

Universal-Flap-Pocket-Machine

Operating instructions

Part 1 Operating instructions



Hint

These operating instructions contain all information required for the operation of the machine. It addresses 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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General security advice and warning hints

1. 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.
2. 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.
3. Before carrying out maintenance or repair duties, the mains supply must be cut off. Additionally pressure must be released from the pneu-matical system.
4. The machine will be destroyed by a connection to a wrong mains voltage! See the section 'Technical data' before connecting the power supply.

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.

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.

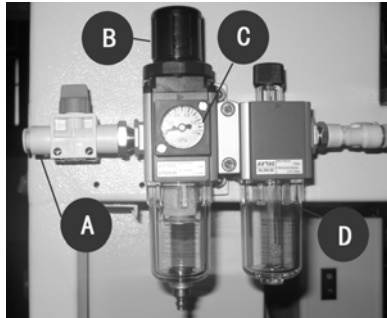
Installation

● Mechanical installation

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.

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).

● Elektrical installation

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.

Hint

Parts under electrical current! Without cutting off the power supply, you might be injured severely. The machine will be destroyed by connecting to a wrong mains voltage! Check, whether the requirements from chapter 'Technical data' meet the local conditions.

Danger to life from insufficient grounding!

● 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.

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.

1 Introduction

1.1 Description of the machine

The Universal-Pocket-Piping-Automaton 5878B allows the automatic piping or slanted 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.

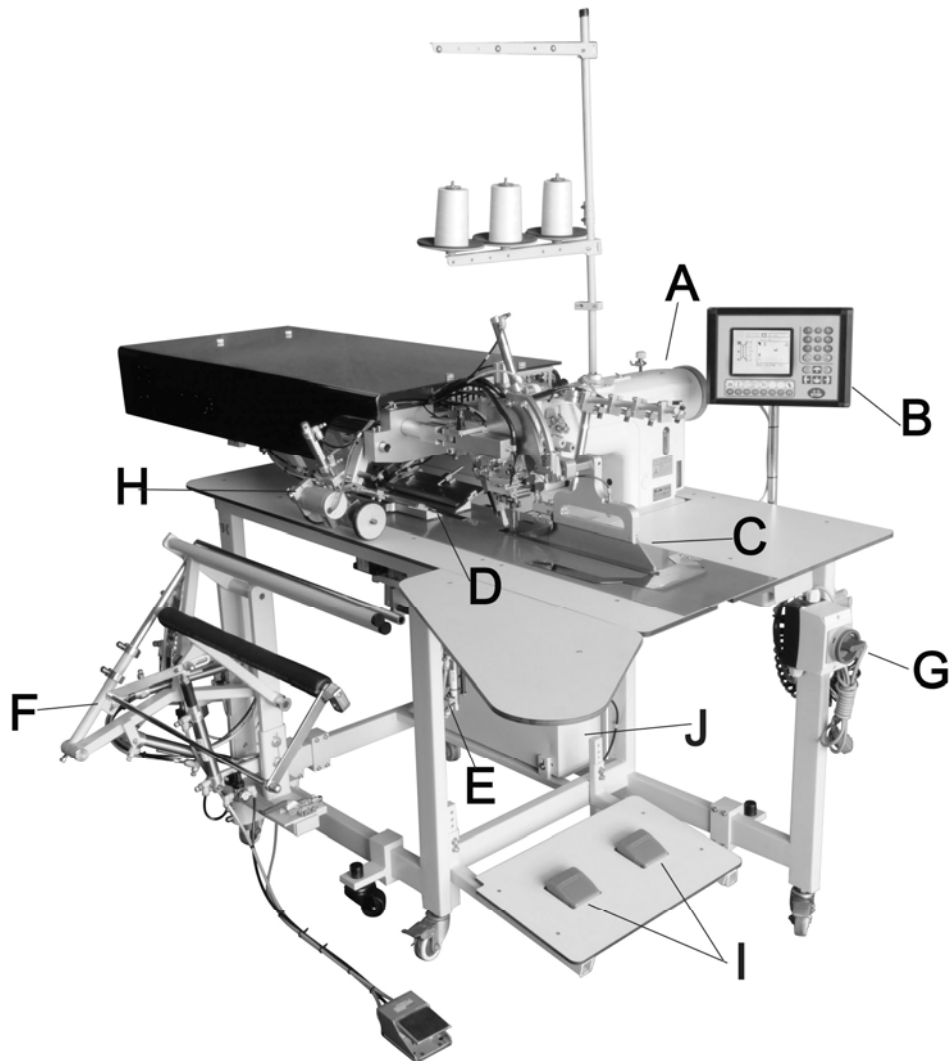
Machine operation is achieved with an operation device. Here you can open several control programs, define new programs and check all machine components individually for maintenance and repair duties.

- Automatic quick clamp adjustment for easy change from single-piped to double-piped pockets.
- Photocells for automatic scanning of flap and welt sizes.
- Maximum precision of sewing lengths and corner incisions due to step motor technology.
- Four standard laser lights for fast and precise loading of the fabric.
- All pocket parameters are freely programmable. Sequence with up to 6 sewing programs programmable.

1.2 Technical data

| | 5878-08B | 5878-28B | 5878-38B |
|-------------------------|--|---|--|
| Welt Styles | Single or double-straight pocket with flap or zipper | Single or double- straight pocket with flap | Single or double-straight pocket or slanted pocket with flap |
| Needle Bite Sizes | Standard 12mm Options 10~24mm | | |
| Stitch Density | 0.5~3mm | | |
| Seam Length | 30~240MM | | |
| Sewing Speed | 2000~3000RPM | | |
| Start and End Speed | 500~1000RPM | | |
| Supply Language | Chinese, English,Indonesia | | |
| Cycle Sewing | Up to 6 preset for each program | | |
| Marking Lamps | 4 standard for positioning of patch piece and flap | | |
| Needle Style | MT*190 16# | | DP*35R 16# |
| Electrical Requirements | 220 VAC, 50/60Hz, single phase, Consumption 0.7kw | | |
| Req. air pressure | 0.6Mpa | | |
| Dimensions | 2100 x 1000 x 1450 mm (L x W x H) | | |
| Weight | 350kg | | |

2 Main parts of the machine



The 5878B consists mainly of the following units.

- A: Sewing machine head
- B: Operation panel
- C: Binder unit
- D: Clamp foot unit
- E: Tab knife unit
- F: Stacker unit
- G: Power switch
- H: Roller stacker (Optional)
- I: Foot switch
- J: Electric control unit

3 Security

3.1 Available security systems

3.1.1 Program stop button (STOP)

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

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 colleagues, active measures of the operator are required.

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

1. Always work concentrated 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 maintenance duties.

4 Operation of the machine



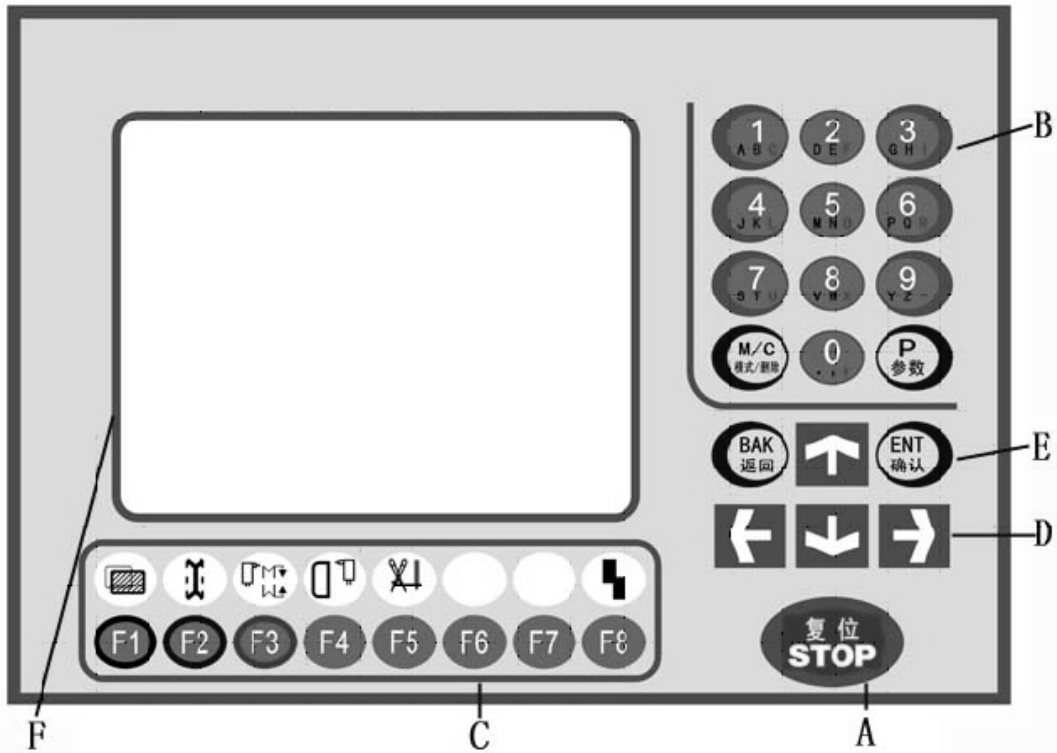
This machine may only be operated by qualified staff, who had read and understood this operating manual completely.

