

Edition notice

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1st Edition

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IMPORTANT SAFETY INSTRUCTIONS

Hardware

Please be aware of the following basic safety instructions when using your machine. Before using this machine, read instruction manual carefully.

DANGER!

To reduce the risk of electrical shock:

- Never leave the machine unattended as long as it is plugged in.
- Always unplug the machine from the electrical outlet immediately after using and before cleaning.

Protection against LED radiation:

- Do not view the LED light directly with optical instruments (e.g. magnifier). The LED light corresponds with protection class 1M.

WARNING

To reduce the risk of burns, fire, electric shock or injury to persons:

- To assemble the system at least 2 adult people are needed.
- The installation, the operation and the repairs are only to be carried out by people who have sufficient knowledge of the system and this instruction. In addition to that, these people must know any warnings and precautions which are indicated in the safety notes. Furthermore these people need to possess the education, instructions and the authorization to connect and disconnect circuits and devices according to the existing safety regulations.

- Before you start installing and operating the system, please check all the components for any transport or installation damages. Don't try to disassemble the system or system components. Contact the authorized BERNINA dealer if components need to be repaired or replaced.
- Never lift the system holding the motor cables, power cables or hydraulic tubes. Keep the motor cables, power cables and the hydraulic tubes away from heat, sharp edges and wetness. Stop operating the product immediately when you notice that motor cables, power cables or hydraulic tubes are damaged and replace the damaged components at once. Do never carry out any repairs on motor cables, power cables or hydraulic tubes.
- Don't operate the system outdoor. Don't expose the system to damp or wet conditions. Avoid surroundings with chemical influences or corrosive environment. Don't operate the system near inflammable dissolvents, propellants and/or explosive substances (e.g. gas, steam, dust etc.). Avoid temperatures beyond the acceptable temperature range from 5° to 45°C. Don't expose the components of the system to vibrations and/or impact loads.
- Don't insert any objects into the system when it is connected to the power supply.
- Be careful when laying the extension cables. Make sure that the cables are not pinched or taut. Position the cable so that tripping can be avoided. Only use spare parts and accessory parts which are authorized or provided by BERNINA.
- To disconnect, turn the main power switch at the control cabinet to «0» then remove the plug from the outlet. Do not unplug by pulling the cord, instead grasp the plug to pull it from the outlet.

- Always disconnect the power plug from the electrical outlet before cleaning and maintenance adjustments, which are mentioned in the instruction manual, are carried out.
- Clean the system components with a mild detergent and a damp cloth. Don't use corrosive detergent or high pressure wash systems to clean the components. Make sure that the system is clean and dry before you connect it to the power supply and start operating it again.
- Use this system only for purposes as described in this manual.

Possible risks

- Never let children be unattended in the surrounding of the system when it is working autonomically.
- Do not use the system as a toy. Close attention is necessary when this Q-matic system is used by or near children.
- Children are not allowed to play with the system.
- While assembling the single and small parts, be careful that they are out of the reach of children (choking hazard)!
- **Choking hazard!** Keep plastic bags away from children and babies. Don't pull the bags over the head.
- Cleaning and maintenance work must not be carried out by children unless they are supervised.
- Standing/Sitting on the frame is strictly forbidden. Inappropriate use of the system can result in serious injuries.
- Make sure that you don't pinch your fingers during the assembly.
- Never operate this system if it has a damaged cord or plug or if it is not working properly. Contact the nearest authorized BERNINA dealer for further assistance.

General warnings

- With the Q-matic installation, the channel locks (Optional accessory) must not be attached to the system anymore. Otherwise it can result in bruises.
- With the Q-matic installation, the magnetic park positioning brackets with a magnet at the carriage must be removed and replaced by the new Q-matic stand-off.
- Staying within (between the fabric rails and the table) or beneath the quilt frame is strictly forbidden during the automatic operation.
- Only proven service technicians are allowed to open the control cabinet. Inside the control cabinet current-carrying parts are accessible. **Danger!**
- Side clamps can become unfastened from the fabric. Children (or short people) shouldn't stand on the side where the side clamps could be catapulted to.
- Switching off the system must be carried out via the main switch and not via the emergency stop knob. The emergency stop knob is considered to be used only in emergency situations.
- When the PC is supplied via the control cabinet, it must be shut down via the regular operating system prior to switching off the Q-matic system. Otherwise damages to the software resp. the operating system or the loss of data can occur.
- Never plug in or out any cables when the system is switched on.

For all grounded, cord-connected appliances

- **GROUNDING INSTRUCTIONS:** This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord

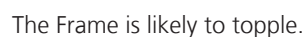
having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local safety regulations.

- **DANGER** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

Notes on assembly instruction

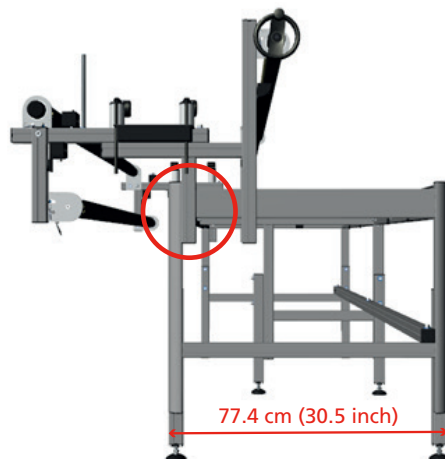
- To connect the cabling to the motor drives their casings must be opened. Therefore a contact with sensitive electronic components is possible. As a consequence it is necessary to be grounded before mounting the cables to the motor drives so that any

The Frame isn't provided with extended legs

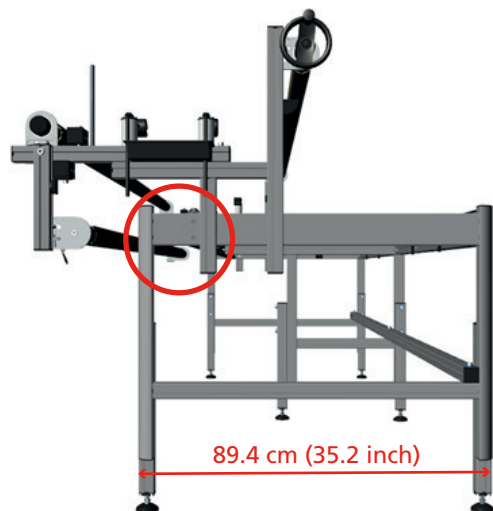


- Make sure that the Frame is equipped with extended legs before the Q-matic-System is assembled. If this is not the case, purchase the appropriate upgrade kit at the specialized BERNINA dealer and attach it to the Frame.

Frame **without** extended legs:



Frame **with** extended legs:



SAVE THESE INSTRUCTIONS!

Appropriate use

Your BERNINA machine with Frame is built and designed for ambitious hobby practice. It answers the purpose of quilting fabrics as described in the separate instruction manual of BERNINA Q 20 / Q 24. Any other usage is not intended. BERNINA doesn't assume liability resulting from inappropriate application.

IMPORTANT SAFETY INSTRUCTIONS

Software

Not any part of the publication or the enclosed software may be copied or spread, transferred, converted, saved in a database, translated to a human or a computer language or made accessible to a third party in any form or in any way, neither electronically nor mechanically nor manually or in any other way.

NOTE

The illustrated screen pictures of the software, which are showed in this manual, serve the purpose to visualize and can differ from the ones which really appear in the software.

PRINTED INSTRUCTION MANUAL

Registered owners of the BERNINA Q-matic software are allowed to copy the BERNINA Q-matic instruction manual for the personal use once (1). This copy can be printed by a private printer or by a commercial printing office.

LIMITED WARRANTY

BERNINA International AG warrants for 90 days, starting on the day when the software has been transferred to you that product is free of any defects in workmanship and materials. You are given the possibility to return the products which are covered by this warranty along with the proof of having purchased them to BERNINA or to the specialised BERNINA dealer during this particular warranty duration. You will get replacement free of cost. Any other costs such as cost of shipment or insurance shall be those of the purchaser. The risk of loss, damage or loss of the products is the purchaser's alone. The purchaser relies on his personal knowledge and on his own judgement when choosing the software which is only needed for private use. The purchaser assumes the complete risk concerning the results and the performance of the software. Subject to legally

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As far as legally tolerable, neither BERNINA International AG, their developers, the people in power, the employees nor subcompanies are responsible to you for consequential, incidental or indirect damages (compensation for losses in sale, operational interruptions, loss of data etc.), whether predictable or not, which emerge from the use or the non-usability of the software or the provided safety device and cable as well as the instruction manual, independent on the basis for a claim and also when BERNINA or an authorized BERNINA retailer has been informed about the eventuality of such damages. Some states or jurisdictions don't allow the exclusion of incidental or consequential, indirect or particular damages, which means that the before mentioned limited liability may not apply for you.

CONCLUSION

Your license to use the BERNINA Q-matic software is legally valid as long as you stick to the terms of the license agreement. If you do not stick to even one term of the license agreement, the immediate annulment of the license agreement will follow automatically without any announcing notice by BERNINA International AG. You can conclude the license at any time by returning the BERNINA Q-matic

software plus any copies of it, the backup device and the cable as well as the complete accompanying documentation to BERNINA International AG.

Application of the anti-virus software and other programs:

On the All-in-one Touch PC which is supplied with the Q-matic, basically no other programs than the ones included in the delivery content should be installed. Only access the Internet when this is explicitly required by the customer service/support provided by BERNINA or Art & Stitch in connection with the technical support. Explicitly no other anti-virus software than the program «Windows Defender» which is already installed in Windows 10 is to be used. This is the only way to ensure that the Q-matic system runs flawlessly. Always use your personal laptop or PC to surf the World wide web when purchasing new designs or to run another software.

License agreements of the Q-matic software and the Art & Stitch Software

By installing and using the Q-matic software and Art & Stitch software, the general terms of the license agreements are accepted automatically by the user.

SAVE THESE INSTRUCTIONS

Appropriate use

Your BERNINA®-Q-matic software has been developed and designed for private household use. It's purpose is to quilt fabrics and other materials as it is described in this instruction manual. Any other use is not considered appropriate. BERNINA assumes no liability concerning consequences resulting from an inappropriate usage.

1 Key to signs



DANGER

Labels a danger with a high risk which can lead to severe injury or even to death unless it is avoided.



WARNING

Labels a danger with a medium risk which can lead to severe injury unless it is avoided.



CAUTION

Labels a danger with a low risk which can lead to light or medium injury unless it is avoided.

NOTICE

Labels a danger which can end up with damage unless it is avoided.



Tips provided by BERNINA **Quilt experts** can be found next to this sign.

By means of illustration, sample pictures are used in this instruction manual. The machines as well as the accessory shown in the pictures may vary from the delivery content of your machine.

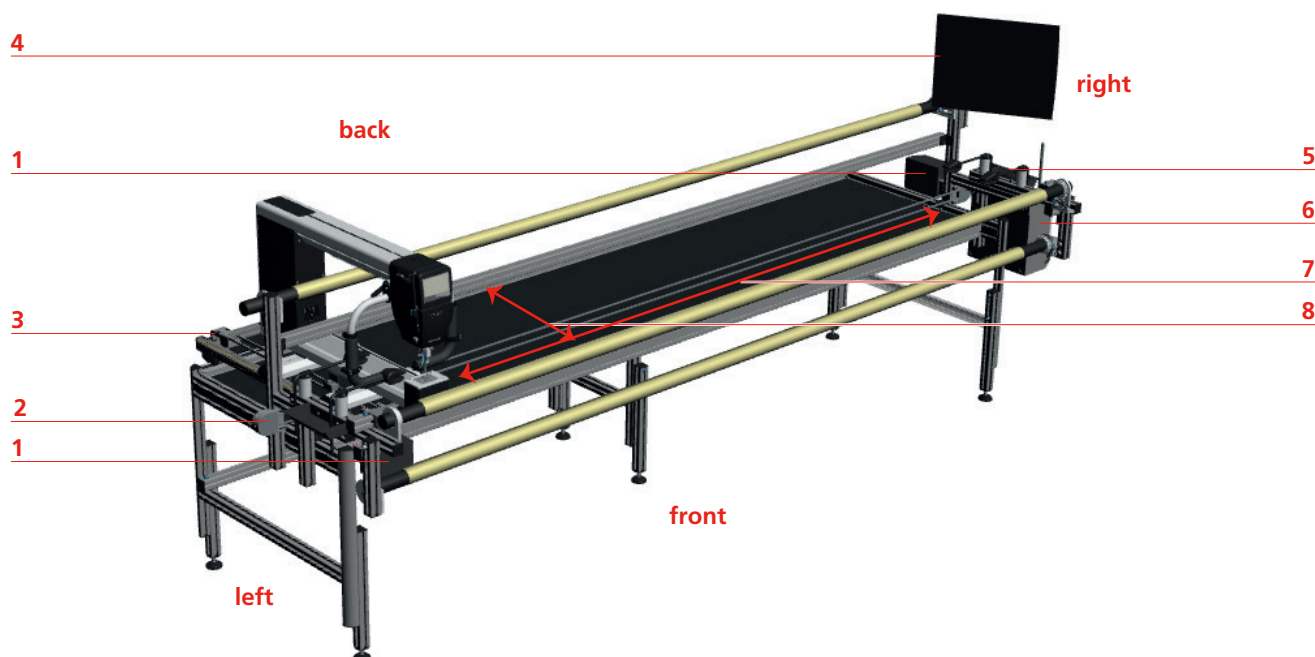
2 Q-matic

2.1 Introduction and the operation principle of the BERNINA Q-matic

Q-matic system

The Q-matic system is a comprehensive, contemporary and automated Longarm system which has been designed to create quilt projects in a computerized way. The system consists of various mechanic components, electronic, the All-in-One touch PC as well as the software programs Q-matic and Art & Stitch.

2.2 Overview Q-matic



- | | | | |
|---|------------------------------|---|---|
| 1 | X-Y-drive | 5 | Start/Stop button and red emergency stop knob |
| 2 | X-axis idler plate | 6 | Control cabinet |
| 3 | Y-axis idler plate | 7 | X-Drive |
| 4 | PC/Monitor and screen holder | 8 | Y-Drive |

2.3 Unpacking the delivery



CAUTION

Using inappropriate power cables

Risk of injury and damage on certain parts.

