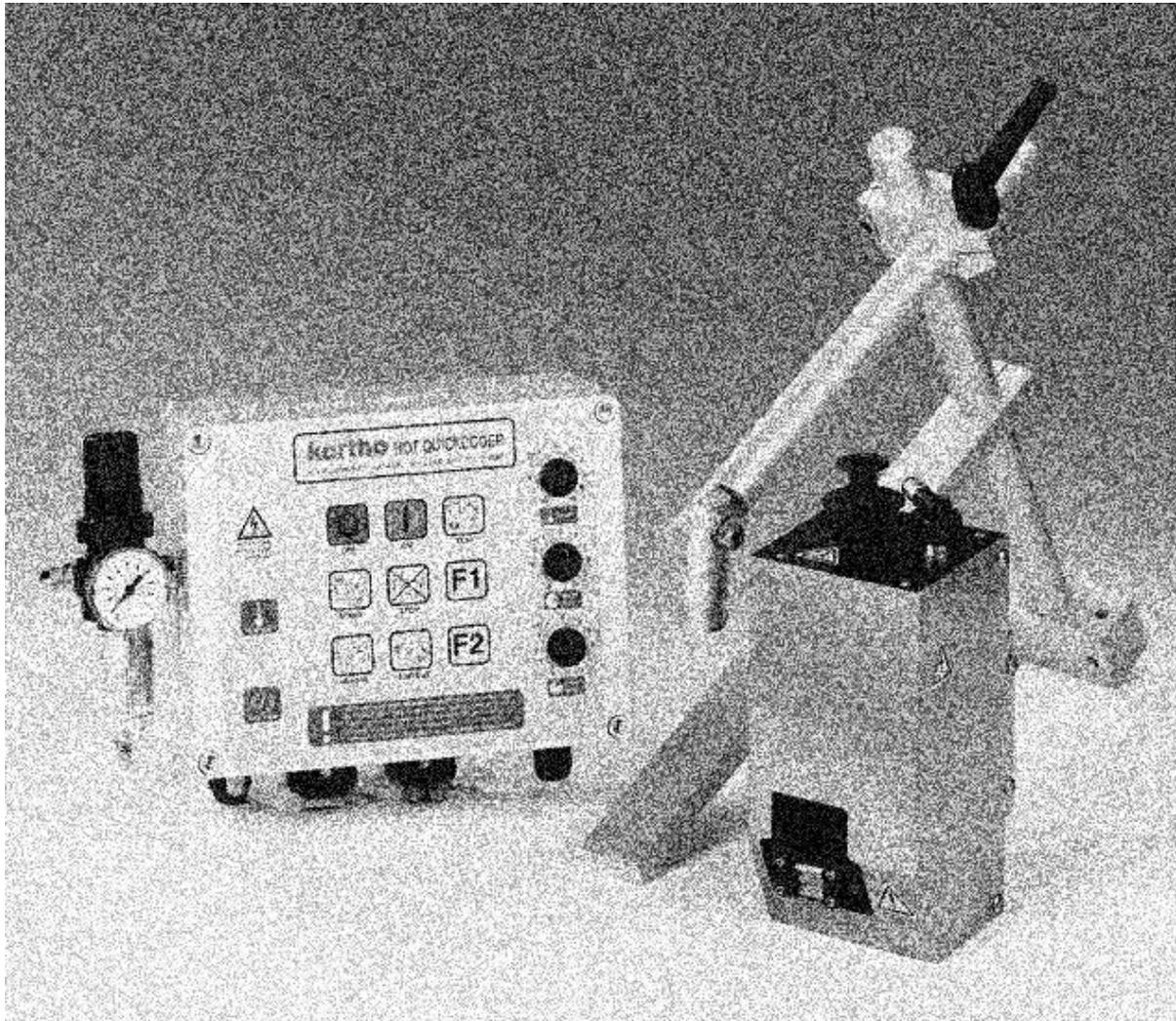

kortho

Hot Quickcoder



Artikelnummer/Articlenumber: H210 AM

NE

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Door voortdurende innovatie van onze producten is het mogelijk dat de gebruikte afbeeldingen licht kunnen afwijken van het daadwerkelijke Hot Quickcodersysteem.

In the light of continuous development and improvement Korthofah reserves the right to modify the specifications without prior notice. The figures printed in these manual may slightly differ from the actual Hot Quickcoder.

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1 GENERAL INSTRUCTIONS BEFORE USE

You should read through this user's manual carefully before putting the Hot Quickcoder into use for the first time. Follow the order indicated precisely when carrying out any of the actions described in this manual.

Pay particular attention to all stated warnings!

1.1 Liability

bv korthofah accepts no liability for damage resulting from the improper or uninformed use of the equipment or caused by maintenance or other work being carried out improperly. They also accept no liability for the normal wear-and-tear of the product.

1.2 Life Span

The life span of the equipment is ten years with normal use and compliance with the indicated maintenance periods. The life span can be negatively influenced if original parts are not used for repairs. All claims to a guarantee or compensation for damages do not apply in such an instance. The Hot Quickcoder does not contain any harmful substances or materials and can be scrapped or recycled at the end of its life span.

The Hotrolls should be treated as small chemical waste.

N.B. The above statement is based on the legislation in force as at mid 1995.

1.3 Normal use

Normal use means use under normal conditions i.e. stamping pressure, time and temperature set within the margins indicated in this User Manual.

1.4 Environment

The environment in which the Hot Quickcoder may be installed must comply with a number of requirements relating to humidity, temperature and vibrations.

The relative humidity should be between 0 and 85% (non-condensing).

The ambient temperature should be between 5 and 40°C.

The Hot Quickcoder may not be used in any areas having a fire or explosion hazard.

The Hot Quickcoder should be installed in a low vibration location.

1.5 Operational Personnel

Operating personnel are required to be informed by means of instruction as to the functioning of the equipment. They also need to be informed about the tips and warnings stated in this manual. A specific preliminary training is not required.

Personnel carrying out repairs and technical maintenance on the equipment should have a secondary technical education or a comparable technical level of knowledge through practical experience.

2 GENERAL INTRODUCTION

The Hot Quickcoder (henceforth HQC) has been developed to apply small texts of one to three lines (max. line length 25 mm) on a production line. The applications vary from loose products to a continuous product (e.g. packaging film).

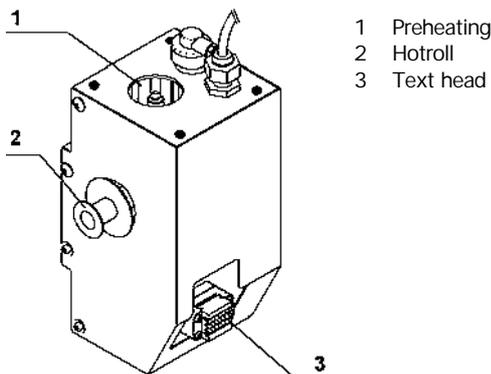
The text can be applied to a stationary or a moving product. The maximum permitted product speed is 60 m/min. Approx. 250 impressions per minute can be produced.

! WARNING:

After using the HQC, it cannot simply be deactivated. For the correct procedure read section 8 "Deactivating the Hot Quickcoder".

2.1 The Hot Quickcoder

Figure 1: The Hot Quickcoder

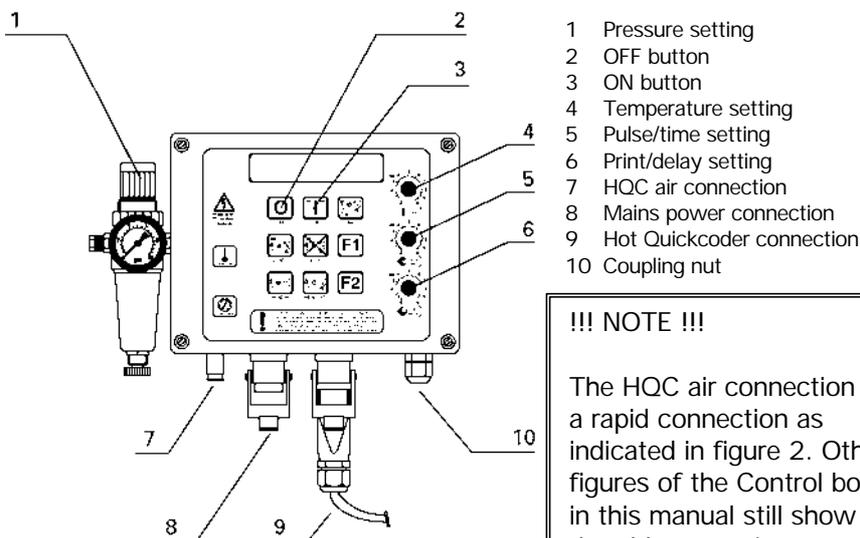


The code to be printed is applied to an exchangeable text head via text characters or blocks. The text head is inked with a Hotroll which only delivers the inked (wax-based) at high temperature. The Hotroll is kept at temperature in the heating ring of the HQC.

2.2 The Control box

A good print quality is achieved with a correct combination of stamping time, stamping pressure, temperature of the text head and the setting of any counter-pressure plate.

Figure 2: The Control box



The stamping time and temperature are set with the buttons on the Control box. The stamping pressure is set as standard to 4 bar. The impression can be optimised using a counter-pressure plate, if there is one. (In case film belts)

!!! NOTE !!!

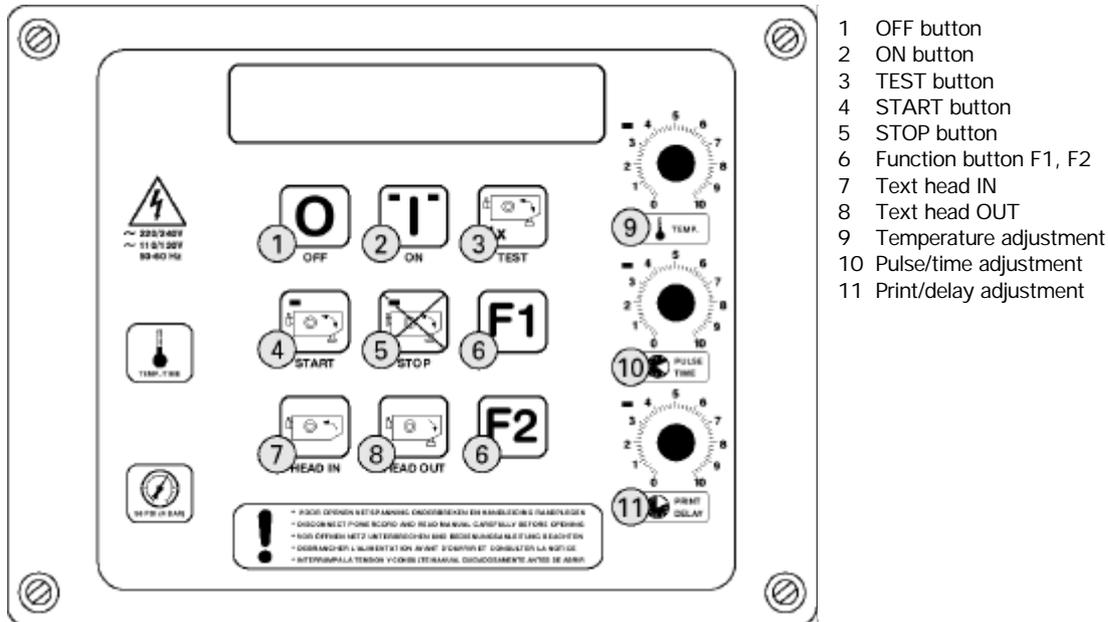
The HQC air connection is a rapid connection as indicated in figure 2. Other figures of the Control box in this manual still show the old connection.

