STAALKAT ARDENTA / SELECTA / ECM WINDOWS INTERFACE OPERATOR / SERVICE MANUAL

P/N 123…-01
Revision 1
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Videojet Technologies B.V. © 2007
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Introduction

Introduction

Videojet has developed a way to encode all kinds of products with all sorts of surfaces, including such fragile ones as eggs. STAALKAT is a company that produces egg-sorting machines. In order to attach the Videojet Excel printers to these egg sorting machines, Videojet Holland has developed an interface. This interface makes it possible to select with great speed a message out of the 80 options available in the internal memory storage. In order to transfer the messages and to set the Videojet Excel printer, a standard serial interface is required. This interface is already present in the Excel printer.
There are several types of machines available at STAALKAT to which the Excel can be attached. The ECM series to which 1 UHS printer could be connected and the ARDENTA series, to which 2 printers can be attached. An UHS needs to be attached to this type of machine. The protocol and interface remain the same for both types of series. However, the Excel printer software has been changed for the communication and control. In addition, there's a range of languages available for the Excel printer.

An addition to the STAALKAT egg-sorters is the Selecta, this systems was designed by STAALKAT. Therefore the interface is the same as the ECM and ARDENTA.

Who Needs this Manual

This manual is intended for use by qualified service or maintenance personnel only.

WARNING: Customers who intend to service and maintain the interface themselves must only have qualified personnel perform those procedures. Qualified personnel are considered to be those persons who have the proper technical training (successful completion of a training course covering this equipment), have experience to work on this equipment, and are aware of the hazards to which they will be exposed. The service manual is intended to be a supplement (and not a replacement) to training.

Manual Overview

This manual contains information on installing, operating, maintaining, troubleshooting, and servicing the interface.

Keep this manual in a safe location where it can be easily accessed for reference.

Installation

Introduction

Before connecting the Excel printer to a STAATLKAT egg-sorting machine the PC Interface needs to be installed. The software needed for communication between the STAALKAT and the Excel is a specific Software release. A Computer based system is used for communication between de STAALKAT and the Videojet Excel printer.

Tools/Supplies Required

The following tools are required to complete the procedures in this section:

- Set of firmware proms (The firmware is application specific).
- Screwdriver

Inspection

If the interface has been removed from its shipping carton for the first time, check the parts for damage and missing components (refer to Figure 1). The parts were packed carefully at the VIDEOJET® manufacturing facility. If any damage is noted, file damage claims with the carrier.

Figure 1. Interface Components

Record Current Printer Settings

Using the worksheet located in *Appendix A*, record all settings from the service, system setup, and print setup modes.

Prepare the Printer for Installation of Firmware

Perform the following steps to prepare the printer for installation of firmware:

1. Press the OFF key and allow the printer to complete the four-minute shutdown process.
2. Turn the AC power to the printer off by placing the main power switch (located on the bottom right side of the printer cabinet) to the off (down) position.
3. Remove AC power from the printer by disconnecting the printer line cord from the AC power source.

WARNING: Remove power from the printer prior to performing the following procedures.

4. Remove the clear plastic shield covering the control board.

CAUTION: The grounding strap (P/N 186934) must be attached prior to servicing the control board. Failure to use the grounding strap may result in serious equipment damage.

5. Follow the instructions that are packaged with the grounding strap, and attach the strap to your wrist.
6. Attach the foil end of the ground strap to the braided wire umbilical strain relief (located at the upper left of the printer cabinet).
7. Refer to Figure 2, and disconnect the 9-volt battery (located at the lower left corner of the control board) by moving the jumper currently on E74 (ON) to E79 (OFF).

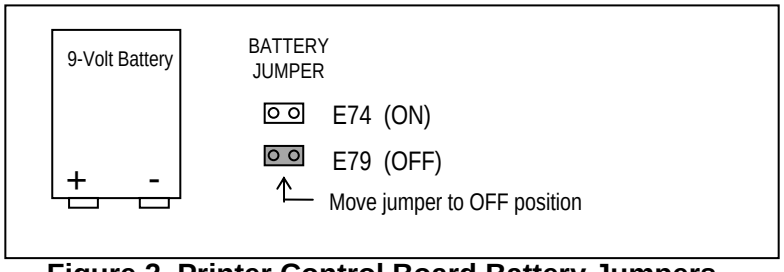


Figure 2. Printer Control Board Battery Jumpers

Install the New Firmware Proms

Perform the following steps to remove the existing prom set, and install the new prom set:

NOTE: Not all prom sets will contain U29.

CAUTION: Install all proms with the locating notch facing up (toward the top of the printer).

1. Refer to Figure 3, and use the prom extractor tool to remove the following firmware proms: U22, U27, U28, U29 (if present) and U76. Install the new prom set in the appropriate locations (the prom location and SAR/Project number is marked on each prom).

2. Place the old prom set in the anti-static tube that the new prom set was received in.

3. Refer to Figure 3 and carefully remove the existing control board revision label and attach it to the anti-static tube containing the old prom set.

4. Ensure that all proms are properly seated in the sockets, and in their correct locations. The locating notch on all proms should be as shown in Figure 3.

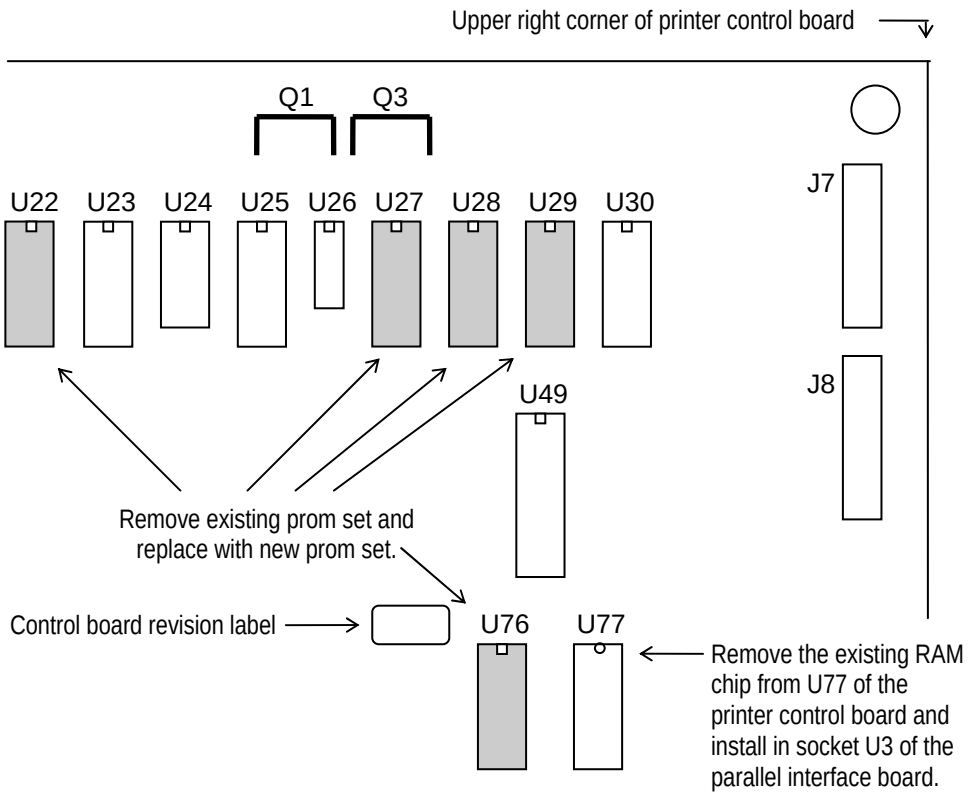


Figure 3. Firmware Prom Set Locations

Reconnect the Battery

Refer to Figure 2, and reconnect the 9-volt battery (located at the lower left corner of the control board) by moving the jumper currently on E79 (OFF) to E74 (ON).

Replace the clear plastic shield over the control board.

Restore the Printer Settings

Perform the following steps to restore the printer settings:

1. Restore power to the printer by reconnecting the printer line cord to the AC power source.
2. Turn the AC power to the printer on by placing the main power switch (located on the bottom right side of the printer cabinet) to the on (up) position.
3. Start the printer by pressing the ON key on the printer keyboard.
4. Turn the printhead off by pressing the HEAD key.
5. Enter the viscosity and nozzle drive in service menu .For viscosity “03 service Menu” and the F1 key, and “04 service Menu” and the F1 key for the nozzle drive.
6. Settings like reduction factor, print direction (print settings) could not be done. This is taken out of the software. The same as the Editor options. All this is done via the serial interface on the system.
7. Enter the current date via the “01 System Menu” and the F2 key.
8. Enter the current time via the “01 System Menu” and the F1 key.

Connecting the PC controller to the Excel and Staalkat

Introduction

In this section you will find:

- How to set the jumpers in the Excel printer
- How to connect the product detect / encoder cable to the Staalkat
- How to connect the controller to the Staalkat and the Excel printer.

Application Addendum's

Check in the back of this manual for an application specific addendum. This document will describe any deviations from the standard configuration outlined in this section.

Firmware Instructions

The instruction supplied with the printer firmware SAR contains additional application specific information that describes how to configure and operate the parallel interface.

Overview

Figure 4 and 5 shows the overview of the connections between the Staalkat egg-sorter and de Videojet Excel printer. The connection is done by a personal computer that will convert signals from Staalkat into Messages for the Excel printer. Each egg could get its own different message. There is a limit within the software to select out of 80 different messages.

Each part is described as a separate chapter on how to connect and test.

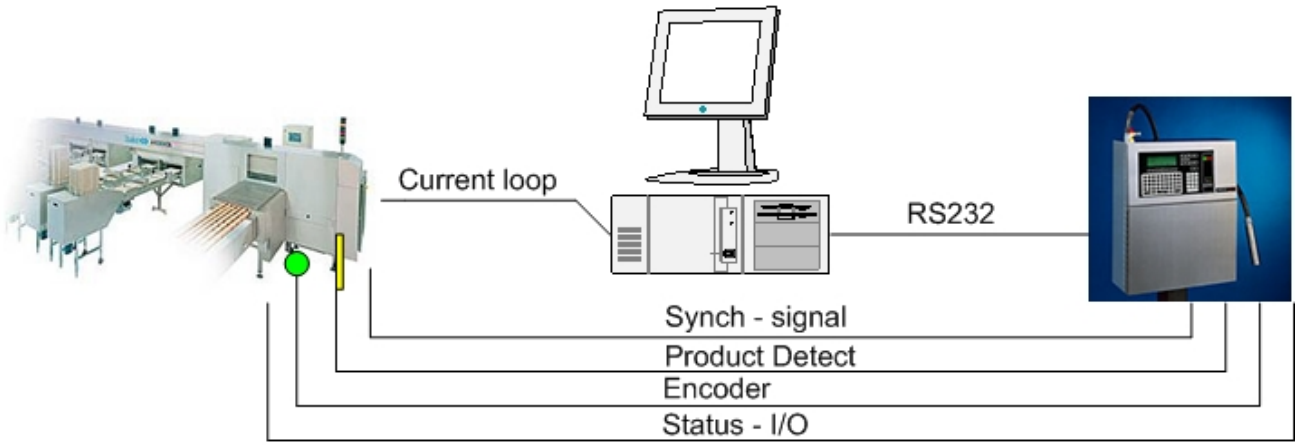


Figure 4. Overview connection Staalkat Ardenta or ECM to one Excel printer.

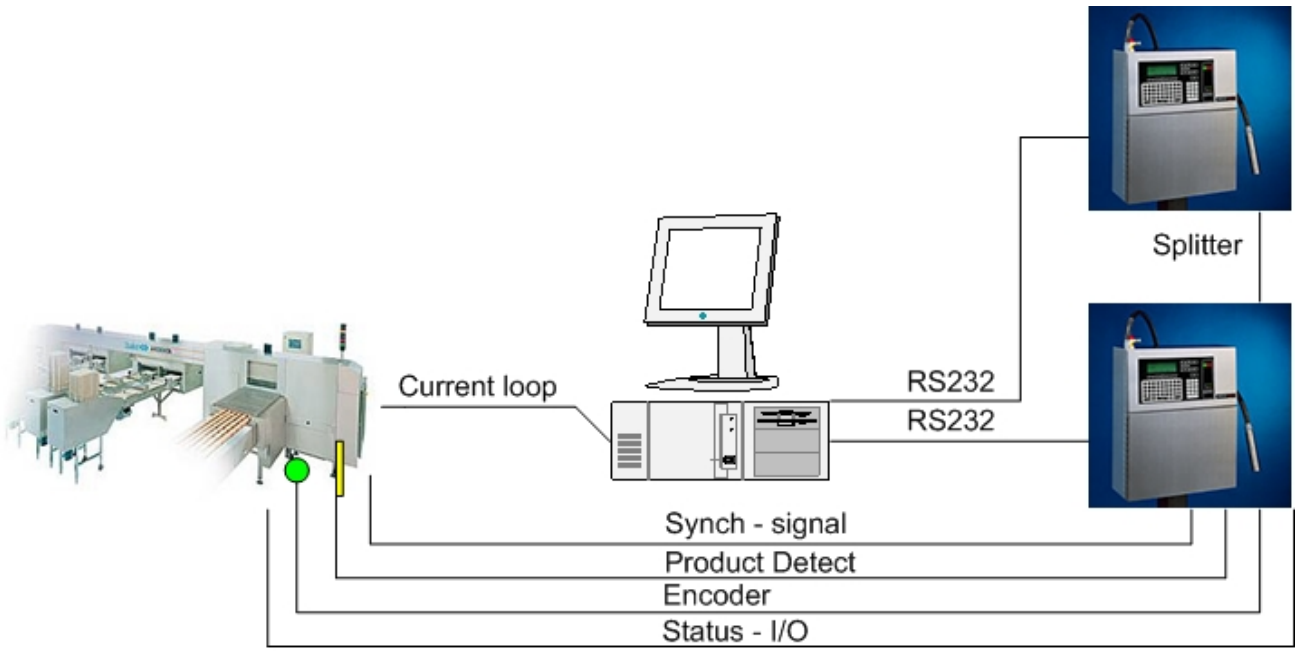


Figure 5. Overview connection Staalkat Ardenta or Selecta to two Excel printers.

Connecting the Encoder

The encoder is connecting directly to the Excel printer. The place where to mount the encoder physically is different for the several Staalkat systems. Pictures are supplied to show the place of mounting.

The schematic shows (in Figure 6) how to connect the encoder electronically to the Excel printer.

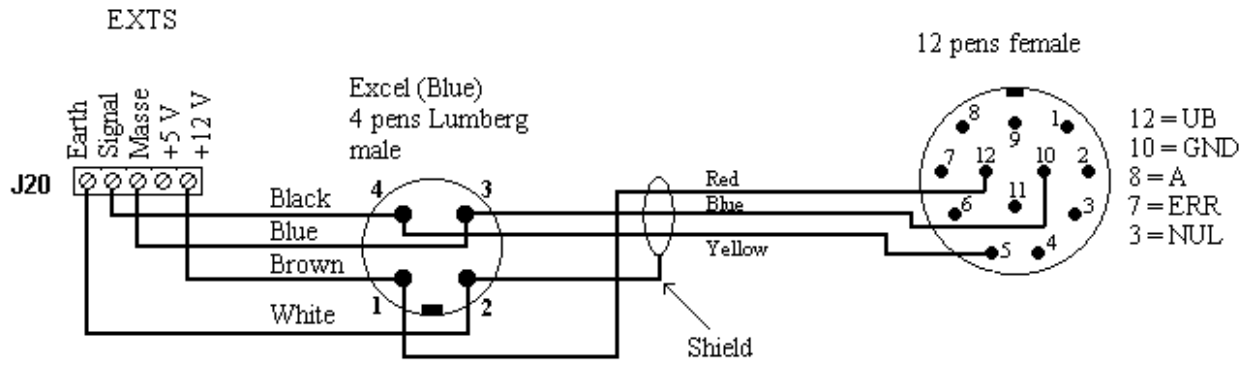


Figure 6a. Electronical drawing of encoder for ECM or Ardenta 1 track.

