



USER MANUAL

SPRINT • SPRINT XL

Jafa • JNFA

RACER



MADE
IN
GERMANY

ZSK STICKMASCHINEN MADE IN GERMANY

USER MANUAL

FOR MACHINE TYPE
SPRINT • SPRINT XL

Jafa • JNFA

RACER



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ZSK STICKMASCHINEN MADE IN GERMANY

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1. Safety guidelines

This chapter contains a summary of the principal rules of behavior that must be observed in order to exclude the risk of injury to yourself and others. It is therefore essential that you read this chapter carefully and thoroughly.

The safety guidelines, together with the relevant regulations governing safety at work, must be observed by all personnel working with the embroidery machine.

1.1 Safety instructions in operator's guide

The operator's guide contains various remarks under the following headings: 'DANGER', 'WARNING', 'CAUTION' und 'NOTICE'.

These are differentiated as follows:



Safety instructions must be observed in order to avoid the risk of personal injury.



Risk of injury from electric shock.



Danger from suspended loads.



This symbol marks instructions in the operator's guide whose infringement can give rise to personal injury or damage to property.



Risk of crushing by moving machine parts.



Risk of piercing by moving mechanical parts (needles, borer).



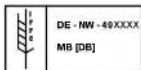
Risk of burning by hot components (magnets, motors).

NOTICE

Instructions labeled “Notice” must be observed to avoid malfunctions/operating errors.



Indicates waste disposal regulations and procedures.



When using hot air cutting devices (optional)



Do not install or remove the magnetic separator with your bare hands. It is necessary to use a suitable metal object.

Do not place any fingers in the cutting zone during hot air cutting!

Avoid contact with the protective screen of the cutting element.

Important Safety Warning!

Read before using the magnetic hoops

Disclaimer

ZSK Stickmaschinen GmbH neither assumes nor accepts any liability for damages resulting from the handling, use, or misuse of its products. With your purchase, the buyer confirms that you have read and understood the following warnings. The buyer agrees that he/she is responsible for all damages and injuries caused by the magnets and hoops, which include personal injuries, property damages and magnet damages. The buyer must agree with the terms before purchase and use of the product.

Please use caution and common sense, and please read and understand our safety warnings below! It is the responsibility of the purchaser to make sure all users of this product are made aware of the information in this letter. If the product is ever sold, transferred or given to a new owner, this warning letter should be provided to the new owner.

The following should not be construed as a complete and exhaustive list of hazards presented by magnetic materials. This document is provided for information only. Readers are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. ZSK Stickmaschinen GmbH does not represent, guarantee or warranty the accuracy, completeness, currency, or suitability of the information in this document. ZSK Stickmaschinen GmbH specifically disclaims any and all liability for any claims or damages that may result from providing this document or the information it contains.

Pacemakers

Individuals with health issues which require that they wear electronics of any sort like pacemakers, defibrillators or other internal and external medical devices should use caution when handling strong magnets, such as the type included in the magnetic hoops. Pace-makers may be damaged or switch to „Test Mode“ in the presence of a strong magnetic force, if a pace-maker or other medical device is in use, magnetic fields may affect the operation of these devices. Consult your physician and the manufacturer of your medical device to determine its susceptibility to static magnetic fields prior to handling the magnetic hoops. All of our magnetic products should be kept at a safe distance from individuals with these devices.

Damage to magnetic media, electronics, and mechanical devices

The strong magnetic fields of neodymium magnets that are a part of this product can damage magnetic media such as floppy disks, hard drives, credit cards, magnetic I.D. cards, cassette tapes, video tapes or other such devices. They can also damage televisions, computers, cell phones, VCRs, computer monitors and other CRT displays. Never place neodymium magnets near electronic appliances, mechanical watches, hearing aids, or loud speakers.

Certain electronic devices are sensitive to magnetic fields and may be damaged permanently or temporarily disabled if exposed to a magnetic field that is too strong. Video screens and televisions will become distorted and/or discolored if exposed to a strong magnetic field. While damaged screens can usually be demagnetized, it's often tricky and may require qualified service technicians to do so. Other electronic devices like cell phones and pagers can also be damaged. Store your magnetic hoops in a safe place away from electronics of any kind.

Keep all magnetic hoops at least 24 inches away from all types of magnetic media.

Children

Children should not be allowed to handle the magnetic hoops or the neodymium magnets that are a part of the product as they can be dangerous. Children and adults should not ingest magnets or place magnets in any body orifice such the ear, nose or mouth. Ingestion of magnets is very hazardous. If magnets are ingested or aspirated to the lungs, immediate medical attention is required.



Pinch and Eye Hazard

The magnetic hoops and magnets included in this product can pose a serious pinch hazard due to their attractive force on each other and to any object containing iron. Usually surprise is an issue--they can jump out of your hands and snap together from a surprising distance before you realize what is happening.

Fingers and other body parts can get severely pinched between two attracting hoops or items. Keep items like scissors, pins, and any other items that contain metal out of your work area.

Disposal

The rare-earth magnets in this product should never be burned, as burning will create toxic fumes. Rare-earth magnets should be disposed of in compliance with local, state, and Federal law. All strong permanent magnets should be thermally demagnetized prior to disposal. Alternatively, all strong permanent magnets should be placed in a steel container prior to disposal so the magnets do not attract waste disposal equipment or refuse containers.

1.2 Prescribed use

The embroidery machine is designed for industrial use. It is intended for finishing textiles and similar materials by embroidering. If the machine is fitted with the requisite auxiliaries, it can also embroider sequins and cord, and execute boring patterns.

The machine can be used with textile fabrics and threads that are customary in embroidery. Our customer service organization will be pleased to advise you, and is also available for testing unfamiliar material combinations on your behalf.

On principle, do not use the machine for purposes other than described in the operator's guide. It must not be used, for example, as a support surface or in place of a step ladder. Utilization for other than the intended purpose can give rise to risks of personal injury and material damage.

The following conditions must be met for a safe operation of the machine:

- Ambient temperature from 15 ° C to 35 ° C.
- Relative humidity of 30% to 85% non-condensing.
- Direct sunlight on the machine should be avoided.

Electromagnetic compatibility



This machine is a class-A device. It can cause radio interference in residential areas; in such cases the operator may be required to take appropriate measures.

1.3 Operational safety

The embroidery machine is designed according to modern principles. Its electrical equipment complies with the stringent German VDE regulations. Numerous design provisions have been made to improve safety.



Design provisions cannot, however, exclude all risks. The embroidery machine must therefore be operated only by thoroughly instructed personnel familiar with the operator's guide, safety guidelines and relevant accident prevention regulations.'

1.4 Regulations concerning safety at work



In addition to the present safety guidelines, observe all the mandatory accident prevention regulations that apply in the country of use and at the operating location as well as the recognized technical rules for safe working practices.

The valid regulations must be known and accessible to all those entrusted with working at the machine.

1.5 All work at and with the machine



Wear close-fitting clothes and, if you have long hair, a hair net or suitable headgear when working at the machine. Do not wear jewelry. Wide sleeves, loose hair, rings or chains can become caught or entangled in moving machine parts.

Wear shoes with non-slip soles in order to avoid the risk of falls.

1.6 Operation

NOTICE

The machine is to be operated only by thoroughly instructed personnel. For instruction purposes we recommend attending an operator training course run by ZSK Stickmaschinen GmbH. In any case, before commencing work with the machine, make yourself familiar with the proper operating practices with reference to the operator's guide.

1.6.1 Essential operations before any manual work

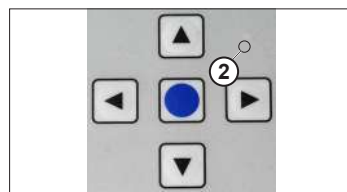
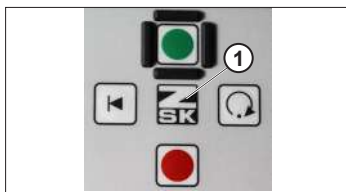
Equipping and setting-up work, conversions (between tabletop, cylinder arm and cap embroidery on tubular system machines, for instance), eliminating needle and thread breaks:



As a matter of principle, carry out such tasks only when the machine is at a standstill. Certain tasks involve switching off the machine and removing the mains plug first. Ensure compliance with the relevant instructions in the operator's guide.

Before working on the stationary machine with the main switch on, switch on the pantograph positioning keys by pressing the ZSK key **(1)** (LED **(2)** next to the keys lights up).

In this setting, you can operate the pantograph manually, but cannot start the machine inadvertently.



1.7 Embroidering



Do not remove any machine covers – they are provided for your safety. See Machine overview.

As a general principle, operate the machine from the front long side. Each time before starting the machine, make certain that nobody is in the vicinity of its moving parts.

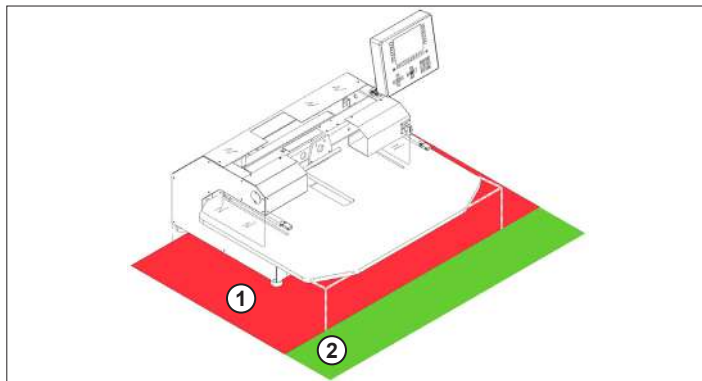


Abb. 1: Work areas



Users are allowed to enter this area **(1) only** when the machine is switched off.

This area **(2)** can be entered for monitoring purposes while the machine is running.



Keep hands away from **moving parts** during embroidering. There is a risk of serious injury especially in the vicinity of the **needles, borers, take-up levers** and **rotary hooks**.

Stop the embroidery machine before all manual operating procedures at the machine, even when simply removing fluff or loose threads from the start of embroidery. Consider your own safety at all times.

Never thread the threads **while the machine is running**.

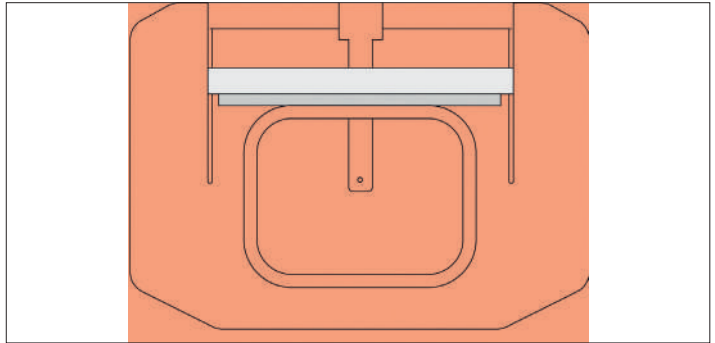


Abb. 2: Working range of pantograph



Keep your hands well away from pantograph guide slot **(1)** because of the risk of injury. See (Abb. 3).

Do not support yourself by the work table.

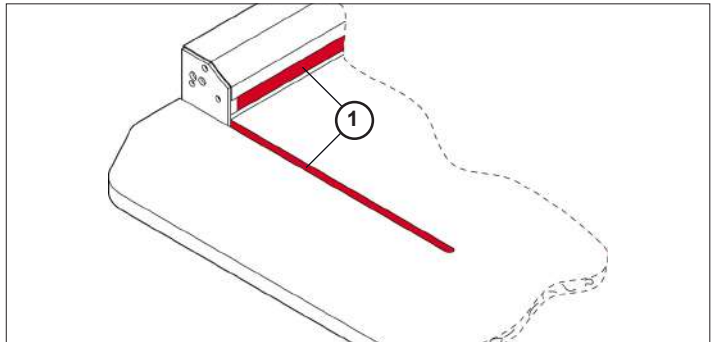


Abb. 3: Risk of crushing, pantograph guide slot

Do not place any objects on the embroidery machine or work table. They could be pushed off the work table by movements of the pantograph. Objects that enter the pantograph guide slot can cause operating malfunctions or damage the machine.

To prevent unauthorized intervention, **never leave the embroidery machine running unsupervised.**

1.8 Cleaning and maintenance



Insofar as they are described in the operator's guide, cleaning and maintenance tasks must be carried out only by appropriately instructed personnel.

More extensive maintenance and repair tasks must always be carried out by service personnel that has been trained and accordingly equipped by ZSK Stickmaschinen GmbH because this work requires the application of special knowledge and resources.

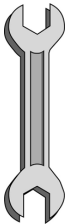


Always disconnect the power supply before carrying out cleaning and maintenance work.

The machine is at zero current only when the mains plug is pulled out **and after a delay of at least 30 seconds**.

Observe the regular servicing periods laid down in the operator's guide.

