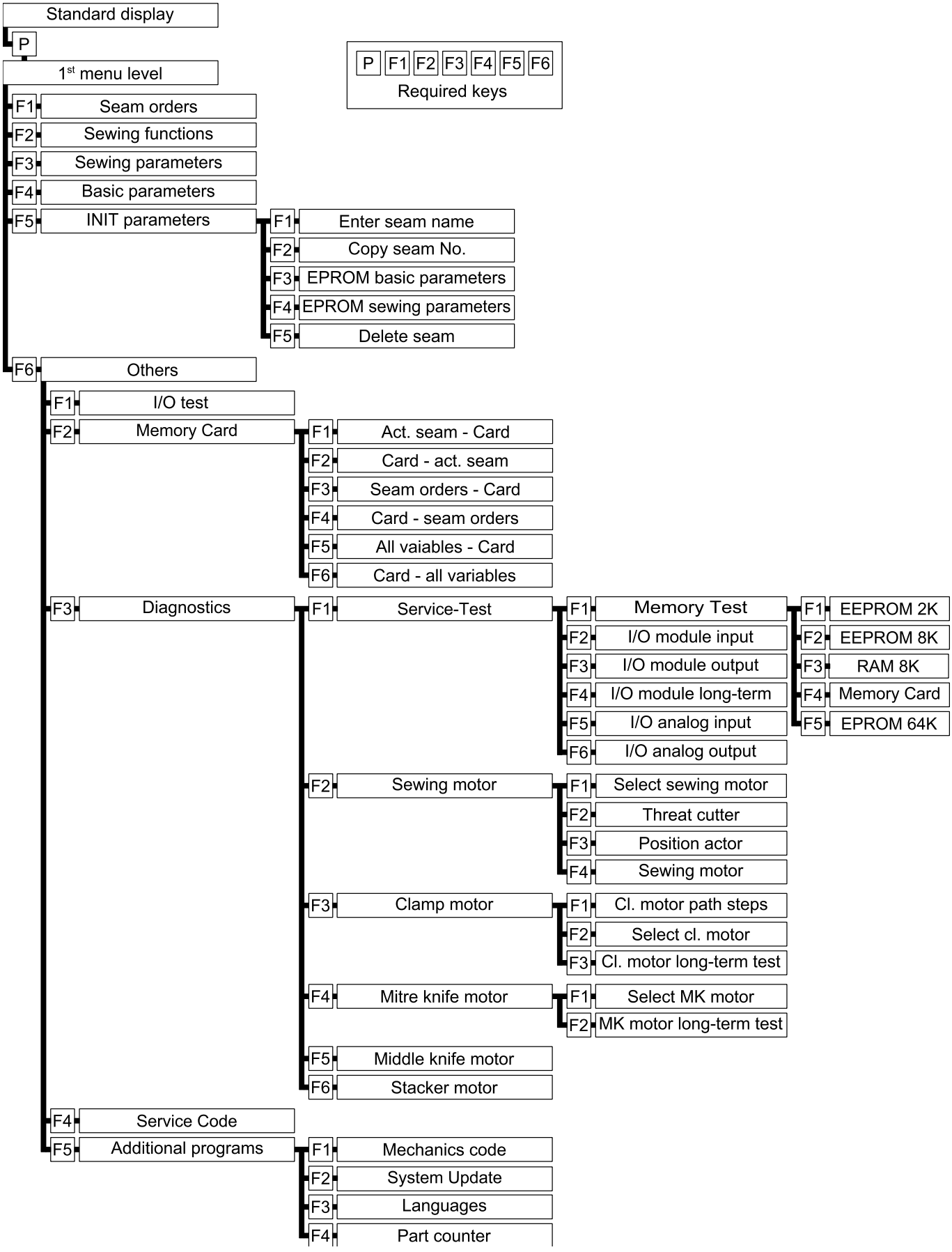
Seam-No.	Seam
01 ... 09	Jacket outside pocket; with/without flap
10 ... 19	Jacket outside pocket; slanted pocket / slanted flap
20 ... 29	Inside pocket; lining pocket with pelon
30 ... 39	Pants pocket; pants front/back pocket with/without flap
40 ... 49	Pockets with zipper

The following shows the factory-set occupation of several memory locations with seams:

Memory loc.		Seam
M01	01	Flap pocket; jacket right panel
	02	Flap pocket; jacket left panel
	03	Welt pocket; jacket right panel
	04	Welt pocket; jacket left panel
M02	10	Slanted pocket with flap; right panel
	11	Slanted pocket with flap; left panel
	12	Slanted welt pocket; right panel
	13	Slanted welt pocket; left panel
M03	20	Jacket inside pocket with pelon; pocket length 100 mm
	21	Jacket inside pocket with pelon; pocket length 100 mm
	22	Jacket inside pocket with pelon; pocket length 150 mm
	23	Jacket inside pocket with pelon; pocket length 150 mm
M04	30	Pants back pocket
	31	Pants front pocket
	32	Pants back pocket with flap
	33	Pants back pocket with button loop
M05	40	Pocket with zipper
	41	Pants back pocket with zipper
M07	16	Jacket breast welt pocket

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5.7 Diagram of the menu structure



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Part 3 Technical manual

Hint

This Technical manual contains information for the further maintenance, adjustment and troubleshooting. It adresses axclusively to trained and experienced technical staff, which is able to assess the tasks and recognize possible danger at an early moment. The prior parts of this documentation ‘1 Operating instructions’ and ‘2 Mechanics manual’ are to be considered as parts of the Technical manual.

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0.1 Reason for this manual

With this manual, especially qualified and authorized persons shall be enabled to execute further adjustment and maintenance duties at the Pocket-Piping Automaton 100-58 manufactured by Beisler.

Even these persons will first have to read and understand the complete documentation and obtain all rules and regulations.

0.2 Structure of the manual

This manual is structured in two columns. On the left side you will find explaining texts, on the right side photos which illustrate the texts and show certain assemblies or parts of the machine.

0.3 Safety instructions

Many of the measures described in this manual can be executed at a machine powered-off and with released air-pressure. Please obtain the switch-off procedures described below.

Some of the measures described in this manual can only be executed, if the machine is under electrical power or air pressure.



DANGER

Never work alone! Assure that a second person is present which can initiate life-saving actions and/or calls for paramedical help in the case of an accident.



DANGER

Danger of mortal electrical shock! While working at a machine where electrical voltage is present, any contact to hot parts must be avoided.



DANGER

Danger of shearing and crushing! Be very careful working at a machine which is under pneumatical pressure. Otherwise, unintented moves of machine components could cause severe injuries.

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0.4 Preparing measures

In this manual, you will find hints at any measure, where the machine must be powered off or the pneumatic pressure must be released:

<power off>	machine must be cut off the power supply
<release pressure>	pneumatic pressure must be released from the machine

To be able to work under maximized safety, the preparing measures should be obeyed at any time.

0.4.1 Cut off power supply

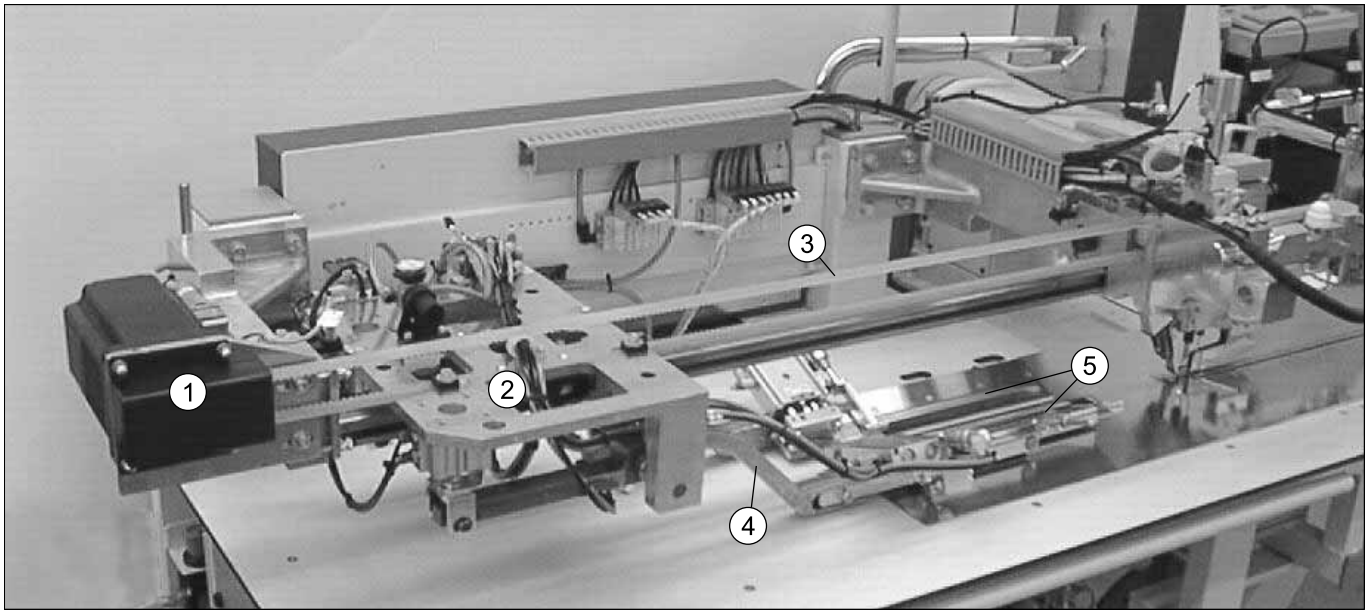
Use the mains/emergency stop switch to switch off the machine. Cut off the power supply and assure that it can’t be restored unintentedly.

0.4.2 Release pneumatic pressure

Close the air supply with the black switch at the air supply unit. Cut the machine from the air supply and assure, that it can’t be restored unintentedly.

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1 Clamp adjustment



The following assemblies must be distinguished in the clamp area:

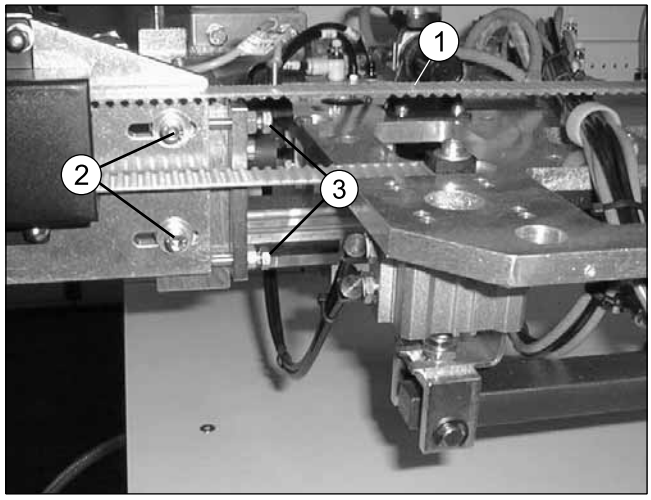
1. Clamp motor
2. Clamp carriage
3. Clamp drive belt
4. Clamp arms
5. Main clamp

1.1 Clamp drive belt

The clamp must stand in home position (like shown in the upper picture).

The drive belt (1) must have enough tension that it gives about 15 mm when loaded with 1 kg (in the middle between both belt disks).

If required, loosen both fixing screws (2) and adjust the set screws (3). Tighten the fixing screws (2) again.



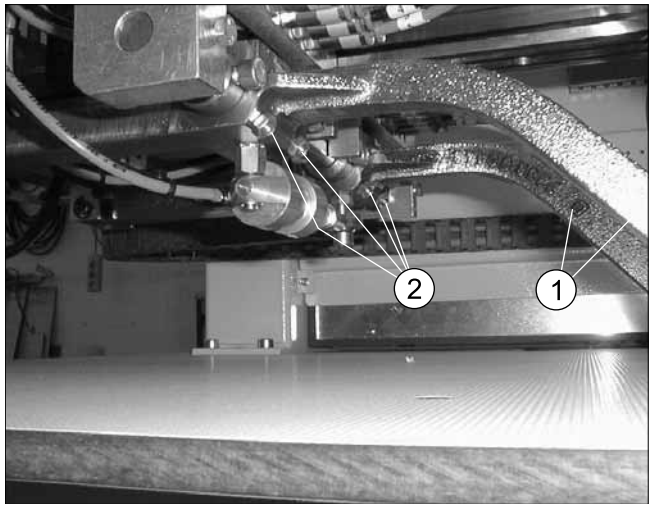
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1.2 Adjust axial free play of the clamp arms

<power off> <release pressure>

The clamp arms (1) must be adjusted without free play. Although they have to move easily.

Check the correct adjustment from time to time. If required, you can adjust the axial free play of the clamp arms with the screws (2).



