

# Manual

***Software CDC-Inkjet***

***Version 1.0.x - Draft***

***iret***

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© 06.2020 EN

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## 1 Start up

### 1.1 Prerequisites

#### 1.1.1 Software - Versions of the devices involved

- Cayman software version at least 12.10
- Machine with software  $\geq$  04.31
- alphaJet evo with software  $\geq$  3.1.0.8
- PC: Windows 7 - Windows 10

#### 1.1.2 Network

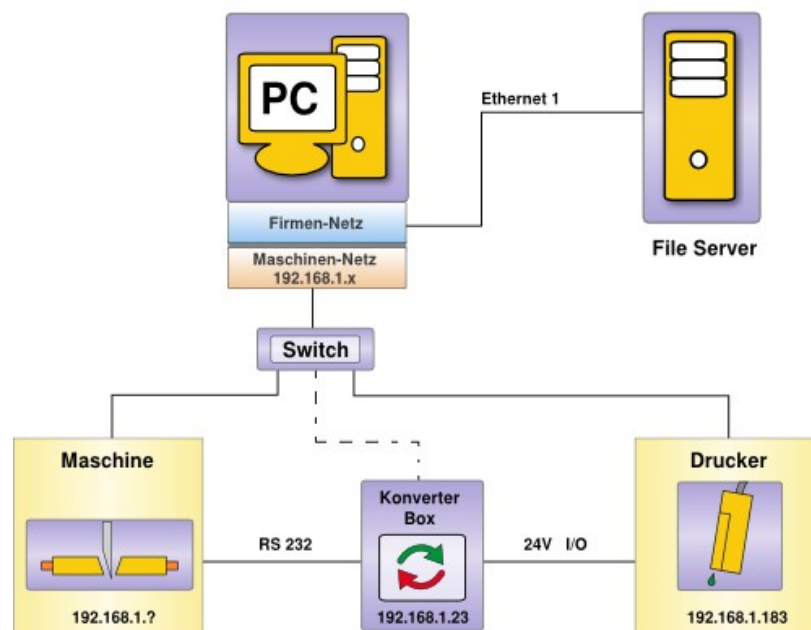
For the operation of the CDC-Inkjet software we recommend the following network constellation:



#### Note!

If the Schleuniger ConverterBox has a network connection, the IP address 192.168.1.23 is permanently set. The Evo printer is expected to be 192,168,1,183. These settings must be taken into account when setting up the network and must not be changed.

### Übersicht Netzwerk Schleunigermaschine



Since the transmission of the print texts must take place in the cycle of the cable production, no other data should be transmitted in this network. i.e. it should be separated e.g. from a house network.

### 1.2 Installation and Licensing of the Software

The procedure is identical with other software of the CaymanToolbox and is described there (e.g. in the short manual for "CWL Import").

**Please note:**

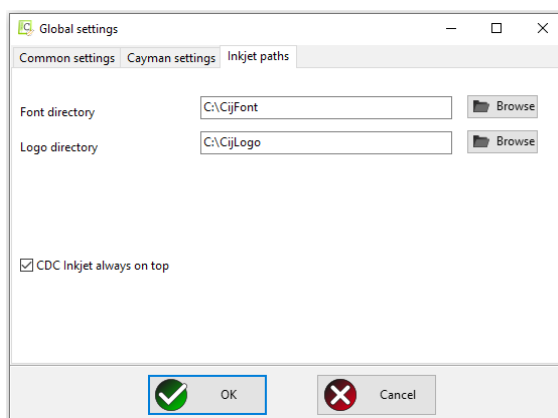
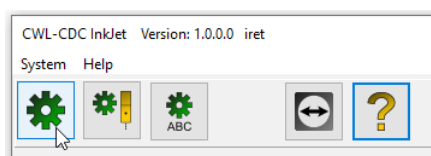
The software requires write access in the installation path!