The Control box contains a Control Panel with which specific functions can be performed such as switching the HQC on and off and setting the print parameters. The Control Panel can also be used to issue a test print signal.

2.2.1 The Control Panel

The Control Panel of the Control box contains the following buttons (see figure 3).

Figure 3: The Control Panel



- OFF (1) This button is used to switch off the system. The mains power remains connected to the system.
- ON (2) If it is connected to the mains power, this button is used to switch the system on. The two green lights indicate that the two low voltages for the electronics and the magnetic valve are present.
- TEST (3) The HQC performs a test print. The system should first be enabled by activating the START button.
- START (4) Once this button is pressed, the HQC is enabled for coding. The green light on the START button is illuminated when a print signal is received from the signal emitter. This may be a switch, photocell, relay contact, inductive sensor or 24V DC voltage pulse. The orange light on the STOP button goes out once the START button has been pressed.
- STOP (5) Once this button is pressed, the HQC stops coding. The orange light on this button will illuminate to indicate that the system is in preheating mode. The control will keep the text head at temperature.
- F1..F2 (6) As standard these buttons do not have a function. A specific function may be assigned to them if customer-gearred options are incorporated.
- HEAD IN (7) If the text head holder is in the outermost position, pressing this button moves the text head into the HQC.
- HEAD OUT (8) This button moves the text head holder to the outermost position. This button should be pressed to change a text head or text. It can then be used to fix the HQC to the

material to be coded. The text head (holder) is moved back into the HQC by pressing HEAD IN (7).

TEMP (9) For adjusting the temperature of the text head between 80° C and 160° C. When the red light is illuminated continuously once the system has been started up, the text head is heating up. When the text head has reached the desired temperature, the red light will flash to indicate that the text head is being kept at temperature. The text head is now kept at the set temperature.

PULSE/TIME (10) For adjusting the desired stamping time of the text head. This time can be set between 10 and 50 milliseconds. The orange PULSE/TIME light emits a light signal during the stamping time.

PRINTDELAY (11) The green light on this dial is illuminated when a print signal is emitted by the signal emitter.

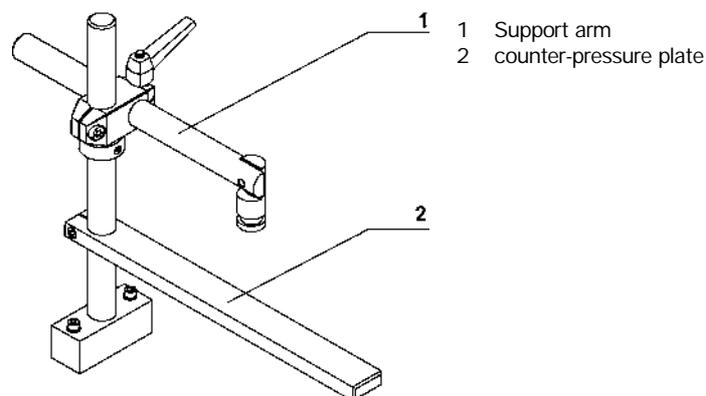
The print delay can be deactivated by connecting jumper J16 on the PCB in the lid of the Control box. See Appendix C.

2.2.1 Connections on the Control box

The Control box (see figure 2) has an HQC air connection (7), mains power connection (8), HQC connection (9) and a swivel acting as a feed for a signal emitter (10).

2.3 The support arm

Figure 4: The support arm



The support arm is used to position the HQC and any counter-pressure plate in relation to the product to be printed.

The support arm is suitable for moving the HQC to any position.

The exceptionally short stamping time makes it possible to print directly onto a moving product without further modifications.

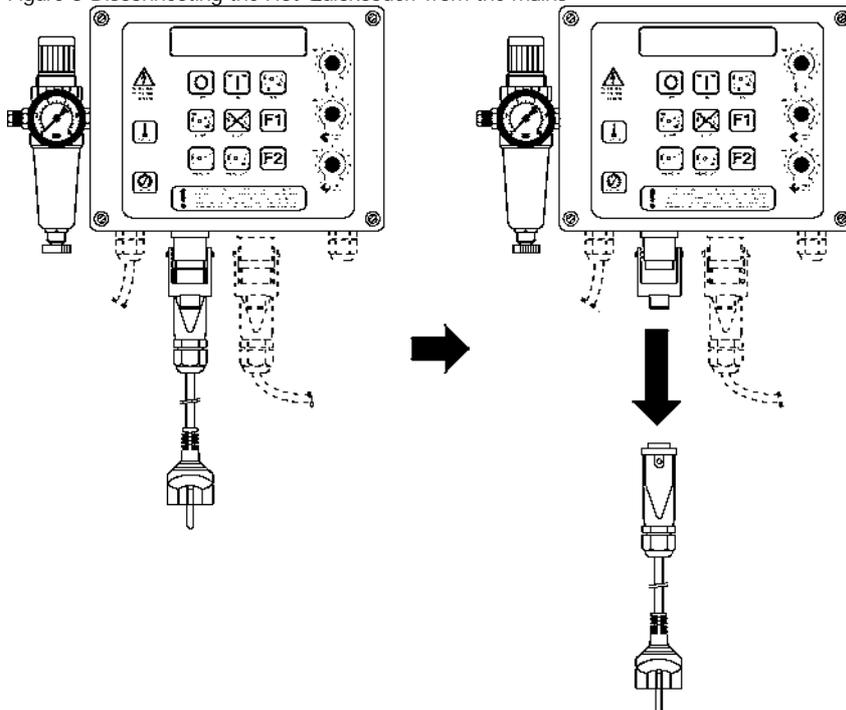
The HOC is a durable and reliable piece of coding equipment. In order to work with it safely, it is important that the precautions indicated in this manual are strictly followed.

SAFETY MEASURES

- ! Before operating the Hot Quickcoder, disconnect it from the mains by removing the mains cord from the control box (see Figure 5).
- ! After using the HOC, it cannot simply be deactivated. For the correct procedure read section 8 "Deactivating the HOC".
- ! Take care not to touch the hot text head of Hotroll (for example when inserting or replacing a hot roll). Allow the printer to cool down for approximately fifteen minutes before carrying out work on the HOC.
- ! Never insert your fingers between the text head and the counter-pressure plate or the product.

3.1 General Safety Measures

Figure 5 Disconnecting the Hot Quickcoderr from the mains



The operation of the HOC is based on:

- movement (of the text head);
- pressure (built up between the text head and the counter-pressure plate or the product);
- heating (of the text head and the Hotroll).

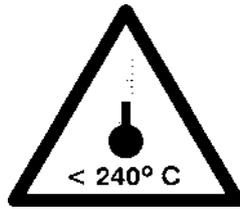
There are potential dangers hidden in the above with regard to the Hot Quickcoder. Safety measures are given in this manual for situations which are potentially dangerous. The following is an overview of the most important safety measures.

3.2 Explanation of attached stickers

Figure 6: Symbols



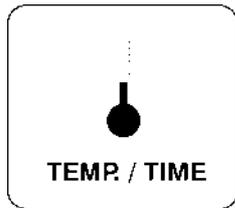
General danger
Danger due to
high voltageparts



Danger due to
high temperature



Various warning symbols are attached to the HQC. Here is an explanation of the symbols on the stickers.



Coding unit remains
Voltage
hot for a while
requirements
after use



Maximum adjustable
pressure



4 INSTALLATION OF THE HOT QUICKCODER

4.1 Assembly instructions

Figure 7a: options for coding products

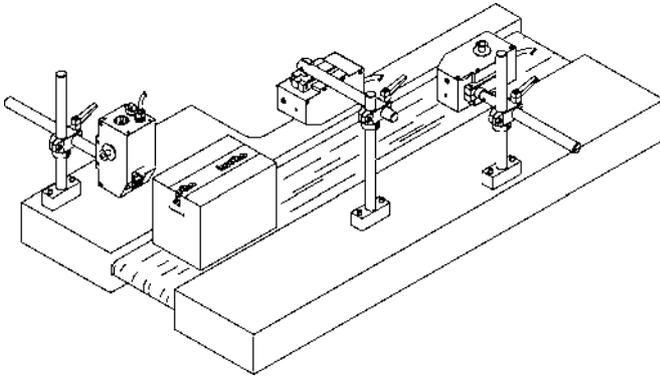
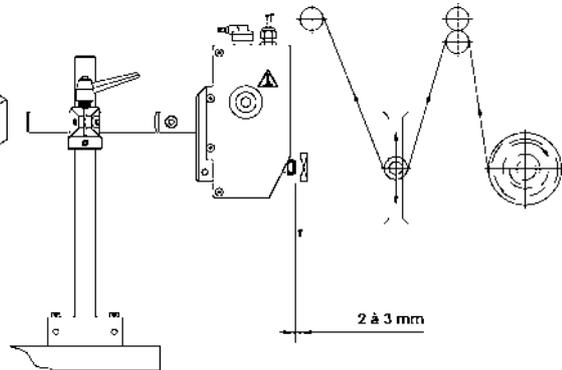


Figure 7b: options for coding lengths of film



See Figure 7 for a summary of the options. During assembly ensure that sufficient space is left around the coder to replace the Hotroll and to change the text head. If necessary, set up the coder so that it revolves. The dimensional sketches are included in Appendix D.

1. Mark the desired position of the holes for assembling the support (pitch is 70 mm). When determining the position, take account of the fact that the text head (in the marked position) should ultimately be located approx. 2-3 mm from the product surface to be printed (figure 7b).
2. Drill the fixing holes for the support (diameter 6.5 mm of M6).
3. Assemble the support with M6 bolts (x2).
4. Fix the coder to the support.
5. Mark the desired position of the holes for assembling the Control box (pitch is 70 mm).
6. Drill the fixing holes for the Control box (diameter 4.5 mm of M4).
7. Assemble the Control box with M4 bolts and/or nuts (x4).