4.1 Controls and indicators

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

4.1.1 Operation device

During production the machine can be operated with the operating device; existing programs can be called and new programmed.



A: Program stop button

D: Arrow keys

B: Ten key pad with P-and M-key

E: Enter and back keys

C: Function keys

F: Display

4.1.1.1 Program stop button

















By pressing the program stop button, all movements of the machine will be stopped immediately. To continue production, you have to pressed the program stop button too.

4.1.1.2 Ten key pad with P- key and M/C-key



















- Numerical inputs can be done using the ten key pad.
- 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.
- The P-key is used in several steps of the machine programming.
- Sewing programs can be selected after pressing the M-key.

4.1.1.3 Function keys – lower occupation

| | | |
|---|---|--|
|  |  | switches to the upper occupation of the function keys |
|  |  | Tab knife correction; press this key once to change the tab knife position at the seam start; press twice to change the position at the seam end; after pressing ENT, 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 tab knife cuts to the outside. e.g. old value 50, new value 56 and the knife cuts 0.6 mm more to the outside; old value 50, new value 22, the knife cuts 2.8 mm more to the inside |
|  |  | 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; |
|  |  | 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; 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; the needle thread catcher will be enabled; until the key is released |
|  |  | Turn on the lamp |
|  |  | reserved |
|  |  | Reset key; use this key to reset the program sequence step by step; sets the clamp into starting position |

4.1.1.4 Function keys – upper occupation

Press F1 to switch to the upper key occupation. The icons will be displayed in the lower line.

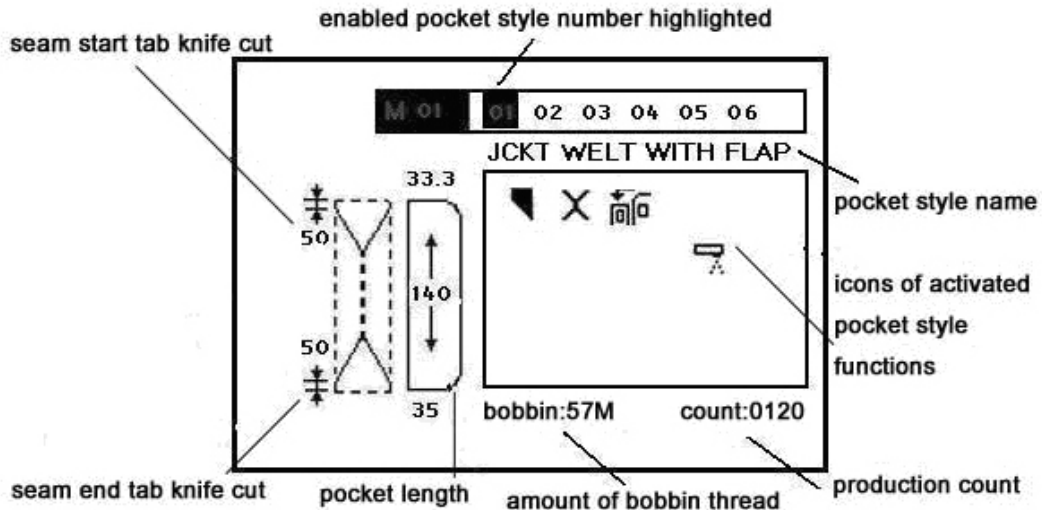
| | | |
|---|---|---|
|  |  | switches back to the lower key occupation |
|  |  | Switch middle knife on/off; the knife is switched off, until it will be switched on here; together with the middle knife, the mitre knife is switched off |
|  |  | Switch mitre knife on/off; it remains switched off, until it will be switched on here |
|  |  | Switch stacker on/off; it remains switched off until it will be switched on here |
|  |  | Loading Position |
|  |  | 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 in any case, both threads must be removed from the needles and the spools from the pickers. |
|  |  | 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 |

4.1.1.5 Arrow and Enter/Back keys



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

4.1.1.6 Display



All information required for the operation of the machine will be imaged in the display.

- the graphic on the left side images the mitre cut of the pocket;
- the graphic to the right shows the seam or flap length of the pocket; the value displayed above the flap (33.3) 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 (35) 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 (01, 02, 03, 04, 05 and 06); seams 01 and 02 are enabled (02 will be the next seam to be sewed), 03, 04, 05 and 06 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 (57 m) and the number of produced parts (120) are displayed

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.

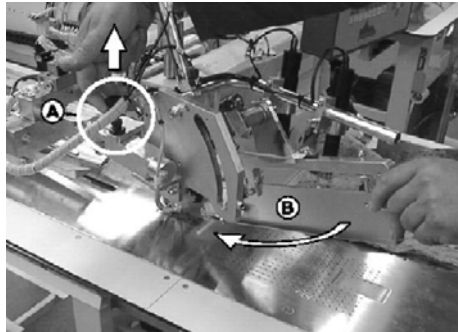
4.1.4 Foot pedal machine sequence

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

4.1.5 Foot pedal stacker

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

4.1.6 Swing out the folder



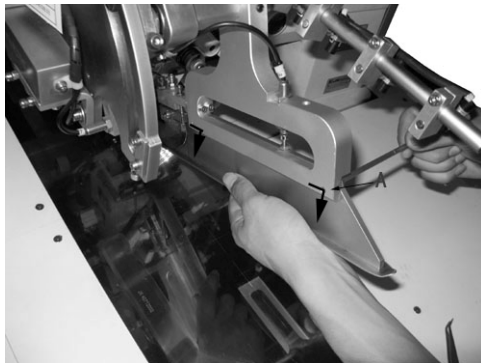
For several reasons (e.g. manual spooling), the folder must be swung out to get access to the sewing head. Pull out the locking pin (A) and swing the folder (B) to the left.

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.

4.1.7 Change folder



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

1. Open the locking (A) of the folder .
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 (A).

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. You can produce several pocket shapes and lengths sequentially, without changing the sewing program.

4.2.2.1 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/C-key.
2. Enter the number of the desired program using the ten key pad.
3. Press ENT-key.

4.2.2.2 Enable/disable seams

Seams are assigned to every sewing program. All enabled seams are sewed sequentially.

Enabled seams are displayed inverted.

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.

4.2.2.3 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 '4.1.1.3 Function keys'.

4.2.2.4 Remove and add seams

- **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/C-key.
6. Repeat steps 4. and 5. for all seams to be removed.

- **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.

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 threads and cloth rests daily from the machine using the air pistol.