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### 1.3 Settings after starting the software

#### 1.3.1 Paths to font and logo directories

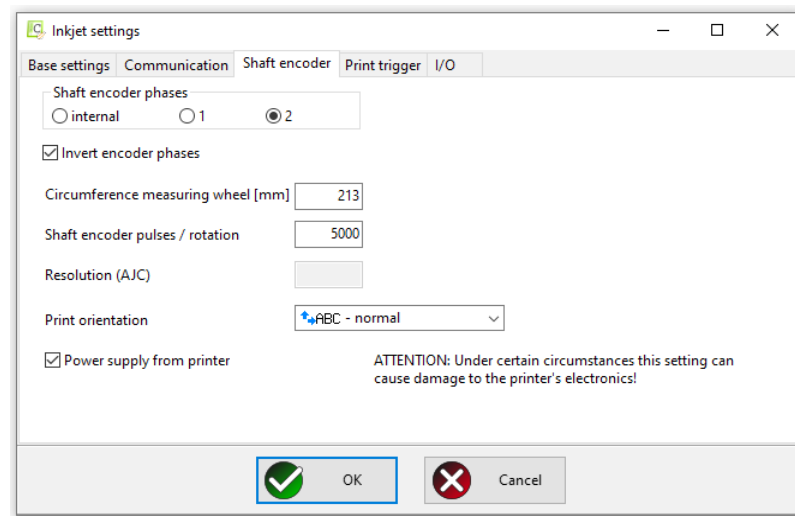
The software is pre-configured as far as possible, normally only the paths to the required fonts and logos have to be adapted. Via the left gear symbol on the main window you can access the program settings, there you have to select the appropriate paths on the tab "Inkjet directories".

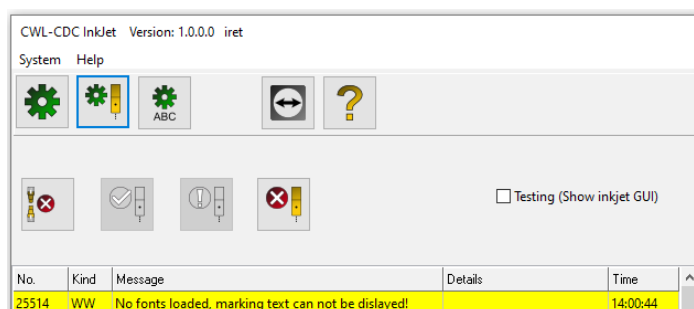


Detailed explanations of the global settings can be found in chapter 3.1.3.

#### 1.3.2 Inkjet printer settings

The settings for the alphaJet are preset as far as possible, only the parameters of the shaft encoder and measuring wheel still need to be configured. You can access the printer settings via the central number wheel symbol ("Inkjet settings"): On the "Shaft encoder" tab you can make the necessary settings. Detailed explanations of the possible entries can be found in chapter 3.2.3.





## 2.1 Main menu

The main menu of the CDC-Inkjet contains the items "System" and "Help".


### 2.1.1 Menu "System"

Function	Description
Settings	Opens the dialog „Global settings“, see chapter 3.1.
Inkjet settings	Opens the dialog „Inkjet settings“, see chapter 3.2.
Configuration settings	Opens the dialog „Configuration settings“, see chapter 3.3
Cayman-Status	Shows the status of the Cayman connection: <ul style="list-style-type: none"> <li><b>GREEN:</b> Cayman is attached</li> <li><b>RED:</b> Cayman is <b>not</b> attached</li> </ul>
ReAttach Cayman	Try to (re)connect with Cayman. Only possible if Cayman is not connected.





### 2.1.2 Menu "Help"

Function	Description
Show manual	Shows this document. A pdf viewer must be installed.
System information	Shows important program information, e.g. paths to required system files etc.
About	Shows program and licensing information.
Maintenance	<b>Start remote session:</b> Starts the remote maintenance software. <b>Copy logfile to desktop:</b> Copies the log file of the previous program run to the desktop. There it is easy to find and can be sent by email for diagnostic purposes.
Load licence	Opens the dialog to load a licence file.

## 2.2 Buttons on top






Symbol	Description
	Opens the dialog with the program settings. Identical with menu item "System / Program settings".



Symbol	Description
	Opens the dialog with the printer settings. Identical to menu item "System / Inkjet settings".
	Opens the dialog with the printing settings. Identical to menu item "System / Configuration settings".
	Starts the remote maintenance software. Identical to menu item "Help / Maintenance / Start remote session".
	Shows this document, a PDF viewer must be installed. Identical to menu item "Help / Show manual".

### 2.3 Network and printer status

The status of the network connection to the printer and the printer status is displayed under the buttons.