1.3 Parallelity of the clamp arms to the sewing head

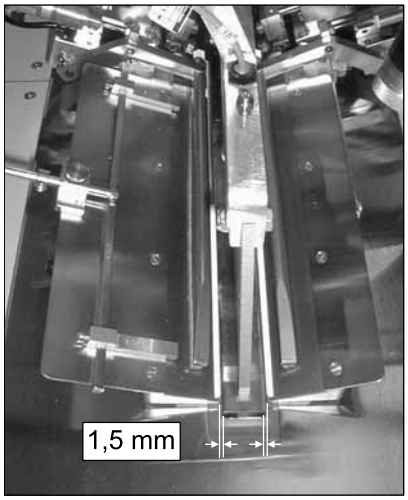
This is adjusted in the factory and doesn't have to be changed.

1.4 Lateral adjustment of the double piping

<power off> <release pressure>

Insert the folder for the double piping.

The distance between the inner side of the main clamp and the sole edge at the folder shall be 1.5 mm on the right and left side (see right).



This distance can be adjusted with the setting rings (1).

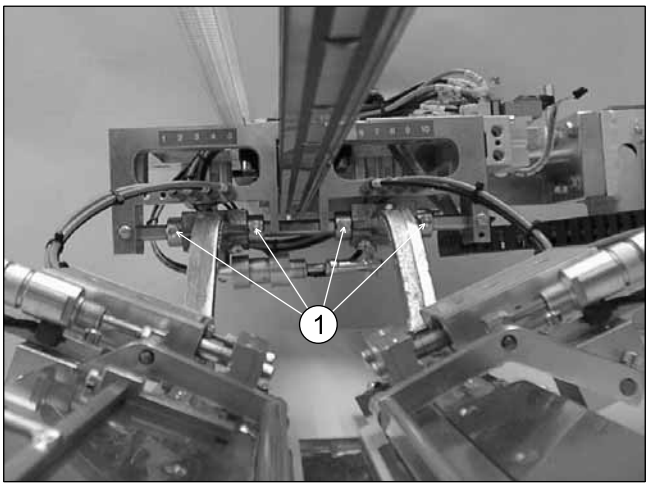
1.5 Lateral flap adjustment

<power off> <release pressure>

Insert the folder for single piping.

There should be a distance of 1.5 mm between the inner side of the clamp and the sole of the folder.

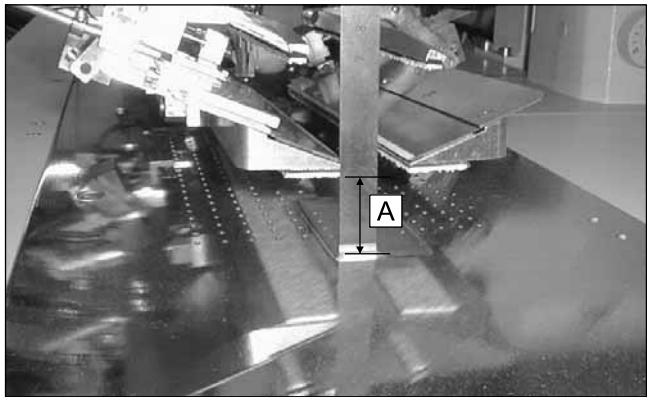
This can be adjusted with the two outer setting rings (1).



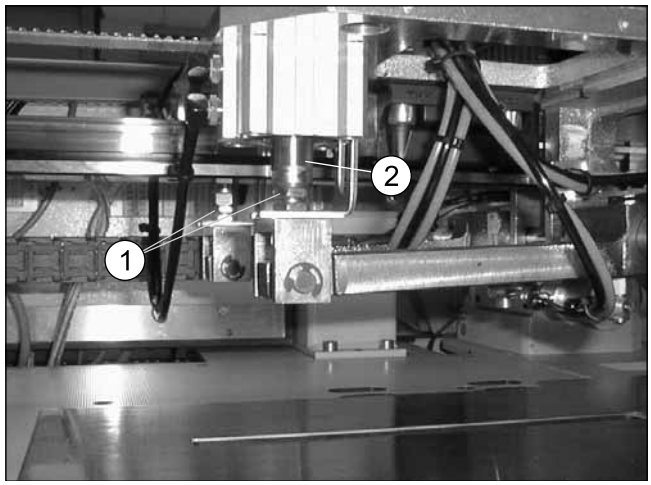
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1.6 Adjust main clamp height

The main clamp height in insertion position must be 30 mm.



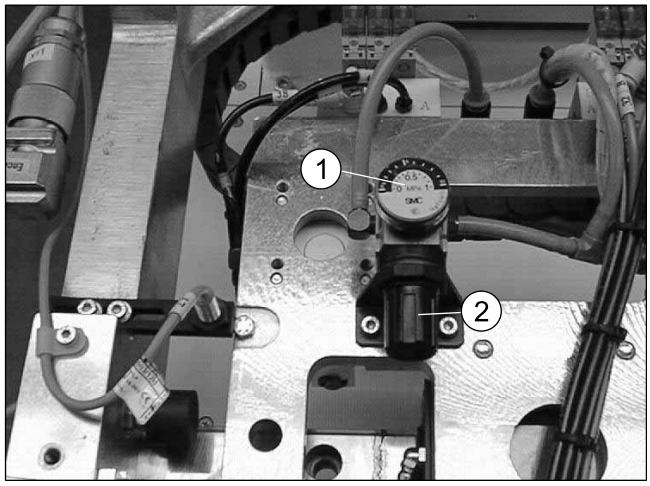
To adjust this, loosen the nuts (1) at both clamp pressure cylinders and turn the piston pole (2) until the must height is present.



1.7 Adjust main clamp pressure

The clamp pressure must be 3.5 bar. You can read it at the pressure gauge (1) on the clamp carriage.

To adjust the pressure, pull out the black knob and turn it into the required direction. Press the knob down again.

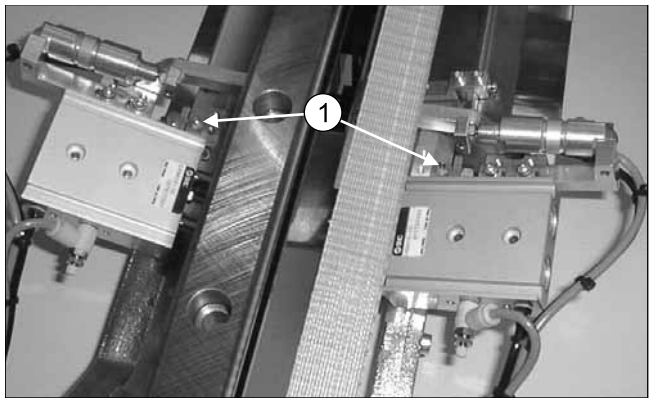


1.8 Main clamp pressure distribution

An even pressure must be over the whole main clamp area.

Drive the main clamp into insertion position and lay thin sewing material under the clamp arms. Close the main clamp (control: check outputs). Pull the sewing material laterally and check the even clamp pressure.

If required, you can adjust the pressure distribution. Loosen the fixing screws (1) of the two allen screws (2). Turn the two allen screws (2) until the correct pressure distribution is present. Tighten both fixing screws (1) again.



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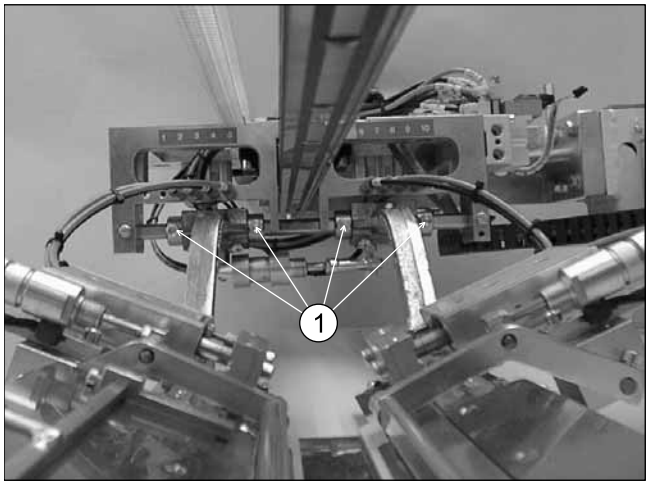
1.9 Clamp quick adjustment double/ single piping (option)

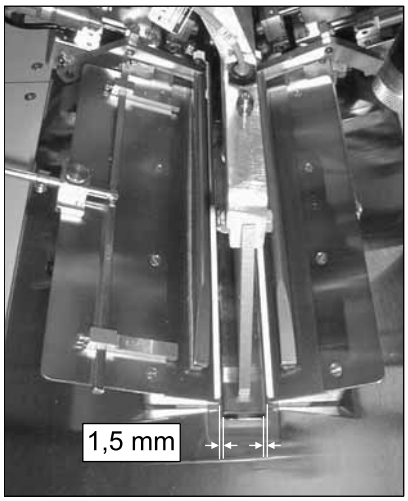
An initiator is mounted at the insertion station, which recognizes the folder for double or single piping. The main clamps will be driven into the correct position dependant on the inserted folder. These positions are adjustable.

Mount the folder for the double piping and move both inner setting rings (1) in a way that there is a distance of 1.5 mm between sole edge and main clamp edge (see lower picture).

Mount the folder for single piping and move the outer setting ring (1) until there is a distance of 1.5 mm and the clamp can only move to one side.

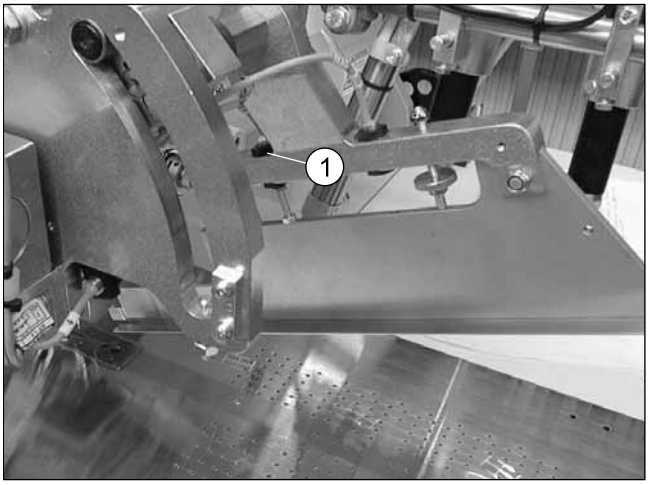
Tighten the fixing screws of all setting rings.



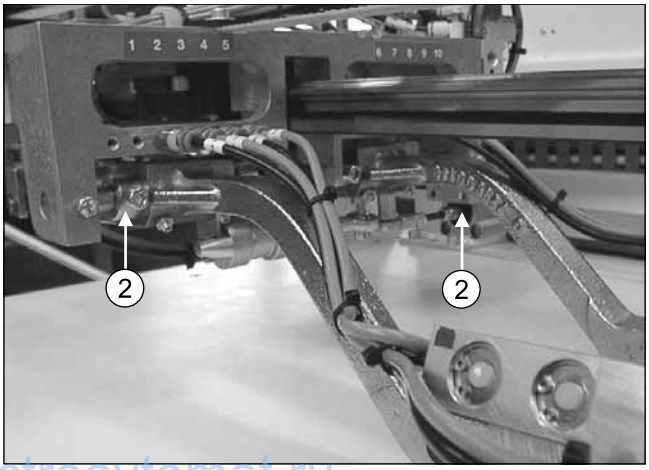


1.10 Clamp quick adjustment jacket/ trouser (option)

With the additional initiator at the folder (1) a valve for the additional clamp move is controlled.

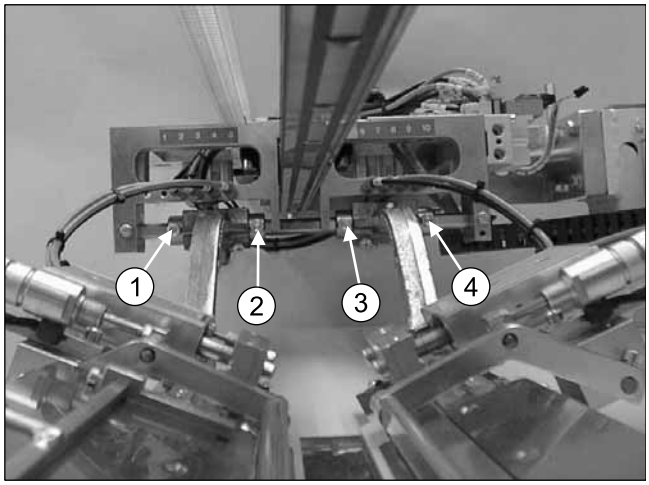


Adjuste the outer position of the clamp with the two outer setting screws (2) in a way that there is a distance of 1.5 mm between the folder sole and the inner side of the main clamp.