> Only use the American power cable for USA and Canada.

⇒ Only use the Japanese power cable for Japan.

The standard delivery content of the BERNINA Q-matic contains 2 cartons/boxes as outer packaging. Carton/Box 1 contains further boxes (A, B, C ...), which contain the bags (1, 2, 3 ...) with the single parts.

Delivery content:

| Cardboard box | Content | Size (cm) | Weight |
|---------------|--------------------------|------------------------|-----------|
| 1 | Q-matic Hardware (Box 1) | Ca. 78.0 x 58.5 x 35.5 | Ca. 35 kg |
| 1 | Q-matic Touch PC (Box 2) | Ca. 92.0 x 52.0 x 20.0 | Ca. 15 kg |





Procedure when unpacking:

- > Open the packaging and unpack the single parts carefully.
- > Please inspect the individual components for any damages.
- > Check whether the delivery content is complete.
- > If some components are missing or if questions concerning the assembly arise, contact your specialized BERNINA dealer immediately.
- > Remove any transparent or gray protection foils.





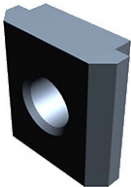
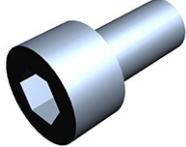


2.4 Delivery content for assembling the Q-matic




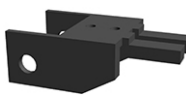
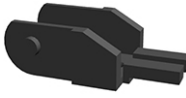

In the following chart, all parts/small parts, which are included in the cartons/boxes/bags, are listed and illustrated so that the delivery content can be checked. Every part/small part has been allocated a corresponding Code (C = cable, M = miscellaneous, N = nuts, S = screws, SN = slot nuts, W = washers).

Please note: All the tools which are needed to assemble the Q-matic but are not mentioned in the delivery content are already contained in the delivery content of the machine Q20/Q24 and the Frame.

| Packaging | Illustration | Count | Content/Component | Code | Comment |
|-----------------|---|-------|---|------|---------|
| Carton 1 |  | 1 | Power cable (control cabinet) | C3 | |
| |  | 1 | Cable trunking | M20 | |
| |  | 1 | Art & Stitch software CD and quick start guide in box | | |
| |  | 1 | BERNINA USB stick packed | | |

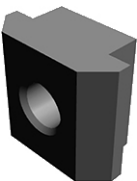
| Packaging | Illustration | Count | Content/Component | Code | Comment |
|---------------------------|--------------|-------|----------------------------------|------|--|
| Carton A | | 1 | X-belt (long) or X-belt (large) | M3 | The appropriate X-belts are provided according to the order. |
| | | 2 | X-Y-drive | M1 | The X-drive and the Y-drive are exactly identical. It doesn't matter which of the drives is built in at the respective position. |
| | | 1 | X-axis idler plate | M2 | |
| Bag «X-axis Hardware Set» | | 4 | Hex socket head cap screws M6x16 | S1 | Partly preassembled. |
| | | 4 | Sliding blocks M6 | SN1 | Partly preassembled. |
| | | 2 | Tape | M4 | |
| | | 1 | Y-axis idler plate | M6 | |

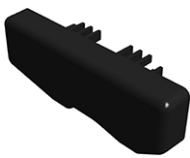





| Packaging | Illustration | Count | Content/Component | Code | Comment |
|---------------------------|---|-------|----------------------------------|------|----------------------|
| |  | 2 | Profiles | M7 | |
| Bag «Y-axis Hardware Set» |  | 6 | Button head screws torx M6x12 | S3 | |
| |  | 6 | Serrated lock washers M6 | W2 | |
| |  | 6 | Washers 6.2/12x1.6 | W3 | |
| |  | 10 | Nuts M6 | SN2 | Partly preassembled. |
| |  | 4 | Hex socket head cap screws M6x12 | S4 | Partly preassembled. |
| |  | 1 | Y-belt (short) | M3 | |
| Packaging | Illustration | Count | Content/Component | Code | Comment |
| Carton B |  | 1 | Control cabinet | M10 | |

| Packaging | Illustration | Count | Content/Component | Code | Comment |
|-----------------|---|-------|-------------------------------|------|--|
| Carton C |  | 1 | Power cable (Q 20 / Q 24) | C1 | |
| |  | 1 | Power cable (PC/Monitor) | C2 | |
| |  | 1 | Holder | M16 | |
| |  | 1 | Energy chain | M19 | |
| |  | 1 | End piece (with holes) | M19A | Is in the bag of the energy chain. |
| |  | 1 | End piece (with knobs) | M19B | Is in the bag of the energy chain. |
| |  | 1 | Screen holder | M21 | In the cardboard box with the plastic cover and description (the supplied screws won't be used). |
| Bag 1 |  | 1 | X-support | M5 | |
| |  | 2 | Button head screws torx M4x40 | S2 | |

| Packaging | Illustration | Count | Content/Component | Code | Comment |
|--------------|---|---------------------|---|------------|---------|
| |  | 2 | 6-kt-Hex nuts with flange and serration | N1 | |
| |  | 2 | Washers 4.3/12x1 | W1 | |
| Bag 2 |  | 1 | Y-belt support | M9 | |
| Bag 3 |  | 3 | Cable clamps | M11 | |
| |  | 8 | Washers 5.3/10x1 | W5 | |
| |  | 1x long 1x short | Spiral cable binding | M12 M18 | |
| |  | 2 | Hose pipes | M13 | |
| |  | 5 | Vario-Quick holding blocks KK | M14 | |
| |  | 20 | Cable ties | M15 | |


| Packaging | Illustration | Count | Content/Component | Code | Comment |
|---------------|---|-------|--|------|-------------------------------|
| Bag 4 |  | 6 | Countersunk screws torx M6x12 | S6 | |
| |  | 6 | Nuts M6 | SN4 | |
| |  | 4 | Countersunk screws torx M3x8 | S7 | |
| |  | 4 | 6-kt-Hex nuts with flange and serration M3 | N2 | |
| |  | 2 | Button head screws torx M4x40 | S2 | |
| |  | 2 | 6-kt-Hex nuts with flange and serration M4 | N1 | |
| Bag 5 |  | 1 | Profile | M22 | |
| Bag 12 |  | 2 | Hex socket head cap screws M8x50 | S8 | Bag 12 is contained in bag 5. |
| |  | 2 | Washers M8 | W4 | |


| Packaging | Illustration | Count | Content/Component | Code | Comment |
|-----------|---|-------|--------------------------------------|------|---------|
| |  | 2 | Nuts M8 | SN5 | |
| |  | 2 | Hex socket head cap screws M6x16 | S1 | |
| |  | 2 | Washers 6.4/18x1.6 | W6 | |
| |  | 2 | Nuts M6 | SN1 | |
| |  | 2 | Covers | M23 | |
| |  | 4 | Hex stand-offs M4x12 | S9 | |
| |  | 4 | Hex socket head cap screw torx M4x10 | S10 | |
| |  | 4 | Washers 4.3/8x0.5 | W7 | |

| Packaging | Illustration | Count | Content/Component | Code | Comment |
|--------------|---|-------|-------------------------------|------|--|
| Bag 6 |  | 4 | Covers | M24 | Bag 6 has possibly already been provided in the delivery content of the Frame. If this is the case, this accessory won't be used anymore. |
| Bag 7 |  | 2 | X-security holders | M25 | Bag 7 has possibly already been provided in the delivery content of the Frame. If this is the case, this accessory won't be used anymore. |
| |  | 2 | Serrated lock washers M6 | W2 | |
| |  | 2 | Button head screws torx M6x12 | S3 | |
| Bag 8 |  | 4 | Y-security holders | M26 | Bag 8 has possibly already been provided in the delivery content of the Frame. If this is the case, this accessory won't be used anymore. |
| |  | 4 | Washers 5.3/10x1 | W5 | |

| Packaging | Illustration | Count | Content/Component | Code | Comment |
|---------------|---|-------|--|------|---------|
| |  | 4 | Head cap screws with torx M5x16 | S11 | |
| |  | 4 | 6-kt-Hex nuts with flange and serration M5 | N3 | |
| Bag 9 |  | 1 | Hex socket head cap screw M8x80 | S12 | |
| |  | 1 | Protective cap | M27 | |
| Bag 10 |  | 2 | Hex socket head cap screws torx M8x16 | S5 | |
| |  | 2 | Washers M8 | W4 | |
| |  | 2 | Nuts M8 | SN3 | |





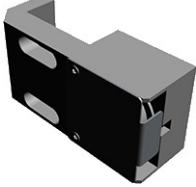

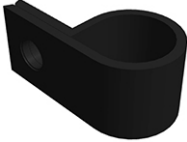


| Packaging | Illustration | Count | Content/Component | Code | Comment |
|---------------|---|-------|------------------------------------|------|---------|
| Bag 11 |  | 1 | Adjustment weight for belt tension | M28 | |
| |  | 1 | Gauge for belt tension with cord | M29 | |
| |  | 1 | Parallel pin hardened Ø 6x30 | M30 | |



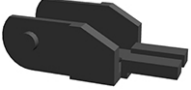






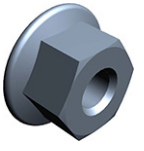
| Packaging | Illustration | Count | Content/Component | Code | Comment |
|-----------------|---|-------|----------------------------|------|---------|
| Carton D |  | 3 | Guidances for energy chain | M17 | |


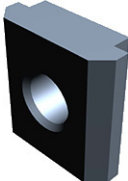
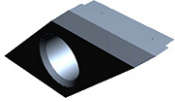
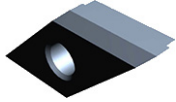
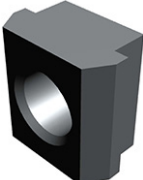
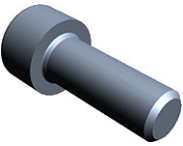


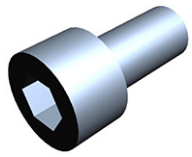
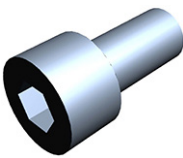

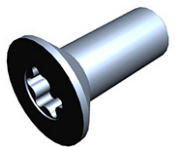
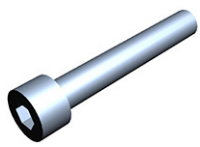
| Packaging | Illustration | Count | Content/Component | Code | Comment |
|--------------|---|-------|---|------|---------|
| Box 2 |  | | All-in-one Touch PC incl. cabling, mouse and keyboard, Quick Start Guide, Warranty, Safety and Regulatory, Cyberlink Media Suite Essentials DVD/CD. | | |












2.5 Illustrations of small parts for the Q-matic

These illustrations serve as additional support for an exact allocation of the parts.

| Category | Illustration | Illustration | Illustration | Illustration |
|--------------------------|--|---|--|--|
| Cables - C | C1  | C2  | C3  | |
| Miscellaneous - M | M1  | M2  | M3  | M4  |
| | M5  | M6  | M7  | |
| | M9  | M10  | M11  | M12  |
| | M13  | M14  | M15  | M16  |

| Category | Illustration | Illustration | Illustration | Illustration |
|----------------|---|--|--|--|
| | M17  | M18  | M19  | M19A  |
| | M19B  | M20  | M21  | M22  |
| | M23  | M24  | M25  | M26  |
| | M27 Protective cap  | M28  | M29  | M30 Ø 6x30  |
| Nut - N | N16 6-kt-Hex nut with flange and serration M4  | N2 6-kt-Hex nut with flange and serration M3  | N3 6-kt-Hex nut with flange and serration M5  | |

| Category | Illustration | Illustration | Illustration | Illustration |
|-----------------------|---|---|---|--|
| Slot nut - SN1 | SN1 Sliding block M6  | SN2 Nut M6  | SN3 Nut M8  | SN4 Nut M6  |
| | SN5 Sliding block M8  | | | |
| Screws - S | S1 Button head screw M6x16  | S2 Button head screw torx M4x40  | S3 Button head screw M6x12  | S4 Button head screw M6x12  |
| | S5 Button head screw M8x16  | S6 Countersunk screw torx M6x12  | S7 Countersunk screw M3x8  | S8 Hex socket head cap screw M8x50  |

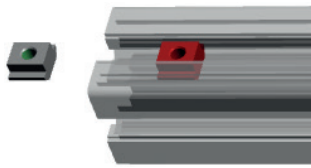
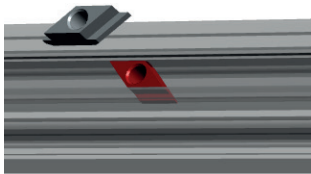

| Category | Illustration | Illustration | Illustration | Illustration |
|--------------------|---|--|---|--|
| | <p>S9 Hex stand-off M4x12</p>  | <p>S10 Hex socket head cap screw torx M4x10</p>  | <p>S11 Hex socket head cap screw torx M5x16</p>  | <p>S12 Hex socket head cap screw M8x80</p>  |
| Washers - W | <p>W1 Washers 4.3/12x1</p>  | <p>W2 Serrated lock washer M6</p>  | <p>W3 Washer 6.2/12x1.6</p>  | <p>W4 Washer M8</p>  |
| | <p>W5 Washer 5.3/10x1</p>  | <p>W6 Washer 6.4/18x1.6</p>  | <p>W7 Washer 4.3/8x0.5</p>  | |

3 Assembly

3.1 Preparation


Important tips for assembly

Attach the nuts correctly.

| Assembly part | Please note |
|--|---|
| <p>SN1, SN2</p>  | <p>Move into the groove from the side.</p> <p>Attach the slot nut so that the wide side of the slot nut is mounted to the groove.</p> |
| <p>SN3, SN4</p>  | <p>Insert the slot nut from above and then turn clockwise.</p> <p>Attach the slot nut so that the wide side of the slot nut is mounted to the groove. These slot nuts need to rotate in the groove when the screw is tightened.</p> |
|  | <p>Fasten the screw finger tight using the long side. Tighten the screw using the short side.</p> |

Tools to assemble the Q-matic system

Every tool which is needed to assemble the Q-matic is supplied in the delivery content of the machine Q20/ Q24 and the Frame.

| Tool | |
|--|---|
|  | Torx screwdrivers T10, T20, T25, T30 |
|  | Allen key set (metric) 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 |
|  | Open-end wrench 6 and 7 mm |

Disconnecting the machine from the power supply system

Before the assembly of the Q-matic can be started, the machine must be disconnected from the power supply system.