Part 2 Mechanics manual

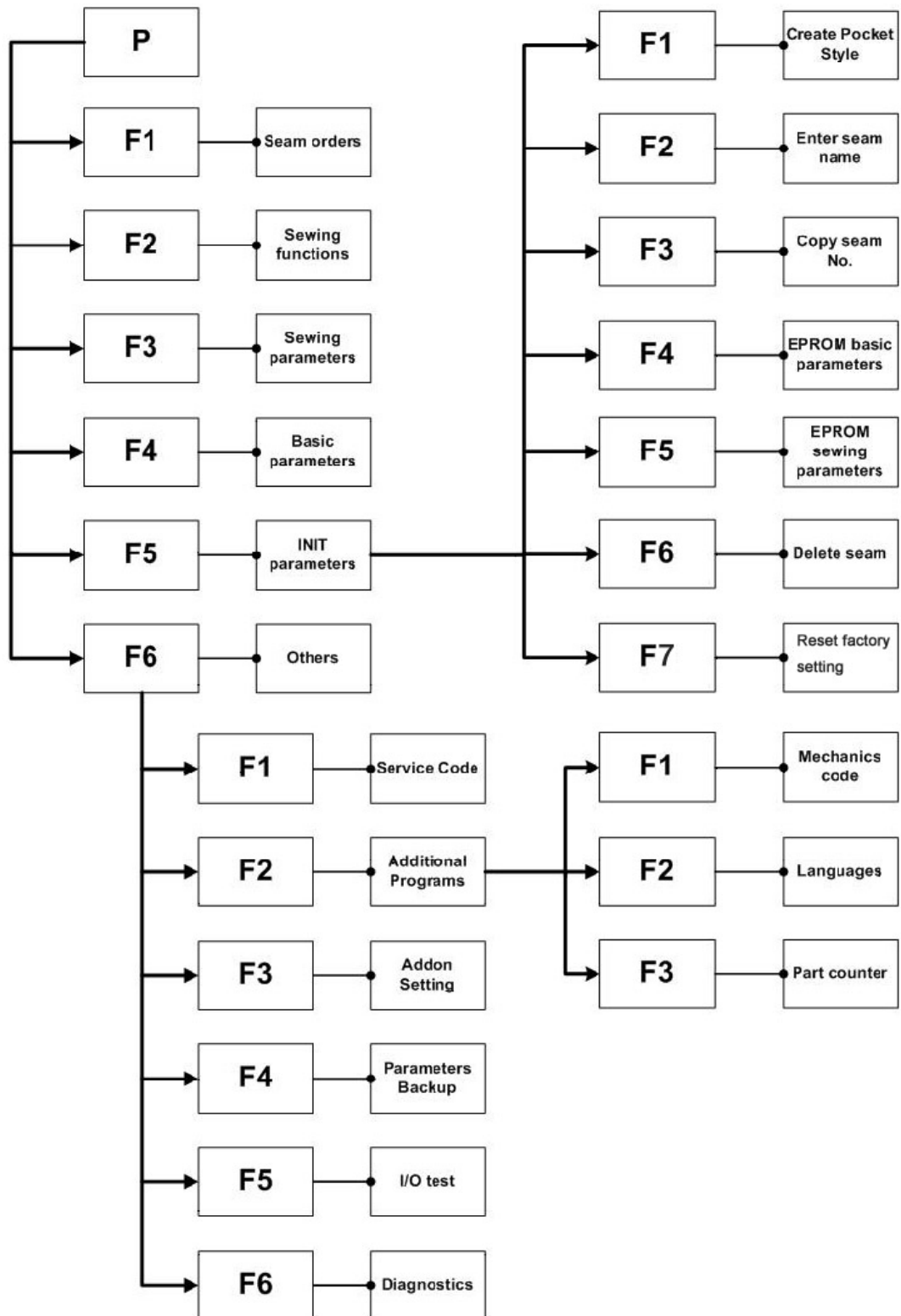


Hint

This part of the operating instructions contains all information required to put the machine into operation and to do programming, troubleshooting and maintenance. It addresses to trained technical personnel, which is able to overview their tasks and recognize possible danger at an early moment.

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1 Diagram of the menu structure



2 Programming instructions

2.1 Create new sewing programs (P-F1)

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.

2.1.1 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.

2.1.2 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.

2.1.3 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 identical. 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.

2.1.4 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

2.1.5 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.










2.1.6 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.

2.2 Seam functions (P-F2)

| | | |
|---|-----------------------------------|--|
|  | Center knife | cuts the pocket between the seams; if the center knife is disabled, the mitre knife will be disabled automatically |
|  | Tab knife | cuts the pocket edges; if the center knife is disabled, the tab knife will be disabled, too |
|  | Stacker | stacks the sewed parts automatically |
|  | Vacuum (option) | keeps the parts in the insertion station, until the main clamp is closed |
|  | Vylene (option) | automatic supply with vylene |
|  | Stamp | fixes the parts in the insertion station (3rd hand) |
|  | Piping blowing (option) | piping is blown to the folder, to prevent a snapping during insertion; should be enabled sewing thin parts |
|  | Folder Down between Seam | Folder have pressure between the seam |
|  | 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 shape trapeze trouters | left needle shorter than right one |
|  | Seam form parallel | both needles work parallel |
|  | 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 |
|  | 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 | during sewing an endless zipper, this function gives a stopcommand to the machine to allow the cutting of the zipper |
|  | Seam backtacking | Tack length at seam start and seam end |
|  | Stitch condensing | Stitch length at seam start and seam end. |

2.3 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 or Back-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 - 15
- Key 1: seam parameters 10 - 24
- Key 2: seam parameters 20 - 34
- Key 3: seam parameters 30 – 35

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 [80%] (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;

3 Revs seam start [750 rpm] (500 - 1000 rpm)

sewing head revs freely selectable, depending on needle- and center knife setting

4 Revs during seam [2000 rpm] (2000 - 3000 rpm)

freely programmable

5 Revs at seam end [750 rpm] (500 - 1000 rpm)

freely programmable

6 Stitch of seam start revs [5] (1 - 20)

stitch with the revs of parameter 3

7 Stitch of seam end revs [5] (1 - 20)

stitch with the revs of parameter 5

8 Condensation stitch length [1mm] (0.5 – 1.5 mm)

stitch length at seam start or seam end for stitch condensation

9 Stitch length [2.5 mm] (2.0 – 3.5 mm)

10 Tack stitch length [1.0 mm] (0.5 – 3.5 mm)

stitch length at seam start or seam end for tack stitch

11 Condensation stitch number seam start [5] (0 - 10)

number with condensation stitch of parameter 8

12 Condensation stitch number seam end [5] (0 - 10)

number with condensation stitch of parameter 10

13 Tack stitch number seam start [5] (0 - 10)

if this value is set to 0, stitch condensation will be sewed automatically

14 Tack stitch number seam end [5] (0 - 10)

if this value is set to 0, stitch condensation will be sewed automatically

15 Enable center knife [8mm] (1 - 30 mm)

depending on seam and knife width, the center knife should cut est. 1 mm further than the tab knife

16 Disable center knife [7mm] (1 - 30 mm)

depending on seam and knife width, the center knife should cut est. 1 mm further than the tab knife

17 Thread monitor on after [5mm] (0 - 99 mm)

distance after which the thread monitor will be enabled;

18 Thread monitor filter [7%] (0 – 99%)

the smaller the digit, the more sensitive the upper thread monitor reacts; 99: thread monitor disabled

19 Slope at seam start [3] (0 - 10)

seam offset (difference left/right needle) at seam start

20 Slope at seam end [3] (0 - 10)

seam offset at seam end

21 Terminal sewing sendlength [0mm] (0 – 9.9 mm.)

22 Intermediate stop selection + pos. [0 cm] (0 - 48 cm)

enter a position, where the main clamp shall be driven to after stacking

23 Clamp up position [off] (on/off)

on = work piece is driven to the insertion station

24 Revs center knife [60%] (10 - 75%)





definition of the cutting speed



























25 Revs final roller [99%] (10 - 99%)





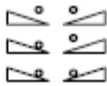
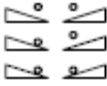

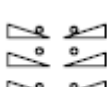

a reduction achieves an optimized positioning for the stacking

26 Flap clamp mode

In the control, you can switch on/off the left or right flap clamp and select one of four 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:   | | |
| 00,02,03 | Insertion position |   |
| 01 | Insertion position automatic with folding slide |     |
| Left flap clamp switched on, right switched off:   | | |
| 00 | Insertion position with foot pedal pressure |     |
| 01,03 | Insertion position automatic with folding slide with foot pedal pressure |       |
| 02 | Insertion position automatic with folding slide with foot pedal pressure |       |

| Left flap clamp switched off, right switched on:   | | |
|--|--|---|
| 00 | Insertion position with foot pedal pressure |  |
| 01, 03 | Insertion position automatic with folding slide with foot pedal pressure |  |
| 02 | Insertion position automatic with folding slide with foot pedal pressure |  |
| Both flap clamps switched on: | | |
| 00 | Insertion position with foot pedal pressure with 2 nd foot pedal pressure |  |
| 01 | Insertion position automatic with folding slide with foot pedal pressure |  |
| 02 | Insertion position automatic with folding slide with foot pedal pressure |  |
| 03 | Insertion position with foot pedal pressure |  |

27 Folding slide mode

both: left + right fold slider enabled left: left fold slider enabled
right: right fold slider enabled

28 Vacuum mode (option)

off: vacuum disabled on: vacuum enabled

29 Main clamp mode

both: main clamp left/right down and tight left: main clamp left down and tight
right: main clamp right down and tight
none: main clamp both weak, before insertion both tight

30 Stacker mode

roller: only final roller stacker: only folding stacker
both: folding stacker and final roller

31 Clamp carriage return safety photocell

on: the premove photocell is activated by the work piece
off: the premove photocell is deactivated

32 Folder as stamp [00] (00 - 01)

off: normal insertion process enabled
on: 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;

33 Flap clam mode

manual: flap clamp active with foot pedal auto: flap clamp automatically active

34 Zipper mode

00: folder down after flap clamp closed 01: folder down when left flap clamp closed

35 Flap detect mode

00: according as set the flap length to detect trim size

01: the sewing head start sewing after the detect;

02: automated detect flap length

36 Run fast

on: when the clamp pushes the part under the sewing head, it will be sewed there.

off: when the clamp pushes the part under the sewing head, press the foot pedal again, it will be sewed there.

2.4 Basic parameters

The basic parameters contain the general settings of the machine.

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. Press ENT-key.
4. Enter the desired value.
5. Repeat steps 3. to 5. for all desired basic parameters.
6. Press the P-key or Back-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 - 15
- Key 1: basic parameters 10 - 24
- Key 2: basic parameters 20 – 28

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** [185 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** [235 mm]

distance between insertion position and seam end; if seam length is changed, only the seam start is varied

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 [38 m]

a wrong thread length leads to incorrect values in the display of remaining thread

06 Clamp up after tab cut [0.1s]

Clamps up after tab knife cut.