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1.11 Lateral clamp adjustment without quick adjustments



Mount the folder for the double piping. Adjust the inner setting rings (2) (3) in a way that there is a distance of 1.5 mm between main clamp and sole.

Mount the folder for single piping. Move clamp and setting rings (3) (4) to the outside until there is a distance of 1.5 mm between folder and sole.

Now block the lateral escape of the clamp arms by fixing the setting rings.

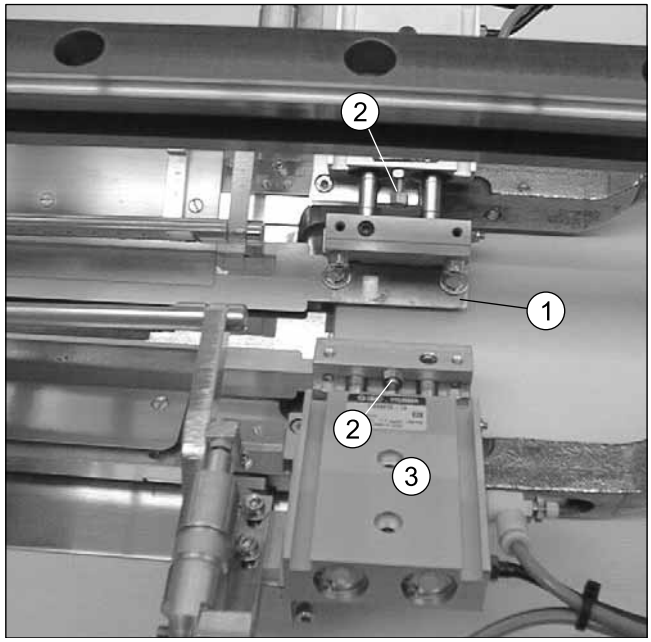
1.12 Clamp adjustment double piping – flap without quick adjustment

Here you will have to move one clamp arm with the setting rings when changing between folder double or single piping.

Loosen the setting ring (3) or (4) and move them together with the clamp arm until there is a distance of 1.5 mm between double piping/flap and main clamp.

1.13 Adjust folding slide path

<power off> <release pressure>



The distance between the folding slide (1) driven in and out must be 5 mm.

If required you can adjust the setting screw (2) at the cylinder (3).

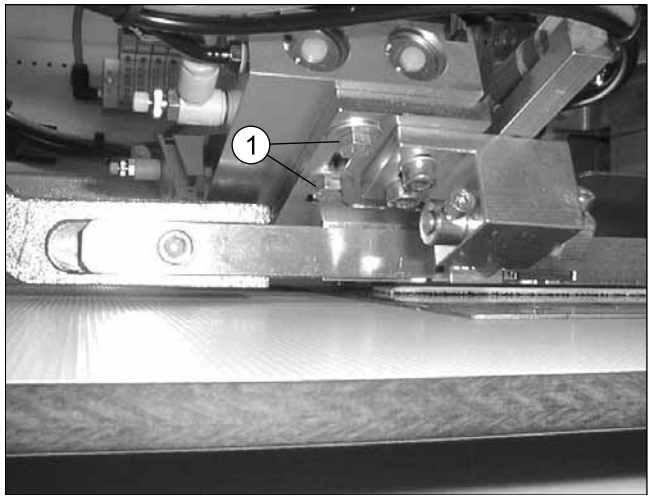
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1.14 Adjust parallelity of folding slide

<power off>

In driven in state, the folding slide must be parallel to and 0.5 mm away from the edge of the main clamp.

This can be adjusted with the fixing screws of the folding slide cylinder (1).

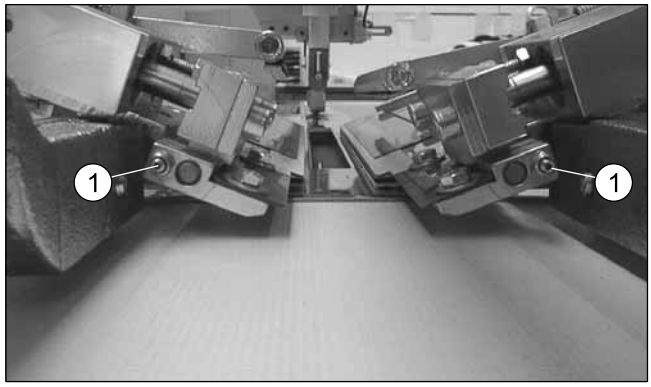


1.15 Adjust folding slide

<power off> <release pressure>

A turn movement of the folding slide must be assured which allows him to adjust to the strength of the sewing material.

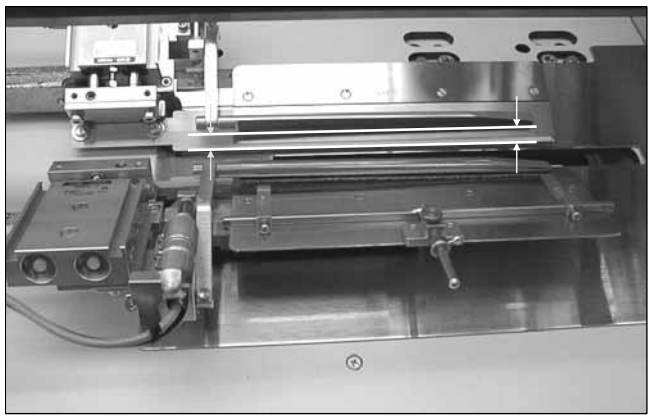
Adjust the screws (1) to adjust the folding slide with no free play axially.



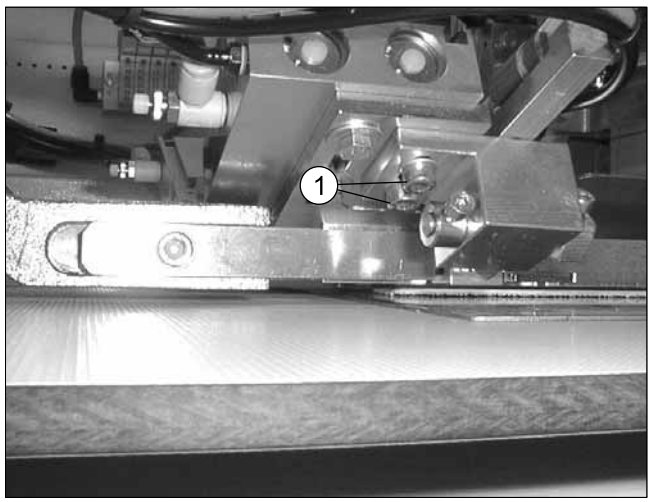
1.16 Flap clamp position

<power off> <release pressure>

The flap clamps must stand in a distance of 5 mm parallel to the inner side of the main clamp.



To adjust the flap clamp, loosen the fixing screws (1) of the flap clamp beam. Adjust the flap clamp correctly and tighten the fixing screws (1) again.

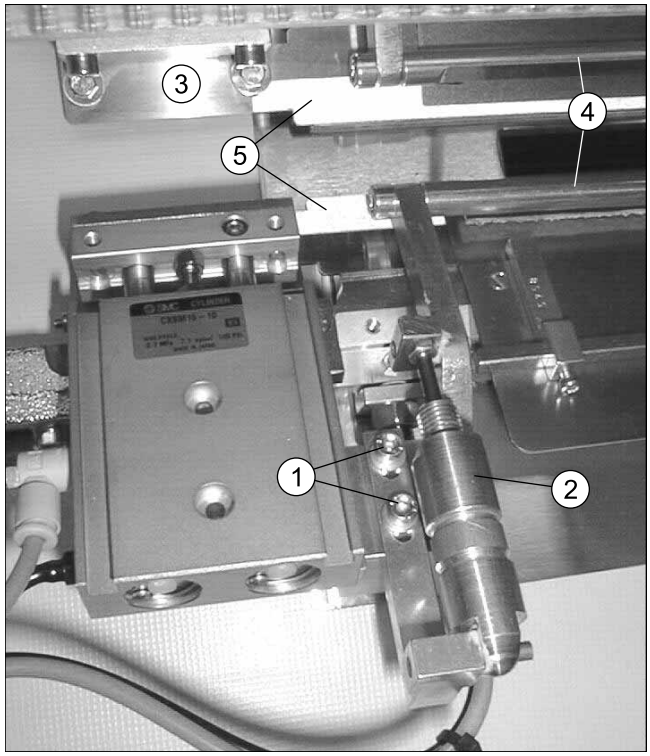


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1.17 Opening path of the flap clamp

The opening path of the flap clamps (4) must be adjusted in a way that the flap clamp presses with its complete length onto the main clamp, when the flap clamp cylinder is driven out.

Loosen both allen screws (1) at the flap clamp to be adjusted and adjust the cylinder (2) correctly. Tighten both allen screws (1) again.



1.18 Photo cell foil

A photo cell foil (5) is fixed to each clamp (3). This allows an always good detection of the flap.

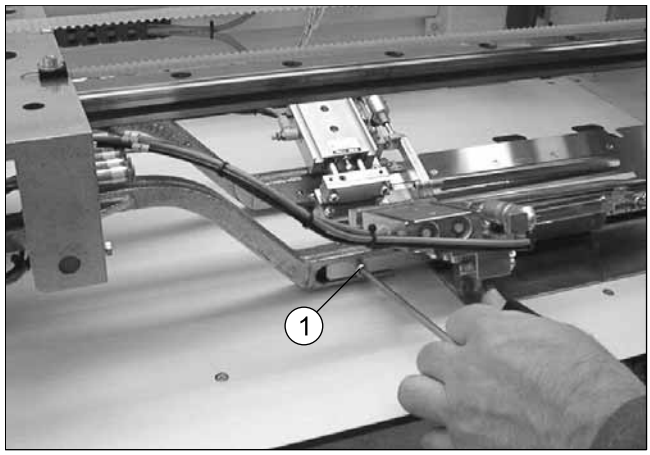
Clean the foil with a clean cloth from time to time. If the foil is damaged, it must be changed.

1.19 Check/change clamp rubber

<power off> <release pressure>

There are moss-rubber strips below each main clamp. If there are problems of the sewing material and the clamp, these rubber strips should be checked.

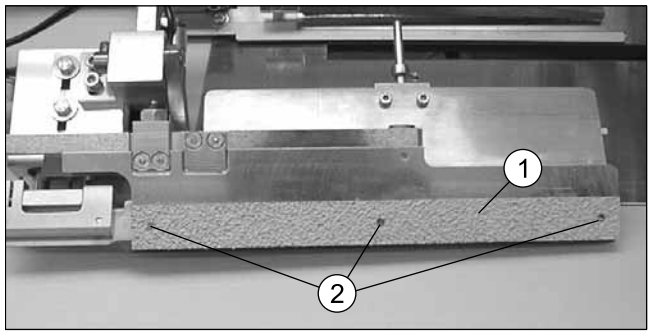
Demount the clamp by loosening the allen screw (1).



The moss rubber strip is fixed with three screws (2).

If the rubber is damaged, loosen them and change the strip.

Fix the clamp arm again and adjust it.



Hint

When working with thick sewing material it is advantageous to use a thicker clamp rubber or mount a heightening.

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1.20 Adjust clamp path

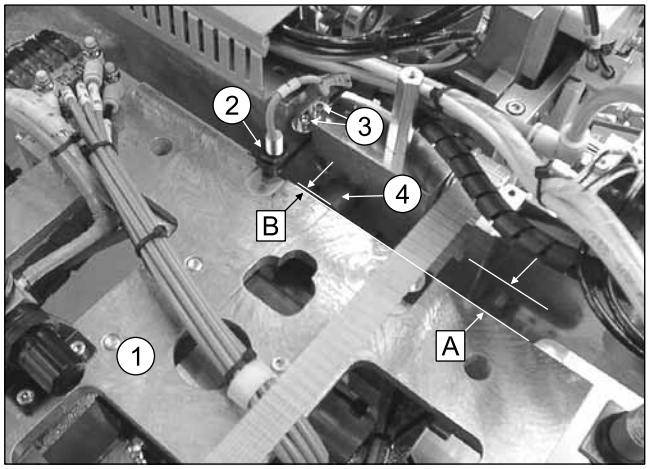
1.20.1 Adjust front stop

<release pressure>

Drive the clamp carriage (1) into insertion position intil initiator 1 (2) switched dark. The distance (A) between the beam and the clamp carriage must be 19 mm.

To adjust the distance, loosen the fixing screws of the initiator 1 (2) and move him in the desired direction. Tighten the fixing screws again.

Loosen the fixing screw of the stopping rubber (3) and turn this in or out, until there is a distance (B) of 3 mm to the clamp carriage. Tighten the fixing screw again.



1.20.2 Measure clamp path

Switch on the machine with the mains/emergency stop switch. Wait until the clamp has been initialized.