Symbol	Description
	<b>Network connetcion:</b> "OK"
	"Not OK"
	<b>Printer:</b> "Ready"
	"Attention required"
	"Not ready"

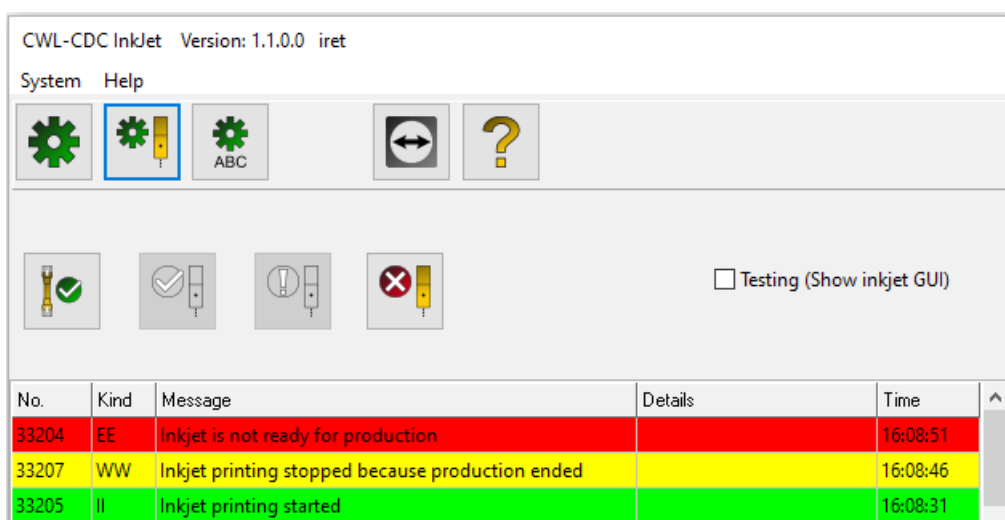
## 2.4 Checkbox "Testing: Show Inkjet GUI"

If this button is marked, the graphical user interface of the printer remains activated, e.g. for diagnostic purposes.

This button is not selected by default: In production operation, this marking should not be set, otherwise the printer may slow down so that newly incoming print texts cannot be processed in time.

## 2.5 Error history

Program messages (errors, notes) are displayed in a table at the bottom of the main window.

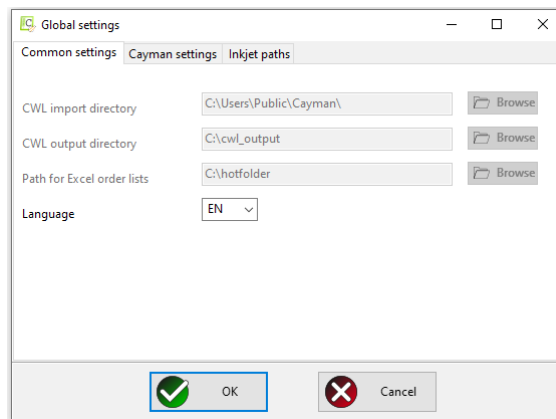


Colum	Description
No.	Internal error number, used for error diagnosis.
Kind	Kind of message: <ul style="list-style-type: none"><li>• II: Information (highlighted green)</li><li>• WW: Warning (highlighted yellow)</li><li>• EE: Error (highlighted red)</li></ul>
Message	Message text.
Details	Additional information, e.g. job or file where the error occurred.
Time	Time of message.

## 3 Settings

### 3.1 Global settings

#### 3.1.1 Common settings:



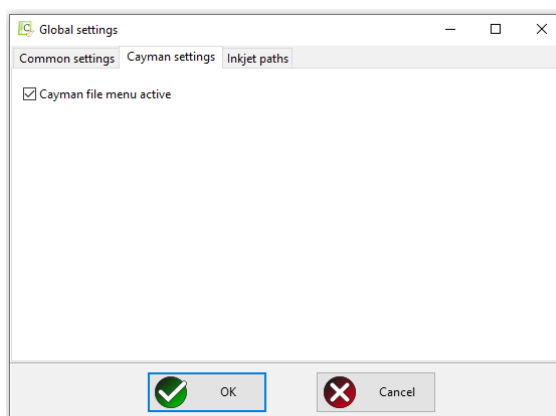
Here the user language can be selected, currently English (EN) and German (DE) are supported. The other input fields are irrelevant in CDC-Inkjet and therefore greyed out.