4.2 Connection instructions

! WARNINGS:

Before opening the control of the Hot Quickcoder, it should first be disconnected from the power. This is done by removing the mains cable from the Control box (see figure 5).

Only an GROUNDED cable may be used for connecting the equipment!

1. Disconnect the printer from the voltage by removing the mains cable from the Control box.
2. Open the Control box.
3. Check that the desired power supply is set correctly. (see appendix C).
4. Connect a sensor to supply the print command. The connection points and settings of the switch and jumpers are given in appendix C.
5. Connect the power and control cable to the coding part.
6. Connect the Control box to the compressed air supply (setting ± 4 bar) via the reducing valve.
7. Connect the HQC to a grounded connection.

5 PUTTING THE HOT QUICKCODER INTO OPERATION

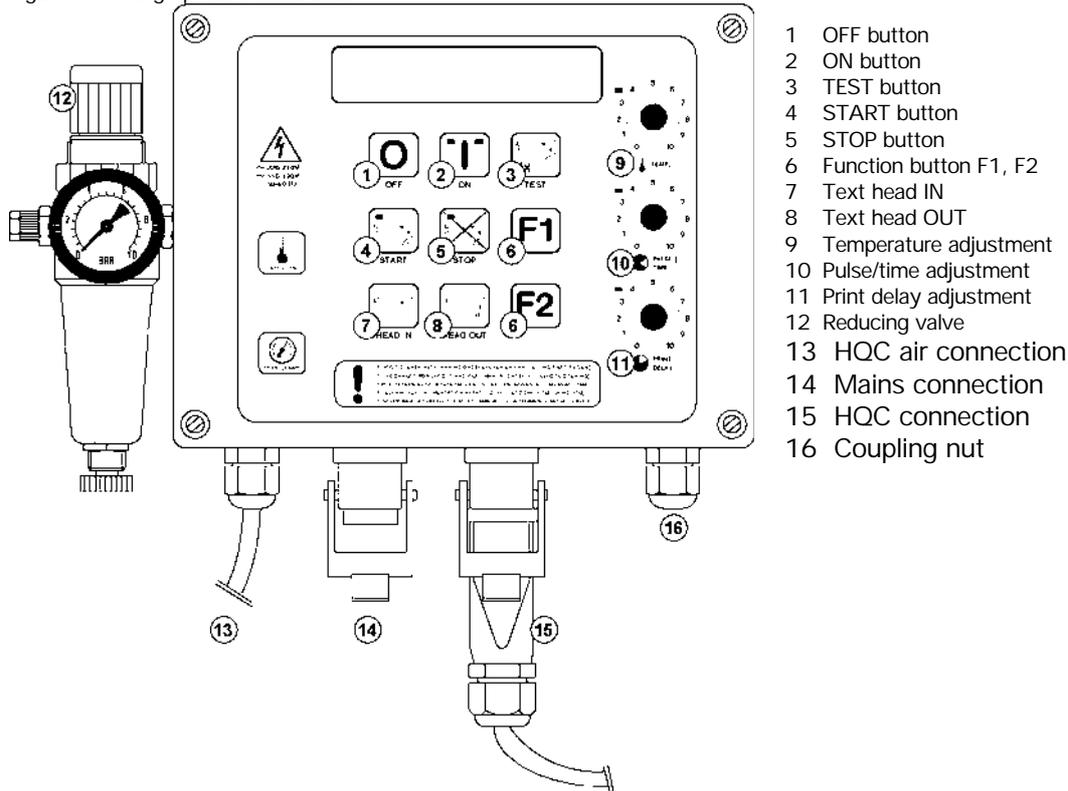
The correct operation of the HQC is determined by the setting of the stamping time, stamping pressure and temperature and the distance of the HQC from the surface to be printed.

The description below assumes that:

- The HQC has been installed so that it is easily accessible (see section 4).
- The supply of products is interrupted.
- The HQC is switched on.

5.1 Setting up the Control box

Figure 8: Setting up the Control box



The HQC can be switched On and Off with the ON (2) and OFF (1) buttons. The dials (9), (10) and (11) are used respectively to adjust the temperature of the text head, the stamping duration and the printing position on the product.

Switch on the system by pressing the ON button (2). The operating temperature of the HQC is around 135° C in most instances. This means that a heating up time of 15 minutes (position 8) after switching on the HQC should be taken into account. The system automatically switches to the warming-up position after the ON button has been pressed. The red light next to the TEMP turn knob (9) will be lit continuously.

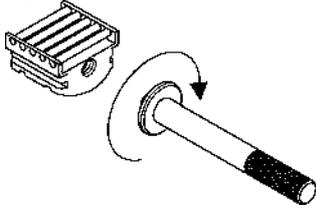
No prints are made during the warming-up phase if a print signal is received. The HQC remains in the STOP position during the warming-up phase and the orange light on the STOP button (5) is lit. The warming-up phase is completed when the red light on the TEMP turn knob (9) blinks at a steady rate.

After the warming-up phase, a testprint can be made by pressing the TEST button (3). To make a testprint, however, the system needs to first be released by pressing the START button (4). Depending on the quality of the testprint, the HQC may need to be adjusted. Otherwise, simply press the START button (4) to prepare the HQC for production.

An explanatory overview of the buttons and turn knobs on the control box control panel is given in Chapter 2.

5.2 Applying the text material

Figure 9: The text head

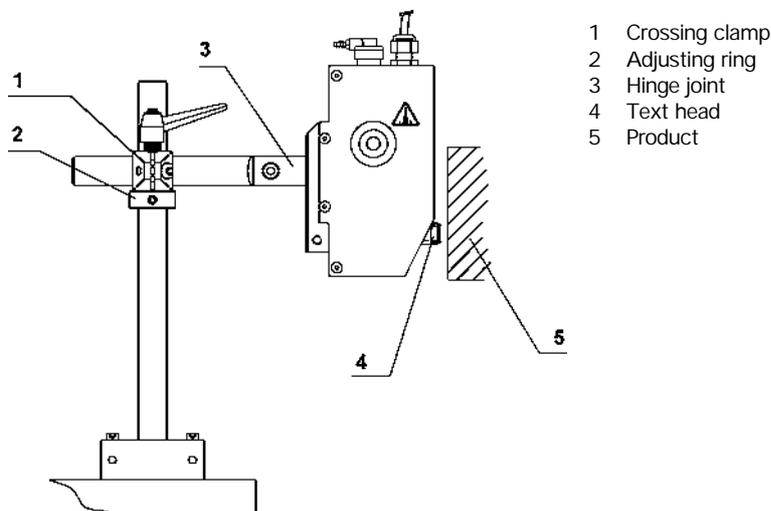


The text head has a printing area of 17 x 20 mm or 17 x 25 mm. The printing area has a specially shaped profile. The text characters have the same profile on the reverse. The text characters are applied to the text head with a simple printing movement.

The 'blank space' in the text characters on the same "line" should be completely filled with space characters.

5.3 Adjusting the position of the HQC

Figure 10: Distance to the product



The HQC should be positioned such that the text head (5) is located in the position shown 2 to 3 mm from the surface to be coded.

Activate the "HEAD-OUT" button (8) on the Control Panel (see section 5.1). This will fix the text head holder in the outermost position.

Position the text head in the older (see section 6.1).

Position the Hot Quickcoder so that the text head is located 2 to 3 mm from the surface to be coded.

Lock the crossing clamp (1).

Place the adjusting ring (2) against the underside of the crossing clamp.

Adjust the hinge joint (3) so that the product will be coded evenly.

If necessary, reset the height.

Activate the "HEAD-IN" button (7) on the Control Panel (see section 5.1). The text head moves in.

A fine adjustment is available as an option. This can be used to adjust the distance to the product simply and accurately.

6 STARTING UP THE HOT QUICKCODER

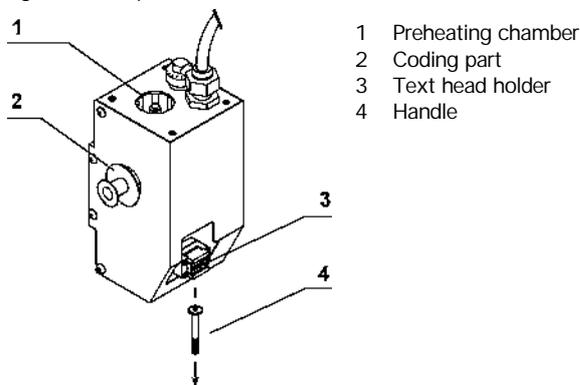
! WARNINGS:

Failure to observe the requisite heating up time of ± 15 minutes leads to irrevocable damage to the text material and the Hotroll!

Failure to remove the handle from the text head can damage the HQC

6.1 Preparation for use

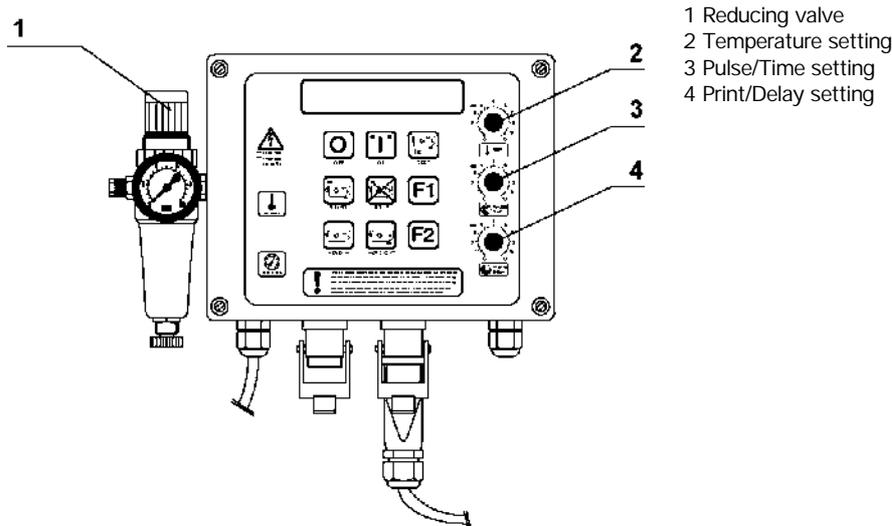
Figure 11: Preparation for use



1. Take the text head and prepare it for use by applying the desired text material (see section 5.2).
2. Connect the system to the Control box by pressing the ON button.
3. Activate the HEAD-OUT button on the Control Panel (see section 5.1). This fixes the text head in the outermost position.
4. Place the text head in the text head holder.
5. Remove the handle (4) by twisting it out of the text head.
6. Place a Hotroll in the coding part (2) of the HQC; the cartridge must be pushed in until it clicks.
7. Activate the HEAD-OUT button on the Control box (see section 5.1).
8. Set the temperature adjustment on the Control box (section 5) to position 8 which sets the temperature to $\pm 135^{\circ}\text{C}$.
9. Take account of 15 to 20 minutes' heating up time.
10. Activate the START button on the Control box (see section 5.1).
11. Activate the supply of products.
Adjust the print quality further in accordance with the instructions in section 6.2.
13. Place a Hotroll in the preheating chamber (1). This heats up a new Hotroll during production so as to avoid undesirable loss of production.