07 Main sewing length correction [50] 50 =middle value;

08 Work piece send length correction [50] 50 =middle value;

09 Time after clamp down [0.3s]

time delay between clamp down and next operation

10 'Thread clamp open' at seam start [2]

after the first two stitches the upper threads should be released from the thread clamp; after the time defined here, the thread clamp opens

11 'Thread clamp open' – duration [0.4s]

duration of 'thread clamp open' at seam start

12 Cut til upper thread [0.13s]

time for catching and cutting of the upper thread

13 Upper thread cutting time [0.13s]

length of the threads after upper threads picked up

14 Scissor cutting time [0.05s]

influences the zipper scissor to cut the zipper completely before moving to the end position

15 Drive to cutting [80%]

percentage of the clamp speed used by the main clamp to drive to the mitre knives

16 Mitre knife distance [38mm] (For 5878-28B)

distance between the mitre knives

Needle gauge [12mm] (For 5878-38B)

distance between the needle

17 Mitre knives cutting time [0.03s]

cutting time of the mitre knives

18 Main clamp open [0.01s]

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

19 Pick up work piece [0.99s]

After the tab cuts, the amount of time the clamps lift and the stacker

20 Flap send to sewing position [35mm]

Distance from the flap sensor to the needle

21 Flap main sewing length correction [50] 50 =middle value;

22 Clamp speed [90%]

speed of the main clamp to the insertion position

23 Process step-by-step [00]

enter 01 to enable the switching of all machine functions

24 Remaining thread counter on/off [00] (option)

function can be enabled and disabled; 01 = remaining thread monitoring on;

25 Thread cutter revs [250 Rpm]

positioning revs for thread cutting systems

26 Thread cutter position [45] (01 - 59)

start correction thread cutter impulse; the smaller the number, the earlier the bobbin thread cutter is started

27 Threat cutter duration [0.02s.]

duration of bobbin thread cutter should be minimized, otherwise the main clamp is already driving

28 Flap detect error [5mm]

29 Laser lamp 1 [on]

30 Laser lamp 2 [on]

31 Laser lamp 3 [on]

32 Laser lamp 4 [on]

33 Laser lamp 5 [on]

2.5 Other Functions P-F6

- **P-F6-F1: Input service code (AAAAAA)**

Press “F1” and press “1” for six times continuously at the same time, and then press “ENT”.

Note: Other menu and related functions of P-F6 can only be performed after the input of service code. This function is for maintenance application.

- **P-F6-F2: Additional programs**

F1: Mechanics code

F2: Languages: Chinese/English/Indonesia

F3: Part counter: The number of total work piece is showed

- **P-F6-F3: Addon Setting**

Note: The menu below is applied to start related program of newly-used mechanical attachment device, i.e. change “off” into “on” on related ones. If no mechanical attachment device as below is installed, please select “off” on related menu, otherwise, the machine would implement wrong operation.

| No. | Option | State |
|-----|--------------------|-------|
| 01 | Zipper Scissor | OFF |
| 02 | Vylene | OFF |
| 03 | Vacuum | OFF |
| 04 | Discret Needle Bar | OFF |
| 05 | Angled Tab Knife | OFF |
| 06 | Welt Turner | OFF |

- **P-F6-F4: Parameters Backup** (Reserve.)

- **P-F6-F5: I/O 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 deactivate it by pressing the ENT-key. If you press the ENT-key longer than two seconds, the output switches between active and de-active, until you press the ENT-key again (shortly).

The following inputs and outputs are available in this machine.

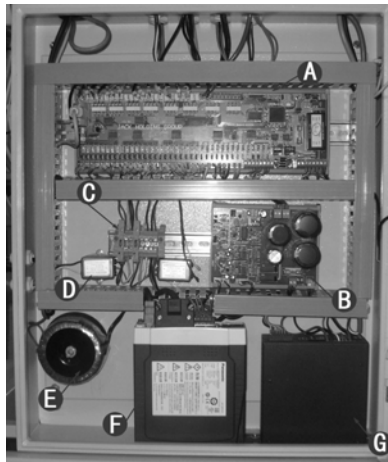
| Input | Description | Sensor No. | Connected |
|--------------|-------------------------------|-------------------|------------------|
| 01 | Dart stretcher up | 01 | SE01 |
| 02 | Stack sensor(MA20*160) | 02 | SE02 |
| 04 | Patch guide position | 04 | SE04 |
| 05 | Center knife up | 05 | SE05 |
| 06 | Stack sensor(MA20*160) | 06 | SE06 |
| 07 | Folder down | 07 | SE07 |
| 08 | Clamp at front | 08 | SE08 |
| 09 | Clamp return safety photocell | 09 | SE09 |
| 10 | Front tab knife | 10 | SE10 |
| 11 | Back tab knife | 11 | SE11 |
| 12 | Mitre knife together | 12 | SE12 |
| 13 | Photocell right | 13 | SE13 |
| 14 | Photocell left | 14 | SE14 |
| 16 | Stack sensor(MA25*50) | 16 | SE16 |
| 19 | Thread monitor left | 19 | SE19 |
| 20 | Thread monitor right | 20 | SE20 |

| output | Description | Valve No. | Connected |
|---------------|--------------------------|------------------|------------------|
| 01 | Stack | 01 | EC01 |
| 02 | Roller motor | 02 | EC02 |
| 03 | Stack | 03 | EC03 |
| 04 | Stack | 04 | EC04 |
| 05 | Folder upwards | 05 | EC05 |
| 06 | Folder downwards | 06 | EC06 |
| 07 | Center knife motion | 07 | EC07 |
| 08 | Tension release | 08 | EC08 |
| 09 | Main clamp left | 09 | EC09 |
| 10 | Pocket pouch clamp left | 10 | EC10 |
| 11 | Folding slide left | 11 | EC11 |
| 12 | Folding slide right | 12 | EC12 |
| 13 | Pocket pouch clamp right | 13 | EC13 |
| 14 | Roller down | 14 | EC14 |
| 15 | Center knife actuator | 15 | EC15 |
| 16 | Bobbin threat cutter | 16 | EC16 |
| 17 | Clamp motor reset | 17 | EC17 |
| 18 | Clamp motor direction | 18 | EC18 |
| 19 | Clamp motor pulse | 19 | EC19 |
| 20 | Mitre knife front | 20 | EC20 |
| 21 | Mitre knife back | 21 | EC21 |
| 22 | Top threat catcher | 22 | EC22 |
| 23 | Dart stretcher | 23 | EC23 |
| 24 | Main clamp righ | 24 | EC24 |

3 TROUBLESHOOTING

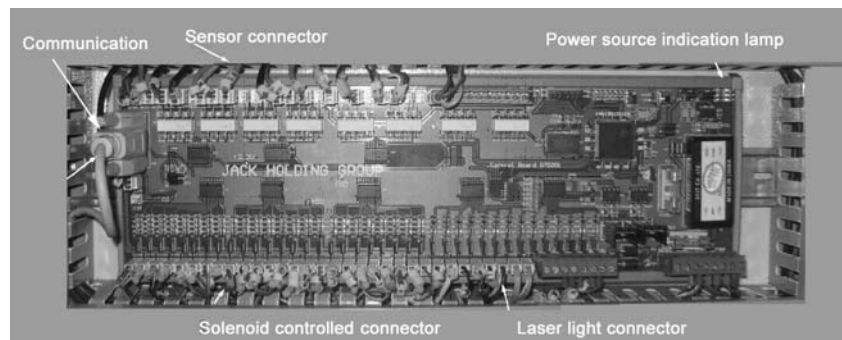
| Error message | Circumstances | Recommended actions |
|----------------------------------|--|---|
| Error 01: Sewing program empty | current sewing program is empty, possibly distances and values are not entered or the whole program is deleted | enter program values manually if required; copy from other programs or load from the memory (INIT parameter) |
| Error 02: Seam not enabled | current seam not enabled; | Press ENT-key to enable the seam |
| Error 08: Main clamp at the stop | limitation switch SE08 switched during clamp move, although the clamp is at a distance | check distance counter using the test program ; if counter defective, change clamp engine, if counter ok, check both switches and connections |
| Error 10: A piece is inserted | push back barrier is not lighted | check photo cell and film |
| Error 17: Folder not up | folder hasn't reached top position within error time | check cylinder, gauges, termination switches EC05, EC06 |
| Error 18: Folder not down | folder hasn't reached position within error time | check cylinder, gauges, termination switches EC05, EC06 |
| Error 20: Knives not together | the mitre knife hasn't reached start position before sewing insertion | check termination switch SE11, check connection to mitre knife engine |
| Error 21: Center knife not up | Center knife couldn't reach top position within error time | check cylinder , termination switch EC07 |
| Error 24: Scissor not up | scissor couldn't reach top position within error time | Check air pressure or mechanical malfunction |
| 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 | 1、 press ENT to return 2、 check signal wire for upper position |
| Error 35: Thread broken | thread monitor detects breakage | adjust the tension of thread; get rid of the burrs |
| Error 36: Spool empty | mode 'Bottom thread counter' enabled; remaining length is zero | change bobbin thread; reset the length of bobbin thread |
| 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 length detection with photo cell is enabled but no flap is detected | insert flapcheck photo cell SE13 or SE14 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 length switch off supervision. check photo cell SE13 or SE14 and film |
| Error 54: Station not locked | folder station not locked | lock stationcheck termination switch SE04 |
| Error 127: | service code not input | press P-F6-F1 and input service code (AAAAAA) |