Prerequisite:

- The machine must be switched off.
- > Unplug the power cable (Q20 / Q24) from the socket.

Assembling the deflectors of the rails

The deflectors are attached to the carriage and serve as protection against pinching the fingers.

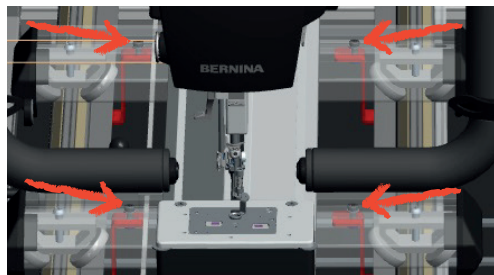
Following components are ready (Bag 6):

- 4 Deflectors (M24)
- > Insert the deflectors into the four profile openings of the rail supports on the carriage.
- > Make sure that the deflectors are inserted completely, as far as they will go.



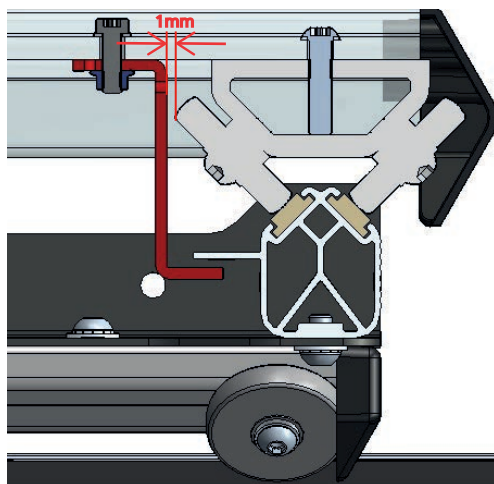
Attaching the Y-security holders

The Y-security holders are attached to the crossbars of the machine which is then secured on the carriage.



Following components are ready (Bag 8):

- 4 Y-security holders (M26)
 - 4 Washers 5.3/10x1 (W5)
 - 4 Hex socket head cap screws M5x16 (S11)
 - 4 6-kt-Hex nuts with flange and serration M5 (N3)
 - Torx screwdriver T25
- > Lift the mid-level Frame plate from below using both hands and move to the side.
 - > Insert the Y-security holder with the slot upwards from the bottom up into the groove of the crossbar.
 - > Insert a hex socket head cap screw plus attached washer from above into the borehole.
 - > Loosely screw on the 6-kt-nut, ribbed surface upwards from below.
 - > Slide the Y-security holder towards the rail and slightly back again.
 - The Y-security holder must **not** touch the rail.



- > Tighten the hex socket head cap screw with the torx screwdriver.
- > Attach the other three Y-security holders in the same way.



- > Move the machine to the front and to the back, making sure that the security holders don't touch anything and the machine cannot be lifted from the carriage.
- > Make sure that none of the rollers gets jammed.
- > Reposition the Y-security holders if necessary.

Attaching the X-security holders

The X-security holders are attached to the carriage which is then secured on the Frame.

Following components are ready (Bag 7):

- 2 X-security holders (M25)
 - 2 Serrated lock washers M6 (W2)
 - 2 Button head screws torx M6x12 (S3)
 - Torx screwdriver T 30
- > Insert one button head screw plus attached serrated lock washer into each of the boreholes of the X-security holder.
- > Attach one X-security holder at the back of the carriage horizontally by fastening the button head screw plus attached serrated lock washer.



- > Screw on the other X-security holder at the front of the carriage horizontally.
- > Move the machine along the complete length of the Frame, making sure that the X-security holders don't touch anything and the machine/carriage cannot be lifted from the Frame.
- > Reposition the X-security holder if necessary.

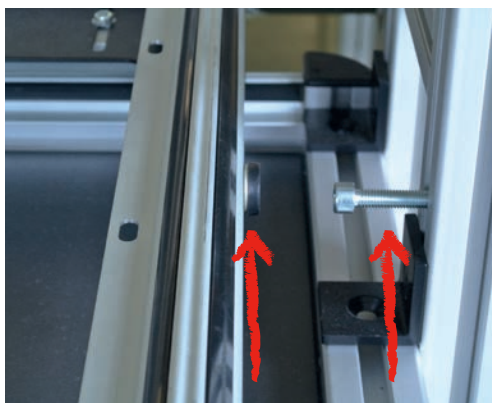
Disassembling the horizontal and vertical channel locks (Optional accessory)

If this optional accessory is attached to your Q 20 / Q 24, it has to be removed before the Q-matic system is assembled. The function is taken over by the belt drive of the Q-matic system.



Disassembling the magnetic parking position bracket

Remove the magnet at the carriage and the screw at the Frame. Find further information in the instruction manual «Assembling the Frame».



3.2 Extending the Frame



DANGER

The Frame isn't provided with extended legs

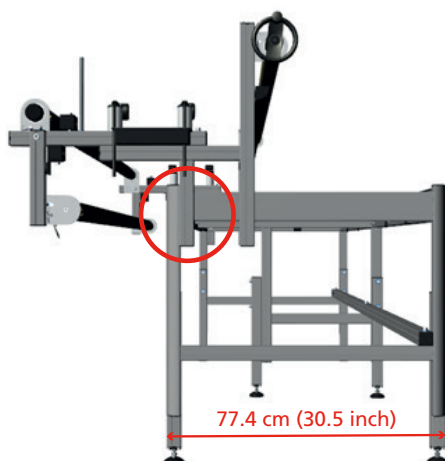
The Frame is likely to topple.

> Purchase and attach the appropriate upgrade kit at the specialized BERNINA dealer's.

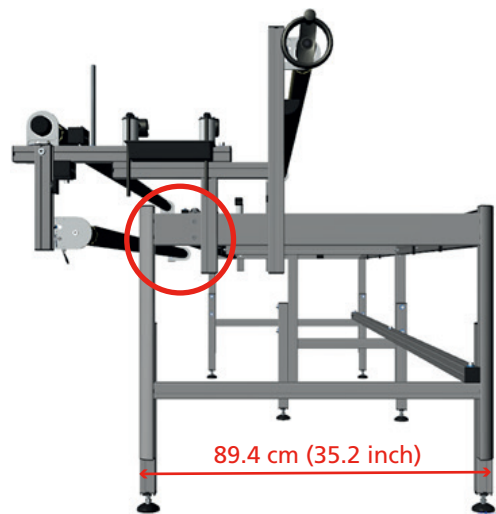
⇒ The Frame must be equipped with extended legs. **If this is not the case, the Q-matic system must not be assembled on any terms.**

Make sure that the Frame is equipped with extended legs before the Q-matic-System is assembled. If this is not the case, purchase the appropriate upgrade kit at the specialized BERNINA dealer and attach it to the Frame.

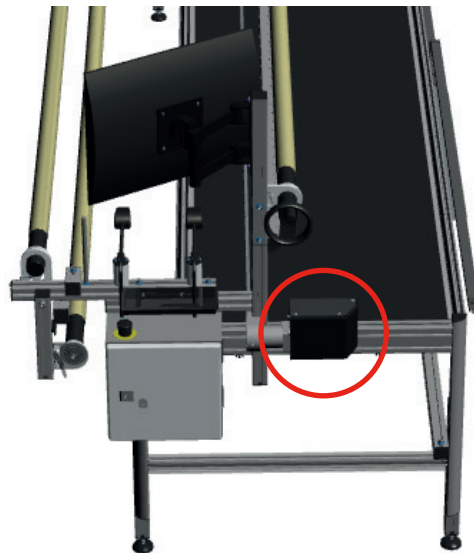
Frame **without** extended legs:



Frame **with** extended legs:



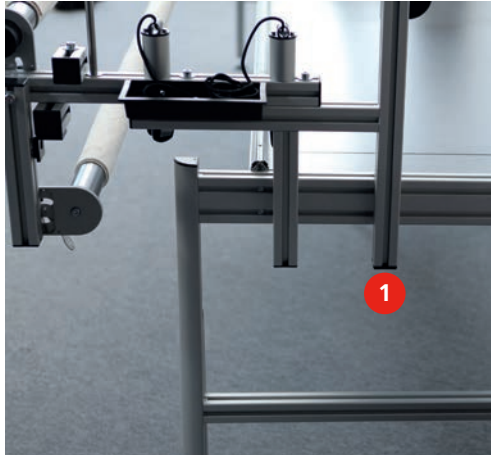
3.3 Assembling the X-drive



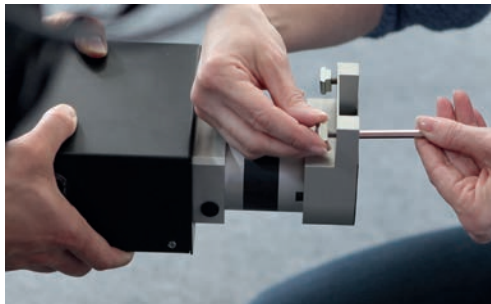
Following components and tools are ready (Carton A):

- 1 X-Y-drive (M1)
- 1 X-belt (M3)
- 2 Hex socket head cap screws torx (S1)
- 2 Sliding blocks M6 (SN1)
- Allen key No. 5
- Torx screwdriver T10
- Screwdriver (not contained in the delivery content)

- > Remove the black cover on the right side of the Frame at the upright bar (1) using a screwdriver.



- > Insert one hex socket head cap screw through each screwhole at the X-drive and attach the sliding blocks at the hex socket head cap screws loosely by two turns.



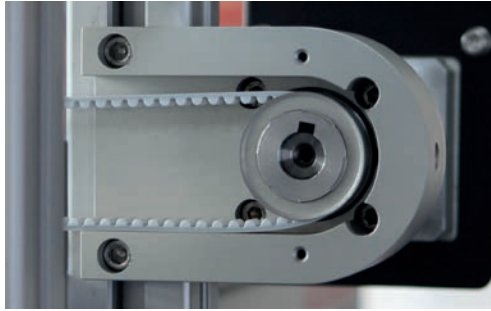
- > Measure 13.8 cm (5.4 inch) at the upright bar from below and mark it with a pen.
- > Insert the X-drive with the sliding block from below into the groove of the upright bar.

-

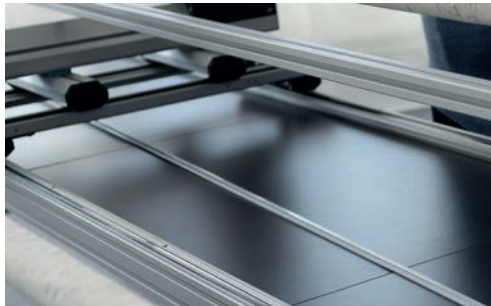
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- 

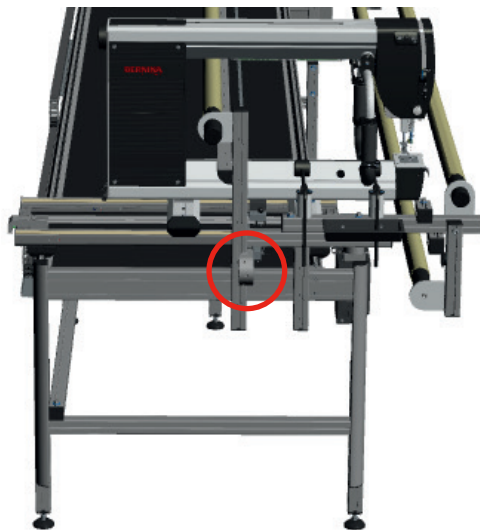
> Place the long X-belt around the X-drive.



> Place the X-belt along the Frame plate under the machine.





3.4 Attaching the X-axis idler plate



Following components and tools are ready (Carton A, Bag «X-axis Hardware Set» and Bag 9):

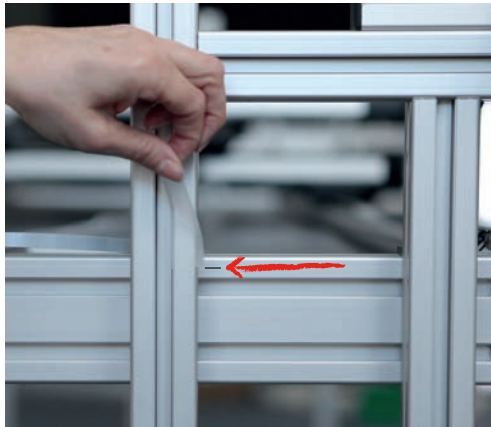
- 1 X-axis idler plate (M2)
- 2 Hex socket head cap screws torx (S1)
- 2 Sliding blocks M6 (SN1)
- 1 Tape (M4)
- 1 Protective cap (M27)
- Allen key No. 3
- Allen key No. 5
- Torx screwdriver T10
- Screwdriver (not contained in the delivery content)

- 

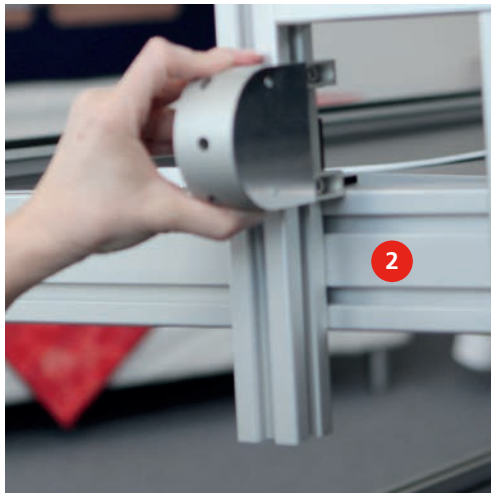
- 

-

- > Fix the tape at the marking from the bottom up to protect the profile against scratch marks.