1.9 Repairs and modifications



Repair and modification work must be carried out only by service personnel that has been instructed and trained by ZSK Stickmaschinen GmbH. Note the following:

Use only genuine spare parts and accessories or parts that have been approved by ZSK Stickmaschinen GmbH.

The machine must not be started up until it is fully assembled with all safety covers and devices installed.

Independent changes and modifications to the machine are not permitted for safety reasons. Such alterations can invalidate the CE Conformity Declaration.

Modification work does **not** include the conversion tasks described in the operator's guide (e.g. changing between tabletop, cylinder arm and cap embroidery).

2. Unloading, unpacking and handling

2.1 For your safety



The machine is to be lifted only by 4 persons, each of whom can lift at least 25 kg.

Make certain that the table is capable of carrying the load (at least 300 kg). In case of doubt, please consult the manufacturer or supplier of the table.

2.2 Unloading

2.2.1 Consignments delivered in a transport crate



In view of its weight, lift the crate off the truck with a fork-lift truck or ropes and a crane only.

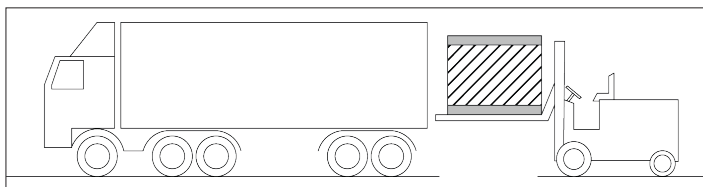


Abb. 4: Unloading by fork-lift truck

2.3 Unpacking

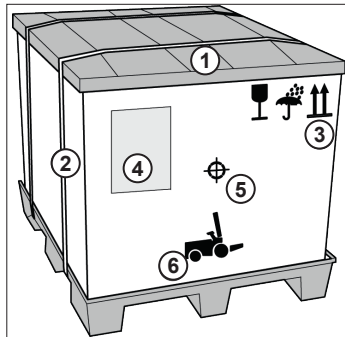


Abb. 5: Transport crate

- (1) Lid
- (2) Lashing straps
- (3) Arrows pointing upward
- (4) Unloading instructions
- (5) Symbol indicating approximate position of center of gravity
- (6) Insert locations for lifting forks

- Remove lashing straps (2).
- Lift off lid (1).
- Remove all individual parts.
- Remove the packing material and desiccant sachets.



- (1) Stand (optional)

Abb. 6: Transport crate, opened

2.4 Moving to the installation location



For safety reasons, if the machine is delivered in a transport crate, move the machine to the installation location with a forklift or stacker truck before detaching it from the floor of the crate if possible.

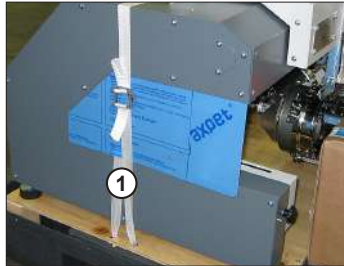
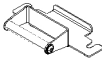


Abb. 7: Removing lashing straps

Cut through and remove the lashing straps (1), that secure the control cabinet and machine to the pallet.

2.5 Attaching carrying handles (4x)

NOTICE



If the machine is being delivered in a transport crate, the machine carrying handles are detached for space reasons. The handles form part of the delivery scope.

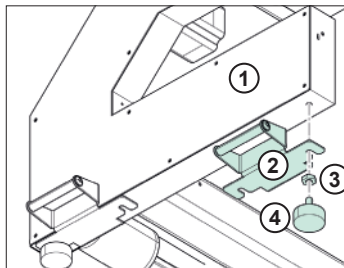


Abb. 8: Installing carrying handles
(view from below)

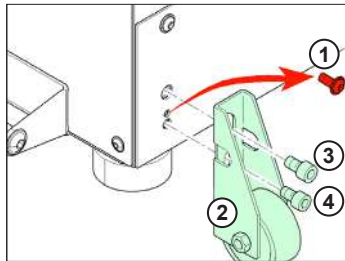
Slacken off nut (3) on machine foot (4) and create a gap between the nut and the frame.

Insert carrying handle (2) between frame (1) and nut (3) into contact with the frame.

Make nut (3) tight against the carrying handle.

Attach a carrying handle to each corner of the frame.

2.6 Casters (optional)

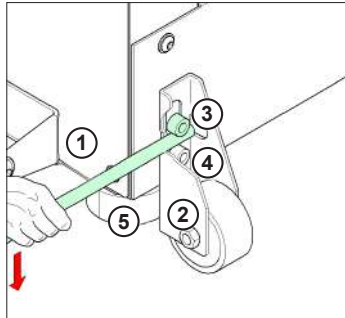


Slacken off and remove bolt (1)

Attach caster (2) and loosely fasten screw (4).

Insert and tighten screw (3).

Abb. 9: Installing casters, illustration: back of machine, left



Push bar (1) through the opening in the side of caster (2) so that it rests underneath the head of top screw (3).

Apply downward pressure to bar (1) until machine foot (5) is raised.

Tighten screw (4).

Repeat this procedure on the other side.

Abb. 10: Aligning caster (section view)

After moving the machine

Slowly slacken off screws (4).

⇒ The machine feet are lowered to the floor.

Detach screws (4), (5) and casters (2).

Insert bolt, see (Abb. 9) item (1).

2.7 Disposing of packaging materials

NOTICE

Dispose of the materials in compliance with national and local law. Keep the parts that make up the crate in case required for service purposes.



The wooden packaging is made almost entirely from natural, non-toxic materials and can be disposed of accordingly. Other treatment guidelines apply in a small number of specific countries. Advice about these can be obtained locally from the relevant authorities.

Packaging paper and foil can be reused and should be recycled.

The desiccant bags contain a natural salt that can be disposed of together with domestic refuse.

3. Setting up and aligning

3.1 Setting up machine

NOTICE

All the fastening elements (bolts, washers, cable ties etc.) are located together with the accessories.

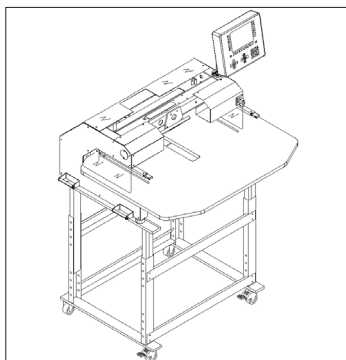
Note the following:



Place the embroidery machine only on a solid surface of sufficient load carrying capacity (e.g. desk, workbench etc.). Make sure that the machine is standing securely.

Each time it is installed, distribute the load between all the machine feet and align the machine. The machine may not wobble!

3.2 Stand (optional)



The stand for the machine can be adjusted to three different heights.

Abb. 11: Stand

3.2.1 Assembling stand

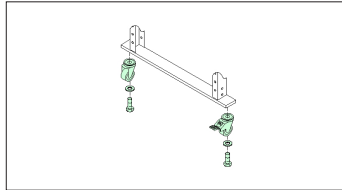


Abb. 12: Attaching casters

Attach two casters (one with and one without a brake) to each end of the stand.

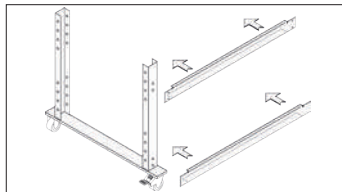
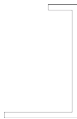


Abb. 13: Assembling stand

Fasten two of the side struts, with the broader flange at the bottom, to one end of the stand with the screws and associated washers, making them hand tight.

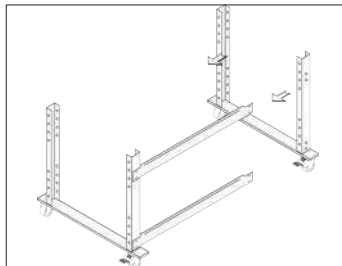


Abb. 14: Assembling stand

Loosely attach the other end of the stand to the pre-assembled side struts.

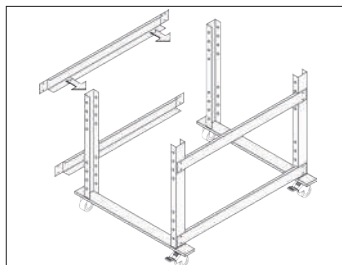


Abb. 15: Assembling stand

Insert the shelf between the two bottom side struts of the stand.

Loosely attach the other two side struts in the envisaged positions on the opposite side of the stand with the screws and associated washers.

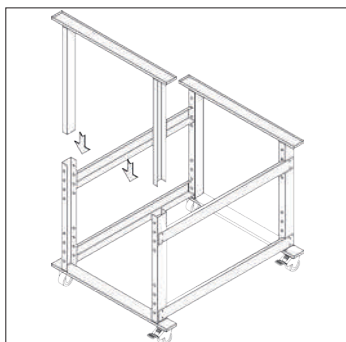


Abb. 16: Assembling stand

Insert the variable-height machine rests into the ends of the stand from above.

With the rests located at the desired height, fasten the screws with washers so that they are hand tight.

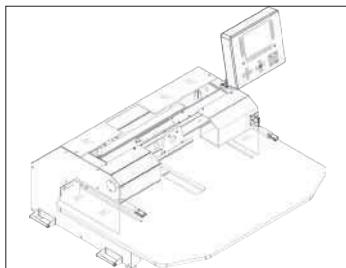
Place the stand on a firm, flat surface.

Tighten all the screws.

3.2.2 Installing machine

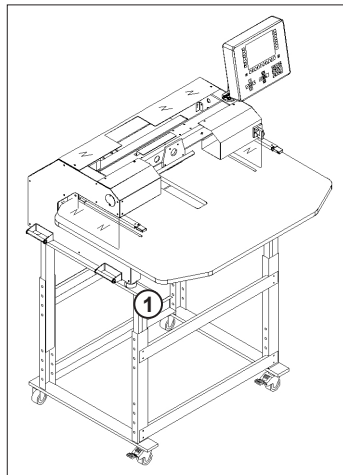


The machine is to be lifted only by 4 persons, each of whom can lift at least 25 kg.



Lift the machine by the 4 carrying handles.

Abb. 17: Installing machine



Place the machine on the stand by locating the machine feet in the provided seat (1).

Abb. 18: Machine on stand

3.2.3 Applying caster brakes



It is essential that you apply the caster brakes before starting up the machine otherwise it could roll away.

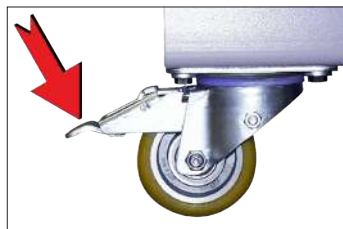
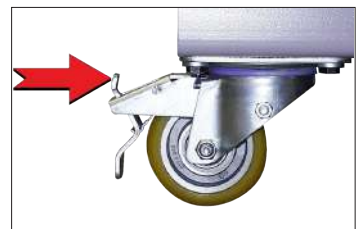


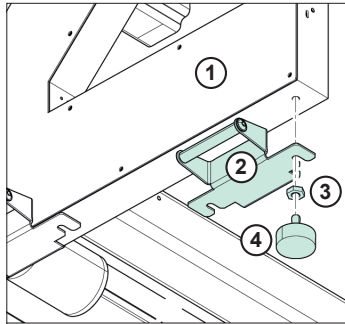
Abb. 19: Typical casters

Left: released, braking



Right: brake engaged, releasing brake

3.3 Detaching carrying handles



Slacken off nut **(3)** on machine foot **(4)** and create a gap between the nut and the frame.

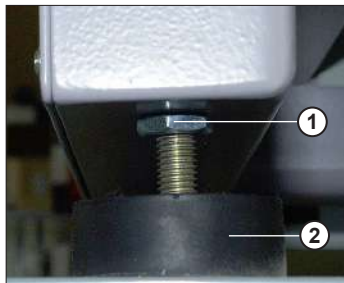
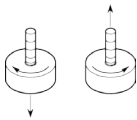
Take out carrying handle **(2)**

Tighten nut **(3)** against frame **(1)** so that it is hand tight.

Detach the carrying handle from each corner of the frame.

Abb. 20: Detaching carrying handles (view from below)

3.4 Aligning machine feet



Slacken off nut **(1)**

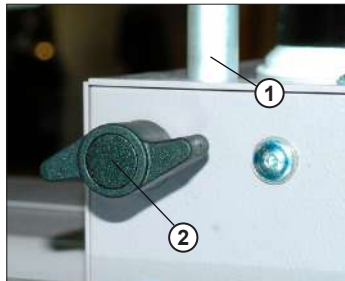
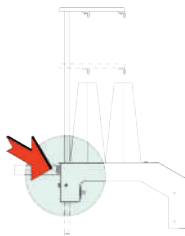
Rotate machine foot **(2)** to the desired position (see sketch)

Each time it is installed, distribute the load between all the machine feet and align the machine.

Tighten nut **(1)**.

Abb. 21: Machine foot, adjusting

3.5 Adjusting yarn rack (e.g. FA head)



Slacken off screws **(2)**.

Adjust yarn rack **(1)**.

Tighten screws **(2)**.