4 CIRCUIT



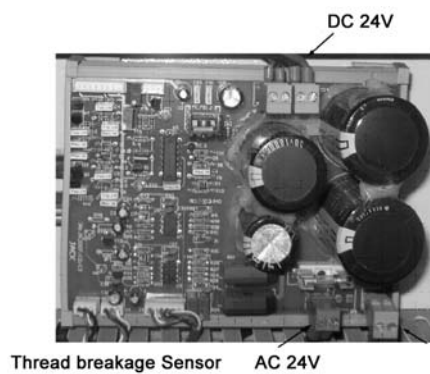
- A: Control Board
- B: Power Board
- C: Fuse
- D: Filter
- E: Transformer
- F: Clamp Motor Driver
- G: Tab Knife Motor Driver

4.1 Control Board



- Sensor connector, on the up part of the control board, with 25 ports which are numbered from SE01 TO SE25 on the board. A number pipe is installed on the connection of each sensor accordingly.
- Solenoid controlled connector, on the down part of the control board, with 25 ports which are numbered from EC01 from EC25 on the board. A number pipe is installed on the connection of each solenoid controlled connector.
- Laser light connector, on the down part of the control board, with 5 ports which are numbered from LED1 to LED5 on the board. A number pipe is installed on the connection of each laser light.
- Communication connector, on the left part of the control board, is the communication connector between the liquid crystal box and the board and applied to offer voltage and signal to the liquid crystal box.
- Power source indication lamp, on the up right part of the control board, two couples of them would be on when the current is switched on, which stand for +5V and +3.3V separately.

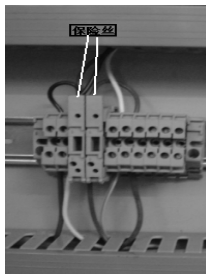
4.2 Power Board



The function of power board is to convert the alternating current output by the transformer into direct current. The left connector on the board is the input connector of the alternating voltage and connects with the yellow output wire of the transformer. The connector on the up left part is the laser lamp connector and offers +5V direct current to the lamp. The up right connector is the output connector of the direct voltage and offers +24V and +5V direct current to the board.

There is a fuse on the board, so please check that it is off when no voltage is output.

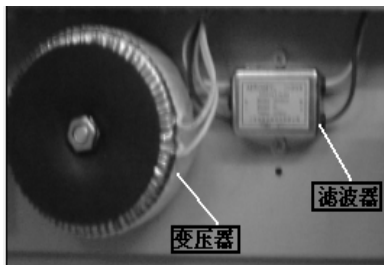
4.3 Fuse



Fuse type and Location: When fuse fuesd, find out the cause and fix it before replace the new one.

CAUTION: Turn off the power and wait 10 minutes before opening box cover.

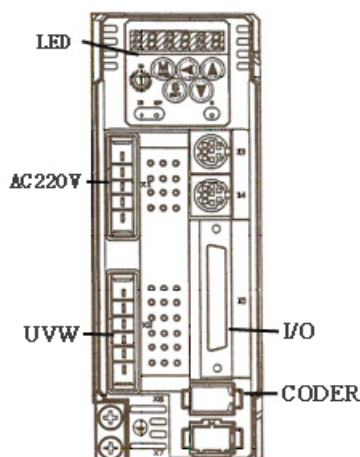
4.4 Transformer And Filter



Transformer: AC 220V ~ AC 24V

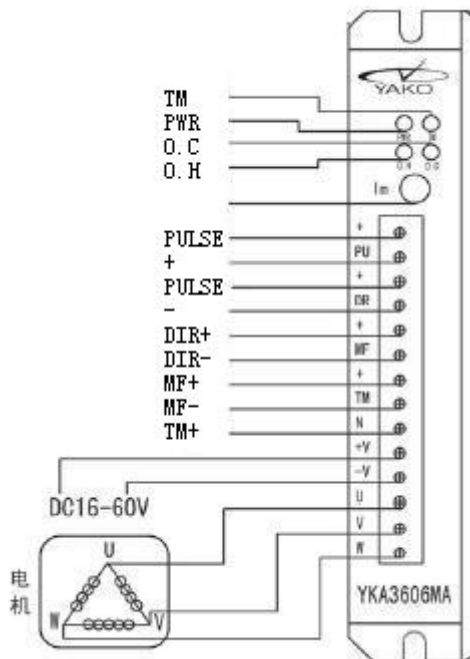
Filter: The function of the filter is to minimize the solenoid interference and improve the efficiency of the input voltage.

4.5 Clamp Motor Driver



Status indicators(LED) indicate operating states and any malfunctions.

4.6 Tab knife Motor Driver



Signal inputs:

PULSE: Square-wave pulses must be fed to the pulse input to set the motor shaft into rotation. Each positive pulse edge makes the motor move by one step. The sense of rotation is preset by the direction input.

DIR: If the signal input is deenergized, the motor turns in a clockwise direction as seen from the front towards the motor shaft. If the signal input is energized, the motor turns in a counterclockwise direction.

MF: The motor phase current is switched off when the signal input is energized. The stationary motor then has no holding torque.

Part 3 Technical manual

Hint: This Technical manual contains information for the further maintenance, adjustment and troubleshooting. It addresses exclusively to trained and experienced technical staff, which is able to assess the tasks and recognize possible danger at an early moment.

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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.

<power off> machine must be cut off the power supply

<release pressure> pneumatic pressure must be released from the machine

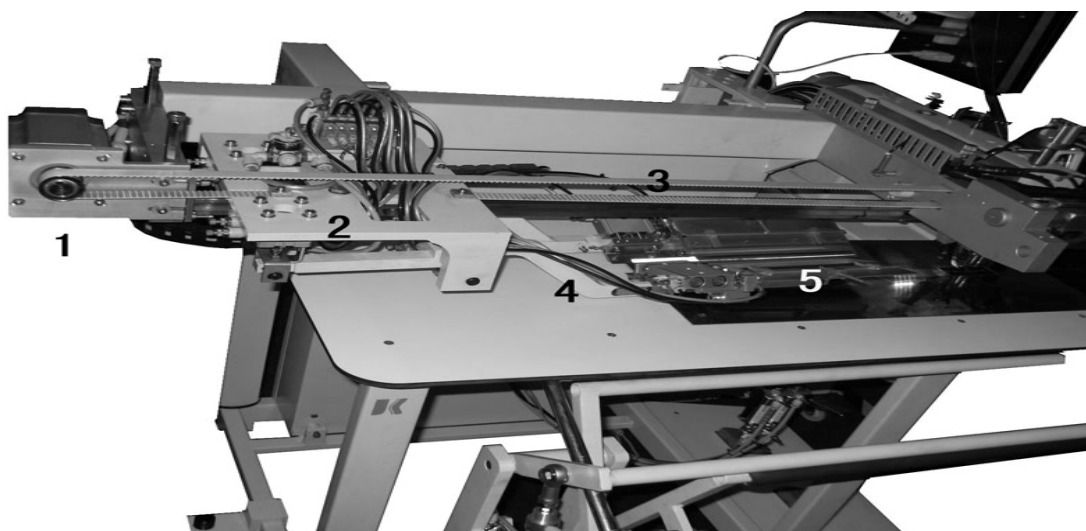
Cut off power supply

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.

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.

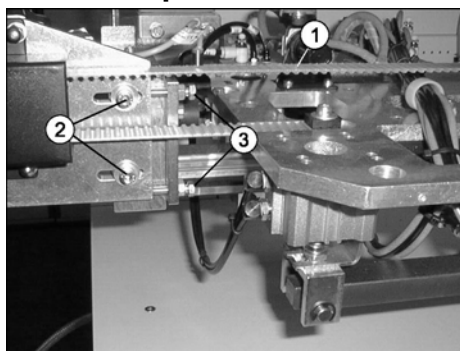
1 Clamp adjustment



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

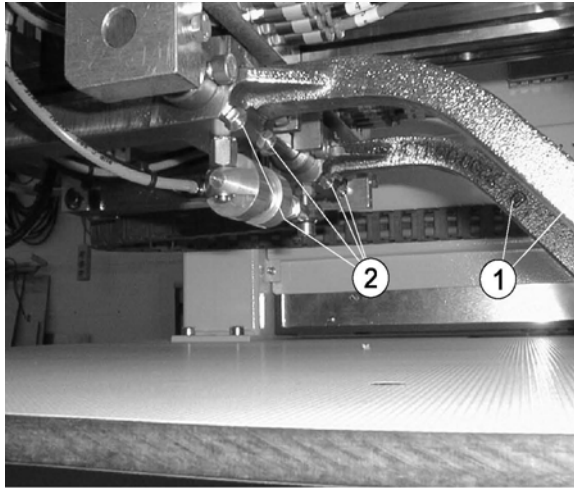
1.1 Clamp drive belt



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.