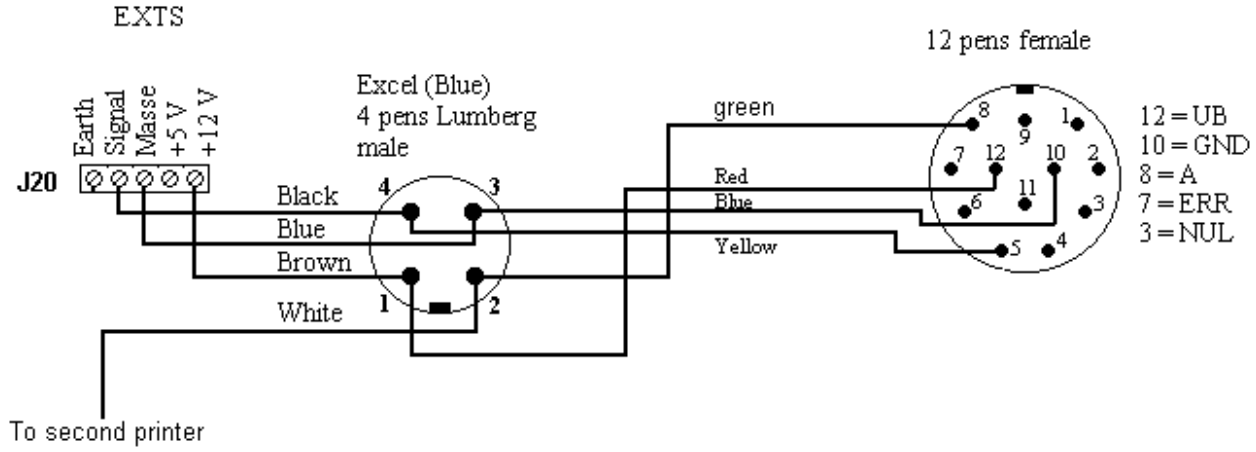


Figure 6b. Electronical drawing of encoder for Ardenta / Selecta 2 tracks.

As show in the picture there is a connector mounted in the chassis of the printer with the color blue. This is for easy disconnection of the printer when transported. Also the shield of the cable is connected, to take away as much noise as possible

Figure 7. Place of encoder connector at the Excel printer.

The encoder at an Ardenta or Selecta

For the Ardenta/Selecta egg-sorters there is one place where the encoder is mounted. This is done via a rubber-chain and some cocks. One cock has a hole of 2 cm, that fits over the round bar that is mounted on there driving shaft. The other cock has a hole of 1 cm that is mounted on the encoder shaft. Several pictures show the encoder mounting. The length of the cable for the Ardenta/Selecta should be 15 meters.

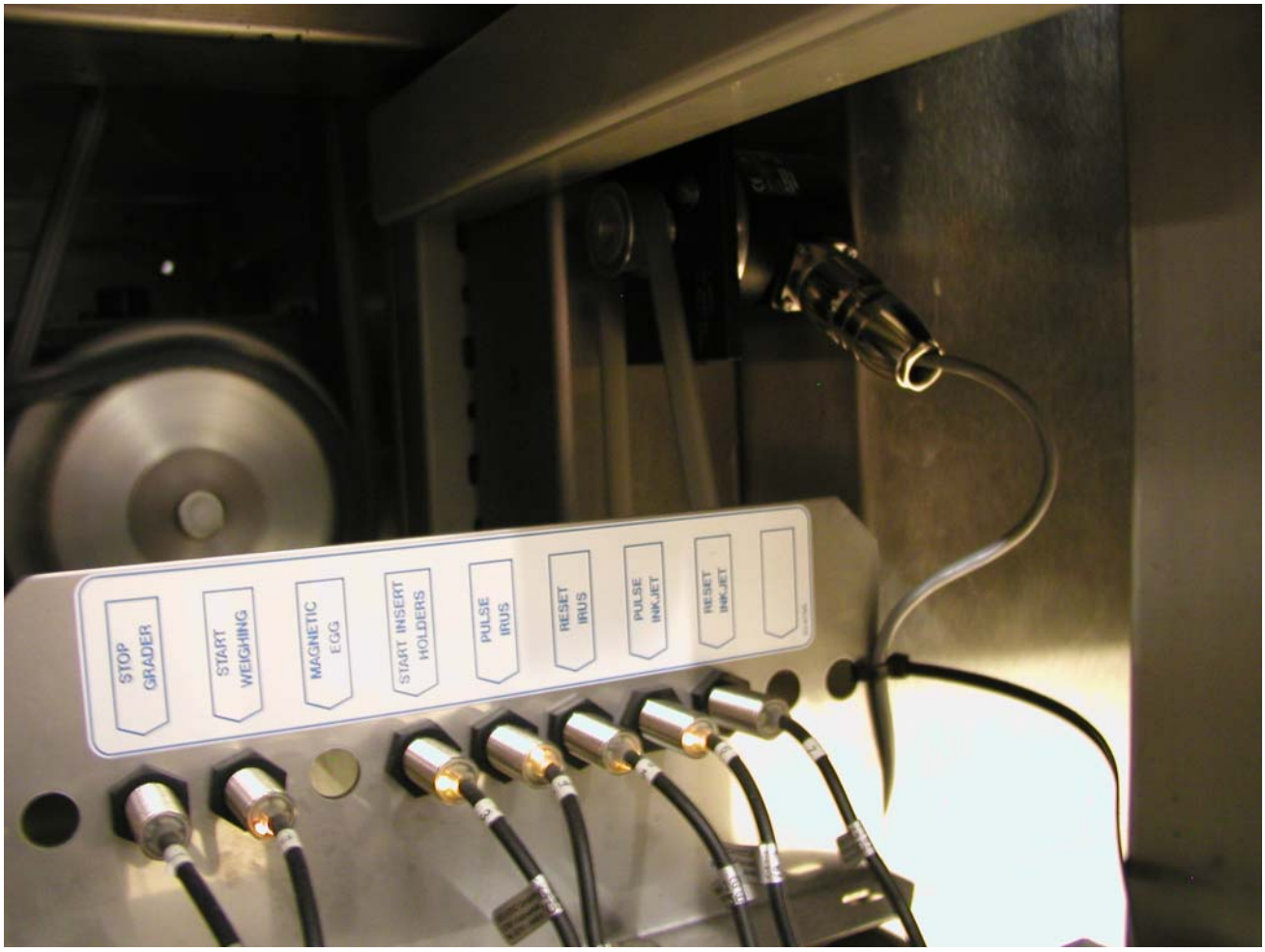


Figure 8. Encode mounting place.

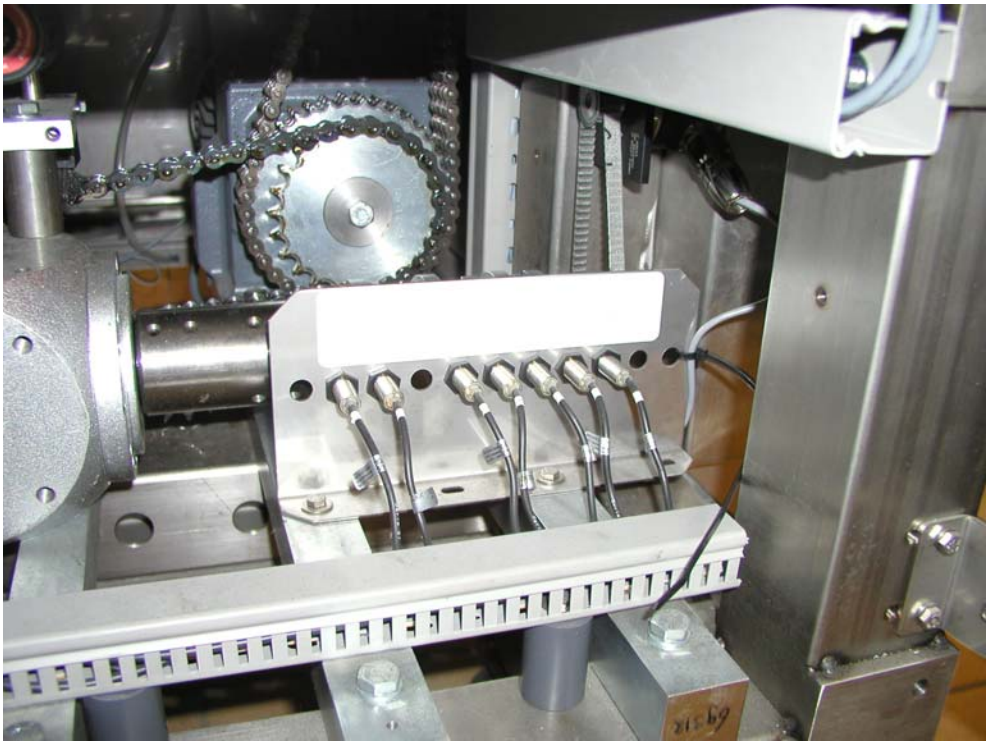


Figure 9. Encoder mounting place.

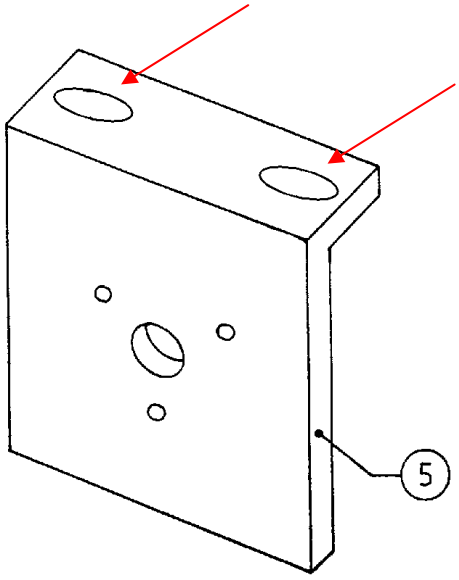


Figure 9a. The encoder bracket with oval slots.

The encoder at an ECM

For the ECM series Staalkat has a mounting-kit for the encoder. This consists of an encoder-bracket, Plastic wheel and a small wheel for the encoder.

The hole for the small wheel is 10 mm, if not drill with a 10mm drill so that it will be 10 mm.

The place where the encoder is mounted is at the back of the machine. The cable need to be directed thru the trunk at the top of the ECM to the begin, this is where the Excel printer will be placed. When opening up the top of the machine the trunk is shown.

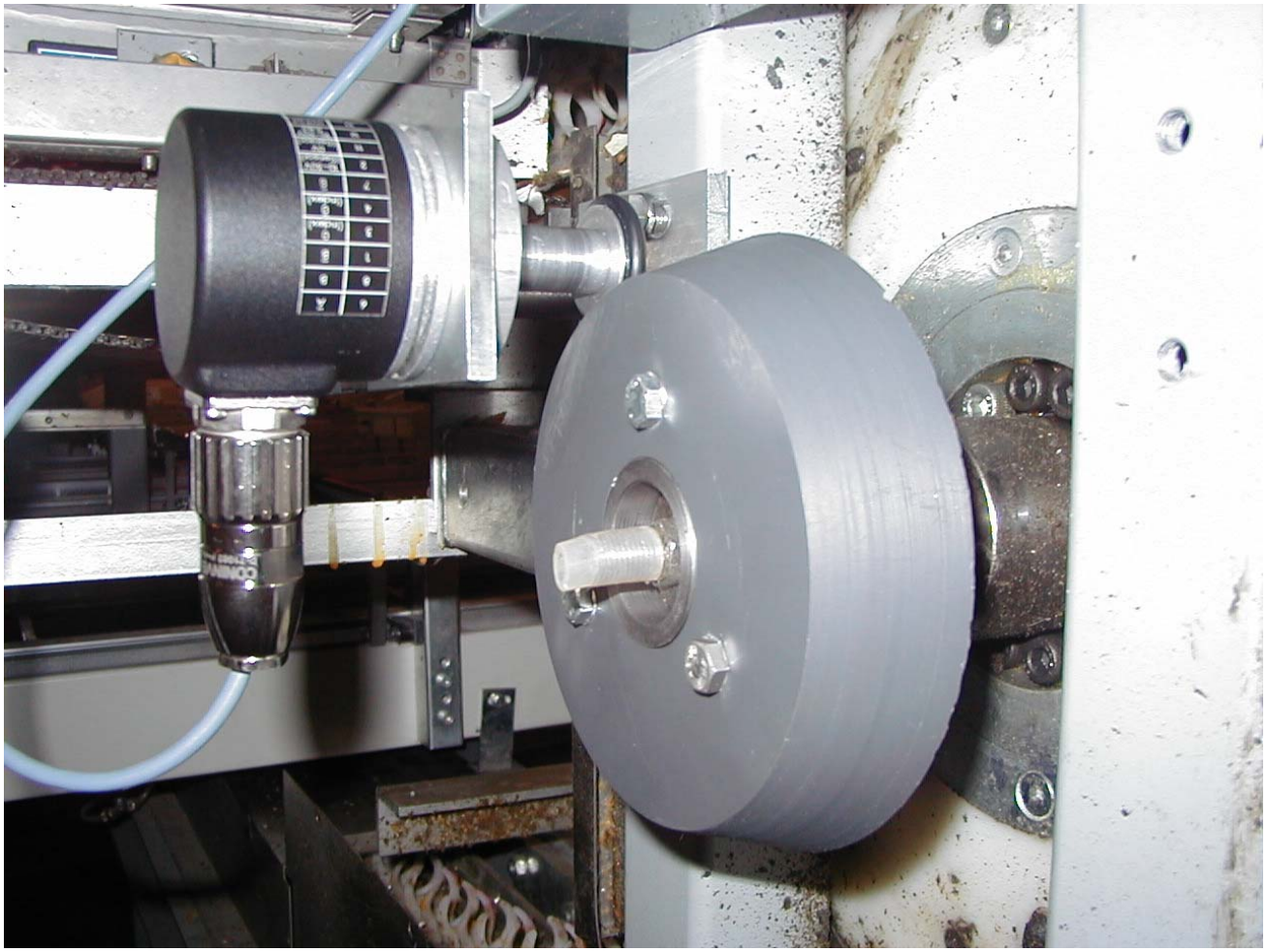


Figure 10. Encoder mounting place at the back of an ECM.

Connecting the Product Detect and Synchro-signal

To connect the product detect and the synchro signal within the excel printer, there will be a connector mounted in the printer with the color RED. Within the printer the cables are connected to the PD connector (J15) and the ext. input 2 (J17).

With all the new egg-sorters coming from Staalkat an connection-block is placed in there controller-box. In figure 12 the new connection-box is showed. In the older system there is a cable supplied or it has to be made by yourself to connect to the excel printer.

The ECM sorters from Staalkat have two sensors. For connection to the Videojet excel printer only the top or last sensor is used.

To synchronise each cycle from Staalkat, we use the synchro-flag for synchronization. Every cycle Staalkat is sending us a string of data, which holds the information of each egg. The data that belongs to an egg is kept in a buffer within the computer. Within the software is a offset-setting that’s tells where the printhead is situated with the Staalkat machine. Therefore each cycle a string of data is send to the Excel printer(s) after the synch-flag is received.

For setting the position of the synch-flag, Staalkat has flags mounted on a shaft. The position of the synch-flag is 1 cm after ON status just at the moment the chain starts to move (egg has been placed).

The product detect also had a flag. The wheel will give the amount of pulses, regarding to the amount off eggs transported per track.

The position of the flag is after synch-flag about 1 the first product detect for the printer. The sensor head is completely on top of the flag.

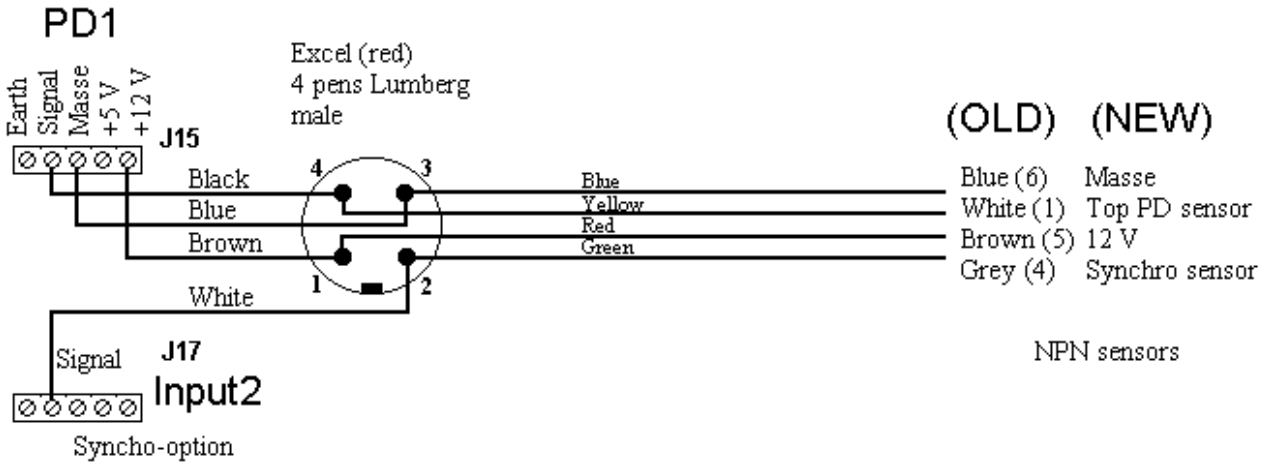


Figure 11. Connecting Product Detect and Synchro-signal

Connection Ardenta

The connection-block has the + and -, used for supply of 12 Volt and Masse from the Videojet printer. SY (green) is the synchro-flag and S1 (yellow) is the sensor we use. The length of the cable for an Ardenta is 15 meters.