Abb. 22: Yarn rack, adjusting height



If the yarn rack is not moved to the top position, an obstruction can occur during a color change and the machine can be damaged .

3.6 Installing control unit

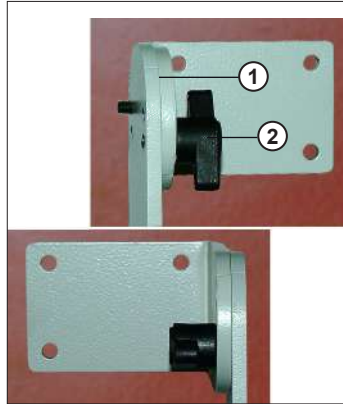
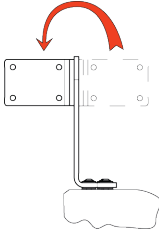


Abb. 23: Holder in transit position

Slacken off and remove screw **(2)**.

Rotate top holder bracket **(1)** through 180°.

Insert screw **(2)** and make hand tight.



Abb. 24: Rear of control unit

Attach the control unit by inserting the threaded pins on the rear panel into the appropriate holes in the holder.

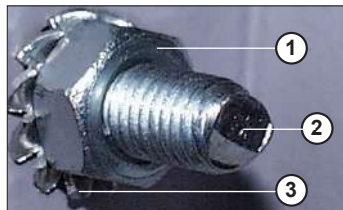


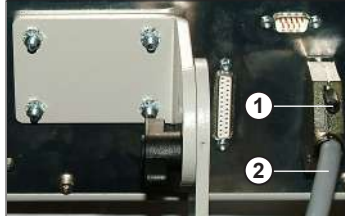
Abb. 25: Rear of control unit

Place serrated lock washers **(3)** on threaded pins **(2)**.

Tighten nuts **(1)**.

3.6.1 Connecting cables

Control unit



Connect cable (2) to rear of control unit and fasten with screws (1).

Abb. 26: Rear of control unit

3.6.2 Adjusting control unit holder

NOTICE

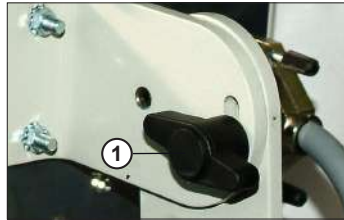
The control unit holder can be individually adjusted.



Do not align the control unit as described below until the machine has been connected and started up.

Before the control unit is adjusted horizontally or vertically to a new position, the traversing and fully equipped yarn rack has to approach the final needle (right) position by executing a color change (change of needle position).

Die Ausrichtung der Bedieneinheit kann jetzt durchgeführt. Once this position has been adopted, the control unit can be adjusted. Make certain that adequate clearance is maintained between the control unit and yarn rack in order to avoid damage and malfunctions when a color change takes place. The machine can be damaged!



Slacken off screw raube **(1)**.

Adjust the control unit to the desired angle.

Tighten screw **(1)**.

Abb. 27: Control unit, holder, adjusting vertically



Slacken off screws **(1)**.

Rotate the control unit to the desired position.

Tighten screws **(1)**.

Abb. 28: Control unit, holder, adjusting horizontally

4. Installing

4.1 Comparing mains voltage



All installation and service work is to be carried out exclusively by trained experts.

The machine is at zero current only when the mains plug is pulled out and after a delay of at least 30 seconds.

The supply voltage of the machine is 230V AC (+/-15%) 50/60Hz.



Compare the mains voltage stated on the rating plate with the system voltage available at the machine location. If the values are not the same, do not start the machine, but contact our customer service department.

4.2 Mains connection

The machine is supplied with power cable and plug and may only be operated at a plug connector with a correctly connected grounding conductor, which has been setup according to the valid regulations. Compliance with applicable regulations and, in particular protective measures against electric shocks according to IEC 364/VDE 0100 or corresponding national and local safety regulations must be observed.



On completion of the installation work, run the connecting cable between the embroidery machine and mains socket-outlet in such a way that it is not an obstacle to foot traffic (risk of tripping).

Do not connect the machine to the power supply until it is fully assembled and the control cabinet is closed.

4.3 Fuses/automatic circuit breakers



Fuses and circuit-breakers are safety devices. Before starting up the machine again, the reason for the power loss has to be investigated in order to avoid the risk of damage or further production down-times.

5. Machine overview

5.1 General view

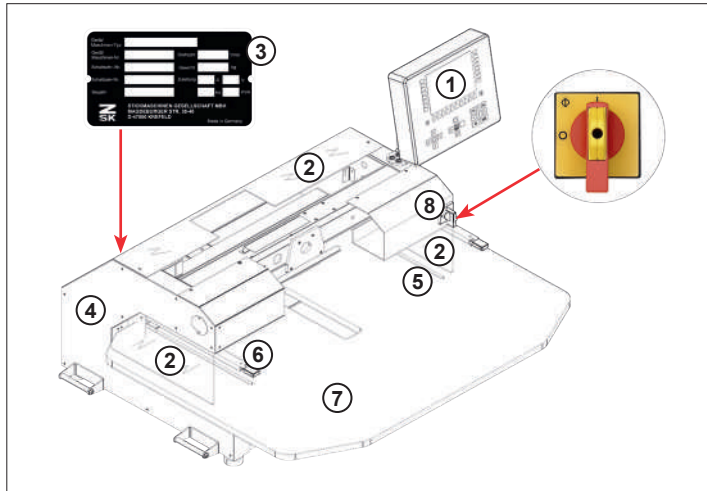


Abb. 29: General view, SPRINT series

- (1) T8 Control Unit
- (2) Machine cover
- (3) Type plate
- (4) Frame
- (5) Pantograph guide
- (6) Light barrier
- (7) Work table
- (8) Main switch/EMERGENCY STOP switch

5.2 Operation

This chapter provides an overview of the embroidery machine's operating elements. These controls are used, for example, to position the pantograph, for starting and stopping the embroidering routine, for reverse embroidering, and when working with appliqués.

NOTICE

The position of the individual operating elements on the machine is illustrated under Machine overview and Control unit.

5.2.1 Main switch

The machine and control cabinet are switched on and off with the main switch.



5.2.2 EMERGENCY STOP



The main switch also serves as the EMERGENCY STOP switch.

NOTICE

Before switching the machine back on, make sure that the cause of the EMERGENCY STOP has been rectified.

All the operating elements described below operate only if the main switch is switched on.

5.2.3 Control Unit

NOTICE

In line with more recent ZSK control units, this control unit has a start/stop control panel and a control panel for manual pantograph positioning.

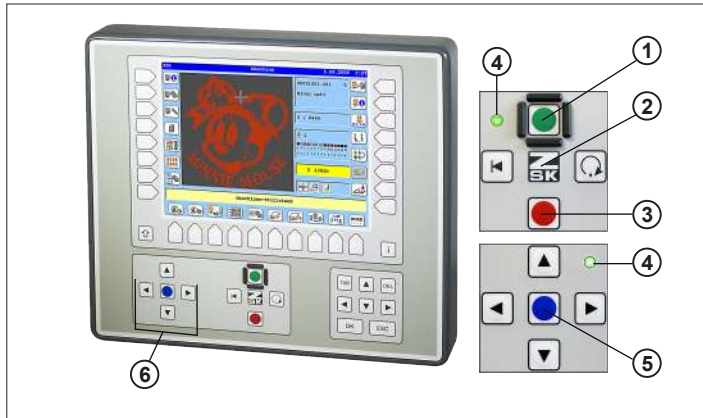


Abb. 30: T8 control unit

- (1) Start key
- (2) ZSK-key
- (3) Stop key
- (4) Light-emitting diode (LED)
- (5) Appliqué key
- (6) Pantograph positioning keys






Start/Stop keys

NOTICE

You can use the Start/Stop key cluster when the LED (light-emitting diode) in the cluster is illuminated. The pantograph positioning keys must be switched off.



The start/stop cluster of keys is situated on the control unit. It consists of the keys for starting and stopping the machine, selecting and deselecting the pantograph positioning keys (ZSK key), reverse embroidery and executing single stitches.

Operation		Function
	Press	Stops the machine
	Press	Starts the machine
	Press	Switches pantograph positioning keys on/off
	Press briefly	Executes a single stitch
	Hold down	Executes a sequence of single stitches (embroidering at low speed)
	Press briefly	Moves the pantograph back one stitch at a time (reverse embroidery)
	Hold down	Executes a sequence of reverse stitches

NOTICE


You can stop the machine at any time with the Stop key. The interrupted embroidering routine is resumed as soon as the machine is restarted with the Start key.

Pantograph positioning key cluster
NOTICE


Do not select manual pantograph positioning while the machine is running. This would stop the machine and interrupt the embroidering routine.

The key cluster for positioning the pantograph manually is situated on the control unit. It consists of the arrow keys for positioning the pantograph and the Appliqué key.

Switching on key cluster

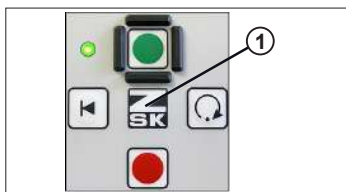


Abb. 31: ZSK key

Press ZSK key **(1)**.

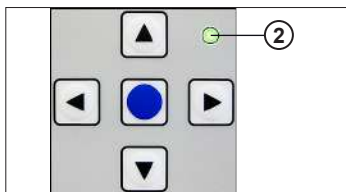


Abb. 32: LED

Pantograph positioning keys switched on.

LED **(2)** illuminated.

Appliqué key



The appliqué key is located in the Pantograph positioning key cluster; it is required when you wish to embroider with appliqués. The key cannot be used unless the key cluster is switched on.

NOTICE

Press the Appliqué key for 1 sec at least.

5.2.4 Aligning pantograph

Risk of crushing

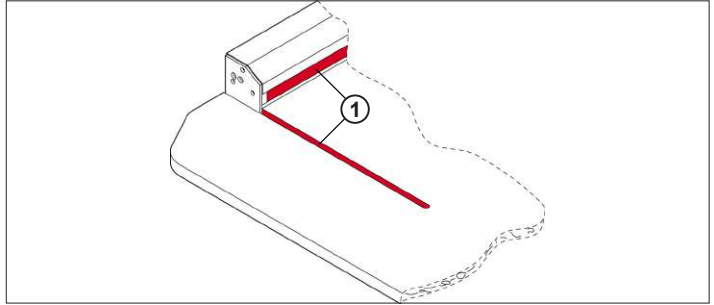


Abb. 33: Risk of crushing by pantograph



The pantograph responds straight away.

Keep your hands well away from the pantograph guide slot (1) and frame.

Risk of injury!



You cannot align the pantograph unless the machine is stationary.

Aligning with arrow keys

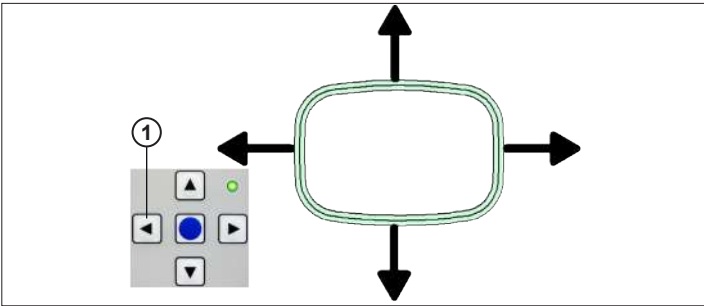






Abb. 34: Directions of pantograph movement (example)
Keys for positioning pantograph (e.g. to the left)

Align the pantograph with the arrow keys (1).

Taste	Bewegungsrichtung des Pantographen
	Backwards (away from the front edge of the work table)
	Forwards (towards the front edge of the work table)
	To the left
	To the right

Press the ZSK key again.

⇒ The pantograph positioning keys are deselected (LED goes out).

NOTICE

Once you have aligned the pantograph, switch off the positioning key cluster because the machine cannot be started while manual positioning is switched on.

Aligning by way of control unit

NOTICE

Aligning the pantograph by way of the control unit is possible only in the Machine module.

By way of the control unit the pantograph position can also be controlled with reference to the screen display. This allows paths to be traveled quickly or slowly or in 1 mm or 1/10 mm steps (increments).

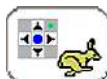


Press the **Taste [U5]** button below the screen display to activate manual pantograph positioning.

⇒ The following symbols are displayed at the bottom of the screen.

NOTICE

The control unit operator's guide contains more detailed information on using the menu keys.



Press button **[U1]** and hold down arrow button to move pantograph continuously and fast.



Press button **[U2]** and hold down arrow button to move pantograph continuously and slowly.



Press button **[U3]** and briefly press arrow button to move pantograph in 1 mm steps with each press.



Press button **[U4]** and briefly press arrow button to move pantograph in 1/10 mm steps with each press.

NOTICE

Once you have aligned the pantograph, switch off the manual pantograph positioning function. With manual pantograph positioning selected, the machine cannot be started.