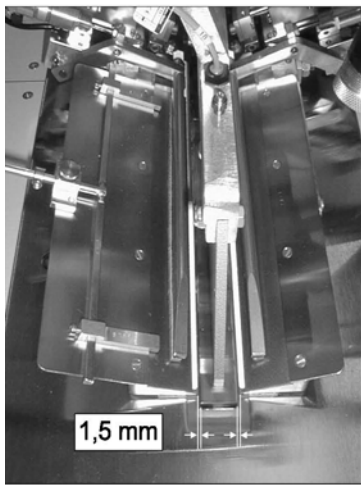


1.2 Adjust axial free play of the clamp arms

<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.

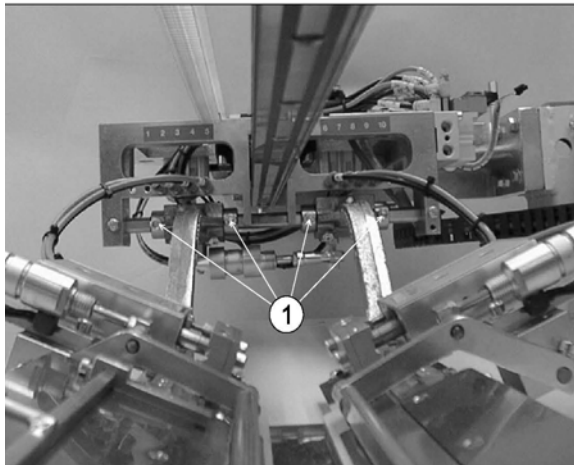
1.4 Lateral adjustment of the double piping

<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.

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



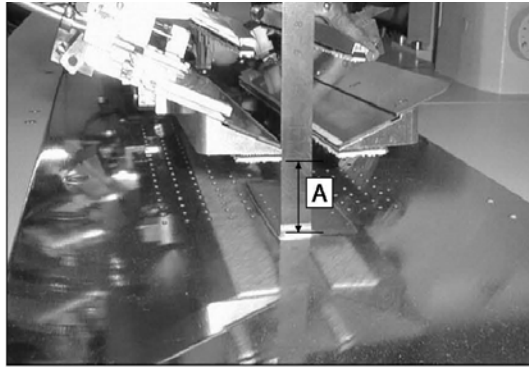
1.5 Lateral flap adjustment

<power off> <release pressure>

Insert the folder for single piping.

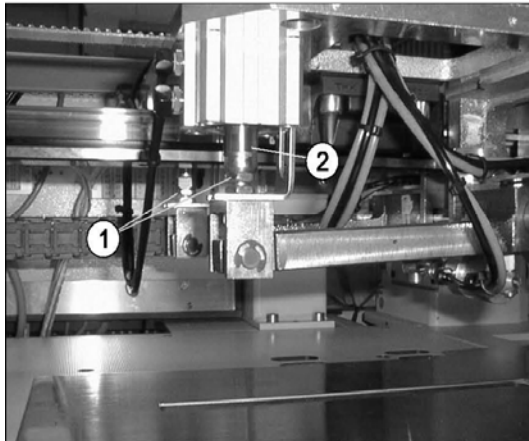
There should be a distance of 1.5 mm between the inner side of the clamp and the sole of the folder.

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

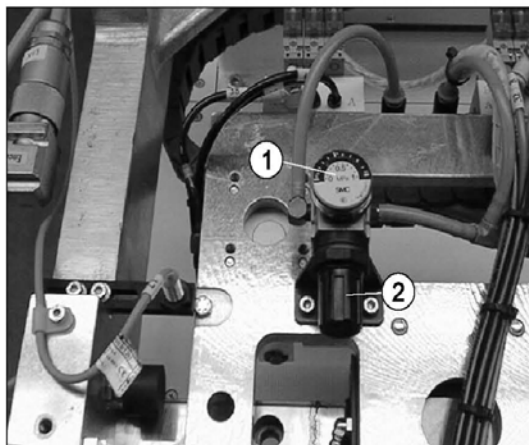


1.6 Adjust main clamp height

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



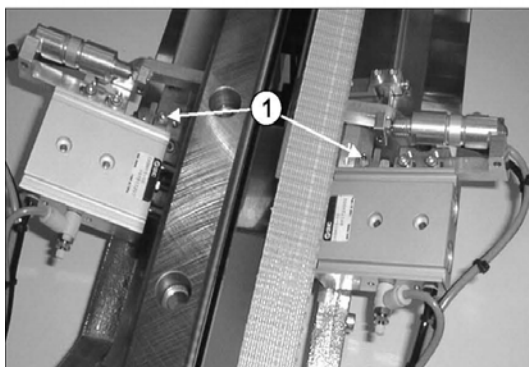
To adjust this, loosen the nuts (1) at both clamp pressure cylinders and turn the piston pole (2) until the must height is present.



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.

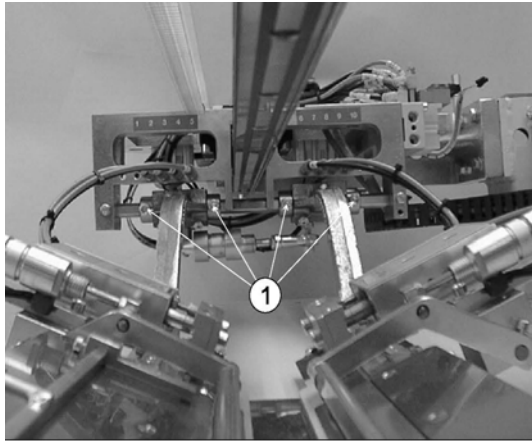


1.8 Main clamp pressure distribution

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.

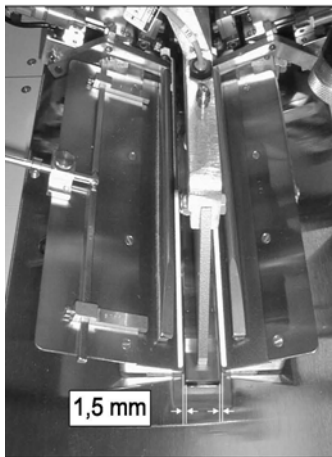


1.9 Clamp quick adjustment double/ single piping (option)

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.

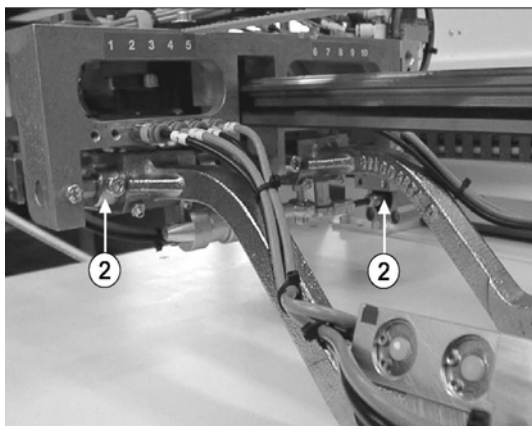
Tighten the fixing screws of all setting rings.

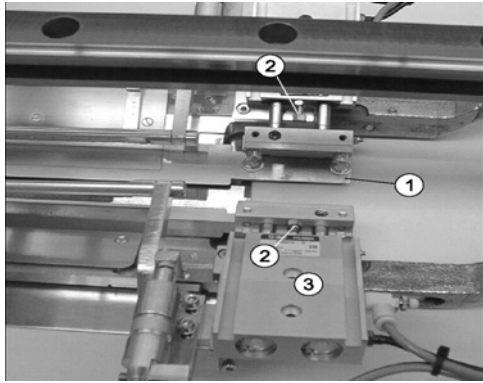


1.10 Clamp quick adjustment

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

Adjust 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.



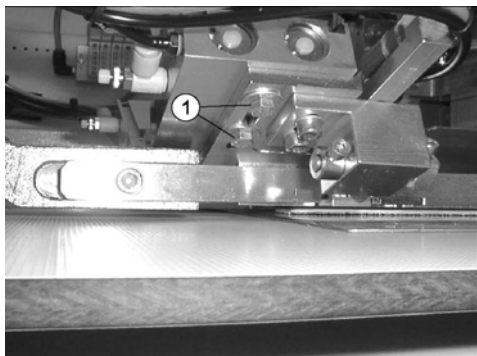


1.11 Adjust folding slide path

<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).

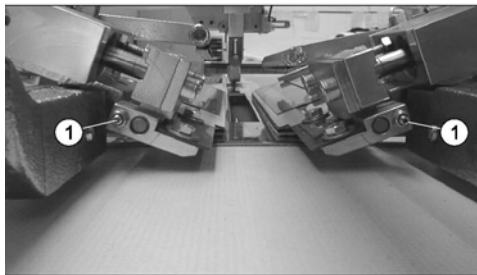


1.12 Adjust parallelity of folding slide

<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).