The machine must be in home position (clamp carriage in the back position).

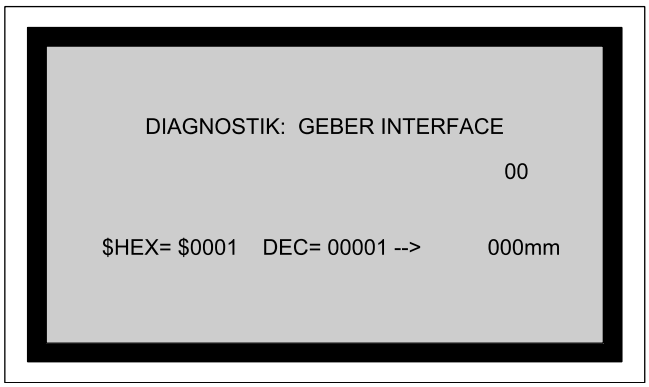
Press sequently the keys [P] – [F6] – [F3] – [F3] – [F1] at the operation device.

Push the clamp forward into insertion position until initiator 1 switches dark. Check the value which is displayed in the lower right corner of the display (in mm):

< 000 mm initiator 17 (see picture in section 1.20.3) is too far in the back and must be adjusted towards the sewing head.

= 000 mm initiator 17 is adjusted correctly.

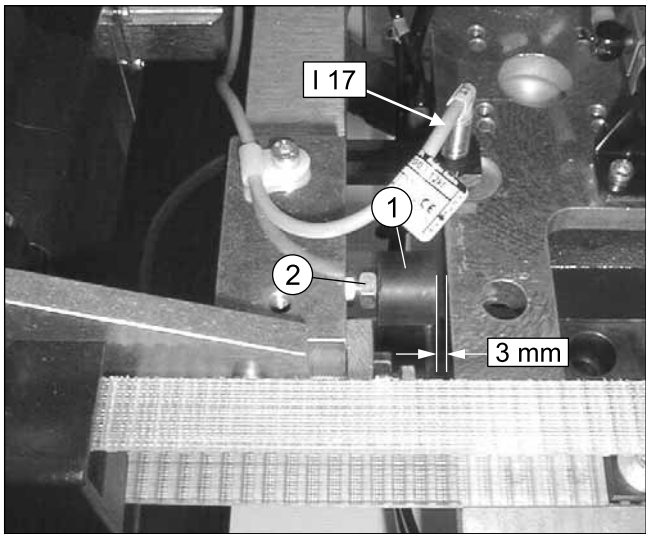
> 000 mm initiator 17 is too far in the front and must be adjusted away from the sewing head.



1.20.3 Adjust back stop rubber

The stop rubber (1) beside initiator 17 (I 17) must show a gap of 3 mm to the clamp carriage.

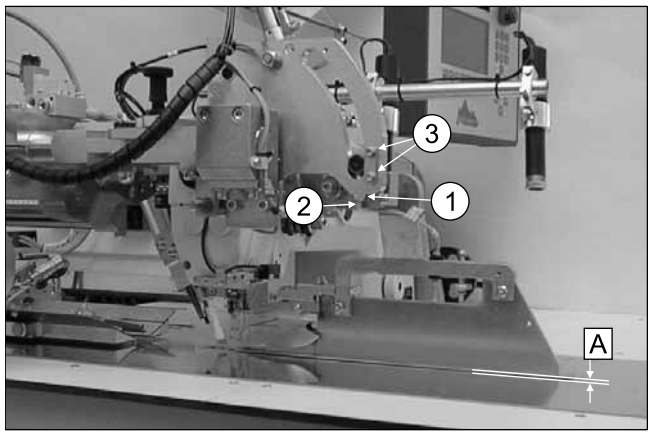
Drive the clamp carriage into home position. Loosen the nut (2) and turn the stop rubber, until there is a distance of 3 mm to the clamp carriage. Tighten the nut (2) again.



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2 Adjustments at the insertion station

2.1 Folder height



Select output 24/25 in the machine control.

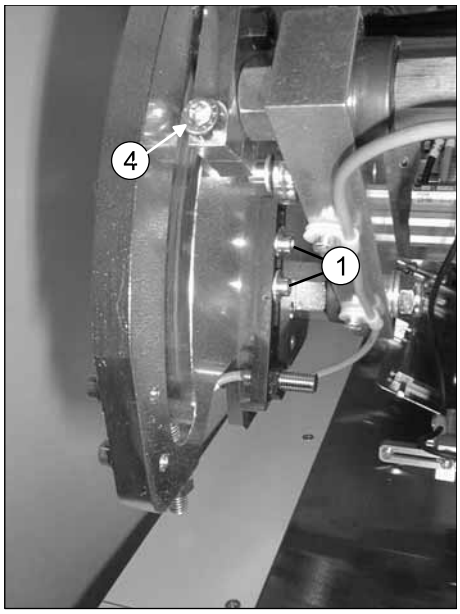
The distance (A) between sliding plate and folder sole must be adjusted to the used sewing material. The basic setting is 2 mm.

If the folder is set too deep, the material will be blocked. If it is too high, the folding slides cannot fold the sewing material.

Loosen the nut (1) and turn the allen screw (2) in or out. Tighten the fixing screw (1) again.

After changing the folder height, the position of the initiator at the insertion plate should be checked (see section 2.2).

2.2 Initiator at the insertion plate



When the folder is lowered completely, this initiator will be switched and triggers the closing of the folding slides (if activated in the program). If the initiator isn't set correctly, the folding slides come too early or not at all.

Loosen the fixing screws (1) to adjust the initiator and move it correspondingly. Tighten both fixing screws again.

2.3 Folder free play

<power off> <release pressure>

The folder should not have any free play in folding position (see picture at section 2.1).

To adjust the free play, loosen the fixing screws at the stop bar and push it towards the bearing. Tighten both screws again.

2.4 Folder parallel to main clamp

<power off> <release pressure>

Loosen the allen key (4) a little and adjust the folder parallel to the main clamp.

Tighten the allen key in this position.

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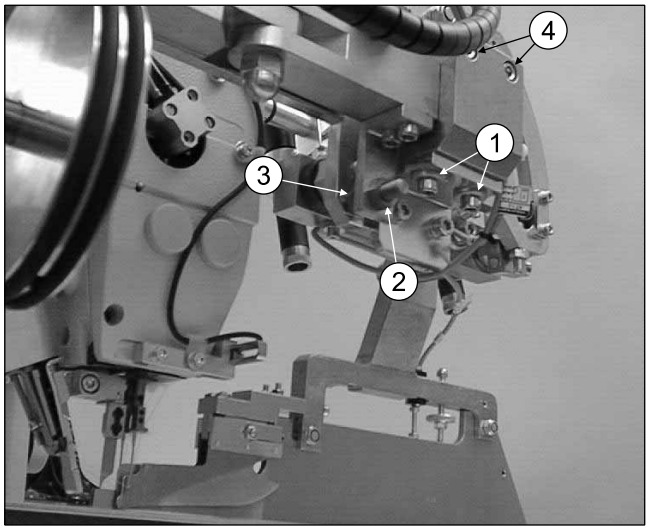
2.5 Adjust piping width

<power off> <release pressure>

To adjust the piping width, loosen both fixing screws (4) at the clamp block. Tilt the clamp block with the help of the setting screw (3) a very little to the left or right.

Tighten the fixing screws again.

Then you should check and possibly adjust the distance to both clamps.



Hint

Double and signle piping width are adjusted in the same procedure automatically.

Hint

After adjusting the folder, the positions of the marking lamps must be checked and possibly adjusted.

Hint

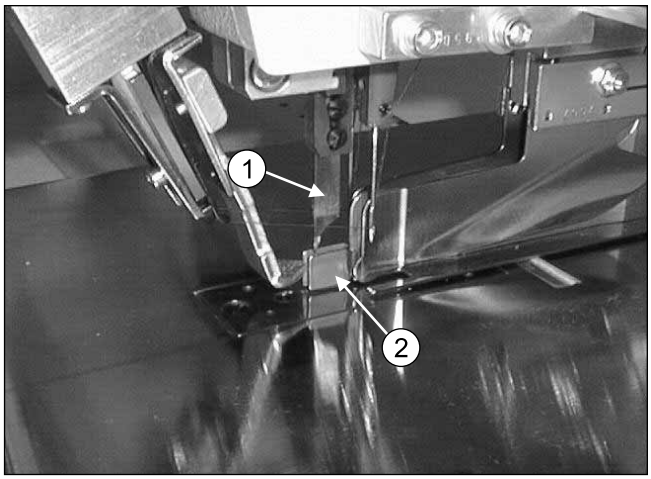
The folder sole width is decisive for the piping width. It can be changed if desired by the customer.

2.6 Center knife protection

<power off> <release pressure>

The center knife protection (2) is mounted at the folder. It should surround the center knife (1) without touching it.

Adjust the center knife protection (2) carefully if required.

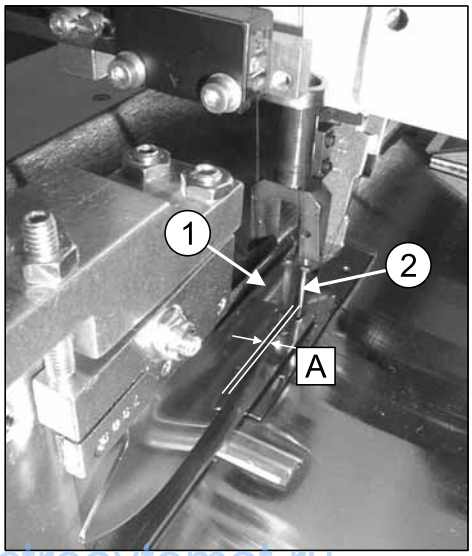


2.7 Lateral distance of the guiding plate to the needle

<power off> <release pressure>

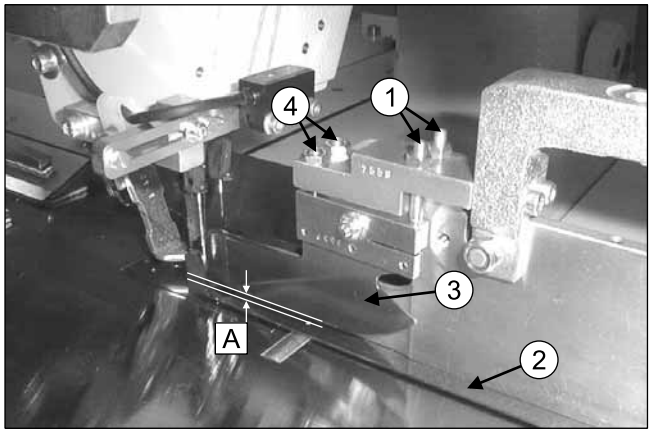
Distance (A) to the needle should be minimized. The guiding plate (1) may not get contact to the needle (2) or needle head, since otherwise there would be loud noise and the possibility of a threat break.

Adjust the distance using the corresponding bending tool.



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2.8 Height stop of the guiding plate



There may be a distance (A) of max. 0.5 mm between upper side of the sole (2) and lower side of the guiding plate (3). Only when sewing very thick material, distance (A) must be enlarged.

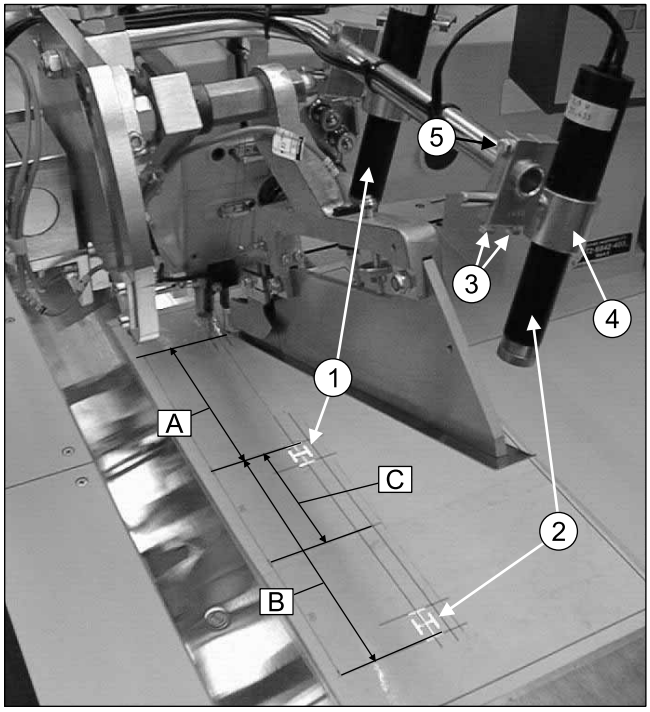
To change the height, loosen the fixing screws of the two screws (1) and turn them in or out. Tighten the fixing screws then.