6. Changing modes

NOTICE

This part of the operator's guide refers exclusively to machines with tubular system functionality.

6.1 Tabletop embroidery - tubular system

CAUTION

The conversion is not to be carried out when the machine is running.



Abb. 35: Examples for SPRINT

- (1) Tabletop embroidery
- (2) Tubular system embroidery

6.1.1 Dismantling frame locator

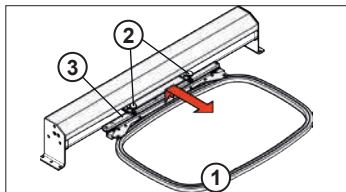


Abb. 36: Dismantling frame locator

Take out single frame (1).

Slacken off screws (2).

Remove Z rail (3).

6.1.2 Dismantling work table

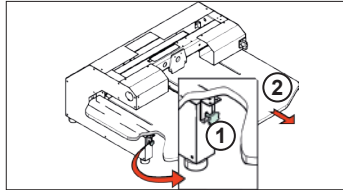


Abb. 37: Removing work table

Slacken off and remove screws **(1)** (left/right).

Pull out work table **(2)** to the front and set it down safely.

Insert and tighten screws **(1)**.

6.1.3 Installing cylinder arm frame holder

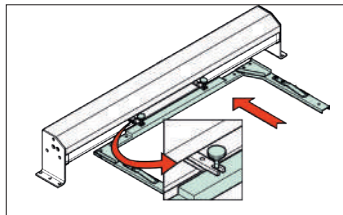


Abb. 38: Installing cylinder arm frame holder

Tighten screws **(1)** in cylinder arm frame holder **(2)** about 2 turns.

Slide cylinder arm frame holder **(2)** underneath carriage support **(3)**.

Tighten screws **(1)**.

6.1.4 Inserting frame

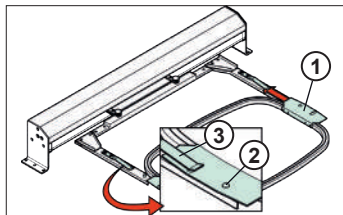


Abb. 39: Inserting frame

Place frame holder **(1)** on stop pins **(2)**.

Slide frame holder **(1)** underneath springs **(3)** and engage stop pins **(2)**.



Each time you convert the machine for a different mode, change the pantograph configuration to suit the application (e.g. border frame embroidery) by way of the control unit.

6.2 Tubular system - tabletop embroidery



The conversion is not to be carried out when the machine is running.

NOTICE

To convert from tubular system to tabletop embroidery, follow the same steps as for converting from tabletop embroidery to tubular system operation, but in the reverse sequence.

6.3 Changing from tubular system to cap embroidery



The conversion is not to be carried out when the machine is running.

NOTICE

The conversion for optional cap embroidery is described in the operating instructions for the cap attachment.

6.4 Work to be performed after each mode change



Each time you convert the machine for a different mode, change the pantograph configuration to suit the application (e.g. border frame embroidery) by way of the control unit.

7. Preparing to embroider



As a general rule, carry out the work described here only when the machine is stationary. Make sure that no-one is able to start the machine while you are fitting the embroidery material and setting it up.

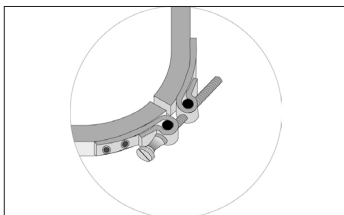
NOTICE

This chapter describes additional work that has to be executed before embroidering. Further information, including on the choice of needles, filling the yarn rack, thread tension etc., is contained in the relevant operator's guide – head –.

7.1 Clamping embroidery material

7.1.1 Tubular system embroidery

Adjusting frame tension



Adjust the frame tension to match the thickness of the embroidery material with the adjusting screw **(1)** on the outer frame.

Abb. 40: Tubular system embroidery, screw for adjusting frame tension

Clamping embroidery material in the frame

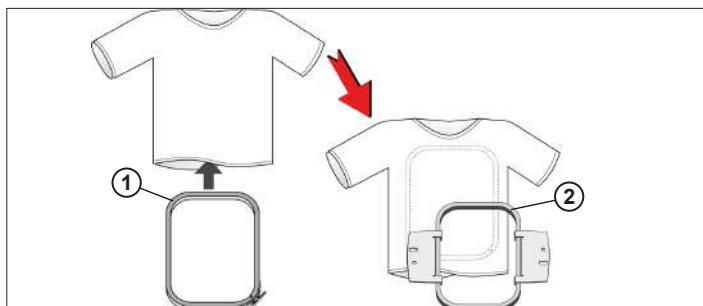


Abb. 41: Tubular system embroidery, clamping tubular fabric in cylinder arm frame



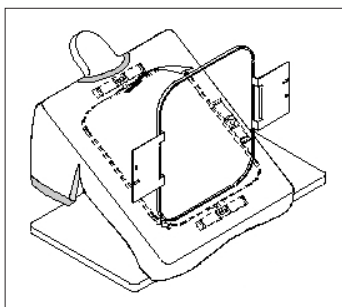
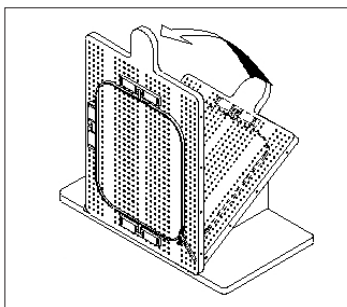
Place outer frame **(1)** underneath the area that you wish to embroider (**between** the two layers of tubular fabric).

Apply pressure with the ball of the thumb to press inner frame **(2)** into the outer frame from above so that the embroidery material is stretched smoothly over the frame.

Abb. 42: Tubular system embroidery, screw for adjusting frame tension

NOTICE

Optional clamping aids are available to facilitate clamping the embroidery material in the cylinder arm frame.



7.1.2 Tabletop embroidery

Single frame technology, (optional)

NOTICE

A separate frame technology operating manual is provided with the single frame embroidery option.

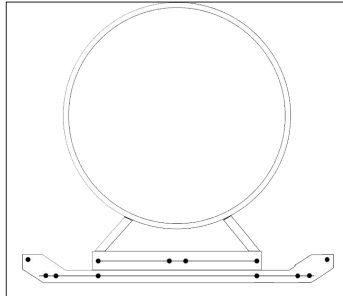


Abb. 43: Single frame

7.1.3 Cap embroidery

Cap device (optional)

NOTICE

A separate manual is provided with the cap device.

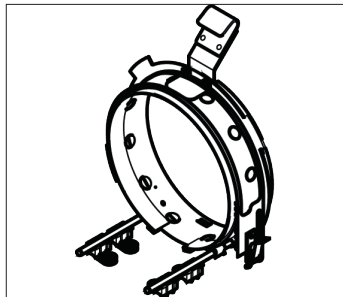


Abb. 44: Cap frame





MACHINE TYPE

JAFa • JNFA

RACER



MADE
IN
GERMANY

ZSK STICKMASCHINEN MADE IN GERMANY

8. Safety guidelines

This chapter contains a summary of the principal rules of behavior that must be observed in order to exclude the risk of injury to yourself and others. It is therefore essential that you read this chapter carefully and thoroughly.

The safety guidelines, together with the relevant regulations governing safety at work, must be observed by all personnel working with the embroidery machine.

8.1 Safety instructions in operator's guide

The operator's guide contains various remarks under the following headings: 'DANGER', 'WARNING', 'CAUTION' und 'NOTICE'.

These are differentiated as follows:



Safety instructions must be observed in order to avoid the risk of personal injury.



Risk of injury from electric shock.



Danger from suspended loads.



This symbol marks instructions in the operator's guide whose infringement can give rise to personal injury or damage to property.



Risk of crushing by moving machine parts.



Risk of piercing by moving mechanical parts (needles, borers).



Risk of burning by hot components (magnets, motors).

NOTICE

Instructions labeled “Notice” must be observed to avoid malfunctions/operating errors.



Indicates waste disposal regulations and procedures.



When using hot air cutting devices (optional)



Do not install or remove the magnetic separator with your bare hands. It is necessary to use a suitable metal object.

Do not place any fingers in the cutting zone during hot air cutting!

Avoid contact with the protective screen of the cutting element.

Important Safety Warning!

Read before using the magnetic hoops

Disclaimer

ZSK Stickmaschinen GmbH neither assumes nor accepts any liability for damages resulting from the handling, use, or misuse of its products. With your purchase, the buyer confirms that you have read and understood the following warnings. The buyer agrees that he/she is responsible for all damages and injuries caused by the magnets and hoops, which include personal injuries, property damages and magnet damages. The buyer must agree with the terms before purchase and use of the product.

Please use caution and common sense, and please read and understand our safety warnings below! It is the responsibility of the purchaser to make sure all users of this product are made aware of the information in this letter. If the product is ever sold, transferred or given to a new owner, this warning letter should be provided to the new owner.

The following should not be construed as a complete and exhaustive list of hazards presented by magnetic materials. This document is provided for information only. Readers are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. ZSK Stickmaschinen GmbH does not represent, guarantee or warranty the accuracy, completeness, currency, or suitability of the information in this document. ZSK Stickmaschinen GmbH specifically disclaims any and all liability for any claims or damages that may result from providing this document or the information it contains.

Pacemakers

Individuals with health issues which require that they wear electronics of any sort like pacemakers, defibrillators or other internal and external medical devices should use caution when handling strong magnets, such as the type included in the magnetic hoops. Pace-makers may be damaged or switch to „Test Mode“ in the presence of a strong magnetic force, if a pace-maker or other medical device is in use, magnetic fields may affect the operation of these devices. Consult your physician and the manufacturer of your medical device to determine its susceptibility to static magnetic fields prior to handling the magnetic hoops. All of our magnetic products should be kept at a safe distance from individuals with these devices.

Damage to magnetic media, electronics, and mechanical devices

The strong magnetic fields of neodymium magnets that are a part of this product can damage magnetic media such as floppy disks, hard drives, credit cards, magnetic I.D. cards, cassette tapes, video tapes or other such devices. They can also damage televisions, computers, cell phones, VCRs, computer monitors and other CRT displays. Never place neodymium magnets near electronic appliances, mechanical watches, hearing aids, or loud speakers.

Certain electronic devices are sensitive to magnetic fields and may be damaged permanently or temporarily disabled if exposed to a magnetic field that is too strong. Video screens and televisions will become distorted and/or discolored if exposed to a strong magnetic field. While damaged screens can usually be demagnetized, it's often tricky and may require qualified service technicians to do so. Other electronic devices like cell phones and pagers can also be damaged. Store your magnetic hoops in a safe place away from electronics of any kind.

Keep all magnetic hoops at least 24 inches away from all types of magnetic media.

Children

Children should not be allowed to handle the magnetic hoops or the neodymium magnets that are a part of the product as they can be dangerous. Children and adults should not ingest magnets or place magnets in any body orifice such the ear, nose or mouth. Ingestion of magnets is very hazardous. If magnets are ingested or aspirated to the lungs, immediate medical attention is required.



Pinch and Eye Hazard

The magnetic hoops and magnets included in this product can pose a serious pinch hazard due to their attractive force on each other and to any object containing iron. Usually surprise is an issue--they can jump out of your hands and snap together from a surprising distance before you realize what is happening.

Fingers and other body parts can get severely pinched between two attracting hoops or items. Keep items like scissors, pins, and any other items that contain metal out of your work area.

Disposal

The rare-earth magnets in this product should never be burned, as burning will create toxic fumes. Rare-earth magnets should be disposed of in compliance with local, state, and Federal law. All strong permanent magnets should be thermally demagnetized prior to disposal. Alternatively, all strong permanent magnets should be placed in a steel container prior to disposal so the magnets do not attract waste disposal equipment or refuse containers.

8.2 Prescribed use

The embroidery machine is designed for industrial use. It is intended for finishing textiles and similar materials by embroidering. If the machine is fitted with the requisite auxiliaries, it can also embroider sequins and cord, and execute boring patterns.

The machine can be used with textile fabrics and threads that are customary in embroidery. Our customer service organization will be pleased to advise you, and is also available for testing unfamiliar material combinations on your behalf.

On principle, do not use the machine for purposes other than described in the operator's guide. It must not be used, for example, as a support surface or in place of a step ladder. Utilization for other than the intended purpose can give rise to risks of personal injury and material damage.

The following conditions must be met for a safe operation of the machine:

- Ambient temperature from 15 ° C to 35 ° C.
- Relative humidity of 30% to 85% non-condensing.
- Direct sunlight on the machine should be avoided.

Electromagnetic compatibility



This machine is a class-A device. It can cause radio interference in residential areas; in such cases the operator may be required to take appropriate measures.

8.3 Operational safety

The embroidery machine is designed according to modern principles. Its electrical equipment complies with the stringent German VDE regulations. Numerous design provisions have been made to improve safety.



Design provisions cannot, however, exclude all risks. The embroidery machine must therefore be operated only by thoroughly instructed personnel familiar with the operator's guide, safety guidelines and relevant accident prevention regulations.'