#### **Please note!**

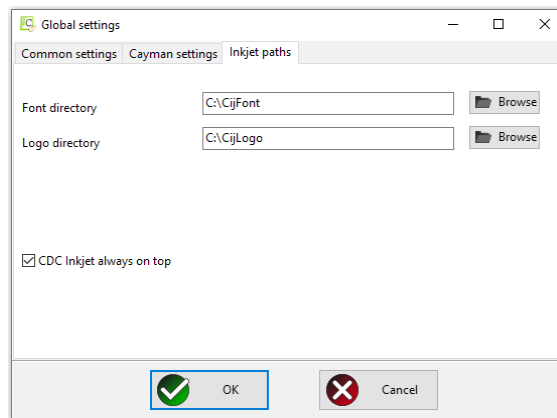
After changing the user language, CDC-Inkjet must be restarted for the changes to take effect.

#### 3.1.2 Cayman settings



This option enables or disables the file menu in Cayman. It must be activated in order to load orders (.cwl files) with Cayman.

### 3.1.3 Inkjet paths and other program settings



Function	Description
Font directory	Directory of inkjet fonts, must contain at least one font.
Logo directory	Directory of logos.
CDC Inkjet always on top	If this option is selected, the main window of cdc-inkjet is always displayed in foreground and cannot be hidden by other program windows (e.g. Cayman).

## 3.2 Inkjet settings

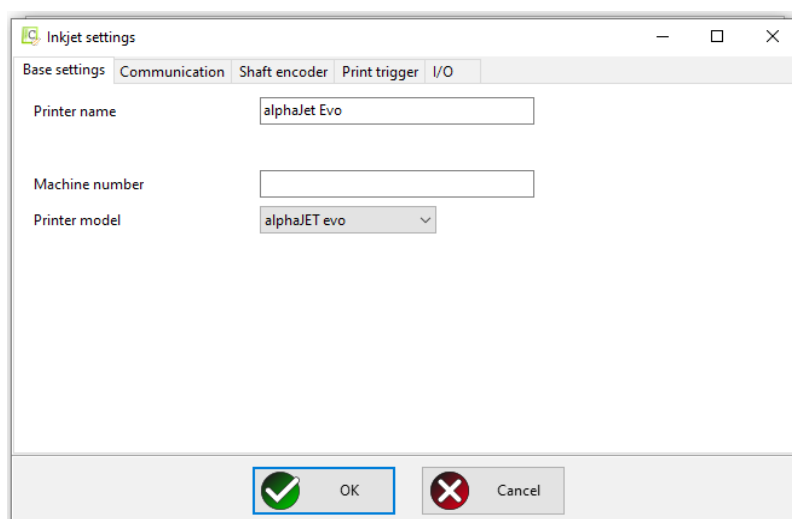


### Please note!

When using the CDC inkjet software, the printer is no longer managed via the Schleuniger machine interface! See also chapter 4.

### 3.2.1 Base settings

This tab is used to define the basic properties of the printer.



Function	Description
Printer name	The name under which the printer is to be saved. The name must be unique.
Machine number	Is used in connection with variable fields if it should be clear during printing which printer or production line was used.
Printer model	In the selection box, all printer types that are supported by the program are displayed. The appropriate type must be selected.

### 3.2.2 Communication

This tab is used to configure the interface for communication with the printer. CDC-Inkjet supports only printers with network connection.

The screenshot shows the 'Inkjet settings' dialog box with the 'Communication' tab selected. The fields are as follows:

- SystemID: P
- Printer ID and Head: A, 1
- Interface: TCP
- Baud rate: 38400
- Parity: 0 - None (keine)
- IP-adress / hostname: 192.168.1.183
- Port for receiving data: 3000
- Port for sending data: 3000
- Date directory: (empty field with a browse button)

The 'OK' button is highlighted with a green checkmark, and the 'Cancel' button is visible next to it.