2.9 Pressure of the guiding plate

The spring pressure must be adjusted in a way that both plates are pressed safely downwards at any time. If the pressure is too low, a needle break can appear during the front tack. If the pressure is too high, the flap will be pushed back at seam start.

Turn both settings screws (4) until enough pressure is present at the guiding plates.

2.10 Adjust marking lamps



2.10.1 Adjust parallelity

The middle axis of the light crosses of the marking lamps must be on the middle cut exactly.

Loosen the fixing screw (5) to adjust the marking lamp. Loosen the fixing screw in the ring (4) to turn the marking lamp.

2.10.2 Adjust distance

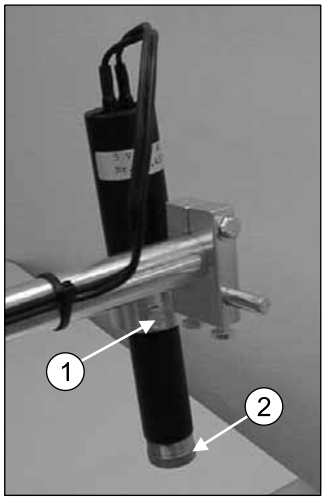
The first line of the marking lamp seam start (1) must be 135 mm (A) away from the needle. The distance between the first line of the marking lamp seam start (1) and the last line of the marking lamp seam end (2) must be 180 mm (B). The distance between the first line of the marking lamp seam start (1) and the middle line of the third marking lamp must be 90 mm (C).

Loosen the fixing screws (3) and push the marking lamps until the correct distances are adjusted.

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2.10.3 Size of the light cross

Loosen the fixing screw (1) and push the marking lamp vertically to adjust the size of the light cross.



2.10.4 Focussing sharply

Turn the setting ring (2) to focus the light cross sharply.

2.10.5 Demount and mount marking lamps

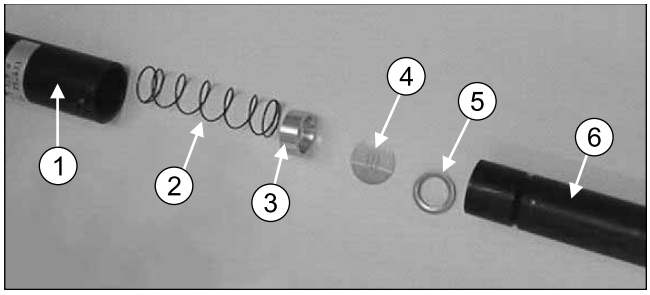
Unplug both plugs from the top side of the marking lamp. Loosen the holding screw (1) and take out the marking lamp.

Mount the marking lamp in reversed order.

2.10.6 Change light mask

With different light masks different shapes of light crosses can be projected.

Demount the marking lamp (see section 2.10.5) and loosen the allen fixing screw in the upper lamp cylinder (1). Be careful when opening the casing since the lamp components could be thrown out due to the spring pressure.



Insert the lamp components in the order distance ring (5), mask (4), lens (3) and spring (2) into the lower lamp cylinder (6) and assure that the lens (3) is inserted with the vaulted side downwards into the cylinder. Push in the upper lamp cylinder (1) and tighten the allen fixing screw.

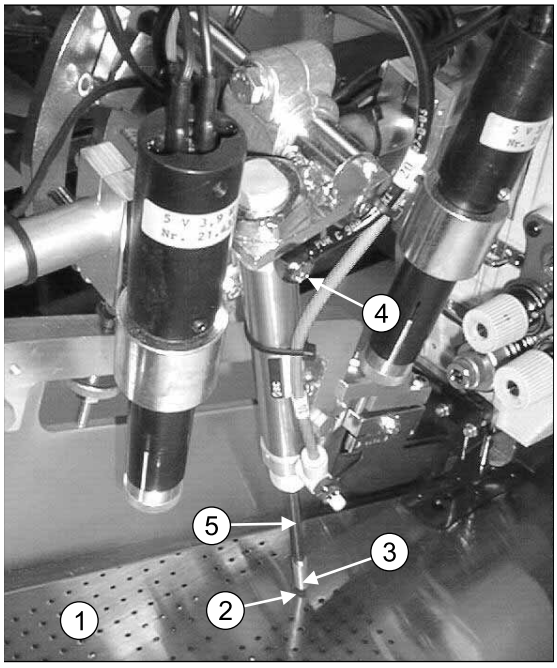
Mount and adjust the marking lamp.

2.11 Dart stretcher

2.11.1 Fixing in the guiding plate

There is a deepening (2) in the sliding plate (1) where the cylinder locks slightly.

The height of the rubber stopper (3) can be changed by loosening the rubber stopper (3) and turning the cylinder pole (5) in or out. Fix the thread case again.



2.11.2 Magnet switch at the dart stretcher cylinder

The magnet switch (4) must be adjusted in a way that a safe switching is assured.

If the switch is not adjusted correctly, the machine shows the error ‘Dart stretcher not up’ permanently.

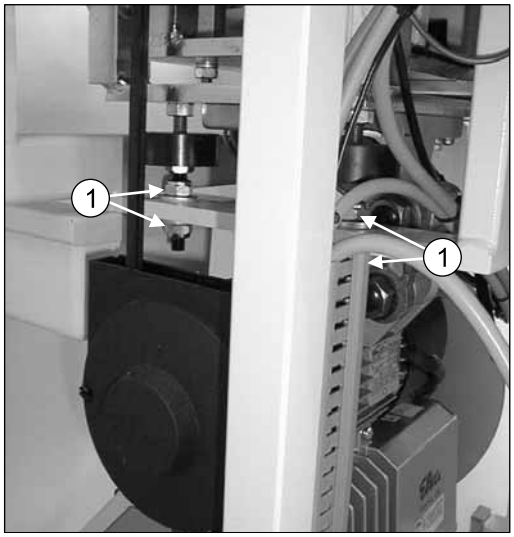
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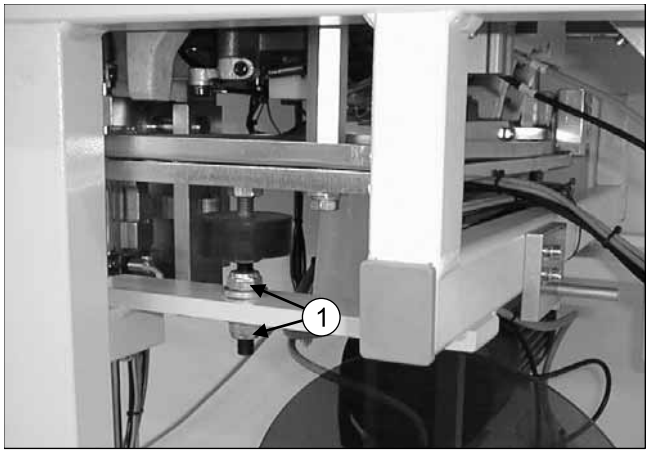
3 Adjustments at the sewing head

3.1 Height adjustment

The ground plate of the sewing head must be levelled with the upper edge of the working table.

To adjust height and horizontal level loosen the nuts (1) and adjust them by turning in or out. Tighten the counter nuts again.

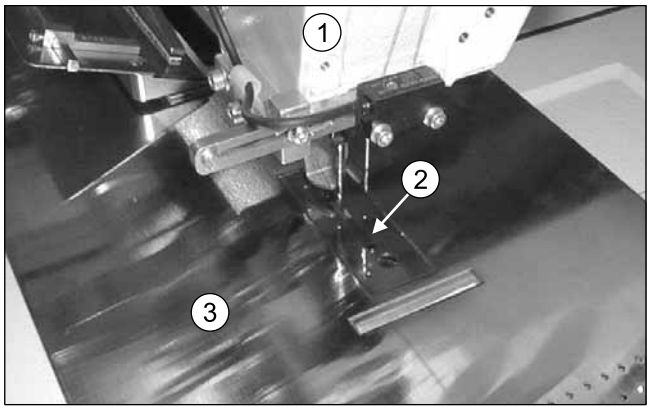




3.2 Lateral adjustment

The stitch plate (2) of the sewing head (1) must be exactly in the gap of the sliding plate (3).

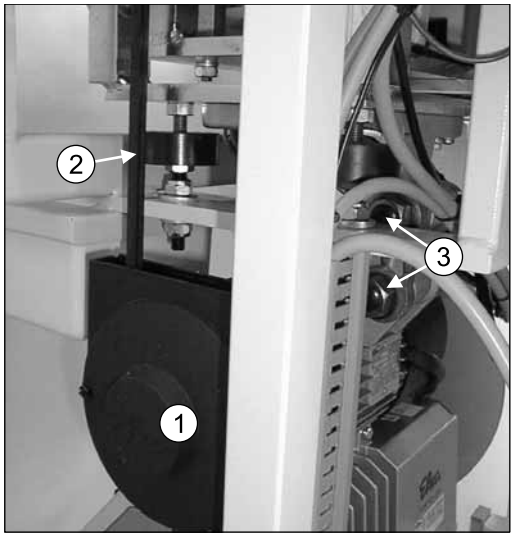
Loosen the fixing screws in the mounting frame (see section 3.1) and level the sewing head exactly. Tighten the fixing screws again.



3.3 Driving belt tension of the sewing motor

It must be possible to push down the driving belt (2) of the sewing motor (1) for 20 mm in its middle.

To adjust the tension loosen the fixing screws (3) of the motor and move him vertically until the correct tension is present. Tighten the fixing screws again.

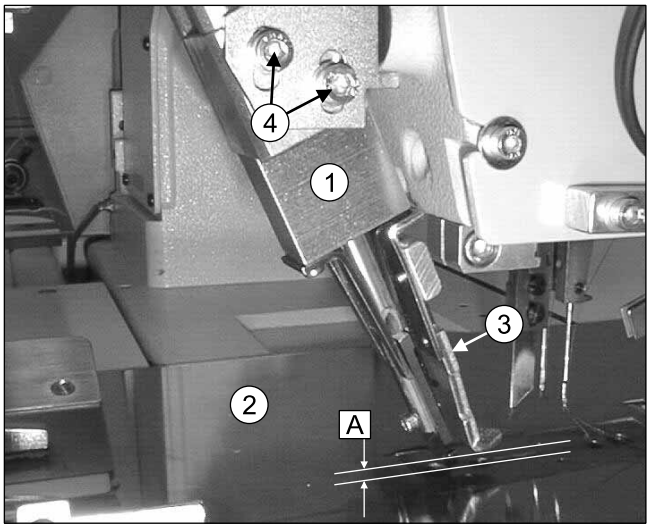


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3.4 Top threat cutter (Beisler sewing head)

The toip threats will be caught by the top threat catcher after the sewing during the clamp drives to the mitre cutting.

The threats will first be clamped on the top side of the catcher and then cut on the backside. The threat clamp must hold the threats during the first stitches of the seam start to assure a clean sewing image at seam start.



3.5 Height of top threat catcher

A distance (A) of 3-4 mm must be present between sliding plate (2) and catcher (3) when the threat catcher cylinder (1) is driven out.

For adjustment loosen the fixing screws (4) of the cylinder and move him until the correct height is present. Tighten the screws (4) again.

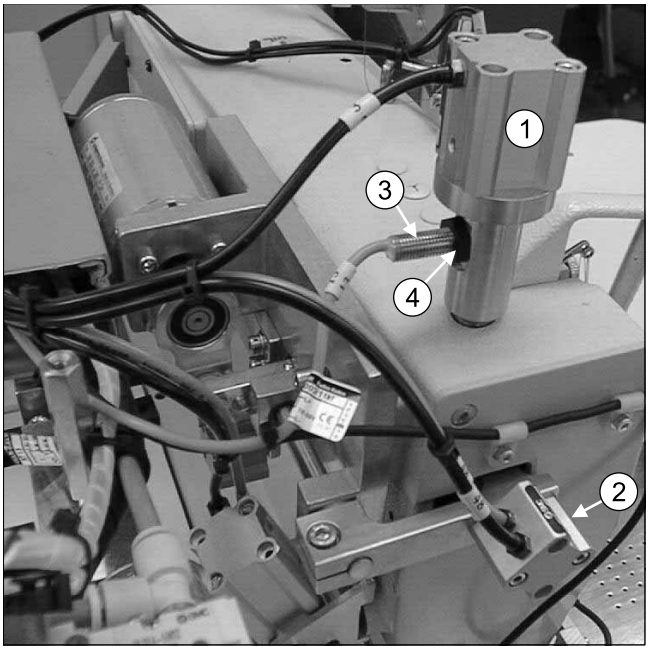
ATTENTION

The enabled center knife may not get contact with the top threat catcher!

3.6 Center knife adjustments

3.6.1 Switching on

The center knife is pushed down during the sewing process with the help of the cylinder Y3 (1). The the pin at cylinder Y49 (2) takes over the locking of the center knife.