8.4 Regulations concerning safety at work



In addition to the present safety guidelines, observe all the mandatory accident prevention regulations that apply in the country of use and at the operating location as well as the recognized technical rules for safe working practices.

The valid regulations must be known and accessible to all those entrusted with working at the machine.

8.5 All work at and with the machine



Wear close-fitting clothes and, if you have long hair, a hair net or suitable headgear when working at the machine. Do not wear jewelry. Wide sleeves, loose hair, rings or chains can become caught or entangled in moving machine parts.

Wear shoes with non-slip soles in order to avoid the risk of falls.

8.6 Operation

The machine is to be operated only by thoroughly instructed personnel. For instruction purposes we recommend attending an operator training course run by ZSK Stickmaschinen GmbH. **In any case, before commencing work with the machine, make yourself familiar with the proper operating practices with reference to the operator's guide.**

NOTICE

Do not climb on the work table.

8.6.1 Essential operations before any manual work

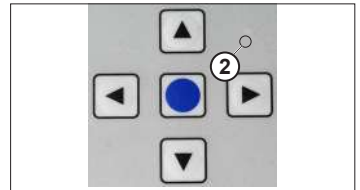
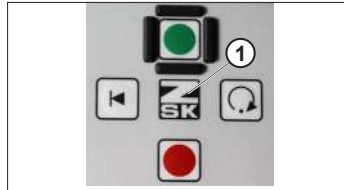
Equipping and setting-up work, conversions (between tabletop, cylinder arm and cap embroidery on tubular system machines, for instance), eliminating needle and thread breaks:



As a matter of principle, carry out such tasks only when the machine is at a standstill. Certain tasks involve switching off the machine and removing the mains plug first. Ensure compliance with the relevant instructions in the operator's guide.

Before working on the stationary machine with the main switch on, switch on the pantograph positioning keys by pressing the ZSK key **(1)** (LED **(2)** next to the keys lights up).

In this setting, you can operate the pantograph manually, but cannot start the machine inadvertently.



WARNING



- CAUTION! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (Abb. 46) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (Abb. 47).

8.7 Embroidering

As a general principle, operate the machine from the front long side. **Each time before starting** the machine, make certain that nobody is underneath the embroidery machine or in the vicinity of its moving parts.

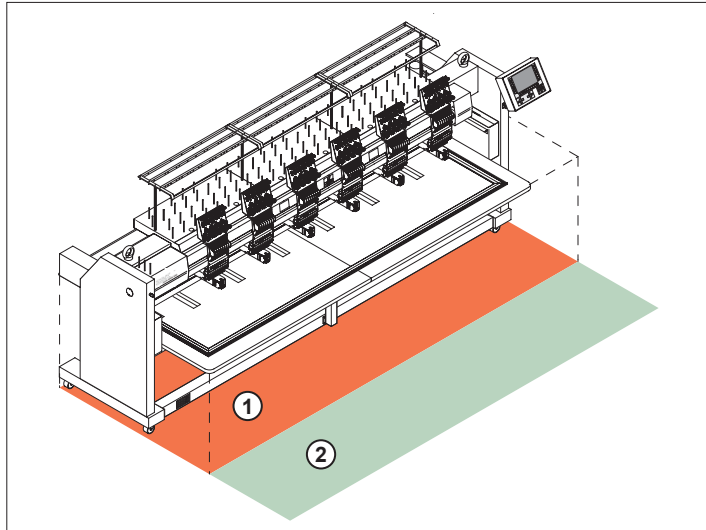


Abb. 45: Work areas



Users are allowed to enter this area **(1) only** when the machine is switched off.

This area **(2)** can be entered for monitoring purposes while the machine is running.



Keep hands away from **moving parts** during embroidering. There is a risk of serious injury especially in the vicinity of the **needles, borers, take-up levers** and **rotary hooks**.

Stop the embroidery machine before all manual operating procedures at the machine, even when simply removing fluff or loose threads from the start of embroidery. Consider your own safety at all times.

Never thread the upper threads **while the machine is running**.

Do not carry out any work at an embroidery unit even when it is switched off because the take-up lever, rotary hook and thread trimmer continue to operate.

WARNING



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

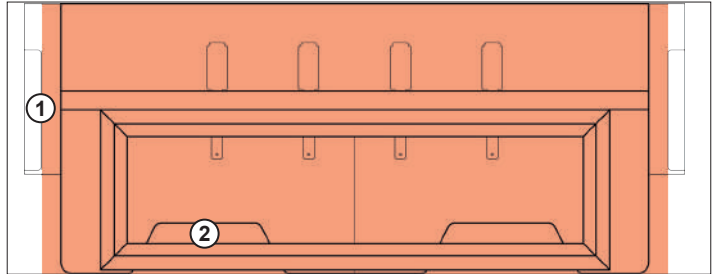


Abb. 46: Working range of pantograph



Keep your hands well away from the insides of supports **(1)**, the table recesses **(2)** and pantograph guide slot **(3)** because of the risk of injury. Also see (*Abb. 47*).

Do not support yourself by the work table.

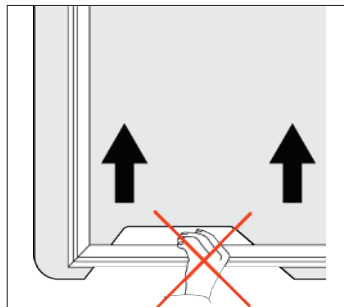


Abb. 47: Risk of crushing against pantograph frame (Work table recess)



Do not place any objects on the embroidery machine or work table. They could be pushed off the work table by movements of the pantograph. Objects that enter the pantograph guide slot can cause operating malfunctions or damage the machine.

To prevent unauthorized intervention, **never leave the embroidery machine running unsupervised.**

8.8 Cleaning and maintenance



Insofar as they are described in the operator's guide, cleaning and maintenance tasks must be carried out only by appropriately instructed personnel.

More extensive maintenance and repair tasks must always be carried out by service personnel that has been trained and accordingly equipped by ZSK Stickmaschinen GmbH because this work requires the application of special knowledge and resources.

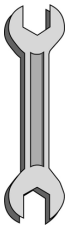


Always disconnect the power supply before carrying out cleaning and maintenance work.

The machine is at zero current only when the mains plug is pulled out **and after a delay of at least 30 seconds**.

Observe the regular servicing periods laid down in the operator's guide.

8.9 Repairs and modifications



Repair and modification work must be carried out only by service personnel that has been instructed and trained by ZSK Stickmaschinen GmbH. Note the following:

Use only genuine spare parts and accessories or parts that have been approved by ZSK Stickmaschinen GmbH.

The machine must not be started up until it is fully assembled with all safety covers and devices installed.

Independent changes and modifications to the machine are not permitted for safety reasons and may conflict with CE regulations.

Modification work **does not include** the conversion tasks described in the operator's guide (e.g. deinstallation/reinstallation of the sequin device).

9. Unloading, unpacking, handling

9.1 For your safety



Only appropriately trained personnel are to be entrusted with handling the machine. Ensure compliance with the relevant safety regulations for operating handling equipment.

In particular, make sure that no-one is standing in the danger area near the machine before each lifting operation.

Do not allow anyone to walk under the suspended load while it is being moved.

9.2 Unloading from a truck with box body

9.2.1 Using a crane and fork-lift truck

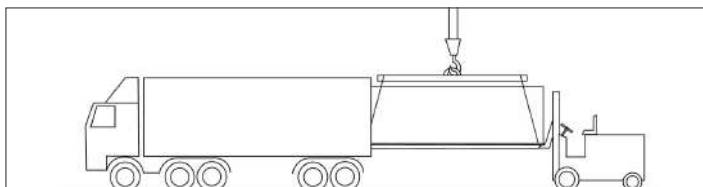


Abb. 48: Unloading using a crane and fork-lift truck

9.2.2 Using a fork-lift truck



Make sure that the stand used to support the crate has an adequate load carrying capacity.

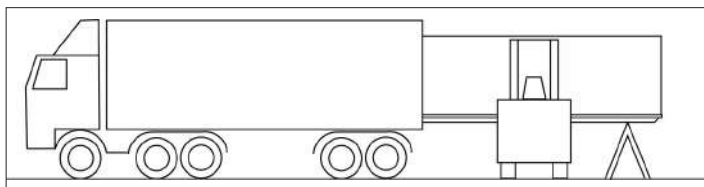


Abb. 49: Correct way of unloading by fork-lift truck

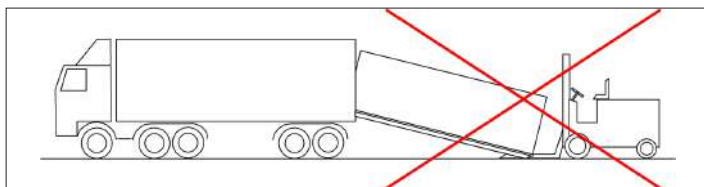


Abb. 50: Incorrect way of unloading by fork-lift truck

9.3 Unpacking

9.3.1 Consignments delivered in a transport crate



Unloading and handling instructions are attached to the crate at the illustrated places (*Abb. 51*)

Begin by opening and removing the crate lid.

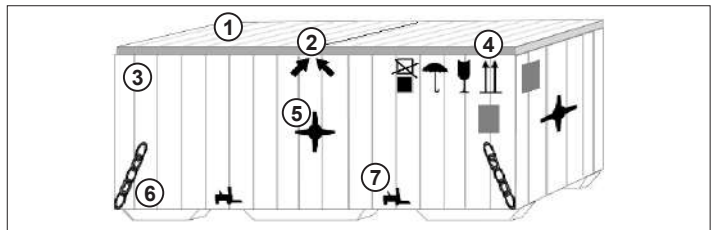


Abb. 51: Transport crate Unloading instructions

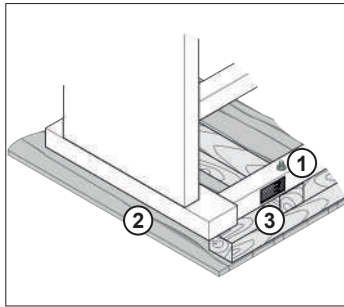
- | | |
|-----|---|
| (1) | Lid |
| (2) | Arrows indicating where lid is divided |
| (3) | Front of crate |
| (4) | Arrows indicating top of crate |
| (5) | Symbol indicating approximate position of center of gravity |
| (6) | Securing points for handling chains and cables |
| (7) | Insert locations for lifting forks |

Remove the front panel and then (if necessary) the sides.

Remove the packing material and the desiccant sachets attached to the machine.

Remove all individually packed components situated on and underneath the work table.

Slacken off the bolts securing the wooden transit blocks to the bottom of the crate.
See (Abb. 52).



- (1) Fixing bolts
- (2) Floor of pallet/crate
- (3) Transit block

Abb. 52: Machine mounted on wooden transit blocks, illustration

9.3.2 If delivered on a pallet

NOTICE

Unloading and handling instructions are attached to the foil packaging.

Proceed as follows to unpack a machine delivered on a pallet:

Remove the foil packaging

Remove the desiccant sachets.

Remove all individually packed components situated on and underneath the work table.

Slacken off the fixing bolts securing the wooden transit blocks to the pallet. See (Abb. 52).

Machines without casters

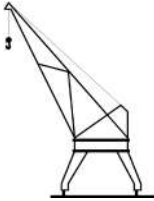


Do not detach the machine from the transit blocks until you install it in the working position. They are not replaced by the machine shoes until the machine is finally installed.

9.4 Moving to the installation location



Prevent the machine from tipping to one side. The machine is liable to tip because the center of gravity is not always in the middle. Personal injury or damage to property can result from the machine tipping over.



The machine is to be moved only by appropriately trained personnel familiar with the relevant safety regulations. Also observe the following points **before moving the machine**:

Prevent the machine from tipping to one side.

Commence lifting movements with care.

9.4.1 Moving by crane (not 1-head machines)



Attach the handling chains or cables only at the eye bolts. The eyes of the eye bolts must be positioned parallel to the long side of the machine. See .



For instructions on handling 1-head machines, see Moving by forklift truck (only if the use of a crane is ruled out).



The 2 to 8-head machines are equipped with two eye bolts for handling the machine by crane.

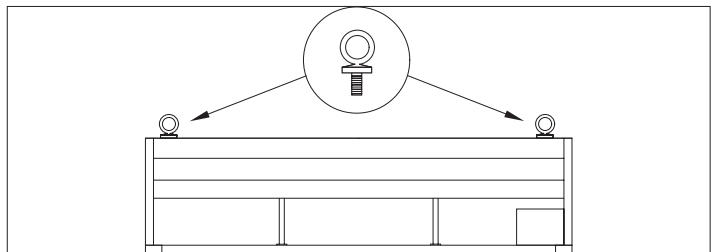


Abb. 53: Eye bolts, illustration

The handling chains or cables should be as close to vertical as possible and must not exceed an angle from the vertical of 26° when the load is being lifted. For this reason, a cross-bar is generally necessary for handling purposes.

The dimensions refer to (Abb. 54):

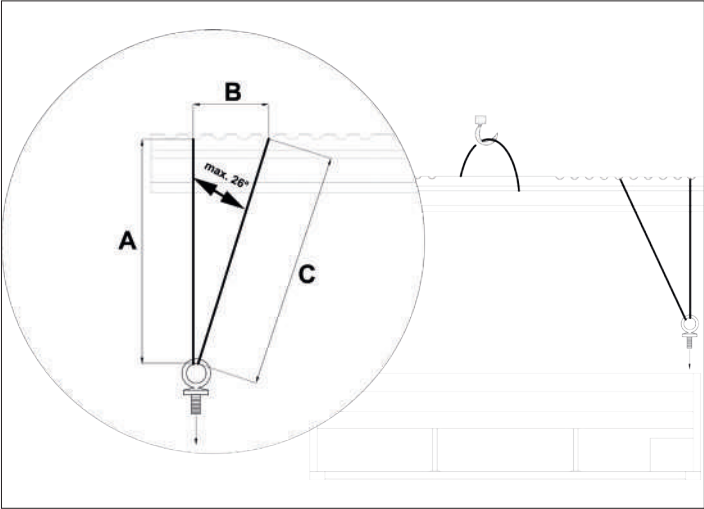
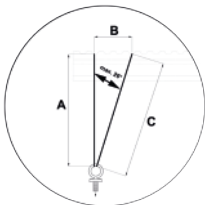


Abb. 54: Moving by crane with cross-bar

NOTICE

The permitted value of 26° will not be exceeded if the dimensions shown in the tables in are observed.



A [CM]	B [CM]	C [CM]
50	24	56
75	37	83
100	49	111
125	61	139
150	73	167
175	85	195
200	98	223
225	110	250
250	122	278

A [CM]	B [CM]	C [CM]
21	10	23
41	20	46
62	30	68
82	40	91
103	50	114
123	60	137
144	70	160
164	80	182
185	90	205
205	100	228
226	110	251

9.4.2 Moving by fork-lift truck (only if the use of a crane is ruled out)



Before raising the forks, make certain that the two bottom cross beams of the embroidery machine are in full contact with and resting securely on the forks, otherwise the machine is likely to tip over and cause personal injury or damage to property.

In order to avoid personal injury and property damage, at least two people must always be present when the embroidery machine is being moved (the fork-lift operator and a marshal).

In ideal circumstances the embroidery machine is to be moved by a crane. Use a fork-lift truck only in the absence of a crane. The fork-lift truck must have sufficient lifting capacity to accommodate the weight of the machine, and a fork length that allows the bottom cross beam(s) of the embroidery machine to make full contact with the fork when the machine is raised. See (Abb. 55).



When introducing and raising the forks, make certain that they do not contact any part of the machine (cables, stepping motor etc.) except for the bottom cross beams.

Introduce the forks underneath the machine cross beams at the center from the back.

Raise the forks carefully until they make contact with the bottom cross beams of the machine. See (Abb. 55).

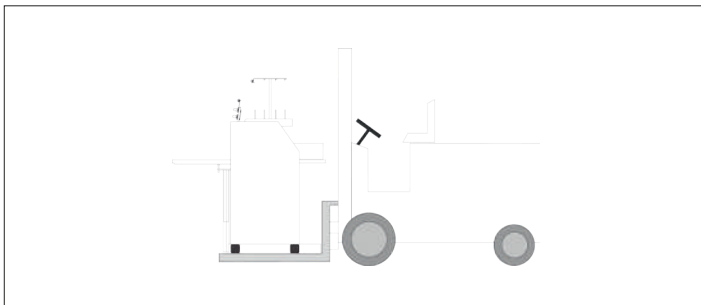


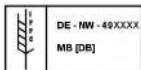
Abb. 55: Fork-lift truck with machine

9.5 Disposing of packaging materials

NOTICE



Dispose of the materials in compliance with national and local law. Keep the parts that make up the crate in case required for service purposes.



The wooden packaging is made almost entirely from natural, non-toxic materials and can be disposed of accordingly. Other treatment guidelines apply in a small number of specific countries. Advice about these can be obtained locally from the relevant authorities.

Packaging paper and foil can be reused and should be recycled.

The desiccant bags contain a natural salt that can be disposed of together with domestic refuse.

10. Setting up and aligning

10.1 Setting up machine



The machine is to be set up and installed by trained service personnel of ZSK or its agents only.



All the fastening elements (bolts, washers, cable ties etc.) are located together with the accessories.

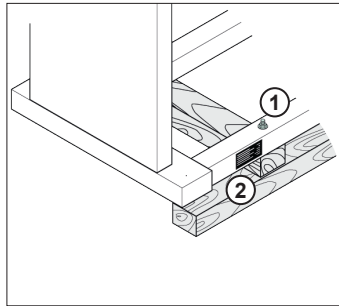
Only trained assembly personnel are allowed to set up the machine at its operating site.

Place the embroidery machine only on a solid surface of sufficient load carrying capacity. Make sure that the machine is standing securely.

10.1.1 Removing transit blocks



You are recommended to lift the machine with a fork-lift/stacker truck.



Detach transit block (2) from the machine by removing the bolts, washers and nuts (1).

Abb. 56: Removing transit blocks, illustration

10.2 Machine variants

There are two variants of the machines:

- Mounted on casters
- Mounted on machine shoes

10.2.1 Casters

Applying caster brakes



It is essential that you apply the caster brakes before starting up the machine, otherwise there is a risk of the machine rolling away.

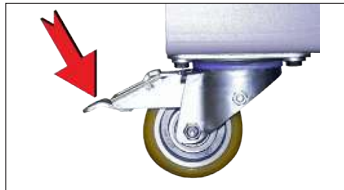


Abb. 57: Brake Left: released, braking

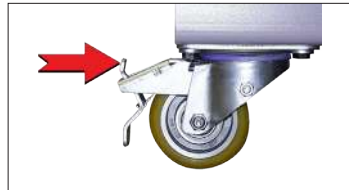


Abb. 58: Right: **applied**, releasing

10.2.2 Machine shoes

Installing machine shoes

NOTICE

You are recommended to lift the machine with a fork-lift truck.

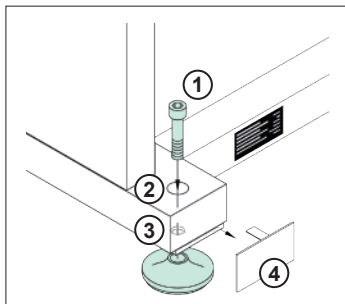


Abb. 59: Installing machine shoe

Take off cover (4).

Insert adjusting screw (1) in hole (2) from above.

Tighten the adjusting screw in tapped hole (3).

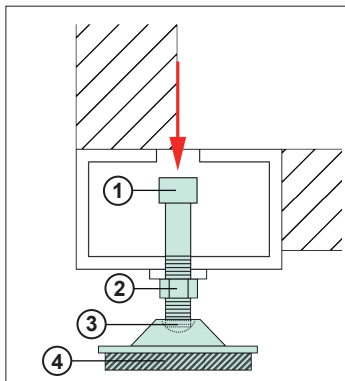


Abb. 60: Installing machine shoe, cross-section

Fasten nut (2) **tightly** on adjusting screw (1) from underneath.

Locate machine shoe (4) centrally underneath adjusting screw (1), so that the adjusting screw mates with the recess (3) in the machine shoe.

Continuously monitor the exact position of the machine shoes while slowly lowering the machine.

Replace cover (4).

NOTICE

Make sure that *all 4 nuts (2)* are tight and that the machine is standing securely before starting up the machine.

11. Installing

11.1 Comparing mains voltage



All installation and service work is to be carried out exclusively by trained experts.

The machine is at zero current only when the mains plug is pulled out and after a delay of at least 30 seconds.

The supply voltage of the machine is 230V AC (+/-15%) 50/60Hz.



Compare the mains voltage stated on the rating plate with the system voltage available at the machine location. If the values are not the same, do not start the machine, but contact our customer service department.

11.2 Mains connection

The machine is supplied with power cable and plug and may only be operated at a plug connector with a correctly connected grounding conductor, which has been setup according to the valid regulations. Compliance with applicable regulations and, in particular protective measures against electric shocks according to IEC 364/VDE 0100 or corresponding national and local safety regulations must be observed.



On completion of the installation work, run the connecting cable between the embroidery machine and mains socket-outlet in such a way that it is not an obstacle to foot traffic (risk of tripping).

Do not connect the machine to the power supply until it is fully assembled and the control cabinet is closed.

11.3 Fuses/automatic circuit breakers



Fuses and circuit-breakers are safety devices. Before starting up the machine again, the reason for the power loss has to be investigated in order to avoid the risk of damage or further production down-times.

NOTICE

Control cabinets in the series MSCL and MSCF do not have fuses of their own. The machines are covered by the protective provisions of the operator's power supply.

12. Operating elements

12.1 General view

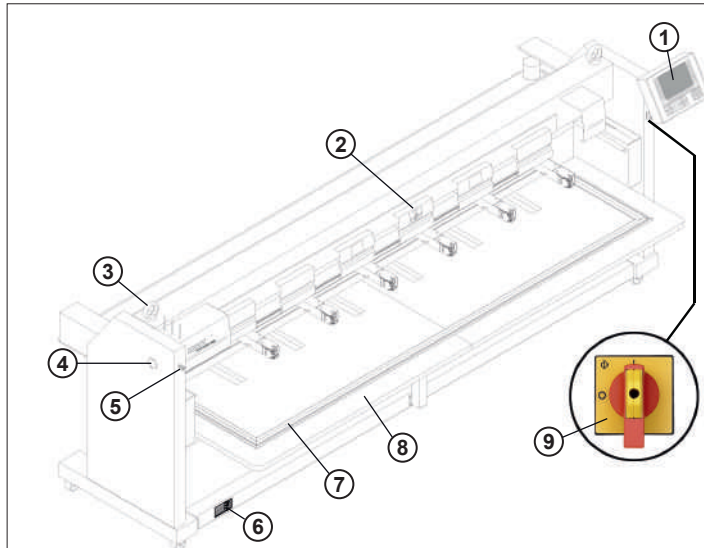


Abb. 61: General view, examples: 6-head frame

- (1) Control unit
- (2) Start/Stop keys
- (3) Eye bolt
- (4) Socket wrench entry for main shaft
- (5) EMERGENCY STOP button (on machines with 4 and more heads)
- (6) Type plate
- (7) Pantograph frame
- (8) Work table
- (9) Main switch, also EMERGENCY STOP switch on 1- and 2- head machines

This chapter provides an overview of the embroidery machine's operating elements. These controls are used, for example, to switch the machine on and off, to position the pantograph, for starting and stopping the embroidering routine, for reverse embroidering, and when working with appliqués.

NOTICE

The position of the individual operating elements on the machine is illustrated under General view and Control unit.

12.2 Main switch

The machine and control unit are switched on and off with the main switch.

12.2.1 1 and 2-head machines

The main switch of the 1 and 2-head machines also functions as the **EMERGENCY STOP switch**.



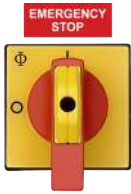
12.2.2 4 to 8-head machines

4 to 8-head machines are equipped with additional, separate **EMERGENCY STOP buttons**.



12.3 EMERGENCY STOP

The main switch also functions as an EMERGENCY STOP switch on 1 and 2-head machines; machines with a larger number of heads have EMERGENCY STOP buttons.



The main switch functions as the EMERGENCY STOP switch as well on 1 and 2-head machines.

NOTICE

If the EMERGENCY STOP button has been operated (illustration on right in *Abb. 62*), it has to be reset by turning it clockwise. Before switching the machine back on, make sure that the cause of the EMERGENCY STOP has been rectified.

EMERGENCY
STOP

Not operated



Operated



Abb. 62: EMERGENCY STOP button

NOTICE

All the operating elements described below operate only if the main switch is switched on.

12.4 Control unit

NOTICE

In line with more recent ZSK control units, this control unit has a start/stop control panel and a control panel for manual pantograph positioning.

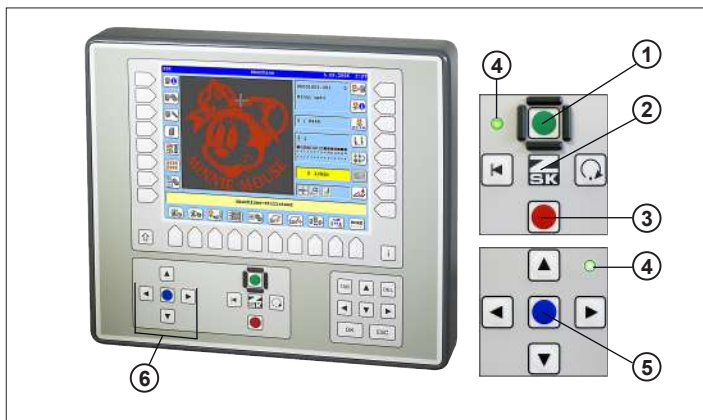


Abb. 63: T8 control unit

- (1) Start key
- (2) ZSK-key
- (3) Stop key
- (4) Light-emitting diode (LED)
- (5) Appliqué key
- (6) Start/Stop keys
- (7) Pantograph positioning keys






12.4.1 Start/Stop keys

NOTICE

You can use the Start/Stop key cluster when the LED (light-emitting diode) in the cluster is illuminated. The pantograph positioning keys must be switched off.



The Start/Stop key cluster is situated on the control unit and, in some cases, between the heads (without the ZSK key). It consists of the keys for starting and stopping the machine, selecting and deselecting the pantograph positioning keys (ZSK key), reverse embroidery and executing single stitches.

	Operation	Function
	Press	Stops the machine
	Press	Starts the machine
	Press	Switches pantograph positioning keys on/off
	Press briefly Hold down	Executes a single stitch Executes a sequence of single stitches (embroidering at low speed)
	Press briefly Hold down	Moves the pantograph back one stitch at a time (reverse embroidery) Executes a sequence of reverse stitches

NOTICE

You can stop the machine at any time with the Stop key. The interrupted embroidering routine is resumed as soon as the machine is restarted with the Start key.



12.4.2 Pantograph positioning key cluster

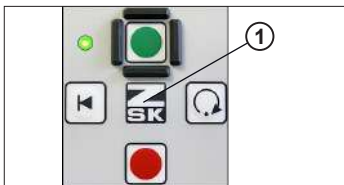
NOTICE

Do not select manual pantograph positioning while the machine is running. This would stop the machine and interrupt the embroidering routine.



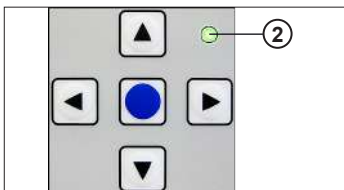
The key cluster for positioning the pantograph manually is situated on the control unit. It consists of the arrow keys for positioning the pantograph and the Appliqué key.

Switching on key cluster



Press ZSK key (1)

Abb. 64: ZSK key



Pantograph positioning switched on:
(LED (2) illuminated).

Abb. 65: LED

Applikations-Taste



The appliqué key is located in the Pantograph positioning key cluster; it is required when you wish to embroider with appliqués. The key cannot be used unless the key cluster is switched on.

NOTICE

Press the Appliqué key for 1 sec at least.



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

Risk of crushing

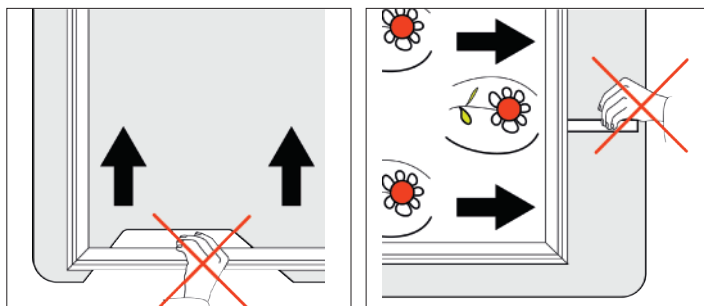


Abb. 66: Risk of crushing against pantograph frame
(Work table recess)



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

NOTICE

You cannot align the pantograph unless the machine is stationary.

12.4.3 Aligning pantograph

Aligning with arrow keys

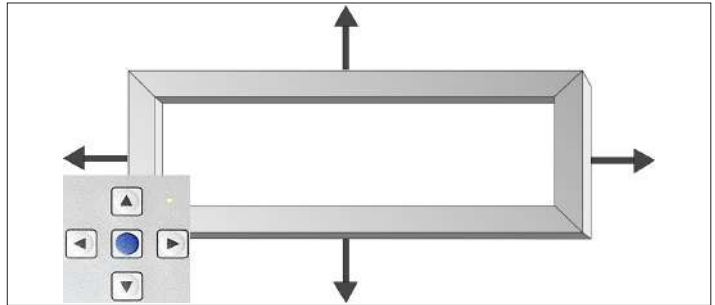






Abb. 67: Directions of pantograph movement (example)
Directions of pantograph movement

Align the pantograph with the arrow keys. See (Abb. 67).

Key	Direction of pantograph movement
	Backwards (away from the front edge of the work table)
	Forwards (towards the front edge of the work table)
	To the right
	To the left

Press the ZSK key again.

⇒ The pantograph positioning keys are deselected (LED goes out).

NOTICE

Once you have aligned the pantograph, switch off the positioning key cluster because the machine cannot be started while manual positioning is switched on.

Aligning by way of control unit

NOTICE

Aligning the pantograph by way of the control unit is possible only in the Machine module.



By way of the control unit the pantograph position can also be controlled with reference to the screen display. This allows paths to be traveled quickly or slowly or in 1 mm or 1/10 mm steps(increments).

Press the **[U5]** button below the screen display to activate manual pantograph positioning.

⇒ The following symbols are displayed at the bottom of the screen.

NOTICE

The control unit operator's guide contains more detailed information on using the menu keys.



Press button **[U1]** and hold down arrow button to move pantograph continuously and fast.



Press button **[U2]** and hold down arrow button to move pantograph continuously and slowly.



Press button **[U3]** and briefly press arrow button to move pantograph in 1 mm steps with each press.



Press button **[U4]** and briefly press arrow button to move pantograph in 1/10 mm steps with each press.



The pantograph responds straight away.



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

NOTICE

Once you have aligned the pantograph, switch off the manual pantograph positioning function. With manual pantograph positioning selected, the machine cannot be started.

13. Changing modes

NOTICE

This part of the operator's guide refers exclusively to machines with tubular system functionality.

WARNING



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

13.1 Changing from border frame to tubular system embroidery

! DANGER

The conversion is not to be carried out when the machine is running.

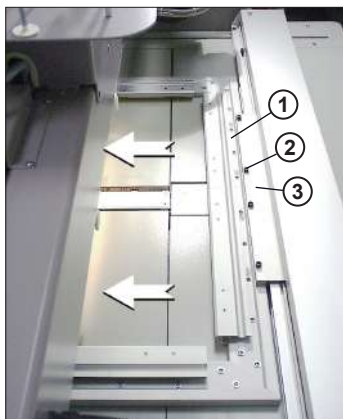


Abb. 68: Operating mode, examples

Left: border frame mode with optional sequin device

Right: Tubular system embroidery

13.2 Removing pantograph frame

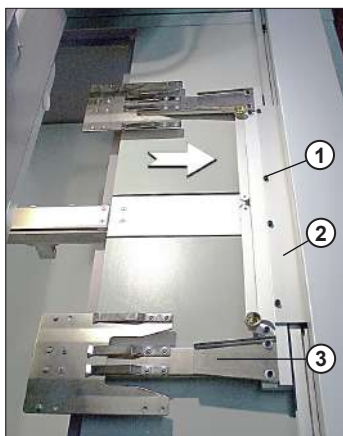


Slacken off screws (2) that fasten pantograph frame (1) to carriage (3) of the pantograph drive.

Remove pantograph frame (1).

Abb. 69: Dismantling pantograph frame, illustrated: 1 head machine

13.3 Installing cylinder arm frame holder



Insert cylinder arm frame holder (3).

Fasten cylinder arm frame holder (3) with screws (1) to carriage (2) of the pantograph drive.

Abb. 70: Installing cylinder arm frame holder, illustrated on a 1 head machine



Each time you convert the machine for a different mode, change the pantograph configuration to suit the application (e.g. border frame embroidery) by way of the control unit.

13.4 Moving work tables



The work tables are heavy. At least two people are required to move them.



To allow tubular system embroidery, the work table has to be lowered to its travel limit.

The Jxx series consists of three machine variants:

- Machines **without** a work table support
- Machines **with manually adjustable** work table support
- Machines **with hydraulic** work table support

13.4.1 Machines without a work table support

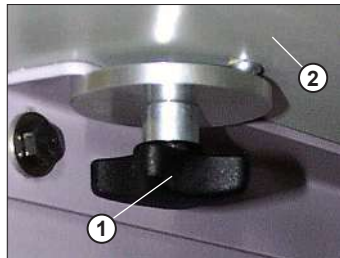


Abb. 71: Upper mounting bracket

Slacken off star-shaped screws (1) with which work table (2) is secured.

Pull out work table.

Insert work table in bottom mounting bracket (3).

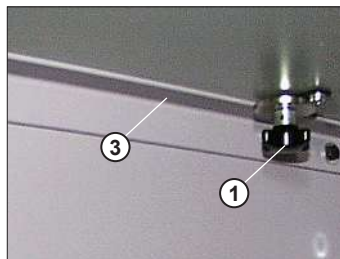


Abb. 72: Lower mounting bracket

Insert star-shaped screws in rear position.

Secure work table by tightening star-shaped screws (1).

13.4.2 Machines with a work table support

Manually adjustable work table support

On machines with work table support with manual adjustment, the work table position is changed in the same way as on machines without work table support. In addition, however, the work table support must also be adjusted as follows:

Manually adjusting work table support

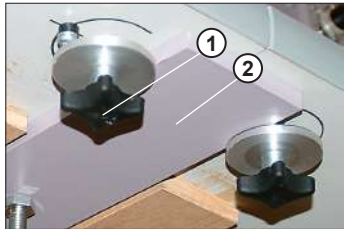


Abb. 73: Star-shaped screws for center support

Slacken off star-shaped screws **(1)** or center support **(2)**.

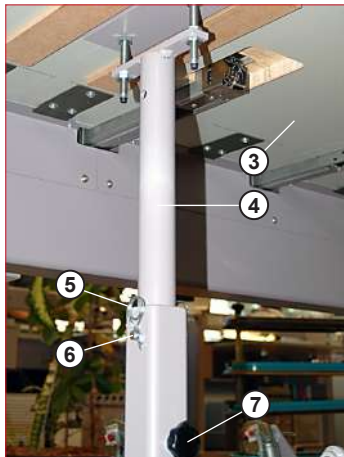


Abb. 74: Work table support in top position

Remove work tables **(3)**.

Unscrew and remove starshaped screw **(7)**.

Pull keeper **(5)** off pin **(6)**.

Hold work table support **(4)** firmly and fully extract pin **(6)**.

Lower work table support **(4)** and rotate through 180° to the rear.

Insert pin **(6)** in the envisaged hole.

Secure the pin with keeper **(5)**.

Tighten star-shaped screw **(7)**.

Slide the work tables from the front onto the bottom mounting bracket (right and left sides) and the work table support.

Secure the work tables with the star-shaped screws.



It is essential that you rotate the work table support through 180° to the rear, otherwise you risk injuring yourself on projecting part (8).

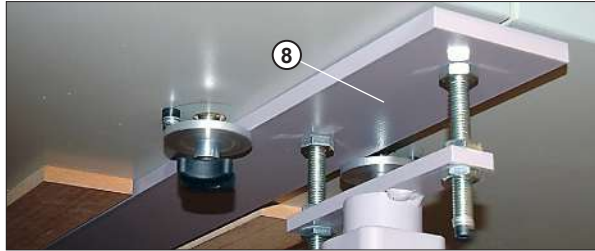


Abb. 75: Attachment of work table to center support

Hydraulic work table support



Make sure that nobody is busy at or underneath the work table while it is being moved.

Removing middle pantograph guide rail



Detach the middle pantograph guide rail before lowering the work table.

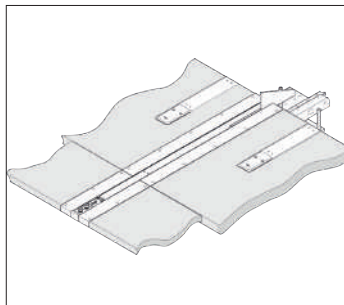


Abb. 76: Pantograph, middle guide

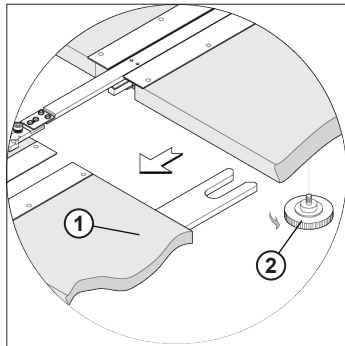


Abb. 77: Dismantling work, table extension

Slacken off fixing screw (2).

Remove work table extensions (1).

NOTICE

Move the “front-to-back” pantograph guide as far forward as possible (front edge of work table).

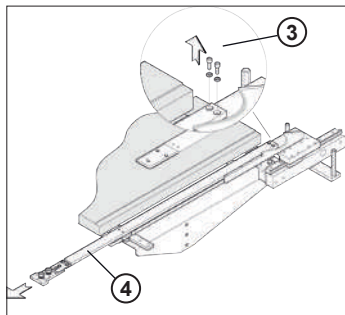


Abb. 78: Dismantling middle pantograph guide rail

Remove screws (3).

Remove middle pantograph guide rail (4).

Adjusting work table support hydraulically

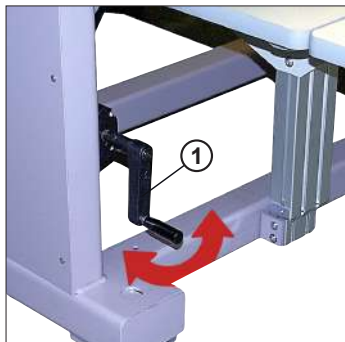


Abb. 79: Hydraulic drive for adjusting work table support

Turn crank (1) **counterclockwise**.

⇒ Work tables **are lowered** to the bottom position.

Turn crank (1) **clockwise**.

⇒ Work tables **are raised** to the top position.

13.5 Changing from tubular system to border frame embroidery



The conversion is not to be carried out when the machine is running.



When you wish to embroider in the border frame mode, it is essential that you return the work table support to the top position, otherwise the work tables can break.

NOTICE

To convert from tubular system to border frame embroidery, follow the same steps as for converting from border frame to tubular system operation, but in the reverse sequence.



Each time you convert the machine for a different mode, change the pantograph configuration to suit the application (e.g. border frame embroidery) by way of the control unit.

13.6 Changing from tubular system to cap embroidery

NOTICE

The conversion for optional cap embroidery is described in the operating instructions for the cap attachment.



Each time you convert the machine for a different mode, change the pantograph configuration to suit the application (e.g. border frame embroidery) by way of the control unit.

14. Preparing to embroider



As a general rule, carry out the work described here only when the machine is stationary. Make sure that no-one is able to start the machine while you are fitting the embroidery material and setting it up.

This chapter describes all the work that has to be executed before embroidering. It covers fundamental manual intervention by the operator as required after faults (e.g. changing needles and threading) or when optimizing the embroidered work (e.g. adjusting thread tension) as well.

14.1 Clamping embroidery material

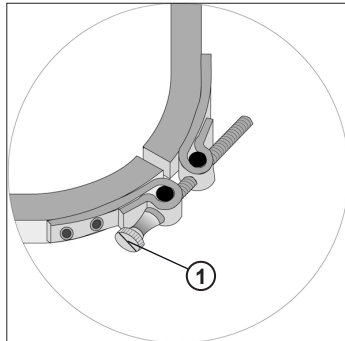
14.1.1 Tubular system embroidery

(machines with tubular system functionality only)



- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

Adjusting frame tension



Adjust the frame tension to match the thickness of the embroidery material with the adjusting screw (1) on the outer frame.

Abb. 80: Tubular system embroidery, screw for adjusting frame tension

Clamping embroidery material in the frame

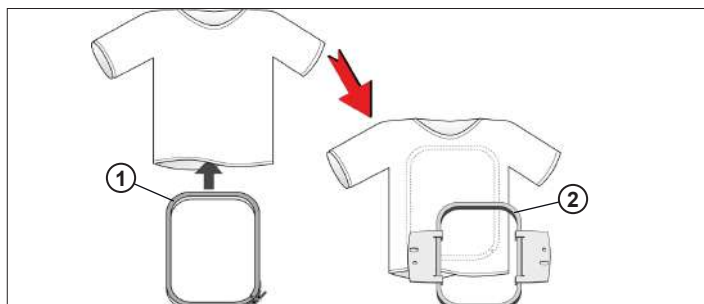


Abb. 81: Tubular system embroidery, clamping tubular fabric in cylinder arm frame

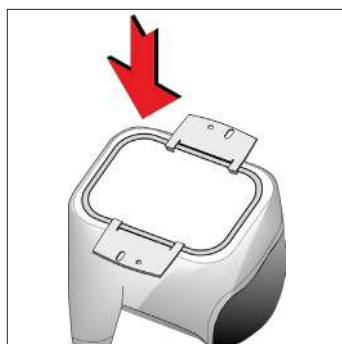


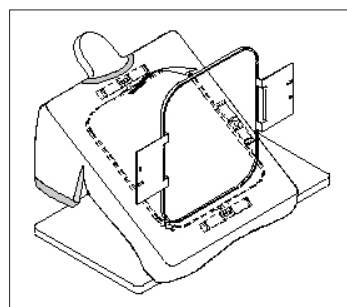
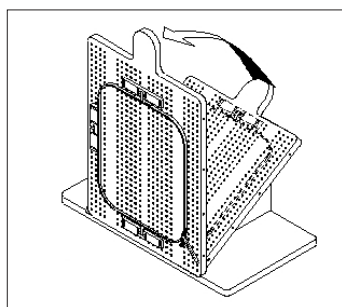
Abb. 82: Tubular system embroidery, screw for adjusting frame tension

Place outer frame **(1)** underneath the area that you wish to embroider **(between the two layers of tubular fabric)**.

Apply pressure with the ball of the thumb to press inner frame **(2)** into the outer frame from above so that the embroidery material is stretched smoothly over the frame.

NOTICE

Optional clamping aids are available to facilitate clamping the embroidery material in the cylinder arm frame.



14.1.2 Border embroidery

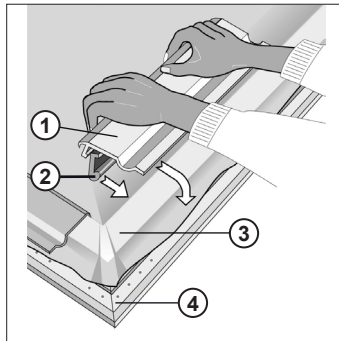


- Caution! - The pantograph travels at a very high speed. Do not rest on the work table or lean against the table recesses within the working range of the pantograph (*Abb. 46*) A collision with the high-speed pantograph can cause bruising and injuries resulting from crushing or shear forces. (*Abb. 47*).

Clamping element, fitting



Make sure that the clamping elements lie absolutely flat otherwise the presser feet will be damaged as they pass over.



Pull clamping profile (2) of clamping element (1) over the cloth from the inside towards border frame (4) until contact is made.

Pull the border clamp over angle rail (3) overcoming the spring resistance, until it engages.

Abb. 83: Clamping element, fitting

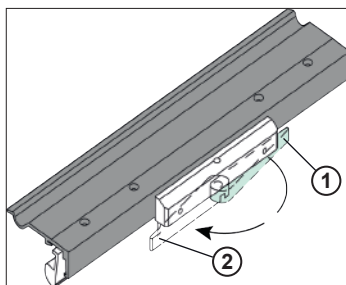
Clamping elements with locking mechanism



Make sure that the locking mechanism on the clamping element is securely engaged before starting up the machine. Otherwise damage may be caused to the embroidery material, embroidery head or any auxiliaries (e.g. sequin attachment).

NOTICE

Depending on the version, the lateral (bronze-colored) clamping elements are equipped with a locking mechanism. Make sure that the locking lever is released when fitting the clamping element. See (Abb. 84).



To lock or release the clamping element, move locking lever **to its travel limit**.

(1) Released

(2) Locked

Abb. 84: Clamping element with locking mechanism

Position and sequence of clamping elements

Attach the clamping elements on the short sides first, then on the rear pantograph rail, and finally those on the front. Compliance with this sequence prevents unnecessary distortion of the embroidery material.

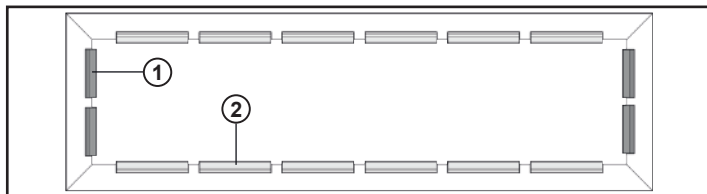


Abb. 85: Position of clamping elements

(1) Bronze color

(2) Aluminium color

Bronze-colored clamping element (without locking mechanism)

NOTICE

You can opt to equip the entire pantograph with bronze colored border clamps, which have a stronger spring action than the aluminum ones. The exclusive use of bronze clamps is beneficial when embroidering designs that contain an exceptionally large number of stitches.

14.1.3 Single frame embroidery

Single frame technology, (optional)

NOTICE

A separate frame technology operating manual is provided with the single frame embroidery option.

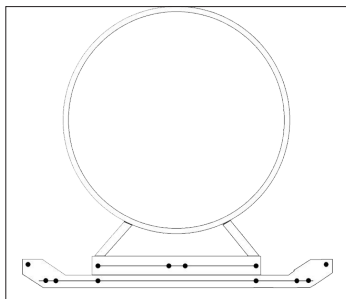


Abb. 86: Single frame

14.1.4 Cap embroidery

Cap attachment (optional)

NOTICE

A separate manual is provided with the optional cap attachment.

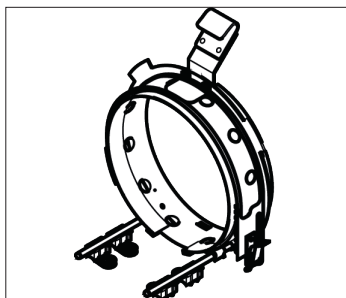


Abb. 87: Cap frame

15. Maintenance and troubleshooting

15.1 For your safety



Before undertaking any cleaning or maintenance work:

Make certain that the machine cannot be switched on unintentionally by unauthorized persons.

Covers have to be removed to perform some maintenance work. On no account is the machine to be restarted before you have reinstalled all covers properly.

15.2 Lubricants

The standard machine accessories include:

- ⇒ A spray can containing sewing machine oil
(JC W 35 Super Lubrifiant, ZSK order No. 750 081)
- ⇒ A grease cartridge
(Gleitmo 585M, ZSK order No. 667 055).

As far as possible, use only the original lubricants supplied with the machine when carrying out maintenance work. These lubricants are available from ZSK.

NOTICE



Waste grease and oil are to be treated in compliance with the disposal regulations applicable in the country concerned or surrendered to a hazardous waste facility.

15.3 Overview

NOTICE

The stated maintenance intervals are guidelines for conventional single shifts. In case of 2 or 3-shift duty cycles, the intervals are to be reduced accordingly.







Before applying grease or oil, remove dirt and old residual lubricant.



All installed lifting magnets are maintenance-free and must not be oiled.


More detailed maintenance instructions are contained in the Maintenance guide.



Do not apply an excessive amount of grease or oil, otherwise moving parts can hurl off lubricant or give rise to dripping. This could cause the work to be soiled.

Key to maintenance table			
	1x (No. of shots)		every three months
	every day		every six months
	every month		every twelve months
~	as necessary		

Type	Maintenance machine in general	Lubricant	Frequency
SPRINT J-Series RACER	Grease linear guide (pantograph control , grease side-to-side drive)	<i>Gleitmo 585M Fett</i>	
L-Z	Grease linear guide (pantograph control , grease side-to-side drive)		

Type	Maintenance control components	Frequency
SPRINT	Clean control components	~
J-Series RACER L-Z	Clean ventilation filter	

15.4 Troubleshooting

The following tables are designed to help you rectify faults caused by incorrect operation or minor damage.

Fault	Cause	Remedy
Pantograph offset	Pantograph adheres to work table as a result of using adhesive spray	<ul style="list-style-type: none"> • Clean work table • If possible avoid use of adhesive spray - use nonwoven fabric instead
	Parts of design lie outside embroidery field	<ul style="list-style-type: none"> • Position in such a way that entire design lies within embroidery field (framing)
	Design is defective	<ul style="list-style-type: none"> • Prepare new copy from original
	Clamped connections of toothed-belt pulleys are slack	<ul style="list-style-type: none"> • Check clamped connections, take up slack if necessary
Design offset	Embroidery material is clamped too slackly	<ul style="list-style-type: none"> • Clamp material taut
	Material distortion, especially with very fine material	<ul style="list-style-type: none"> • Reinforce embroidery material, e.g. with nonwoven fabric
	Embroidery frames not sufficiently secured	<ul style="list-style-type: none"> • Secure individual frames, mounting rails etc. well
	Upper and bobbin thread tension too high	<ul style="list-style-type: none"> • Set correct thread tension
	Punch faults (processing sequence not operating smoothly, especially with stitch-intensive designs)	<ul style="list-style-type: none"> • Obtain information from card manufacturer • Notify ZSK customer service
Machine runs irregularly	Belt tension too slack	<ul style="list-style-type: none"> • Tighten belts
	Components not running freely	<ul style="list-style-type: none"> • Notify ZSK customer service
Inaccurate stopping position	Belt tension too slack	<ul style="list-style-type: none"> • Tighten belts
	Drive belts coated with oil and slipping	<ul style="list-style-type: none"> • Degrease pulley • Renew drive belts
	Components not running freely	<ul style="list-style-type: none"> • Notify ZSK customer service
Machine does not start	Power supply interrupted	<ul style="list-style-type: none"> • Press ZSK-button on control panel (LED in start/stop switch group comes on) • Check fuse/automatic circuit breaker

Subject to change!

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