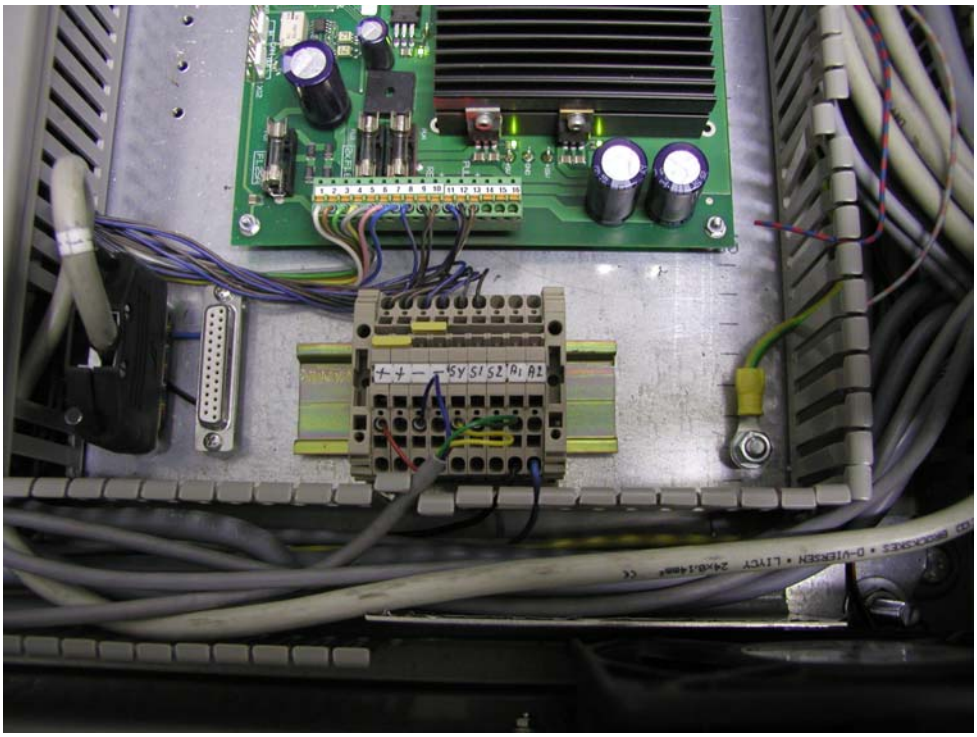


Figure 12. Connecton-block used by the new systems.

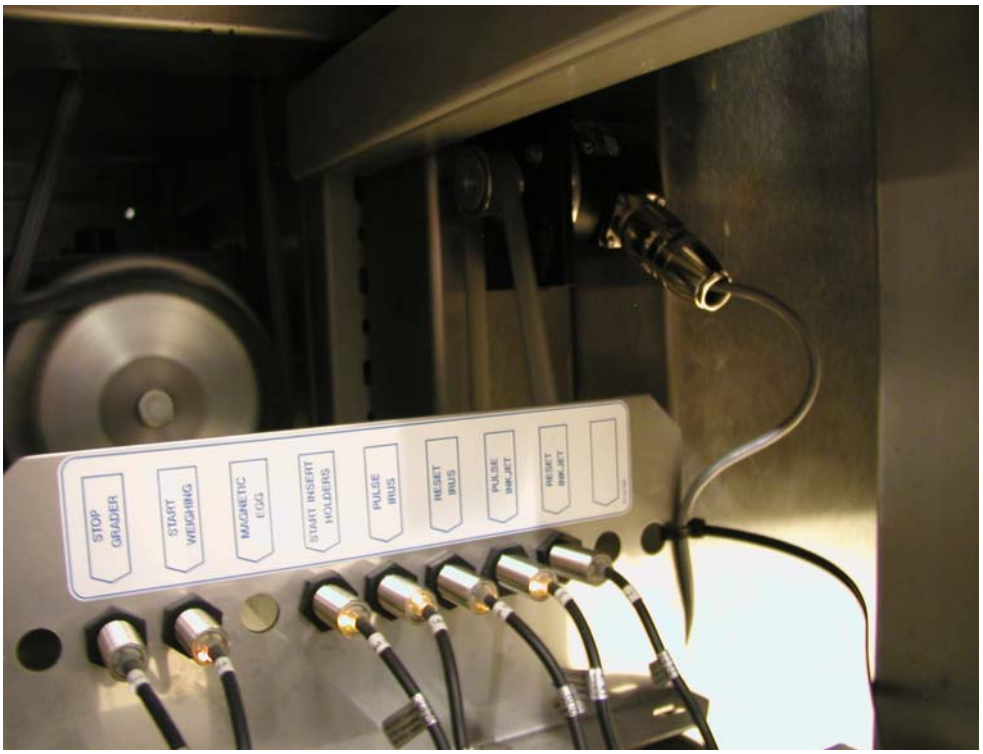


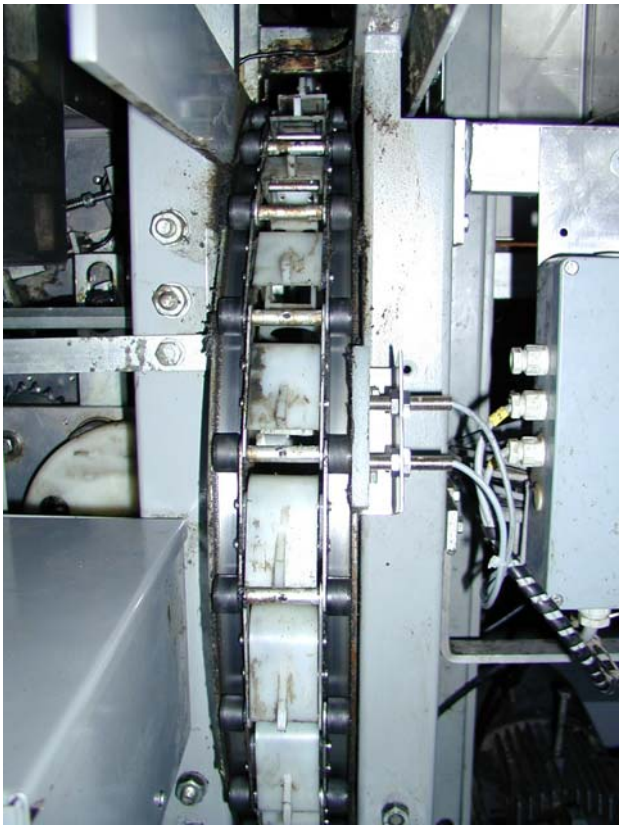
Figure 13. Synch-flag and product detect on an Ardenta / Selecta

Connection ECM

For the ECM series there are different positions where to connect to the product detect and synchro-flag.

On the older systems they have an plastic-box where screw-terminals are situated. This is where we connect to. On other newer systems the have the same connection-block used at the Ardenta.

Even the place of the synchro is different at the different ECM series. Somethimes they use the synchro shown in figure 15. On older systems there even use small opto-U-sensors.



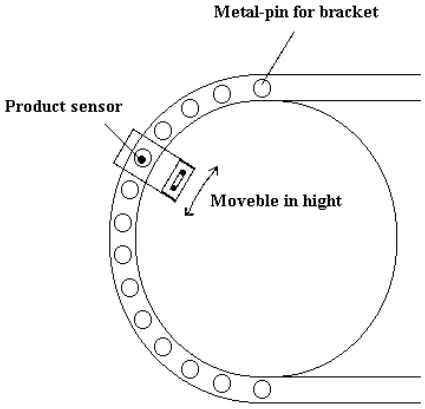


Figure 14. Product detect on an ECM.

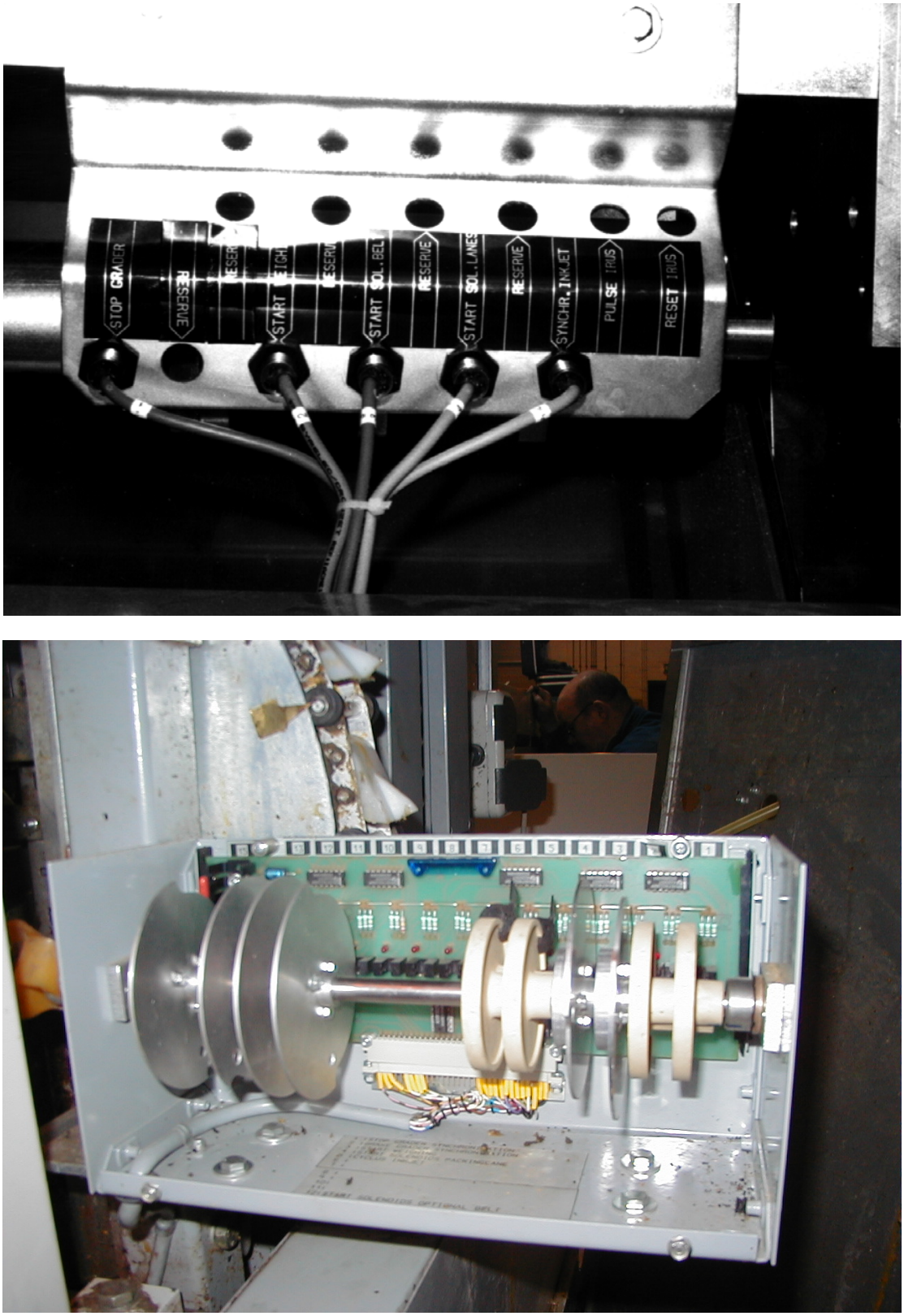


Figure 15. Synch-flag on an ECM series.

Status I/O.

At the new systems of Staalkat an extra input is added. With this input the inkjet system tells the Staalkat the status of the system.

When all OK there is no short, therefore no message on the system.

When a problem occurs in the software the relais will activate and therefore create a short on A1 and A2. A message appears on the screen of Staalkat and the egg-sorter stops.

Ext. Output 1 is used to connect to the Staalkat, this follows the Printer Status.

This is only used with new Ardenta systems.

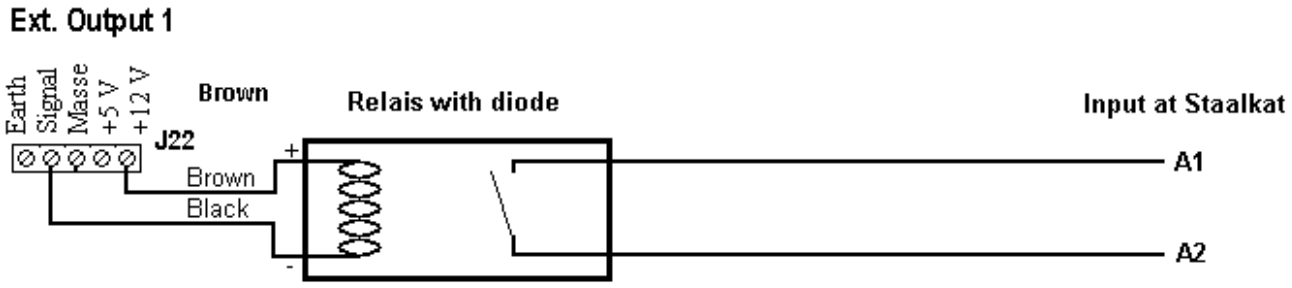


Figure 16. Electronical drawing of the status towards the Ardenta.

Splitter

When two printers are used, a splitter option is implemented. The first printer is setup as a 1 printer system. With the splitter the signals are split and brought to the second printer by one cable.

The difference is with the encoder, normally the white core is used for shield. Now it will be used for the B channel of the encoder. This signal is that directed to the second printer.

Use the drawing in figure 17 to setup the splitter.

Also what is specifically created is a mobile stand where two printers will be mounted next to each other, like figure 18.
As well as the air-reducers are connected to each other.

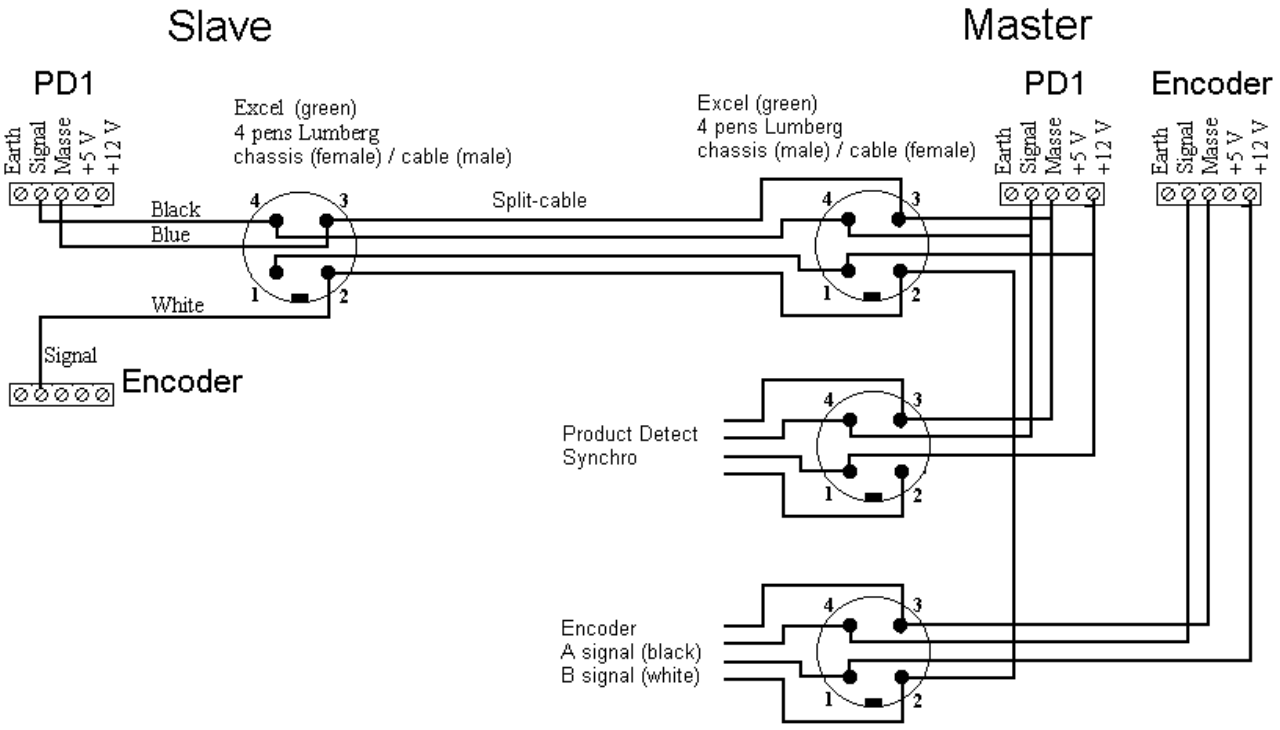


Figure 17. Electronical drawing of the splitter.