3.6.2 Switching off

As soon as the seam end has been reached the center knife will be switched off. This can be delayed by an entering in the control.

The mechanical switching off is done by a withdrawal of the locking pin at cylinder Y48 (2). This allows the pressure pole of the center knife to be pulled upwards by the pulling spring.

3.6.3 Safety initiator at the center knife pole

During center knife switched off, the diode at the initiator (3) must be lighted.

3.6.4 Depth adjustment of the safety initiator

The safety initiator (3) must be mounted in a distance of 0.3 - 0.5 mm to the center knife pole.

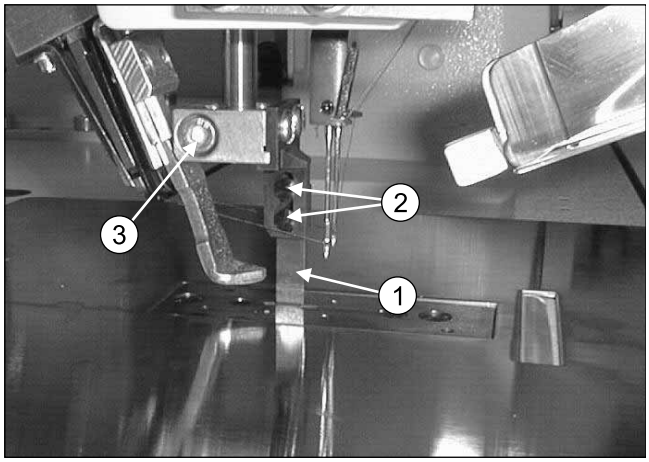
To adjust it loosen the fixing nut of the initiator (4) and turn it in until it has contact to the center knife pole. Now turn it out for half a rev and tighten the fixing nut (4) in this position.

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3.6.5 Height of center knife

The front edge of the center knife (1) must stand (in switched on state and deepest position) 1 mm deeper than the top side of the stitch plate.

To adjust it, loosen both fixing screws (2) and move the center knife. Tighten both screws again.



3.6.6 Shear angle of the center knife

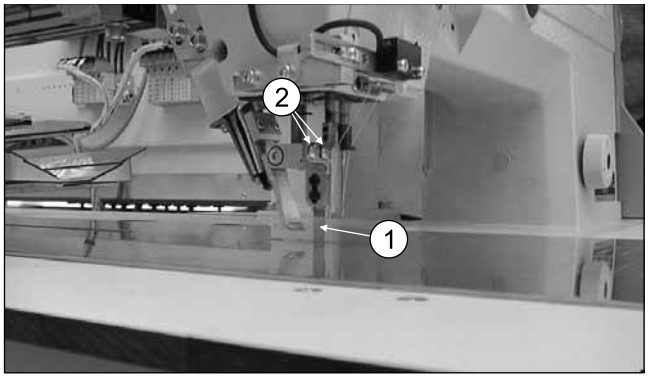
The center knife should stand slightly folded against the counter knife in the stitch plate.

Loosen the allen key (3) and turn the holding hook on the center knife pole until the desired position is met. Tighten the allen key again.

3.6.7 Lateral adjustment

The center knife (1) must be adjusted laterally that the pressure is minimized.

Loosen the fixing screws (2) and adjust the center knife exactly. Tighten both screws again.



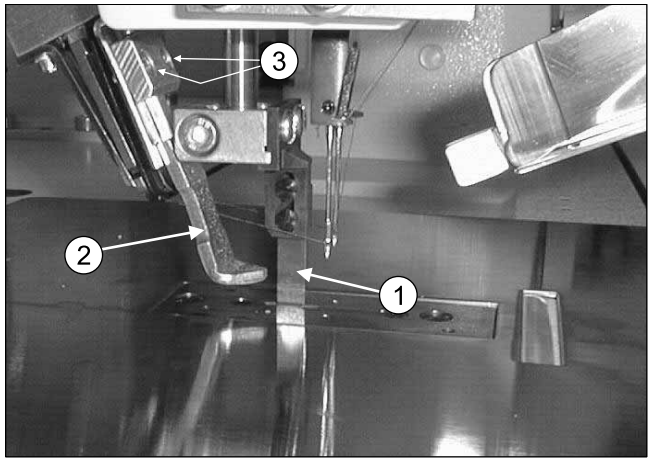
ATTENTION

Possible faults in machine sequence! If the center knife has too strong contact to the counter knife, it cannot be withdrawn after sewing into home position by the spring. Additionally the knife gets blunt very fast which causes bad cutting, different seam lengths, improper mitre cutting and additional width in the seam.

3.6.8 Needle protection

The needle protection (2) is mounted at the holder of the upper threat catcher. It should stand 1 mm deeper than the top of the center knife (1) and 1 - 1.5 mm away from the back of the knife.

To adjust it loosen the fixing screws (3) of the needle protection and move it. Tighten the fixing screws again.



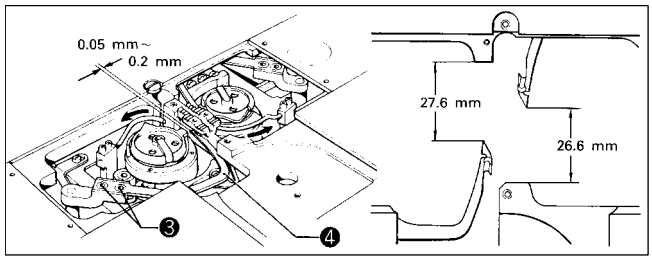
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3.7 Adjustments of the bobbin threat catcher (Beisler sewing head)

3.7.1 Catcher adjustment

<power off> <release pressure>

Turn the belt disk manually until the spool capsule lever stands as far as possible back into arrow direction. Fix the movable knife (4) temporarily with the screw (3) and press manually onto the top side of the knife (4) to move it. Tighten screw (3) when the distance between the top of the movable knife to the holder of the catcher is netween 0.05 and 0.2 mm.



Fix the movable knife (4) at the top of the spool clamp spring now.

3.7.2 Time of bobbin threat cutting

This time can be programmed.

If the time is too early, upper and bobbin threat will be caught and cut at the same time. Then the upper threats will be too short for the next sewing process.

3.7.3 Duration of bobbin threat cutting

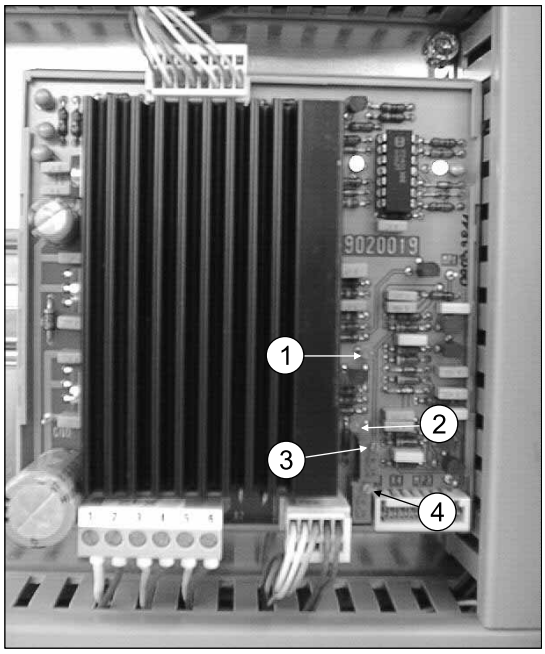
This time can be programmed.

If the time is too short, the bobbin threats will not get caught. If the time is too long it is possible that the main clamp drives to the mitre cutting before the threat catcher is in cutting position. This lengthens both threats remaining at the seam end.

3.8 Sensitivity of the bobbin detector (option)

Insert full bobbins into the grasper and close the sliding plate. Activate the bobbin detector.

Open the casing of the switchboard and turn the potentiometer (2) to the left until the LED (1) lights up. Now turn the potentiometer (2) as far to the right until the LED doesn't light up during the sewing. Mount the casing of the switchboard.



Occupation of the LEDs and potentiometers:

(1) (3) right-handed spool

(2) (4) left-handed spool

Hint

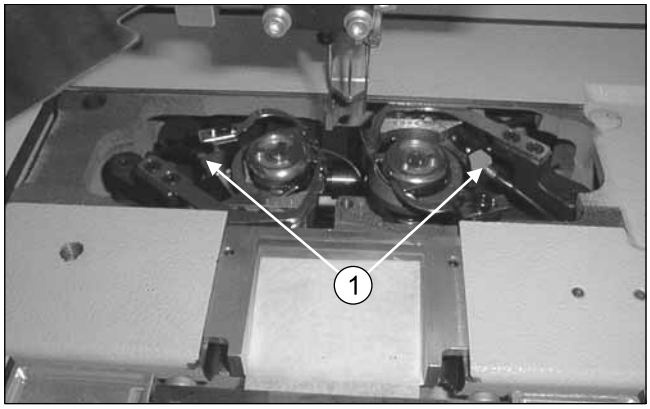
During sewing with residual threat on the spool, the LED (1) (2) must switch several times per rev.

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3.9 Clean tactual head of the bobbin detector (option)

There is a blowing system at the bobbin detector which blows the tactual head free of dirt.

Clean the tactual head (1) with a clean and lint-free cloth from time to time.



3.10 Adjust piping detection

3.10.1 Lateral adjustment

The photocell (1) is equipped with a red light point (4 – illustrated by drawing), which indicates the exact switch point on the folding slide. The complete light point must hit the reflecting foil when the folding slide is driven out.

Loosen the fixing screw (2) of the photocell (1) and adjust it exactly. Tighten the screw again.

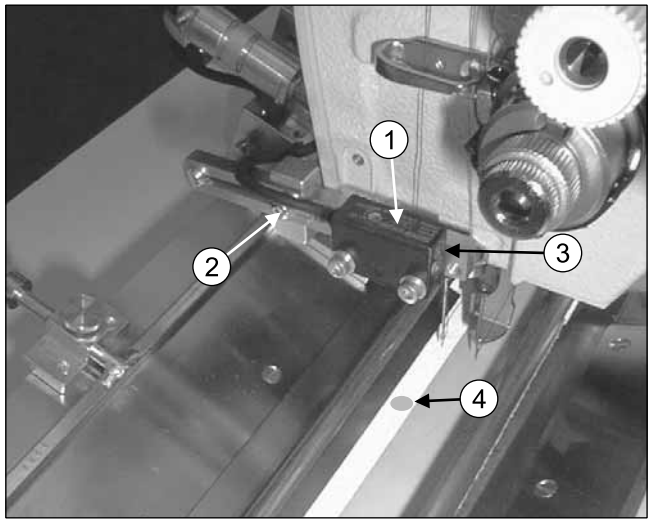
3.10.2 Adjust intensity

The intensity of the photocell (1) can be adjusted with a potentiometer (3) which is at the side of the casing.

Drive the clamp into insertion position and close the main clamp. Insert the flap and press the ‘Program-Stop’ button (remain it pressed). Push the clamp manually under the photocell.

There is a red and a green LED on the front side of the photocell (3). Adjust the intensity with the potentiometer (3) in a way that both LED light up during reflection from the foil.

Push the clamp until the flap covers the reflecting foil. Now the green LED must be lighted and the red not.



Hint

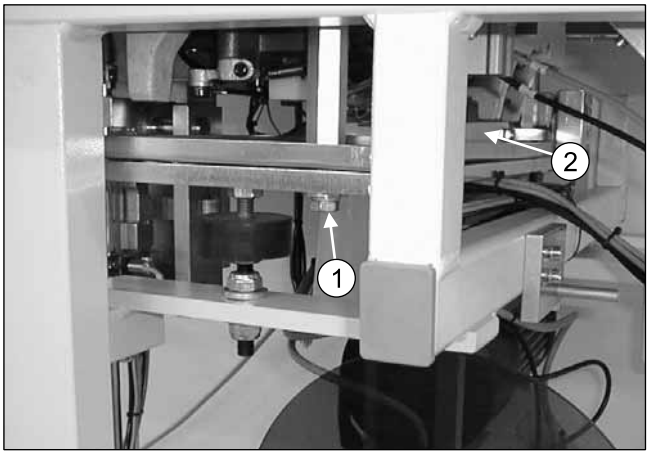
After changing the intensity of the photocell you will have to check and possibly adjust the detection correction of the flap at flap start and end.

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3.11 Swing up sewing head

The sewing head can be swung up. First you will have to demount several parts: spooler, position actuator, belt protector; push sliding plate to the left.

Loosen screw (1) and swing the sewing head upwards. Use the support (2).

