# RENA Direct Address Printer
# DA615

# Instruction Manual


Order No. R0615.0.980 State 12.99

# CONTENTS

Page

# Important Notes on Safety

PLEASE READ THESE INSTRUCTIONS CAREFULLY.

Keep them within easy reach for later use.

All direction and warning labels on instruments must be observed.

**Setting up the printer**

- When setting up the printer, ensure that it is positioned securely and is level. If it is allowed to tilt, roll away or drop, injuries may result.
- The printer must be protected from moisture

**Electrical safety**

- When connecting the printer to the power supply, observe the rated values for the power connection on the type plate.
- Check the voltage setting at the printer's power input module.
- For reasons of electrical safety, the power connection socket must be equipped with a grounded conductor contact.
- The printer has a double-pole fuse protection! In the event of fuse failure, electrical parts in the instrument may still be live.
- Run the power supply cable so that no-one can trip over it. Also ensure that nothing is placed upon the cable.
- If the printer remains unused over a longer period of time, disconnect it from the power supply. This ensures that no damage will be caused by voltage surges.
- Never open the printer. For reasons of electrical safety, it may be opened only by authorized service personnel.

**Operational safety**

- Never touch the internal parts of the printer while it is running !
- To avoid damaging the printer, use only spares that have been approved by the manufacturer.

**Cleaning the printer**

- Before cleaning, the printer must always be disconnected from the power supply.
- Use no liquid or aerosol cleaning agents. Cleaning is best done with a cloth dampened with water.

**Let your service partner check the printer !**

IN THE FOLLOWING CASES, DISCONNECT THE PRINTER FROM THE POWER SUPPLY !

- The power cable or power socket are damaged.
- Liquid has penetrated the printer.
- The printer was exposed to moisture.
- If the printer does not function as described in the operating instructions, or you can obtain no improvements with the aid of these instructions.
- The printer was dropped and/or the housing is damaged.
- If the printer shows clear signs of a defect.

**Spares**

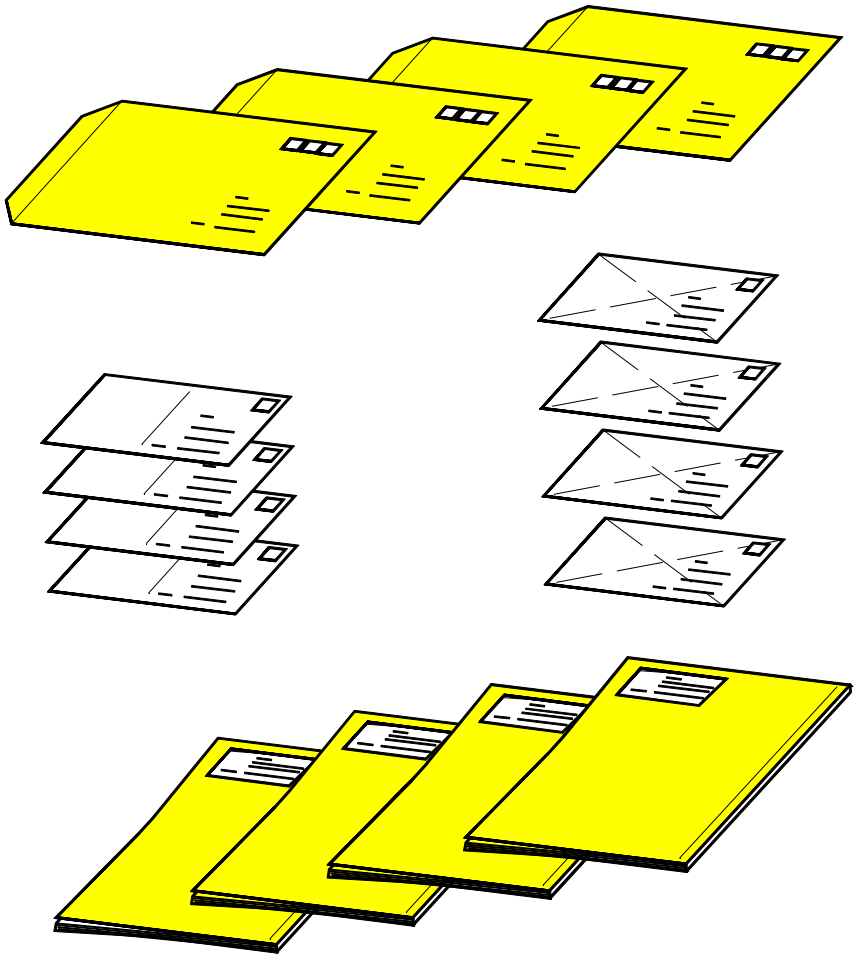
- In the event of repair, only original spares or those corresponding to the original parts should be used.

Consult your service partner about all queries relating to service and repair. This will ensure that your printer will operate perfectly at all times.

# 1. Introduction

## What can the DA615 address printer do?

The DA615 address printer is an ink-jet printer ensuring a high-quality printout. It prints addresses at the correct positions on media such as envelopes, cards, brochures, magazines and other documents up to 10 mm in thickness.

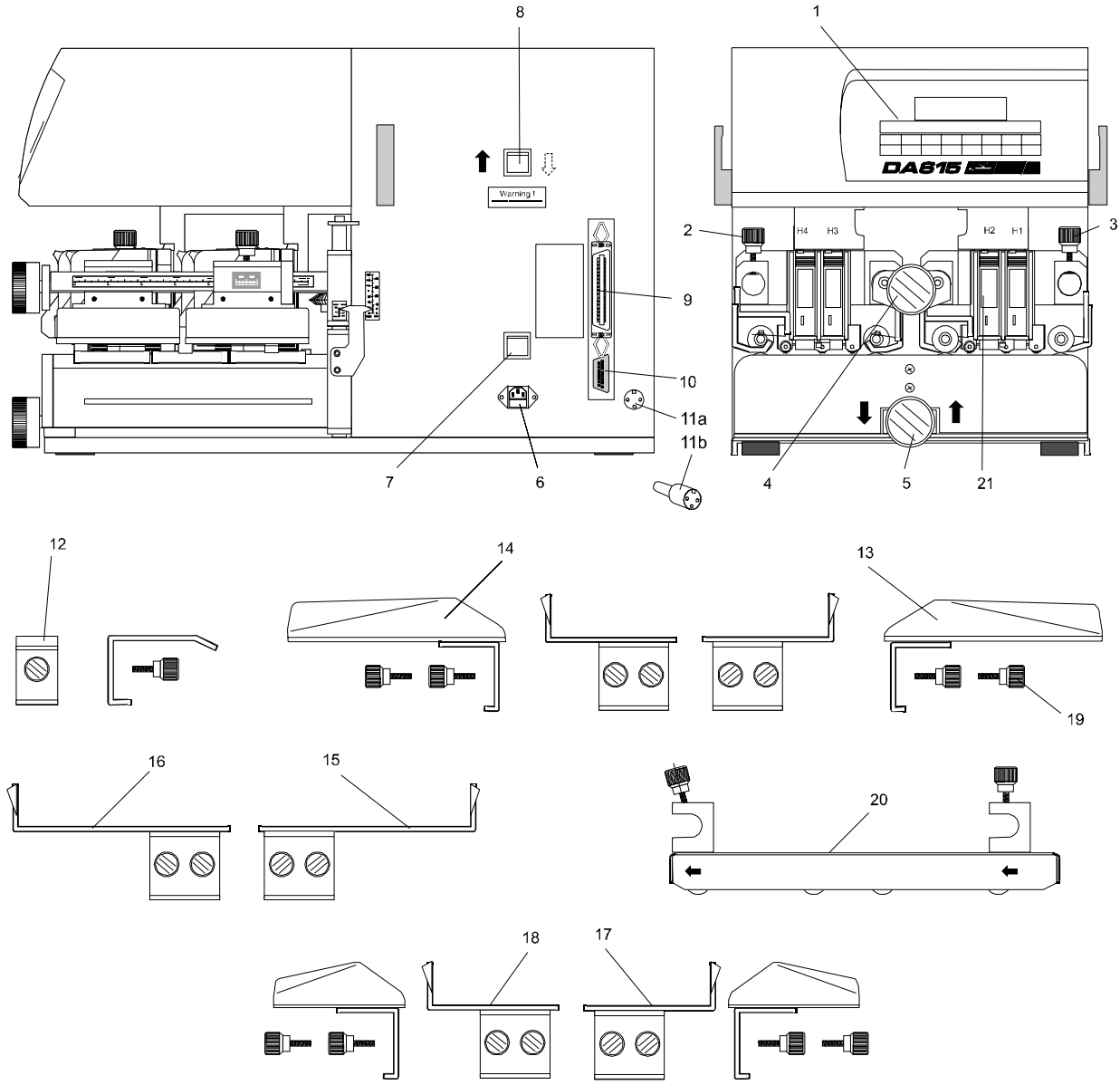


**A total of thirteen installed fonts lets you choose from a large selection of different typefaces.**

**The width of the print area is 600 mm.**

**Printing is performed with standard exchangeable ink cartridges.**

# Presenting the DA615 address printer




1. Control panel with display (see next page)
2. Locking/unlocking print units H4-H3
3. Locking/unlocking print units H2-H1
4. Print media thickness setting
5. Support setting
6. Power terminal
7. Power switch
8. Switch for changing media transport direction
9. Interface (parallel)
10. Interface (serial)

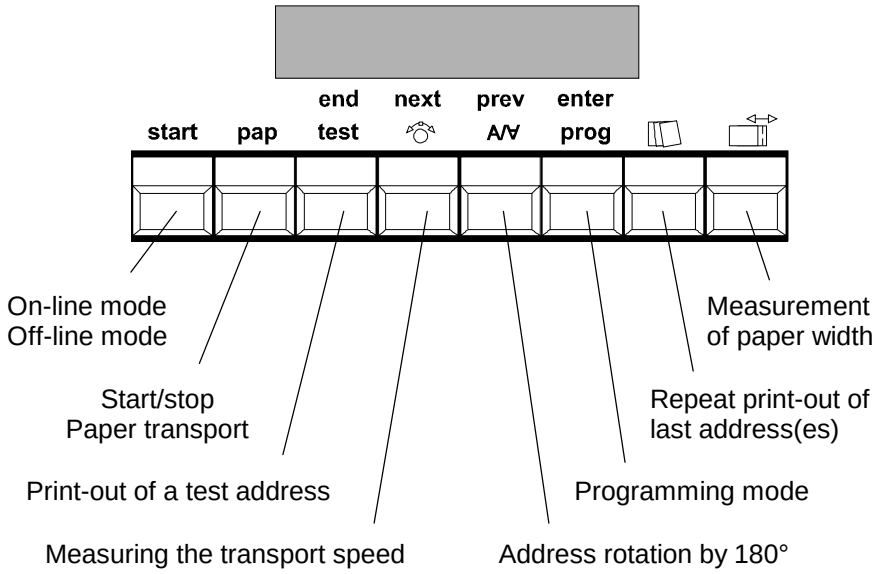
11a. Socket for control signal

11b. Connector for control signal (E0906.024)

12. Mid-support (R0615.0.098)
13. Guide bracket 1 (R0615.1.076)
14. Guide bracket 2 (R0615.1.077)
15. Wide guide bracket 3 (R0615.1.078)
16. Wide guide bracket 4 (R0615.1.079)
17. Short guide bracket 5 (R0615.1.080)
18. Short guide bracket 6 (R0615.1.081)
19. Knurled knob (K2913.029)
20. Paper guide (R0615.2.051)
21. Inkjet – print cartridges

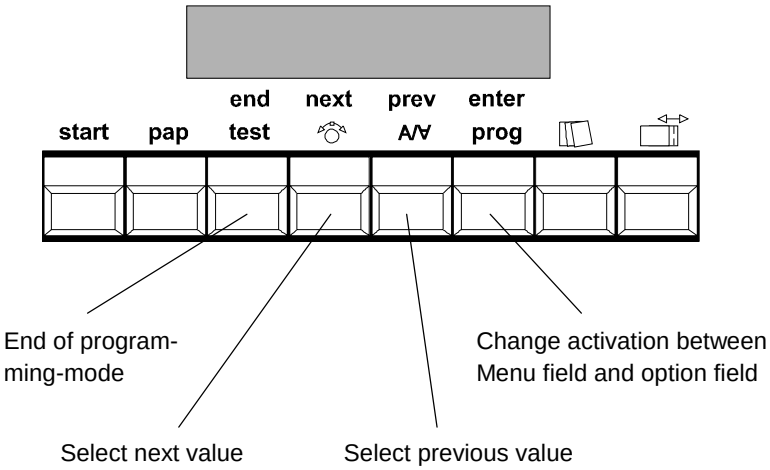
# Control panel

## In off-line mode




## In programming mode

In programming mode, menu settings are made on the printer. In this mode, the upper line of key descriptors applies (END, NEXT, PREV, ENTER)




## in combination with the power switch

| Key combination | Meaning |
|---|---|
| Power on + Prog | Reset to works default |
| Power on + Start | HexDump |

# Brief guide

The table shown below lists the operating steps in correct sequence. It allows you to perform a test print quickly without any prior knowledge. You can find the detailed description of the various operating steps on the pages shown in the right-hand column.

| **Operating step** described on | Page |
|---|---|
| Connecting the printer | 2.1 |
| Switching the printer on | 2.1 |
| Adjusting the height of the supports | 3.1 |
| Setting the print-head spacing | 3.1 |
| Transport direction | 3.2 |
| Adjusting the lateral guides | 3.4 |
| Paper transport without address printing | 3.4 |
| Positioning the media | 3.5 |
| Positioning the print areas | 3.5 |
| Print test | 3.9; 4.3 |

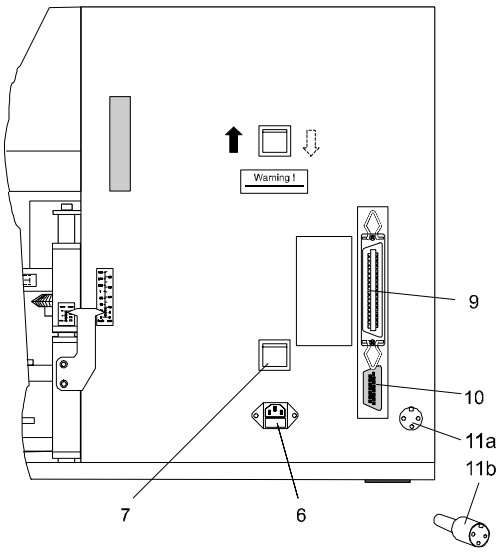
# 1. Introduction 1.1

# 2. Operation

## Connecting the printer

### Interface cable

Plug the interface cable into terminal (9) on the right-hand side of the printer for a parallel interface connection or into terminal (10) for a serial interface connection. Then lock it and connect the cable to your PC.




### Connection to media feed unit

Connect the cable of the media feed unit to the connector supplied (11b). Connect the cable to the control signal terminal (11a).

### Power cable

**CAUTION!**
The DA615 is an instrument of
Protection Class 1

The printer may be operated only from grounded power outlets !
Plug the power cable into the right-hand side of the printer (6).

## Switching the printer on

Switch the printer on via the power switch (7).

The display in the control panel (10) shows the following brief message - for initialization

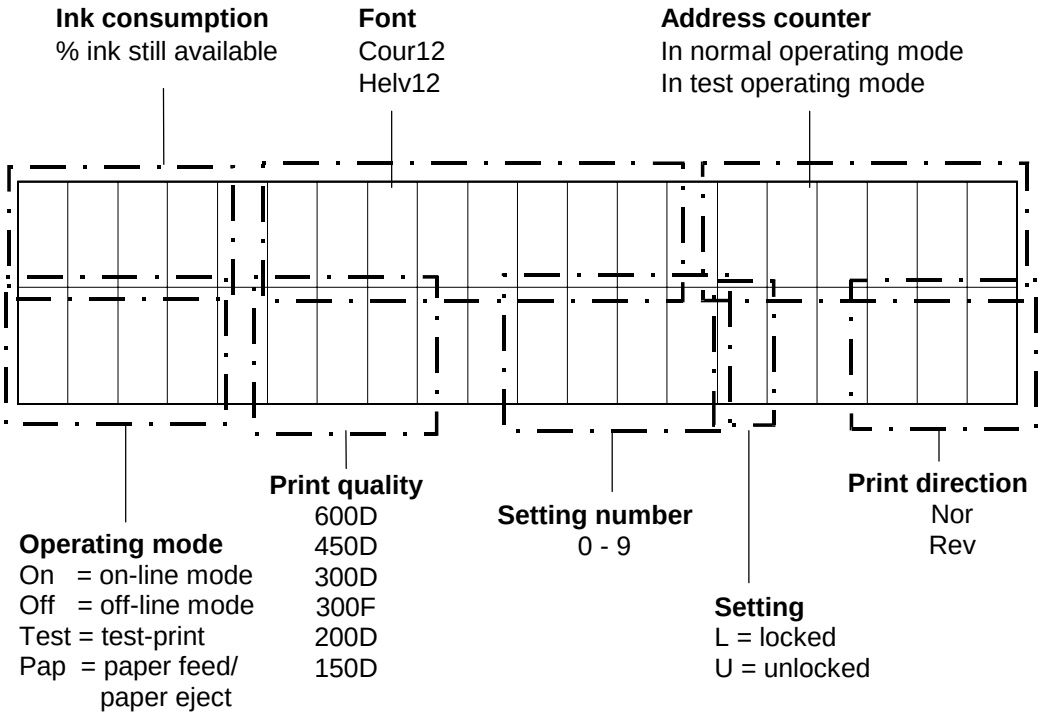
| | | |
|---|---|---|
| DA615 | | Inkjet |
| | Initialization | |

When the printer is in on-line mode, the display shown on the right appears (for example).