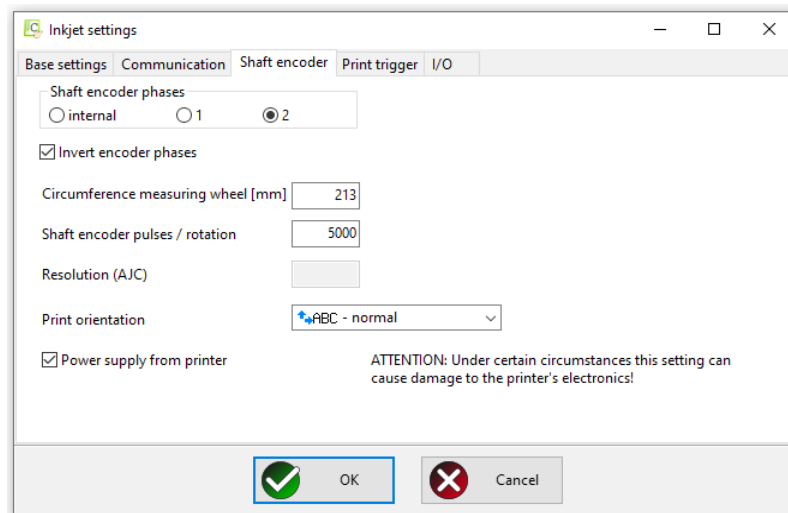
Function	Description
<b>SystemID</b>	Enter the system identification of the PC here. Default value: "P".
<b>Printer ID and head</b>	Enter the system ID of the alphaJET C printer here. Default value: "A". Currently only one print head is supported, therefore the default value "1" should not be changed.
<b>Interface</b>	The CDC-Inkjet program only supports TCP network connections.
<b>(Baudrate)</b>	(Serial interface is not supported).
<b>(Parität)</b>	(Serial interface is not supported).
<b>IP-adress / hostname</b>	Network only: Specify either the name or IP address of the printer.
<b>Port for receiving data</b>	(Network + UDP only. UDP is not supported).
<b>Port for sending data</b>	(Network only) Enter the port on which the network device listens for commands.
<b>(Date directory)</b>	(Not supported).

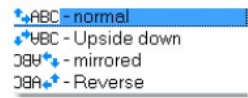
### 3.2.3 Shaft encoder

Here the printer is adjusted to the action of the production line.

**Please note!**

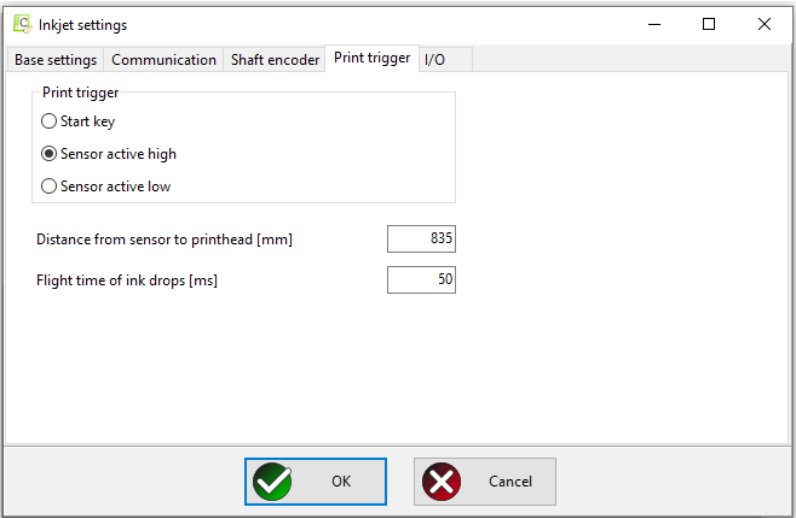
This information is used for the calculation of print text lengths and print text spacing! Entering incorrect information will cause errors when printing.



Function	Description
<b>Shaft encoder phases</b>	<ul style="list-style-type: none"> <li>• “Internal” means that the printer creates the pulses, no external incremental encoder is connected.</li> <li>• “1 phase” means that only 1 phase of the encoder is used. Using this setting, the direction of rotation cannot be determined, meaning the printer cannot differentiate between forward and backward.</li> <li>• “02 phases” means that the printer analyzes both the forward and backward movement.</li> </ul>
<b>Invert encoder phases</b>	With this button the detection of the moving direction of the printer is adjusted to the actual conditions. This function must be activated when the product moves „forward“, but when the printer interprets this action as „backward“.
<b>Circumference measuring wheel [mm]</b>	Enter the circumference of the measuring wheel in mm here.
<b>Shaft encoder pulses/rotation</b>	When using a shaft encoder the number of impulses per rotation must be specified. The correct value is usually found on the name plate of the shaft encoder.
<b>Resolution (AJC)</b>	This additional information is only for informative purposes and corresponds to the setting which the alphaJET C printer uses as its internal resolution given in the defined settings (also see the KBA- Metronic® AG user's manual). This value can not be modified.
<b>Print orientation</b>	<p>The following adjustments are possible:</p> 
<b>Power supply from printer</b>	If this option is selected, the encoder is powered by the printer. Attention: If the encoder has its own power supply, the printer electronics may be damaged!