Figure 18. Mobile stand with two printers next to each other.

Figure 19. Two printers where air-reducers are connected.

PC connections

The PC is an industrial PC where extra parts are connected to.

Within the PC a current-loop converter will be placed.

Minimal 4 USB connecters will be available, otherwise extra USB connecters needs to be placed.

Serial ports are needed, one for each printer and one for Staalkat. For an one track system two serial ports are needed. For a two track system 3 serial ports.

Current-loop converter

The schematic in figure 20 is how to connect the current-loop to the PC. Figure 21 will show the place within the PC.

A Connector Sub-D 25 is placed at the outside of the PC for the cable from Staalkat.

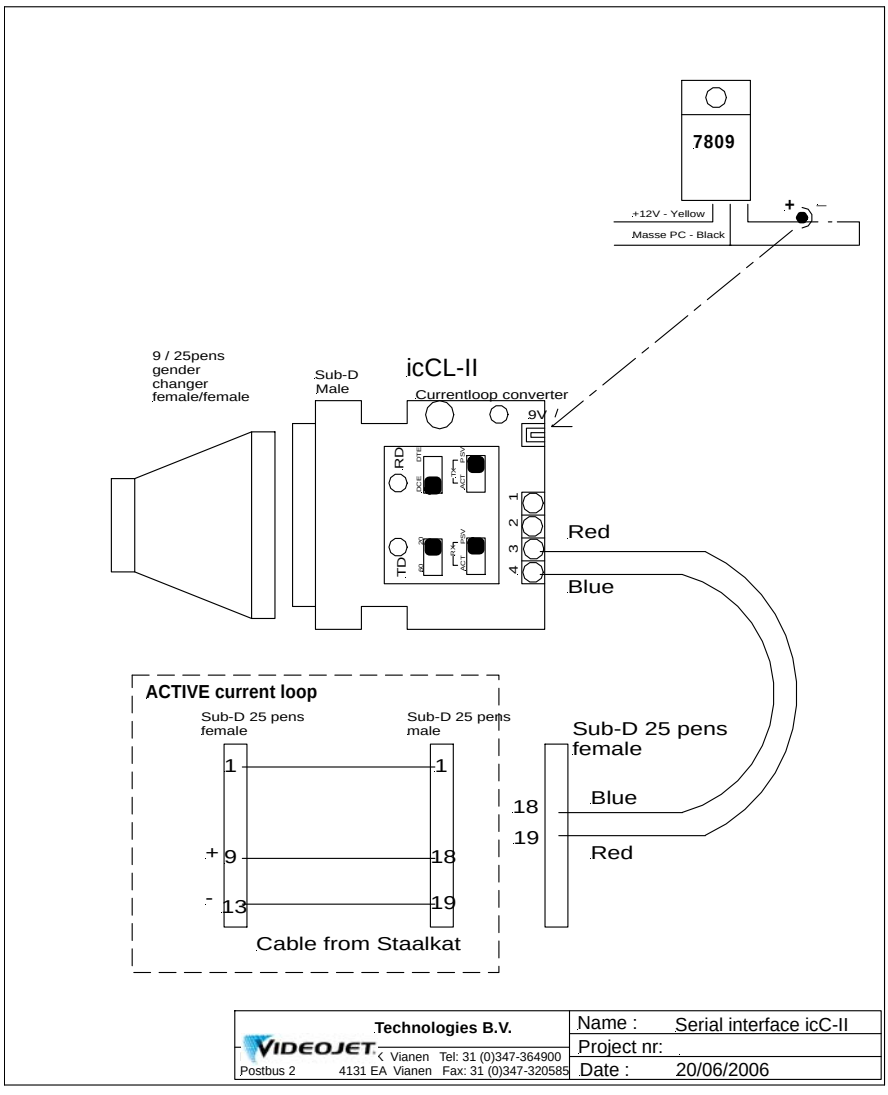


Figure 20. Schematic of the current-loop within the PC.

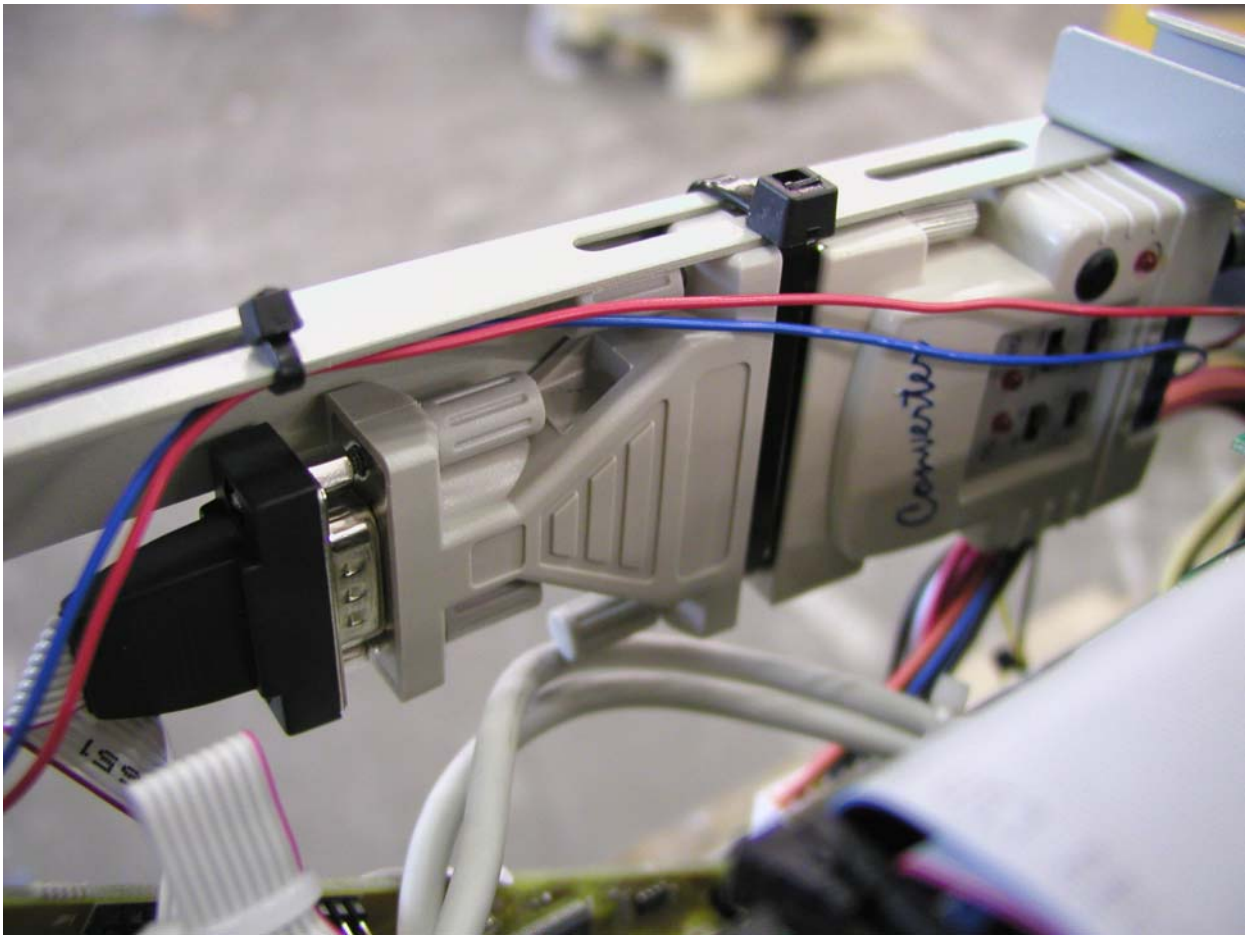


Figure 21. The place of the current-loop within the PC.

Current-loop cable

The Staalkat system is connected to the Videojet system by using a current-loop cable. The cable is delivered by Staalkat. If not is can be created by using the schematic in figure 21a. At the Staalkat side place the current-loop in active mode. In the PC this will be the passive mode.

The position the cable has to be connected at Staalkat is different at the 3 systems. The following figures shows the positions.

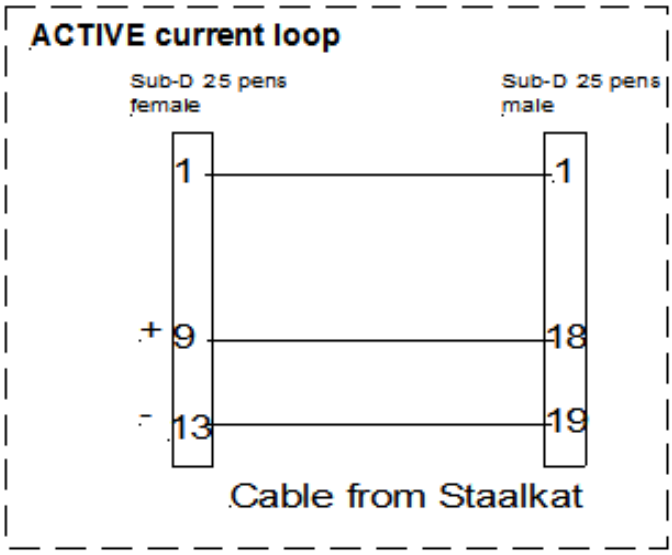


Figure 21a. Current-loop cable.

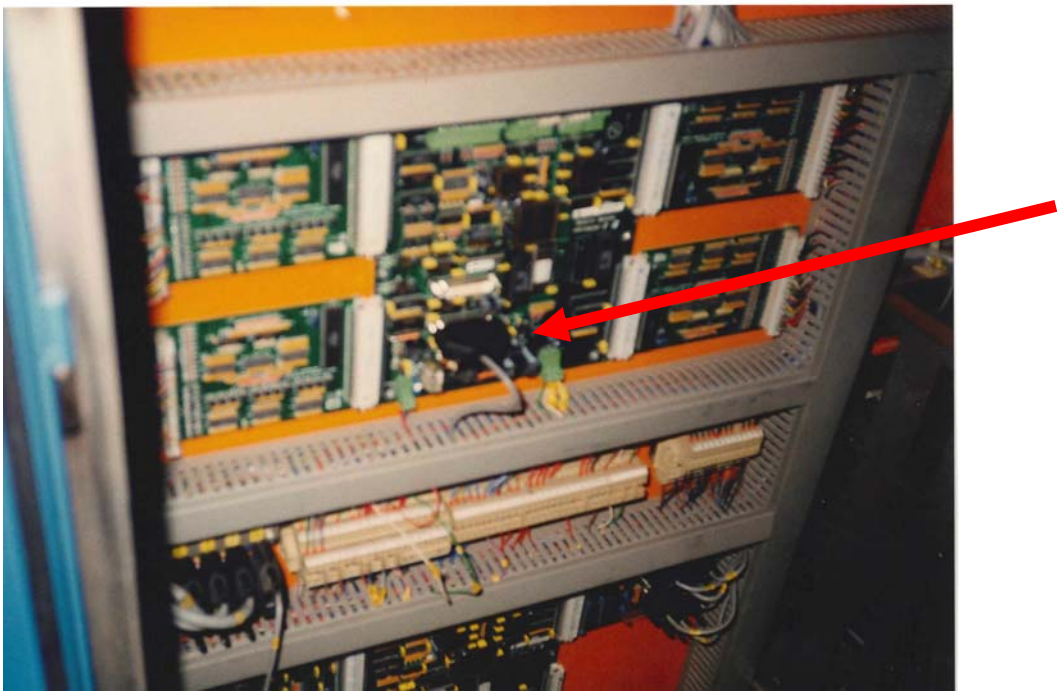


Figure 21b. Current-loop connection at Selecta.

PC power connection

When using Windows it is important to use an UPS with USB connection to switch of the PC when power is disconnected. The UPS is therefore only for switching off the PC.

Also there are two options to connect the PC to a monitor and keyboard. The first one is one PC and one monitor, keyboard and trackball. To save place and cost a KVM-switch could be used to connect the PC from Staalkat and Videojet to one monitor, keyboard and trackball. See also figure 22.

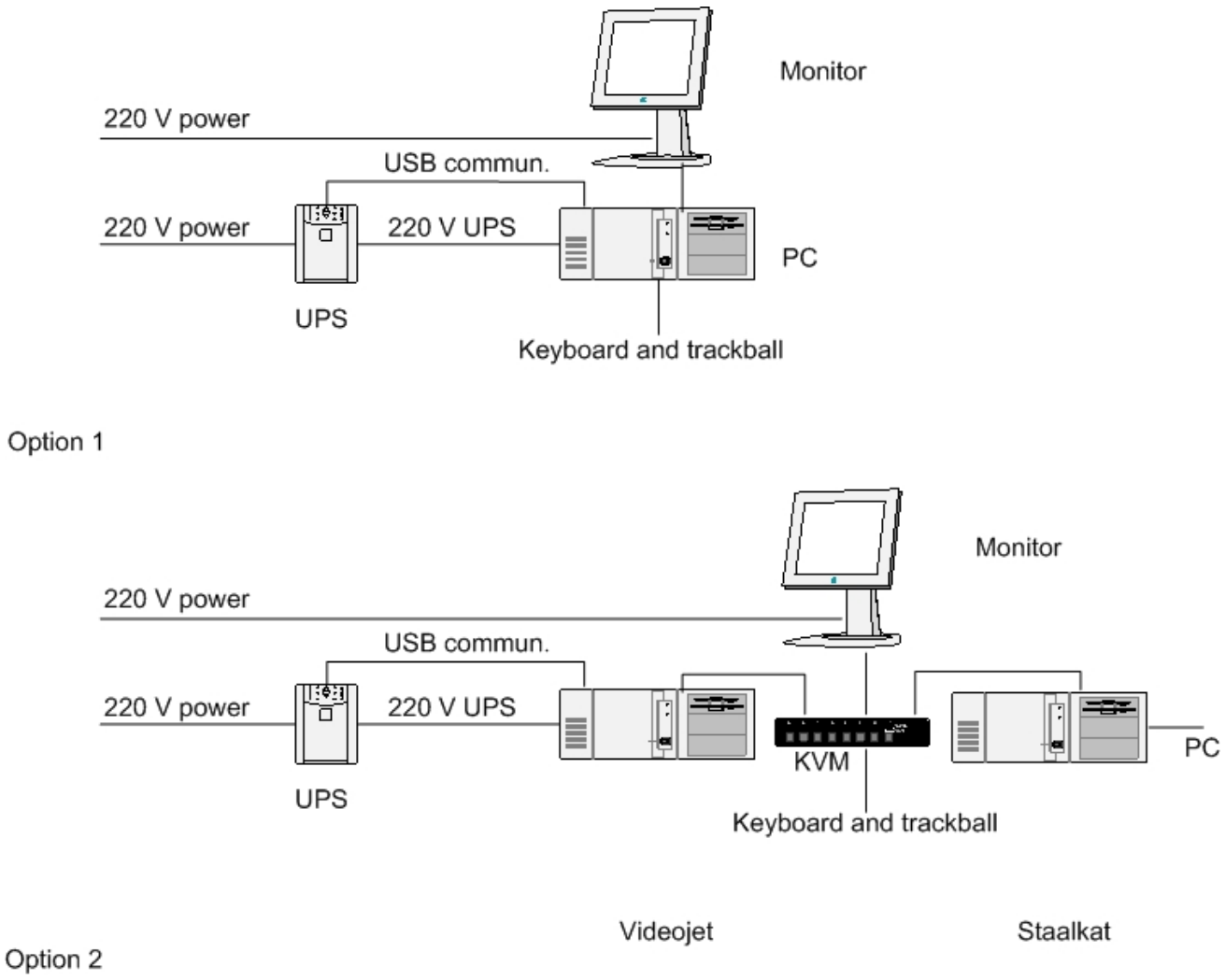


Figure 22. PC an UPS possibility with or without KVM.

Serial cable(s)

For each printer a serial cable is needed. This is for the software to control the Excel printers.