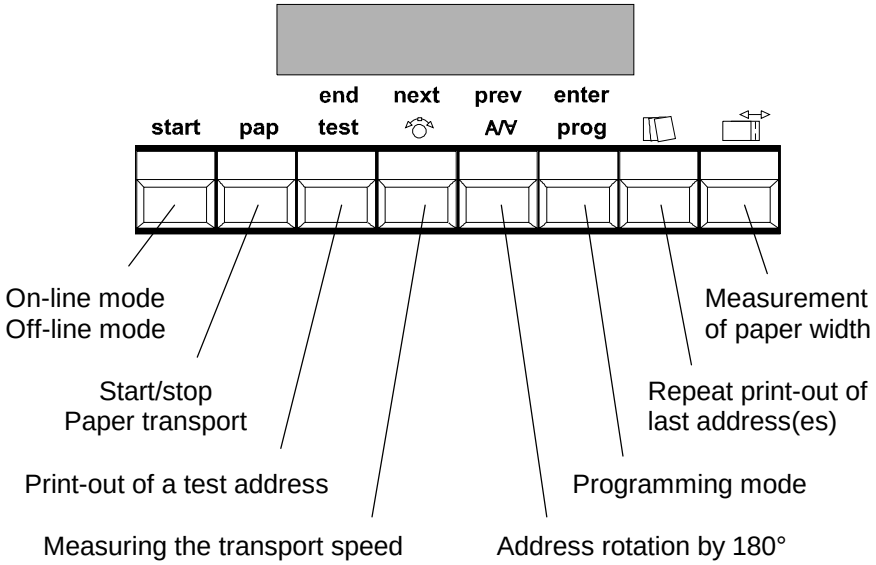
| | | | |
|---|---|---|---|
| 100% | Cour12 | | 000000 |
| On | FAST | Set1U | Nor |

The messages are explained on the next page.

## What does the display show ?



## What do the keys mean ?




☞ The four middle keys have a dual meaning, depending on the operating mode!

**"START" key** The "Start" key is used to switch between on-line and off-line modes.

**"PAP" key** The "Pap" key is used to start or stop the transport unit.

**"TEST" key** The "Test" key is used to print the test address onto all sheets of paper which are fed in.
If you press the “Test” key a second time, the print test is terminated.

**"PROG" key** The "Prog" key gets you into programming mode.

**key** This key allows you to repeat the print out of the last (up to 20) addresses.

**key** This key allows you to measure the width of an inserted sheet of paper.

"START"+"PAP" **keys** — By pressing these two keys simultaneously, you can reset the address counter from its currently displayed value to "0".

"START"+"TEST" **keys** — By pressing these two keys simultaneously, you can reset the test address counter from its currently displayed value to "0".

"START"+ **keys** — When these two keys are pressed simultaneously, the nozzles are cleaned.

NOTE ! Higher ink consumption !!

## When are the keys active?

With the exception of the "START" key, the keys are active **only** in off-line operating mode.

The "START" key allows you to switch between on-line and off-line operating modes. To check the current operating mode, simply consult the display.

### Off-line mode

The second line of the display reads "Off".

| | | | |
|---|---|---|---|
| 100% | Cour12 | | 000000 |
| Off | FAST | Set1U | Nor |

In this mode you can change the settings via the keyboard.

Pressing the "START" key returns you to on-line mode.

### On-line mode

The second line of the display reads "On".

| | | | |
|---|---|---|---|
| 100% | Cour12 | | 000000 |
| On | FAST | Set1U | Nor |

In this mode you can start the printer from your computer via instruction sequences.

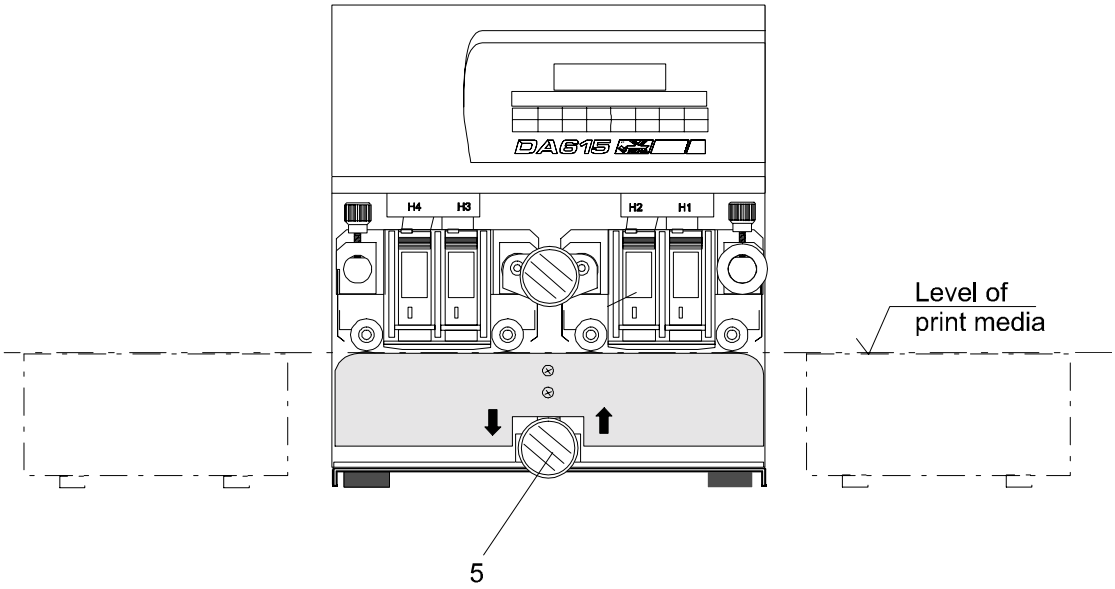
# 2. Operation 2.1

# 3. Addressing media

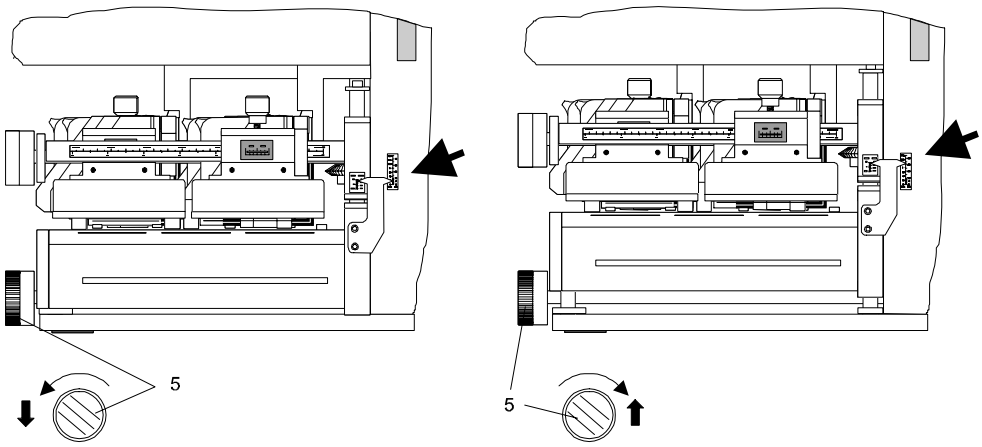
## Adjusting the support height

The DA615 operates with single-sheet feed and uses a band for transporting the media.

The DA615 support can be raised or lowered by up to 43 mm in order to adjust its level to adjacent equipment. To do this, turn the rotary knob (5) in the direction of the arrow (see diagram below).




The set distance can be read off from the right-hand scale (arrow).



# Setting the print-head spacing

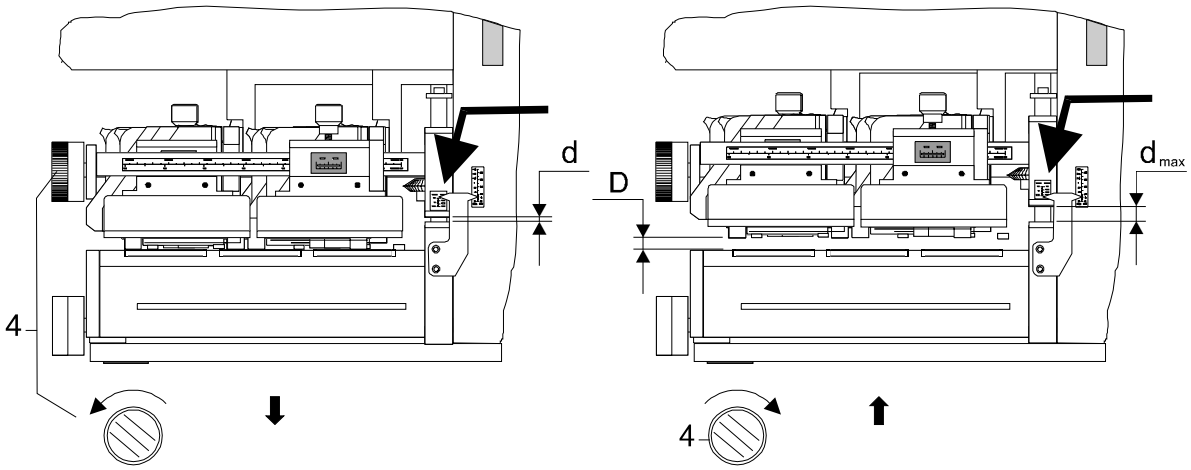
When printing media up to 1 mm in thickness, you can work with the smallest spacing between print-head and contact plate. Turn the rotary button (4) in the direction of the arrow as far as the left stop (see left diagram on the next page).

If the print is smudged or if you are using thick media such as magazines, the spacing must be increased.

Turn the rotary knob (4) clockwise until the medium (up to 10 mm) fits into the gap (d).

Place two thin (< 1 mm thick) or one thick (> 1 mm thick) media between *all four* pairs of contact bars and the roller (gap D). Turn the rotary knob to the left again until the medium can be pulled out against a slight resistance.

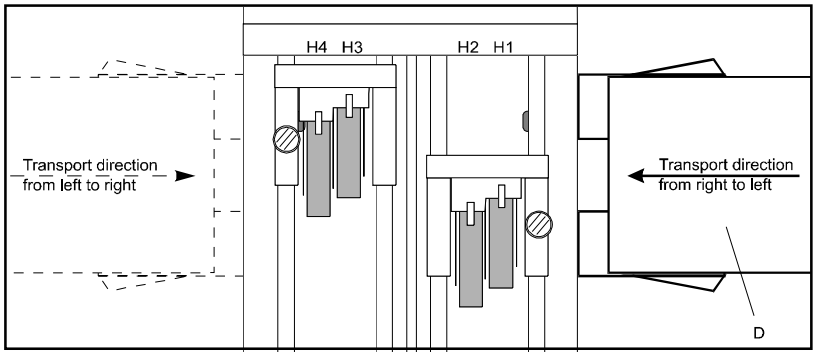
The set spacing can be read off the left-hand scale (arrow).




# Transport direction

The transport direction from *right to left* is set at the works as the default option.

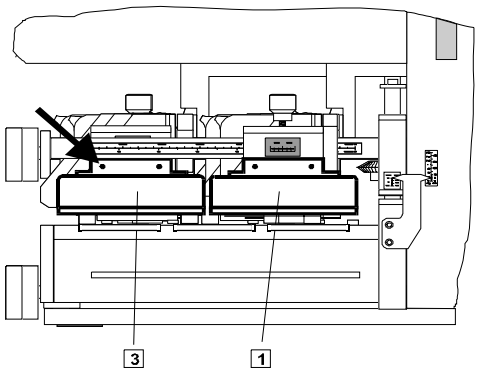
The mounts of the print cartridges are numbered through from right to left as H1 to H4 following the sequence in which the medium (D) reaches the four print cartridges (see following diagram). When the media is fed in the opposite transport direction, it first reaches print-head H4 (see broken line in the diagram below).

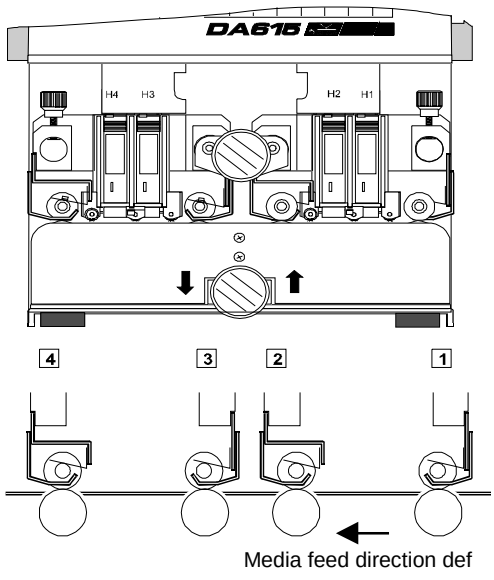



If you need to use the opposite transport direction, you must first replace the hold-down sets. To do this, refer to the following page and to the first and third sections of the variant list.

Hold-down set 4 – 1 must be replaced completely by set 7 – 10 (Accessories!). The order numbers for the hold-down units are given in the variant list.

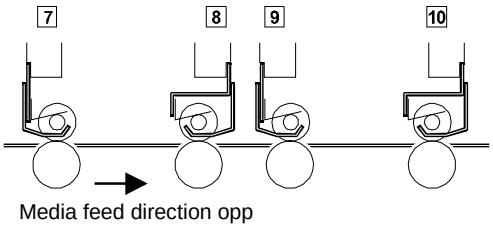
**Switch the printer off !** Remove the two hexagon-socket screws (see arrow in left diagram) of each hold-down unit and replace them by the corresponding variants (see table).



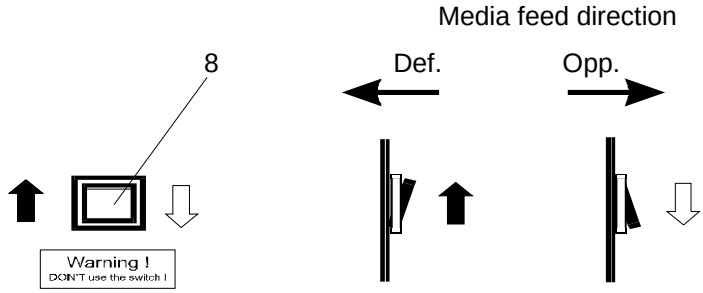

**Ensure correct assignment of the hold-down units to the print-head mounts!**

| Print-head mount | Media feed direction Def. | Opp. |
|---|---|---|
| H1 | 1 | 10 |
| H2 | 2 | 9 |
| H3 | 3 | 8 |
| H4 | 4 | 7 |




## Check these points before switching the printer on !

- Check to ensure that the hold-down units of print-head mounts H4/H3 and H2/H1 are all aligned in the feed direction.
- When changing feed directions, activate switch (8) – ***after*** replacing the hold-down units. The white arrow now applies. Compare the switch position with the right-hand diagram.

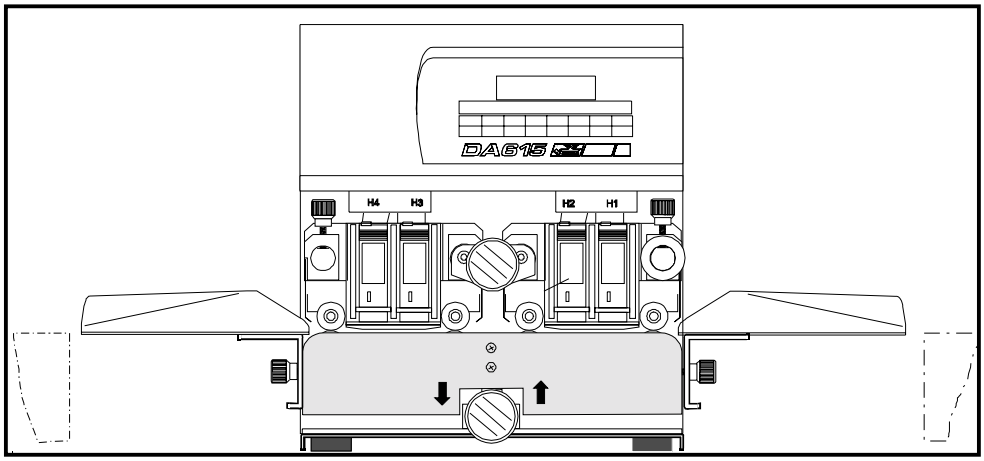



The switch position is only effective **after** the printer has been switched on ! Any changes made via the menu or via control sequences are effective only as long as the printer is switched on!

The direction can also be changed in programming mode or via control sequences. Read the interface description relating to this point.

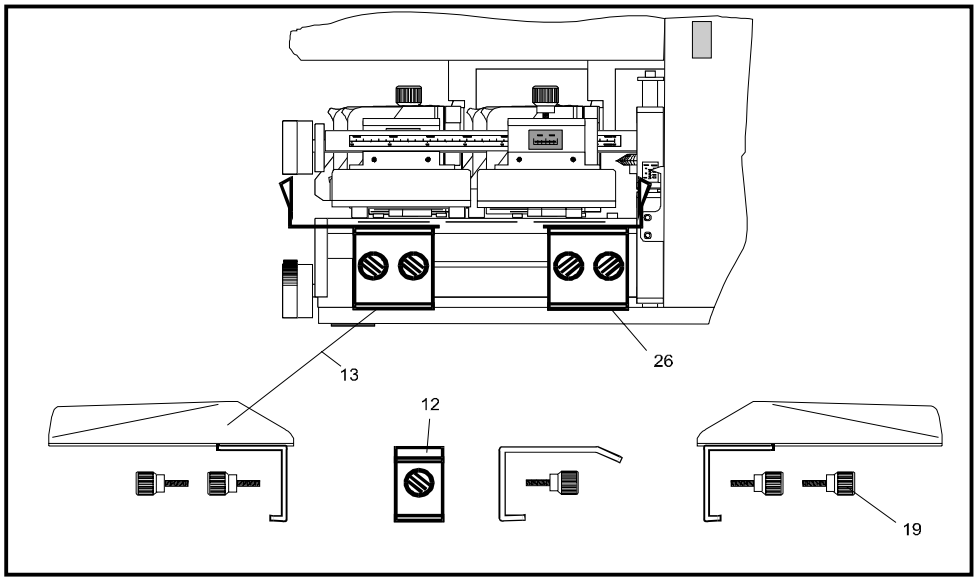
# Lateral guides

Two lateral guides are fitted on each side of the printer (media-feed and eject sides). The following figure illustrates their positions. The broken lines indicate appliances connected before and after the printer.