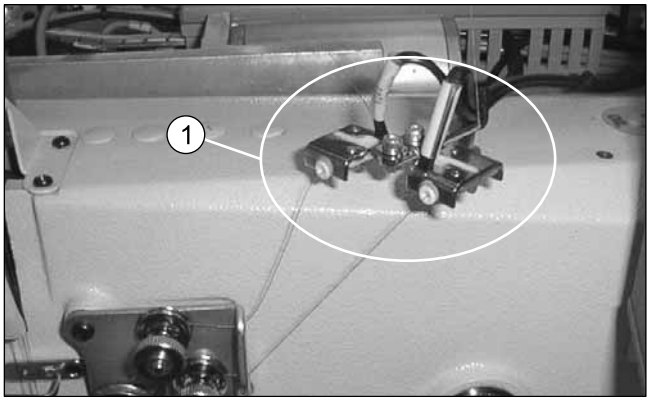


DANGER

During maintenance duties at the swung up sewing head, the support must be locked completely at the oil reservoir. Otherwise it can slip away and the sewing head can cause severe injuries.

3.12 Upper threat monitor

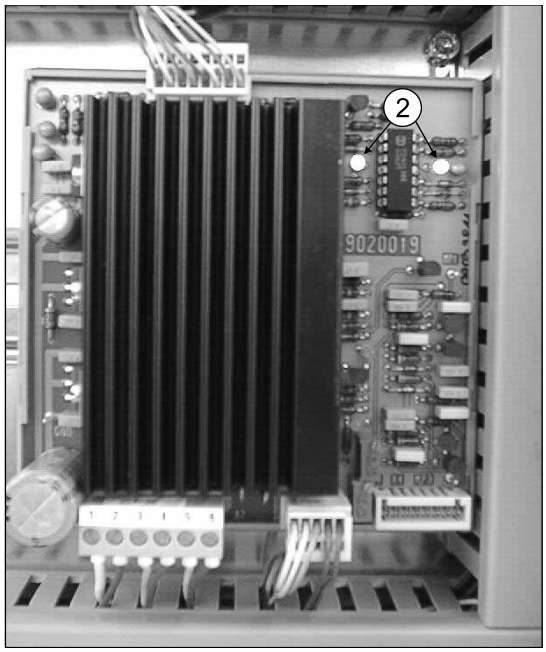
Both upper threats are permanently monitored during the sewing. The threats must be guided through the threat guidings with low tension. Both green LED (2) in the control are showing the switching of the tactual heads.



3.12.1 Switch on time

The switch on time decides, when the threat monitor is questioned (key [P] - [F3] - parameter 19). Further information is contained in the prior parts of this manual.

If the time is set too early, misswitches can arise at sewing heads with switchable needle in the range of the tack.



3.12.2 Filter threat monitor

The set value defines after how many missing impulses of the threat monitor the control signalizes threat breakage.

Select parameter 20 using the keys [P] and [F3]. For further details see the prior chapters of this manual.

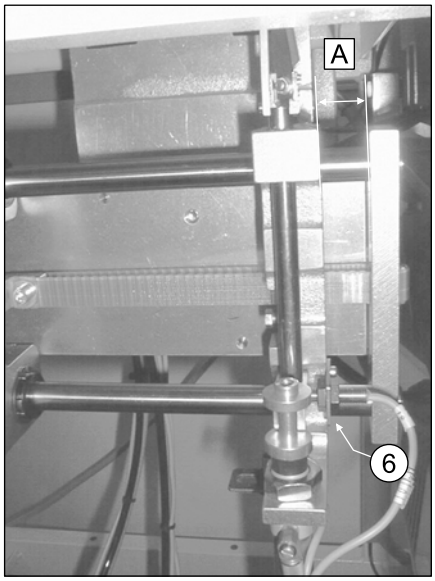
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4 Adjustments at the mitre knifes

4.1 Basic adjustment locked mitre knife (seam end)

Between the mitre knife for the seam end and the basic holder a distance (A) of 21 mm must be adjusted.

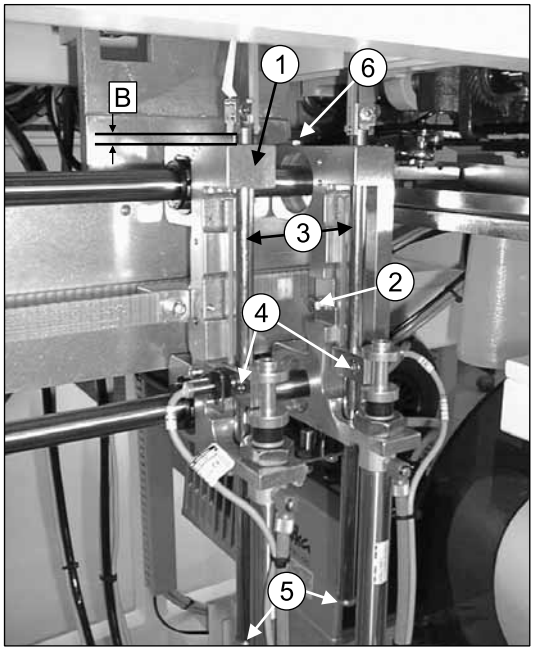
Loosen both screws (6 in this and in the picture at section 4.2) and move the mitre knife axially. Tighten both screws again.



4.2 Basic adjustment movable mitre knife (seam start)

When the movable knife for seam start (1) has contact to the locked mitre knife, the distance between both holders must be 3 mm.

Turn the screw of the magnet (2) in or out to adjust the distance.



4.3 Mitre knife height

The height of the mitre knife pinoles (3) must be adjusted that they are in their lower position the distance (B) of 6-7 mm higher than the holder of the mitre knifes.

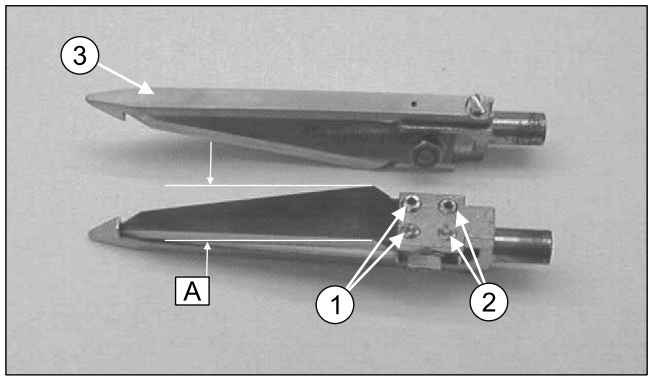
Loosen the fixing screws (4) and move the pinoles (3) axially. Tighten the screws again.

4.4 Mitre knife broadth

Turn the two screws (5 in the picture at section 4.2) until the mitre knifes can be taken out.

Adjust the broadth (A) of the mitre knifes with the two screws (1). At a seam distance of 12 mm, you will have to adjust 10-10.2 mm here.

Now turn the two screws (2) as far until both knifes get contact at their top.



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4.5 Pre-stabber

The pre-stabber (3) at the mitre knifes is used as a protection. It prevents the piping and the flap to be damages during cutting.

4.6 Lateral adjustment

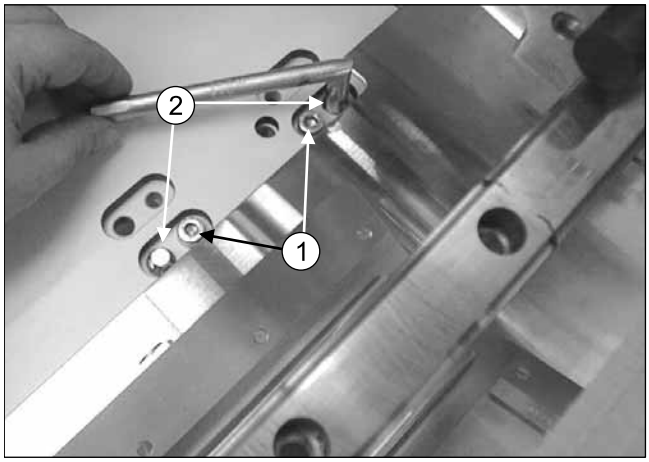
To achieve an exact mitre knife cutting, the knifes must be adjusted also laterally.

Bring the mitre knifes into the upper final position (output 54). Measure the distance between sliding plate and mitre knifes exactly.

Loosen both allen screws (1) a little and turn the exenter adjustment (2). If the exenter for the mitre knife for seam start is turned to the right, the mitre knife moves to the left at seam start.

If the exenter for the mitre knife for seam end is turned to the right, the mitre knife turns to the right.

Tighten the allen screws (1) after the adjustment.



Hint

After changing the exenter adjustment you should carry out sewing tests before continuing the production.

4.7 Fine adjustment in the length

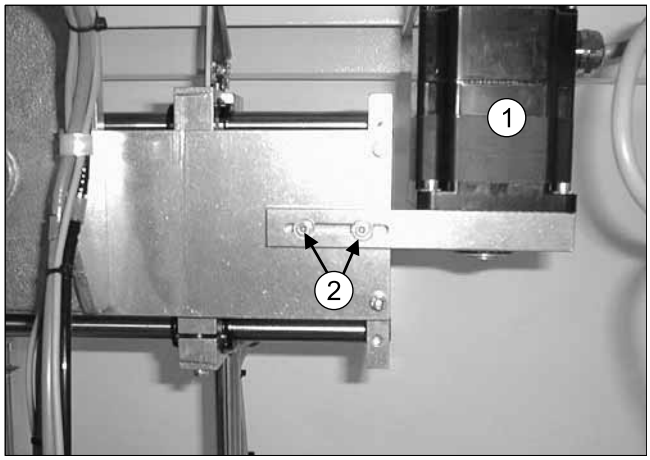
This is done in the machine control.

After the first pressing of the key [F2] you can adjust the mitre knife for seam start, after another pressure you can adjust the knife for seam end.

4.8 Tighten cog-belt of the mitre knife drive

It must be possible to press down the middle of the cog-belt of the mitre knife drive (1) 2-3 mm.

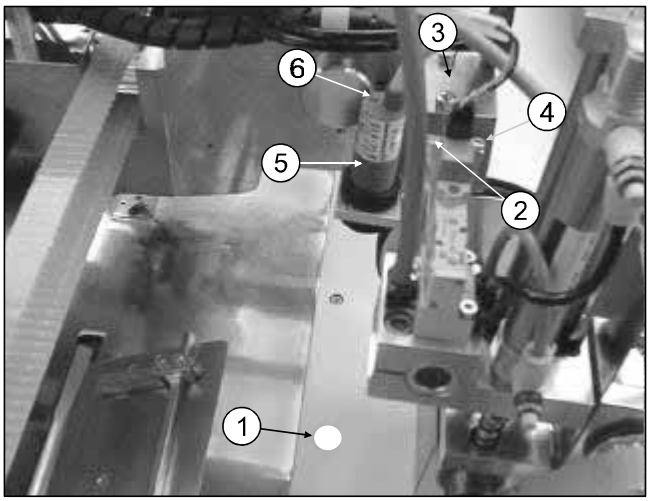
To adjust the tension, loosen both fixing screws (2) and move the motor until the correct tension is present. Tighten both fixing screws.



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5 Adjustment of machine options

5.1 Automatic push-back blocking



The light beam of the photo cell (5) of the automatic push-back blocking must hit the center of the reflecting foil (1). This must be 70 mm away from the outer edge of the table.

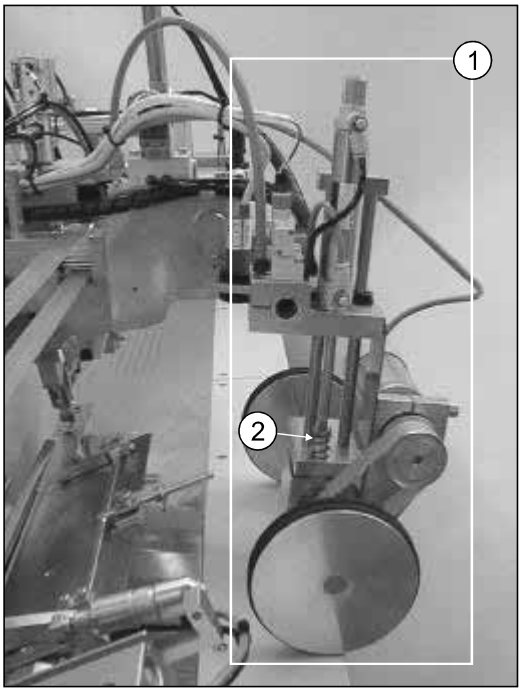
The distance between the setting ring (2) of the photo cell (5) and the bearing shield (3) must be 10 mm. To adjust it, loosen the fixing screw (4) and push the photo cell together with the setting ring. Tighten the fixing screw.

To check whether the light beam hits the middle of the reflecting foil (1) exactly, lay a piece of cloth or paper on the table and push it from all directions over the reflecting foil. As soon as the photo cell switches, the red diode (6) turns dark. Move the photo cell by moving and turning of the setting ring until the light beam is adjusted exactly.