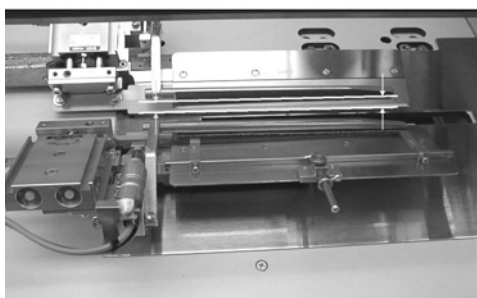


1.13 Adjust folding slide

<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.

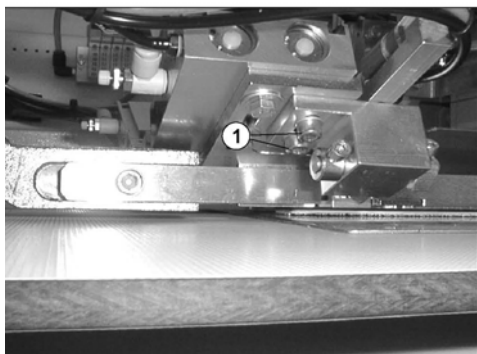
Adjust the screws (1) to adjust the folding slide with no free play axially.



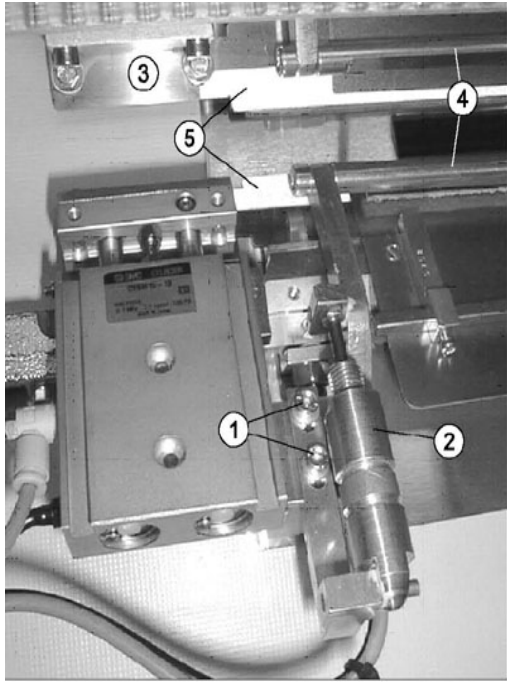
1.14 Flap clamp position

<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.



1.15 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.

1.16 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.

1.17 Check/change clamp rubber

<power off> <release pressure>

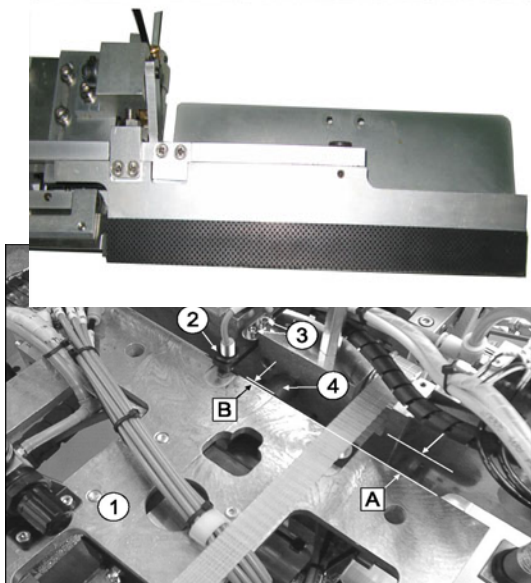
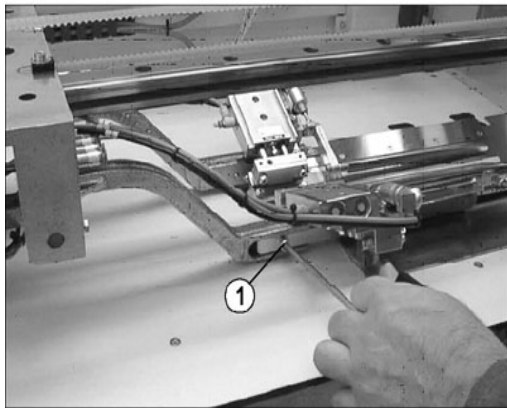
There are moss-rubber strips below each main clamp. If there are problems of the sewing material and the clamp, these rubber strips should be checked.

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.



1.18 Adjust clamp path

Adjust front stop <release pressure>

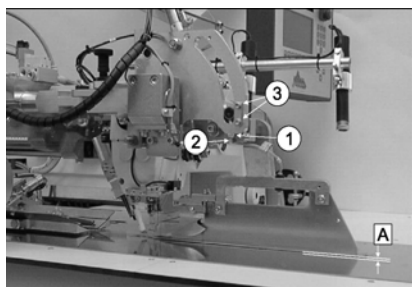
Drive the clamp carriage (1) into insertion position until initiator 1 (2) switched dark. The distance (A) between the beam and the clamp carriage must be 19 mm.

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.

2 Adjustments at the insertion station

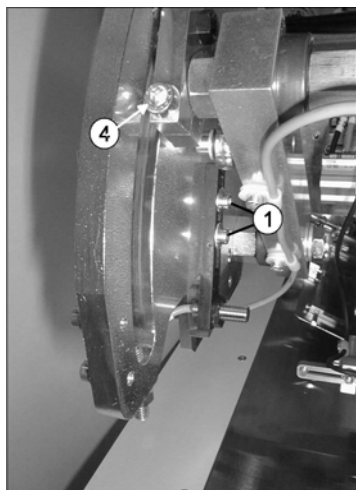


2.1 Folder height

Select output 05/06 in the machine control.

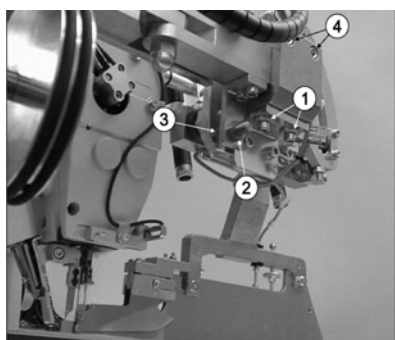
The distance (A) between sliding plate and folder sole must be adjusted to the used sewing material. The basic setting is 2 mm.

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.

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.

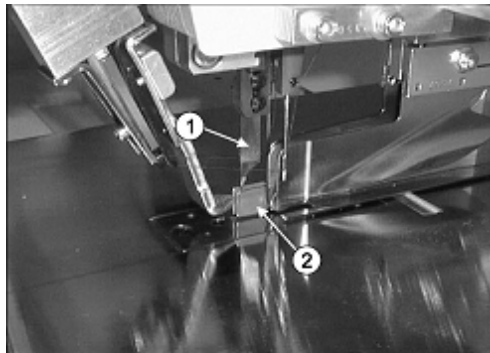
Hint: Double and single piping width are adjusted in the same procedure automatically.

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

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>

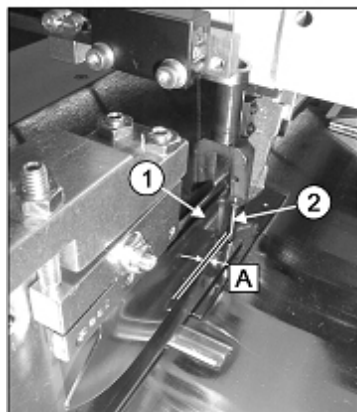


The center knife protection (2) is mounted at the folder. It should surround the center knife (1) without touching it. Adjust the center knife protection (2) carefully if required.

2.7 Lateral distance of the guiding plate to the needle

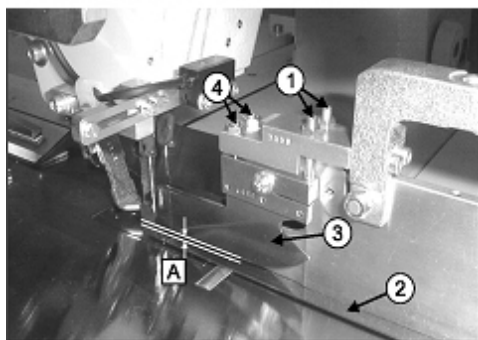
<power off> <release pressure>

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 thread break. Adjust the distance using the corresponding bending tool.