The chapter entitled “Accessories” gives an overview of the guide brackets which can be ordered to suit your individual format sizes if those supplied with the printer are not sufficient.

When using thick media, set the paper support (12) between the lateral guides as required.




**Paper feed without address printing**

– Place a sheet onto the feed side

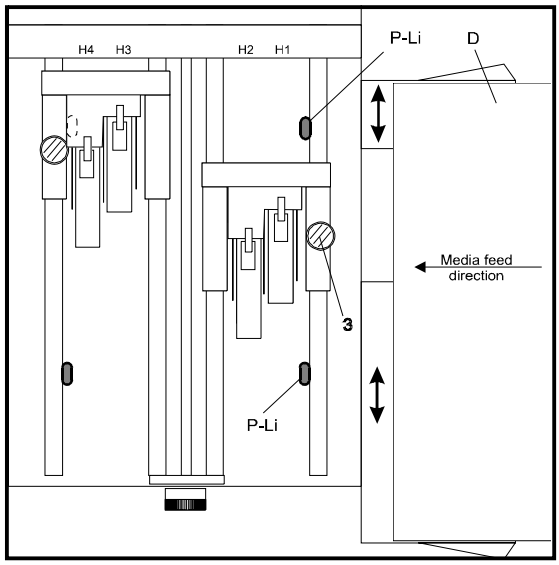
Press the "PAP" key: The inserted sheet is pulled in, transported through the printer and ejected.

☞ **Never touch the internal parts of the printer while it is running !**

# Positioning the media

Each feed side is equipped with two paper light barriers (P-Li) for measuring the print position (see diagram below).

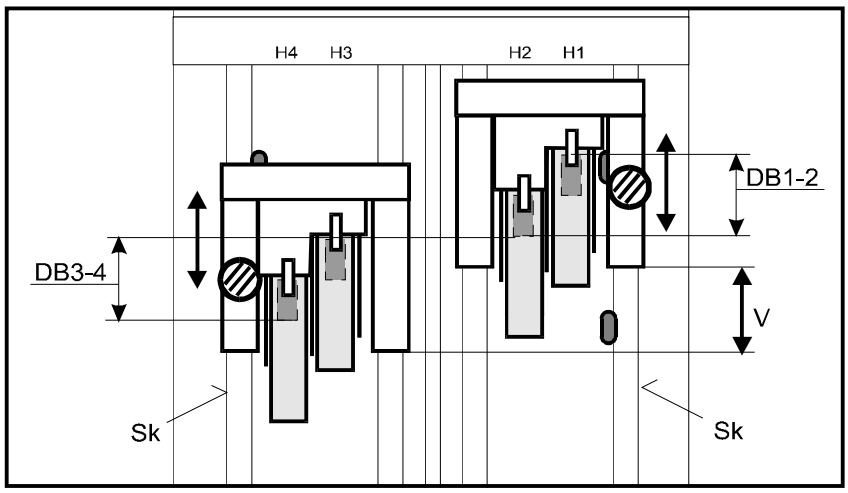
> The medium must always completely cover one of the two paper light barriers in its transport path!




# Positioning print areas

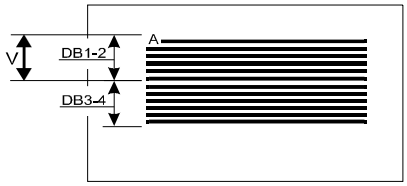
Each of the two print-head pairs H1-H2 and H3-H4 has its own print area (DB1-2 and DB3-4) and can be separately adjusted with respect to the other one. Both print-head pairs have an adjustment scale (Sk in the diagram below).

To obtain a 12-line print-out with equal line spacing (cf. left diagram on the next page), you must shift the print-head pairs with respect to each other by an offset (V) of 25.4 mm / 1 inch as shown in the diagram below.

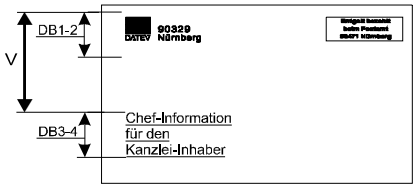


If you want to use the two print areas separately (cf. right-hand diagram below), you must make sure that a specific *minimum* offset (V) exists between the print-head pairs in order to prevent the contact rollers smudging the ink or any overlap of the print formats.

**12-line print format**




**Two individual print formats**

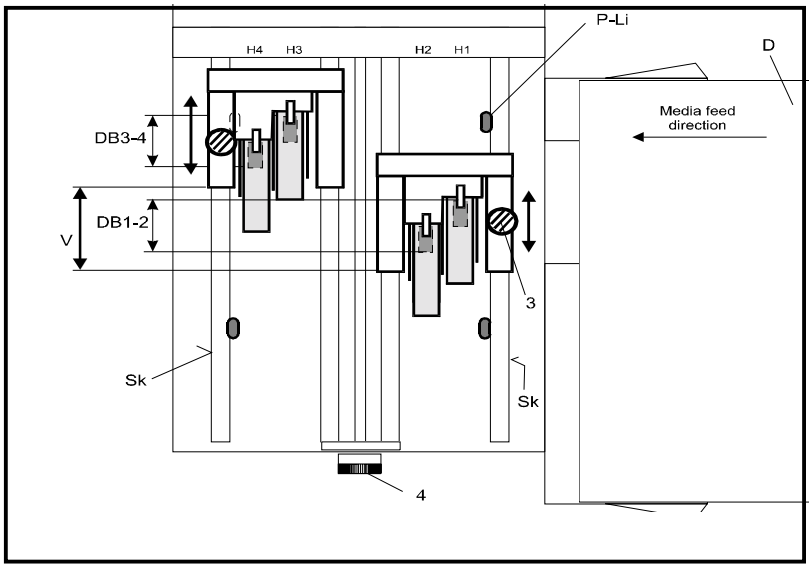



There are several ways of adjusting the print-head pairs. The following table shows how each offset affects the **distance between the print formats**.

| Arrangement of print-head pairs | *Minimum* offset V | Position of print formats | Distance (a) between print formats |
|---|---|---|---|
| H4-H3<br>H2-H1 | 38 mm / 1½ inch | DB3-4<br>a<br>DB1-2 | 12.7 mm / ½ inch |
| H2-H1<br>H4-H3 | 25.4 mm / 1 inch | DB1-2<br>DB3-4 | 0 mm / inch (= 12 line print) |
| H2-H1<br>H4-H3 | 64 mm / 2½ inch | DB1-2<br>a<br>DB3-4 | 38 mm / 1½ inch |
| At any scale end-positions | 175 mm / 7 inch | DB3-4<br>a<br>DB1-2 | 150 mm / 6 inch |

To shift the print-head pairs, loosen fixing screw (3).

You may have to use rotary knob (4) to reduce the pressure of the contact bars on the transport rollers (cf. page 3.2).



# Pinwheels

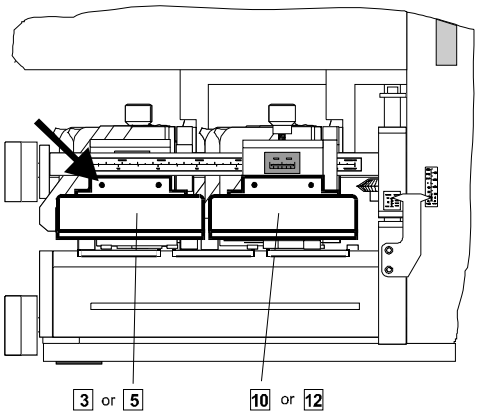
To avoid smudging of ink by the contact rollers, simply replace the hold-down units with contact rollers positioned immediately after the print-heads by equivalent ones with pinwheels.

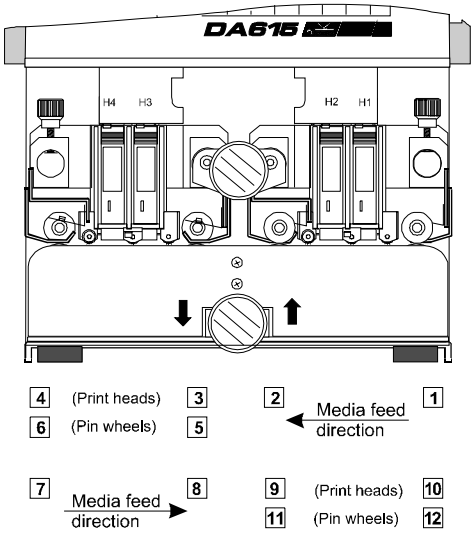
To do so, replace hold-down set 3 – 4 by set 5 – 6 (Accessories!). The order numbers of these hold-down units are given in the variant list.

If the printer is set for the opposite transport direction, hold-down set 9 – 10 must be replaced by set 11 – 12 (Accessories!).

To do this, refer to the second and fourth sections of the variant list.

**Switch the printer off !** Remove the two hexagon-socket screws (see arrow in left diagram) of each hold-down unit.

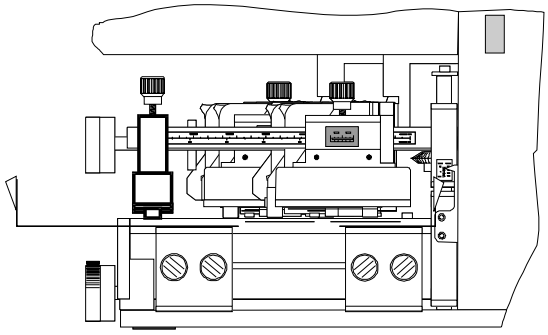


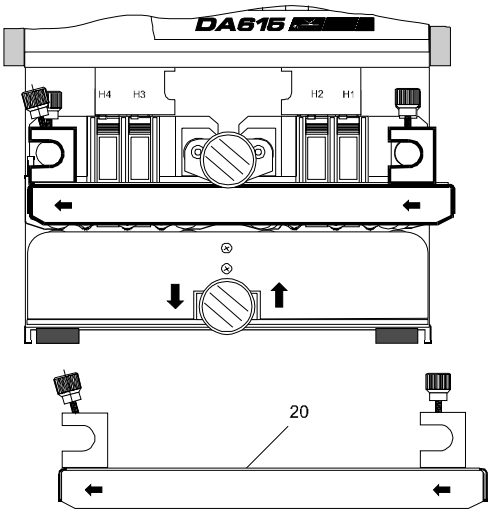




# Paper guide

If you are using large formats with small print areas, adjust the paper guide (20) to avoid a smudged print-out.

Note that the direction of the arrow must correspond to the direction set for the medium feed.





# Adjusting the print position

Before inserting the medium, you must decide how you wish to position the address on your medium and how this can be done within the print area of the printer.

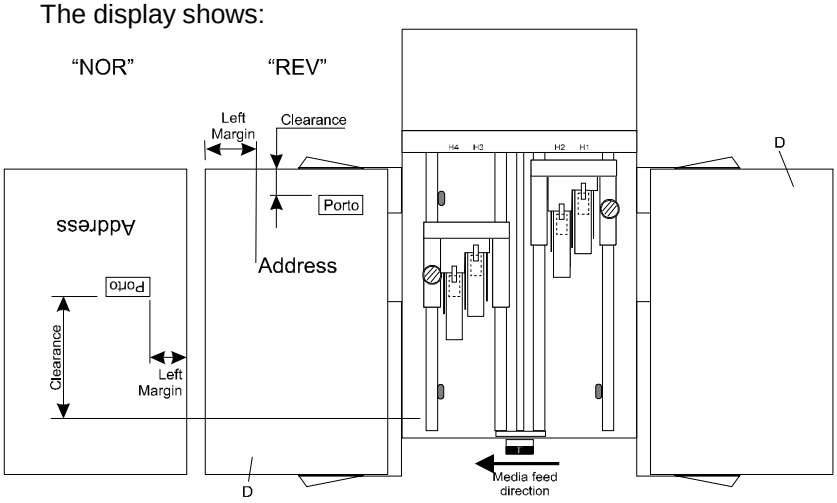
## Address-block rotation

The direction of printing depends on the size of your print area. If the cartridge cannot reach the desired upper margin, then the address block must be rotated by 180° together with its left margin.

– You can rotate the address block in programming mode (see Sect. 5) in the "ORIENTATION" menu by selecting between “Nor“ and “Rev“. The selected position can be read from the display.

The address block can contain up to 12 lines.

The display shows:




## Left margin

The left margin is the spacing between the print area edge and the first printed character, when the address block direction “REV“ and the media transport direction “Def“ are set.

The default setting for the margin is 0 mm.

– If you wish to set a different value, you may select a margin of 0-304 mm in the "Left Margin" menu in programming mode (see Sect. 5).

## Clearance

The clearance is determined by the position of cartridges H1/H2 or H3/H4.

To be quite sure, check your print position settings by performing a **print test** (see next page).

## Print test

- Place a sheet onto the feed side.
- Press the “TEST” key. The sheet is pulled in, the test address is printed out and the sheet is ejected.

  Assuming that the test shows the print-out to be correctly positioned, press the “START” key to return to on-line status.

**Never touch the internal parts of the printer while it is running !**

# 3. Addressing media 3.1

# 4. Printing

## Print cartridge

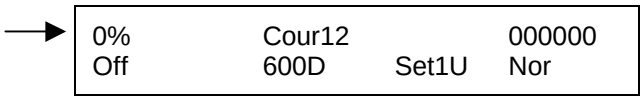
Printing is performed with a standard print cartridge. When the ink is used up, the cartridge must be replaced.

**Which cartridges to use**

Inkjet HP 51645A

**When should the cartridge be replaced ?**

When the display (see arrow) reads 0%




the following message appears

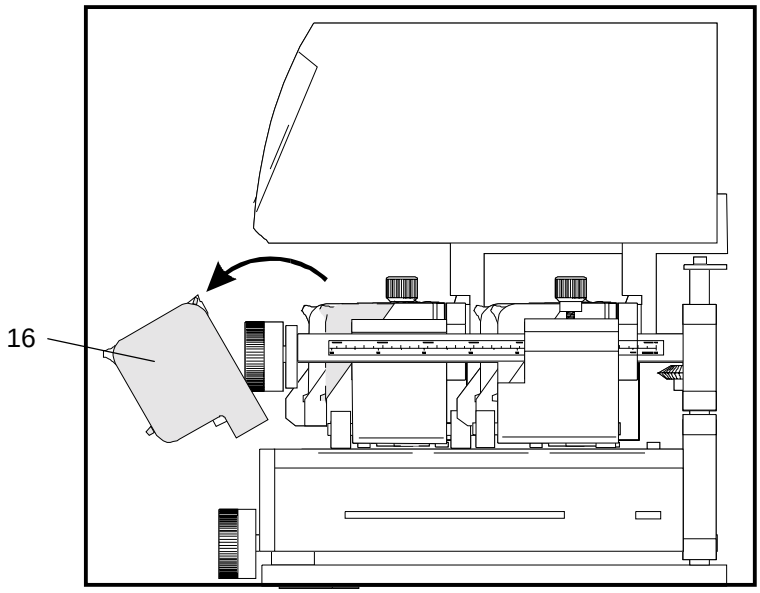

and printing is interrupted.

The empty cartridge can be identified by its color code.

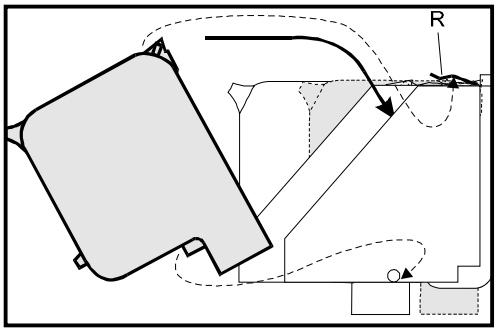
The following page describes how to replace the cartridge and to reset the ink counter.

## Replacing the cartridge and resetting the ink counter

- Press the "START" key to go into off-line mode.
- Remove one, some or all of the cartridges (16) in sequence in the direction of the arrow.




- When inserting the new cartridges, make sure that they click audibly into place.




- Observe the directions on the new cartridge packet.
- Press the “PROG“ key.
- Press the “PREV“ key to get to the “HEAD RESET“ menu.
- Use the “PREV“ or “NEXT“ keys to select the print-head which should be reset.
- Press the “ENTER“ key.
- The counter for the selected print-head is reset to 100%.
- Return to on-line mode by pressing the "START" key.

☞ The ink counter display applies to the lowest value of all the HP 51645A cartridges !

### Cleaning the ink nozzles

The ink nozzles are cleaned:

- automatically when the printer is switched on
- by pressing the “START +  “ keys simultaneously.

### Print test

Press the “TEST” key. A sheet is pulled in and printed with a test address. The sheet is then transported further and the next sheet is pulled in (if other sheets are waiting on the feed plate).

☞ **Never touch the internal parts of the printer while it is running!**

## Counting addresses

Every print operation is counted after the paper has been ejected. The number of print operations can be seen in the right top of the display. The printer can count addresses in two different and independent ways.

### Counting test addresses

A count of the test addresses represents the number of *test* print operations performed by the printer after the paper is ejected. To perform this count, press the “TEST” key when the printer is in off-line mode.
If you switch to on-line by pressing the “START” key, the count will disappear from the display but will remain stored in the printer.

If you return to off-line mode by pressing the "START" key again and carry out more test prints, the stored counter number reappears in the display and counting is continued.

By simultaneously pressing the "PAP" and "TEST" keys, you can reset the currently displayed counter number to “0”.

### Counting received addresses

An address count represents the number of data sets *received* by the computer after the paper is ejected.

This counting takes place when the printer is on-line. The counted number remains visible in the display until you press the "TEST" key in off-line mode. Only when you change back to on-line mode does the counted number of the received data-print operations reappear in the display.
If you return to data transfer with printing, the counting is continued.

By simultaneously pressing the "START" and "PAP" keys, you can reset the currently displayed counter number to “0”.

☞ ***All*** address counters are reset when the printer is switched off!