### 3.2.4 Print trigger

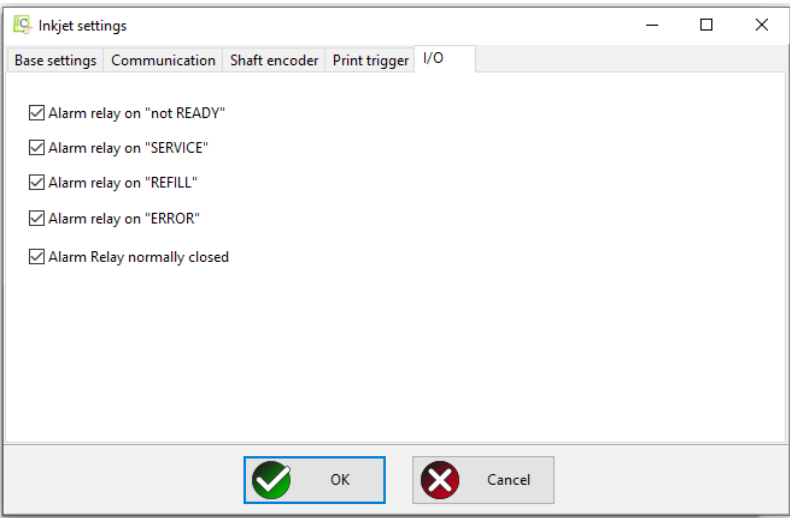
Here the start of the print is configured.



Function	Description
Print trigger	<ul style="list-style-type: none"><li>Start key: the print starts when sending it from the PC or with the appropriate key of the printer.</li><li>Sensor active high: the print starts when a signal with positive electric tension resides against the printer's input port.</li><li>Sensor active low: the print starts when the printer's input is switched on 0.</li></ul>
Distance from sensor to printhead	<ul style="list-style-type: none"><li>The distance between the blade and the ink jet must be set here</li><li>This value is included in the calculation of the material consumption</li><li>Note: The value must match the "Distance" value from the Schleuniger machine configuration (see also chapter 4.1 and Schleuniger documentation), otherwise the print positions will not be correct!</li></ul>
Flight time of ink drops [ms]	For an explanation of this value, refer to the printer manual. Default value: 50

3.2.5 I/O

Use the options on this page to configure the alarm output of the printer.



**Please note!**

Not every printer supports all options!

Function	Description
Alarm relay on "Not ready"	The alarm relay is activated since the printer is not ready for operation (LED Ready is not on).
Alarm relay on "Service"	The alarm relay is activated, service measures need to be carried out (LED Service is on).
Alarm relay on "Refill"	The alarm relay is activated when ink or solvent are running low.
Alarm relay on "Error"	The alarm relay is activated, a printer error occurs (LED Error is on).
Alarm relay normally closed	Activation of the alarm relay is inverted.

## 3.3

**Configuration settings**

These settings are sent to the printer before production and influence the print width, maximum print height, print quality and speed.

Function	Description
Name	("*", cannot be changed at present)