6.2 Adjustment of the HQC

Figure 12: Adjustment of the HQC



A correct adjustment of the HQC is achieved by the setting of the stamping pressure, temperature and stamping time.

The stamping pressure is adjusted with the reducing valve. This is mounted on the left-hand side of the Control box (1). The temperature is set with the TEMP dial (2). The stamping time is set with the PULSE/TIME dial (3).

Furthermore, the PRINT/DELAY dial (4) can be used to set a delay between the sensor signal and the actual coding job through the Control box to the HQC.

STEPS:

1. Set the stamping pressure to ± 4 bar.
2. Set the temperature to position 8 ($\pm 135^{\circ}\text{C}$).
3. Set the stamping time such that an optimum print is generated. If necessary, the print quality can be improved by slightly increasing the pressure and/or temperature.

If the print does not result in a completely even image, the position of the HQC probably needs to be adjusted (see section 5.3).

! WARNING:

Too high a temperature setting can reduce the service life of the Hotroll.
Too high an air pressure setting can reduce the service life of the Hot Quickcoder.

The standard optimum setting in most cases is an air pressure of ± 4 bar and a temperature of $\pm 135^{\circ}\text{C}$ (position 8). Adjust the setting so that both the temperature and the air pressure are around the standard setting.

7.1 Changing a text head

Texts can be changed particularly quickly by changing the text head.

! WARNINGS:

If the text head is removed during normal operation, it's temperature is approximately 120° C!

Failure to remove the handle from the text head can damage the HQC.

1. Stop the supply of products.
2. Remove the product under (or in front of) the HQC or turn the HQC in its entirety away from the belt.
3. Activate the HEAD-OUT button on the Control Panel.
4. Twist the handle into the text head.
5. Use the handle to extract the text head from the text head holder.
6. Use the handle to position the (new) text head in the text head holder (check for blockages).
7. Twist the handle out of the text head.
8. Activate the HEAD-IN button on the Control Panel. This moves the text head back into neutral position.
9. Allow the new text head to reach operating temperature (approx. 2 minutes).
10. Replace the product under (or in front of) the HQC or turn the HQC in its entirety back towards the belt.
11. Start the supply of products.

7.2 Replacing the Hotroll

If the print becomes less legible, the Hotroll should be replaced. Replace the used roll with a roll which has already been brought up to the correct temperature in the preheating chamber of the HQC.

! WARNINGS:

Failure to follow the rules below when replacing a Hotroll leads to damage to the text material, the Hotroll and the HQC itself!

The temperature of the text head is approximately 120° C!

1. Activate the STOP button on the Control Panel.
2. Stop the supply of products;
3. Activate the HEAD-OUT button on the Control Panel;
4. Extract the used Hotroll from the coding part of the HQC;
5. Remove the new Hotroll from the preheating chamber;
6. Slide the new Hotroll into the coding part of the HQC; the cartridge must be pushed in until it clicks;
7. Replace the removed product under (or in front of) the HQC;
8. Activate the HEAD-IN button on the Control Panel;
9. Activate the START button on the Control Panel.
10. Restart the supply of products;
11. Place a new Hotroll in the preheating chamber.

8.1 Stopping printing for a short time

If the HQC is deactivated for a short time (during a break), the STOP button on the Control Panel should be pressed. The thermostat part of the Control box continues to operate normally. When production is resumed, the START button on the Control Panel must be pressed and the QC is ready for immediate use.

8.2 Stopping printing for a longer time

If the HQC is deactivated for a longer time (several days):

1. Stop the supply of products;
2. Activate the HEAD-OUT button on the Control Panel;
3. Remove the Hotroll from the coding part of the HQC;
4. Activate the HEAD-IN button on the Control Panel. This moves the text head back into neutral position;
5. Now switch off the HQC using the OFF button on the Control Panel;
6. If necessary, remove the air pressure from the system;
7. If desired, resume the supply of products;

When the system is started up again, you should take account of the requisite heating up time of 15 to 20 minutes (see section 5.1).

! WARNING:

Failure to observe the requisite heating up time of ~ 15 minutes leads to irrevocable damage to the text material and the Hotroll!

! WARNINGS:

Whenever the HQC is cleaned it should first be completely disconnected from the mains power by removing the mains plug from the Control box (see figure 5)

Under no circumstances must the HQC be cleaned with water.

9.1 Maintenance

It is recommended to have the HQC system checked and/or reconditioned periodically. The recommended frequency is once every two years depending on the degree of use of the HQC. No special tools are needed for carrying out maintenance work.

9.2 Cleaning

The HQC can best be cleaned using a dry brush.
The control box can best be cleaned using a cleaner that will not damage the plastic.

APPENDIX A: LIST OF POSSIBLE MALFUNCTIONS

! WARNING:

If you decide to open the Control box or the HQC, the entire installation should first be disconnected from the power! This is done by removing the mains cable from the Control box (see figure 5).

Making a Diagnosis of Malfunctions

A diagnosis can be made at the electrical level using the lights on the Control Panel of the Control box.

The lights on the control box control panel indicate the following:



ON

ON, green, left:

Light illuminated: 12V DC power supply present for electronics.

ON, green, right:

Light illuminated: 24V DC power supply present for magnetic valve coil and print signal sensor.

START, green:

Light illuminated: the sensor is activated.

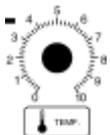


STOP

STOP, orange:

Light illuminated: the HQC is in preheating mode.

The lights to the upper left of the turn knobs indicate the following:



TEMP, red:

Light is lit: the heating element is receiving voltage.

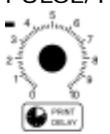
Light burns continuously: the heating element is preheating the printhead.

Light is blinking at a steady rate: the set temperature of the sensor has been reached.



PULSE/TIME, yellow:

Light is lit: the magnetic valve is being powered.



PRINT/DELAY, green:

Light is lit: during the delay time. The light is also lit up whenever the PRINT/DELAY is not switched on.

Checkpoint 1 PRESENCE OF MAINS VOLTAGE

Is the mains power present, check voltage supply?

No: Perform steps 13 and 14

Check that the mains power is now present.

No: Fault outside the HQC system

Yes: Go to checkpoint 2

Checkpoint 2 TESTING ON and STOP

Activate the ON button

Are the ON and STOP lights illuminated?

Yes: Go to checkpoint 3

No: Perform steps 1 and 15

Perform steps 2, 6, 7 and 8

Perform steps 11 and 12

Activate the ON button

Are the ON and STOP lights now illuminated?

No: Contact the Korthofah service department.

Yes: Go to checkpoint 3

Checkpoint 3 TESTING THE TEMPERATURE

Check that the ON button lights are still on.

Is the light next to the Temp dial illuminated?

Yes: Go to checkpoint 4

No: Perform steps 1, 22, and 15

Perform steps 3, 8, 9, 17 and 18

Perform steps 11 and 12

Activate the ON button

Is the light next to the Temp dial now illuminated?

No: Contact the Korthofah service department

Yes: Go to checkpoint 4

Checkpoint 4 TESTING START and STOP

Set the temperature and wait at least five minutes after the TEMP light starts flashing.

Check that the ON button lights are still on.

Activate the START button

Does the STOP light go out?

Yes: Go to checkpoint 5

No: Perform steps 1 and 15

Perform step 9

Perform steps 11 and 12

Activate the ON button

Set the temperature and wait until the TEMP light starts flashing *.

Check that the ON button lights are still on.

Activate the START button. Does the STOP light now go out?

No: Contact the Korthofah service department

Yes: Go to checkpoint 5

Checkpoint 5 TESTING PULSE/TIME

Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on and activate the START button.
Activate the TEST button
Is the PULSE/TIME light illuminated?
Yes: Go to checkpoint 6
No: Perform steps 1 and 15
Perform step 9
Perform steps 11 and 12
Activate the ON button and the START button.
Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on.
Activate the TEST button. Is PULSE/TIME now illuminated?
No: Contact the Korthofah service department
Yes: Go to checkpoint 6

Checkpoint 6 TESTING OPERATION OF TEXT HEAD HOLDER

Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on.
Activate the TEST button
Does the text head holder of the HQC move?
Yes: Go to checkpoint 7
No: Perform steps 1 and 15.
Perform steps 8, 9 and 23.
Perform steps 10 and 18.
Perform steps 11 and 12.
Activate the ON button and the START button.
Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on.
Activate the TEST button. Does the text head holder of the HQC now move?
No: Contact the Korthofah service department
Yes: Go to checkpoint 7

Checkpoint 7 TESTING THE SYSTEM ADJUSTMENT

Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on.
Activate the TEST button
Adjust the system in accordance with Section 5
Does the text head holder of the HQC move?
Yes: Go to checkpoint 8
No: Perform steps 1 and 15.
Perform steps 19 and 20.
Perform step 21.
Perform steps 11 and 12.
Activate the ON button and the START button.
Set the temperature and wait until the TEMP light starts flashing *.
Check that the ON button lights are still on.
Activate the TEST button. Does the text head holder of the HQC now move?
No: Contact the Korthofah service department
Yes: Go to checkpoint 8

Checkpoint 8 FINAL CHECK

The Hot Quickcoder should now be working properly.

If the HQC is still not working properly, the Korthofah service department should be called.

(*) If some time has passed after Checkpoint 4, the control light should flash for at least five minutes. During this period, the entire text head on the Hot Quickcoder reaches the desired temperature which is essential for further tests.