Hint

In the case of a breakdown of the push-back blocking it can be disabled in the machine control (seam parameter 36).

5.2 Height of the take off roller



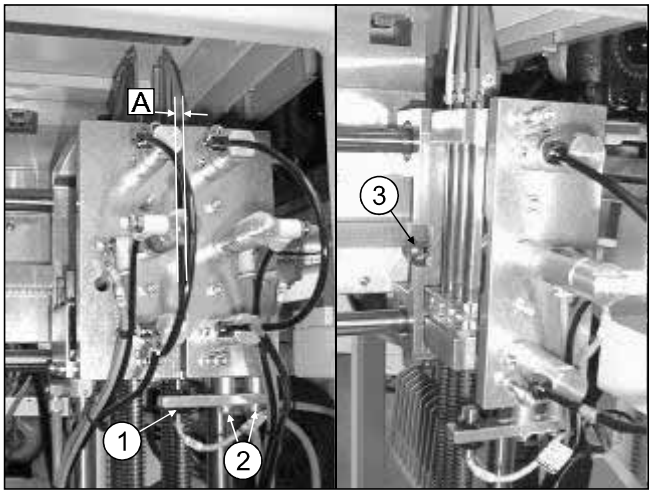
Lower the take off roller (1) (output 23 in the machine control).

Check whether the screw (2) has a free play of 1 mm. If not, loosen the counter nut at the screw and move it correspondingly.

Tighten the counter nut again.

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5.3 Mitre knife slant position



5.3.1 Distance between basic bodies

<power off> <release pressure>

The distance (A) between the basic bodies of the mitre knifes must be 3 mm in home position (both knifes completely right).

To set the distance you will have to move the initiator and adjust the mechanical stop.

Loosen the fixing screws (2) of the initiator (1) and move it until the required distance is present in the home position.

Push aside the movable mitre knife, loosen the counter nut of the mechanical stop (3) and turn this in or out. Tighten the counter nut.

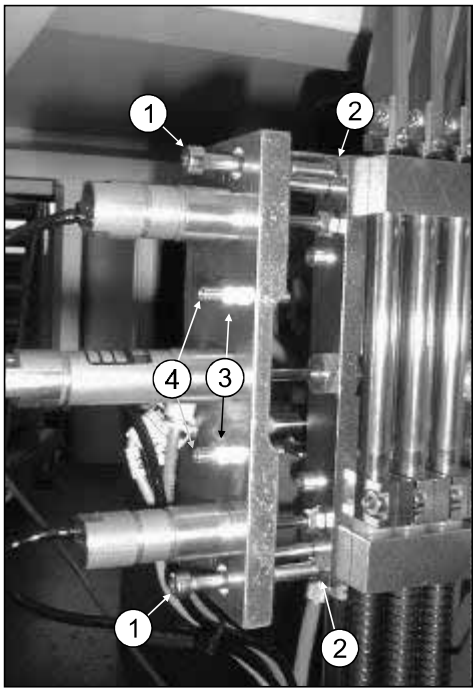
5.3.2 Height adjustment

This is done similar to the height adjustment of the standard mitre knifes (see section 4.3).

5.3.3 Center adjustment

For the center mitre knife a lateral adjustment must be executed. This is done similar to the adjustment of the standard mitre knifes (see section 4.6).

5.3.4 Adjust mitre knife stops



The mitre knife stops must be adjusted at both mitre knifes. The adjustment procedure is similar and is shown here for the example of the movable mitre knife:

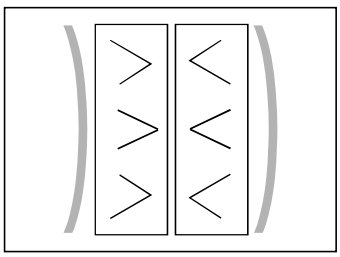
The right stops (1) are adjusted by loosening the counter nuts (2) und turning the screws (1) in or out. Tighten the counter nuts again.

The left stops (4) are adjusted by loosening the counter nuts (3) and turning the allen screws (4) in or out. Tighten the counter nuts again.

ATTENTION

Adjust the stops equally. The basic body of the mitre knifes must have an equal contact to the upper and lower stop.

5.3.5 Knife arrangement



Assure to insert the knifes in the correct order when changing the knifes.

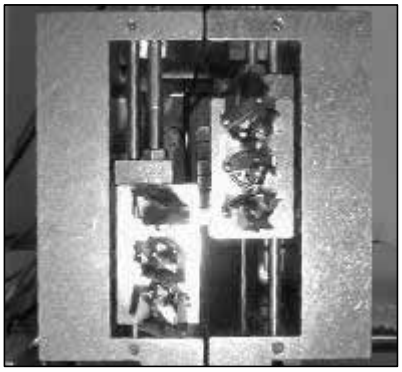
At the locked knife for the seam end, the cutting blades must show an concave bow (left side in the drawing).

At the movable knife for the seam start, the cutting blades must show an convex bow (right side in the drawing).

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5.3.6 Arrangement of the mitre knife during flap pocket production

The photo shows the correct Arrangement of the mitre knife during flap pocket production.

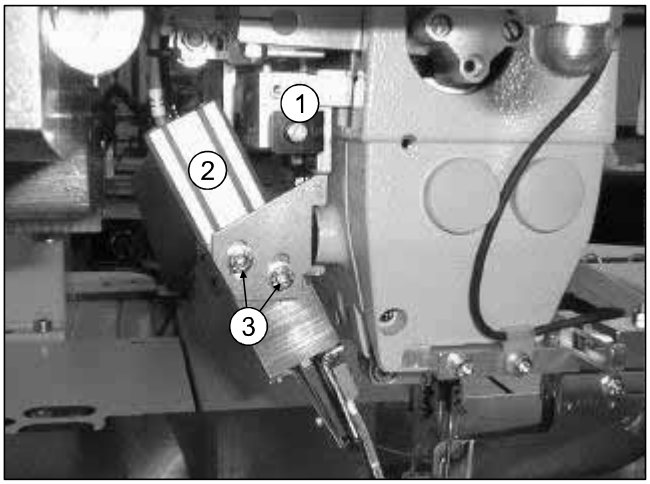


5.4 Split needle (Beisler sewing head)

5.4.1 Distance to cylinder of the top threat catcher

There must be a distance on at least 0.5 mm between the pushing block of the split needle (1) and the cylinder of the top threat catcher.

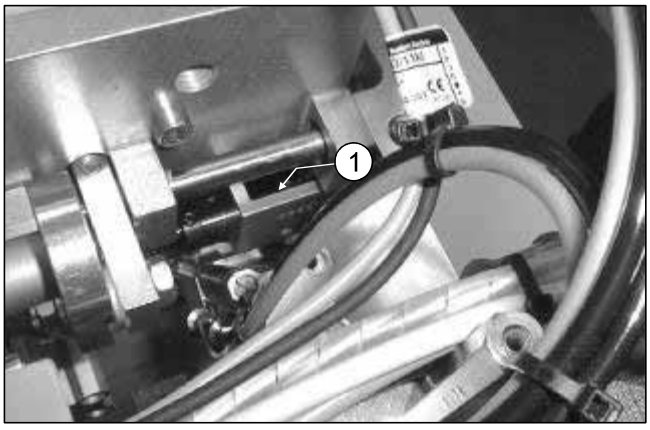
If required, loosen the fixing screws (3) of the top threat catcher (2) and move it, until the minimum distance is kept. Tighten the fixing screws again.



5.4.2 Center adjustment

The setting ring of the split needle (1) must be in the middle of the rectangular metal frame while in home position.

If required. loosen the fixing screw of the setting ring and move him. Tighten the fixing screw again.



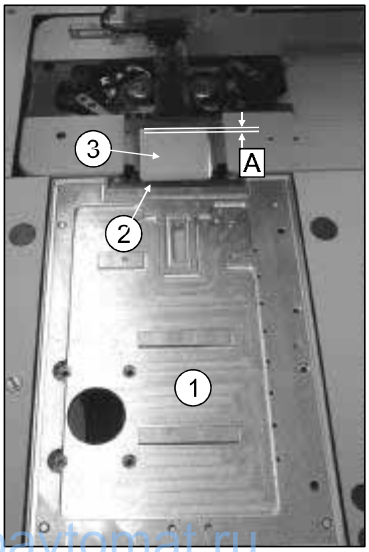
5.5 Vylene adjustments

5.5.1 Correct vylene adjustment

The vylene strip (3) must be seen with the inserted sliding plate but set back from the front edge of the vylene supply for the distance (A) of 3 mm.

1: Vylene plate

2: Counter knife



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5.5.2 Demount vylene plate

<power off> <release pressure>

Pull out the vylene strip (3) from the supply slot.

Loosen the fixing screw (2) of the roll (3) and take this out by pulling to the left.

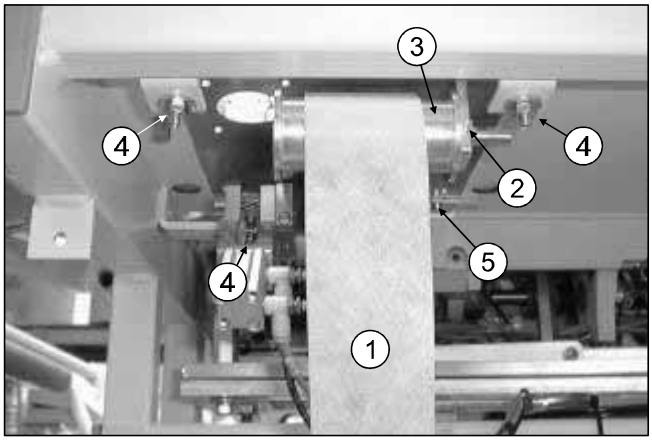
Loosen the three fixing screws (4) of the vylene plate. Assure that the vylene plate cannot tilt away.

Loosen the fixing screw of the table support (5) and swing it to the front or back.

Now you can take out the vylene plate.

ATTENTION

Assure that the hoses at the vylene won't be damaged. We recommend to leave the hoses at their positions.



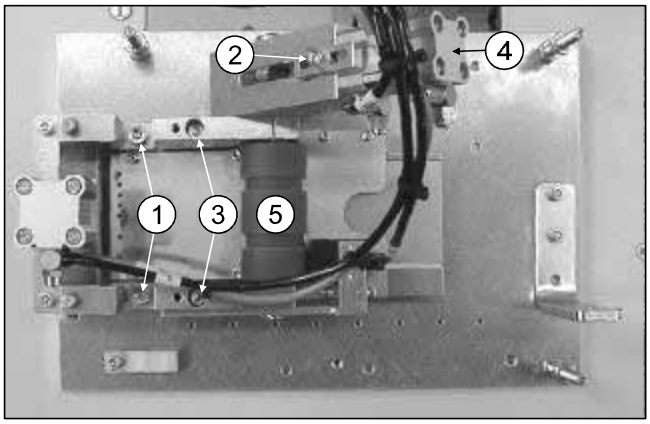
Hint

By adjusting the fixing screws (4) it is possible to adapt the height of the vylene plate to the table height.

5.5.3 Change cutting pressure

Loosen both allen keys (1) and move the counter knife (No. 2 in picture at section 5.5.1) until an adequate cutting pressure is present.

Tighten both allen screws.



5.5.4 Adjust vylene supply

The vylene must to be seen when the sliding plate is inserted. To adjust the supply, loosen the fixing screw (2) at the cylinder (4) and move this correspondingly. Tighten the fixing screw again.

5.5.5 Easy-running of the vylene roll

The vylene roll must run easily.

Loosen one of the allen screws (3) and push the roll, until it runs easily. Tighten the loosened allen screw.

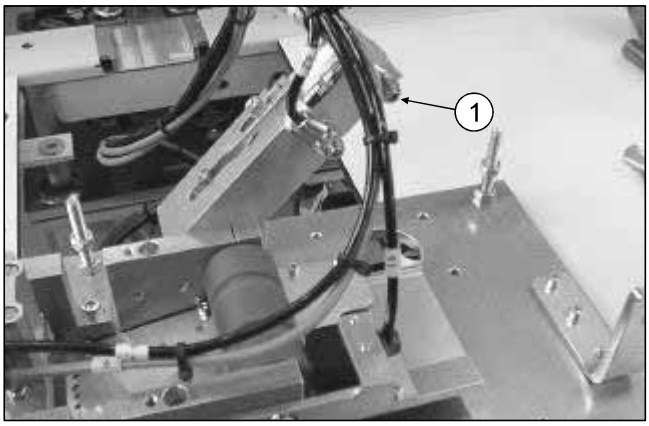
5.5.6 Vylene supply speed

The vylene supply must be adapted and synchronized to the clamp speed.

Adjust the throttle (1) to change the vylene supply speed:

turn right: slower

turn left: faster



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