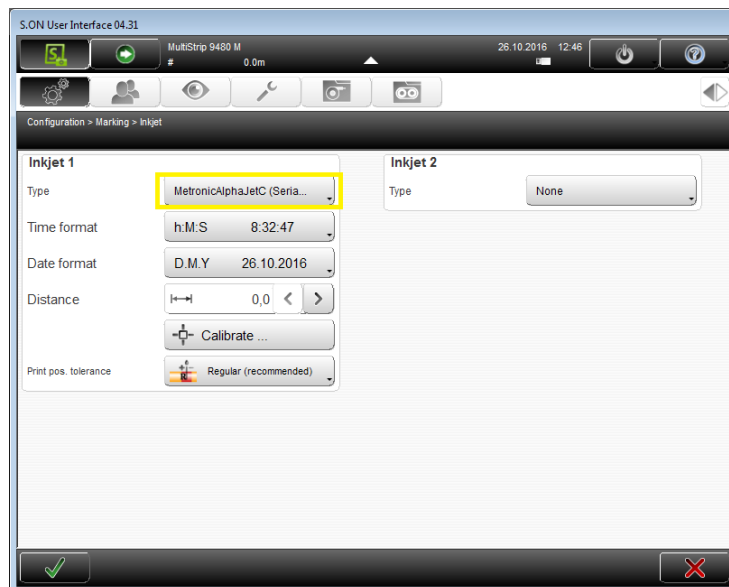


Function	Description
Default font height	Internal value for calculating actual marking text widths. If a font of a <i>different</i> size is used, this value must be adjusted accordingly in order to print marking texts with the correct distance to the <b>left</b> end of the cable.
Barcode height [pixel]	Here the height of the barcode can be set independently of the height of the character set. <ul style="list-style-type: none"><li>• Large height ==&gt; lower speed</li></ul>
Stroke distance [mm]	This value determines the horizontal distance between the ink drops: <ul style="list-style-type: none"><li>• Larger values mean wider font</li></ul>
Printing quality	Used to set the print mode: <ul style="list-style-type: none"><li>• High quality ==&gt; lower speed</li></ul>
Print height	Also used to determine the print mode: <ul style="list-style-type: none"><li>• Large height ==&gt; lower speed</li></ul> <b>Note:</b> The height must be at least as high as the barcode and font height of the character set.
High voltage [%]	("50", cannot be changed at present)

## 4 Settings on the Schleuniger machine

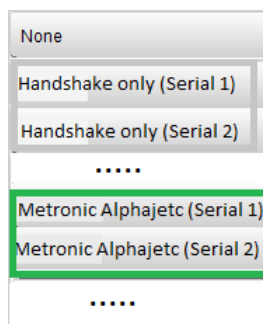
### 4 Settings on the Schleuniger machine

#### 4.1 Inkjet 1 setup

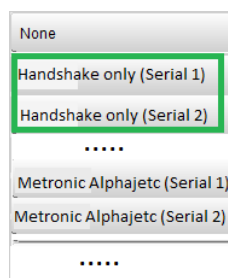


Setting	Description
Type	"MetronicAlphaJetC"
Distance	This value mus correspond to the setting "Distance from sensor to printhead" in "Inkjet settings / Print trigger"!

#### 4.2 Offline operation: printer connection without CDC inkjet



#### 4.3 Online operation: Printer connection with CDC-Inkjet



## 5 5 Diagnosis

### 5.1 Application log file

The application logs many activities in a text file which can be exported via the menu item "Help / Maintenance / Copy log file to desktop". On the desktop, the files are named "cdc\_inkjet\_\_<name of PC>\_\_<date stamp>.log".

### 5.2 Network connection machine

The application PC must be able to establish IP connections to the Schleuniger machine and the Evo printer. A sketch of the recommended network configuration can be found in chapter 1.1.2.

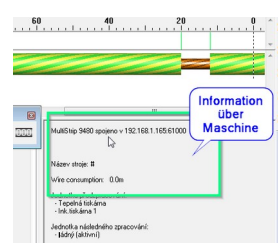


#### Note!

For easy switching between online mode (with CDC inkjet) and offline mode (Cayman only) we recommend the subnet: 192.168.1.0/24!

For switching between online & offline operation see also chapter 4.2.

#### 5.2.1 IP overview with diagnostic hints

IP adress	Device	Function & Diagnosis
192.168.1.23	Evo converter box	<p>The ConverterBox prepares RS232 data from the Schleuniger machine for the Evo printer.</p> <p>Diagnosis</p> <ul style="list-style-type: none"> <li>• ping 192.168.1.23</li> <li>• telnet 192.168.1.23 10010</li> </ul> <p>→ Answer: "KBA Metronic ajctoevo: ....."</p> <p><b>Only used in offline mode! To test the online operation it may be useful to disconnect the network connection of the converter box for a short time (remove cable from the switch)</b></p>
192.168.1.183	Evo printer	<p>The printer is used in both online and offline operation.</p> <p>Diagnosis:</p> <ul style="list-style-type: none"> <li>• ping 192.168.1.183</li> <li>• telnet 192.168.1.183 3000</li> </ul> <p>→ Answer: &lt;GP&gt;&lt;MSG&gt;Connection Accepted&lt;/MSG&gt;&lt;/GP&gt;</p>
192.168.1.???	Cayman – PC	
192.168.1.???	Schleuniger Machine	<p>Diagnosis:</p> <ul style="list-style-type: none"> <li>• ping 192.168.1.???</li> <li>• Cayman displays the connection status in the lower right area of the main window</li> </ul>  <ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>