Checkpoints: steps to be carried out

1. Press the OFF button and disconnect the system from the mains by removing the mains cord from the control box.
2. Check whether the wires from the mains connection are fastened properly in the plug and in the power supply connector.
3. Check whether wire numbers 1 & 2, the sensor, are fastened properly in the plug and in the power supply connector.
4. Check whether wire numbers 3 & 4, the heating element, are fastened properly in the plug and in the power supply connector.
5. Check whether fuses F1 & F2 for supplying power to the heating element are still intact.
6. Check whether fuses F3 & F4 for supplying power to the electronic elements are still intact.
7. Check whether fuses F5 & F6 for the secondary alternating voltage for the electronics are still intact.
8. Check for damage to the flat cable which runs from the power supply board to the control board.
9. Check whether the flat cable which runs from the control panel to the control board is damaged or has come loose.
10. Check the air pressure. This should be adjusted at around 4 bar.
11. Close the control box and/or coding unit carefully.
12. Connect to the mains voltage by reconnecting the mains cord.
13. Check whether the voltage selection switch, SW2, is switched to the correct voltage: 115 or 230 VAC.
14. Switch it to the correct voltage, 115 or 230 VAC, 50-60 Hz, sinusoidal according to electricity company requirements.
15. Open the control box using a screwdriver. Handle the cover with care because of the cabling.
16. Test the heating element for continuity. To do so, see Appendix C.
17. Test the sensor for continuity. To do so, see Appendix C.
18. Check the wiring to and in the coding unit. Are they damaged or have they come loose?
19. Check whether the signaldevice entry is properly set using SW1. See Appendix C for instructions on how to adjust this. The entry needs to be set for the type of sensor; NPN, PNP or 24VDC voltage pulse.
20. Check whether the wiring of your signal device is properly connected (24VDC, signal, ground, galv). See Appendix C.
21. Check the wiring of the signal device for damage, such as interruption or short-circuit.
22. Check whether the encoder cable is properly connected to the control box.
23. Check whether wire numbers 5 & 6, the magnetic valve, are fastened properly in the plug and in the power supply connector.

(1-23)

A. Text head does not move

possible cause:	action:
1. Still in preheating mode. (STOP status)	Activate the START button on the Control Panel (normal operation, see also 5.1.1)
2. No air pressure	Check reducing valve on the Control box
3. No supply voltage	Measure the voltage on the 220V AC terminals in the command box voltage
4. Fuse blown	Check the fuses (on the PCB) in the Control box and replace if blown (coil and/or system power not illuminated).
5. Magnetic valve defective	Replace the magnetic valve
6. Wire broken in the supply and/or control cable (heating & sensor).	Disconnect the system from the power and the cables. Test the power cable and control cable. If necessary replace the power and control cable (see electrical connection diagram appendix C).

B. Text head moves but no printing or only partial printing visible

possible cause:	action:
1. Temperature too low	Set temperature to a higher value
2. Stamping time too short	Set stamping time to a higher value
3. Counter-pressure plate / product far from the text head of the HQC.	Adjust the counter-pressure plate or HQC.
4. Fault in the text material	Check that the text materials is not worn or that the (loose) characters are varying in height. If necessary replace the block or the characters
5. The HQC is out of alignment with the product to be printed	Adjust the HQC in relation to the product to be coded.
6. The Hotroll is empty (exhausted)	Check the Hotroll and replace if necessary.
7. The Hotroll does not turn	Check the position of the transport spring and adjust it if necessary.

C. Printing too thick

possible cause:

action:

- | | | |
|----|--------------------------------|--|
| 1. | Temperature too high | Set temperature to a lower value |
| 2. | Stamping time too long | Set stamping time to a lower value |
| 3. | Text head too close to product | Adjust distance if necessary to 2-3 mm |

D. The text head is not heating up

possible cause:

action:

- | | | |
|----|--|---|
| 1. | Fuse blown | Replace the fuse (accessible from outside) |
| 2. | Wire broken in the supply and control cable or the mains cable | Check the wiring for short circuit or breakage. If necessary replace the power and control cable (see electrical connection diagram appendix C). |
| 3. | Sensor is broken or defective | Test the sensor at points 1 and 2 of the connector on the HQC (first disconnect the supply and control cable). The correct value is 220 kOhm at 25° C.
Replace the cable if the value deviates more than 10%. |
| 4. | Heating element defective or short circuited | Test the heating element at points 3 and 4 of the connector on the HQC (first disconnect the supply and control cable). The correct value is 825 kOhm at 25° C.
Replace the cable if the value deviates more than 10%. |

Technical data Hot Quickcoder

Mass of coding part [kg]	2
Mass of Control box [kg]	2.3
Length of supply and control cable [m].	2.5
Maximum printing area [mm x mm]	12 x 20 or 12 x 24
Maximum printing speed [n/min]	250
Maximum product speed [m/min]	60
Operating pressure [bar]	± 4
Temperature range text head [° C]	80 - 160
Supply voltage (50/60Hz) [V AC]	110 / 220 V AC ± 10% 50-60 Hz
Air consumption	0.3 ltr. at 4 bar.
Power consumption [Watt]	110 max.

Technical data Control box for Kortho HQC

Mass [kg]	1.9
Dimensions L x W x H [mm x mm x mm]	310 x 125 x 300
Length of mains cable [m]	2.5
Supply voltage [V AC, reversible]	115 or 230 ± 10% 50-60 Hz
Temperature range [° C]	80 – 160
Pulse/time setting [ms]	10 – 50
Print/Delay setting [s] *	0.10 – 2

Other specifications:

Zero voltage safety mechanism
 Industrial model, min. IP 65
 Option for Mini Kortho Logic Controller

Inputs:

Detection input: J10, 24VCC, SIGNAL [+], GALV [-] and GROUND, with anti-branching circuit for:

Sensors of type NPN [open collector], PNP [open collector].

These are connected to 24V CC, SIGNAL and GROUND. SW1 must be set depending on the type (NPN or PNP). For NPN, SW1-1= ON and SW1-2 = OFF. For PNP, SW1-1= OFF and SW1-2 = ON.

Potential free contact This is a single-pin contact which is not yet used by other electronics. For example, a free contact from a relay in the packaging machine or a cam switch. Connect the two wires of the switch as you wish to SIGNAL and GROUND. Set SW1-1 to ON and SW1-2 to OFF (standard factory setting). Ensure the switch is of good quality!

A voltage pulse of 24V DC, minimum 15 ms
 Instead of sensors or a switch, a 24V DC voltage pulse can also be used to issue a start command. This pulse must have a minimum duration of 15 ms. This pulse must be a clean rectangle without interference. In this state the input circuit is separated and filtered completely galvanically, too much interference causes problems!

Set SW1-1 and SW1-2 both to OFF. Connect the 24V DC (+) to the SIGNAL [+] and the ground to GALV [-]. For example, a PLC can supply this type of voltage pulse (this depends on the type of PLC).

STOP :

Input for interrupting coding

This input must be grounded with a potential-free contact or an NPN open collector. Connect the wires to J3, PRE EXT and GROUND. The maximum current which will run is 30 mA. The coding unit remains at temperature. When the contact is opened again, the HQC will be ready to resume coding after about 1 second.

With this input the packaging machine, for example, can start/stop coding.

Outputs:

Signal busy with printing This signal is grounded as soon as the cylinder is activated. This output is an open collector which can switch 24V DC 30 mA. The connection you use is on J3, called PRINT. It is used to synchronise the HQC with the packaging machine, if the packaging supports this.

Preheating signal As soon as the STOP button on the Control Panel is activated or the STOP input is triggered, this output is grounded. This output can switch 24V DC, 30 mA.

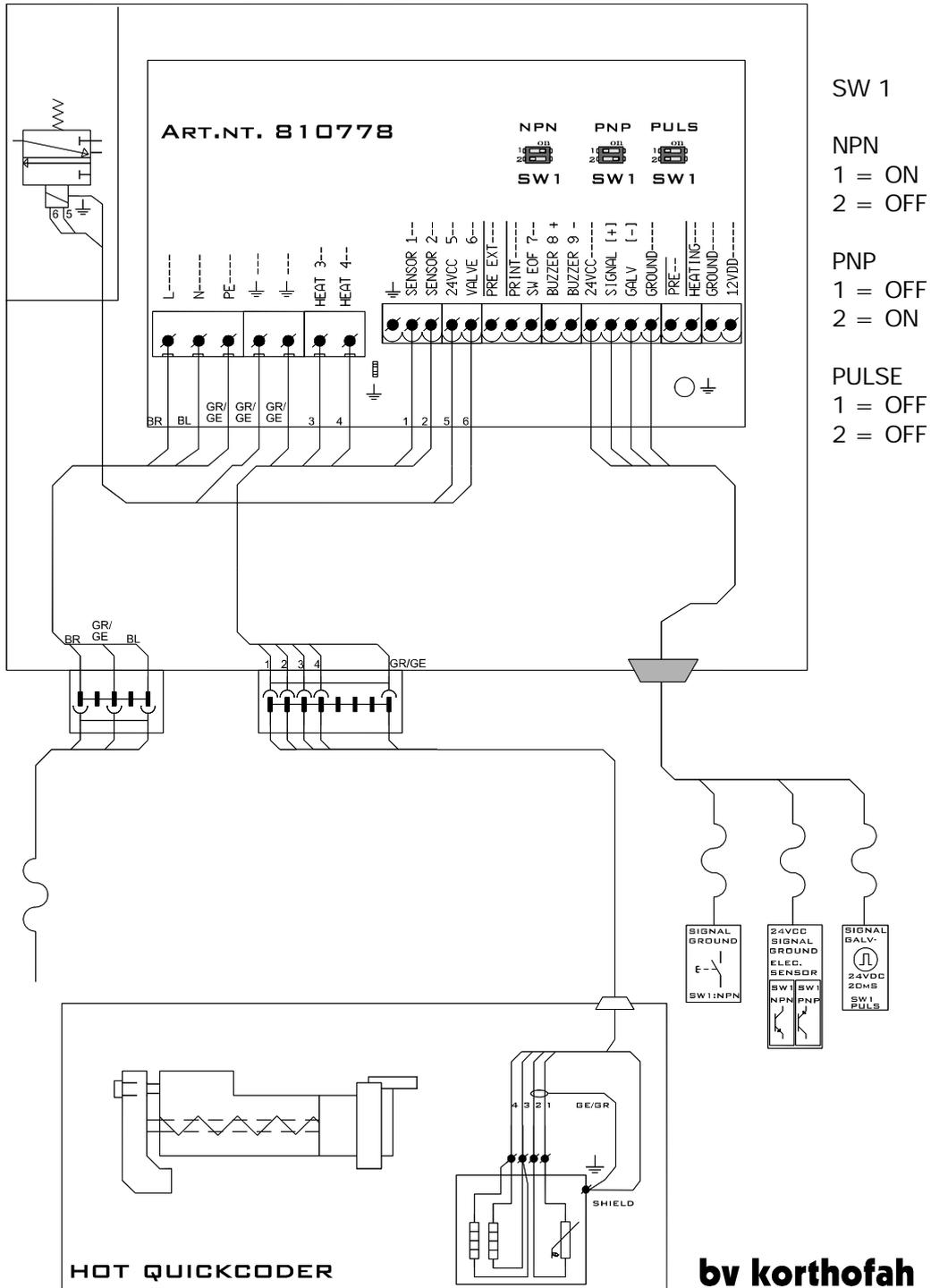
Heating signal This output is grounded as soon as the heating element is activated. This signal goes down to the zero throughputs of the mains voltage. This output can switch 24V DC, 30 mA. A pulse train can therefore be observed by using a pull-up resistor to, for example, the 24V CC. The pulse train is present when the red TEMP light is illuminated. This output can be used, for example, by an intelligent PLC with a high speed counting input. In this way the PLC can monitor the heating function of the hot printer.