Make sure that the cable will use the opening (tule) at the side of the printer. The serial cable needs to be made at the printer.

The length of the cable is max. 15 meters. Longer can give communication problems.

The way to connect the cable is show in figure 22.

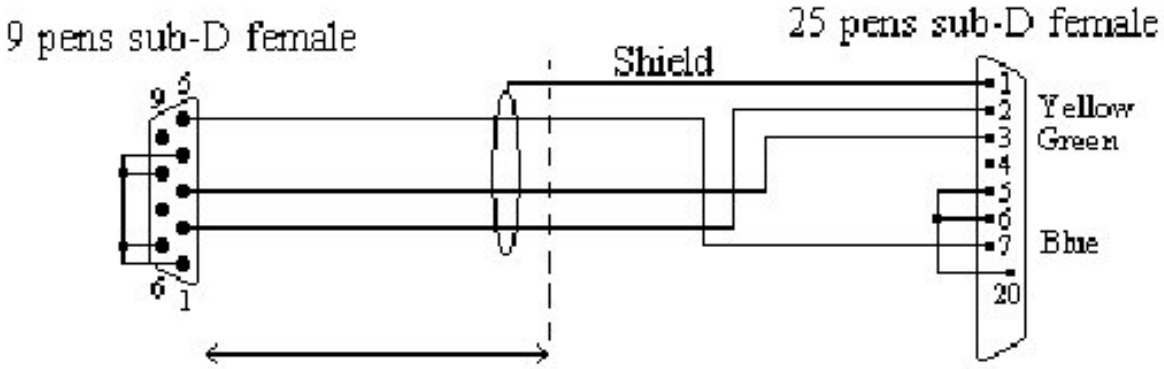


Figure 22. Schematic of the serial cable.

Printhead(s)

The placement of the printheads also depends on the egg-sorter. For each sorter a place is predetermined by Staalkat. From Videojet a bracket is created to fit on the place Staalkat has prepared.

For the Ardenta 1 or 2 brackets are needed when having a 1 or 2 track system. In figure 23 a 2 track Ardenta is shown. The printhead has a slight angle towards the egg.

Figure 23. Printheads brackets for the Ardenta 2 track.

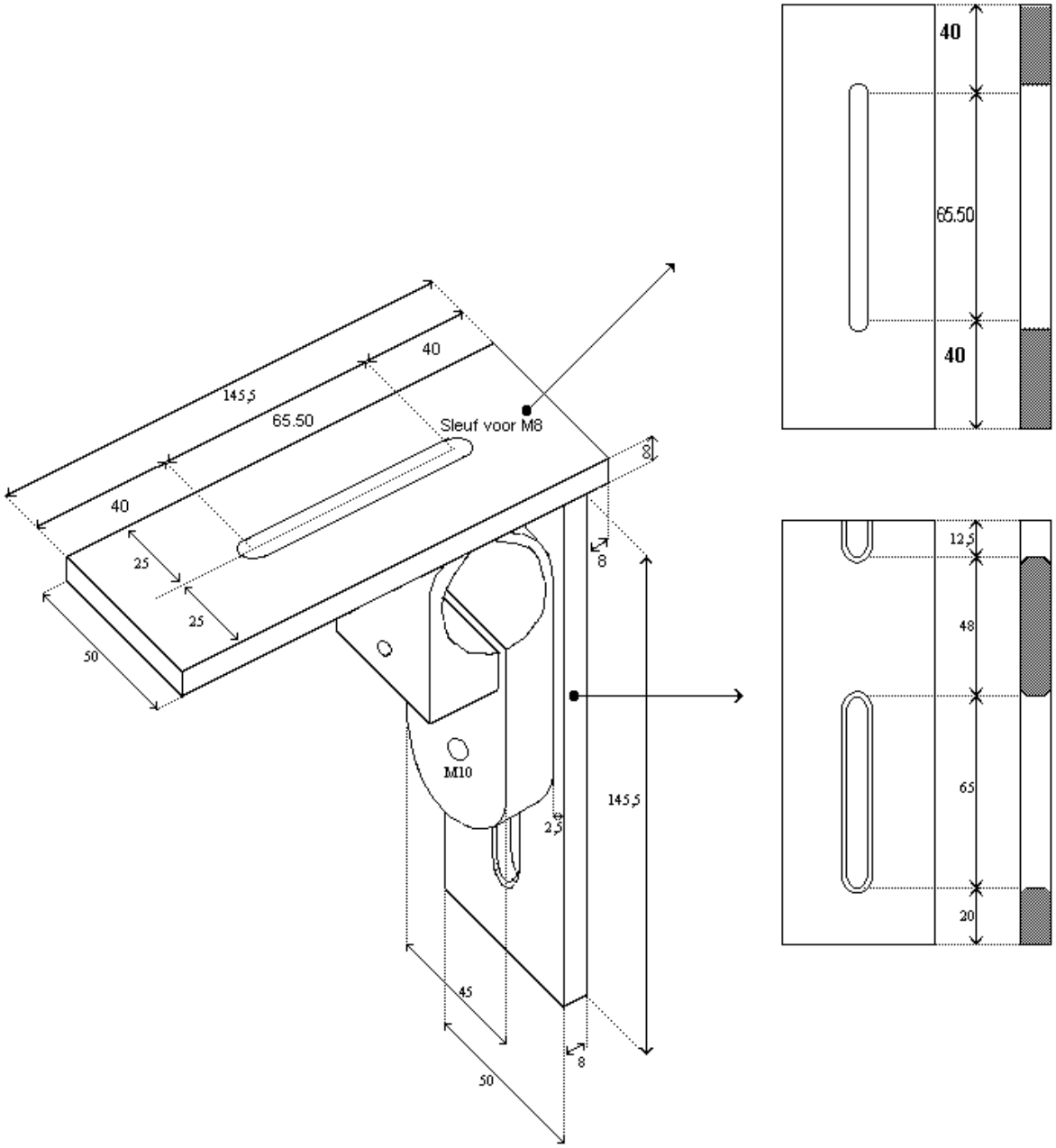
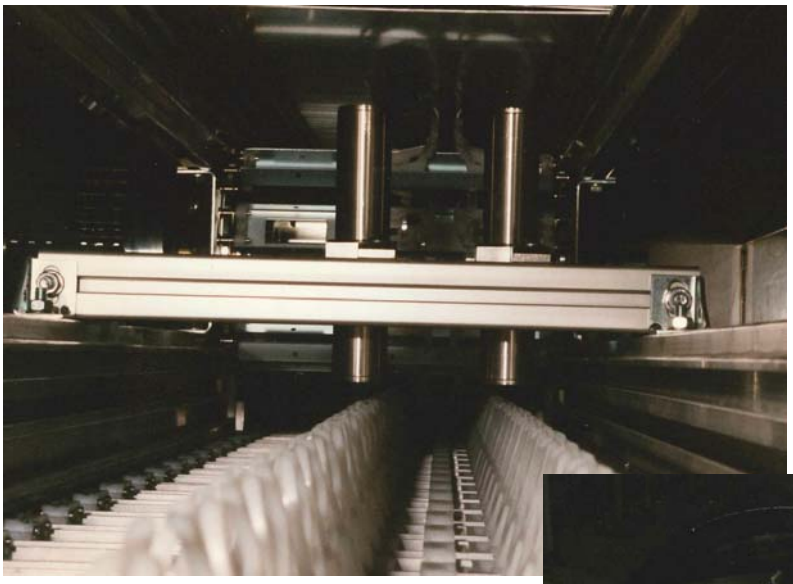
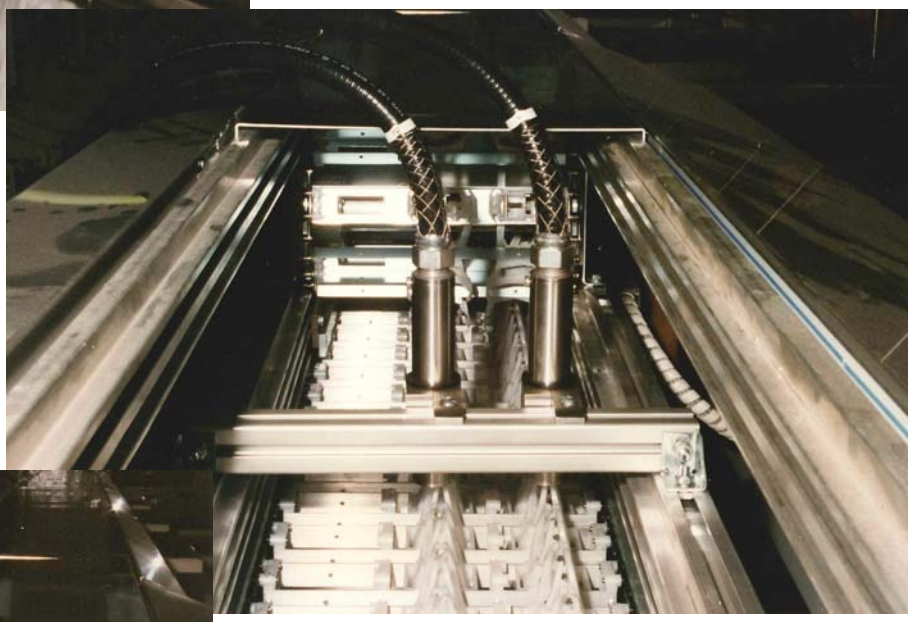


Figure 23a. Printhead brackets for the Ardenta.

Printhead Selecta

For the Selecta series is also a bracket created as shown in figure 23b. The position is determined by trail and error. The offset in the software is about 0 or 1. with this value find the place where to put the printheads on to of the Selecta. By moving the printheads the position can be found. Do this with only some eggs in the systems. Not in production. About 6 eggs per track.





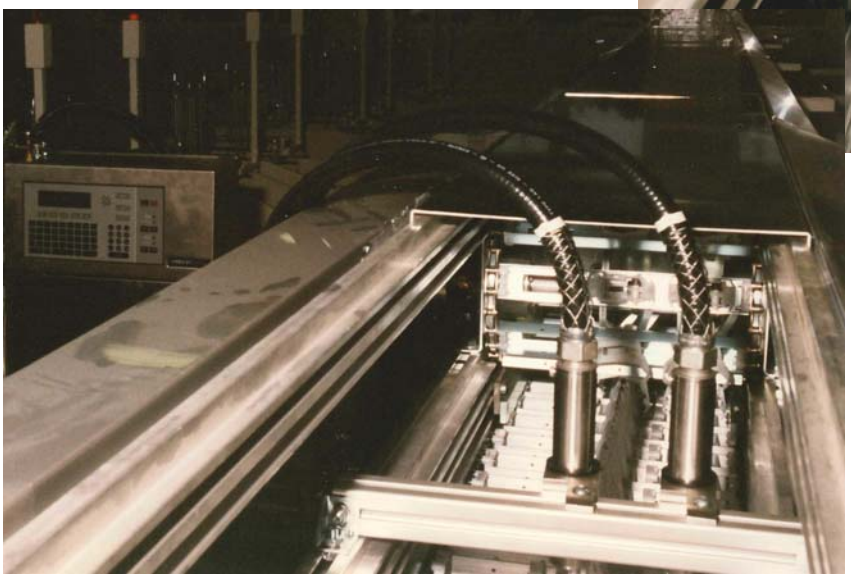


Figure 23b. Printhead bracket for the Selecta series.

Printhead ECM

For the ECM series is also a bracket created as shown in figure 24.

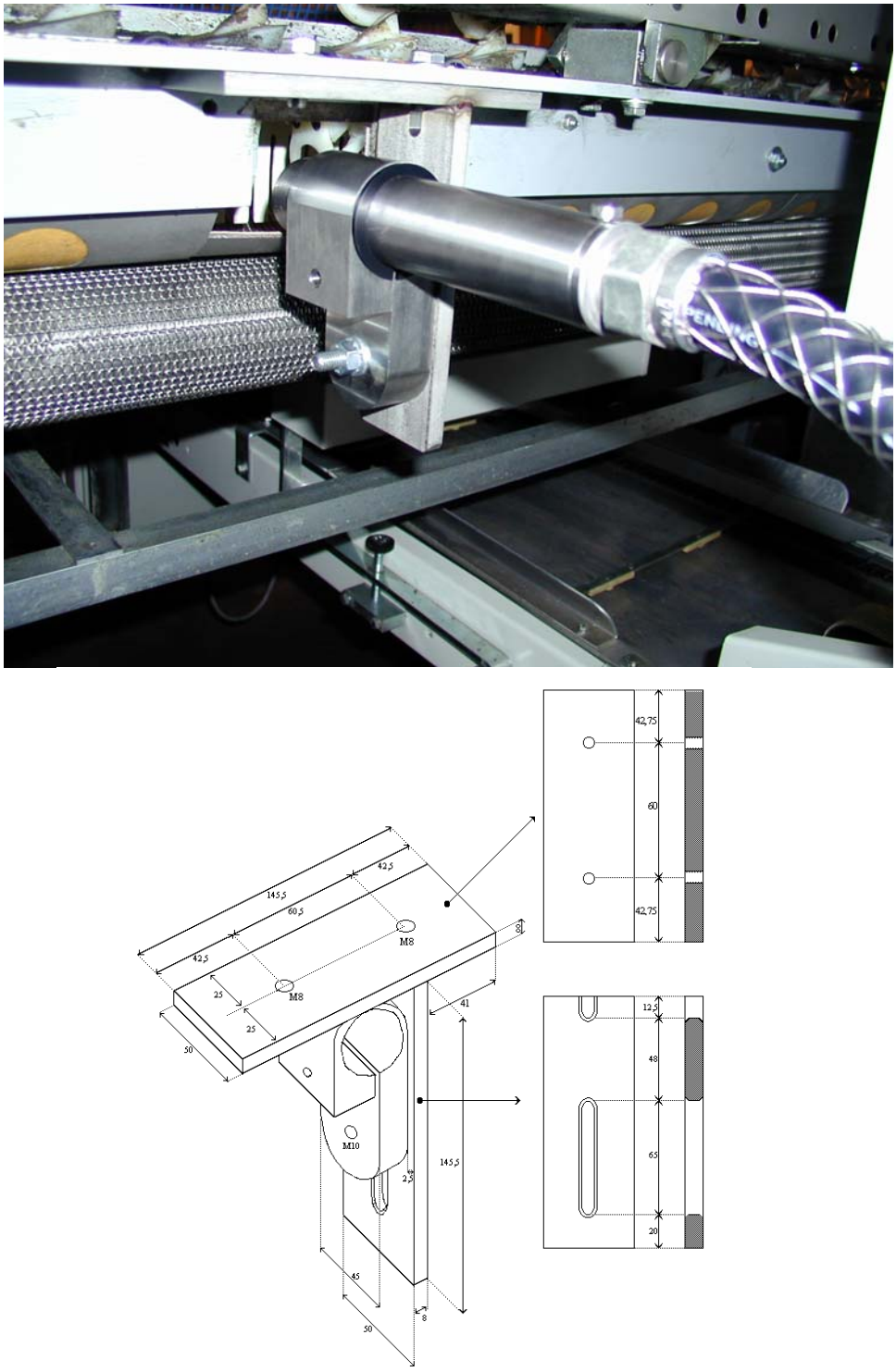


Figure 24. Printhead bracket for the ECM series.

Software

Software Videojet Excel printer

The software in the Videojet Excel printer is not standard software.

It is modified to handle faster communication and better handling data communication between de PC and the printer.

An SAR is written for it and is available only in English this is SAR05915. A second SAR is made based from the SAR05915 with the Cyrillic font (Russian). The machine is still in English but lowercase characters are changed to Cyrillic. The SAR is SAR3107005. A third version is available. This is an English front with Hebrew characters.

SAR – 05915 operates as Excel 170i Ultra, U.K. E.S.I., software revision E0200 with the following exceptions:

1. The 5x7/5x7/5x7 matrix now has the addition of a single line (16-drop high) sub-font. The character size can be selected be pressing the F1 key on the 02 EDIT menu. The default character size is SINGLE for three lines of single height characters. The other character size is DOUBLE for one line of double height characters, including graphic characters. For remote messages, the default sub-font is sub-font 0 (Double height characters). The command for sub-font 1 (1B, 81, 01) must be used for three-line printing.

2. It is now possible to select a baud rate of 38400.

3. It is now possible to mix single and twin-line characters in the 10x16 matrix. The character size can be selected be pressing the F1 key on the 02 EDIT menu. The default character size is SINGLE for two lines of single height characters.