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

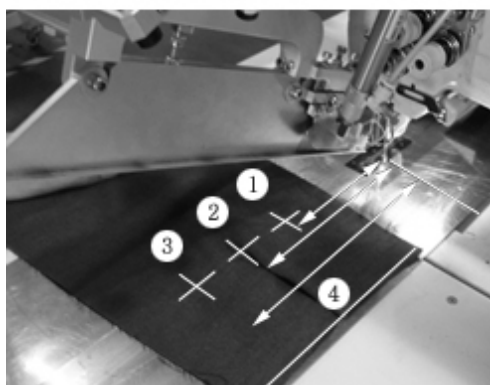
The spring pressure must be adjusted in a way that both plates are pressed safely downwards at any time. If the pressure is too low, a needle break can appear during the front tack. If the pressure is too high, the flap will be pushed back at seam start. Turn both settings screws (4) until enough pressure 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

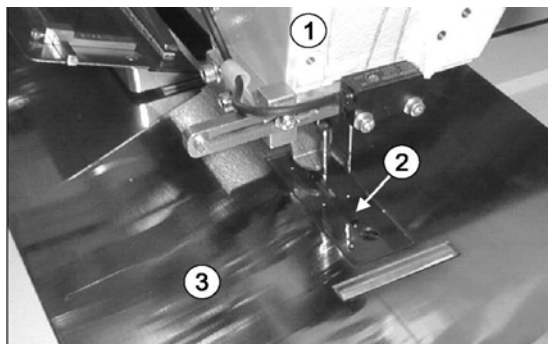
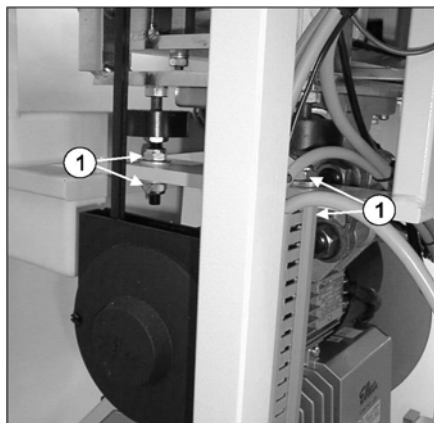


lamp. Loosen the fixing screw in the ring (4) to turn the marking lamp.

2.10.2 Adjust distance

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

3 Adjustments at the sewing head



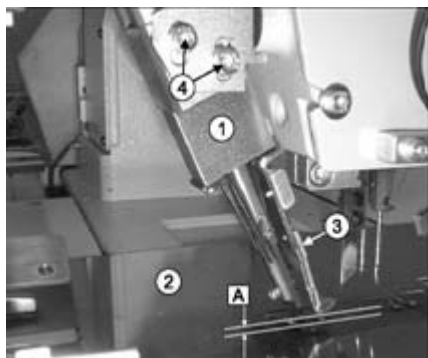
3.1 Height adjustment

The ground plate of the sewing head must be leveled 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 Top thread cutter



The top threads will be caught by the top thread catcher after the sewing during the clamp drives to the mitre cutting. The threads will first be clamped on the top side of the catcher and then cut on the backside. The thread clamp must hold the threads during the first stitches of the seam start to assure a clean sewing image at seam start.

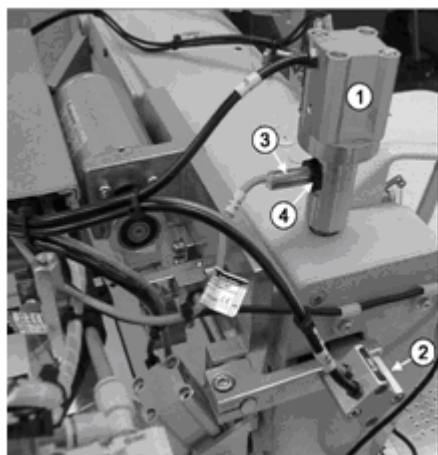
3.4 Height of top thread catcher

A distance (A) of 3-4 mm must be present between sliding plate (2) and catcher (3) when the thread 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 thread catcher!

3.5 Center knife adjustments



3.5.1 Switching on

The center knife is pushed down during the sewing process with the help of the cylinder Y7 (1). The the pin at cylinder Y15 (2) takes over the locking of the center knife.

3.5.2 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 Y15 (2).

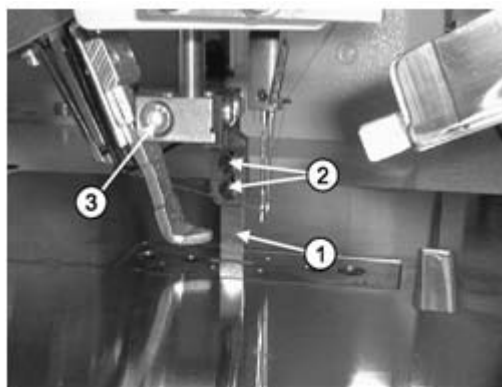
This allows the pressure pole of the center knife to be pulled upwards by the pulling spring.

3.5.3 Safety initiator at the center knife pole

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

3.5.4 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.



3.5.5 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.

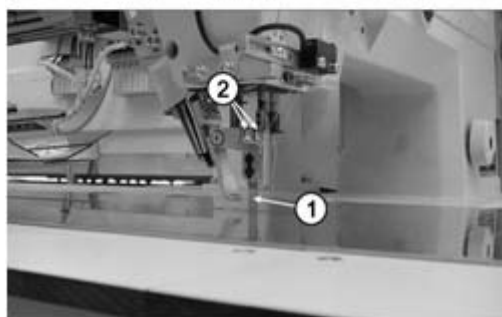
3.5.6 Shear angle of the center knife

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.

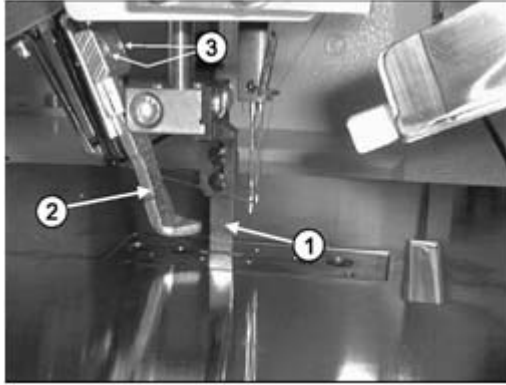
3.5.7 Lateral adjustment

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.

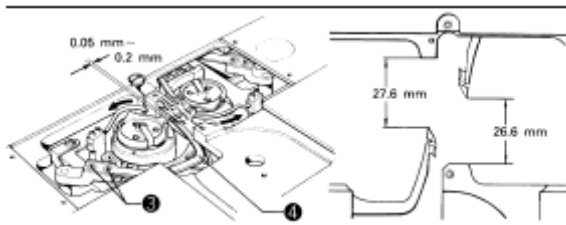


3.5.8 Needle protection

The needle protection (2) is mounted at the holder of the upper thread 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.

3.6 Adjustments of the bobbin thread catcher

- **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 between 0.05 and 0.2 mm. Fix the movable knife (4) at the top of the spool clamp spring now.

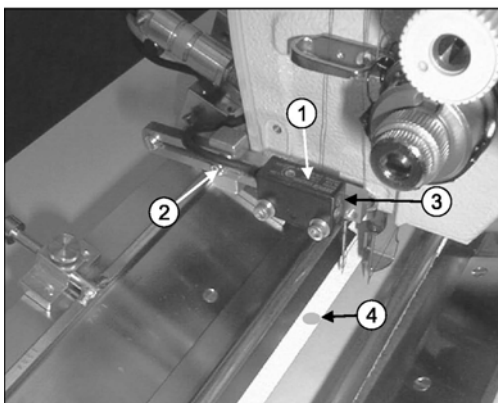
- **Time of bobbin thread cutting**

This time can be programmed. If the time is too early, upper and bobbin thread will be caught and cut at the same time. Then the upper threads will be too short for the next sewing process.

- **Duration of bobbin thread cutting**

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

3.7 Adjust piping detection



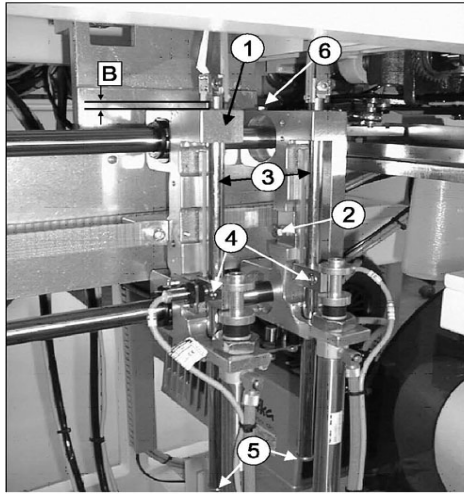
The photocell (1) is equipped with a red light point (4 –illustrated by drawing), which indicates the exact switch point on the folding slide. The complete light point must hit the reflecting foil when the folding slide is driven out.

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

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.

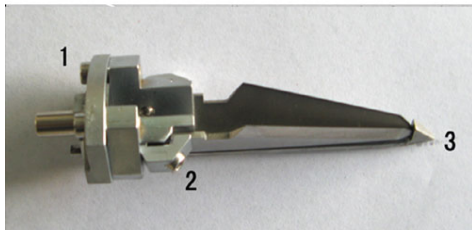
3.8 Adjustments at the mitre knives



3.8.1 Mitre knife height

The height of the mitre knife pinole (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 knives.

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



3.8.2 Mitre knife breadth

Turn the two screws until the mitre knives can be taken out.

Adjust the breadth (A) of the mitre knives 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 knives get contact at their top.