Temperature setting up with the Control box

[± 10° C]		Position	
Position		Position	
1	80	6	115
2	85	7	125
3	90	8	135
4	100	9	150
5	110	10	160

Control Box Electrical Connection Diagram

PCB supply Hot Quickcoder: Electrical connection diagram HQC



Setting the Signal device entry using the SW1

Here is a brief summary of the possible settings:

SW1-1 OFF,	SW1-2 OFF,	Pulse, 24V DC, min 15ms.
SW1-1 ON,	SW1-2 OFF,	NPN sensor or potential-free contact
SW1-1 OFF,	SW1-2 ON,	PNP sensor
SW1-1 ON,	SW1-2 ON,	Reserved setting

Signal device: Checking Wiring Connection

Read the manual supplied with the sensor on how the wiring for this sensor should be connected to the Control box. Check that the sensor is suitable for a supply voltage of 24V DC, that it can switch 30 mA current etc. Sometimes a sensor has 4 wires and one of the wires must be connected to the 24V DC or GROUND (LIGHT-ON, DARK-ON).

Setting the HQC to the correct mains voltage (110/220V)

SW2 is located on the PCB at the bottom of the box. This is used to select whether the Control box should operate on 115V AC or 230V AC. This therefore depends on the available mains voltage. This is set as standard to 230V AC.

?

EC DECLARATION OF AGREEMENT

(in accordance with appendix II A of the Machinery Directive)

We: B.V. Korthofah
Lageweg 39
2222 AG Katwijk Zh
The Netherlands

declare entirely on our own account that the product:

Hot Quickcoder including controlbox and mounting support
which is understood to means machines with type numbers and identification:

901457 SET KORTHO HQC-AT,
810819 BASIC UNIT HQC-AT,
810387 CONTROL BOX HQC-AT

810501 HQC TABLEMODEL EXCL. COMPR. AT
810527 HQC TABLEMODEL INCL. COMPR. AT

installed in a support constructed of one or more of the following type
numbers::

809477 STANDARD SUPPORT HQC
809489 FINE ADJUSTMENT STD. SUPPORT

Also included under supports are supports built specifically for customers by B.V. Korthofah.

this declaration complies with the following standards or other normative documents::

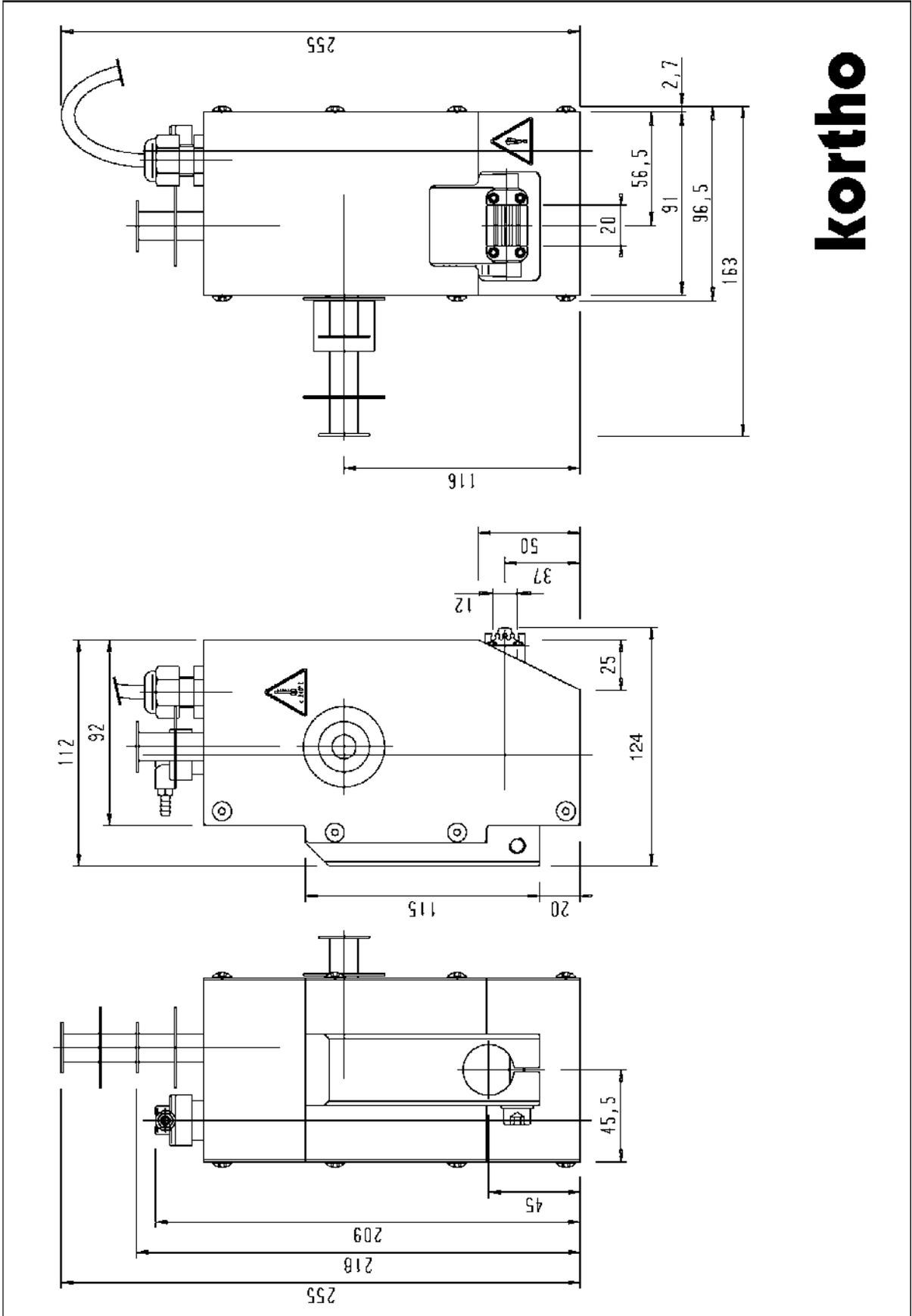
NEN-EN 292-1, 2nd impression, April 1994
NEN-EN 292-2, 2nd impression, April 1994
Low Voltage Directive: 73/23/EEC
NEN-EN 60204-1, 1st impression, September 1993
NEN-EN 60950 1992, IEC 950 1991, IEC 950A1 1992, IEC 950A2
1993,
IEC 950A3 1995, IEC 950A4 1996, modified.
EMC directive: 89/336/EG
EN50081-1 1992
EN50082-2 1995

according to the regulation of:

machinery directive: 89/392/EEC, in which are included 91/368/EEC, 93/44/EEC en 93/68/EC draft
NEN 5509, August 1993