4. The maximum print speed for the 10x16 matrix has been increased to approximately 112m/min.

5. There is a new option MESSAGE SELECTION on the 02 SYSTEM menu. There are three options for message selection, NORMAL, E.S.I. and PARALLEL. For NORMAL message selection, messages are created on the keyboard and loaded for printing when the PRINT MESSAGE key is pressed, as normal. For E.S.I. message selection, messages to be printed are selected with a new ESI command as defined below. For PARALLEL message selection, messages to be printed are selected by the binary value latched on the parallel interface board (P/n 123899/SAR-8175) at the time of the product detect. Valid input on the parallel port for message selection is in the range of 1 to 120 (78 hex) inclusive. If an invalid message number appears on the parallel port at the time of a product detect, nothing will be printed. A message number greater than 120, will cause the printer to transmit 07, 23 (enabled by bit 6 of the status reports mask). When switching from E.S.I. or PARALLEL to NORMAL it is necessary to press PRINT MESSAGE to reload the currently displayed message.

6. A new ESI command, 1B, 01, 2C, X1, has been added to allow uploading of messages into storage locations. These storage locations are not

available from the keyboard. This command should only be used if either E.S.I. or PARALLEL message selection is enabled. The number of storage locations is 120, so the value of X1 can be 01-78 hex. Values exceeding 78 hex will cause the message to be stored at location 120. The maximum message length of the stored messages is less than normal, dependent on the print matrix. For three line messages, the maximum message length is about 21 characters per line, but more for twin and single line messages. After the command has been sent the message must be sent, followed by the carriage return (0D) character. The printer will then respond with 07,20. As with Message Mode, the message must consist of at least one character plus 0D. It is possible to upload messages into the storage locations while in print, although the uploading of a message while it is selected for printing is not advised. It is recommended that all stored messages are in the same print matrix. Message parameters such as serializer definition, timer format, and expiration date offset are **NOT** stored with the messages. Due to this limitation, it is recommended that the serializer, expiration date and timer inserts are **NOT** used unless they are identical for all messages.

7. The software polls External Input #2 and sends an output whenever the status changes on the rising edge. The response from the printer is:

   07,12 - External Input #2 active

   The transmission of the responses is configurable in the status reports mask (bit 8).

8. A new ESI command, 1B, 01, 2D, X1, X2, X3,.....,X54, FF, has been added, for use when E.S.I. message selection is enabled, to create a queue to allow printing of the messages in the stored locations in the order specified. Xn values are the message numbers and may be 0, for no message to be printed, to 78 hex. Not all 54 values have to be sent - FF may be sent at any time to terminate the command. The printer will respond with the normal 07,08,07,09 response. On receipt of the FF, the queue pointer is reset to the first item. Each message will be printed once, and after the last message has been printed the printer will transmit 07,10. The transmission of the 07,10 response is configurable in the status reports mask (bit 7). If a product detect is received after the last item in the queue has been printed, the printer will print nothing. A message number greater than 120 (78 hex), will not be printed and no subsequent messages in the queue will be printed, and the printer will transmit 07, 23 (enabled by bit 6 of the status reports mask).

10. External Output #1 follows the Print status. When the Print light is flashing External Output#1 will remain deactivated.

11. Sixteen remote data inserts have been added. Each remote data insert is always 12 characters long. It is only possible to add these inserts into messages generated through the serial interface. Data in the remote inserts is not be buffered, so new data will overwrite any existing data, whether printed or not. It is possible to locate any remote insert on any line, any number of times, subject to space being available. The following ESI commands have been added to access the remote inserts:

    1B, 02, 09, X1 Define remote insert data, where X1 is the remote insert number (01-10 hex), followed by 12 ASCII characters (The printer will respond with 07, 08, 07,09).

		Display Character
1B, 84, 23	Insert remote insert 1	A
1B, 84, 24	Insert remote insert 2	B
1B, 84, 25	Insert remote insert 3	C
1B, 84, 26	Insert remote insert 4	D
1B, 84, 27	Insert remote insert 5	E
1B, 84, 28	Insert remote insert 6	F
1B, 84, 29	Insert remote insert 7	G
1B, 84, 2A	Insert remote insert 8	H
1B, 84, 2B	Insert remote insert 9	I
1B, 84, 2C	Insert remote insert 10	J
1B, 84, 2D	Insert remote insert 11	K
1B, 84, 2E	Insert remote insert 12	L
1B, 84, 2F	Insert remote insert 13	O
1B, 84, 30	Insert remote insert 14	P
1B, 84, 31	Insert remote insert 15	S
1B, 84, 32	Insert remote insert 16	T

Each remote insert command has to be followed by 11 filler bytes (1B, 84, 0E)

The display character column indicates the special character (I + character) that appears on the view print screen for each remote insert command.

Installation

For installing the software on a PC, make sure you have enough COM ports available for the amount of printers and Staalkat egg-sorter and if the PC is within spec's.

PC spec's:

- Windows 2000 or higher
- 5 MByte of Harddisk space left
- Enough COM ports 1 for each printer and 1 for Staalkat
- Keyboard and mouse/trackball
- 800x600 screen resolution
- USB connection for UPS

Installing the software starts by clicking Egg-Soft.exe on the provided CD.

Follow the instructions as being asked during installation.

A shortcut is created on the desktop and in the Startup group. When starting the PC automatically the egg-soft software will start.

⚠

After installation and setup of all settings, create a backup of the file *Videojet.ini*. When a problem occurs and the software will be newly installed all setting could be restored by copying this file back.

Setup

Before the system can be used, a setup (settings) needs to be done. Depending on the Staalkat egg-sorter different setting has to be made. These setting are available under the Setup menu.

Options that are available at Setup are :

- **General** : This will open a dialog with all parameters to communicate with the Staalkat and the Videojet printers.
- **Remote Data Inserts** : Selection if the option Remote Data from Staalkat is used. With this option Staalkat has the possibility to fill Remote Data buffers on the Excel printer and thereby change message text on the fly.
- **Special Characters** : Selection if the Special Characters are used. When characters are used that are not standard available on the USA keyboard windows need to convert these toward the Videojet Excel printer. The Excel printer software needs also a modification in the standard character layout.
- **Alert Output Inverted** : This option is NOT used.
- **Staalkat Comms** : This option will send all information that is coming in at the Com-port of Staalkat to the status window. It is used to check if data is coming in and if the Com-settings are correct.
- **Loop Time Test** : This option give the processing-time of the production-cycle when in production mode. When activated it will stop after a couple of cycles.
- **Service Mode** : All info received from Staalkat and all info send to the Excel printers as well as there response are being written in the Status window. This option will slow down the software, therefore use this only for setting up the system and control purpose. The Staalkat can not run at maximum speed, otherwise the system will lose synchronization and print wrong messages onto the eggs.

In Figure 25 the Setup options are shown.

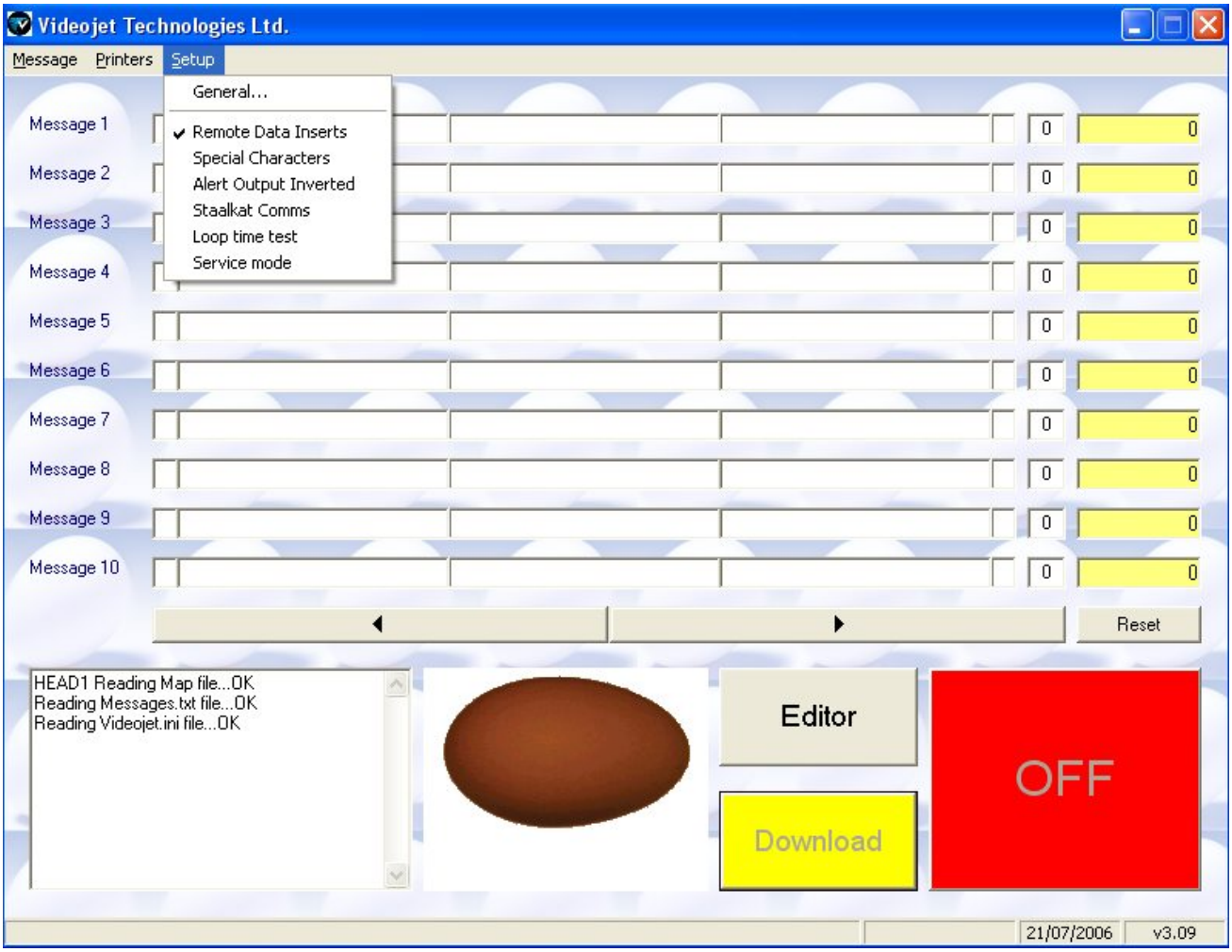


Figure 25. Main screen where Setup options is selected.

When the General option is selected in the Setup menu a new dialog pops up. Within this Dialog all setting regarding communication can be set as well as the layout of the Staalkat egg-sorter.

Staalkat Settings

- **Tracks** : Amount of tracks in the system. For an ECM always 1, for an Ardenda 1 or 2 and for an Selecta 2 or 3.
- **Eggs** : Amount of egg transported every cycle on 1 track.
- **Offset** : The place off the printhead within the Staalkat machine. This referenced to the moment the data of the specific egg is received.
- **Header** : The header of the string that is send by Staalkat.

- **Footer** : The footer of the string that is send by Staalkat.
- **Remote data header** : The header of the Remote data string send by Staalkat.
- **Remote data length** : The length of the string sended by Staalkat. This as always 12.
- **Remote data amount** : the amount of different buffers used by Staalkat. This is always 12.

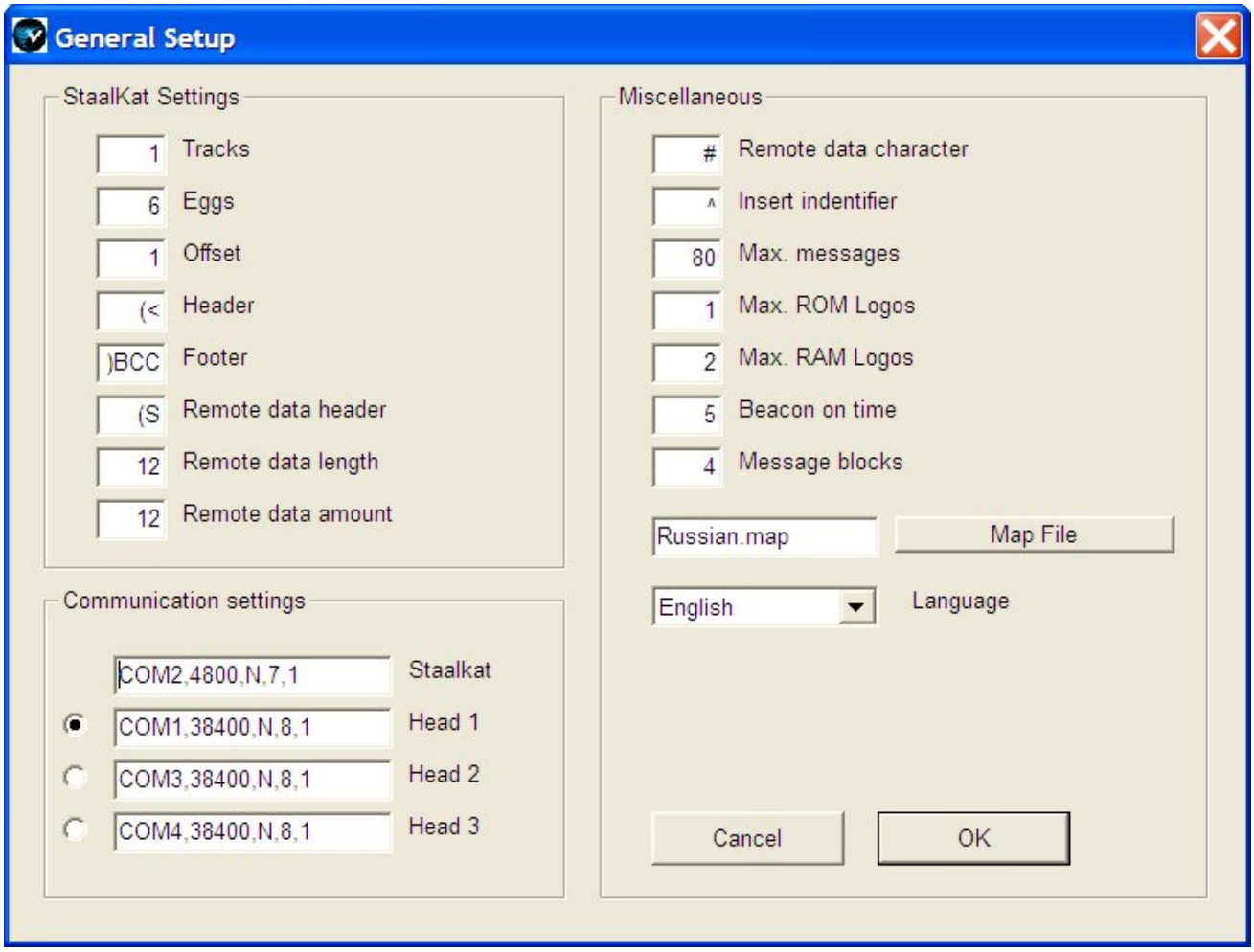


Figure 26. Communication settings.

Communication settings

- **Staalkat** : The setup of the Communication port that is used at the PC for the Staalkat. Also the baud-rate, paraty, databits and stopbit is given.
- **Head 1, Head 2 and Head 3** : The setup of the Communication port for each Videojet Excel printer.

- **Master printer selection** : The selection item in front of the communication settings is used to select the master printer. The master printer has the Synchronization input.

Miscellaneous

- **Remote data character** : This is the character shown in the software when the variable Remote data is used.
- **Insert Identifier** : This is the character shown in the software when an PC based date is used to identify with.
- **Max. Messages** : The maximum amount of messages used within the software. Minimum is 10 maximum is 120. For Staalkat 80 is the normal value.
- **Max. ROM logos** : The amount of logos burned into the Excel printer. When set to 0 no logo could be selected within the software. ROM logos need to be burned in the printer as well.
- **Max. RAM logos** : The Videojet Excel printer can hold maximum 2 RAM logos that will be send by the software. When set to 0 no logo could be selected.
- **Beacon on time** : The time the alert beacon will be activated when an error occurs. This option is NOT used.
- **Message Blocks** : Normally there will be 1 message block. All messages available for selection. When used together with Remote data the system will be setup with message blocks. Staalkat has then te possibility to change between blocks. When used this value will be 4.
- **Map File** : Button to select the conversion-file. When Special character option is used the map file will hold the conversion-table between printer and windows.
- **Language** : This is to set the language of the program.

With the OK button every setting is stored. You need to stop the program and restart to activate all the settings.

When the Cancel button is used. Nothing happens.

Creating messages

When the program starts the layout of the software looks like Figure 27.

The way the software is setup is on the top of the software there is a menu structure. This is used for setting several parameters.