# 4. Printing 4.1

# 5. Printer functions

## Programming mode

The printer is delivered with its menus set to default values at the works.

Should you wish to change a font quality or type, for example, you must go into programming mode.

### What is programming mode for?

Programming mode is used to set specific parameters manually via the control panel.

The "Menu overview" section lists the available menu fields and their associated options.

The parameters can be changed either by software instructions or by making new settings in programming mode.

### Getting to programming mode

Change over to off-line mode by pressing the "START" key.

Press the "PROG" key.

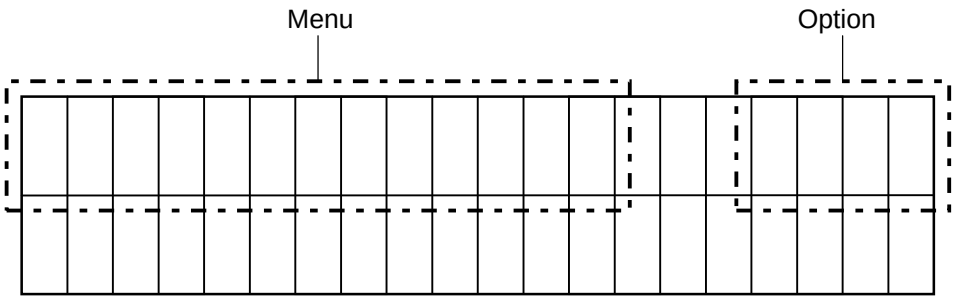
The following display briefly appears:

| DA615 Inkjet<br>Programming mode |
|---|

The printer is in programming mode when the following display appears:

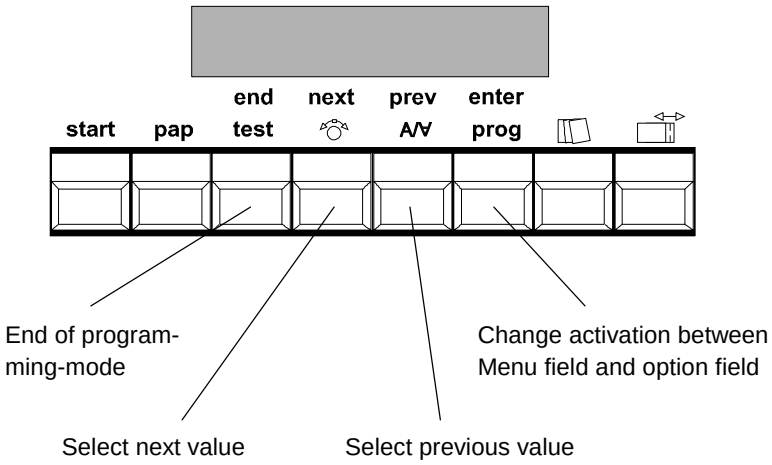
| (Menu field) blinking (Option field) |
|---|

## What does the display show in programming mode ?




## The key functions in programming mode

In programming mode, the top line of the key lettering applies (END, NEXT, PREV, ENTER).




**"ENTER" key**

This key allows you to change over between displaying the menu field and the option field. The currently active field blinks. The last status set is always stored.

**"NEXT" key**

This key allows you to move to the next possible contents of the active field.

**"PREV" key**

This key allows you to move to the previous contents in the active field.

**"END" key**

This key allows you to leave programming mode and return to normal mode.

# Menu overview

| MENU | OPTION | | | | |
|---|---|---|---|---|---|
| **SETTING** | No 0 <u>No 1</u> ... No 9 | | | | |
| **FONT** | <u>Cour12</u> Cour12bo Cour12it Helv07 Helv10 Helv12 Helv12bo Helv12it Helv13 LetGot12 TmsRm12 Bru12 OCR-A | | | | |
| **PRINT QUALITY** | 450D <u>600D</u> 300D 300F 150D 200D | | | | |
| **LEFT MARGIN** | <u>0</u> ... 304 [mm] <u>0</u> ... 11.9 [inch] | | | | |
| **TOP MARGIN** | <u>0</u> ... 50 [mm] <u>0</u> ... 1.96 [inch] | | | | |
| **TYPE OF BARC.** | off | <u>zip</u> | bpo4 kix cana | 2/5i coda co39 c128 | ean[1]) |
| BARC. OPTIONS | | <u>off</u> zip4 dpbc | | | |
| BARC. POSITION | | <u>top</u> bot | | | |
| SMALL WIDTH (dots) | | | | 1 ... <u>6</u> ... 99 | |
| LARGE WIDTH (dots) | | | | 1 ... <u>15</u> ... 99 | |
| BARCODE HEIGHT (dots) | | | | 1 ... <u>50</u> ... 999 | |
| **CHAR. SPACING** | <u>0</u> 1 2 ... 89 90 | | | | |
| **CHAR. HEIGHT** | <u>1x</u> 2x 3x 4x 5x 6x | | | | |
| **CHAR. WIDTH** | <u>1x</u> 2x 3x 4x 5x 6x | | | | |
| **LINE SPACING** | 1 2 ... <u>6</u> ... 10 | | | | |
| **ORIENTATION** | <u>REV</u> NOR | | | | |
| **PAPER SIZE** | USER | <u>off</u> EXEC LETT LEGA A4 A5 MONA C10 INTD C5 INSD C6 A6 CRD1 CRD2 HAGA B5 | | | |
| PAP. LENGTH [mm]<br>Maximum values [inch] | 762<br>30.0 | | | | |
| **CHARACTER SET** | USA7 UK7 Fra7 Ger7 Ita7 Spa7 Den7 Nor7 Swe7 SwN7 Por7 <u>PC8</u> Rom8 P850 ECMA P8DN ICEL P852 P860 | | | | |
| **TRANSP. DIRECT.** | <u>def</u> opp **NOTE !** Conversion required see Page 6 ! | | | | |
| **HEAD12 CORRECT.** | -24 -23 -22 -21 ...-2 -1 <u>0</u> 1 2... 21 22 23 24 | | | | |
| **HEAD34 CORRECT.** | -24 -23 -22 -21 ...-2 -1 <u>0</u> 1 2... 21 22 23 24 | | | | |
| **FIRST UNIT** | <u>1+2</u> 3+4 | | | | |
| **DISTANCE HD2_3** | -48 -47 -46 -45 ...-2 -1 <u>0</u> 1 2... 45 46 47 48 | | | | |
| **PAPER SPEED**<br>mm/s // inch/s | USER | MAX<br>1439 // 56.6 | FAST<br>1207 // 47.5 | MED<br>889 // 35.0 | SLOW<br>688 // 27.0 | <u>MIN</u><br>370 // 14.5 |
| PAP SPEED [Hz] | 1 - 6800 | | | | | |
| **PAPER SENSOR** | <u>on</u> off | | | | | |
| **SETTING LOCKED** | <u>no</u> yes | | | | | |

[1]) EAN barcode for European printers / UPC barcode for US printers

| MENU | OPTION |
|---|---|
| **SPECIAL FUNCT.** | |
| BIT8 SET TO | BIT8 FIX0 FIX1 |
| AUTO LF | off on_1 on_2 on_3 |
| HEX TO ASCII | off on |
| LINE MODE | off 0 1 ... 99 |
| DELIMITER < > | off on |
| STX-ETX | off on |
| OFFS. EDGE [mm] | 0 ... 304 [mm] |
| WARMING | off lev1 lev2 lev3 lev4 max |
| PAPER TIME-OUT | on off |
| SPEED REDUCT. | off 5% 10% 15% 20% |
| **SERIAL INTERF.** | PC DISP |
| HANDSHAKE | DTR both XON |
| BAUDRATE | 9600 4800 19K2 |
| DATA LENGTH | 8Bit 7Bit |
| PARITY | no even odd |
| STOPBIT | 1 2 |
| **SERVICE** | Rev. Adrc Head Char HexD InpD SetD |
| **HARDWARE TEST** | -- For service use only ! -- |
| **HEAD RESET** | all Hd.1 Hd.2 Hd.3 Hd.4 no |

The **underlined** values are default settings

## Explaining the menu fields

### Setting

Selection of user configurations.

If you wish to use the DA615 in certain applications, it may be necessary to change some menu settings. You may set up various configurations yourself and store them in the "Setting" menu.
Nine of the 10 options, namely "No 1" - "No 9", are available for your own configuration.
The first option, "No 0", is reserved for the default setting.
If you select this option, programming mode is terminated immediately after you press the "ENTER" key. No further changes can then be made in this configuration.

To make changes in your configuration, you must first select one of the remaining nine options ("No 1" to "No 9").

When programming mode is terminated, the changes made are automatically stored in the selected "Setting No".

You can lock the setting you have made immediately by using the “A/∀“ key to call the “SETTING LOCKED“ option and selecting between “yes“ and “no“ with the same key.

The set configurations are retained when the printer is switched off.

In the "SetD" option in the “Service” menu you can print out the active configuration (see "Service" description).

After a works initialization via the "PROG" key (at switch on) all configurations are set to the default setting.

Selecting individual menu options.

Page down the menu until you get to the option you want. Press the “A/∀“ key. The following message will appear on the display:

| Menu field | Option field |
|---|---|
| Local locked : NO blinking | |

Use the PREV, NEXT or keys to select between the options "YES" and "NO".
When you select the "YES" option, "(L)" appears in the second line of the display:

| Menu field | Option field |
|---|---|
| (L) | |

In the sample print-out of the “SetD" service program on page 5.13, for example, "ORIENTATION : REV" and "PAPER SIZE : A4" are marked as “local locked“.

You may also change local locked statuses when the setting is locked.

The following menu options can be individually locked:

| | | |
|---|---|---|
| FONT | TYPE OF BARC. | LINE SPACING |
| PRINT QUALITY | CHAR. SPACING | ORIENTATION |
| LEFT MARGIN (mm) | CHAR. HEIGHT | PAPER SIZE |
| TOP MARGIN (mm) | CHAR. WIDTH | CHARACTER SET |

NOTE **!** Locking of settings may lead to incompatibilities with software applications.

EXAMPLES:

When you lock the left margin, the application program may implement absolute horizontal positions.

Other conflicts may also occur.

## Fonts

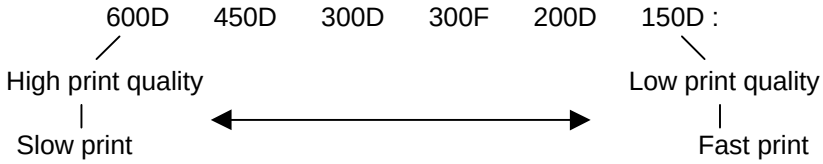
In selecting your fonts, refer to the section entitled “Fonts”. Thirteen different fonts are installed in the printer. If more fonts are present, only the first 25 are shown. The following sequence is observed:

works fonts
soft fonts.

## Print Quality

You may select between six print qualities:

The numbers specify the number of print dots per character.
The higher the number, the better the print quality.




## Left Margin

This menu allows you to set the spacing between the printing area and the first printed character in the range between 0-304 mm.

When the PREV/NEXT key is pressed continuously, the change is performed in cm-steps, otherwise in mm-steps.

## Top Margin

This menu allows you to set the spacing between the paper edge and the first printed line in the range between 0-50 mm.

When the PREV/NEXT key is pressed continuously, the change is performed in cm-steps, otherwise in mm-steps.

## Type of barcode

Use this menu to select a barcode.

The following barcodes are available:

| | |
|---|---|
| ZIP barcode | coda barcode |
| bpo4 barcode | co39 barcode |
| kix barcode | c128 barcode |
| cana barcode | ean barcode |
| 2/5 interleaved barcode | |

If you acknowledge the "ZIP" barcode with the ENTER key, you will be offered the following parameter setting:

" BARCODE OPTIONS: off "

BARCODE OPTIONS
(Only for USA !)

You may select between the options "off", "zip" and "dpbc".

In the setting "ZIP" the nine (or five) digits of the postal code from the "ZIP line" are recognized and the corresponding barcode (with check sum) is printed. The line with the "$D_{I\,F}$" sequence (see interface description - Sect. 8 Zip barcode) in the addressing is then obviated.

The numbers of the postal code should be sent in the last line of the address. The postal code cannot have more than nine digits, but must have at least five. As the number sequence search starts from the end of the address, the last nine digits of a sequence are converted. You may add a separating hyphen or other printable character between the fifth and sixth digits.

At the "DPBC" setting, the program searches for the house number at the start of the street line and adds it to the ZIP barcode.
The street line must be sent to the printer before the line containing the postal code. The house number should be at the beginning of the line. Where the house number consists of three digits, only the last two are converted into barcode. House numbers consisting of only a single digit are preceded by a 0.

BARCODE POSITION

After you acknowledge your choice in the "BARCODE OPTIONS" menu field, the following display appears:

"BARCODE POSITION : top"

The ZIP barcode position can be defined by the options "top" or "bot".

These define the position of the ZIP barcode within the address block. The following variants are possible:

| | |
|---|---|
| top: | the barcode line is printed as the first address line. |
| bottom: | the barcode line is printed after the last address line. |

## Other barcodes

If you acknowledge barcode "2/5i", "coda", "co39" or “c128” with the ENTER key, you will be offered the following parameter setting:

"SMALL WIDTH : 6"

SMALL WIDTH

You can set the width of the narrow bar from 1 to 99 (dots).

LARGE WIDTH

After you have acknowledged your setting in the "SMALL WIDTH" menu field, the following appears:

"LARGE WIDTH : 15"

You can now set the width of the thick bar from 1 to 99 (dots).

BARCODE HEIGHT

After you have acknowledged your setting in the "LARGE WIDTH" menu field, the following appears:

"BARCODE HEIGHT : 50"
You can now set the height of the barcode from 1 to 999 (dots).

☞ A maximum of 50 dots can be printed with a single traverse of the print-head.

## Other barcodes

If you acknowledge the barcode "ean" with the ENTER key, then you will be offered *only* the parameter setting "BARCODE HEIGHT" - as already described.

**Char. Spacing** You can change the character spacing from 0 to 90 dots by inserting additional blanks.

**Char. Height** You can increase the character height to up to six times the standard height without changing the width.

**Char. Width** You can increase the character width to up to six times the standard width without changing the height.

**Line Spacing** You can change the spacing between the lines from 1 to 10 lines per inch.

**Orientation** The address block may be rotated by 180°.

In "Nor" mode, the address is printed in reverse.
In "Rev" mode, the address is printed in legible form.

**Paper Size** You may select any of the following format sizes:

| **Format** | **Meaning** | **P/E/ Cd*** | **Size in inches** Width x length** | **Size in mm** Width x length** |
|---|---|---|---|---|
| off | No format size | -- | -- | -- |
| EXEC | Executive | P | **7 1/4** x 10 1/2 | **184** x 267 |
| LETT | Letter | P | **8 1/2** x 11 | **216** x 279 |
| LEGA | Legal | P | **8 1/2** x 14 | **216** x 356 |
| A4 | DIN A4 | P | **8 1/4** x 11 11/16 | **210** x 297 |
| A5 | DIN A5 | P | **5 13/16** x 8 1/4 | **148** x 210 |
| MONA | Monarch | K | 3 7/8 x **7 1/2** | 98 x **190,5** |
| C10 | Com-10 (Business) | K | 4 1/8 x **9 1/2** | 105 x **241** |
| INTD | International DL | K | 4 11/32 **x 8 21/32** | 110 x **220** |
| C5 | International C5 | K | 6 3/8 x **9 1/64** | 162 x **229** |
| INSD | Inserter DL | K | 4 1/2 x **9 1/64** | 114 x **229** |
| C6 | International C6 | K | 4 1/2 x **6 3/8** | 114 x **162** |
| A6 | DIN A6 | P | 4 1/8 x **5 13/16** | 105 x **148** |
| CRD1 | Card 1 | Kt | 4 x **6** | 102 x **152** |
| CRD2 | Card 2 | Kt | 5 x **8** | 127 x **203** |
| HAGA | Hagaki | K | 3 15/16 x **5 13/16** | 100 x **148** |
| B5 | | K | 6 15/16 x **9 27/32** | 176 x **250** |
| USER | The format width is entered in mm | P | max. **30** | max. **762** |

* **P** = Paper / **E** = Envelope / **Cd** = Card

** The values printed in bold are the lengths in the direction of transport

**Character Set**

National character sets are available with their own special characters in each language (see character sets in the Annex).

**Transport Direction**

Change of media transport direction

Def. (from right → left)
Opp. (from left → right).

The transport direction can be changed only if you replace the hold-down sets (cf. Section 3).

The default setting of the transport direction is from *right to left*.

**Head12 Correct.**

This function allows a mechanical horizontal offset between the two print cartridges 1 and 2 to be corrected. The correction is performed in steps of $^{1}/_{300}$ inch.

Select one of the following 49 values :

-24, -23 ... -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5 ... +23, +24

**Head34 Correct.**

This function allows a mechanical horizontal offset between the two print cartridges 3 and 4 to be corrected. The correction is performed in steps of $^{1}/_{300}$ inch.

Select one of the following 49 values :

-24, -23 ... -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5 ... +23, +24

**First Unit**

This menu allows you to select the print cartridge block which – depending on the transport direction – prints lines 1 to 6.

H12 for transport direction of the media from *right* to *left*
H34 for transport direction of the media from *left* to *right*

**Paper Speed**

The maximum transport speed for each print quality may be set.

**Paper Sensor**

End-of-form detection on/off.

When the end-of-form detection function is activated, the light barrier is interrogated before every line is printed as to whether paper is present in the print area.

For printing media with black surfaces, you can deactivate the light barrier during printing. To do this, you **must** set a format size in the “PAPER SIZE“ menu (see page 5.8).

When the end-of-form detection is deactivated *and* a format size has been specified, the light barrier is interrogated as to whether paper is present in the print area *only* when the paper is fed in.

☞ An incorrect format size can lead to printing outside the paper area!

### Setting locked

You may "lock" each configuration individually. This means that the corresponding configuration **cannot** be changed via printer instructions.

If you select the "yes" option, your configuration is locked and the corresponding printer instructions are ignored. In the “SETD“ service program, this setting is clearly identified by “!!!“ (see the sample print-out on page 5.13).
The status of the active configuration is shown on the display.
The display text "Set1U" means that configuration "No 1" was selected, but is **U**nlocked.
The display text "Set1L" means that configuration "No 1" was selected, but is **L**ocked.

## Special Funct.

### Bit8 Set To

This menu allows you to define how the DA615 should execute bit 8. This menu option is active only for *7-bit* character sets.

The following variants are possible:

BIT8: The higher-value bit (bit 8) of the received character is taken over in unchanged form.
FIX0: The higher-value bit (bit 8) of the received character is always deleted.
FIX1: The higher-value bit (bit 8) of the received character is always set to "1".

### Auto LF

Automatic line feed off / on_1 / on_2 / on_3

Use this menu to define how the DA615 should interpret the following control characters:

**CR** = Carriage return
**LF** = Line feed
and **FF** = Form feed.

The following variants may be selected:

| | | | |
|---|---|---|---|
| off : | **CR** = CR, | **LF** = LF, | **FF** = FF |
| on_1: | **CR** = CR + LF | **LF** = LF | **FF** = FF |
| on_2: | **CR** = CR, | **LF** = CR + LF | **FF** = CR + FF |
| on_3: | **CR** = CR + LF | **LF** = CR + LF | **FF** = CR + FF |

### Hex to ASCII

HEX to ASCII conversion off/on

When the conversion is switched on, the printer interprets the percentage symbol "%" as a non-printable control character. The two characters following the % symbol are then interpreted as HEX values and combined into a single character.

Example: %0C = Form Feed

### Line Mode

Line mode off / 1 - 99 lines

This option allows address separation by a specific number of line feeds.
If the PREV/NEXT key is kept continuously pressed, the change takes place in steps of 10, otherwise in steps of 1.

Delimiter < > — Individual page feed on/off

When the delimiter is activated, the two print characters "< >" are recognized as the beginning and end of a page print with paper ejection. This means that you should set the character "<" before a piece of text that should go onto a new page and the character ">" after the text, before the page is to be ejected.

STX-ETX — Print-out of a specific text area off/on

With this mode activated, only the text located between STX and ETX will be printed.

STX = Start text ETX = End text

Offset Edge — Offset edge of page by 0 – 304 mm

This function shifts the measured edge of the paper. To the user, it will look as if the left margin had been increased.
This option is required for:

- Windows programs in which the left edge cannot be changed (or this is not desired).
- Printing of large envelopes with Windows serial print, where the desired print position cannot be set on the PC.

Warming — Warming the print cartridges

This function sets the time during which the cartridges are warmed.

min. lev1 lev2 lev3 lev4 max.

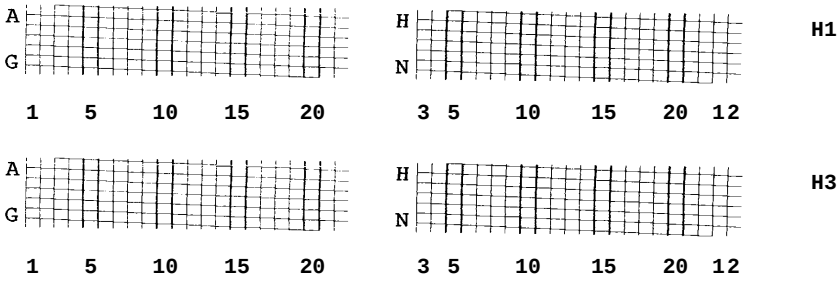
## Service

Rev. (=Revision) — The version number of the firmware is displayed together with the prom number of the paper transport controller. Both numbers must be specified if problems occur with the printer.

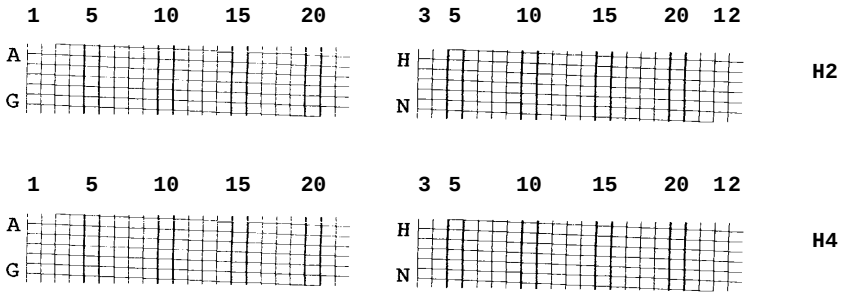
Adrc — Display of printed addresses from the initial operation of the printer. This counter can be reset only by service personnel.

Head — Several print tests are performed for all cartridges:
- the contacts to the nozzles are displayed in a grid pattern,

H1 = Head 1
H3 = Head 3



H2 = Head 2
H4 = Head 4




– the contacts to all nozzles, addressed individually in sequence, are displayed in a continuous oblique line.


**Char** Print-out of the currently defined character set.

**HexD** Hex Dump causes all received characters to be printed from the receive buffer in LetGot12.

Hex Dump is terminated with the PROG, END or START keys.

> ☞ Hex Dump may also be initiated directly by keeping the START key pressed down when the printer is switched on. Do not terminate Hex Dump by switching off the printer as this may lead to changes in the settings!!

**InpD** In Inp-Dump, all 96 kbytes of the receive buffer are printed with PC8 symbols.

> **NOTE !** The entire print-out requires about 30 DINA4 pages. Switch the printer off and then on again, send the print job and then start the dump print-out. The required data is now located at the beginning of the buffer. As soon as it has been printed out, you may stop further printing.

**SetD** The 10 printer settings that are activated under each number in the "Setting" option are printed out.
To do this, you will need nine sheets with minimum dimensions (LxW) 160 x 50 mm (6.3x2"). They are not pulled in until *after* the "SetD" instruction has been given.

The following page shows a complete SetD print-out.

**DA615**

| **SETTING** | No 1 | No 2 ... | No 0 |
|---|---|---|---|
| **FONT** | Cour12 | Helv10 | Cour12 |
| **PRINT QUALITY** | 600D | 600D | 300D |
| **LEFT MARG. [mm]** | 10 | 20 | 0 |
| **TOP MARGIN [mm]** | 0 | 10 | 0 |
| **TYPE OF BARC.** | zip | 2/5i | ean |
| **BARC. OPTIONS** | off | - | - |
| **BARC. POSITION** | top | - | - |
| **SMALL WIDTH** | - | 6 | - |
| **LARGE WIDTH** | - | 15 | - |
| **BARCODE HEIGHT** | - | 50 | 50 |
| **CHAR. SPACING** | 0 | 0 | 0 |
| **CHAR. HEIGHT** | 1x | 1x | 3x |
| **CHAR. WIDTH** | 1x | 1x | 2x |
| **LINE SPACING** | 6 | | |
| **ORIENTATION** | Rev (L) | Nor | Rev |
| **PAPER SIZE** | A4 (L) | User | off |
| **PAP LENGTH [mm]** | **-** | 237 | **-** |
| **CHARACTER SET** | PC8 | PC8 | PC8 |
| **TRANSP. DIRECT.** | def | def | opp |
| **HEAD12 CORRECT.** | -2 | -1 | 0 |
| **HEAD34 CORRECT.** | -2 | -1 | 0 |
| **FIRST UNIT** | 1+2 | 3+4 | 1+2 |
| **DISTANCE HD2_3** | 0 | -1 | 0 |
| **PAP SPEED mm/s** | MIN=370 | MED=889 | FAST=1207 |
| **PAPER SENSOR** | on | on | on |
| **SETTING LOCKED** | yes !!! | no | no |
| **HEAD SENSOR** | on | on | on |
| **SEPARATION** | min | lev12 | min |
| **BIT8 SET TO** | Bit8 | Bit8 | Bit8 |
| **AUTO LF** | off | on_1 | off |
| **HEX TO ASCII** | off | off | off |
| **LINE MODE** | off | off | off |
| **DELIMITER < >** | off | off | off |
| **STX-ETX** | off | on | off |
| **OFFS. EDGE[mm]** | 0 | 0 | 0 |
| **WARMING** | off | lev_1 | max |
| **PAPER TIME-OUT** | on | on | off |
| **SPEED REDUCT.** | 10% | 30% | 20% |
| **SERIAL INTERF.** | PC | PC | PC |
| **HANDSHAKE** | DTR | DTR | XON |
| **BAUDRATE** | 9600 | 9600 | 19K2 |
| **DATA LENGTH** | 8Bit | 8Bit | 8Bit |
| **PARITY** | no | even | even |
| **STOPBIT** | 2 | 2 | 2 |
| **EMULATION** | PCL3 | | |
| **MACRO** | 32333[H=4] | | |
| **DL FONT** | no | | |
| **INK COUNTER 1** | 99% | | |
| **INK COUNTER 2** | 98% | | |
| **INK COUNTER 3** | 94% | | |
| **INK COUNTER 4** | 92% | | |
| **ADDRCOUNTER** | 1581 | | |
| **RAM** | Expanded [4MByte] | | |
| **REVISION** | V3.30 #2763 | | |

**Hardware Test** Testing of various hardware components.
(For service personnel only!)

**Head Reset** Resets the ink counter after a new cartridge has been inserted (see page 4.1).

### Example of an application in programming mode

You want to set up a configuration whose line spacing is changed from 6 lines/inch to 8 lines/inch.

Switch the printer on.

**Programming mode** Press the "PROG" key.

**Activate required menu field** Use the "PREV" or "NEXT" keys to move to the desired "Line spacing" menu field. The blinking menu field is activated.

**Changing from menu field to option field** Press the "ENTER" key. The option field (= 1 line to the **right**) blinks.

**Activate required option field** Use the "PREV" or "NEXT" keys to move to the desired option field "8". The blinking option field is activated.

**End programming mode** Press the "END" key. The new value is now stored in the configuration under the selected "Setting No" and the printer is in off-line mode again

or

Press the "START" key. The printer is now in on-line mode again and is ready to continue the print job.

## Initializing the printer

**without loss of configuration** To get to the default configuration, select option "No 0" in the "Setting" menu field in programming mode. To end programming mode, press the "ENTER" key. The "Set 0U" message appears on the display. The set configurations are stored under their respective setting numbers (cf. "Setting" menu).

**with loss of configuration** To return *all* the changed values *and* configurations to their original settings, switch the printer off.

Keep the “PROG" key pressed down when switching the printer on again.

The display shows

| DA615 Inkjet |
| --- |
| Default Reset |

The printer now has the default settings and all configurations as set at the works. The display shows "Set 1U”.

# 5. Printer functions 5.1

# 6. Interfaces

The DA615 printer is equipped with two standard data communications interfaces.

The interface connection sockets are:

- **Centronics parallel**
- **RS-232-C serial**

Both of them allow connection of the printer to the terminal or the computer.

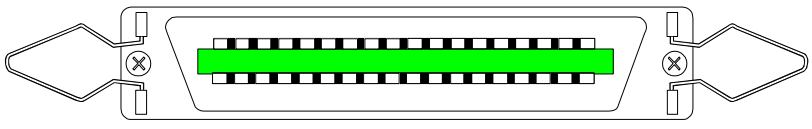
## Centronics parallel interface

The DA615 printer is equipped with a standard Centronics parallel interface. This interface is most frequently used for connecting to a personal computer. In contrast to the RS-232-C serial socket, it usually requires no special instructions or configurations for the printer or computer. In addition, the Centronics parallel interface cable allows faster data transmission.

The parallel interface connector has a standard 36-pin Amphenol socket with two metal clips.

**Connecting socket**

Connector type: Amphenol socket strip
Design: 57 - 40360
Cable length max. 2 m with Amphenol plug strip 57 - 30360



The signal description is given on the next page.

## Signal description


| PIN | Associated GND | Signal | Signal- Input/Output | Meaning |
|---|---|---|---|---|
| 1 | 19 | $\overline{\text{STROBE}}$ | E | This pulse (0.5µs) reports that data bits are valid |
| 2-9 | 20-27 | DATA 1-8 | E | Data bits D0-D7 |
| 10 | 28 | $\overline{\text{ACKNOWLEDGE}}$ | A | Printer report: data are processed (ready to receive) |
| 11 | 29 | BUSY | A | Printer report: data received, data being processed |
| 12 | 30 | PE (Paper empty) | A | Printer reports to computer: no paper |
| 13 | -- | SELECT (Online) | A | Signal is high when printer is on-line |
| 14 | -- | Autofeed | E | No function, only for bidirectional interface |
| 15 | -- | Free | | Free |
| 16 | -- | GND | | GND |
| 17 | -- | Chassis GND | | Chassis GND |
| 18, 35 | -- | + 5V | | + 5V over 0.2A Si |
| 19-30 | -- | GND | | GND |
| 31 | -- | $\overline{\text{INIT}}$ | E | Resets printer |
| 32 | -- | $\overline{\text{ERROR}}$ | A | Signal is low at printer error |
| 33 | -- | GND | | GND |
| 34 | -- | Free | | Free |
| 36 | -- | SELECT IN | E | No function, only for bidirectional interface |

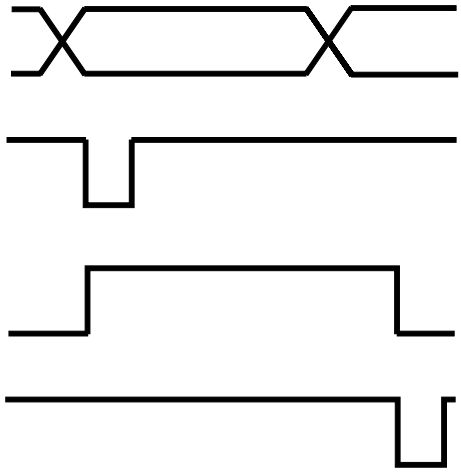
## Pulse diagram

**DATA 1 - 8**

**$\overline{\text{STROBE}}$**

**BUSY**

**$\overline{\text{ACKNOWLEDGE}}$**



# RS-232-C serial interface

The DA615 printer has a standard RS-232-C serial interface that is compatiblewith with most computers and terminals.

## Connecting socket

The DA615 printer is equipped with a standard DB-9 serial connection socket.

## Pin assignment

| PIN | Signal | Signal-Input/Output | Meaning |
|---|---|---|---|
| 1 | --- | - | Free |
| 2 | R x d | E | Receive data |
| 3 | T x d | A | Transmit data |
| 4 | DTR | A | Clear to receive |
| 5 | GND | - | Signal ground |
| 6 | --- | - | Free |
| 7 | RTS | A | +12V |
| 8 | CTS | E | Clear to send |
| 9 | --- | - | Free |

### Pin 2

**Received Data** (RxD):
Serial data transfer from computer to printer.

### Pin 3

**Transmitted Data** (TxD):
Serial data transfer from printer to computer system or terminal (e.g. $X_{ON}/X_{OFF}$ characters).

### Pin 4

**Data Terminal Ready** (DTR):
Printer output that clears data transfer to the printer or aborts it (handshaking). Data transfer is possible when DTR is high. It is not possible when DTR is low.

### Pin 5

**Signal Ground** (GND):
This is the reference potential for the entire data exchange.

### Pin 7

**Request to Send** (RTS):
This signal is always high when the printer is switched on.

### Pin 8

**Clear to Send** (CTS):
Printer input that clears or aborts data transmission to the computer. When the input is high, the printer can transmit data. This input must always be high for software handshaking with Xon/Xoff.

# 6. Interfaces 6.1

# 7. Fonts

## Terminology

A font is a collection of characters and symbols with the same font type and spacing, the same size (height), line thickness and character position

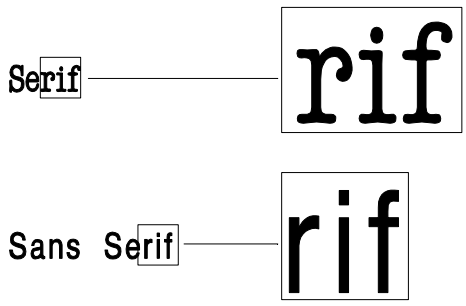
**Font type**

A font type is a set of characters and symbols of a specific design.

| Cour | Helv | TmsRm |
|---|---|---|

**Serif or sans serif font type**

Serifs are small cross-lines above or below characters (known as "feet" in the Antiqua fonts). Cour is a Serif font type. Font types without serifs are known as Sans Serif. Helv is a Sans Serif font type. The diagram below shows the difference between a Serif and a Sans Serif font type.




**Normal/italics**

The characters can be printed out either in normal mode or in italics - with a constant slope.

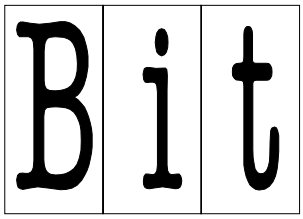
This line is printed with normal characters.
*This line is printed in italics.*

## Spacing

Spacing refers to the relative print density between the letters of a font. The character spacing is either fixed or proportional.

### Fixed spacing

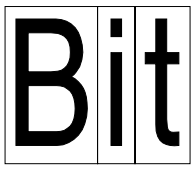
With fixed character spacing, each letter of a font assumes the same width and has the same spacing to the adjacent letters. Cour and LetGot are fonts with fixed spacing.




Fixed spacing between characters

### Proportional spacing

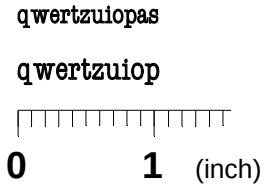
With proportional character spacing, the spacing depends on the width of each letter. Helv and TmsRm are examples of fonts with proportional spacing.




Proportional character spacing

## Pitch

The pitch depends on the number of printed characters within a linear inch. A font with a pitch of 10 cpi prints 10 characters per horizontal inch (cpi = characters per inch). The pitch can be specified only for fonts with fixed spacing.



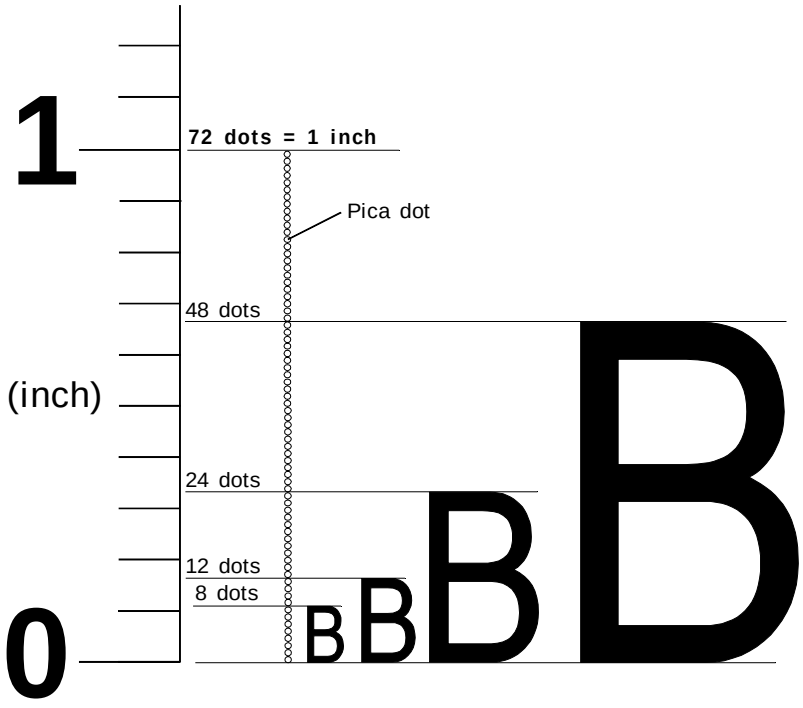

12 characters per inch (12 cpi)

10 characters per inch (10 cpi)

## Dot size

Dot size (character height) refers to the height of an upper-case printed latter. The dot size is measured in pica points. One point corresponds to 1/72 of an inch.

The heights of both types of font, those with fixed and those with proportional character spacing, are measured in pica points.




## Underlining

A piece of text may be highlighted by underlining. The otherwise uniform typeface remains unchanged.

You can underline a single word.

## Expanded mode

You can print the address (e. g. for large goods packages) twice as wide while maintaining the proportional character width with respect to the spacing.

This is normal width

This is expanded width

## Character spacing

To bring single words out more clearly, you can expand the spacing between letters and words without changing the character size itself.

This E x a m p l e is printed with expanded spacing.

## Quality

The term quality refers to the quality of the printout.

**150D**

Use 150D for fast printing with low ink consumption. This corresponds to a pitch of 150x150 dpi (dots/inch).

**300F**

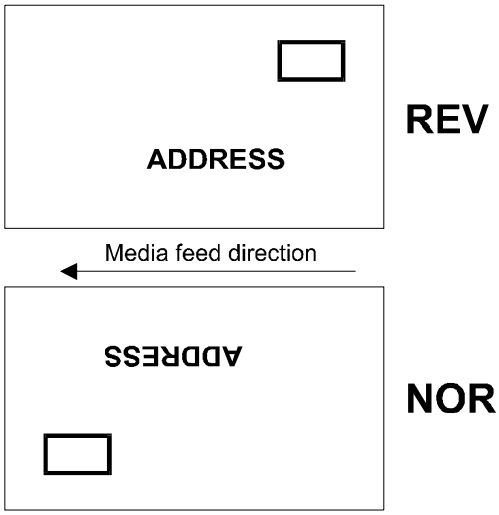
Use 300F for your standard correspondence. This mode makes use of the maximum pitch of 300 dpi (dots/inch).

**600D**

Use 600D to obtain an enhanced appearance for your correspondence. This mode makes use of the maximum pitch of 600x600 dpi (dots/inch).

## Orientation

Orientation refers to the (readable) address position on the paper. It may be rotated by 180°.




Note the specifications relating to image memory capacity in the “Orientation“ menu on page 5.8.

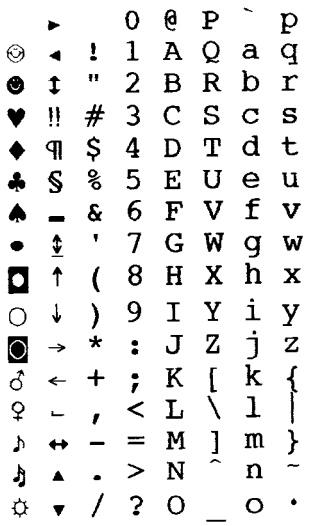
# Character sets

A character set consists of characters and symbols that contain all elements of a language or subject (country-specific characters), including punctuation marks and numerals.

## 7-bit character set

A 7-bit character set corresponds to the definitions of the "International Standards Organization" (ISO) and the 'American Standard Code for Information Interchange' (ASCII).
The 7-bit character set contains 128 characters.
An example of a 7-bit character set is shown below.

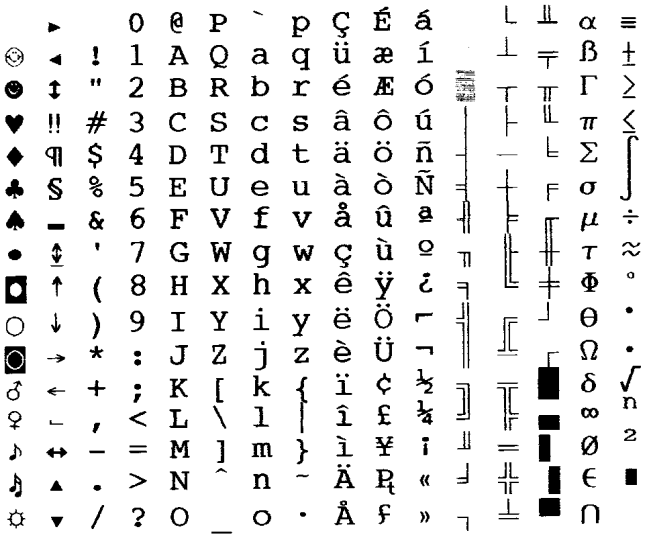
### USA7



## 8-bit character set

The 8-bit character set contains 256 characters.
It includes many national characters. The most commonly used 8-bit character set is shown below.

### PC8



# Selecting fonts for your addresses

The fonts are selected either by software or by printer commands.

Fonts can be used selectively to give an address a specific appearance.
Select the fonts that correspond to the message that you want your document to express.

## Serif fonts

The example below shows an address using Cour12 font:

Dr.
Lemuel Gulliver
104 Churchill St.

Cambridge CB8 5TD

## Sans serif fonts

The example below shows an address using Helv12 font:

Dr.
Lemuel Gulliver
104 Churchill St.

Cambridge CB8 5TD

# 7. Fonts 7.1

# 8. Error messages and hints

## General error messages

| Error message | Cause | Solution |
|---|---|---|
| ERROR LCA !!<br>CALL SERVICE | Error in loading the hardware into the XC5206 module. | - Check the connection on or to the print board.<br>- Check the module XC5206<br>- Check the print-head.<br>- Check that the correct firmware was loaded. |
| ERROR LCA# Ready<br>CALL SERVICE<br># = Number 1-4 specifies which module is responsible for this error. | Printing error – the XC5206 module does not confirm successful completion of the print operation. | |
| NO PAPER !! | Paper has run out. | Insert new paper |
| PAPER JAM !!<br>REMOVE PAPER | Paper is jammed. | Remove jammed paper and readjust the paper feed mechanism (see Sect. 3). |
| POSITION ERROR !!<br>CHECK TOP MARGIN | – The printed area is outside the paper format.<br>– The light barrier for paper detection is not working properly. | – Check the light barrier.<br>– Reduce the "Top margin" setting with the "⇨" key or in programming mode, or correct the paper size (see Sect. 5).<br>– Check the paper for black areas. |
| NO INK !!<br>CHANGE PRINTHEAD | The cartridge is empty. | Replace the cartridge (see Sect. 4). |
| CHECKSUM ERROR !!<br>MAKE DEFAULT RESET | Error in the buffered RAM (module M48Z58). | – Reset to default value (see Sect. 5).<br>– Replace module M48Z58. |
| CHECKSUM ERROR !!<br>MAKE COUNTER RESET | | |
| CHECKSUM ERROR !!<br>TESTMACRO RESET | | |
| CHECKSUM ERROR !!<br>SETTING RESET | | |

| Error message | Cause | Solution |
|---|---|---|
| TEST MACRO TOO LONG | The user-defined test address is too long. | Limit the size of the test address to 3 Kbytes. |
| BUFFER OVERFLOW !! | Error in data transfer. | Check connections of the interface cable. |
| EPROM ERROR !!<br>VERIFY FONT | Error in the Flash prom. | Reload the RENA fonts. |
| EPROM ERROR !!<br>VERIFY PROG | | Reload the program (firmware). |
| RAM ERROR !!<br>VERIFY RAM | Error in RAM. | Arrange for the CPU board to be replaced by service personnel. |
| PROGRAM ERROR !!<br>MAKE DEFAULT RESET | Error in program execution. | - Perform a default initialization (Sect. 5)<br>- Reload the firmware. |
| UNPRINTED ADDRESSES !<br>FINISH THE JOB | Address was not printed to the end. | Make no changes in programming mode when the print job is running! |
| PIC ERROR<br>VERIFY CONTROLLER | Error in controller module that controls the paper transport. | - Check module PIC 1665.<br>- Set the paper feed mechanism properly. |
| PIC TIME OUT<br>VERIFY CONTROLLER | | |
| PIC STATUS ANSW.<br>PAPER OUT (PAP) | | |
| PIC CALL<br>PROGRAM ERROR | | |
| TIME OUT PIC<br>WAITING FOR PAPER | | |
| PIC CODE<br>PAPER OUT (PAP) | | |
| IBF ERROR<br>VERIFY CONTROLLER | | |
| PIC OBF ERROR<br>PAPER OUT (PAP) | | |

| Error message | Cause | Solution |
|---|---|---|
| UART TIMEOUT<br>CALL SERVICE | Error in UART module (serial interface). | Replace CPU board. |
| DISPLAY TIMEOUT<br>CALL SERVICE | Error in addressing the display | – Check cable connections<br>– Replace display unit if necessary |
| CHECK CARTRIDGE #<br># specifies the number of the missing cartridges | Cartridge No. # is not inserted. | Insert the missing cartridge (see Sect. 4). |
| CHECK CARTRIDGES #,#<br>## specifies the number of the missing cartridges | One pair of cartridges is not inserted. #,# stands for 1,2 or 3,4. | Insert both missing cartridges (see Sect. 4). |
| CHECK ALL CARTRIDGES | No cartridge is inserted. | Insert all 4 cartridges (see Sect. 4). |
| CHECK THE CARTRIDGES | Some cartridges are not properly inserted. | Insert the missing cartridges (see Sect. 4). |

## Error messages for soft fonts

| Error message | Cause | Solution |
|---|---|---|
| FONT LOADING<br>ERROR: TIMEOUT | Error in download font. | Check download font. |
| FONT LOADING<br>ERROR: HEADER (SB) | | |
| FONT LOADING<br>ERROR: HEADER (F) | | |
| FONT LOADING<br>ERROR: FONT ORIENT | | |
| FONT LOADING<br>ERROR: CHAR. HEADER | | |
| FONT LOADING<br>ERROR: MEMORY (RAM) | Error in loading the font: insufficient memory | Font no longer fits into the memory |
| FONT LOADING<br>ERROR: CHAR. NO. | Error in download font | Check download font |

| Error message | Cause | Solution |
|---|---|---|
| FONT LOADING<br>ERROR: SUPPL. CHAR. | Error in download font | Check download font |
| FONT LOADING<br>ERROR: CHAR. LasFt | | |
| FONT LOADING<br>ERROR: DATA LasFt | | |
| FONT LOADING<br>ERROR: CHAR. HEIGHT | | |
| FONT LOADING<br>ERROR: DL DISABLED | | |
| MACRO LOADING<br>ERROR: MEMORY (RAM) | Error in loading the macro: insufficient memory | Macro no longer fits in the memory |

In some error messages, from Rev. 4.5, a number is displayed in the top right corner. This number must be specified in the event of all error messages.

# Notes on maintenance

Ensure that the contact wheels and rollers are kept clean at all times

# 8. Error messages and hints 8.1

# 9. Annex

Page

# A. Technical data

**Dimensions**

| | | |
|---|---|---|
| L x W x H | (mm) | 687 x 281 x 410 |
| | (inches) | 27.05 x 11.06 x 16.14. |

**Weight** (kg / lbs.) 40 / 88.18

**Paper formats**

| | |
|---|---|
| Width | From 100 mm / 3.93 inches |
| Length | From 50 mm / 2.0 inches |
| Thickness | Max. 10 mm / 0.393 inches |

**Paper feed** External feed

**Fonts**

- Cour12, 12bold, 12italics
- Helv 7, 10, 12, 13, 12bold, 12italics
- TmsRm12
- LetGot12
- Bru12

**Print technology** Ink-jet technology
Two blocks, each with two inkjet
HP 51645A cartridges

**Cartridges** Inkjet HP 51645A

Life: Approx. 160,000 addresses in fast quality, 60 characters/address

**Print area**

| | |
|---|---|
| Height | 2x25.4 mm / 2x1 inches height |
| Width | 600 mm / 23.6 inches |

**Pitch** 600 dpi (dots per inch)

**Print qualities**

- 600D 600 dpi (dots per inch)
- 450D 450 dpi (dots per inch)
- 300D 300 dpi (dots per inch)
- 300F 300 fast
- 200D 200 dpi (dots per inch)
- 150D 150 dpi (dots per inch)

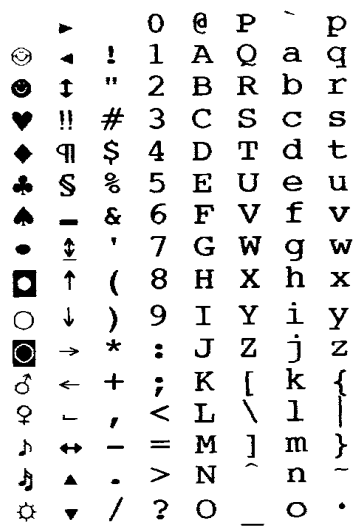
**Orientation** Normal
Rotated by 180°

| | |
|---|---|
| **Barcodes** | - Codabar<br>- Code 39<br>- C128<br>- 2/5 interleaved barcode<br>- EAN industry barcode<br>- Postal barcode for the UK<br>- Postal barcode for the Netherlands<br>- Postal barcode for Canada<br>- Postal barcode for USA |
| **Buffer** | 4 MB |
| **Settings** | 10 configurations can be stored |
| **Address buffer** | Stores the last 20 addresses |
| **Firmware update** | Via PC interface in flash proms |
| **Counter** | - Resettable address counter<br>- Life counter |
| **Interface** | |
| Parallel | Centronics compatible |
| Serial | V24, 2400 – 19K2 baud |
| **Power supply** | 100 - 120V / 220 - 240V<br>50 / 60 Hz |
| **Fuse** (power input)<br>100 - 120V, 230 - 240V | 1 x 2A (slow-acting) |
| **Noise** | < 55 db at a distance of 1 m<br>(ISO 9296) |
| **Options** | - Automatic dry band<br>- Stand for height adjustment of dry band<br>- Stop plate for lateral paper transport<br>- Hold-down units for changing print direction with contact rollers<br>- Hold-down units for changing print direction with pinwheels<br>- Stacker for DIN A4 formats |

# B. Character sets

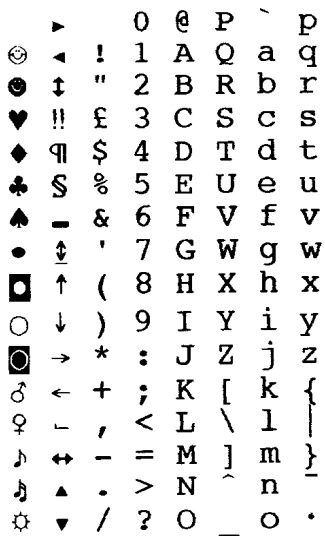
## 7-Bit-character sets

**ASCII** (= USA7)*



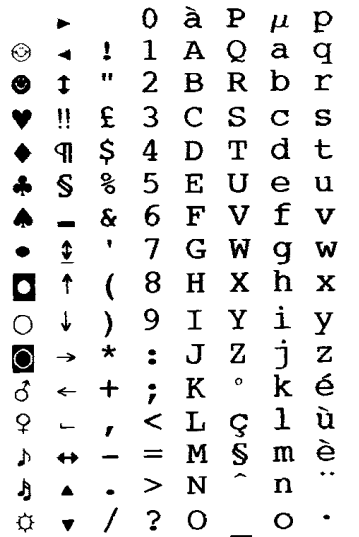
| | |
|---|---|
| **ASCII:** | $E_c$ ( 0 U ** |
| **Decimal:** | 27 40 48 85 |
| **Hexadecimal:** | 1B 28 30 55 |

**England** (= UK7)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 1 E ** |
| **Decimal:** | 27 40 49 69 |
| **Hexadecimal:** | 1B 28 31 45 |

**Frankreich** (= Fra7)*

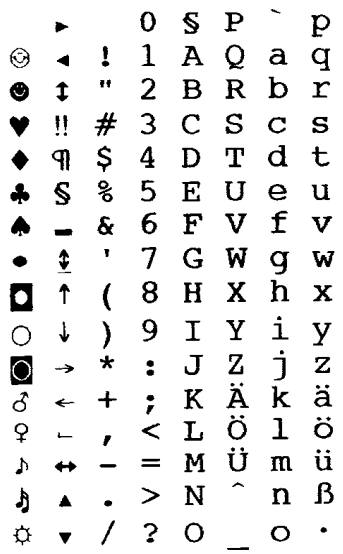


| | |
|---|---|
| **ASCII:** | $E_c$ ( 1 F ** |
| **Decimal:** | 27 40 49 70 |
| **Hexadecimal:** | 1B 28 31 46 |

* The figures in parentheses correspond to the option field names in the DA615

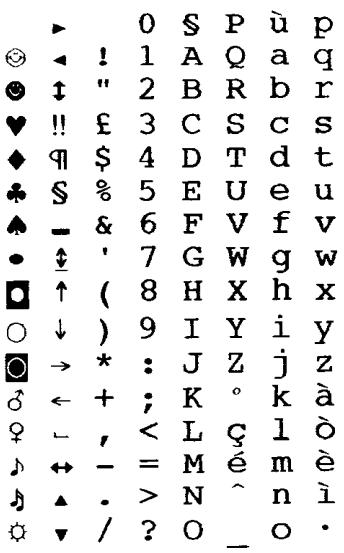
** You can use the printer command to call the character set via software.

**Deutschland** (= Ger7)*



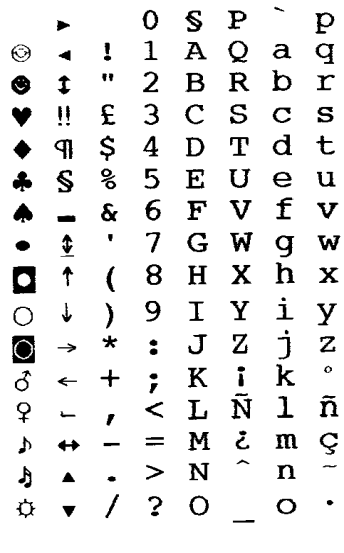
| **ASCII:** | $E_c$ ( 1 G | ** |
|---|---|---|
| **Decimal:** | 27 40 49 71 | |
| **Hexadecimal:** | 1B 28 31 47 | |

**Italien** (= Ita7)*



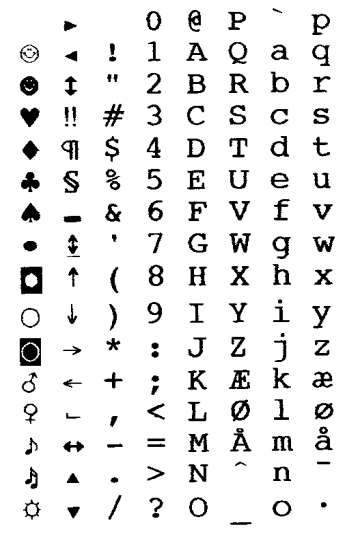
| **ASCII:** | $E_c$ ( 0 I |
|---|---|
| **Decimal:** | 27 40 48 73 |
| **Hexadecimal:** | 1B 28 30 49 |

**Spanien** (= Spa7)*



| **ASCII:** | $E_c$ ( 2 S |
|---|---|
| **Decimal:** | 27 40 50 83 |
| **Hexadecimal:** | 1B 28 32 53 |

**Dänemark** (= Den7)*

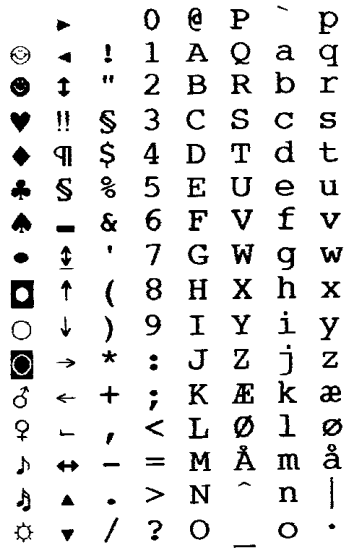


| **ASCII:** | $E_c$ ( 1 D |
|---|---|
| **Decimal:** | 27 40 49 68 |
| **Hexadecimal:** | 1B 28 31 44 |

* The figures in parentheses correspond to the option field names in the DA615

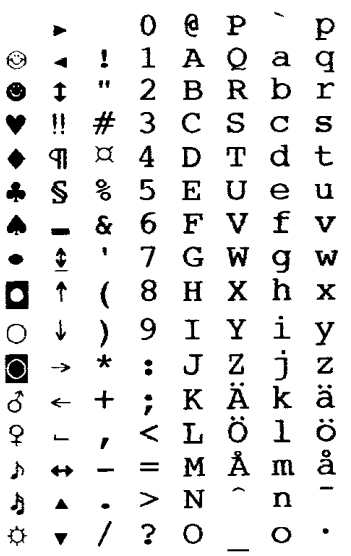
** You can use the printer command to call the character set via software.

**Norwegen** (= Nor7)*



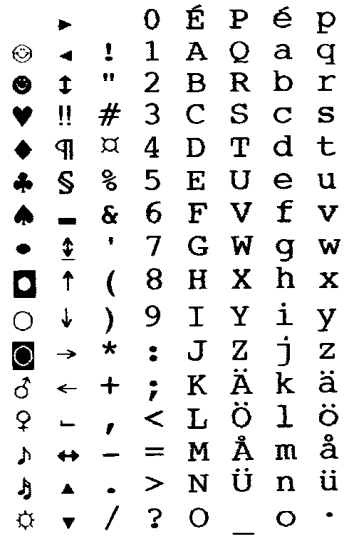
| | |
|---|---|
| **ASCII:** | $E_c$ ( 0 D ** |
| **Decimal:** | 27 40 48 68 |
| **Hexadecimal:** | 1B 28 30 44 |

**Schweden** (= Swe7)*



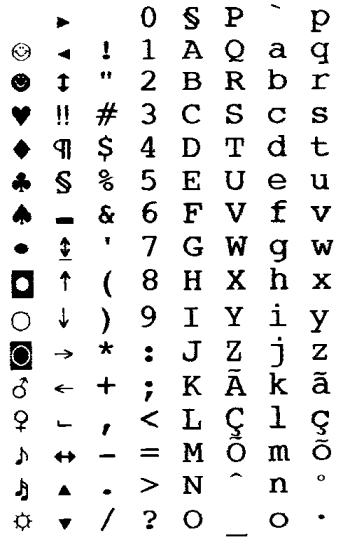
| | |
|---|---|
| **ASCII:** | $E_c$ ( 3 S |
| **Decimal:** | 27 40 51 83 |
| **Hexadecimal:** | 1B 28 33 53 |

**Schweden/Namen** (= SwN7)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 0 S |
| **Decimal:** | 27 40 48 83 |
| **Hexadecimal:** | 1B 28 30 53 |

**Portugal** (= Por7)*



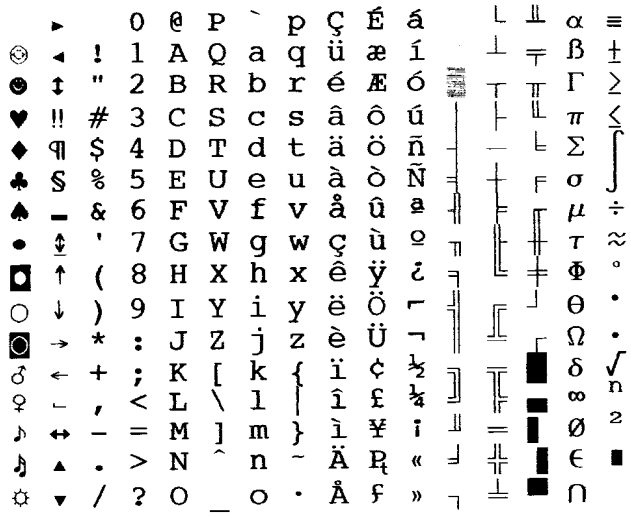
| | |
|---|---|
| **ASCII:** | $E_c$ ( 4 S |
| **Decimal:** | 27 40 52 83 |
| **Hexadecimal:** | 1B 28 34 53 |

* The figures in parentheses correspond to the option field names in the DA615

** You can use the printer command to call the character set via software.

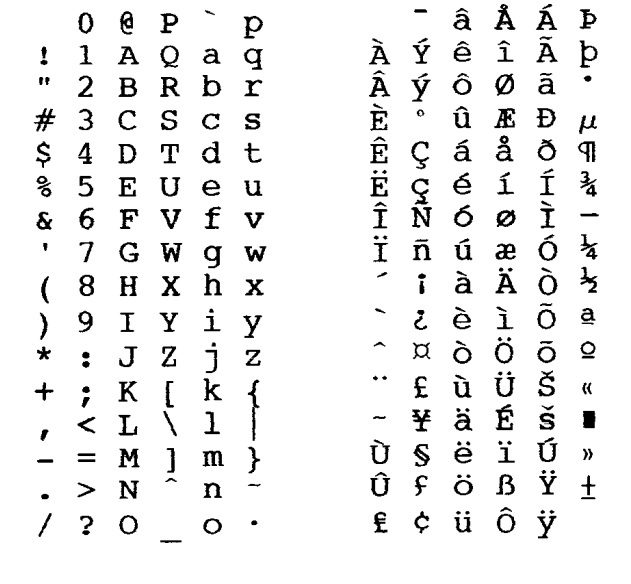
## 8-Bit-character sets

**PC-8** (= PC8)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 10 U ** |
| **Decimal:** | 27 40 49 48 85 |
| **Hexadecimal:** | 1B 28 31 30 55 |

**Roman8** (= Rom8)*

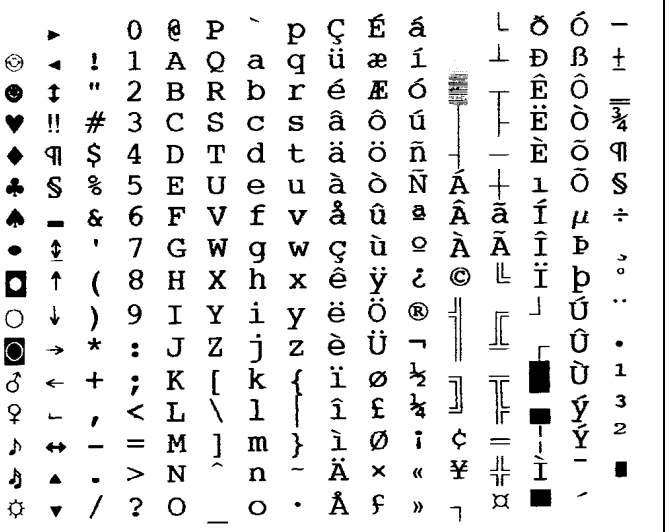


| | |
|---|---|
| **ASCII:** | $E_c$ ( 8 U ** |
| **Decimal:** | 27 40 56 85 |
| **Hexadecimal:** | 1B 28 38 55 |

* The figures in parentheses correspond to the option field names in the DA615

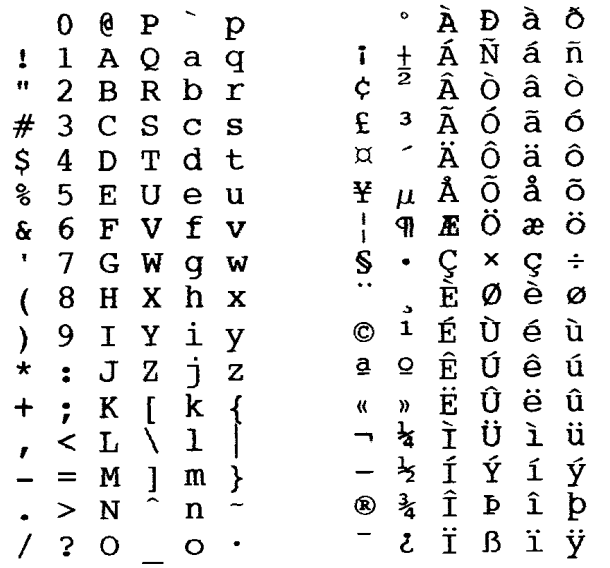
** You can use the printer command to call the character set via software.

**PC-850** (= P850)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 12 U ** |
| **Decimal:** | 27 40 49 50 85 |
| **Hexadecimal:** | 1B 28 31 32 55 |

**ECMA-94 Latin 18** (= ECMA)*

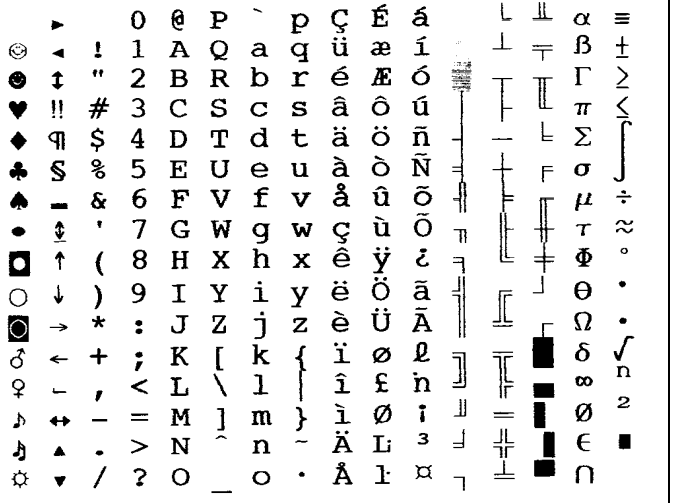


| | |
|---|---|
| **ASCII:** | $E_c$ ( 0 N |
| **Decimal:** | 27 40 48 78 |
| **Hexadecimal:** | 1B 28 30 4E |

* The figures in parentheses correspond to the option field names in the DA615

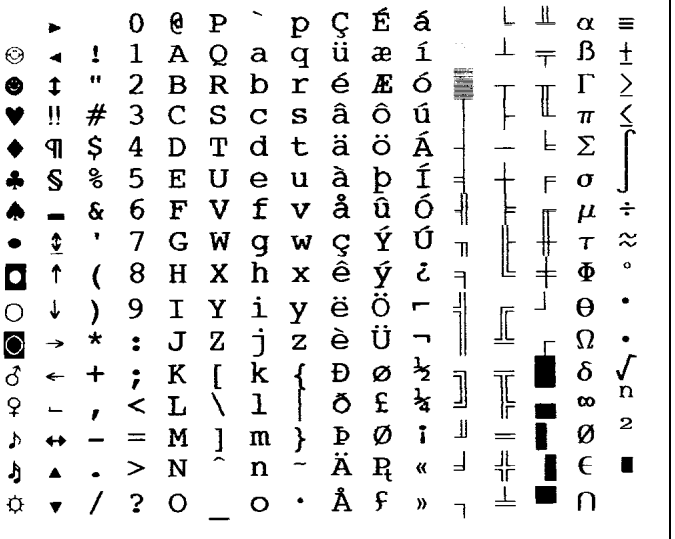
** You can use the printer command to call the character set via software.

**PC-8** Dänemark/Norwegen (= P8DN)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 11 U ** |
| **Decimal:** | 27 40 49 49 85 |
| **Hexadecimal:** | 1B 28 31 31 55 |

**ICEL** (= ICEL)*

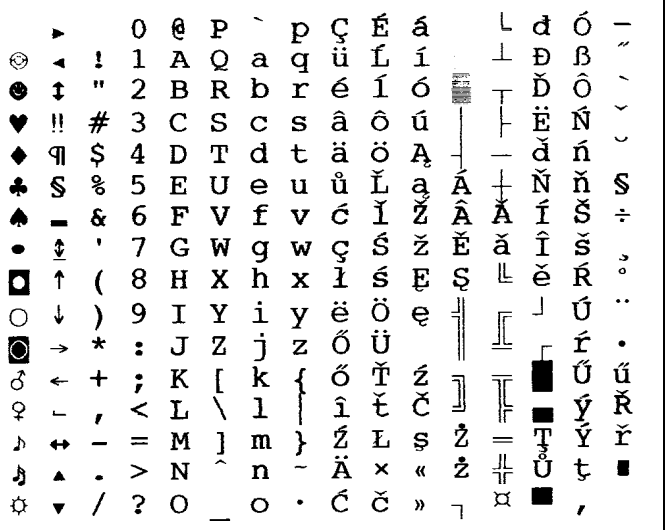


| | |
|---|---|
| **ASCII:** | $E_c$ ( 33 O |
| **Decimal:** | 27 40 51 51 79 |
| **Hexadecimal:** | 1B 28 33 33 4F |

* The figures in parentheses correspond to the option field names in the DA615

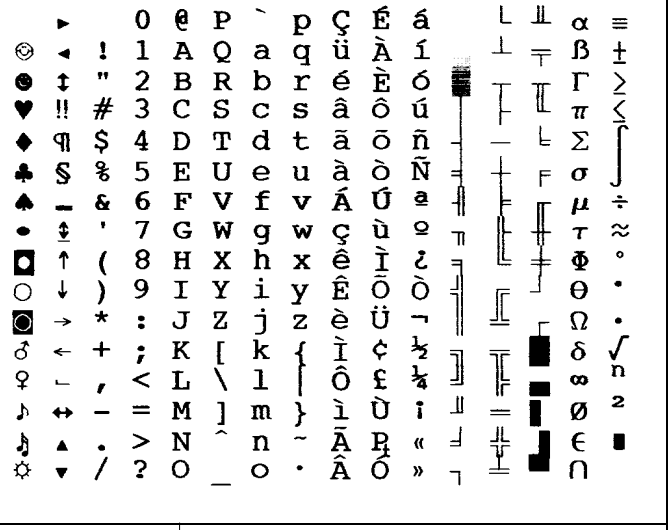
** You can use the printer command to call the character set via software.

**PC-852** (= P852)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 17 U ** |
| **Decimal:** | 27 40 49 55 85 |
| **Hexadecimal:** | 1B 28 31 37 55 |

**PC-860** (= P860)*



| | |
|---|---|
| **ASCII:** | $E_c$ ( 20 U |
| **Decimal:** | 27 40 50 48 85 |
| **Hexadecimal:** | 1B 28 32 30 55 |

* The figures in parentheses correspond to the option field names in the DA615

** You can use the printer command to call the character set via software.

# C. Glossary

**ASCII:**

ASCII stands for American Standard Code for Information Interchange. The printer commands used in this User Guide are entered with ASCII characters. However, decimal or hexadecimal characters may also be used.

**Barcode:**

Data information about a print medium is converted into a barcode, a form independent of language and characters. A barcode is easy to create and simple to read by opto-electronic devices. It is printed in addition to information written in normal text.

**Baud rate:**

This is the speed at which data is transferred between the computer and the printer via the serial interface. The computer and printer must have the same baud rate. It can vary between 1200 and 9600 baud depending on the computer used. The baud rate is specified only if a serial interface is used.

**Bit:**

Binary digit. A bit is the smallest unit of digital information and can represent only two states, namely "I" or "O".

**Bit map:**

A collection of dots forming text or graphics in output equipment (printer, monitor).

**Buffer:**

A buffer is a memory area in the printer. It stores the input and output information until its subsequent processing.

**Byte:**

A memory unit consisting of 8 bits.

**Character:**

Letters, numbers and symbols that can be printed.

**Character height:**

The height of an upper-case printed letter. The dot size is measured in pica dots. One dot is 1/72 of an inch.

**Character set:**

A character set is defined according to the application and is usually a combination of letters, numbers, lines and symbols within a font. Character sets may, however, consist only of symbols.

**Character spacing**

All fonts have either a constant or a variable character spacing. In a font with a constant spacing, all characters have the same width irrespective of their size. In proportional fonts, the printed width depends on the actual widths of the respective characters.

**Configuration:**

A configuration is a set of specific printer settings. Several configurations can be set up and stored under specific configuration numbers.

**Control code:**

See printer command.

**Control panel:**

This comprises the keyboard and the display. It is used to make all the internal settings for the printer.

**CPI:**

Characters Per Inch: the unit of print density.

**Data transfer:**

The transfer of information between computer and printer.

**Default configuration:**

Before being dispatched, the printer is programmed with standard settings. These are stored in the „O“ configuration and remain active until a different configuration number is selected and the settings are changed.

**Dot size:**

The dot size is measured in pica dots. One dot represents 1/72 of an inch.

**DPI:**

Dots Per Inch: the unit of measurement for the image definition. The more dots, the sharper the image.

**Driver:**

See Printer driver.

**Escape character:**

The escape character $E_C$ is an instruction indicator in ASCII code. This character is not printed, but the printer recognises the characters following it as instruction code.

**Escape sequences:**

See Printer commands.

**Font:**

A font is a collection of characters and symbols of the same print type and spacing, the same size (height), line thickness and print orientation. Fonts can be installed inside the printer or loaded externally via font cartridges.

**Font cartridges:**

These contain fonts that can be loaded into the printer.

**Handshake:**

This refers to the control of the data transfer between the computer and the printer in order to protect the printer's memory buffer from overflow or loss of data.

**Hardware:**

The parts of your computer system such as the computer itself, the keyboard and the printer.

**Interface cable:**

The data transfer cable that connects your computer with the printer or other peripheral.

**Interface connection socket:**

The DA 615 is supplied with two interface connection sockets, a parallel and a serial one. Both are located under the paper feed tray next to the power module. The connection cable for your computer and printer is connected to this socket.

**Internal fonts:**

These fonts are installed in the printer of which they form a permanent part.

**Line thickness:**

This refers to the width of barcode lines. Normal and bold thicknesses are available.

**LPI**

Lines Per Inch: the unit of line spacing. The most frequent spacing for printing is 6 lpi.

**Off-line:**

In off-line mode, the printer cannot receive any data from the computer. Settings and programming are then carried out directly on the printer.

**On-line:**

In on-line mode, the printer can receive data from the computer. In this state, the keyboard is locked except for the START key.

**Paper jam:**

A paper jam may occur during printing, with blockage of paper feed or ejection.

**Paper sensor:**

This is required for maintaining the top margin value and for stopping the printer in the event of a paper jam. The medium must always be transported over the paper sensor.

**Paper size:**

This refers to the paper format on which text is printed. With an address block rotation around 180°, the top margin is automatically calculated so that it corresponds to the value set for the normal address-block orientation.

**Parallel interface:**

This is also known as a Centronics interface and connects the computer to the printer. It always transfers 8 bits = 1 byte at a time (in parallel).

**Parity:**

Parity is an error-detection technique used on a serial interface. Errors are detected during data transfer. This involves checking the even number of binary ones in an information unit (such as a byte).

**PCL instruction**

Printer Control Language is the HP PCL Level III printer language developed by Hewlett-Packard.

**Pitch:**

The number of printed characters in an inch.

**Print area:**

The maximum width accessible to the printer cartridge.

**Print cartridge:**

The cartridge contains the ink for printing. An empty cartridge is replaced by a new one of the same type.

**Print density:**

A measure of image definition. It is measured in dots per inch (dpi).

**Print orientation:**

The characters can be printed either upright (normal) or as italics with a constant angle.

**Print type:**

This refers to the print design of a character set. Thus Cour has a different character design than LetGot or Helv.

**Printer commands:**

Commands entered via the software application in order to make changes in the active printer configuration.

**Printer driver:**

The driver converts the printer commands entered via software into instruction codes for the printer. It must be adapted to both the software and the printer.

**Print-head cradle:**

The print head is attached to a movable cradle.

**Print-head holder:**

This holds the print head securely in place.

**Print-head spacing:**

This affects the print quality. If the spacing is too big, the print is unclear. If it is too small, the ink can smudge.

**Sans Serif font:**

A font type with no horizontal lines on the head or foot of a letter. This text is printed in a Sans Serif font, for instance.

**Separators:**

Separators allow single-sheet feed from a media stack. The lowest sheet is drawn in first.

**Serial interface:**

In a serial interface, the data are transferred successively (bit by bit) from the computer to the printer. The connection is set up via an RS-232-C socket.

**Serif font:**

Serifs are the „feet“ on the Antiqua fonts. Cour is a serif font, for example.

**Setting:**

Selecting configurations.

**Soft fonts:**

Soft or download fonts are stored on floppy disk. They can be loaded into the printer memory.

**Software:**

The various programs installed in your computer system, including operating and graphics programs or special application packages.

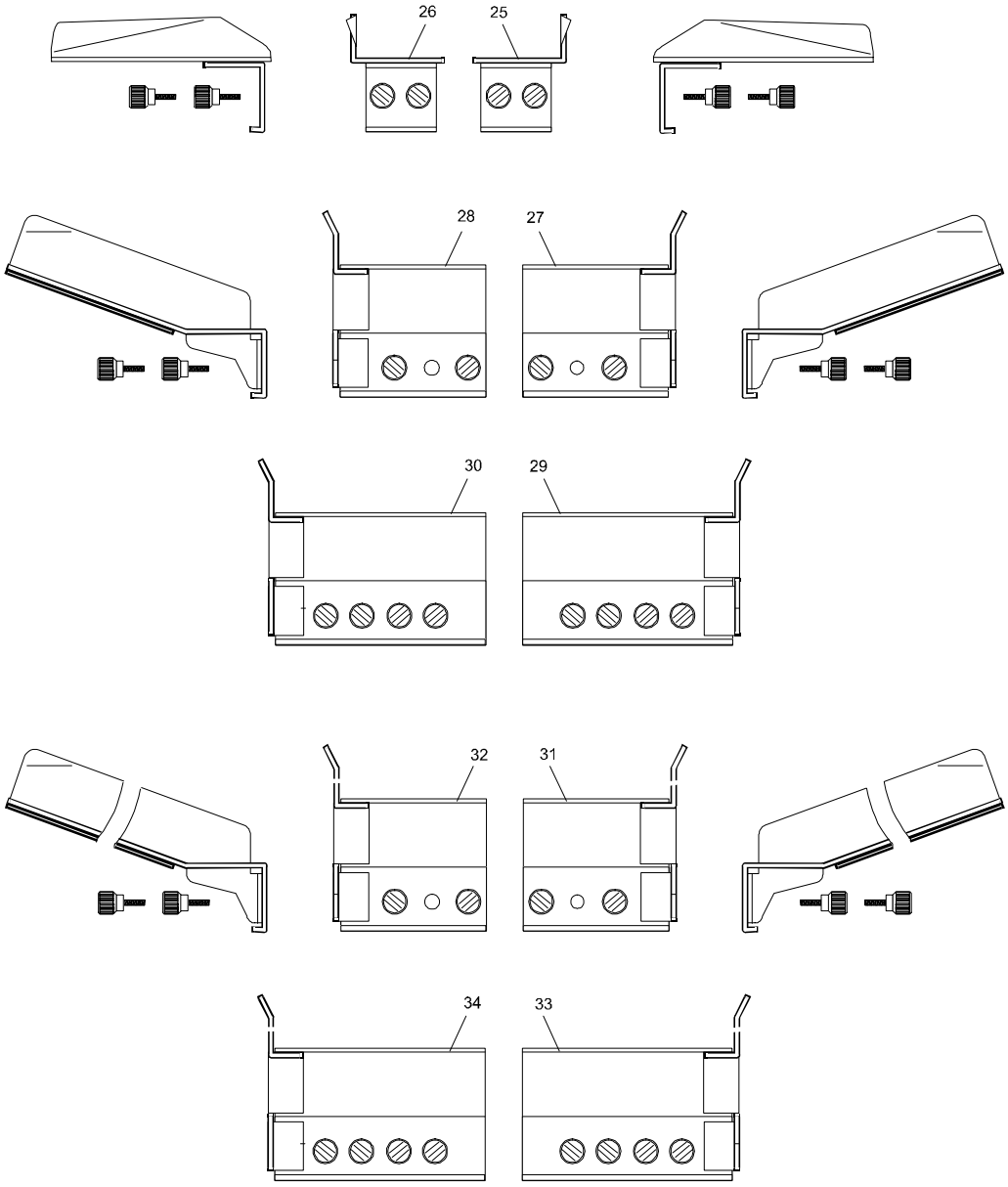
## C. Glossary

Fehler! Textmarke nicht definiert.

# D. Index

# E. Accessories

## Guide brackets




| Item No. | Order No. | Designation | Suitable for format size Length x Width | |
|---|---|---|---|---|
| 25<br>26 | R0615.1.053<br>R0615.1.054 | Guide bracket narrow 7 right<br>Guide bracket narrow 8 left | 160-250 mm | from 76 mm |
| 27<br>28 | R0615.1.068<br>R0615.1.069 | Guide bracket narrow 9 right<br>Guide bracket narrow 10 left | 220-300 mm | 180-302 mm |
| 29<br>30 | R0615.1.072<br>R0615.1.073 | Guide bracket wide 13 right<br>Guide bracket wide 14 left | 220-300 mm | 296-360 mm |
| 31<br>32 | R0615.1.070<br>R0615.1.071 | Guide bracket narrow 11 right<br>Guide bracket narrow 12 left | 250-400 mm | 180-302 mm |
| 33<br>34 | R0615.1.074<br>R0615.1.075 | Guide bracket wide 15 right<br>Guide bracket wide 16 left | 250-400 mm | 296-360 mm |

## Pinwheels

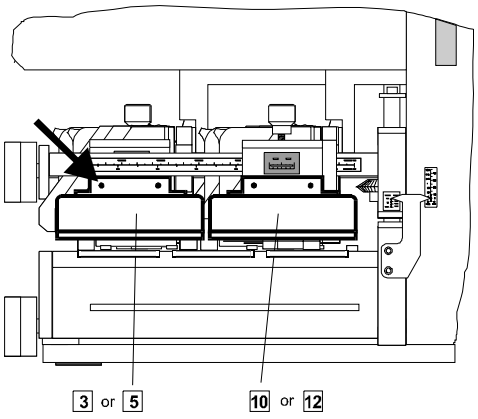
To avoid smudging of ink by the contact rollers, simply replace the hold-down units with contact rollers positioned immediately after the print-heads by equivalent ones with pinwheels.

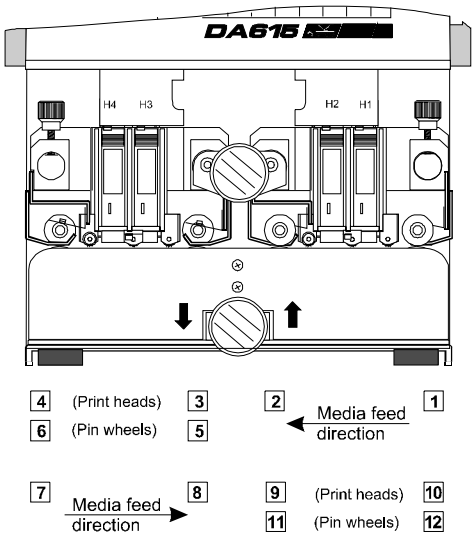
To do so, replace hold-down set 3 – 4 by set 5 – 6 (Accessories!). The order numbers of these hold-down units are given in the variant list.

If the printer is set for the opposite transport direction, hold-down set 9 – 10 must be replaced by set 11 – 12 (Accessories!).

To do this, refer to the second and fourth sections of the variant list.

**Switch the printer off !** Remove the two hexagon-socket screws (see arrow in left diagram) of each hold-down unit and replace it by the corresponding hold-down unit with pinwheels.

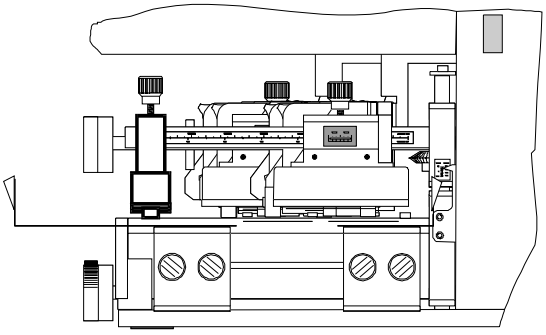


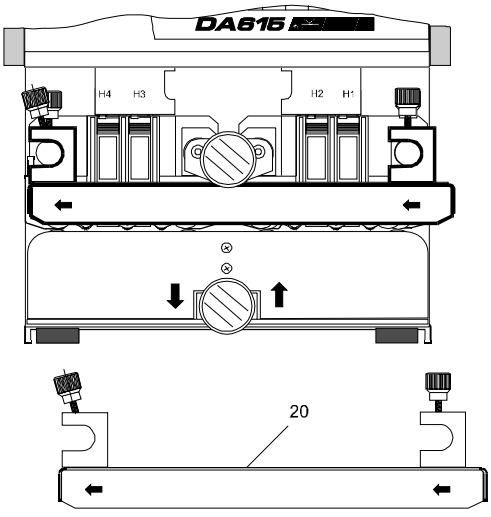




## Paper guide

If you are using large formats with small print areas, adjust the paper guide (20) to avoid a smudged print-out.

Note that the direction of the arrow must correspond to the direction set for the medium feed.



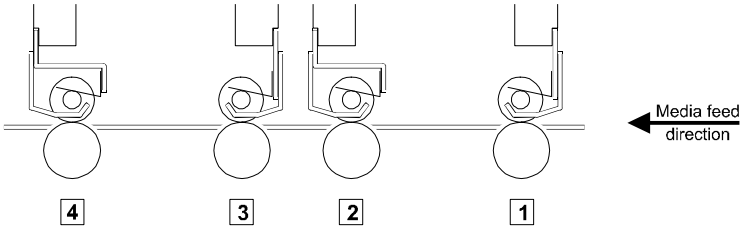


# E. Accessories E.1

# Variant list DA615

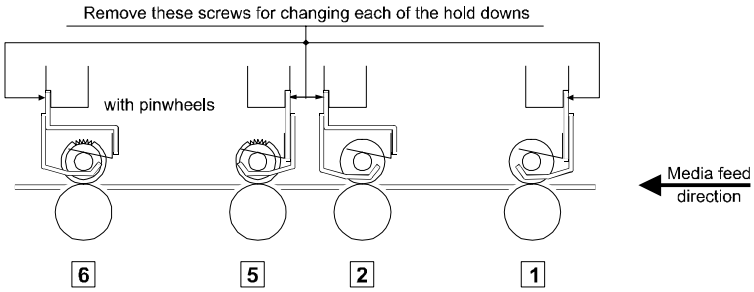
1. Media feed from right to left

   **- Standard -**



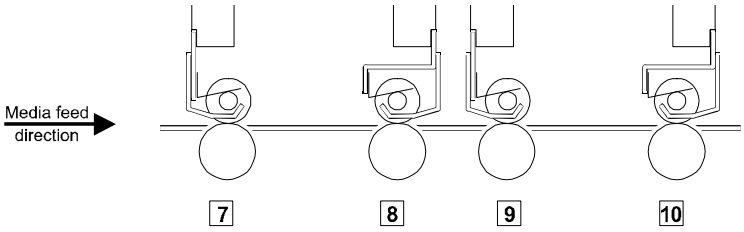

2. Media feed from right to left with pinwheels

   **- Option -**



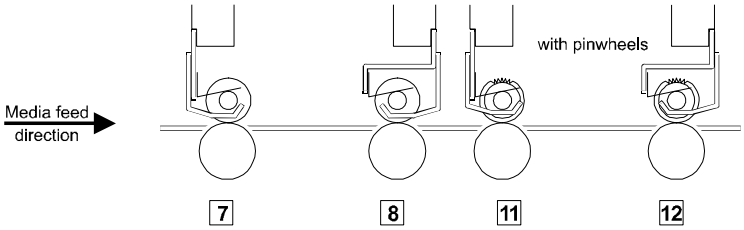

3. Media feed from left to right

   **- Option -**




4. Media feed from left to right with pinwheels

   **- Option -**




## List of available hold-down rollers

| Item No. | Order No. | Designation |
|---|---|---|
| 1 | R0615.2.035 | Hold-down H1 - Paper from right |
| 2 | R0615.2.036 | Hold-down H2 - Paper from right |
| 3 | R0615.2.037 | Hold-down H3 - Paper from right |
| 4 | R0615.2.038 | Hold-down H4 - Paper from right |
| 5 | R0615.2.039 | Hold-down H3 - P.f.r. (pinwheel) |
| 6 | R0615.2.040 | Hold-down H4 - P.f.r. (pinwheel) |
| 7 | R0615.2.041 | Hold-down H4 - Paper from left |
| 8 | R0615.2.042 | Hold-down H3 - Paper from left |
| 9 | R0615.2.043 | Hold-down H2 - Paper from left |
| 10 | R0615.2.044 | Hold-down H1 - Paper from left |
| 11 | R0615.2.045 | Hold-down H2 - P.f.l. (pinwheel) |
| 12 | R0615.2.046 | Hold-down H1 - P.f.l. (pinwheel) |