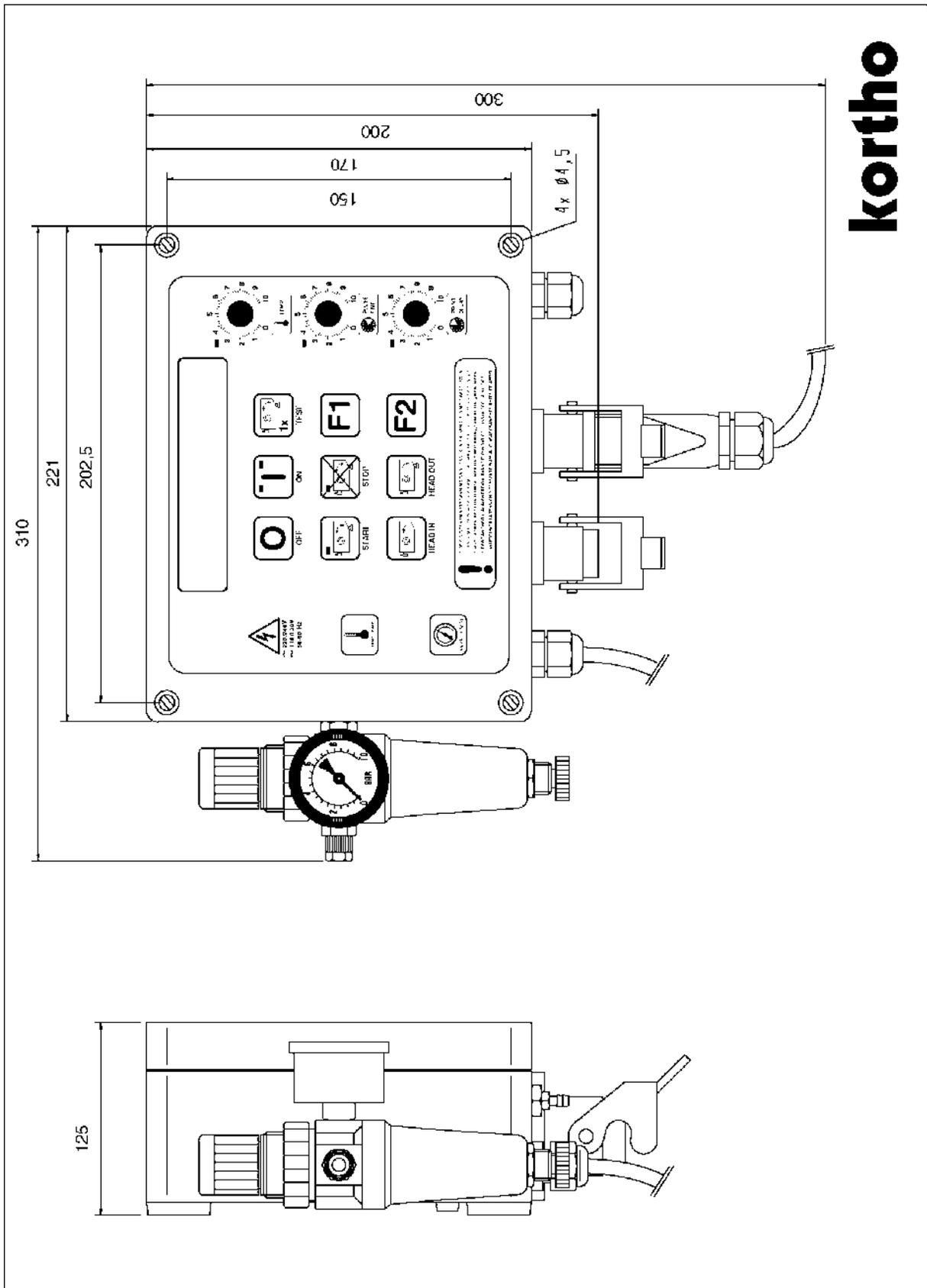


M.P.J.J. de Groot, Director
1 April 1999, Katwijk Zh, The Netherlands

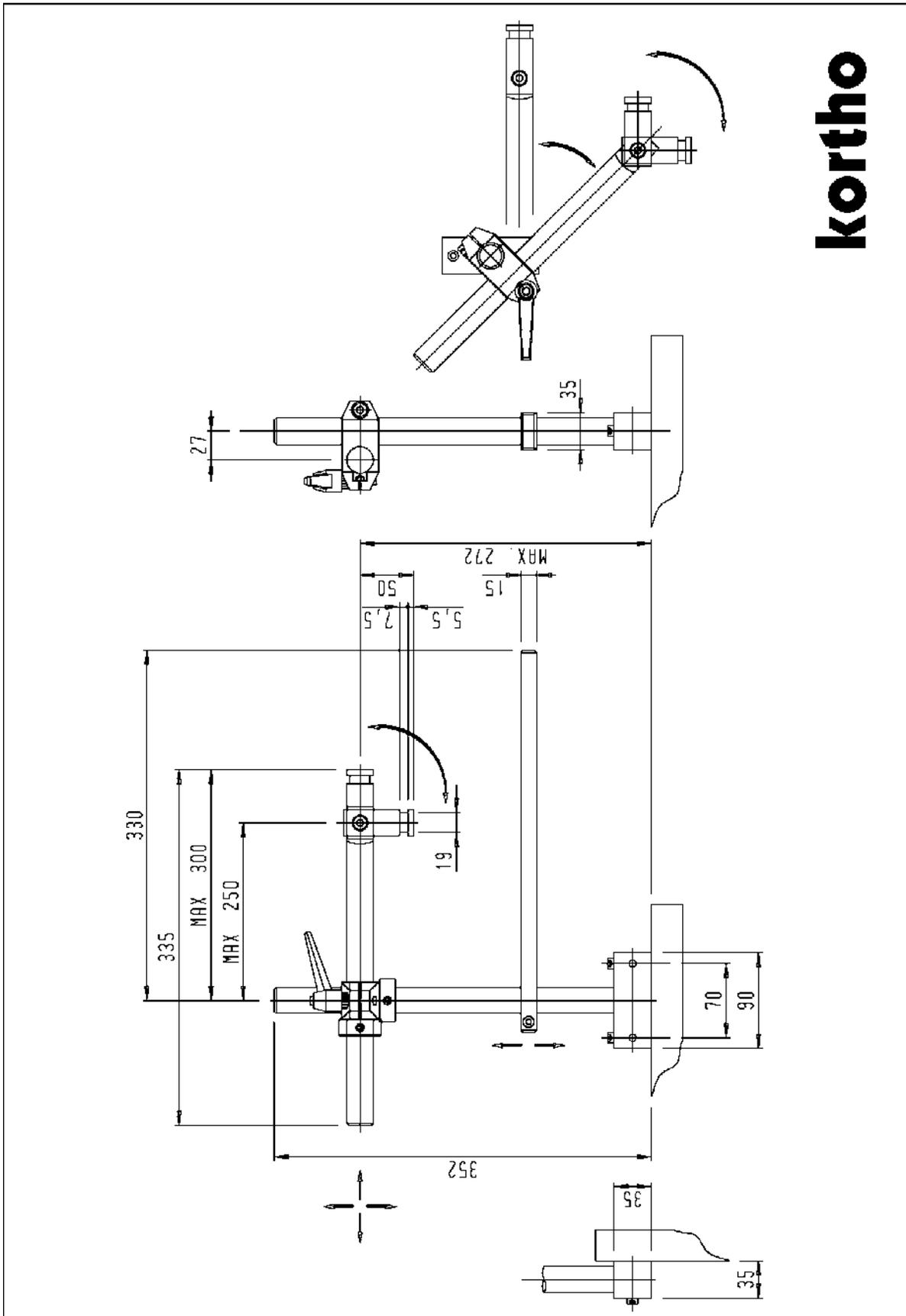


kortho

Artikelnummer / Item number: 810819 Hot Quickcoder-AT

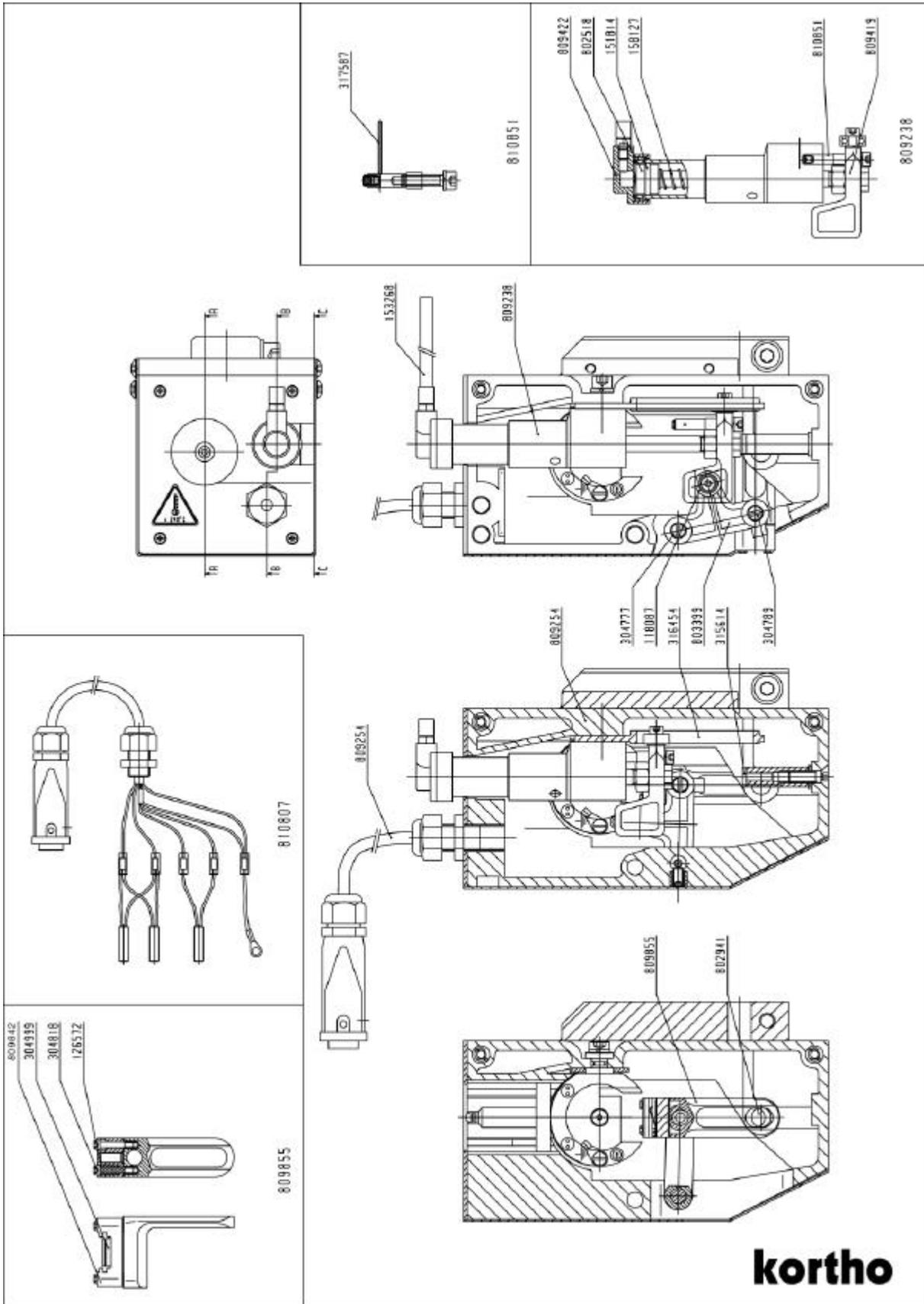


Artikelnummer / Item number: 810387 Commandokast / Control box HOC-AT



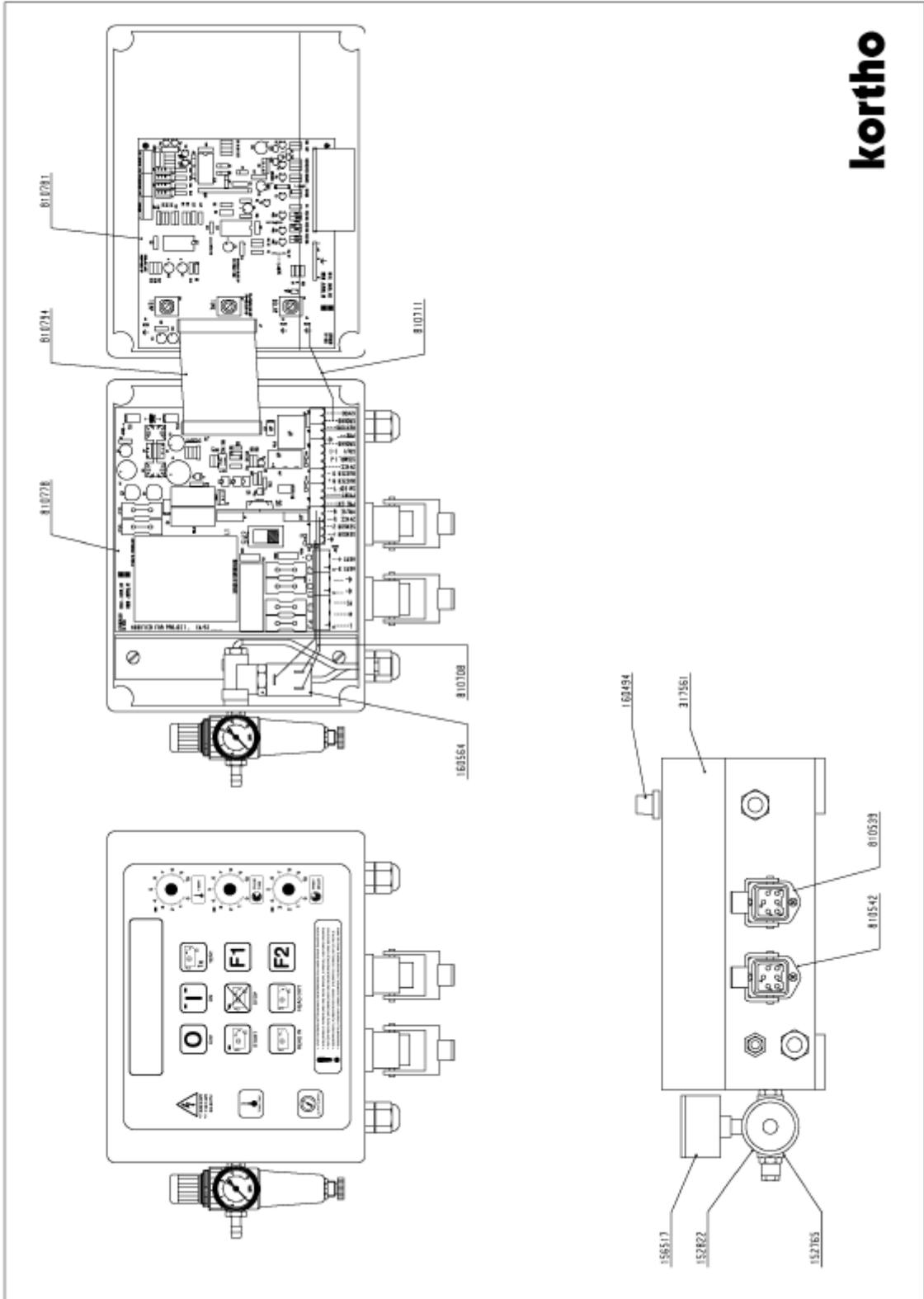
Artikelnummer / Item number: 809477 Standaard Steun / Standard support HOC