Then there is a message part, which shows 10 messages at one time. With the two big arrow buttons underneath there is a way to walk thru the different messages.

The way one line is constructed is :

- First the message number as a text.
- Small box where thru numbers a logo will be placed at the front of the printed message. Depending on the settings in the general-setup ROM logo 1 – 8 can be selected and A or B for RAM logo's.
- The next 3 boxes are for the message lines. First line 1, then line 2 and last line 3. The possibilities for the amount of line depends on the matrix selecting. Boxes will gray-out when a line could not be filled.
- The last small box on the right side is the same as the small box at the beginning. This is for placing a logo at the end of the message. Again 1 – 8 for ROM logo's and A and B for RAM logo's.
- Then there is a separate small box with a number, this will be used when an insert of date with offset is created within the message. The value given in this box calculates the date of today plus the offset that is given. At the moment of transfer towards the printer the date is calculated and send to the printer as fixed text. The next day a new transfer is needed to update the printer messages.
- The last box on the right has a yellow background. This is the counter of the message. When in production every time this message is printed the counter will count up.

By using the arrow buttons, all the different messages could be filled in. The maximum amount off messages that can be used depends on the maximum given in the General-setup and is message blocks are used.

By using message blocks, the background color of the messages will change to light blue. These messages will be created automatically when downloading them to the printer(s). Only the messages with a white background could be filled in.

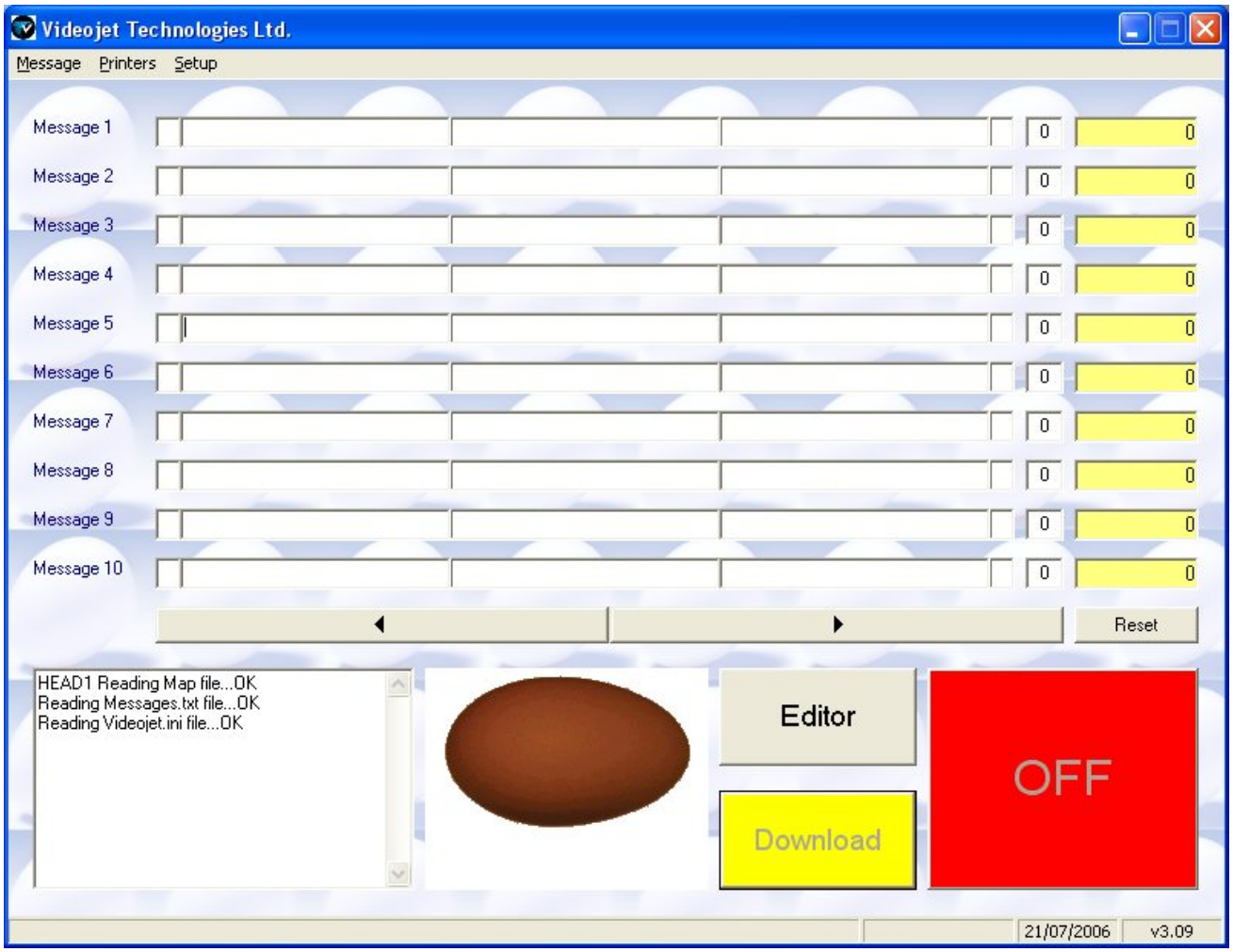


Figure 27. Main screen.

With the reset button all counters even the one not shown will be reset to 0.

When the menu option message is selected there will be several options to select , shown in figure 28.

- **New** : This option is grayed out. Was only for test purpose.
- **Save Messages** : This option saves the created messages. An automatic same of the messages starts at the moment of transfer to the printer(s) or when the program ends.
- **5x7 Twinline** : This is a check option. Only one of the five matrix setting can be selected. This option gives only a twinline matrix. NO logo's.
- **5x7 Triline** : This matrix give the possibility for three line and 10x16 matrix logo's.
- **10x16 Twinline** : This matrix gives two lines and 10x16 logo possibility.
- **5x7 Singleline** : This matrix is one line and NO logo's.
- **10x16 Singleline** : This matrix is one line large characters and logo's as possibility.
- **Date Inserts ...** : When selecting this option a dialog pops up where a date can be selected (shortcut : <ctrl> D).
- **Remote Data Inserts…** : When selecting this option a dialog pops up where the Remote data field can be selected (shortcut : <ctrl> R).
- **Character Inserts…** : When selecting this option a dialog pops up where a special character could be selected. This option is not yet available (shortcut : <ctrl> H).
- **Logo's...** : When selecting this option a dialog pops up when a logo could be selected or add a new Ram logo.

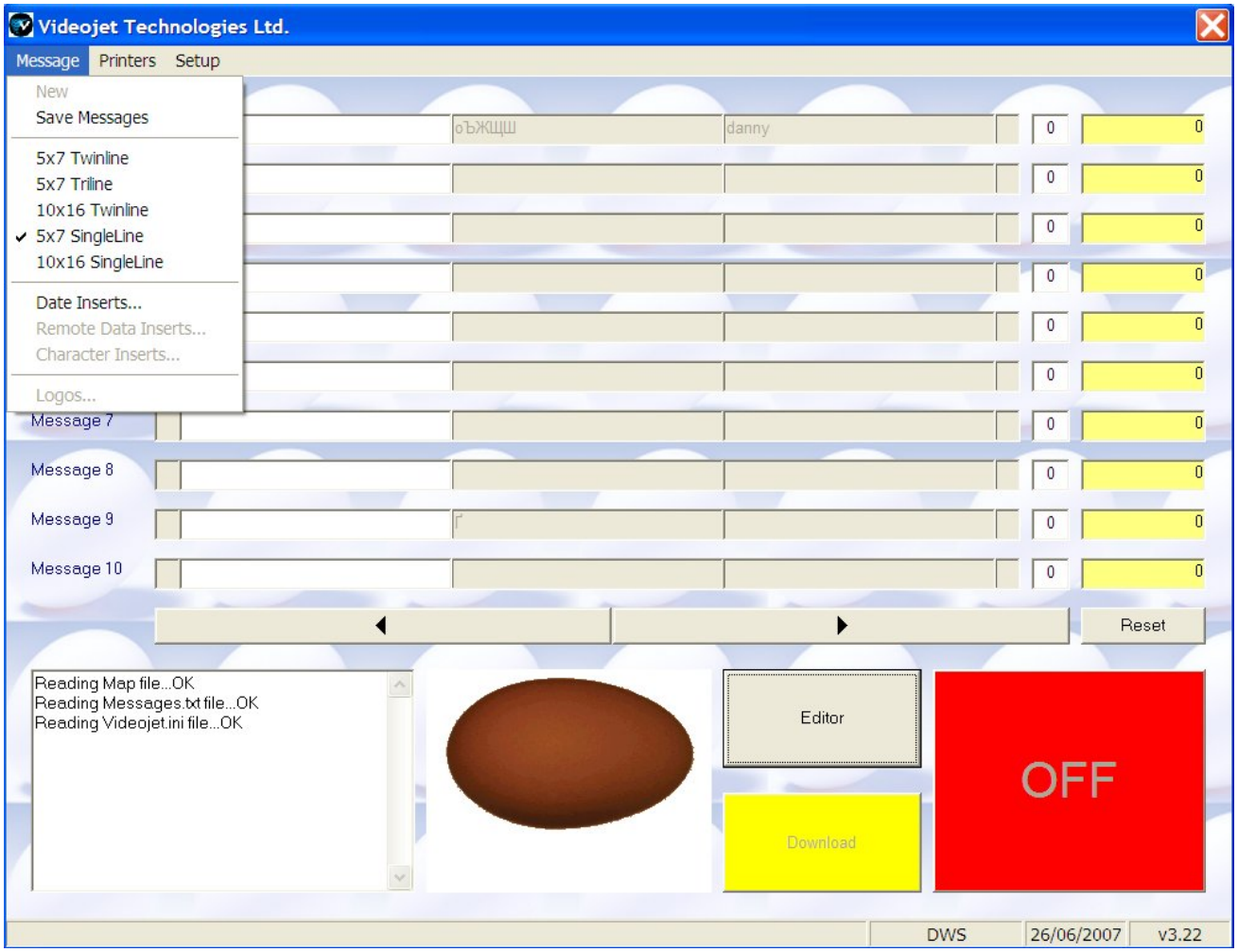


Figure 28. Main screen with the menu Message selected.

Date inserts …

Selecting the option Date insert will active an extra dialog. By selecting one of the buttons this value will be added into the text-field the cursor was selected. When the cursor is not in a text-field no date can be inserted.

Different date value could be selected. The current date (day of today), Offset date (date plus the value in the message screen), Current -1 date (date of today minus 1), Current -1 date (date of today minus 2) and Current -3 date (date of today -3).

With every date there are several options to chose from :

- 2 digit day : Day as two digits like 01, 02 until 31
- 2 digit month : Month as two digits like 01, 02 until 12
- 3 character alpha month : Alpha month as 3 characters like jan, feb until dec
- 1 digit Year : Year as 1 digit like 0, 1 until 9
- 2 digit Year : Year as 2 digits like 00, 01 until 99
- 4 digit Year : Year as 4 digits like 2000, 2001 until ….

When an insert is selected a new one could be selected. By pressing the OK button the dialog will go.

Within the text field the insert is placed as text like on the button. When using the big Editor/Preview button, the messages will change between editor mode and preview mode. The editor mode shows the text as an editor with all control characters, the preview mode shows the text as it will be printed.
When in preview mode no message could be edited.

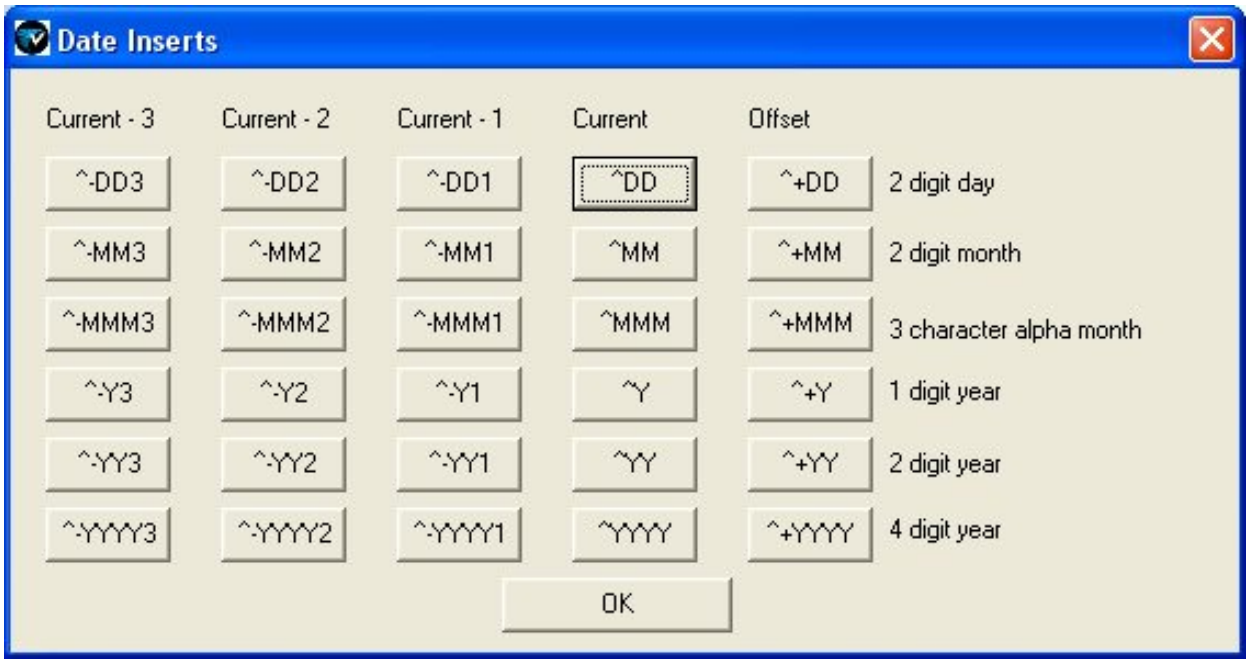


Figure 29. Date insert dialog.

Remote Data Inserts …

Selecting the option Remote Data Insert will active an extra dialog. By selecting one of the buttons this value will be added into the text-field the cursor was selected. When the cursor is not in a text-field no date can be inserted.

The available inserts depends on the amount of message blocks. When message blocks are used the maximum available Remote Data inserts is the maximum of Remote data set in general divided by the amount of message blocks. When sending the messages towards the printer(s), the message blocks are automatically filled with the correct corresponding Remote Data inserts.

When an insert is selected a new one could be selected. By pressing the OK button the dialog will go.

Within the text field the insert is placed as text like on the button. When using the big Editor/Preview button, the messages will change between editor mode and preview mode. The editor mode shows the text as an editor with all control characters, the preview mode shows the text as it will be printed.
When in preview mode no message could be edited.

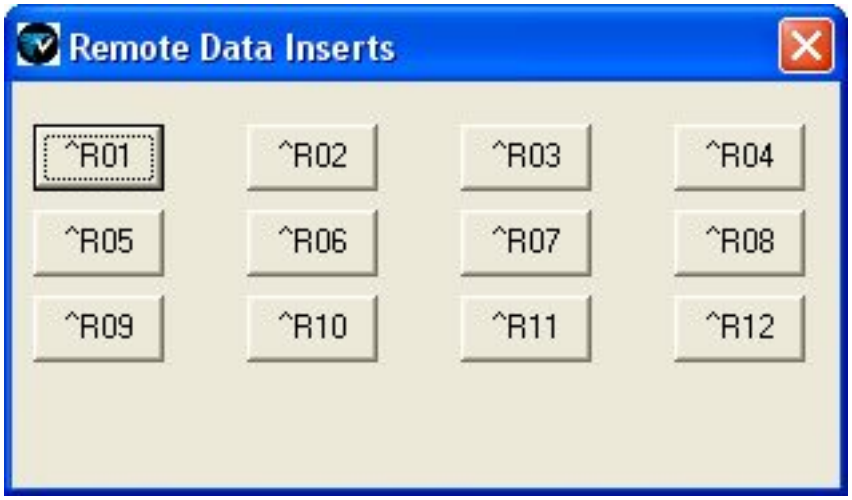


Figure 30. Remote Data Insert dialog.

Logos ...

Selecting the option Logos will active an extra dialog.

This dialog shows the logos that could be used within the message. The number correspond with the logo number given in the message.

It shows the ROM logo's as they are burned in the EPROM of the printers.

With RAM logos the bitmap (bmp) could be selected within the software. At the moment of download of the messages this bmp will be send over as well. By double-click on the logo box a file selection dialog pops up, where a logo could be selected.
This logo will then be displayed within the logo-box.
For deleting the logo from this dialog click with the Right-mouse-key on the logo-box.