- > Insert the X-axis idler plate with the sliding blocks from below into the groove of the upright bar.
- > Position and screw on the X-axis idler plate above the cross profile (2) loosely.




- > Loosen and remove the two countersunk screws at the X-axis idler plate using the Torx screwdriver.



- > Lead the X-belt from the X-drive to the X-axis idler plate beneath the carriage.
- > Make sure that the belt is not twisted.
- > Place the X-belt around the idler plate.
- > Hold the X-idler plate and loosen the hex socket head cap screw of the X-idler plate slightly.

- 

-
- A close-up photograph showing a person's hand adjusting a cable on a mechanical device. The hand is pulling on a cable that is connected to a metal bracket. The device appears to be part of a larger system, possibly a door or window mechanism, with various metal components and cables visible.

- 
- A close-up photograph of a black cylindrical component, likely a bearing or bush, mounted on a white plastic track. The component is circled in red. The track has a series of white, tooth-like protrusions along its length. The background is blurred, showing more of the track and some mechanical parts.

-

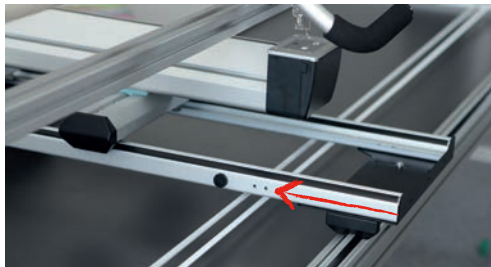
- > Check the height of the belt on the other side of the protective cap.
 - The X-belt should be supported slightly on the left side.
- > Tension and adjust the X-belt (see page 43).

3.5 Attaching the X-support

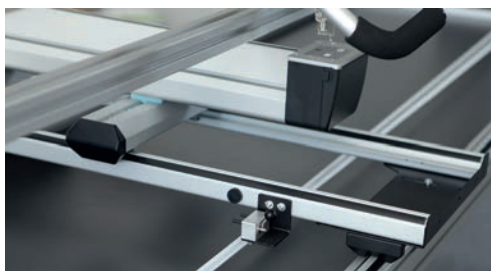


Following components and tools are ready (Bag 1):

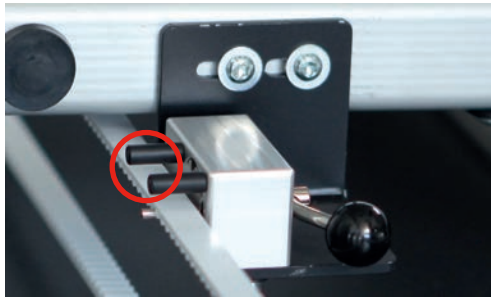
- 1 X-support (M5)
 - 2 Button head screws torx M4x40 (S2)
 - 2 Washers 4.3/12x1 (W1)
 - 2 6-kt-Hex nuts with flange and serration M4 (N1)
 - Torx screwdriver T20
- > Insert one button head screw with attached washer into each screwhole of the X-support.
- > Insert the X-support with the two button head screws plus the attached washers into the pre-bored screwholes of the carriage.



- > Attach a 6-kt-hex nuts with flange and serration to each of the button head screws on the backside.



- > Position the X-support so that the black pins are flush with the belt at the front.



- > Tighten the X-support horizontally.

3.6 Tensioning and adjusting the X-belt



NOTICE

The belts are overtensioned

Damages on the bearings.

- > Check the belt tension.

NOTICE

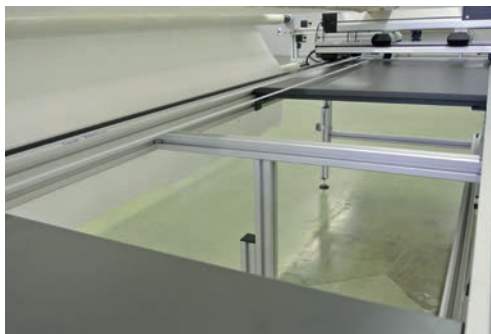
The belts are not tensioned enough

The quilt design will be quilted imperfectly.

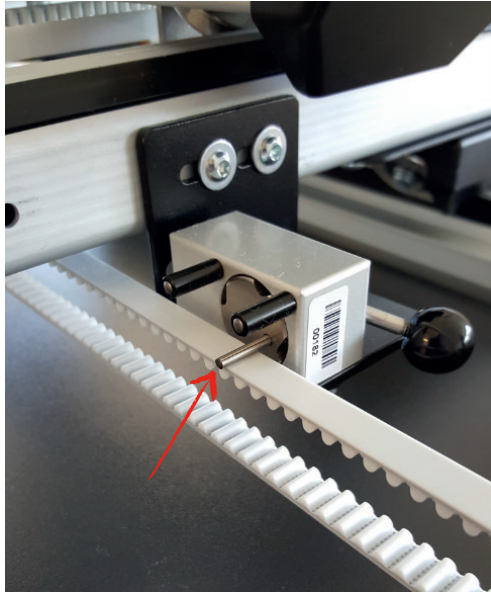
- > Check the belt tension.

Following components and tools are ready (Bag 11):

- 1 Adjustment weight (M28)
 - Allen key No. 3
 - Allen key No. 5
- > Lift the mid-level Frame plate from below using both hands and move to the side.
 - > Position the machine far left and unlock the clutch or



- > place the X-belt under the pin.



- > Place the adjustment weight in the middle of the Frame over both belts.

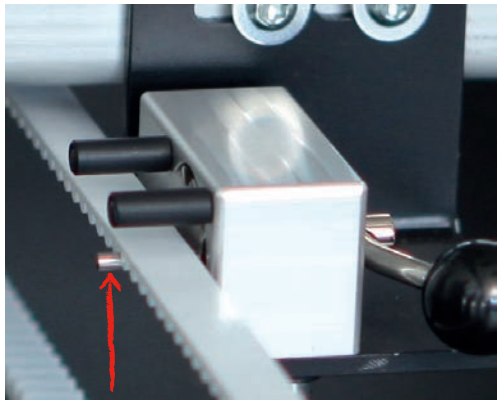
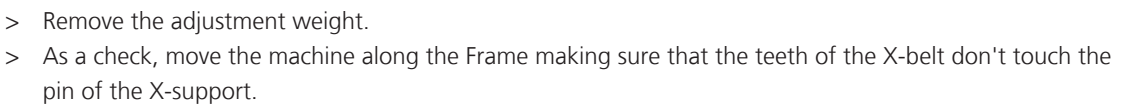


- > Tighten **both** setscrews at the X-idler plate **evenly** using the Allen key to tension the X-belt. Make sure that the setscrews are tightenend simultaneously so that the X-belt doesn't run loosely in the idler plate.



- > Tension the X-belt so that there will be an air gap (min. 0.1 - max. 1.0 mm / 0.004 - 0.04 inch) on the adjustment weight between the two belts.

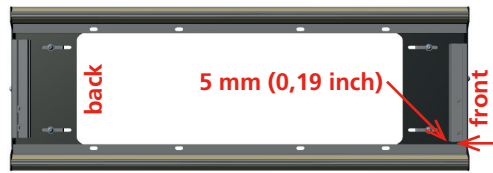
-
- A close-up photograph of a silver-colored metal bracket or clip. The bracket is L-shaped, with a vertical stem and a horizontal base. It is holding a white, flat, flexible cable or strip. The cable has a series of small, dark, rectangular markings or indentations along its length. The background is a blurred, light-colored surface, possibly a wall or ceiling.



- > Otherwise readjust the height of the X-belt and check the X-belt tension again.
- > Attach all the removed covers again.
- > Lock the clutch at the X-support.



3.7 Attaching the profiles to the carriage

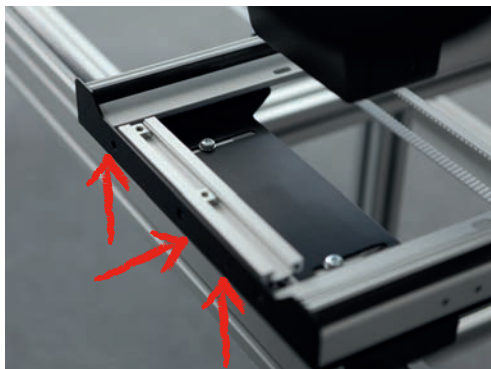


Following components and tools are ready (Carton A and Bag «Y-axis Hardware Set»):

- 2 Profiles (M7)
 - 10 Nuts RF M6 (SN2)
 - 6 Button head screws torx M6x12 (S3)
 - 6 Serrated lock washers (W2)
 - 6 Washers (W3)
 - Allen key No. 4
- > Place two nuts into the lower groove of both profiles.
 - > Place one nut into the front groove of both profiles.
 - > Place two nuts into the lower groove of both profiles.

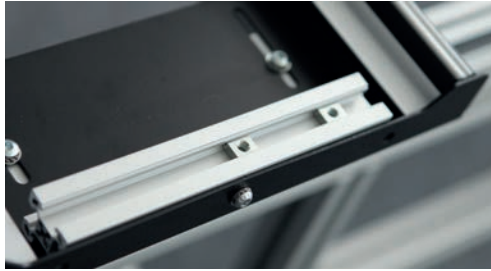


- > Move the machine to the back.
- > Place the profile **at the front** on the **left** of the carriage leaving an air gap of about ca. 5 mm (0.19 inch).
- > Position the nuts in the profile so that they are flush with the pre-bored screwholes at the carriage **at the front and below**.
- > With every button head screw, attach first a serrated lock washers and a washer.
- > Fix the profile with the button head screws plus the attached serrated lock washers and the washers to the nuts **at the front and below**.

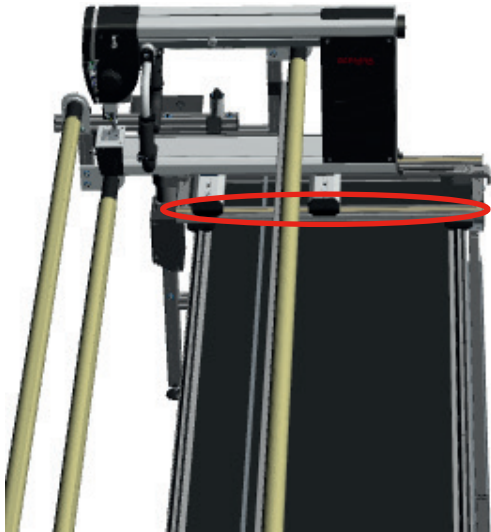


- > Move the machine to the front.

- > Fix the second profile **at the back** of the carriage in the same way **but centered**.



3.8 Attaching the cable trunking to the carriage



Following components and tools are ready (Bag 4):

- 1 Cable trunking (M20)
 - 2 Button head screws torx M4x40 (S2)
 - 2 6-kt-Hex nuts with flange and serration (N1)
 - Torx screwdriver T20
- > Push the cable trunking apart and put the lid without pre-bored screwholes to the side.
 - > Insert one button head screw into each screwhole of the cable trunking, far left and far right.
 - > Insert the cable trunking with the button head screws through the pre-bored screwholes on the right side of the carriage and fix them with the 6-kt-hex nuts with flange and serration.



3.9 Attaching the holder

Following components and tools are ready (Bag 4 and Carton C):

- 1 Holder (M16)
- 1 End piece with holes which is enclosed with the energy chain (M19A)
- 2 Countersunk screws (S7)
- 2 6-kt-Hex nuts with flange and serration M3 (N2)
- Allen key No. 4

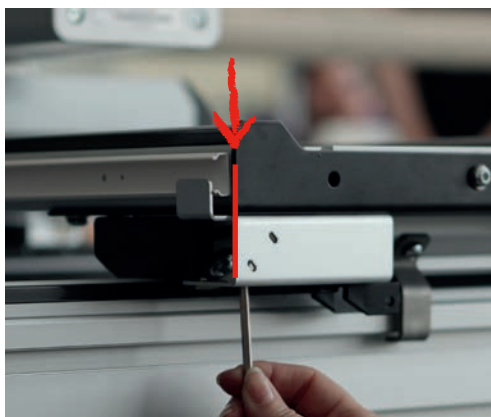
- Torx screwdriver T10
- > Remove any transparent or gray protection foils.
- > Insert both countersunk screws through the screwholes of the end piece and the holder.
- > Fix them with the two 6-kt-hex nuts with flange and serration **parallel**. Watch the parallel alignment of the end piece.



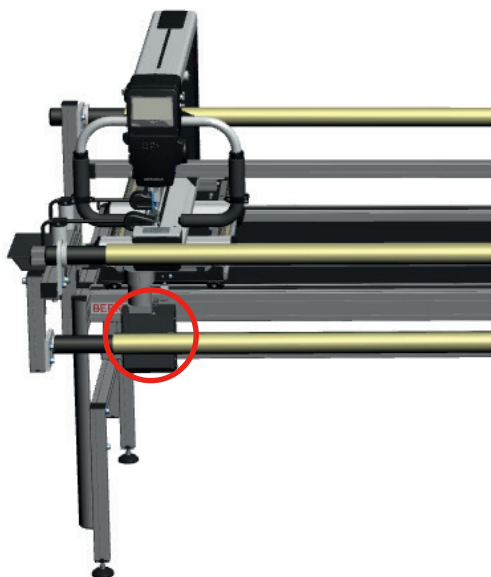
- > Loosen and remove the two bottom left screws at the back of carriage.



- > Attach the holder to the boreholes of the carriage using the two previously removed screws.
 - Make sure that the holder is flush with the carriage **on the left side**.



3.10 Assembling the Y-drive

**NOTICE**

The Q-matic system doesn't work

Components on the circuit board can get damaged.

- > Therefore it is necessary to be grounded before assembling the cables to the Y-drive to discharge any electrostatic charge. This can be done by touching an exposed metal piece of the existing quiltframe.

NOTICE

The cables are not plugged in correctly

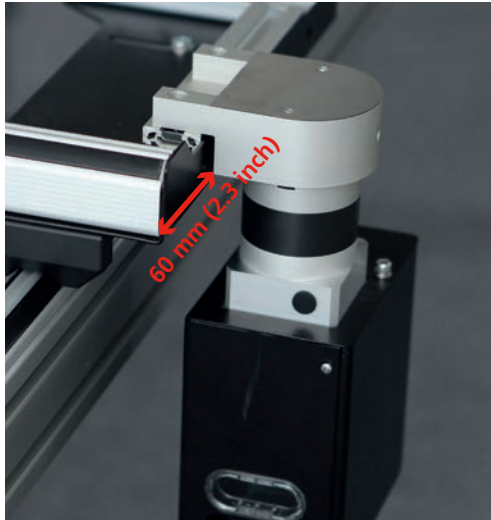
The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

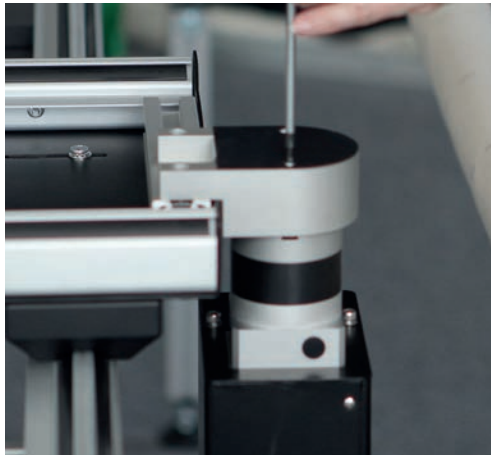
Following components and tools are ready (Carton A and Bag «Y- axis hardware set»):

- 1 X-Y-drive (M1)
 - 1 Y-belt (M3)
 - 2 Hex socket head cap screws M6x12 (S4)
 - Allen key No. 5
 - Torx screwdriver T10
- > Move the machine to the back.

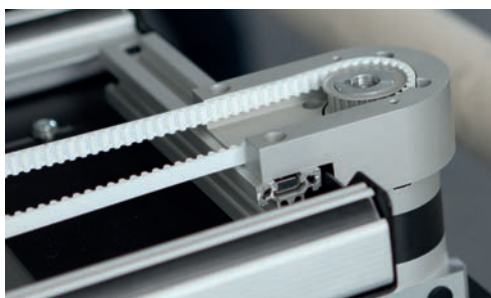
- > Assemble the Y-drive at the front of the carriage, about 60 mm (2.3 inch) from the left, using the two hex socket head cap screws which will be fixed in the nuts of the previously attached profile.



- > Loosen and remove both countersunk screws at the belt cover using the Torx screwdriver.



- > Place the Y-belt around the Y-drive.



3.11 Attaching the Y-idler plate



Following components and tools are ready (Carton A, Bag «Y- axis hardware set»):

- 1 Y-idler plate (M6)
- 2 Hex socket head cap screws M6x12 (S4)
- 1 Tape (M4)
- Allen key No. 3
- Torx screwdriver T10

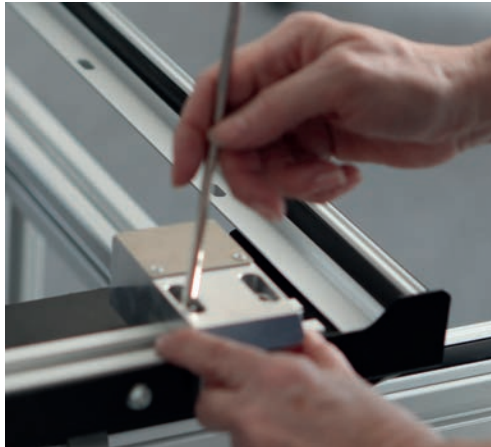
Prerequisite:

- The profile at the back of the carriage is attached.
- > Mark the position at the back of the carriage from the right at 7.5 cm (3 inch) with a pen.

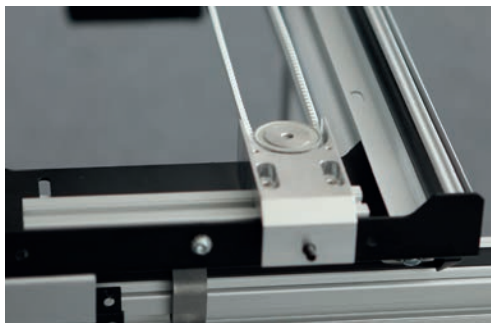


- > Place the tape at the marking from the right to the left.

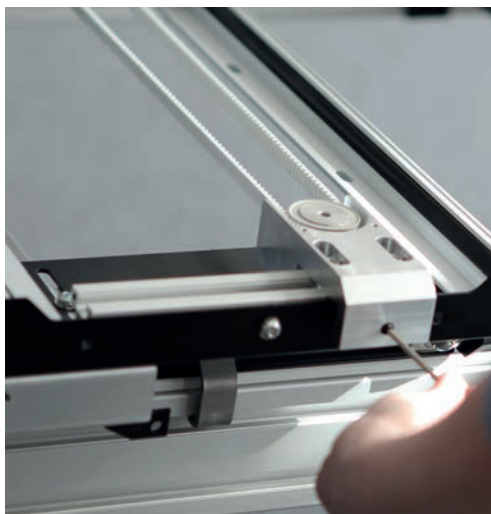
- > Attach the Y-idler plate loosely to the nuts in the previously attached profile at the marking using the two hex socket head cap screws.



- > Loosen and remove both countersunk screws at the belt cover using the Torx screwdriver.
- > Lead the Y-belt from the Y-drive to the Y-idler plate, beneath the carriage but above the X-belt.
- > Make sure that the Y-belt is not twisted.
- > Place the Y-belt around the idler plate.

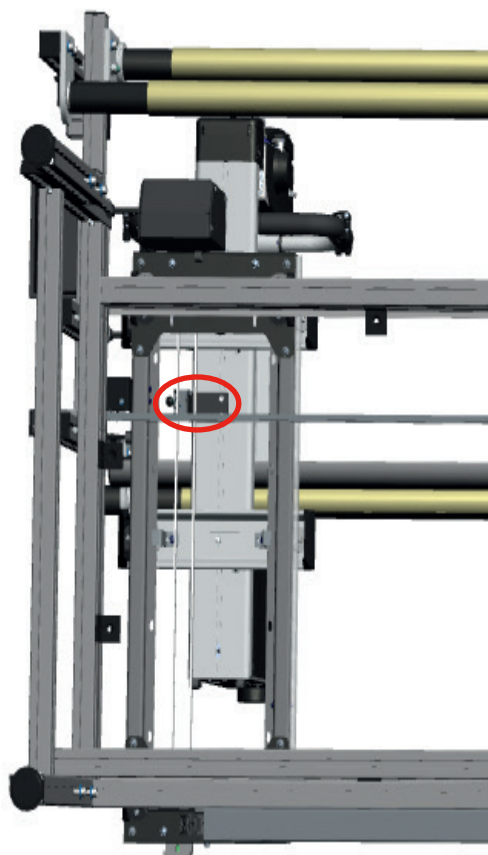


- > Pull the Y-idler plate carefully to the back by hand to pretension the belt.
- > Screw on the Y-idler plate loosely.
- > Tighten the setscrew at the Y-idler plate lightly.



- > Tension and adjust the Y-belt (see page 55).

3.12 Attaching the Y-support



NOTICE

The nuts are inserted incorrectly

The Y-support cannot be fixed properly.

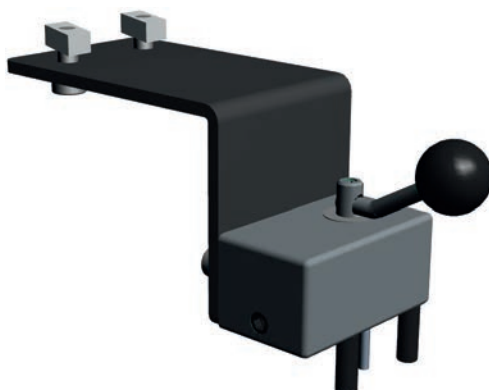
> The nuts must turn in the groove when the screws are tightened.

Following components and tools are ready (Bag 2):

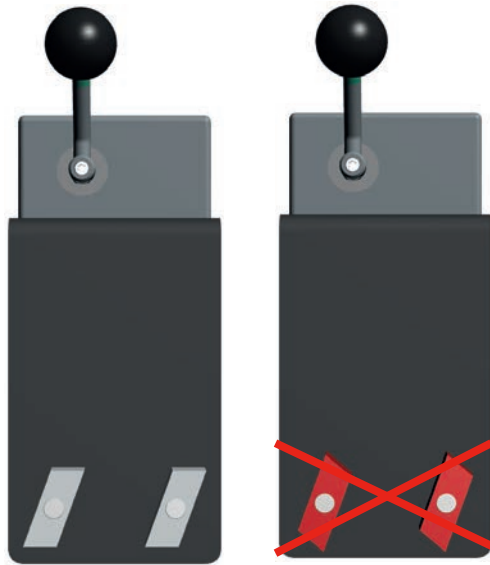
- 1 Y-support (M9)
- Torx screwdriver T25

The Y-support is attached to the bottom side of the carriage, seen from the front of the machine, between the front crossbar and the preassembled screw (1).

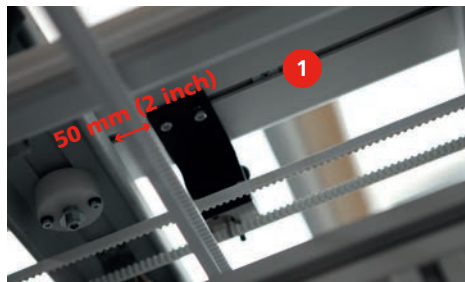
> Loosen the nuts at the Y-support until two or three turns are left.



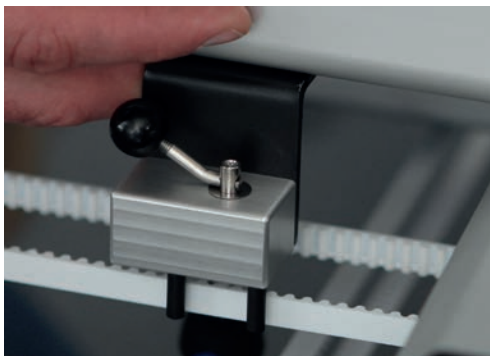
- > Check the assembly direction of the nuts according to the illustration.



- > While inserting the nuts into the groove, make sure that the Y-support is attached between the front crossbar and the assembled screw (1).
- > Make sure when tightening the screws that the Y-support is aligned parallel to the machine.



- > Lead the Y-belt behind the black pins of the Y-support.



- > As a check, move the machine along the Frame to the front and to the back, making sure that the teeth of the Y-belt don't touch the pin (when the clutch is unlocked).
- > At the same time the back of the belt should be at a regular distance of 0.1 - 1.0 mm (0.004 - 0.04 inch) to the black pins.
- > If necessary, correct the sideways position of the X-Y-drive and the Y-idler plate.

3.13 Tensioning and adjusting the Y-belt



NOTICE

The belts are overtensioned

Damages on the bearings.

> Check the belt tension.

NOTICE

The belts are not tensioned enough

The quilt design will be quilted imperfectly.

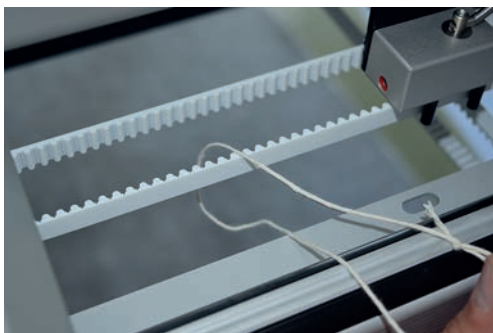
> Check the belt tension.

Following components and tools are ready (Bag 11):

- Adjustment weight (M28)
- Adjustment gauge (M29)
- Parallel pin hardened (M30)
- Allen key No. 3
- Allen key No. 5

> Position the machine in the center of the carriage.

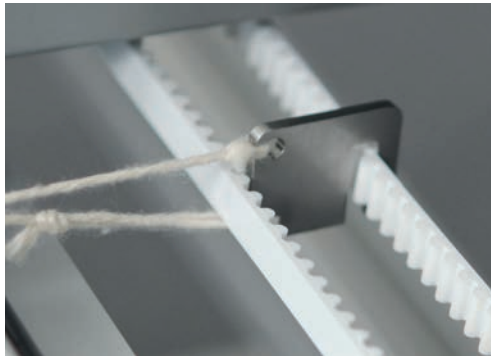
> Place the string of the adjustment gauge around the Y-belt in the center of the carriage.



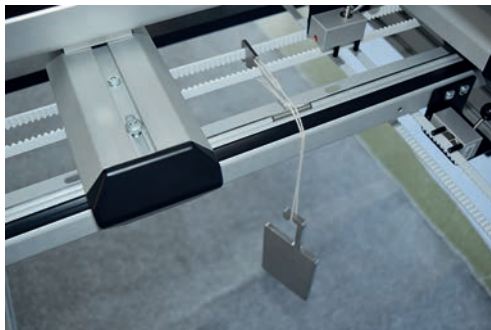
- > Mount the string at the adjustment gauge.




- > Hook the adjustment gauge in the right Y-belt.

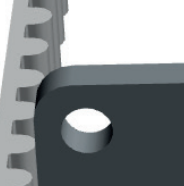


- > Attach the adjustment weight to the string.
- > Place the string over the parallel pin.



- > Move the parallel pin slightly from one side to the other so that the adjustment gauge gets into position.
- > Pulling the string, move the adjustment gauge slightly from one side to the other.

- 

- 
- 0.1 - 1.0 mm
(0.004 - 0.04 inch)

- 

3.14 Assembling the control cabinet

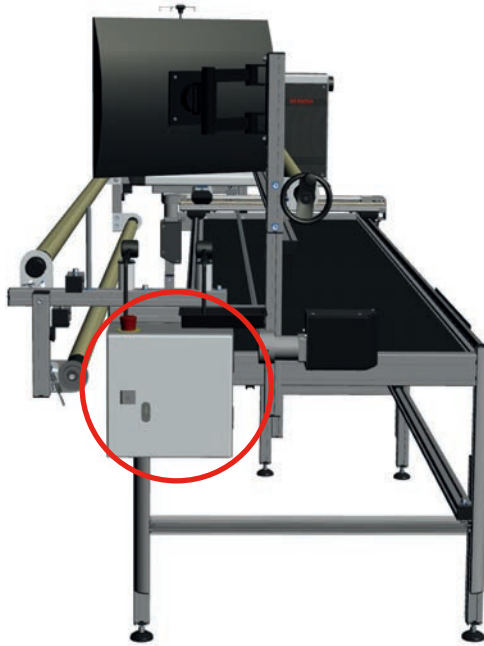
NOTICE

The control cabinet is too heavy for one person.

If a person tries to assemble the control cabinet without the help of another person, back injuries can result.

The control cabinet can get damaged if it is dropped.

> The control cabinet must be assembled by two people.



Following components and tools are ready (Bag 10):

- 1 Control cabinet (M10)
 - 2 Nuts PA-R M8 (SN3)
 - 2 Hex socket head cap screws M8x16 (S5)
 - 2 Washers M8 (W4)
 - Allen key No. 3
 - Allen key No. 6
 - Screwdriver (not contained in the delivery content)
- > On the right side of the Frame loosen the screws of the storage tray.
- > Disassemble the storage tray completely (including the nuts) and attach a profile further down far right. Refer to the illustration.
- > Remove the black covers at the profiles.



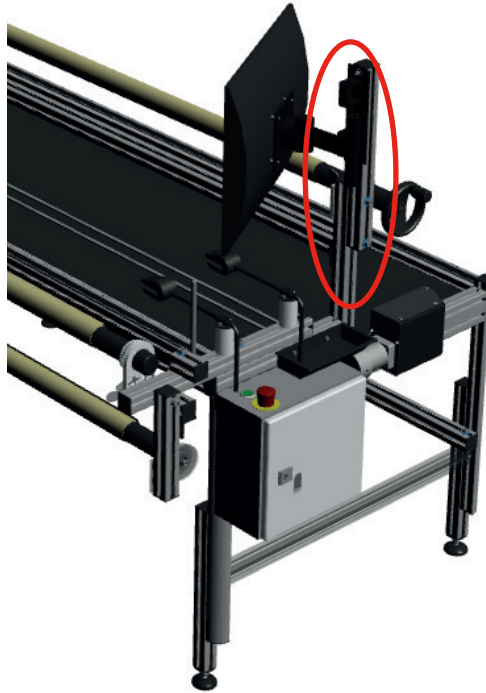
- > Insert the hex socket head cap screws with attached washers through both suspensions of the control cabinet and attach the nuts loosely on the other side by two turns.



- > Position the control cabinet from below at the profile, making sure that the nuts get into the correct position in the groove.
- > Tighten the two screws.
 - When the screws are being tightened, the nuts must turn in the groove.



3.15 Assembling the screen holder



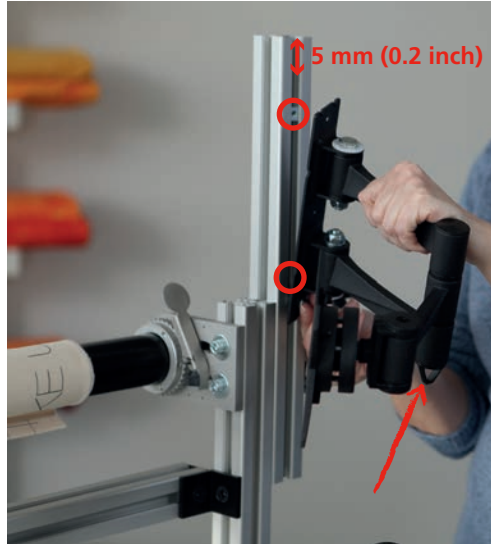
Following components and tools are ready (Bag 5 and Bag 12):

- 1 Screen holder (M21)
 - 1 Profile (M22)
 - 2 Hex socket head cap screws M8x50 (S8)
 - 2 Hex socket head cap screws M6x16 (S1)
 - 2 Sliding blocks (SN5)
 - 2 Sliding blocks (SN1)
 - 2 Washers (W4)
 - 2 Washers (W6)
 - 2 Covers (M23)
 - Allen key No. 5
 - Allen key No. 6
 - Screwdriver (not contained in the delivery content)
- > Remove the black cover at the upright profile at the handwheel.

-

-

- > Insert one hex socket head cap screw with attached washer through the upper and lower borehole of the screen holder and attach the sliding blocks. Assemble the screen holder 5 mm (0.2 inch) underneath the profile edge.
 - When assembling the screen holder, make sure that the cable layout points downwards as shown in the picture.



- > Push both covers on the left and on the right of the screen holder first from below and then from above into the notches and press them together.



- > Attach the covers at the top and at the bottom of the profile.

3.16 Attaching the PC/Monitor

NOTICE

Scratching the screen

The PC/Monitor has to be replaced if necessary.

- > To protect the PC/Monitor, place it on a blanket.

It is of utmost importance that the PC/Monitor is attached by **two** people.

Following components and tools are ready (Bag 12):

- 1 PC/Monitor
- 4 Hex stand-offs (S9)
- 4 Hex socket head cap screws torx M4x10 (S10)

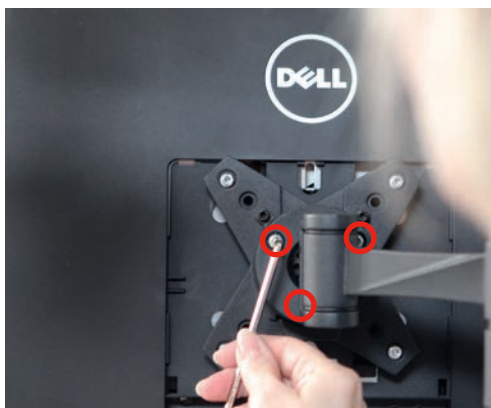
- 4 Washers (W7)
 - Allen key No. 4
 - Torx key T20
 - Open-end wrench 7 mm
- > Place the PC/Monitor face down on an even surface (table) and to protect the glass, put it on a blanket.
- > Attach the four hex stand-offs to the backside of the PC/Monitor.



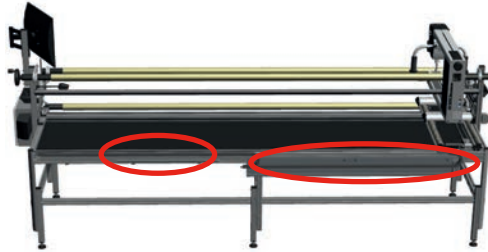
- > Position the PC/Monitor on the screen holder so that the hex stand-offs are exactly aligned with the boreholes of the screen holder.
- > Insert the four hex socket head cap screws plus attached washers through the boreholes of the screen holder into the four hex stand-offs and tighten them.



- > Adjust the PC/Monitor concerning the preferred screen angle and preferred height. The PC/Monitor needs to be in a comfortable working position for the user.
- > Tighten the three locking screws to lock the screen holder.



3.17 Attaching the guidance for the energy chain

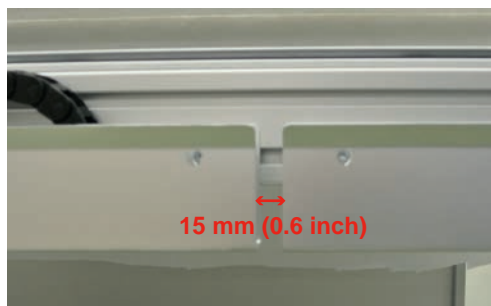


Following components and tools are ready (Bag 4):

- 3 Guidances (M17)
 - 6 Countersunk screws torx (S6)
 - 6 Nuts RF M6 (SN4)
 - Torx key T30
- > Remove any transparent or gray protection foils.
 - > Insert two countersunk screws through the boreholes of the guidance and attach the nuts on the other side of the screws loosely.
 - > Attach the first guidance with the nuts on the left of the rear center leg to the **lower** groove and screw them on loosely.
 - > Position and tighten the guidance at 7.5 cm (3 inch) on the left of the center leg.

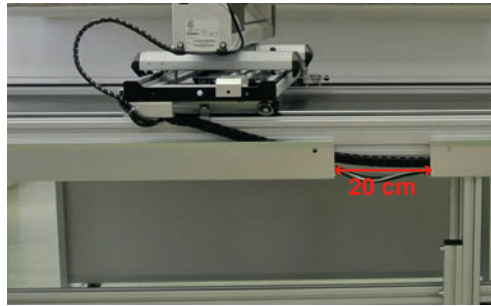


- > Attach the second guidance on the right next to the first guidance in the same way.
 - Attach the second guidance at a distance of 15 mm (0.6 inch) next to the first guidance.

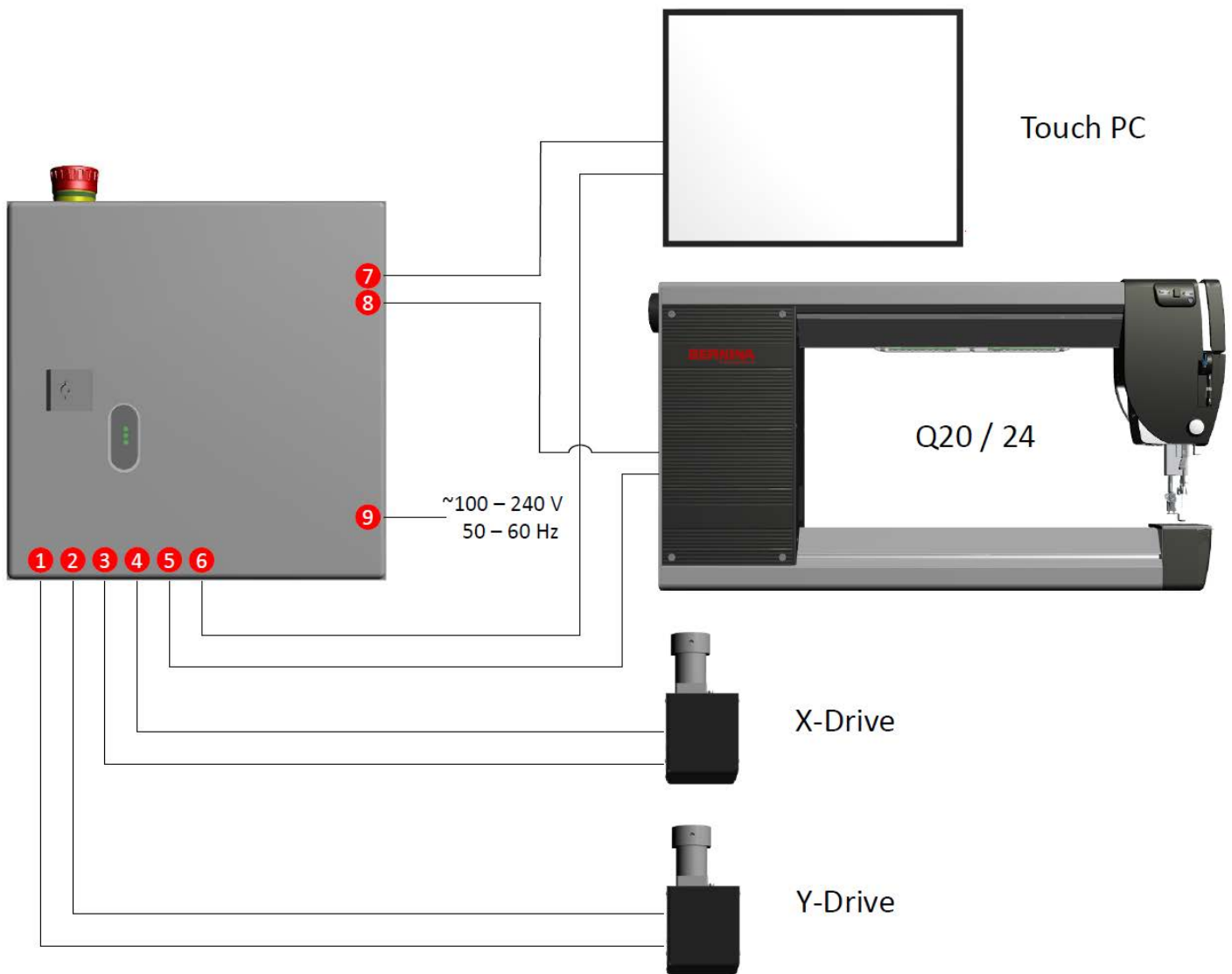


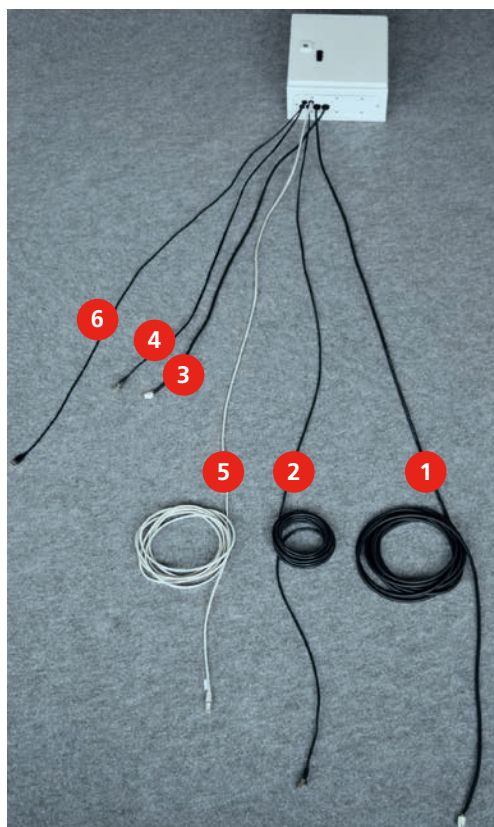
- > Insert two button head screws through the boreholes of the guidance and fix them loosely to the other side of the screw with the nuts.
- > Attach the guidance at 20 cm (7.8 inch) on the left of the guidance with the nuts to the **lower** groove and screw it on loosely.







> Check the distance and tighten the guidance.



3.18 Cable installation





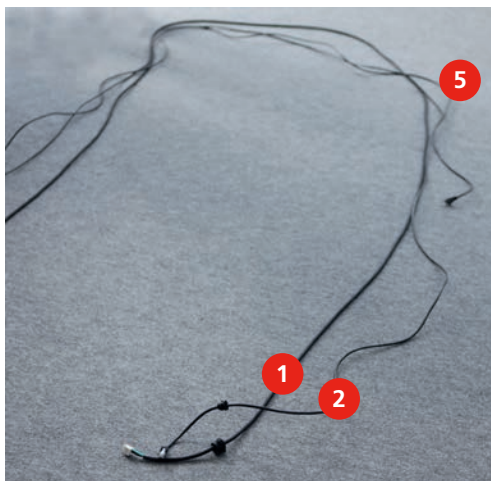
| Number | Cables | Cable beginning | Cable end |
|--------|-----------------------------|---|---|
| 1 | Power cable Y-drive | Already assembled in the control cabinet. |  |
| 2 | Communication Y-drive cable | Already assembled in the control cabinet. |  |
| 3 | Power cable X-drive | Already assembled in the control cabinet. |  |
| 4 | Communication X-drive cable | Already assembled in the control cabinet. |  |
| 5 | Communication Q 20 / Q 24 | Already assembled in the control cabinet. |  |
| 6 | USB cable | Already assembled in the control cabinet. |  |

| | | | |
|---|--|--|---|
| 7 | Power supply PC/Monitor (power cable C2) |  |  |
| 8 | Power supply Q 20 / Q 24 (power cable C1) |  |  |
| 9 | Power supply control cabinet (power cable C3) |  |  |

Six cables in total are connected with the control cabinet; three short and three long ones. Among the three long cables, one is a bit shorter. Beforehand the three long cables need to be laid carefully and close together.

Following components and tools are ready (Box C):

- 1 Power cable Q 20 / Q 24 (C1)
 - 1 Energy chain (M19)
 - Cable ties
- > Lay the three long cables (1, 2, 5) from the control cabinet beneath the Frame but above the struts so that the cables are not twisted and close together.



- > Plug the power cable in the second top socket of the control cabinet.



- > Lay the power cable from the control cabinet beneath the Frame but above the struts, too, so that the power cable is close to other cables.
- > Hold the two longer cables (1, 2) together at the cable relief in front of the plugs.
- > Lay the cables flat and und measure 160 cm (63 inch) from the cable relief and mark this position.
- > Hold the two shorter cables (5, 8) together, measure 95 cm (37.4 inch) from the plugs and mark this position.
- > Hold the markings on top of each other and tie all four cables together with a cable tie at the marked positions.



3.19 Preparing the energy chain



WARNING


The energy chain doesn't run smoothly

When moving the machine, it runs unevenly.

- > Make sure that the cables are not twisted in the energy chain.
- ⇒ Check the alignment of the energy chain in the guidances.

Following components and tools are ready:

- 1 Energy chain (M19)
- 1 End piece with knobs (M19B)

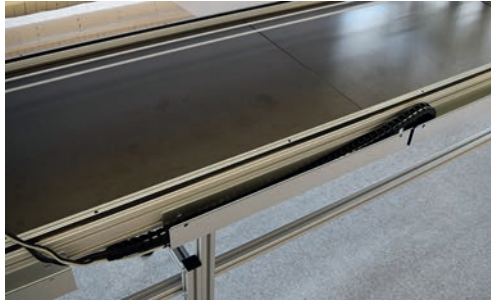
- 
- 1



- 



- > Place the energy chain temporarily into the energy chain guidance (see the picture).



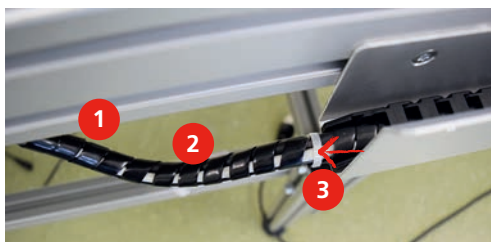
3.20 Attaching the energy chain

Following components and tools are ready (Bag 4):

- 2 Countersunk screws (S7)
 - 2 6-kt-Hex nuts with flange and serration (N2)
 - 1 Spiral cable binding (M16, short)
 - Torx key T10
- > Place the energy chain into the guidance.
 - > Attach the end piece of the energy chain with two countersunk screws and two 6-kt-hex nuts with flange and serration to the guidance, being aware of a parallel alignment.
 - > Tie the four cables around the end piece with a cable tie and cut the excessive cable tie.



- > Wind the spiral cable binding from the right to the left (starting before the end of the energy chain, (1)) around the four cables.
- > Make sure that the cables are not straight but slightly hanging down (2).
- > Tie the cable tie (3) around the four cables, the end piece of the energy chain and the spiral cable to fix all of them together.
- > Turn the end of the cable tie downwards, fix it with tension and cut the excessive cable tie.



- > Lay the energy chain one on top of the other.

- > Fix the end of the energy chain at the end piece of the carriage (4).
- > Cut off the previously attached cable tie.
- > Tie another cable tie around the four cables and the end piece and cut the excess cable tie.



- > Fix the energy chain at the security holder with a cable tie as shown in the illustration.

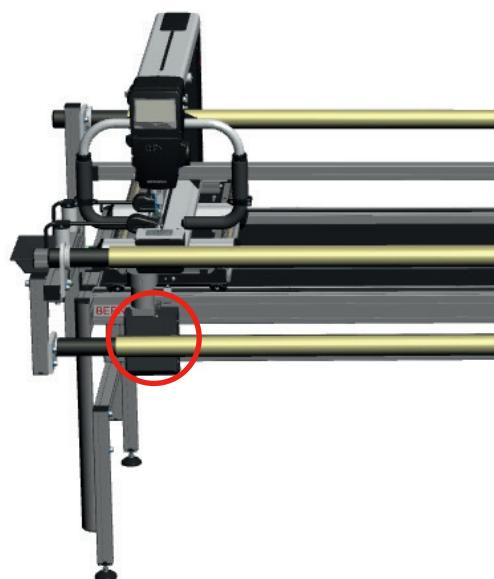


- > Put the two long cables on the Frame first and then into the cable trunking at the carriage.



- > Close the cable trunking with the lid.

3.21 Connecting the cables with the Y-drive



NOTICE

Electrostatic charge during assembly

Components on the circuit board can get damaged.

- > The customer/technician **must** be grounded before assembling the cables with the X-Y-drive to discharge electrostatic charge, refer to the safety instructions (see page 4). The green circuit board must **not** be touched during the cable assembly.

NOTICE

The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

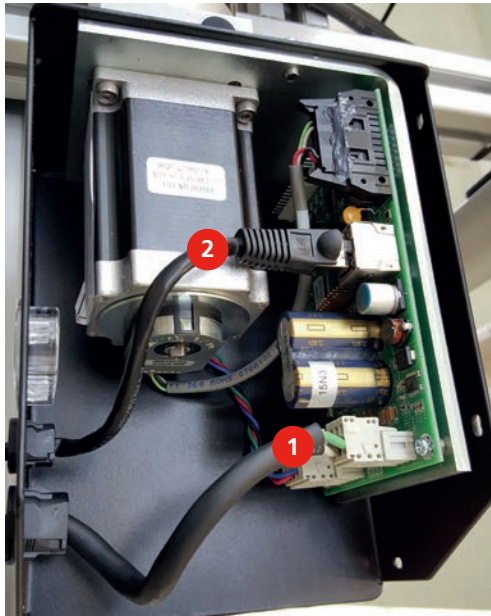
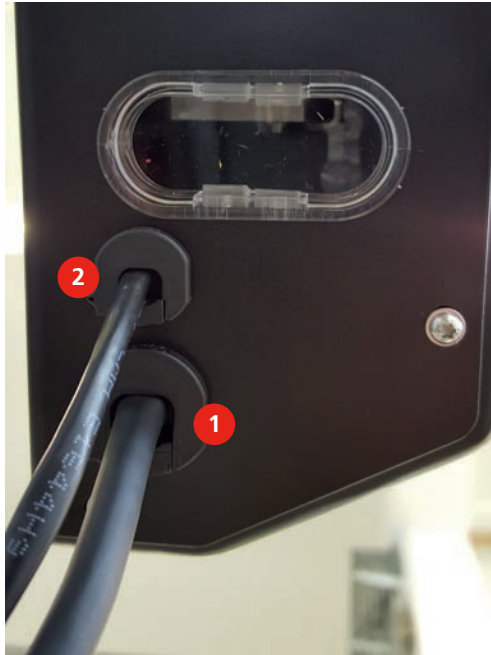
Following components and tools are ready (Bag 3):

- 1 Cable clamp (M11)
- Cable ties
- Allen key No. 4
- Torx key T10
- > The customer/technician **must** be grounded before assembling the cables with the X-Y-drive to discharge electrostatic charge, refer to the safety instructions (see page 4). The green circuit board must **not** be touched during the cable assembly.

> Loosen the three screws on each the left and the right side of the Y-drive and remove the cover.



- > Insert the communication Y-drive cable (2) and the power Y-drive cable (1) into the opening, as the picture shows, plug them in and engage the cable relief.



- > Attach the cover again.

- > Loosen the screw at the back of the Y-drive.



- > Push the cables through the cable clamp and attach the cable clamp with a screw.
- > Make sure that the Frame is not touched by any cable.
- > If necessary, fix the cables at the cable clamp with a cable tie.

3.22 Connecting the cables with the machine

NOTICE

The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

Following components and tools are ready (Bag 3):

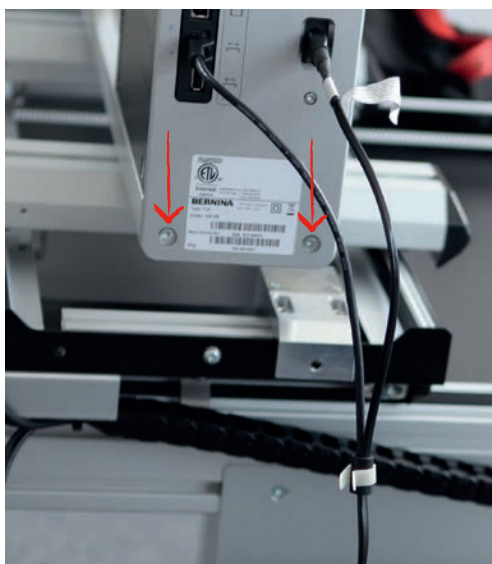
- 2 Cable clamps (M11)
 - 8 Washers (W5)
 - 1 Spiral cable binding (M12)
 - Torx screwdriver (T25)
 - Cable ties
- > Plug the two remaining short cables (5, 8) at the back of the machine in the appropriate sockets.



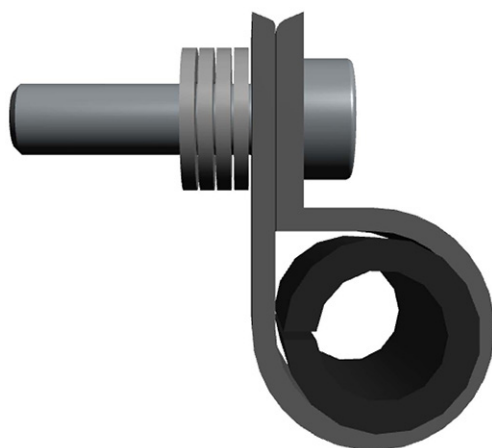
- > With the cables fully stretched, attach a hose pipe at 30 cm (12 inch) and on top of it fix a cable clamp.



- > Remove the two screws at the back of the machine.



- > Insert the previously removed screw into the borehole of the first cable clamp and then place four washers on the screw.

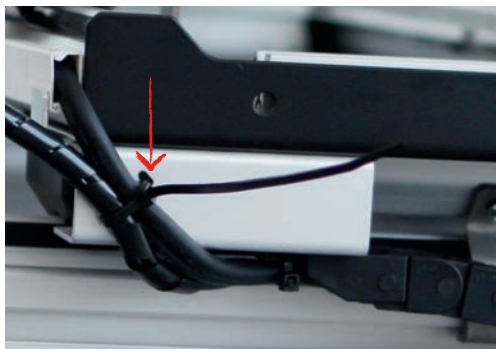


- > Tighten the screw in the right screwhole so that the cables draw a bow on the right of the machine.
- > Prepare the second cable clamp in the same way.

-
- A close-up photograph of the back of a white Bernina sewing machine. The machine is positioned on a light-colored surface. On the left side, there is a power switch and a power cord. The power cord is black and has a white label with the text "BERNINA" and "Model 1000-10" on it. The power switch is a black rectangular button with a white "ON/OFF" label. To the right of the power switch, there is a small white label with the Bernina logo and the text "BERNINA" and "Model 1000-10". The machine has a clean, modern design with a white body and black accents.

-

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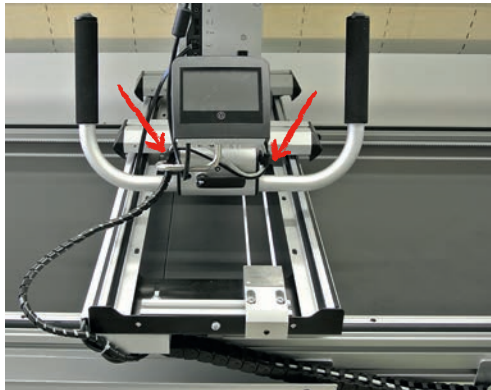
3.23 Connecting the cables with the machine along with the Pantograph (Optional accessory)

The cables of the Pantograph need to be laid separately. The cable laying is carried out in the same way as without Pantograph (see page 75). The only difference is the fixture at the machine.

Following components and tools are ready (Bag 3):

- 2 Cable clamps (M11)
- 2 Washers (W5)
- 1 Spiral cable binding (M12)
- Torx screwdriver (T20)
- Cable ties

> Remove the screws on the left and on the right of the Pantograph.

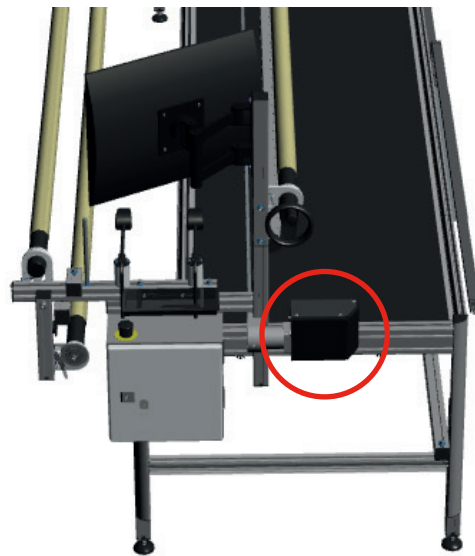


- > Insert the previously removed screw with a washer through the cable clamp and tighten it on the Pantograph.
- The alignment of the cable clamps and the cables is shown in the illustration. Be careful that the cables are laid properly.





3.24 Connecting the cables with the X-drive



NOTICE

Q-The Q-matic system doesn't work

Components on the circuit board can get damaged.

- > It is necessary to be grounded before the cables are connected with the X-drive to discharge electrostatic charge. This can be done by touching an exposed metal part of the existing quilt frame beforehand.

NOTICE

The cables are not plugged in correctly

The Q-matic doesn't start.

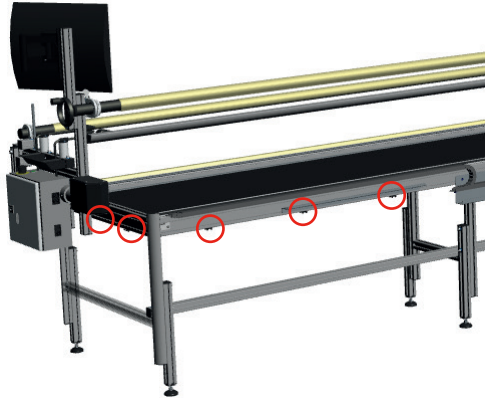
- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).
-
- > Lead the two short cables of the energy chain over the struts to the left to the X-drive.
 - > The customer/technician **must** be grounded before assembling the cables with the X-Y-drive to discharge electrostatic charge, refer to the safety instructions (see page 4). The green circuit board must **not** be touched during the cable assembly.
 - > Plug the cables in the same way as already done with the Y-drive (see page 72).

3.25 Fixing the cables to the Frame

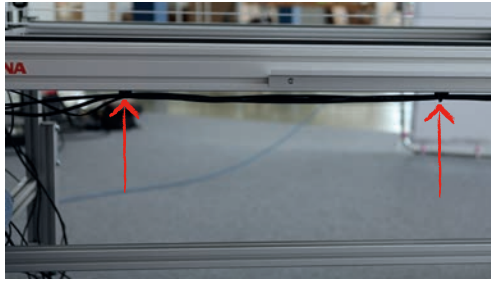
The Vario-Quick holding block has to be turned by 90° clockwise after having been inserted into the groove so that it is clamped in the groove.

Following components and tools are ready (Bag 3):

- 5 Vario-quick holding blocks KK (M14)
 - Cable ties
- > Attach the five vario-quick holding blocks to the lower groove, as indicated in the picture.
- > Turn the vario-quick holding blocks at 90° clockwise so that they get clamped in the groove.



- > Lay the cables without any sags and fix them with to every vario-quick holding block with a cable tie.



- > Roll the excess cables together and place them tied with a cable tie behind the control cabinet.
- > Make sure that none of the cables are kinked.



- > At last cut all ends of the cable ties.

3.26 Connecting the power cable of the screen

NOTICE

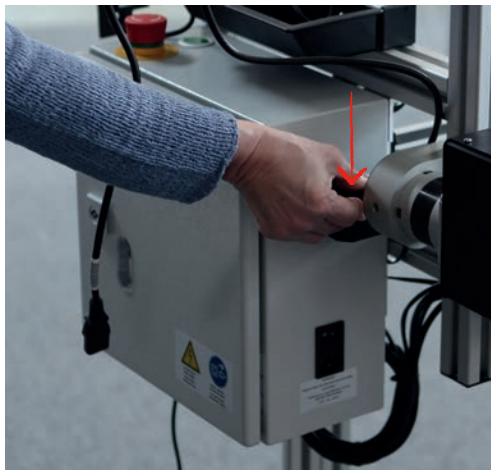
The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

Following components and tools are ready:

- 1 Power cable for the screen (C2)
- > Connect the power cable for the PC/Monitor with the highest socket on the right side of the control cabinet.



- > Hook the USB cable together with the power cable for the PC/Monitor from the control cabinet into the cable trunking (1).
- > Connect the power cable for the PC/Monitor in the socket (3).
- > Connect the USB cable in the socket (2).



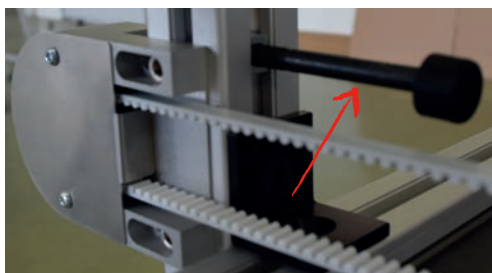
- > If necessary, tie all loose cables together with a cable tie and fix them to the Frame.

3.27 Attaching the protective cap

Following components and tools are ready:

- 1 Protective cap (M27)
- 1 Screw
- Allen key No. 6
- > Remove the silver screw on the left side of the X-drive at the upright bar and replace it by a new black screw.
- > Tighten the screw.

- > Fix the protective cap on the screw.



3.28 Connecting the power cable

NOTICE

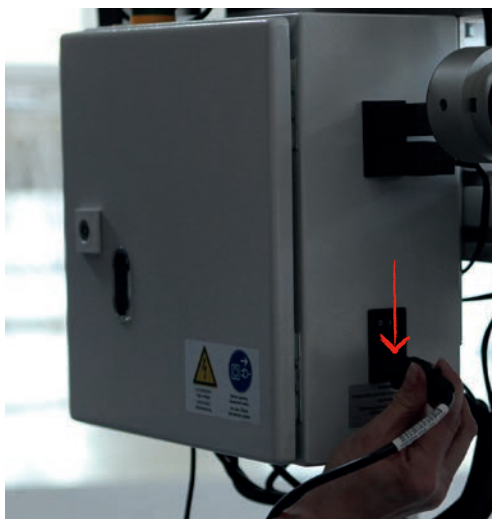
The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

Following components and tools are ready:

- 1 Power cable (C3)
- > Connect the power cable on the right side of the control cabinet with the lowest socket.



3.29 Q-matic system status and troubleshooting

At the control cabinet as well as at the two X-Y-drives, two little transparent spy windows are mounted which allow a view of the inner components. When the Q-matic system is started, various LEDs light up resp. flash for a short time. After a few seconds, only one green LED per component should light up continuously under normal conditions. If other LEDs are on or keep flashing after the starting process, a problem must have occurred. In this case, shut the system down completely, disconnect it entirely from the power supply and restart the system. If the problem couldn't be solved after the second attempt, check whether or not the USB cable is plugged in the socket of the PC correctly or the power cable is connected correctly at the back of the Q-machine. If these actions don't help, please turn to your BERNINA partner resp. the technical support.

The Q-matic system provides following status LEDs:

LEDs at the control cabinet: Yellow, green, red (top down).



LEDs at the motor/drive of the Y-axis: green, red. Similar to LEDs at the motor/drive at the X-axis (not shown).



3.30 Initial startup operation

DANGER

Don't interfere with the running system!

Can lead to severe injuries in the worst case.

- > Never interfere with the running Q-matic system (computer-controlled operation). Only the touch screen at the front of the machine head of the Q 20 / Q 24 and the touch screen of the PC as well as the red emergency stop knob may be used to operate the system. No other parts of the Frame, the Q 20 / Q 24 or the Q-matic system is to be touched during the computer-controlled operation.

CAUTION

Inappropriate voltage

Risk of injury and damage on certain parts.

- > The Q-matic must be connected to the power supply via the appropriate power cables for the respective voltage.

CAUTION

Use of inappropriate power cables

Risk of injury and damage on certain parts.

- > Only use American power cables for USA and Canada.
⇒ Only use Japanese power cables for Japan.

NOTICE

Loose cables

Risk of injury and damage on certain parts.

- > Any loose cables must be fixed to the Frame with cable ties.

NOTICE

The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).

CAUTION

Switching off the system improperly

This can result in damages on the system.

- > As long as the system is switched on, no cabling must be plugged in or unplugged.

Taking the Win 10 Touch-PC into operation and updating the firmware Q 20 / Q 24

- > Plug in the power cable in the power outlet.

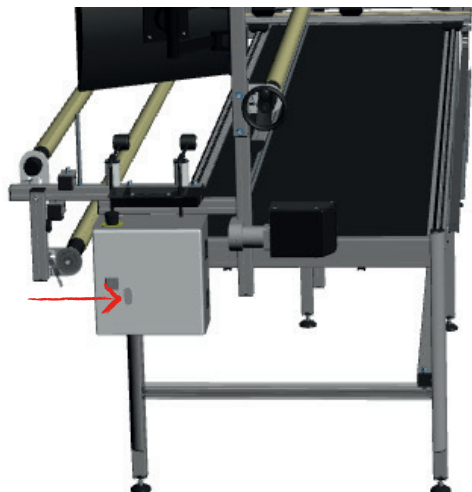
- > Switch on the main switch at the control cabinet.



- > Turn the red emergency stop knob in arrow direction so that the knob is in the correct position (unlocked).
- > Keep the green starting button at the top of the control cabinet pressed for 3 seconds until a click sound is heard.



- > If none of the three lamps light up or flash, the power supply connection has not been carried out properly.



- > **Taking the Win 10 Touch-PC into operation**
- > On the bottom right of the screen press the button «Monitor on/off» to switch on the PC.
 - The PC starts up and Windows setup is opened. This process may take some moments!
- > Follow the instructions of the «Setup».
- > Enter your basic settings, your preferred user name and other settings.

- > For the installation process skip the choice of a network connection. Some other steps may be skipped if you like.
 - At the end of the installation the Windows desktop appears.
- > **Updating the firmware Q 20 / Q 24**
- > On the desktop of the Q-matic PC touch the folder «Q-matic Software Firmware» with your finger twice in close succession to start the Q-matic program.
 - Three subfolders appear.
- > On the screen touch the folder «Q-Series Firmware» with your finger twice in close succession.
- > Copy both files onto a BERNINA USB stick.
- > Insert the BERNINA USB stick with the latest software version in the port (1).



NOTICE

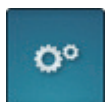
The BERNINA USB stick has been removed too early

The software cannot be updated and the machine cannot be used.

- > Remove the BERNINA USB stick only if the update has been completed successfully.



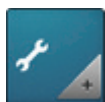
- > Touch the icon «Home».



- > Touch the icon «Setup Program».



- > Touch the icon «Machine settings».



- > Touch the icon «Maintenance/Update».



- > Touch the icon «Update the machine».



- > Touch the icon «Save data on USB stick» to start the saving process.



- > Touch the icon «Update» to start the update process.
- > Switch on the machine Q 20 / Q 24. Find further instructions in the «Instruction manual Q 20 / Q 24» and the «Operating Instructions».
- > Touch the «Q-matic» icon on the display with your finger twice in close succession to start the Q-matic program.

3.31 Switching the system on and off

DANGER

Don't interfere with the running system!

Can lead to severe injuries in the worst case.

- > Never interfere with the running Q-matic system (computer-controlled operation). Only the touch screen at the front of the machine head of the Q 20 / Q 24 and the touch screen of the PC as well as the red emergency stop knob may be used to operate the system. No other parts of the Frame, the Q 20 / Q 24 or the Q-matic system is to be touched during the computer-controlled operation.

CAUTION

Inappropriate voltage

Risk of injury and damage on certain parts.

- > The Q-matic must be connected to the power supply via the appropriate power cables for the respective voltage.

CAUTION

Use of inappropriate power cables

Risk of injury and damage on certain parts.

- > Only use American power cables for USA and Canada.
⇒ Only use Japanese power cables for Japan.

NOTICE

Loose cables

Risk of injury and damage on certain parts.

- > Any loose cables must be fixed to the Frame with cable ties.

NOTICE

The cables are not plugged in correctly

The Q-matic doesn't start.

- > Make sure that the plugs are plugged in the appropriate sockets (check the positions).
- > Plug the power cable in a power outlet.
- > Switch on the main switch at the control cabinet.



- > Turn the red emergency stop knob in arrow direction so that the knob is in the correct position.

- > Keep the green starting button at the top of the control cabinet pressed for 3 seconds until a click sound is heard.



- > On the bottom right of the screen press the button «Monitor on/off» to switch on the screen.
- > Touch the «BERNINA» icon on the display with your finger twice in close succession to start the Q-matic program.
- > Press «Close» top right to quit the program.
- > Shut down the operating system.
 - Wait until the display has shut down.
- > Switch off the main switch at the control cabinet.

3.32 Pressing the emergency stop knob



DANGER

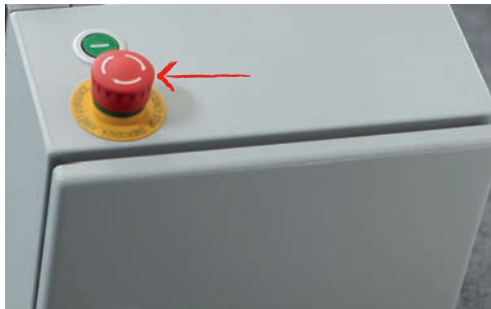
Danger of any kind

Can lead to severe injuries in the worst case.

- > Press the red emergency stop knob to stop the power supply immediately.

Only press the emergency stop knob in case of emergency!

- > Press the red emergency stop knob at the top of the control cabinet.



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