BIJLAGE / APPENDIX E: Naleverbare Onderdelen / Spare parts



kortho

Artikelnummer / Item number: 810819 Codeergedeelte / Coding part HOC-AT



Artikelnummer / Item number: 810387 Commandokast / Control box HOC-AT

Artikellijst / Part-list

Art. Nr	REF	L
	Nederlands	
118087	KOGELLAGER 13/4X5	NL
126572	DRUKVEER, LO= 16,5; DM= 4,0; D= 0,4	NL
151814	AIRZET AFD. ZUIGER, 16X9X2,3MM	NL
152765	FILTER/REDUCEER UNIT 1/8 INCH	NL
152822	DICHTINGSRING 1/8 INCH	NL
153268	M. LUCHTLEIDING 6/4-ZWART	NL
153268	M. LUCHTLEIDING 6/4-ZWART	NL
154152	HAAKSE SLANGTULE M5	NL
156517	MANOMETER 10 BAR & PSI, 1/8 IN	NL
158127	DRUKVEER, LO= 96,5; DM= 10,0; D= 0,8	NL
160004	FRONTPLAAT COMM.KAST HQC	NL
304751	GELEIDEBLOK QC	NL
304777	SCHARNIERBOUT LANG	NL
304789	SCHARNIERBOUT KORT	NL
304818	BOUT TEKSTKOP	NL
304999	BLADVEER TEKSTKOP	NL
315614	BUFFER HP/HQC	NL
315795	AS VERWARMINGS-UNIT HQC	NL
315808	VEERHOUDER HQC	NL
315935	BUFFER HOUDER HQC	NL
316454	GELEIDEBLOK HQC	NL
316651	BESCHERMKAP HQC	NL
317561	COMMANDOKAST HQC-AT	NL
317587	RVS VEER HQC, 1,25 X 25	NL
802518	ZUIGER COMPLEET QC	NL
802801	SCHARNIERBLOK QC	NL
802941	EXCENTER QC	NL
803399	GAFFEL QC	NL
809127	CILINDER QC-M	NL
809238	CILINDER + AANDRIJFBLOK HQC	NL
809254	FRAME QUICK-CODER HQC	NL
809295	VERWARMINGSRING HQC	NL
809419	AANDRIJFBLOK HQC	NL
809422	CILINDER BODEM HQC	NL
809422	CILINDER BODEM HQC	NL
809842	TEKSTPLAATHOUDER HQC	NL
809855	TEKSTKOPHOUDER HQC	NL
	Francais	
118087	ROULEMENT 13/4X5	F
126572	RESSORT PRESS. ,Lo= 16,5; Dm= 4,0;	F
126572	d= 0,4	F
151814	JOINT PISTON KQC	F
152765	REDUCTEUR+ FILTRE D'AIR KQC	F
152765	1/8 INCH	F
152822	JOINT KQC	F
153268	TUYAU NOIR 6/4	F
153268	TUYAU NOIR 6/4	F
154152	RACCORD KQC	F
156517	MANOMETRE 10 BAR/PSI, 1/8 INCH	F
158127	RESSORT PRESS. QC-M	F
160004	PLAQUE ORIFICE BOITIER KET	F
160494	BOUTON POTENTIOMETRE MAC/KET	F
160564	3/2 ELECTROVANE 1/8-1,5-24VDC	F
304751	GLISSIERE KQC	F
304777	AXE LONG KQC	F
304789	AXE COURT KQC	F
304818	VIS P.T. KQC	F
304999	RESSORT PORTE TEXTE	F
315614	TAMPON MAC	F

Art. Nr	REF	L
315795	AXE UNITE CHAUFFAGE KET	F
315808	PORTE-RESSORT KET	F
315935	PORTE-AMORTISSEUR	F
316454	GLISSIERE HQC	F
316651	CHAPERON KET	F
317561	BOITE KET-AT	F
317587	RESSORT KET	F
802518	TIGE DE VERIN KQC	F
802801	BIELLETTTE P.T. RO KQC	F
802941	EXCENTRIQUE AVEC ROULEMENT KQC	F
803399	ETRIER KQC	F
809127	CYLINDRE QC-M	F
809238	VERIN COMPLET HQC	F
809254	SUPPORT HQC	F
809295	ANNEAU DE CHAUFFAGE KET	F
809419	PIECE BOUT VERIN HQC	F
809422	FOND VERIN HQC	F
809422	FOND VERIN HQC	F
809842	SUPPORT PORTE TEXTE HQC	F
809855	ENS.BIELETTE SANS PORTE TEXTE	F
809855	HQC	F
810539	PARTIE CHASSIS BOITIER KET-AT	F
810542	PARTIE CHASSIS ALIMEN.KET/MAC	F
810682	CABLE ALIM. KET/MAC	F
810708	CABLE ELECTROVANNE KET	F
810711	CABLE TERRE PLATINE KET/MAC	F
810778	CIRCUIT IMPRIME KET	F
810781	CIRCUIT IMPRIME KET	F
810794	CABLE PRINCIPALE PLATINE KET/MAC	F
810807	ENS. RESISTANCES, SONDE AV.CORDON	F
810851	RESSORT + SUPPORT KET	F
	English	
118087	BALL BEARING 13/4X5	E
126572	COMPR.SPRING, LO= 16,5; DM= 4,0	E
151814	GASKETRING PISTON 16X9X2,3MM	E
152765	FILTER-REDUCTION UNIT 1/8 INCH	E
152822	GASKETRING 1/8 INCH	E
153268	MTR. AIR TUBE 6/4-BLACK	E
153268	MTR. AIR TUBE 6/4-BLACK	E
154152	SQUARED HOSE SOCKET M5	E
156517	PRESSURE GAUGE 0-10 BAR 1/8 IN	E
158127	COMPR.SPRING QC-M	E
160004	PANEL CONTROL BOX HQC	E
304751	CAM HOLDER QC	E
304777	SPINDLE LONG	E
304789	SPINDLE SHORT	E
304818	SREW PRINTING HEAD	E
304999	SPRING PRINTING HEAD	E
315614	BUFFER GEAR RACK	E
315795	SHAFT HEATING UNIT HQC	E
315808	SPRING HOLDER HQC	E
315935	BUFFER HOLDER HQC	E
316454	CAM HOLDER HQC	E
316651	COVER CAP HQC	E
317561	CONTROL BOX HQC-AT EMPTY	E
317587	SPRING HQC	E
802518	PISTON ROD WITH PISTON QC	E
802801	GUIDE BRACKET QC	E
802941	PLUG WITH BALL BEARING QC	E
803399	FORK QC	E
809127	AIRCYLINDER QC-M	E

Art. Nr	REF	L
809238	AIRCYLINDER COMPLETE HQC	E
809254	HOUSING HQC	E
809295	HEATING RING HQC	E
809419	DRIVING BLOCK HQC	E
809422	CYLINDER BOTTOM HQC	E
809422	CYLINDER BOTTOM HQC	E
809842	TEXTPLATE HOLDER HQC	E
809855	PRINTING ASSY W/O TEXTPL. HQC	E
	Deutsch	
118087	KUGELLAGER 13/4X5	D
126572	DRUCKFEDER,Lo= 16,5;Dm= 4,0;	D
126572	d= 0,4	D
151814	DICHTUNG KOLBENSTANGE,16X9X2,3	D
152765	DRUCKMINDERER KPL. 1/8 INCH	D
152822	DICHTUNGSRING 1/8 INCH	D
153268	M.LUFTSCHLAUCH 6/4-SCHWARZ	D
153268	M.LUFTSCHLAUCH 6/4-SCHWARZ	D
154152	ANSCHLUSSNIPPEL M5	D
156517	MANOMETER 10 BAR/PSI, 1/8 INCH	D
158127	DRUCKFEDER LUFTZYL. QC-M	D
160494	KNOPF POTENTIOMETER HQC/HC	D
160564	3/2 MAGNEETVENT. 1/8-1,5-24VDC	D
304751	NOCKENHALTER QC	D
304777	ACHSE	D
304789	BOLZEN	D
304818	INBUSSCHRAUBE QC	D

Art. Nr	REF	L
304999	BLATTFEDER TEXTKOPF	D
315614	PUFFER HP	D
315795	ACHSE HEIZUNG HQC	D
315808	FEDER HALTER HQC	D
316454	NOCKENHALTER HQC	D
316651	SCHUTZKAPPE HQC	D
317561	STEUERUNGSGEHÖUSE HQC-AT	D
317587	FEDER ANTRIEB HQC FARBWALZE	D
802518	KOLBEN MIT KOLBENST.QC	D
802801	F ³ HRUNGSB ³ GEL QC	D
802941	PROPFEN MIT KUGELLAGER QC	D
803399	HALTEB ³ GEL QC	D
809127	ZYLINDER QC-M	D
809238	LUFTZYLINDER/MITNEHMERBL. HQC	D
809254	KUNSTSTOFFGEHÖUSE HQC	D
809295	HEIZUNGSRING HQC	D
809419	MITNEHMERBLOCK HQC	D
809422	ZYL.-KAPPE/ANSCHLUSS HQC	D
809422	ZYL.-KAPPE/ANSCHLUSS HQC	D
809842	TEXTPLATTENHALTER HQC	D
809855	DRUCKSATZ HQC	D
810539	CHASSISTEIL STEUER. HQC-AT	D
810542	CHASSISTEIL NETZ. HQC-AT	D
810682	NETZKABEL HQC/HP	D
810708	KABEL MAGN. VENTIL HQC	D
810711	ERDDRAHT PLATINE HQC/HP	D
810778	PLATINE NETZTEIL HQC	D
810781	PLATINE FRONTPLATTE HQC	D
810794	STEUERUNGSKABEL PLATINE HQC/HP	D
810807	HEIZUNGSSET HQC-AT	D
810851	FEDER MIT FEDERHALTER, HQC	D