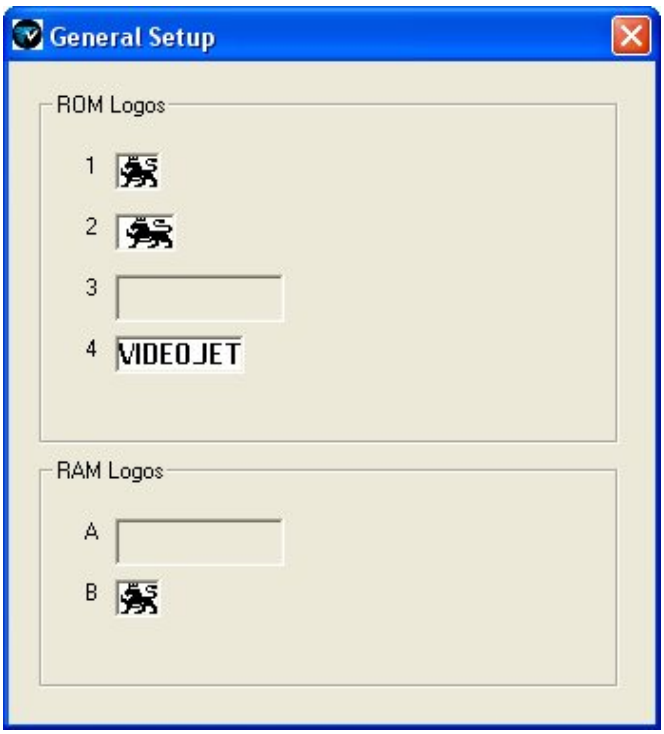


Figure 31. Logos Dialog.

Production

Before going into production, make sure that the messages are transferred towards the printer(s). This is done with the Download button on the screen. Downloading of messages can only be done when the software is out of production-mode. The big button says OFF (red).

When the download button becomes yellow, this means that a message has been changed but there was no transfer of messages towards the printer(s).

The button is also Yellow when the software starts and when there is a day roll-over.

With the download the RAM logos will be send over as well, when there are RAM logos selected.

The maximum of messages send to each printer depends on the setting in the general setup.

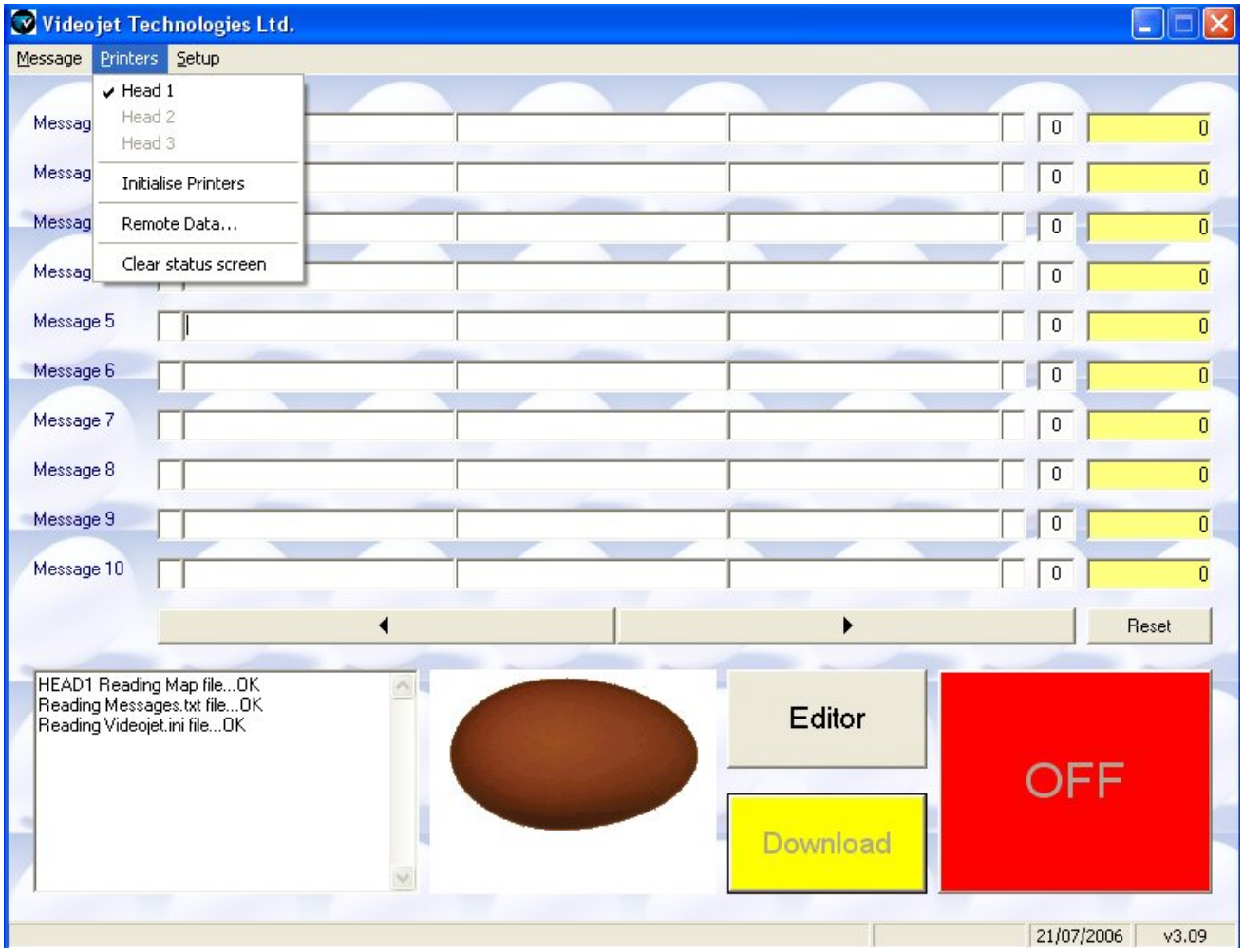


Figure 32. Main screen with the menu selection Prinetrs.

The Status window shows the progression of downloading the messages.

When messages are transferred towards the printer(s) the production could start. To start the software into Production-mode is by clicking on the red OFF button.

The button becomes green and the text will be ON. When the Staalkat machine starts to run the color of this button with changes every cycle from green to purple and back again. This shows that the software is acting on the signals from Staalkat and the printers. Also at the left bottom corner a text is shown that the software is in production mode (running).

To stop the production is by clicking on the big button again. The button becomes Red with the text OFF.

There are several options that can be set before going in production. These options can be found in the menu-bar under Printers.

- **Head 1** : When within the General settings the value of tracks is set to a number higher then 0 and the printer reacts by sending responses back towards the PC this option is activated. There is the option when going into production to deselect the printer for printing text on egg's. Normally this should be on, but for test purpose is could be switched off.

- **Head 2** : When within the General settings the value of tracks is set to a number higher then 1 and the printer reacts by sending responses back towards the PC this option is activated. There is the option when going into production to deselect the printer for printing text on egg's. Normally this should be on, but for test purpose is could be switched off.

- **Head 3** : When within the General settings the value of tracks is set to a number higher then 2 and the printer reacts by sending responses back towards the PC this option is activated. There is the option when going into production to deselect the printer for printing text on egg's. Normally this should be on, but for test purpose is could be switched off.

- **Initialize Printers** : The software tries to get communication with the printers and will then activate the corresponding Head options within the menu.

- **Remote Data…** : This will activate a Dialog that shows the data within the Remote Data variables. This data is data received from Staalkat and send towards the printer(s).

- **Clear Status screen** : The options clears the status screen at the bottom.

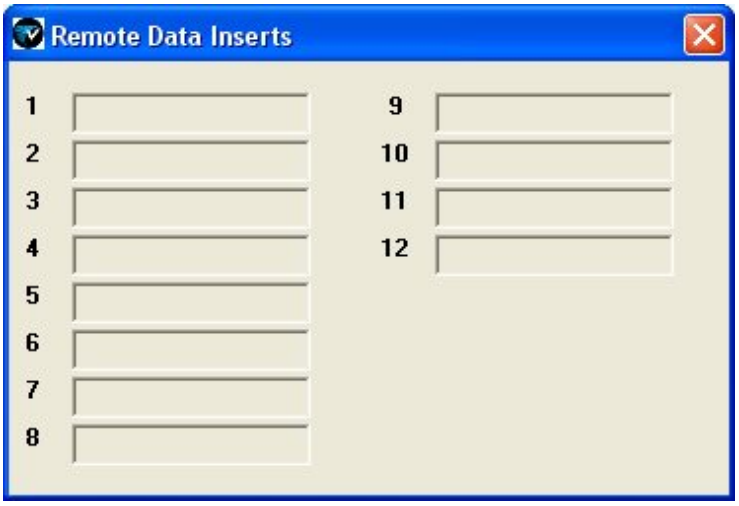


Figure 33. Remote Data Inserts data dialog.

Extra option

There is are extra options that shows the message as it will be printed onto the egg. When Remote data is received from Staalkat, this data is then also showed within this message on the egg.

By clicking onto the message number, the data from this message is shown on the egg within the software.

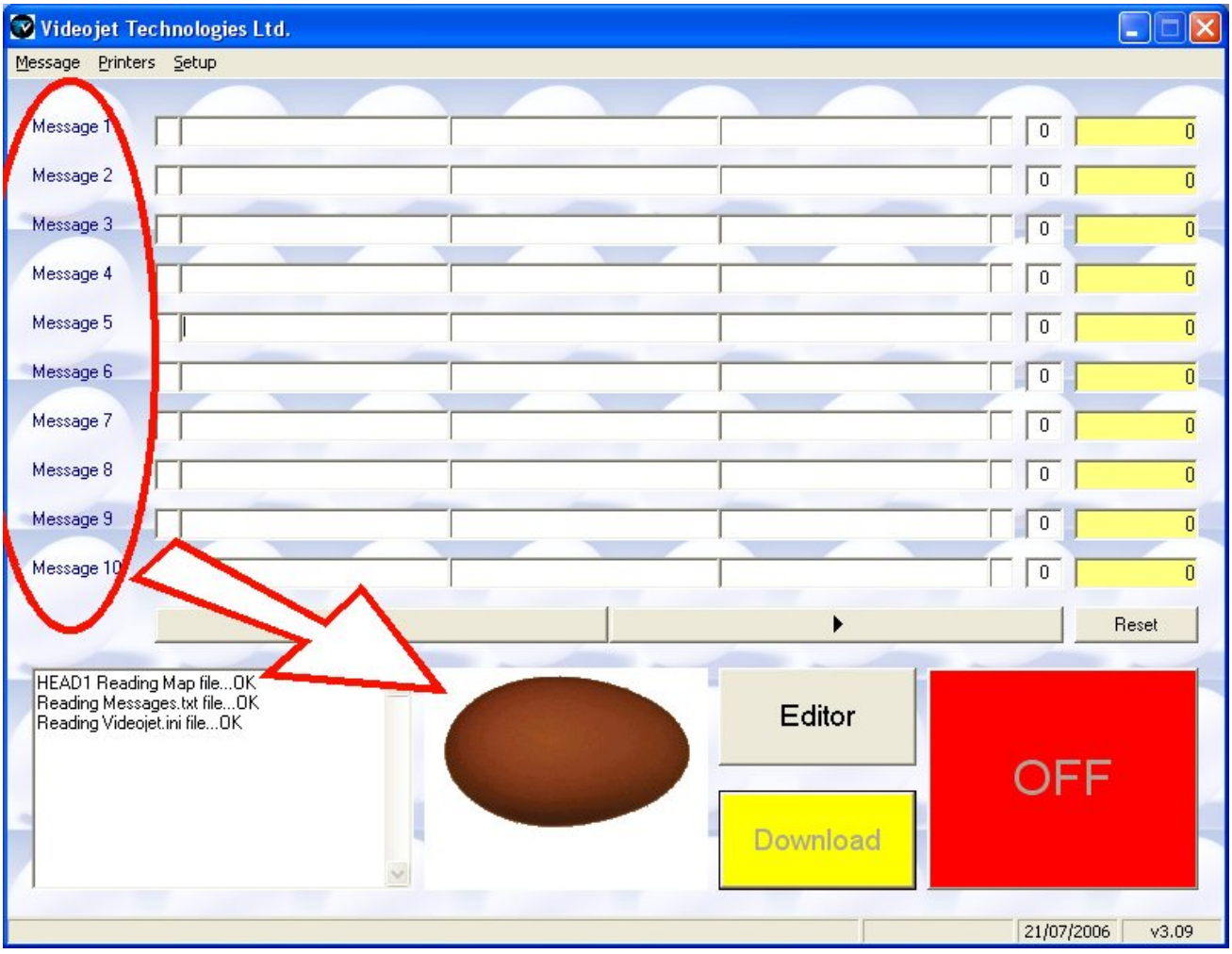


Figure 34. Main screen with the extra egg message option.

Appendix A: Printer Settings Worksheets

Printer Serial Number 1:	Date:	Initials:

Service Mode	
Viscosity set Point:	
High Voltage Adjust:	
Nozzle Drive:	
Service Password:	

System Setup Mode	
REMOTE MODE:	■ INSERT ☐ MESSAGE (check one)
Baud Rate:	38400 Baud
Message Selection:	E.S.I.
Inkt Low Alert:	ON

Printer Setup Mode		
Message Height:		
Message Width:		
Print Delay:		
Multi-stroke:	■ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (check one)	
Reverse Message:	☐ ON ☐ OFF (check one)	
Invert Message:	☐ ON ☐ OFF (check one)	
Reverse All Char:	☐ ON ☐ OFF (check one)	
Encoder:	☐ INT ■ EXT ☐ AUTO (check one)	
Line Speed:		Speed Compensation: ☐ ON ■ OFF (check one)
Detect Area:		Speed Compensation: ☐ ON ■ OFF (check one)
Reduction Factor:		Speed Compensation: ☐ ON ■ OFF (check one)

Printer Serial Number 2:	Date:	Initials:

Service Mode	
Viscosity set Point:	
High Voltage Adjust:	
Nozzle Drive:	
Service Password:	

System Setup Mode	
REMOTE MODE:	■ INSERT ☐ MESSAGE (check one)
Baud Rate:	38400 Baud
Message Selection:	E.S.I.
Inkt Low Alert:	ON

Printer Setup Mode		
Message Height:		
Message Width:		
Print Delay:		
Multi-stroke:	■ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (check one)	
Reverse Message:	☐ ON ☐ OFF (check one)	
Invert Message:	☐ ON ☐ OFF (check one)	
Reverse All Char:	☐ ON ☐ OFF (check one)	
Encoder:	☐ INT ■ EXT ☐ AUTO (check one)	
Line Speed:		Speed Compensation: ☐ ON ■ OFF (check one)
Detect Area:		Speed Compensation: ☐ ON ■ OFF (check one)
Reduction Factor:		Speed Compensation: ☐ ON ■ OFF (check one)

Printer Serial Number 3:	Date:	Initials:

Service Mode	
Viscosity set Point:	
High Voltage Adjust:	
Nozzle Drive:	
Service Password:	

System Setup Mode	
REMOTE MODE:	■ INSERT ☐ MESSAGE (check one)
Baud Rate:	38400 Baud
Message Selection:	E.S.I.
Inkt Low Alert:	ON

Printer Setup Mode		
Message Height:		
Message Width:		
Print Delay:		
Multi-stroke:	■ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (check one)	
Reverse Message:	☐ ON ☐ OFF (check one)	
Invert Message:	☐ ON ☐ OFF (check one)	
Reverse All Char:	☐ ON ☐ OFF (check one)	
Encoder:	☐ INT ■ EXT ☐ AUTO (check one)	
Line Speed:		Speed Compensation: ☐ ON ■ OFF (check one)
Detect Area:		Speed Compensation: ☐ ON ■ OFF (check one)
Reduction Factor:		Speed Compensation: ☐ ON ■ OFF (check one)

PC Settings (Videojet.ini) :	Date:	Initials:

GENERAL	
Setup :	
Service :	
LoopTime:	
Beacon On Time :	
EXTOUT2 Invert :	

COMMS	
STAALKAT :	
Head1 :	
Head2 :	
Head3 :	
Synch :	

STAALKAT	
Tracks :	
Eggs :	
Egg Offset :	
Header :	
Footer :	
RD Header :	
RD Length :	
RD Total :	

MESSAGE	
RD char :	
Insert Identifier :	
Max Messages:	
Max ROM Logos :	
Max RAM Logos :	
Message Blocks :	
Map File :	

Notes: