

Control unit CPC 1-04

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1 Basic safety instructions

1.1 Intended use

The CPC 1-04 control unit is used for remotely setting registers and ink fountain zones in printing units and the registers in coating units. Job data is transmitted via job memory cards and stored in the control unit.

The unit may only be controlled and operated by personnel trained for this purpose. Initial installation of the unit will be carried out by authorised HEIDELBERG service staff.

Local safety and accident prevention regulations must be followed by the user.

Do not use other than as intended. Noncompliance with safety instructions and accident prevention regulations endangers

- your life,
- your health,
- presses and equipment.

1.2 Working at the unit

The unit is controlled from the operator workplace (Fig. 1, ①) using the control panel (Fig. 1, ②).

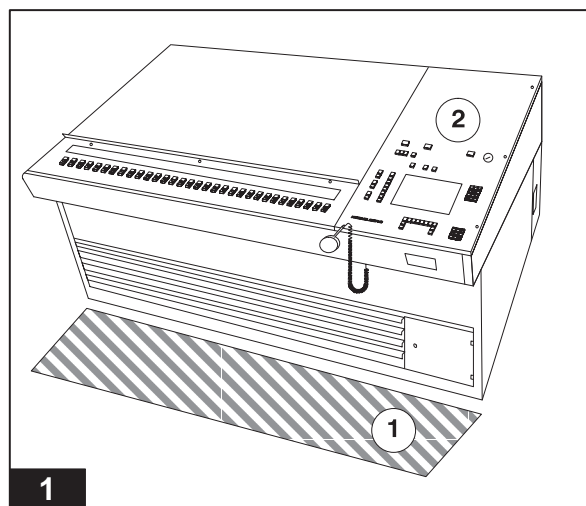
For reasons of safety, do not reach into the inside of the housing for any reason!

Do not climb/step onto the unit!

Before starting work, check that

- electronics housings and covers are mounted correctly;
- no foreign matter can get into the unit.

Do not place any spray cans or containers of volatile or flammable cleaning agents in this area.



1.3 Technical data

Noise emission values

(in accordance with DIN 45635, sheet 27)

- Noise emission value < 70 dB (A)

Electrical equipment

Voltage	115V / 230V AC
Frequency	50 / 60Hz
Rated current	4 / 2A
Fuse	16A

Electrical devices

- Only to be repaired and serviced by authorised HEIDELBERG service staff.
- Always keep electronics housings and covers closed.

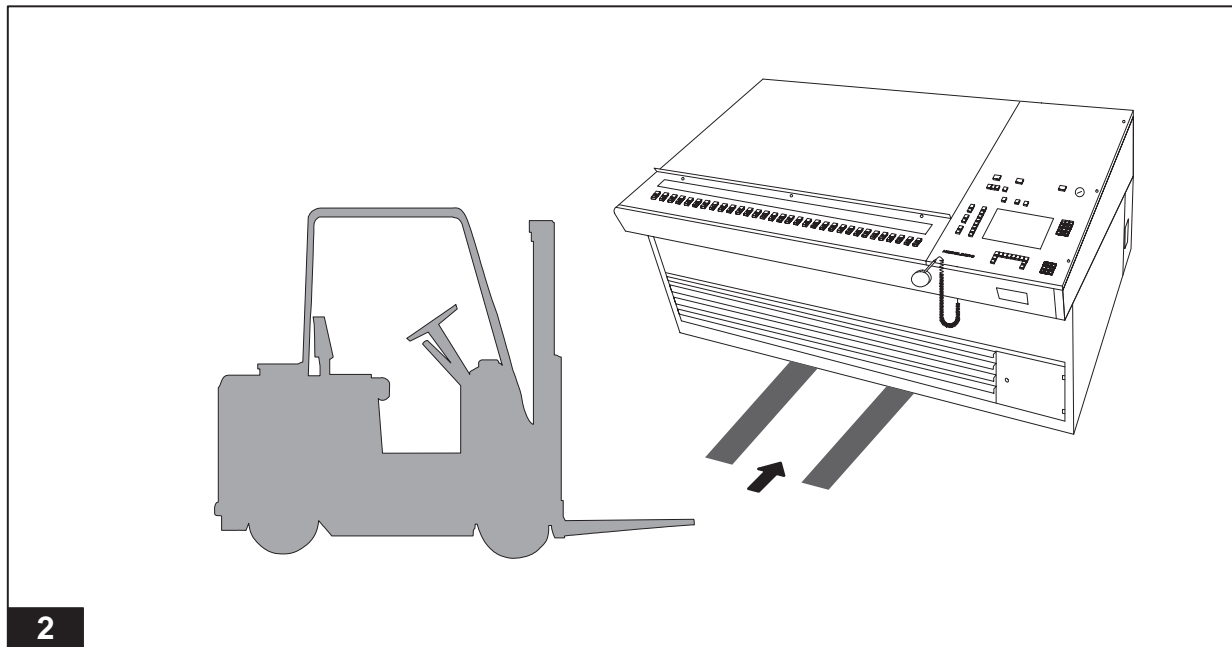
1.4 Transporting the unit

Weight

– approx. 450 kg

To transport the unit, slide the forks (Fig. 2) of a fork lifter or similar means of transport under the unit.

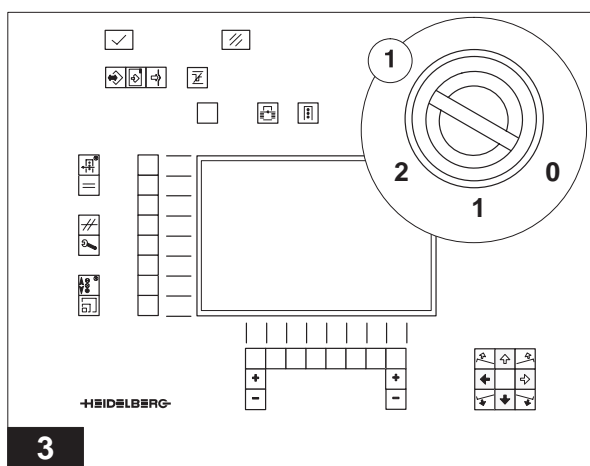
When transporting and setting down the unit, make sure that nobody is in the area within which the unit may tip over.



1.5 Operator control elements

Key switch

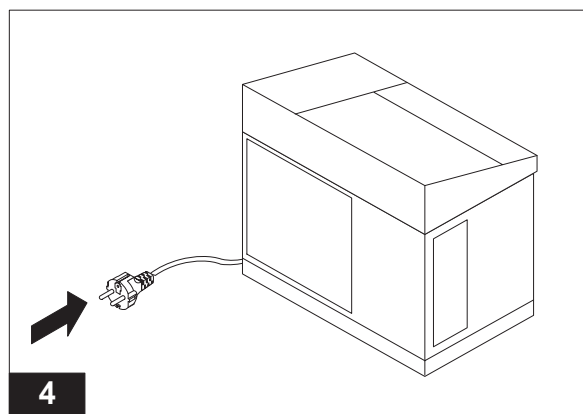
The key switch ① is located on the control panel.



Warning – Electric current

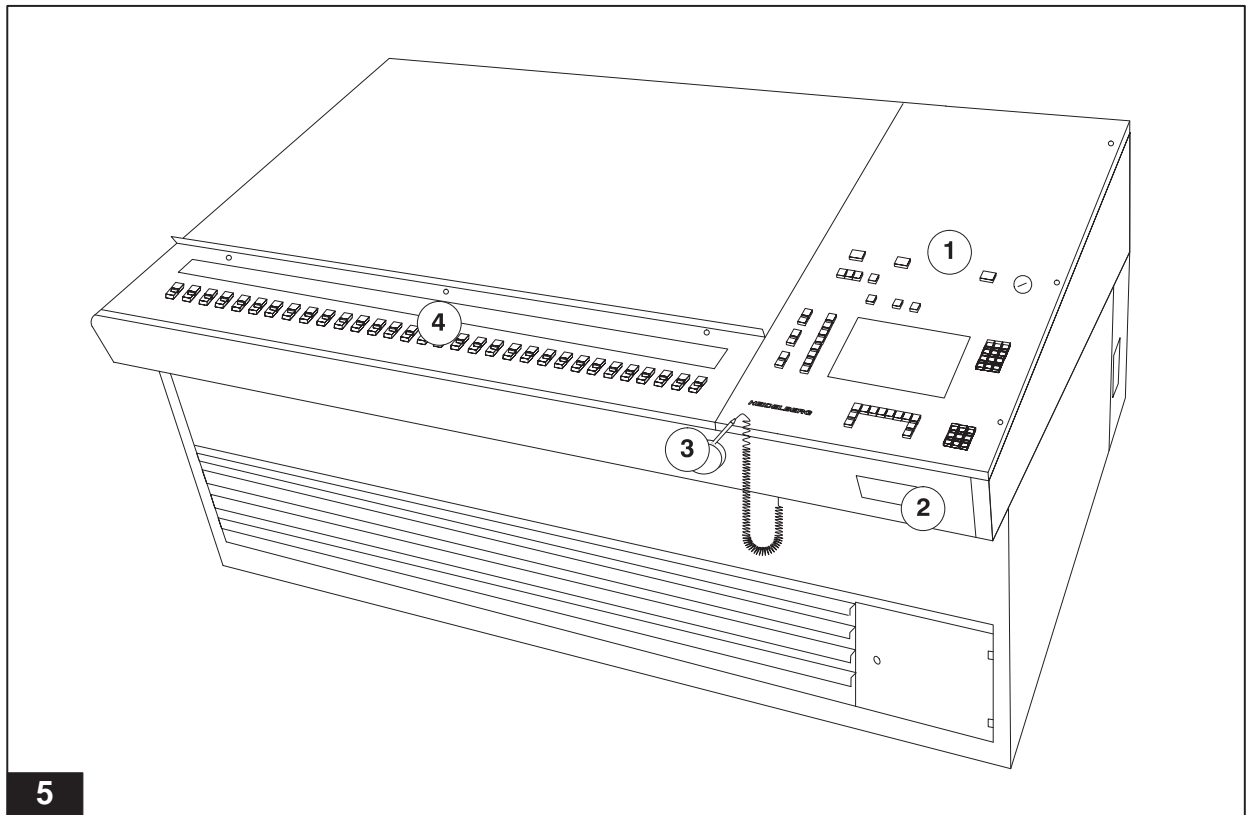
Even if the key switch is in „0“ position, the unit will not be safely isolated from the electrical supply. To de-energize the unit, remove the power plug from the socket-outlet (Fig.4).

Power plug



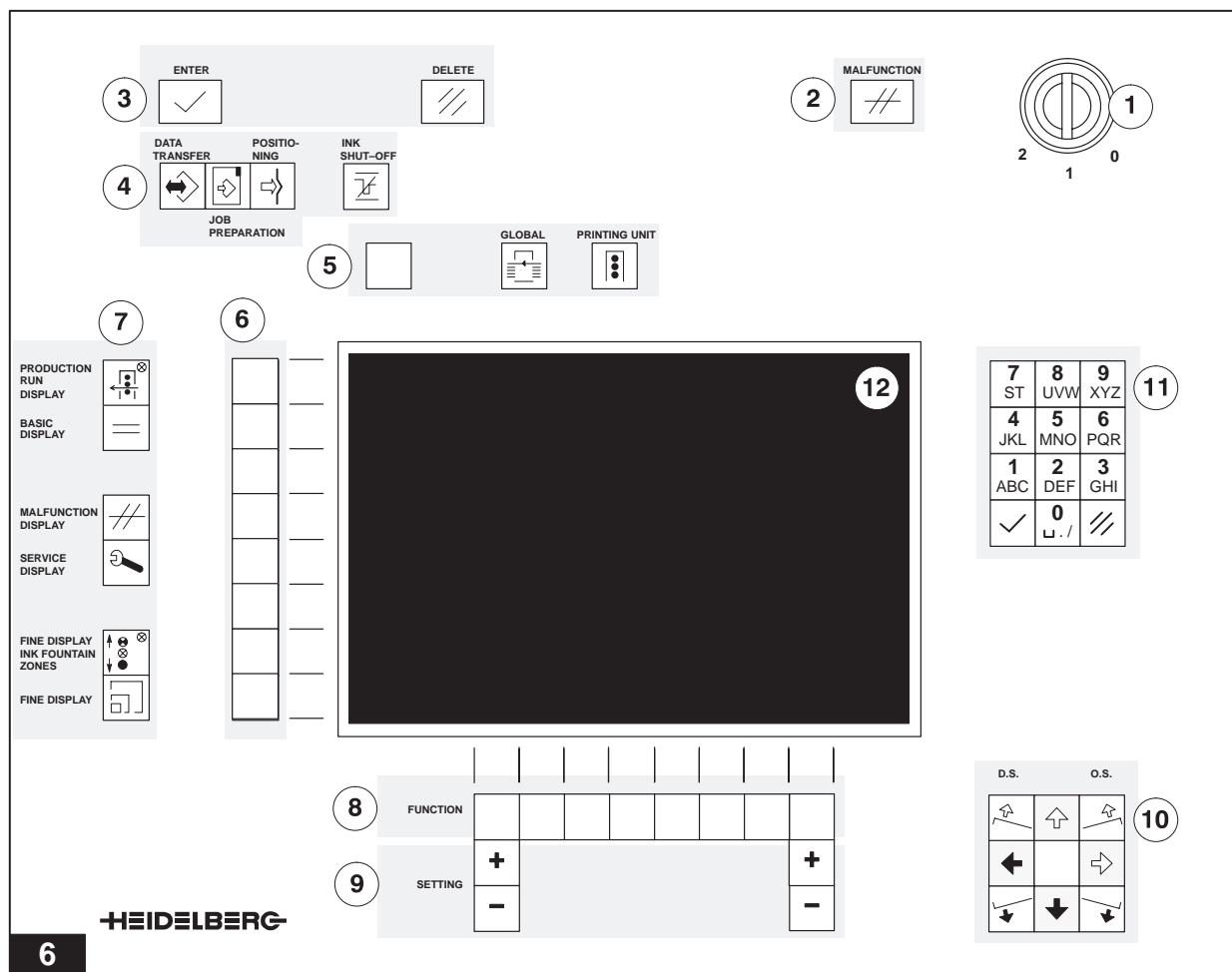
2 Structure and functions

2.1 Complete unit



- ① Control panel with display
- ② Job memory card unit
- ③ Light pen
- ④ Ink zone display and buttons for ink zone setting

2.2 Control panel



- | | |
|---|---|
| <p>① Key switch</p> <p>② Signal lamp</p> <p>③ Command control buttons
ENTER
DELETE</p> <p>④ Command buttons
DATA TRANSFER
JOB PREPARATION
POSITIONING
INK SHUT-OFF</p> <p>⑤ „Unit“ selector buttons
SWITCHOVER
GLOBAL
PRINTING UNIT</p> <p>⑥ „Group“ selector buttons</p> | <p>⑦ Display buttons
PRODUCTION RUN DISPLAY
BASIC DISPLAY
MALFUNCTION DISPLAY
SERVICE DISPLAY
FINE DISPLAY INK FOUNTAIN ZONES
FINE DISPLAY</p> <p>⑧ Function buttons</p> <p>⑨ Adjustment buttons (+/-)</p> <p>⑩ Register keypad
Circumferential register
Lateral register
Diagonal register</p> <p>⑪ Alphanumeric keypad</p> <p>⑫ Control console display (ZID)</p> |
|---|---|

2.3 Functions

All functions are entered via the control panel of the CPC 1-04 control unit and monitored on the ZID control console display.

Remote control of:

- register motors,
- ink zone motors,
- ink fountain roller and dampening ductor motors.

Data transfer

Processing of a maximum of 50 jobs on one job memory card and of the jobs in a maximum of five internal job memories.

Job preparation

A job can be prepared/processed from a maximum of five job memories and transferred to the printing press at a later point in time (positioned).

Automatic register control

Automatic colour control using CPC 41 register control/CPC 42 Autoregister.

Displays

- to inform and guide the operator
- for test and service purposes.

Characteristic default curves

Characteristic parameter curves for speed compensation:

- dampening ductor
- ink fountain roller
- varnish ductor

Characteristic parameter curves for plate image reader presettings:

- Data from the CPC 31 plate image reader

Coating unit register

Control of register in circumferential and lateral direction.

Transfer of measured values from

- CPC 2 /CPC 21 quality control (online) for colour control;
- CPC 3/CPC 31 plate image reader for presetting data.
In the CPC 1-04 control unit, the recorded measured values are used to calculate ink zone openings and ink stripe widths.
- CPC 41 register control/
CPC 42 Autoregister for register control.

2.4 Control consoles

To each press of the Speedmaster 102 series, two CPC control consoles can be connected. The consoles are designed as democratic systems so that settings for the press can be done on each of them. The displays will always be shown on the other console as well.


























If a particular setting is changed parallelly from both control consoles, the control console on which the corresponding button was **last** actuated will be given priority. Reciprocal interlocking of the control consoles is not possible.

Exception:

While inputs are made on one of the consoles, the settings for jobs and characteristic curves will be interlocked to the other. The interlocked status is shown by a key symbol on the ZID.

3 Buttons, pictograms, overviews

3.1 Control panel buttons

	ENTER		Diagonal register, + D.S.
	DELETE		Lateral register, –
	MALFUNCTION		Diagonal register, – D.S.
	SWITCHOVER (sheet reversal, scroll)		Circumferential register, +
	GLOBAL		Signal lamp, register block active
	PRINTING UNIT		Circumferential register, –
	DATA TRANSFER		Diagonal register, + O.S.
	JOB PREPARATION		Lateral register, +
	POSITIONING		Diagonal register, – O.S.
	INK SHUT-OFF		
	PRODUCTION RUN DISPLAY		
	BASIC DISPLAY		
	MALFUNCTION DISPLAY		
	SERVICE DISPLAY		
	FINE DISPLAY OF INK FOUNTAIN ZONES		
	FINE DISPLAY		

Abbreviations

New designation		Old designation	
Quality control	CPC 21	Quality control	CPC 2-S
Plate image reader	CPC 31	Plate image reader	CPC 3-S
Register control	CPC 41	Register reader	CPC 4
Autoregister	CPC 42	CPC Autoregister	
Data Control	CPC 51	CPData	













Number legend

1	2	3	...	work-steps
1	2	3	...	enumerations

3.2 Pictograms/symbols in the display



















PRODUCTION RUN DISPLAY

-  Setting of ink fountain roller
-  Percentage setting of ink fountain zones
-  Register display zero
-  Diagonal register D.S.
-  Lateral register
-  Circumferential register
-  Diagonal register O.S.
-  Setting of dampening ductor/varnish ductor
-  Total mode
-  Display automatic register control active
-  Automatic follow-up control active
-  Display ink fountain zone setting active



BASIC DISPLAY

-  **Automatic register control selection**
-  Switch automatic register control to active
-  **STF** Standard colour for CPC 42 Autoregister
-  Disable/switch on circumferential register
-  Disable/switch on lateral register
-  Disable/switch on diagonal register
-  Correction values zero
-  Total mode
-  Delete
-  Operation automatic register control
-  **Follow-up functions selection**
-  Automatic follow-up control
-  Follow-up control
-  Total mode
-  Selection confirmation
-  Dead beat

**SERVICE DISPLAY****Software versions****Characteristic curves**

Characteristic curves dampening ductor



Characteristic curves ink fountain roller



Characteristic curves varnish ductor



Characteristic curves presetting CPC 31 plate image reader



Select the support positions



Select the support positions



Switchover between displayed characteristic curves of a characteristics field



Reset characteristic curve



Delete



Percentage adjustment characteristic curve



Input confirmation

**Service functions**

ZID functional test



Wiring test illuminated buttons






















Wiring test signal lamp



Wiring test ink zone keys













Command DATA TRANSFER

-  Current job in press memory
-  Copy job to one of the 5 job memories
-  Copy to one of the 50 memory locations on the job memory card
-  Combine jobs
-  Job in job memory
-  Read job from job memory card
-  Delete job
-  Select job memory card
-  Format the job memory card
-  Define job memory
-  Scroll
-  Store all characteristic curves
-  Store all characteristic curves of the *dampening ductor* type
-  Store all characteristic curves of the *ink fountain roller* type
-  Store all characteristic curves of the *varnish ductor* type
-  Store all characteristic curves of the *colour presetting* type
-  Store characteristic curve of the *dead beat* type
-  Store characteristic curve of the *CPC 2 follow-up control display* type
-  Store characteristic curve of the *preinking* type



Command JOB PREPARATION

-  Select memory/job
-  Name job memory
-  Press configuration
-  Colour allocation
-  Format limitation
-  Alphanumeric keypad
-  Input using letters
-  Switchover straight printing/perfecting
-  Sheet reversal
-  Change colour

**Command JOB PREPARATION**

Printing unit/colour



Colour selection



Select special colours



No ink in printing unit



Delete allocation of colours/varnishes to units



Delete existing colours/varnishes



Confirmation of input



Allocate characteristic default curve of CPC 32



Characteristic curve default colour black



Allocate characteristic curves



Offset inks



U.V. inks



Dry offset inks



Vario operation



Printing with alcohol



Printing without alcohol



Select varnish



Characteristic curves coating unit



Set ink fountain roller



Ink fountain zones identical / set ink fountain zones in gradations (light pen)



Randomly set ink fountain zones (light pen)



Set varnish ductor



Total mode



Display ink fountain zone setting active



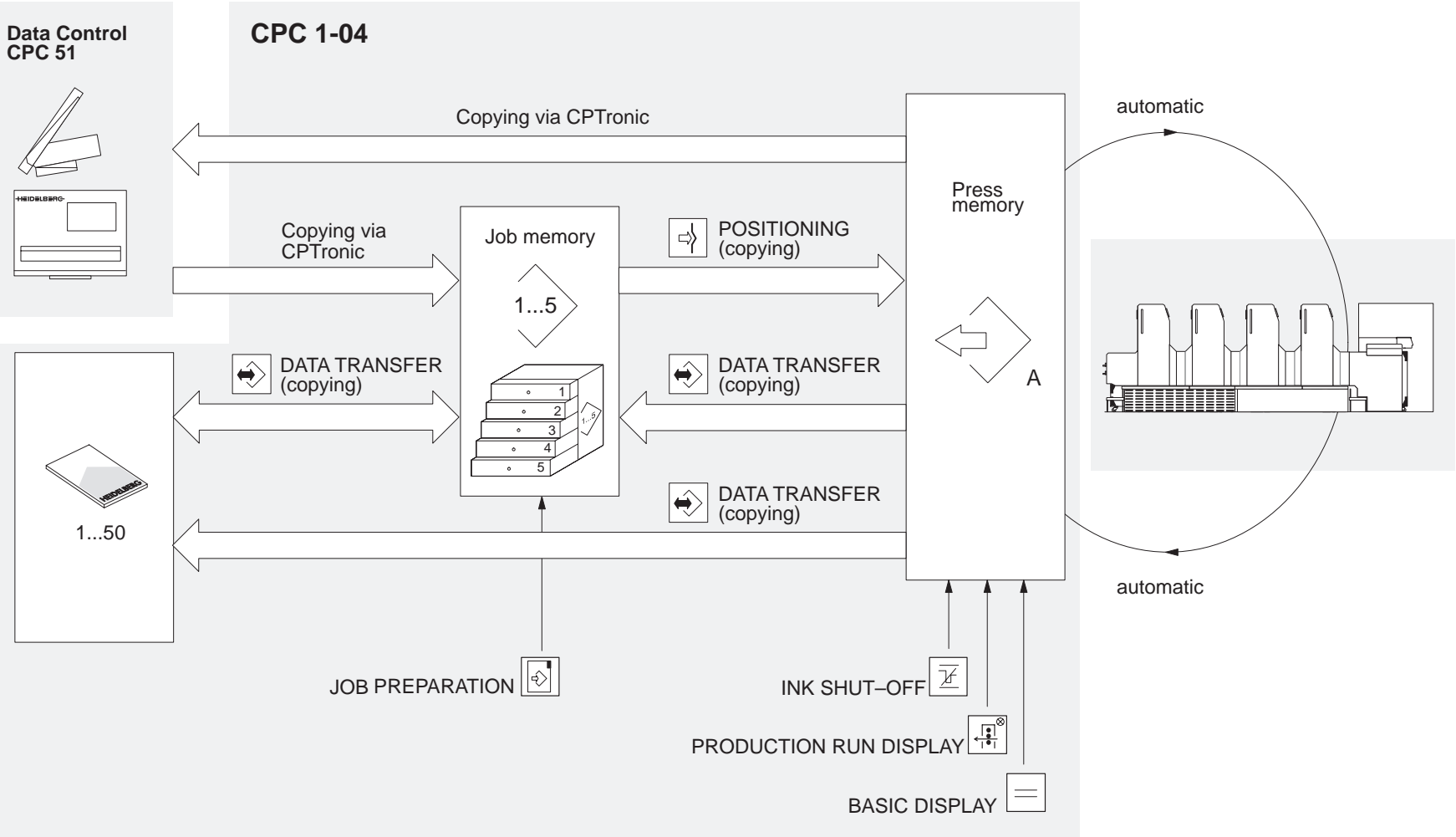
Display disable LED active

**Command POSITIONING**

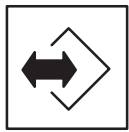
Select memory/job

**Command INK SHUT-OFF**

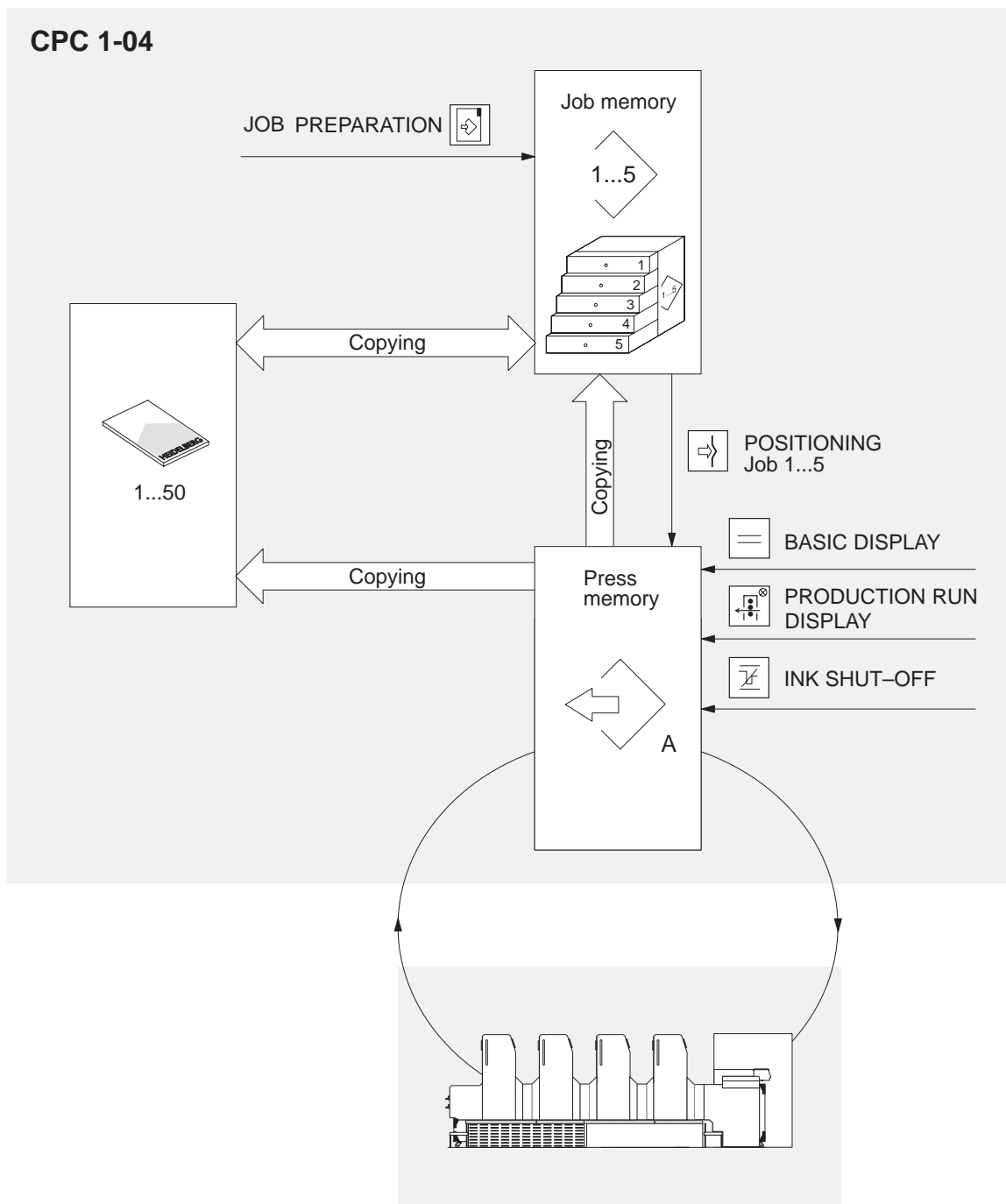
CPC 1-04 Communication



Overview DATA TRANSFER



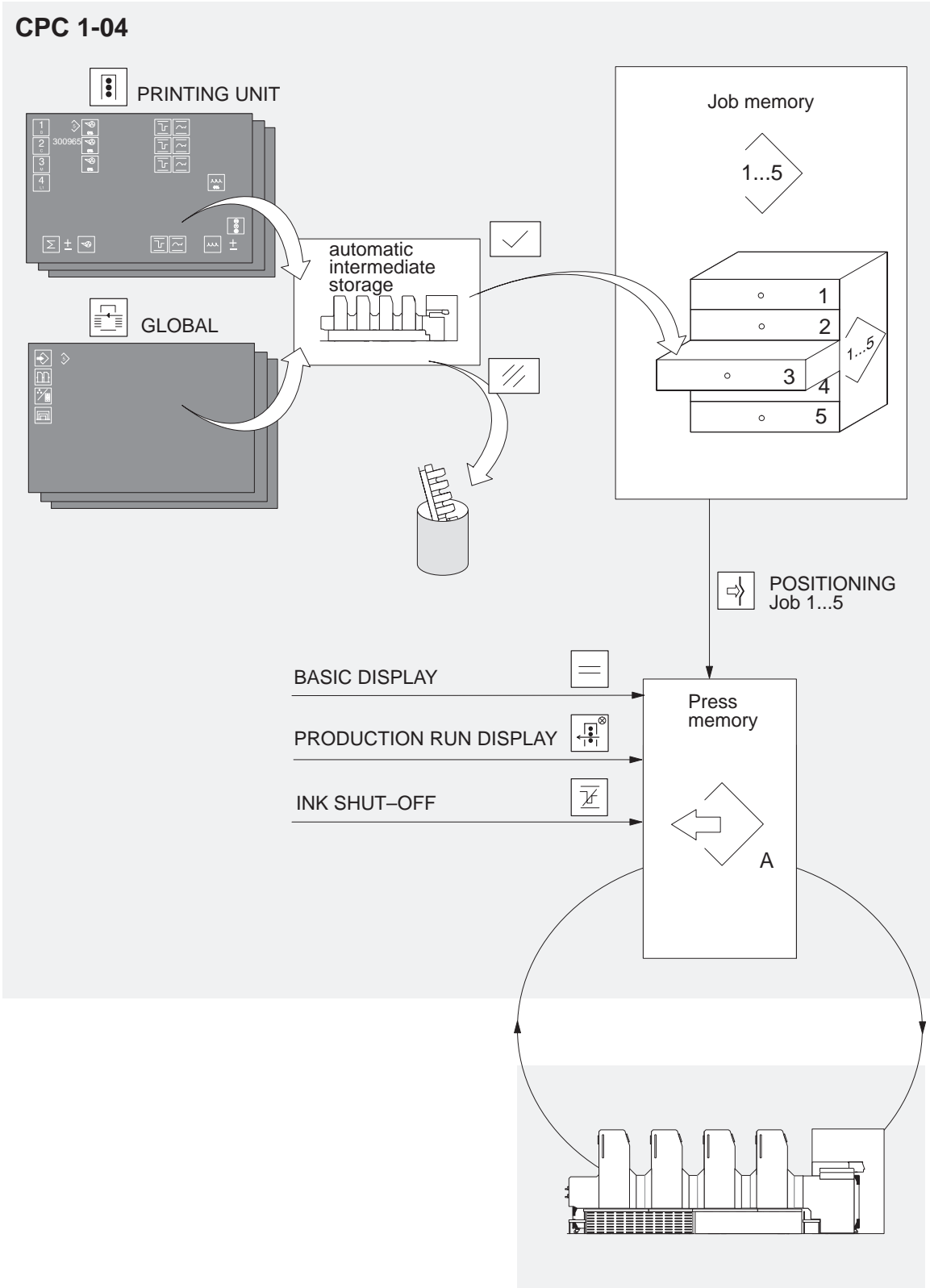
DATA TRANSFER



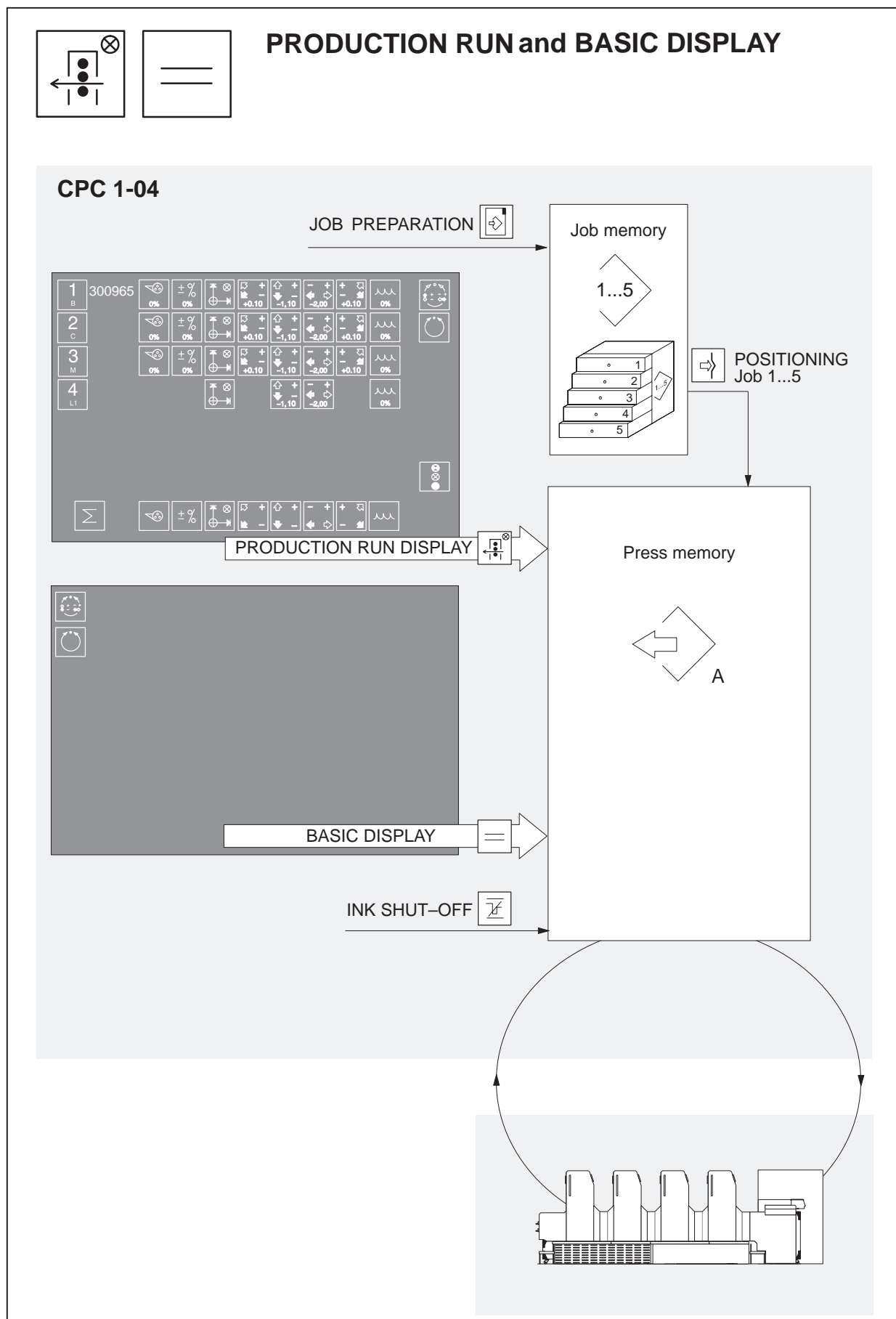
Overview JOB PREPARATION



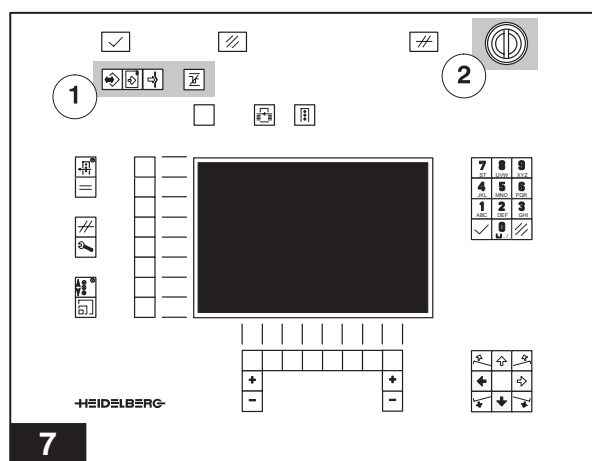
JOB PREPARATION



Overview PRODUCTION RUN and BASIC DISPLAY

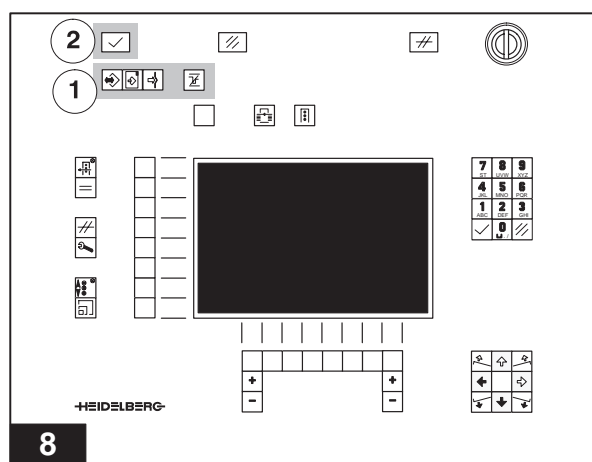


3.3 Commands general



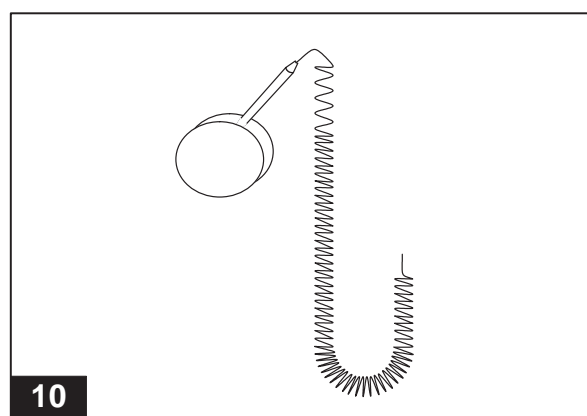
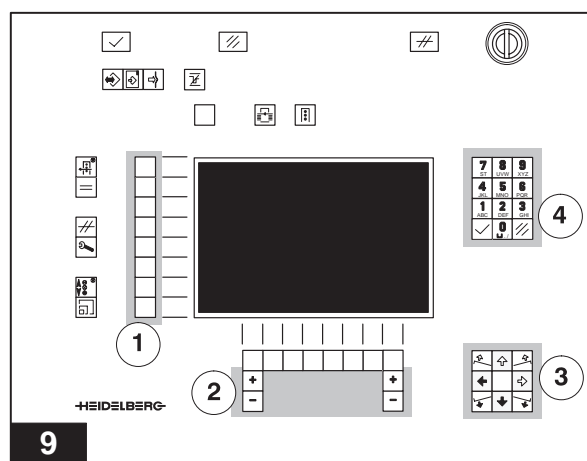
Commands (Fig. 7, ①) can be selected when the key switch (Fig. 7, ②) is in the unlocked state (position 1), irrespective of the current display. However, this is only possible if no other command is being processed at the same time.

Command initialization



Upon selection of a command (Fig. 8, ①) all displays are removed and the command control button ENTER (Fig. 8, ②) flashes. Depending on the command, press groups and printing unit groups are preselected in the display. Preselections can be changed.

Command functions

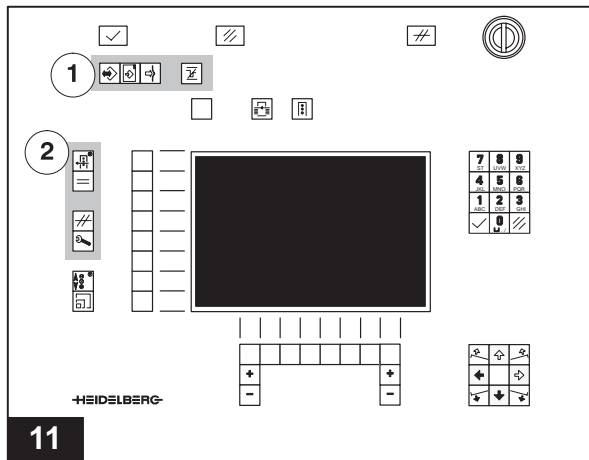


Depending on the preselection, the function groups and printing unit groups will appear for which the command can now be selected more precisely.

Command selection is effected using:

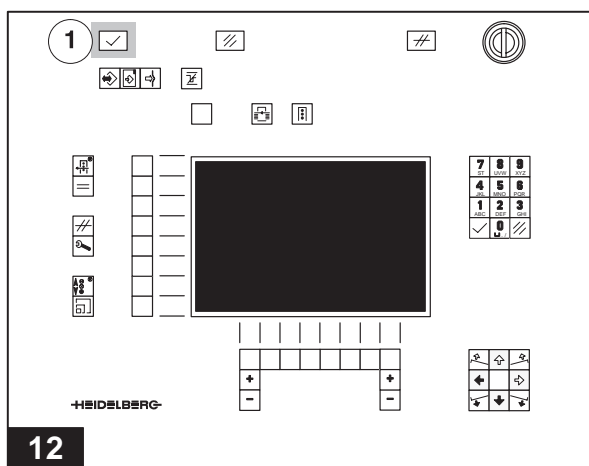
- the selector buttons 'Group' (Fig. 9, ①),
- the +/- adjustment buttons (Fig. 9, ②),
- the numeric keypad (Fig. 9, ④),
- the register keypad (Fig. 9, ③) or
- the light pen (Fig. 10).

Command correction and command interruption



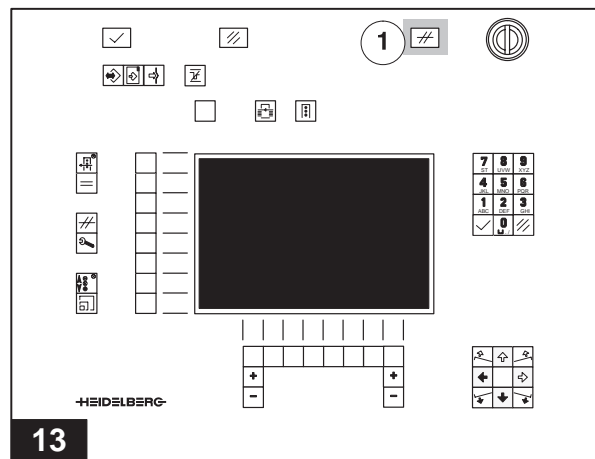
Corrections to the command selection are input after reselection (Fig. 11, ①). Any desired interruptions during command selection can be made by selecting the PRODUCTION RUN, BASIC, MALFUNCTION or SERVICE DISPLAY (Fig. 11, ②). The command control button Enter switches off and the command button flashes. To return to the command, press the flashing command button (Fig. 11, ①).

Enable command



All commands are enabled using the command control button ENTER (Fig. 12, ①). Upon actuation, the Enter button will light up until the command has been executed.

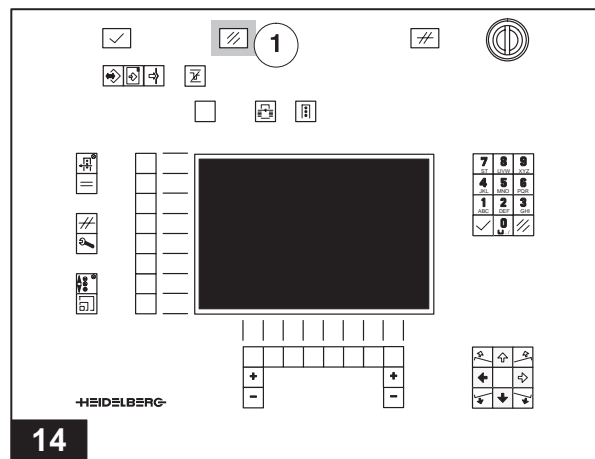
Command execution not possible



If the command cannot be executed at all or only incompletely, the signal lamp (Fig. 13, ①) will light up.

In order for the command to be carried out again, the cause of the malfunction must be eliminated and the command re-initialized.

Aborting a command



Commands are aborted by pressing the command control button DELETE (Fig. 14, ①).

Actuation **prior to** enabling via the command control button ENTER:

Return to the display selected before the command was initialized.

Actuation **after** enabling via the command control button ENTER:

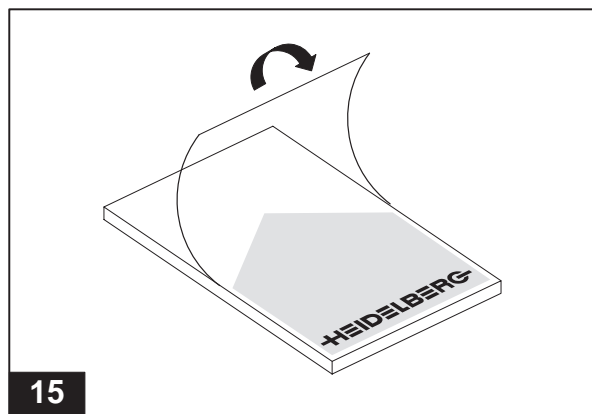
Abortion of command execution in the current actual status.

4 Job memory card

General

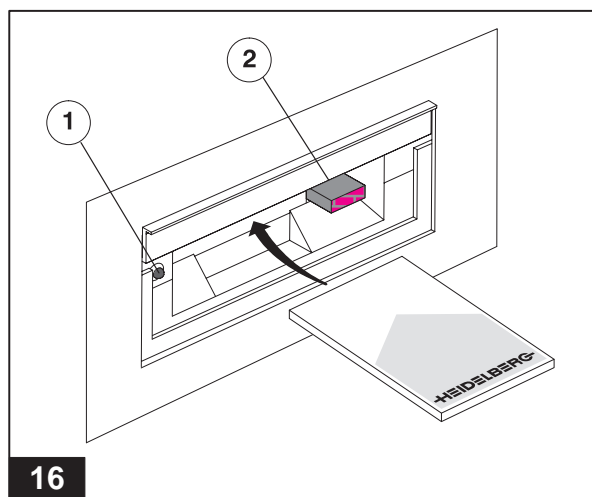
Only use genuine HEIDELBERG job memory cards.

Repeat job data of a maximum of 50 jobs can be stored on a job memory card.



- 1 Remove the protective film before using the job memory card (Fig. 15).

Inserting a job memory card



- 1 Push card (into direction of the arrow) into the slot (Fig. 16) until the card engages.

If the card is inserted correctly, the red signal lamp ② will light up for a short moment.

- ! **Caution – danger of data loss if the job memory card is removed prematurely**

During reading or writing on the job memory card, the red signal lamp will light up. Do not remove the card as long as the signal lamp is lit: data loss!

Remove card only when the Enter button is no longer lit, or the display on the screen has changed.

- 2 To eject the job memory card, press the button ② to the right of the slot.

Master for copying contents of job memory card

1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
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19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	



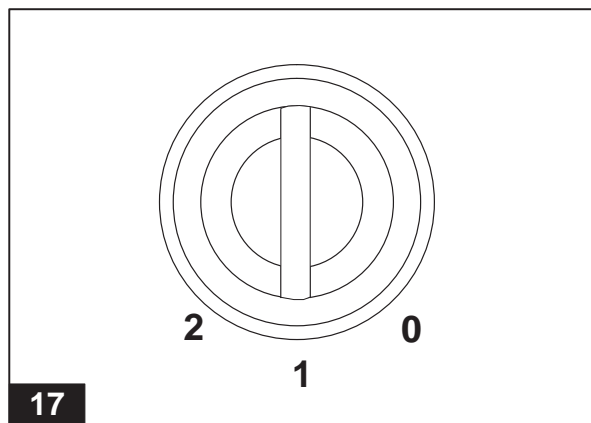
5 Switching on and off

5.1 Switching on

► Note

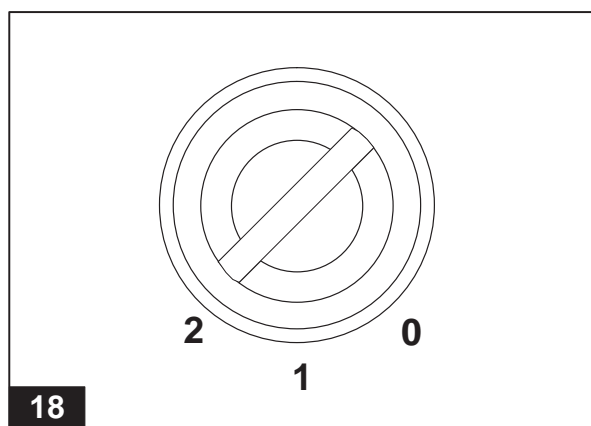
Before switching on the CPC 1-04 control unit, the main switch of the printing press (CPTronic) must be switched on.

Key in position 1:



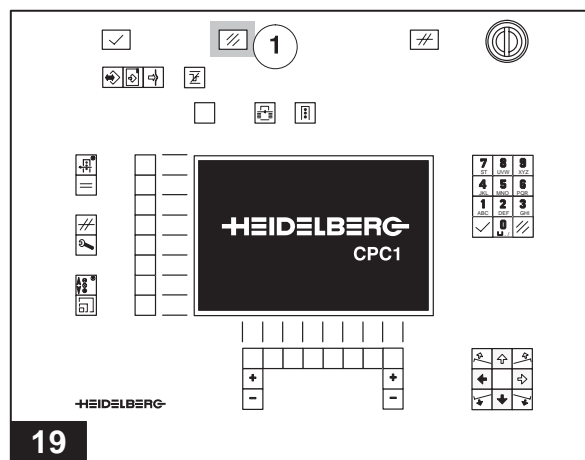
- CPC 1-04 is switched on.
- All buttons can be used for inputs.
- The key cannot be removed.

Key in position 2:

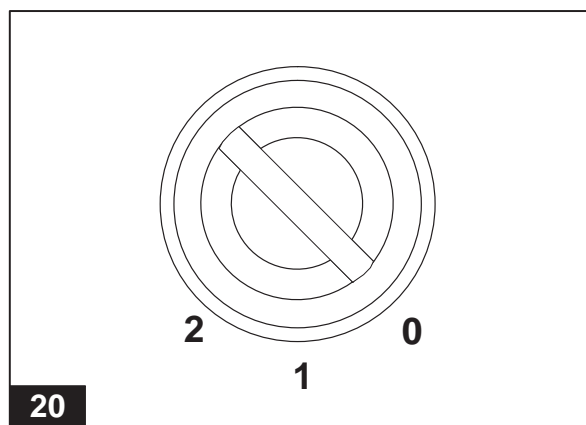


- CPC 1-04 is switched on.
- Commands and control functions (remote control of registers, ink fountain zones, ink fountain roller and dampening duct motor) are not possible.
- The key can be removed.

During the start-up phase, "Heidelberg CPC 1" (Fig. 19) will appear on the display.



5.2 Switching off



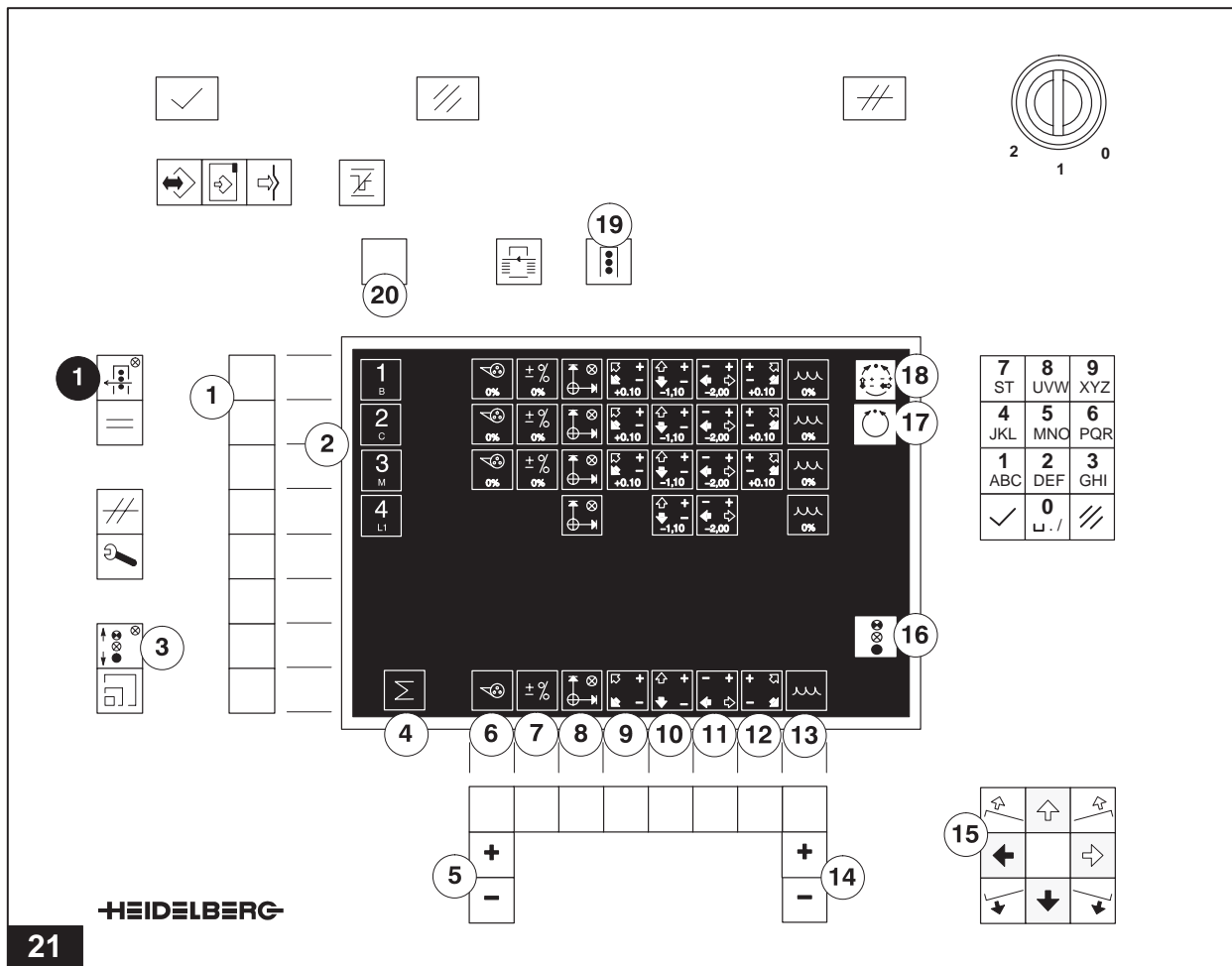
Key in position 0:

- CPC 1-04 is switched off.
- The key can be removed.

► Note

Wait at least 2 seconds between switching off and on.

6 Production run display



Any settings entered will be transmitted to the printing press and executed approximately 1 second after the last actuation of a button.

While ink fountain zones are being set, the coarse diodes will flash, whereas the values on the display will flash when registers are set.

- ① Press the PRODUCTION RUN DISPLAY button.

► Note

Upon switching on, the PRODUCTION RUN DISPLAY will automatically appear in the total mode ④. No printing unit is selected.

- ① Selector buttons for printing units
② Display printing units/colour

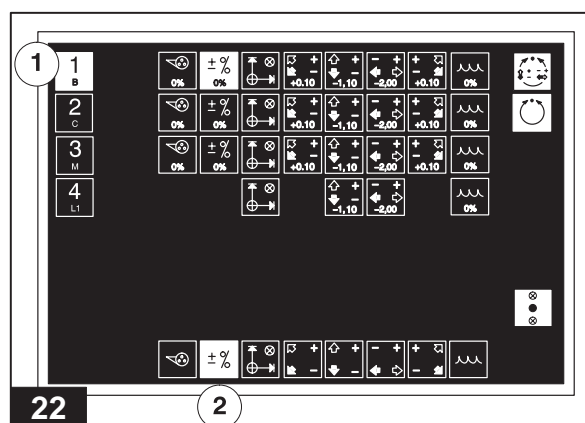
- ③ FINE DISPLAYS INK FOUNTAIN ZONES active (after printing unit selection)
④ Total mode display
This display will appear only after switching on or actuation of ①.
⑤ Adjustment buttons for ink fountain roller values/percentage setting of ink fountain zones
⑥ Display of ink fountain roller values
⑦ Percentage setting of ink fountain zones
⑧ Register display at zero

Upon selection of a register (9) ... (12) using the function buttons, the button in the center of the register block (15) will light up.

If the diagonal register is set, the values for the circumferential register will automatically be corrected.

- (9) Display diagonal register D.S.
- (10) Display circumferential register
- (11) Display lateral register
- (12) Display diagonal register O.S.
- (13) Display dampening values/varnish values
- (14) Adjustment buttons dampening values/varnish values
- (15) Adjustment buttons register (register block)
- (16) Display ink zone setting active (after printing unit selection)
- (17) Display automatic follow-up control active
- (18) Display automatic register control active
- (19) Selector button PRINTING UNIT
Total mode (all printing units selected)
- (20) The function button SWITCHOVER is used to change between the previously selected printing unit groups (before/after the set sheet reversal).

Setting of ink fountain zones in groups



Ink fountain zones can be set in groups. However, only ink fountain zones which directly follow one another can be selected as a group.

- 1 Select the production run display (Fig. 22), activate a printing unit (1) and press the button "Percentage setting of ink fountain zones" (2).

The diodes for the selected printing unit will light up in the ink zone display, in accordance with the opening value for the associated ink fountain zones.

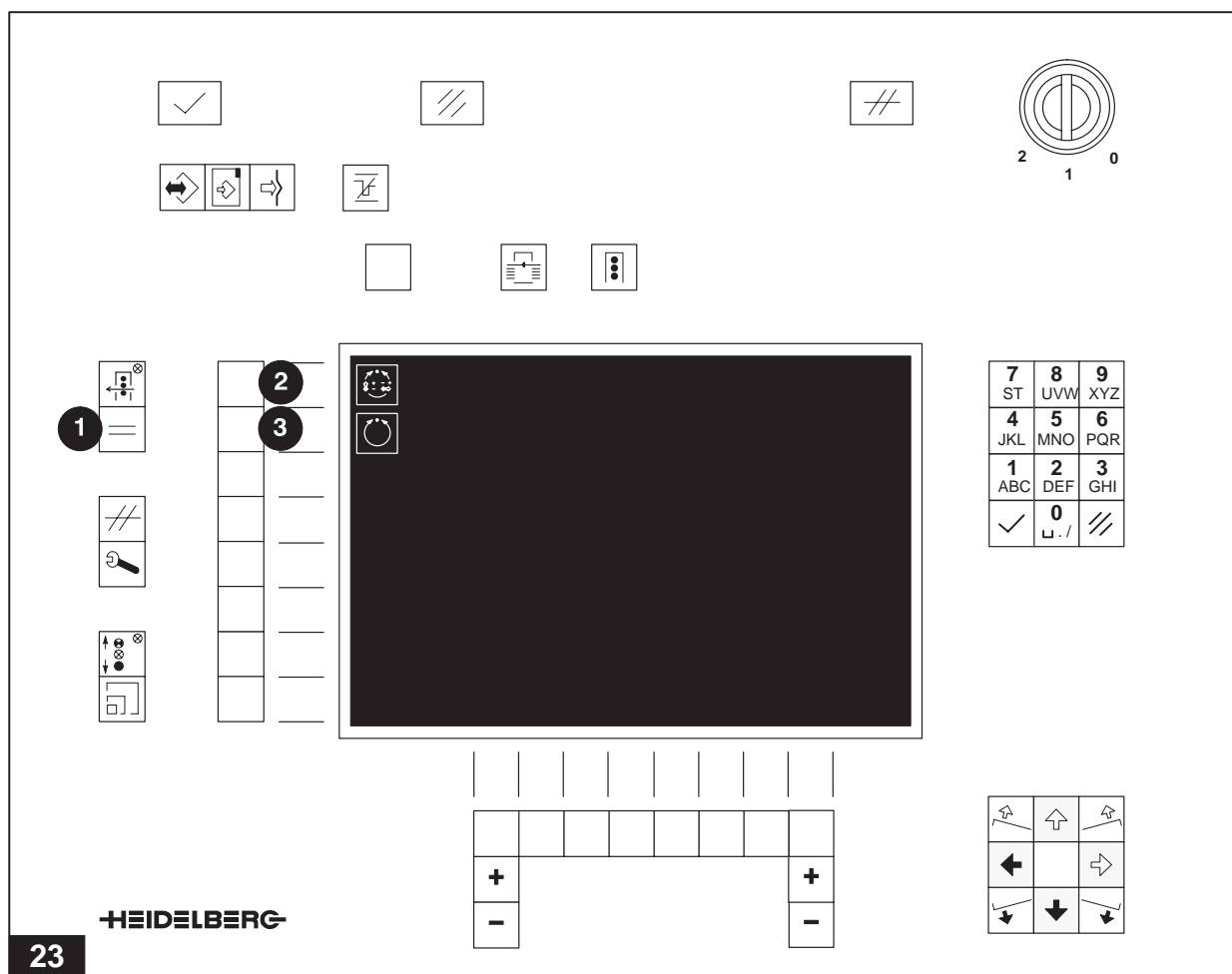
- 2 Use the "–" buttons below the light-emitting diodes to define the required range.

Example:

Select ink fountain zones 9 to 13; press the "–" buttons below the ink fountain zones 9 to 13 (one after the other). The disable diodes in the selected range will **not** light up.

- 3 Set the selected ink fountain zones in the production run display, using the left-hand side +/- buttons (see page 22, (5)).

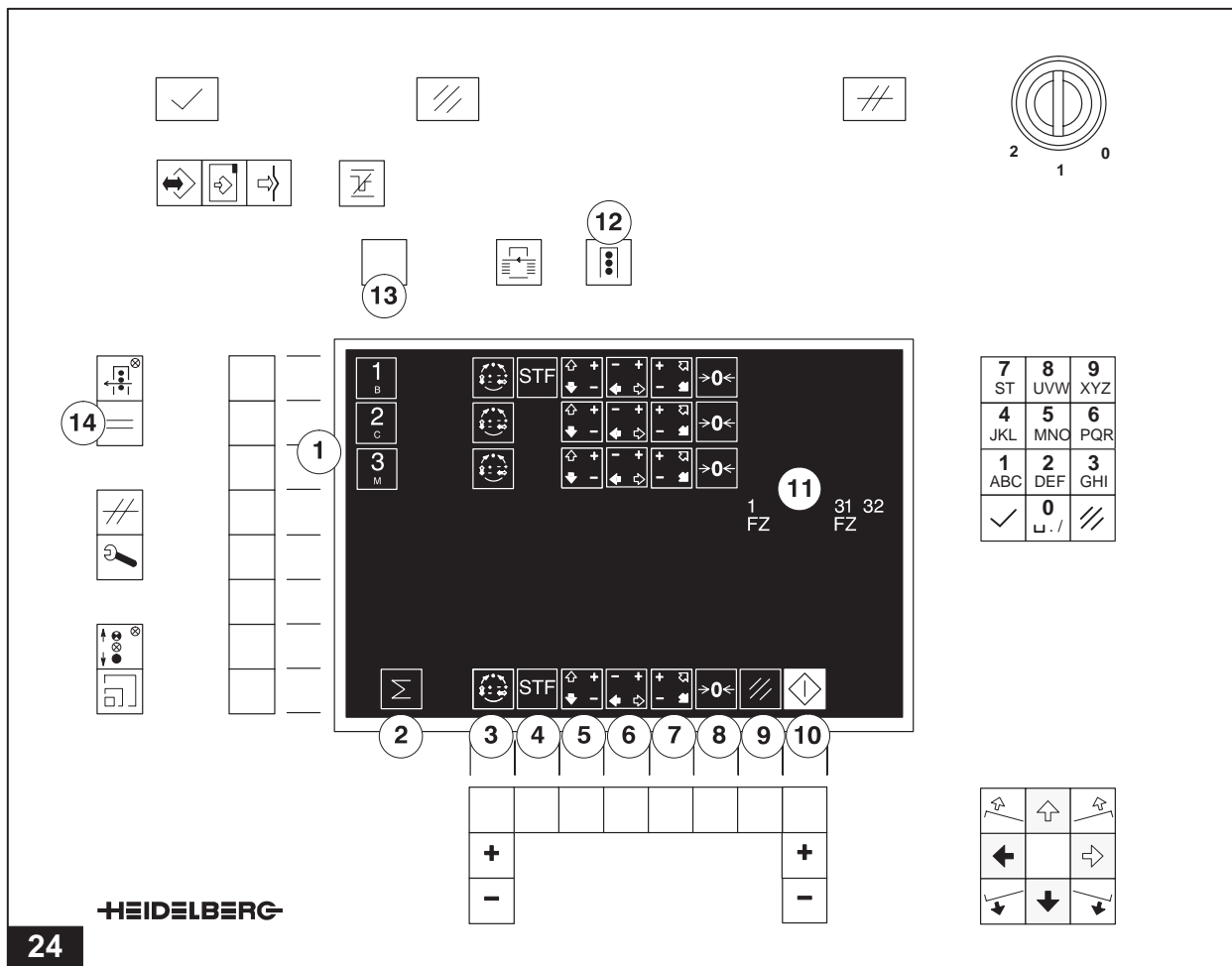
7 Basic display



Input functions are transmitted directly to the printing press where they are carried out.

- 1 Press the BASIC DISPLAY button (button lights up).
- 2 Press the AUTOMATIC REGISTER CONTROL (**CPC 41/CPC 42**) button (see page 26).
- 3 Press the FOLLOW-UP FUNCTIONS (**CPC 2/CPC 21**) button (see page 28).

7.1 Automatic register control



Automatic register control with CPC 41 register control or CPC 42 Autoregister . Upon pressing the Run (10) function button, inputs will be transmitted directly to the printing press where they are carried out.

- ③ **Automatic register control**
After individual printing units ① have been selected for automatic register control, use the automatic register control button ③ for confirmation.

► Note

For a detailed description see the CPC 42 Autoregister operating instructions , Chapter "Operation" (this file).

- ① Select the printing units (default: total mode)
- ② **Total mode**
Will only appear if all printing units have been selected (upon switching on of the automatic register control or actuating ⑫).

- ④ **Standard colour** (only for CPC 42 Autoregister)

- ① Select PU (colour) ① for standard colour.
- ② Press function button ④.
- ③ Press function button ⑩.

► **Note**

If no colour is selected, black will automatically become the standard colour!

Example:

With a 6-colour print on a 4-colour printing press, 2 colours will not be printed until the second pass. The colour black, already printed in the 1st pass, will become the standard colour in the second pass.

If the printing unit of the selected standard colour is not selected, it will not be possible to switch on the CPC 42 Autoregister.

- ⑤...⑦ Disabling/switching on of individual registers for automatic control.

- ⑧ **Correction values zero**

(only for CPC 42 Autoregister)

Upon switching on of the automatic register control, the correction values of the control will be set to zero (e.g. in case of a new job).

- ⑨ **Delete**

To be pressed before the CPC 1-04 control unit is switched off. This ensures that the correction values of the control will remain stored after switching off of the control unit.

- ⑩ **Operation of the automatic register control**

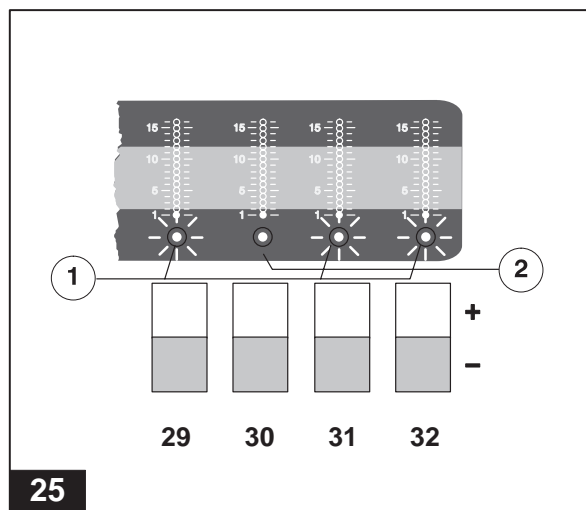
Only upon pressing the "Run" button, all entries will become effective.

- ⑪ Search areas control marks for CPC 42 (see Fig. 25).

When the CPC 42 Autoregister is connected, the disable diodes will flash (see Fig. 25, ①) and the disable diodes (see Fig. 25, ②) of the most recently entered search areas will light up.

► **Note**

For detailed description, see CPC 42 Autoregister operating instructions, Chapter "Operation" (this file).

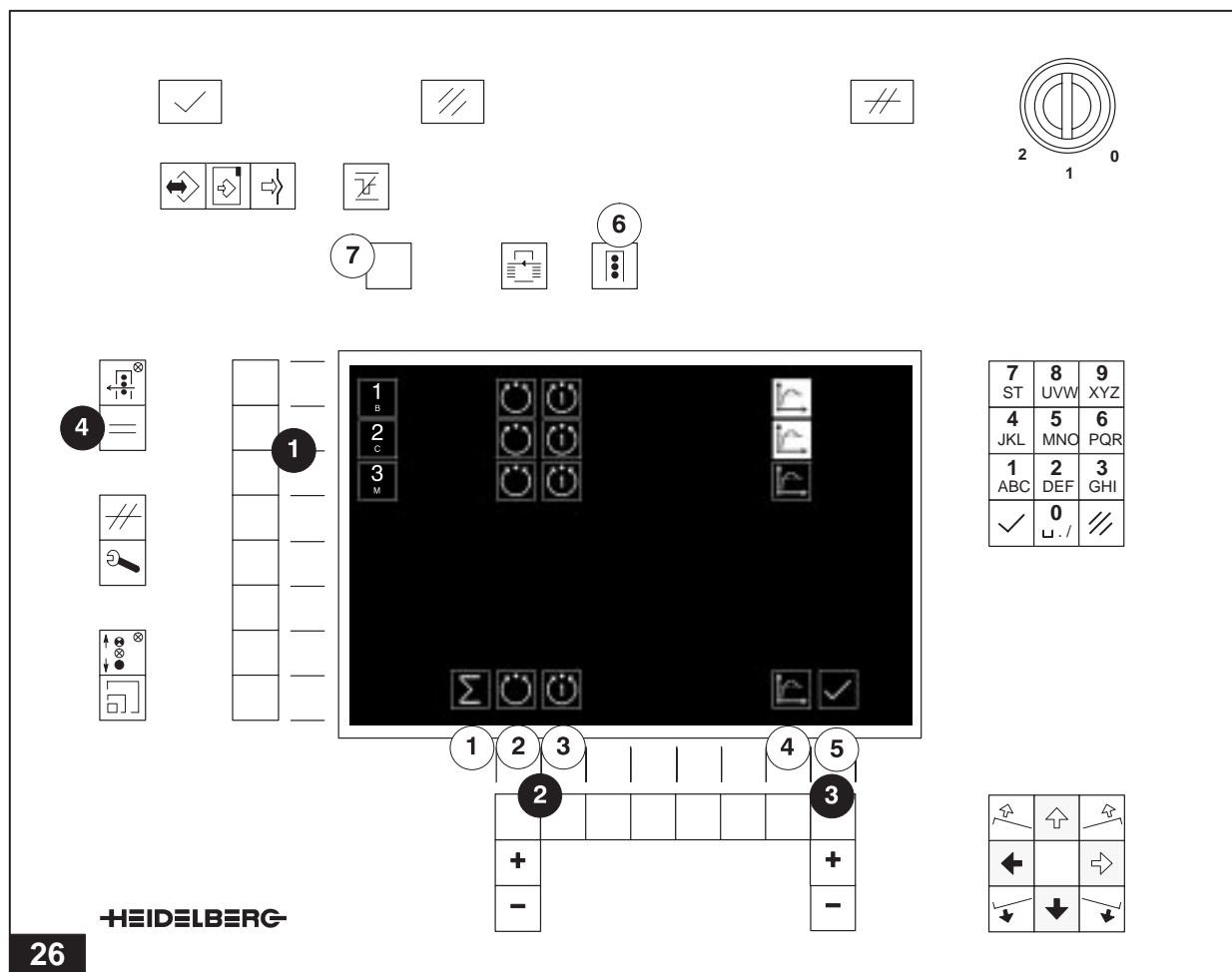


- ⑫ **Selector button PRINTING UNIT**
Total mode (all printing units selected).

- ⑬ The SWITCHOVER function button is used to change between the previously selected printing unit groups (before/after the set sheet reversal).

- ⑭ To return to the BASIC DISPLAY:
Press the BASIC DISPLAY button.

7.2 Follow-up functions



Transfer of measured data from CPC 2/CPC 21

- ① Select printing unit (default: total mode).
- ② Select using the **automatic follow-up control** ②/ **follow-up control** ③ button (selected pictogram will be shown in inverse representation; pictogram Selection Confirmation ⑤ flashes).
- ③ Press the Selection Confirmation button.
- ④ To return to the BASIC DISPLAY: Press the BASIC DISPLAY button.

- ① Total mode will appear if all printing units are selected (upon switching on or actuation of ⑥).

- ② **Automatic follow-up control**

If automatic follow-up control has been selected, the ink supply will automatically be corrected without reselection on the CPC 1-04.

- ③ **Follow-up control**

If follow-up control has been selected, the calculated current ink zone and ink stripe follow-up function will be executed.

► **Note**

Pictograms will only be displayed if measurement data from CPC 2/CPC 21 exist. After carrying out follow-up control (also for individual printing units), the pictograms will no longer be displayed.

- ④ **Dead beat** (overmodulation)

If the "Dead beat" function is activated, the ink fountain zones will first open or close in excess of the preset values and then move into their final positions.

This function can be activated or deactivated individually for each printing unit.

- ⑤ Selection confirmation display

- ⑥ **PRINTING UNIT**

Total Mode selector button (all printing units selected).

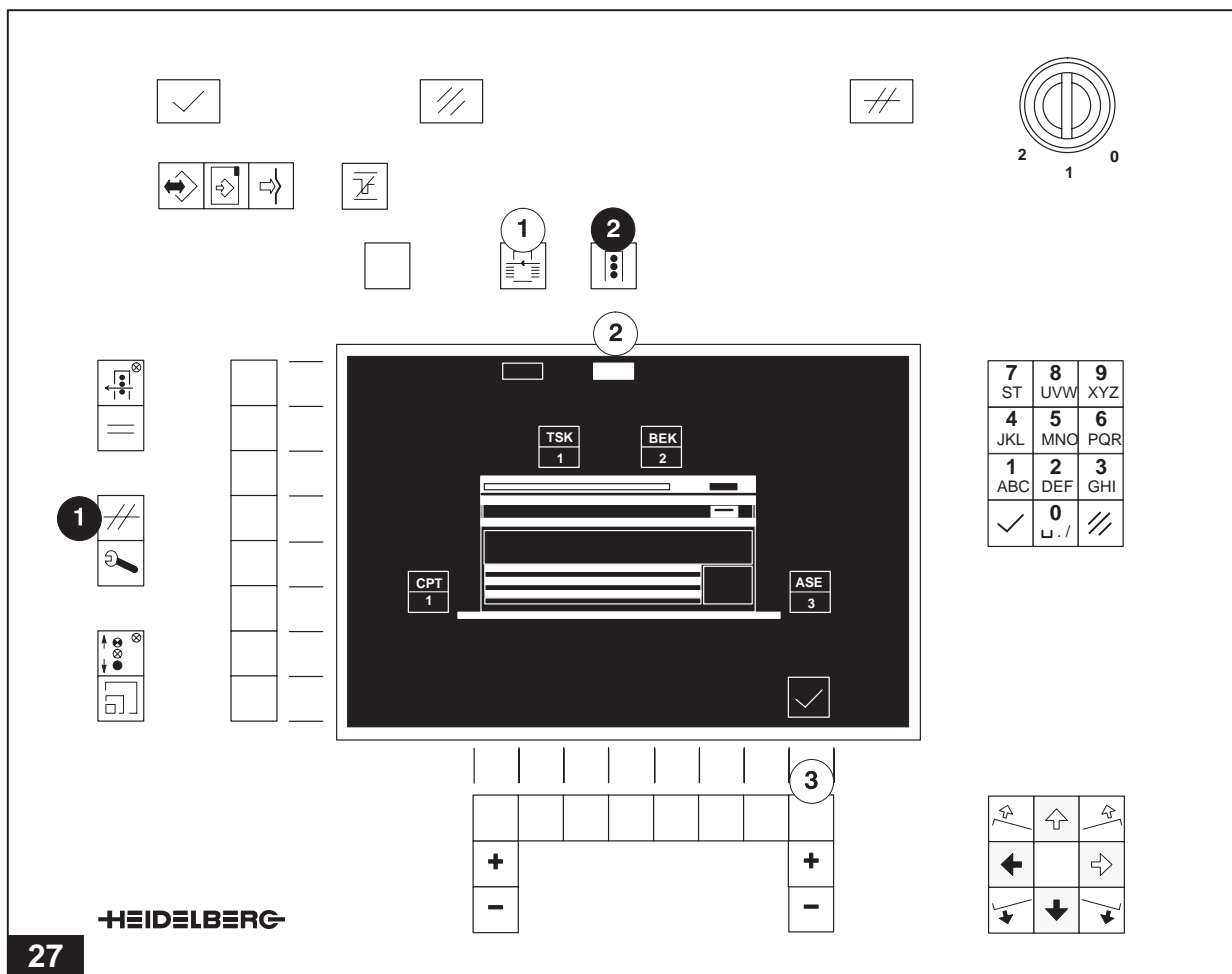
- ⑦ The SWITCHOVER function button is used to change between the previously selected printing unit groups (before/after the set sheet reversal).

Follow-up display

Upon selection of the printing unit ①, the recommendation by the follow-up control will be shown in the ink zone display. During follow-up, these LEDs will flash and the ink zone motors will move. Upon termination of follow-up, the ink zone display will switch off.

The follow-up function depends on the "Dead beat" ④ function.

8 Malfunction display



Display of malfunctions of the control unit and printing units.

► Note

Malfunction codes for the CPC 42 Autoregister are described in the CPC 42 Autoregister operating instructions (this file).

① Press the MALFUNCTION DISPLAY button (button will light up).

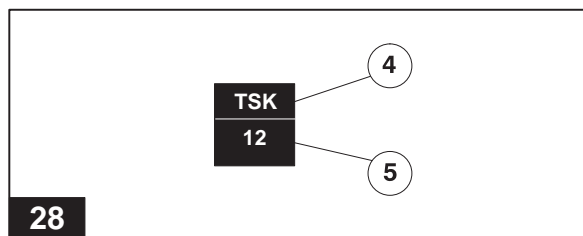
② Display "Malfunction printing units": Press selector button PRINTING UNIT (see page 33).

① Default display: GLOBAL PRESS.

② This field flashes in the case of malfunctions in one or several printing units.
Display: Press selector button PRINTING UNIT ②.

③ Displayed malfunctions can be acknowledged. Upon acknowledgement, the flashing malfunction display will be deactivated; the malfunction, however, is still **not eliminated!**

Eliminated malfunctions will be recognized only after re-initialization (switching off and on) of the control unit.

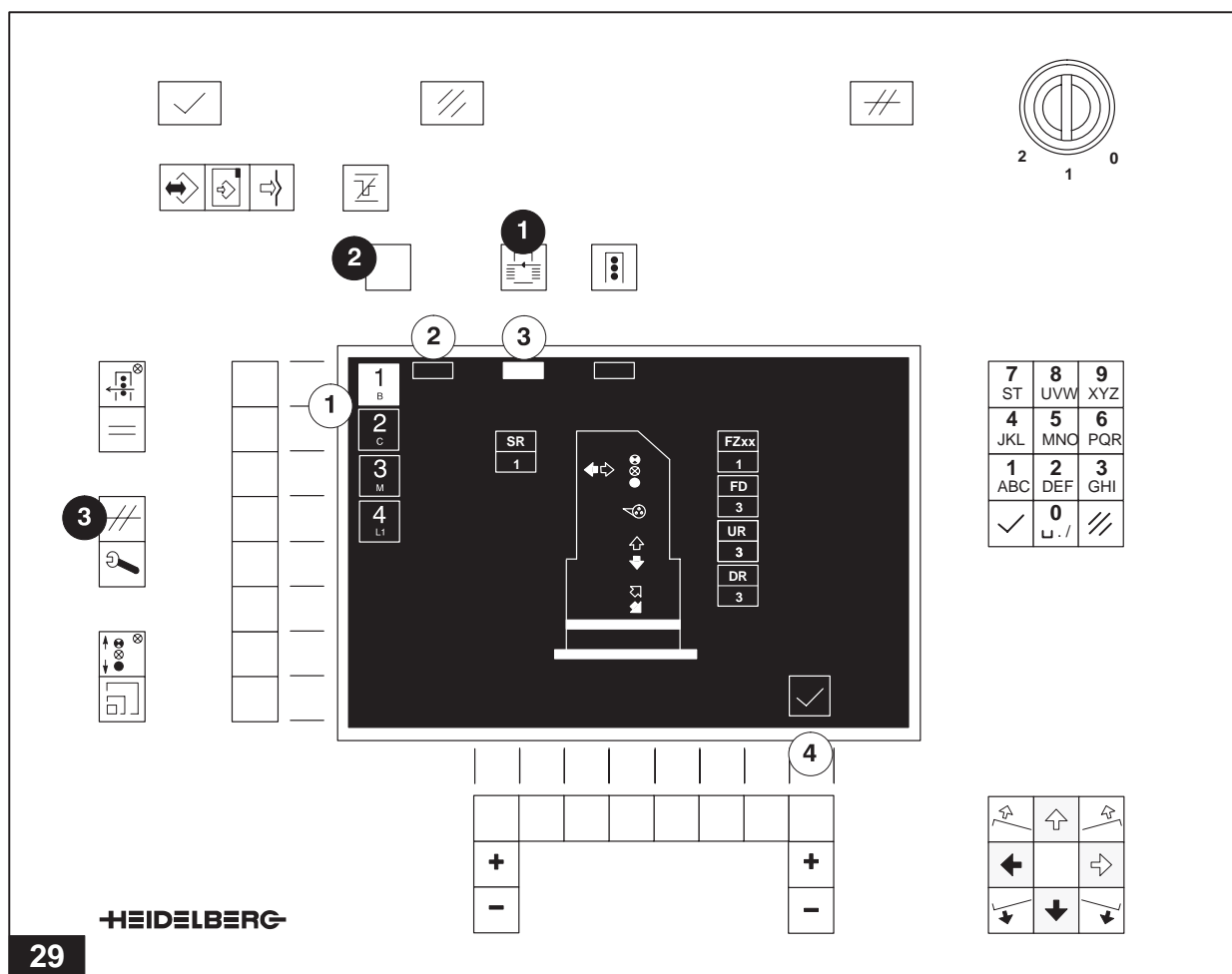


④ Unit/electronic board: see table

⑤ For type of malfunction, see table

Malfunction display	Explanation	Elimination of malfunction
All units		
1	Malfunction in electronic communication	– Switch on CPTronic. Inform HEIDELBERG service agent.
<div>TSK 1</div>	TSK driver/interface board	
1	Malfunction in electronic communication	Inform HEIDELBERG service agent.
10	Internal malfunction	– Switch unit off and then on again.
11		—> Inform HEIDELBERG service agent.
12	Hardware initialization malfunction	Switch unit off and then on again.
13	Motor initialization malfunction	Switch unit off and then on again.
<div>BEK 1</div>	BEK control unit board	
1	Malfunction in electronic communication	Inform HEIDELBERG service agent.
40	Value of manipulated variable does not fall within valid range	
41		
51	Malfunctiony reading of an internal job	Repeat procedure
52	Malfunctiony writing of an internal job	Repeat procedure
53	Malfunction in deletion of an internal job	Repeat procedure
54	Job already in use	Repeat command and ensure that the job is free
55	Malfunction in release of a job	Repeat procedure
61	Malfunctiony reading of an internal characteristic curve	Repeat procedure
62	Malfunctiony writing of an internal characteristic curve	Repeat procedure
63	Malfunction in deletion of an internal characteristic curve	Repeat procedure
64	One of the selected characteristic curves is already in use	Repeat command and ensure that all characteristic curves are free
65	Malfunction in release of a characteristic curve	Repeat procedure

Malfunction display	Explanation	Elimination of malfunction
<div>ASE</div> <div>1</div> ASE job memory card unit		
1	Malfunction in electronic communication	Inform HEIDELBERG service agent.
10	Faulty job memory card	Use new job memory card
30	Internal malfunction	Inform HEIDELBERG service agent.
50	Job memory card improperly formatted	Use new job memory card
51	Faulty reading of a job from the job memory card	Repeat command
52	Faulty writing of a job on the job memory card	Repeat command
53	Malfunction in deletion of a job from the job memory card	Repeat command
61	Faulty reading of a characteristic curve from the job memory card	Repeat command
62	Faulty writing of a characteristic curve on the job memory card	Repeat command
63	Malfunction in deletion of a characteristic curve from the job memory card	Repeat command
<div>CPT</div> <div>1</div> CPTronic		
1	Malfunction in electronic communication	– Switch on CPTronic. —> Inform HEIDELBERG service agent.
30	Press does not rotate!	Set press into operation or abort command.



- ① Upon selection of the printing units, the printing unit in which the malfunction has occurred will be displayed (see Fig. 29, DW 1).

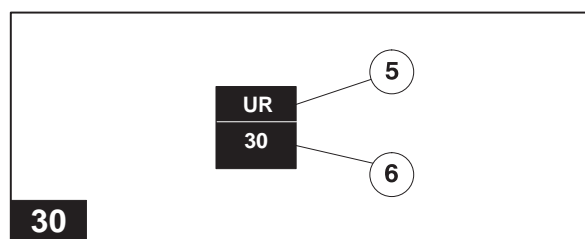
In the case of malfunctions in other printing units, the corresponding printing unit displays will flash. Display: select printing unit.

- ② This field will flash in the case of malfunctions in printing units after a sheet reversal. Display: select printing units after sheet reversal ②.

- ③ This field will flash in the case of malfunctions in the control unit. Display: Press GLOBAL ① selector button.

- ④ Displayed malfunctions can be acknowledged. The flashing malfunction display switches off; the malfunction, however, has **not been eliminated!**

Eliminated malfunctions will be recognized only after re-initialization (switching off and on) of the control unit.



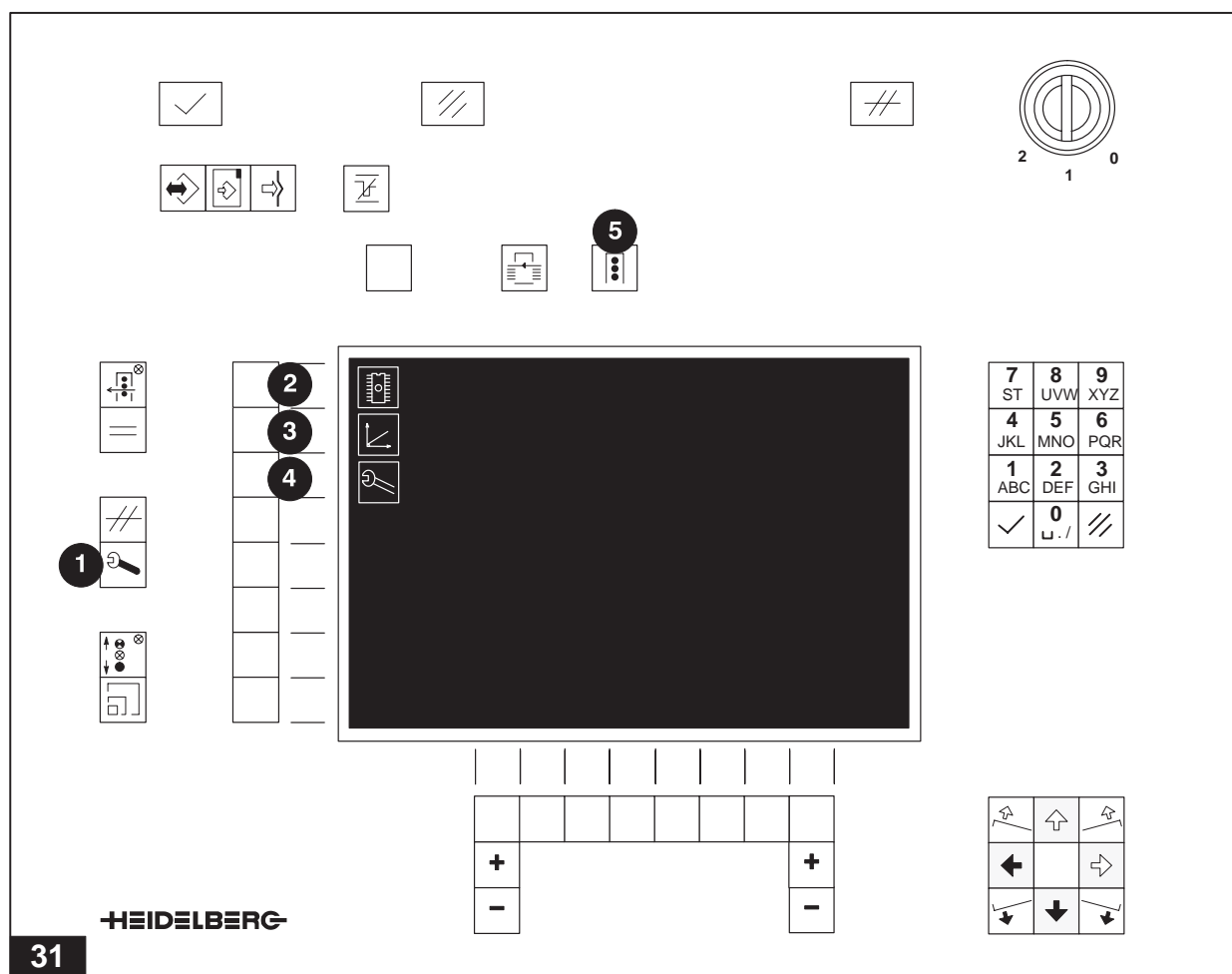
- ⑤ For motor see table on page 34
⑥ For type of malfunction see table on page 34

- ① To reach the GLOBAL PRESS display: Press the GLOBAL selector button.
② The SWITCHOVER function button is used to change between the previously selected printing unit groups (before/after the set sheet reversal).
③ To exit the MALFUNCTION DISPLAY: Press the MALFUNCTION DISPLAY display button.

Malfunction display	Explanation	Elimination of malfunction
SR 30	Lateral register motor	
FZ24 31	Ink zone motor 24	
FD 30	Ink fountain roller motor	
UR 30	Circumferential register motor	
DR 31	Diagonal register motor	
30	Motor does not rotate	<ul style="list-style-type: none"> – check the cable – motor may be sluggish —> inform HEIDELBERG service agent.
31	Motor vibrates	setting procedure is aborted.

9 Service display

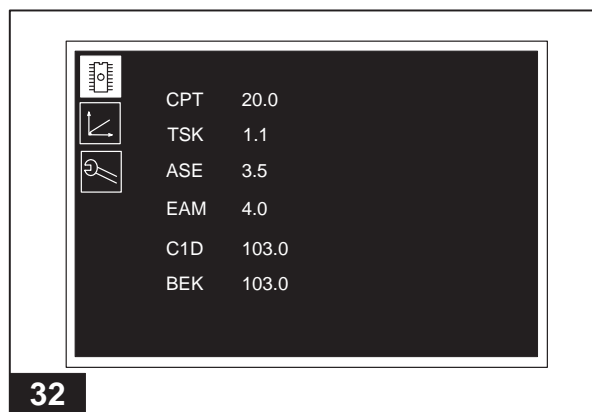
9.1 SERVICE DISPLAY main menu



- ❶ Press the SERVICE DISPLAY button (button lights up).
- ❷ Press the SOFTWARE VERSIONS button (display as shown in Fig. 32, page 36).
- ❸ Press the CHARACTERISTIC CURVES button (display as shown in Fig. 37, page 39).
 - Characteristic curves speed compensation
 - Characteristic curves for manipulated ink zone values from area coverage values.
- ❹ Press the service functions button (display as shown in Fig. 33, page 36).
- ❺ To return from each display to the main menu: Press the PRINTING UNIT selector button.

9.2 Software versions

Press the Software Versions **2** button (see Fig. 31, page 35).



The software versions of the electronic boards used in the CPC 1-04 control console and the software version of the connected CPTronic will be shown (Fig.32 standard display, expansion possible).

The abbreviations used stand for the following:

- CPT: CPTronic
- TSK: Driver/interface board
- ASE: Job memory card unit
- EAM: Input/output module
- C1D: Display software
- BEK: Control unit board

► Note

These operating instructions for the CPC 1-04 (HDM no. 00.999.1922) are valid from the CPC103.0 software package. This package currently consists of the software for the TSK1.1, C1D103.0 and BEK103.0 electronic boards.

9.3 Service functions

Press the Service Functions **4** button (see Fig. 31, page 35).

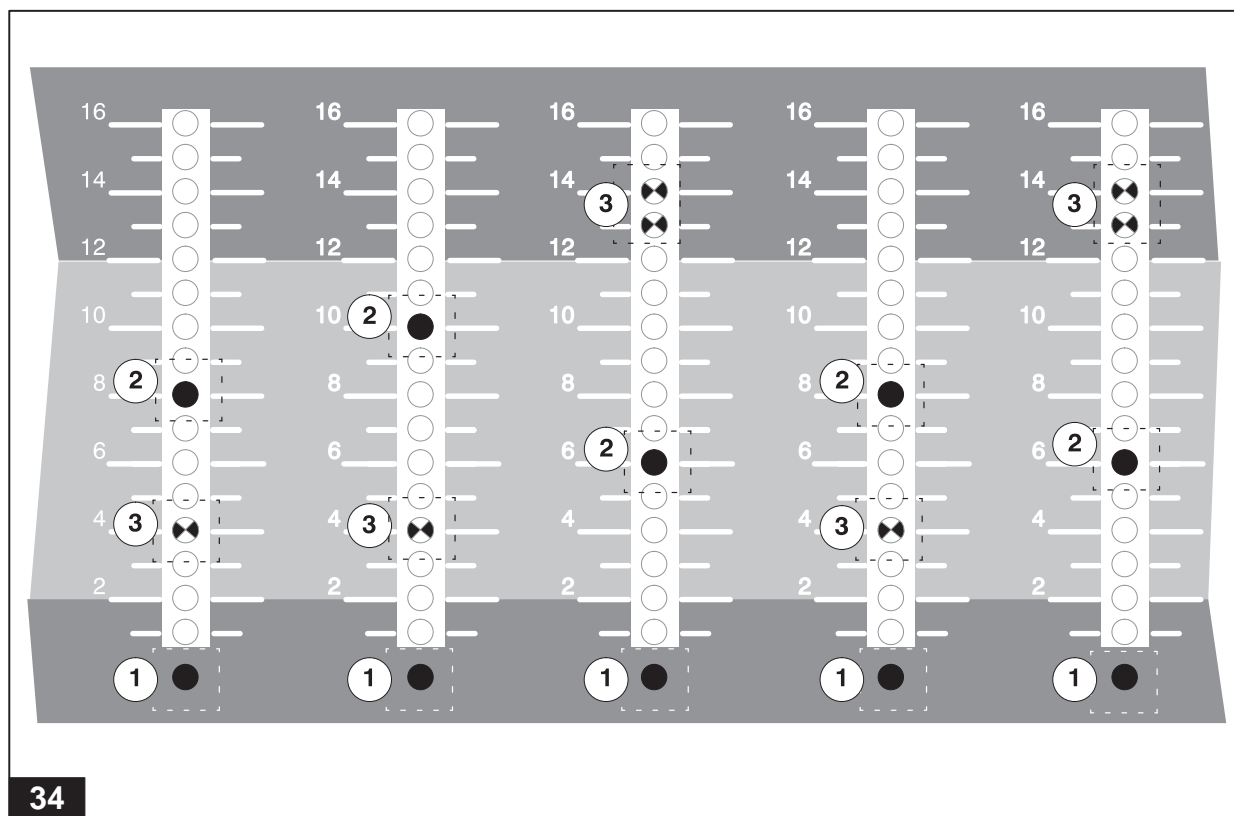


► Note

The individual buttons and signal lamps in the service functions ① to ③ are to be tested manually, i.e. by hand. Between pressing the button and activation of the display of the buttons or signal lamps, there may be a delay.

- ① Upon pressing the button, the function and the correct wiring of the luminous push buttons will be checked.
- ② Upon pressing the button, the function and the correct wiring of the signal lamps will be checked.
- ③ Upon pressing the button, the function and the correct wiring of the feelers for the setting of the ink fountain zones will be checked.
- ④ Upon pressing the button, the function of the ZID control console display will be checked.

Ink zone display



The ink zone display will be active after

- selection of an individual printing unit in the **PRODUCTION RUN DISPLAY**,
- selection of an individual printing unit within the follow-up functions
- selection of the light pen function (functions within **JOB PREPARATION**).

① Disable diodes

For each ink zone display there is a disable diode ①. If the CPC 42 Autoregister is connected, the disable diodes will flash and the search areas last entered will light up (see page 27).

② Coarse diodes

For each ink zone display there are 16 coarse diodes ②. The diodes show the ink zone opening in a value range from 1 (ink fountain zone closed as far as possible) to 16 (ink fountain zone open as far as possible).

③ Fine diodes

After pressing the FINE DISPLAY INK FOUNTAIN ZONES display button, the display of the coarse diodes will be resolved into 32 intermediate control steps.

The fine diodes ③ are not as brightly lit. Between each individual fine diode there are intermediate control steps which are represented by two illuminated diodes, one above the other.

In this way, the ink zone fine setting can be broken down into 512 control steps.

10 Characteristic curves

10.1 Types of characteristic curves

The production run display is used for percentage setting of the ductor stroke for ink fountain roller, dampening ductor and, if applicable, varnish ductor at a given printing speed. If the press is printing at another speed, the volumes of ink, dampening solution or varnish will no longer be those required for achieving the required printing quality. In this case, the ductor stroke must change automatically to supply the correct volumes of ink, dampening solution or varnish into the press. For this purpose, characteristic curves are stored in the press control which adjust the ductor stroke as a function of the printing speed (Fig. 35).

Two types of characteristic curves are of particular importance:

- speed-compensated characteristic curves
- ink-presetting characteristic curves

Speed-compensated characteristic curves

These characteristic curves are available for:



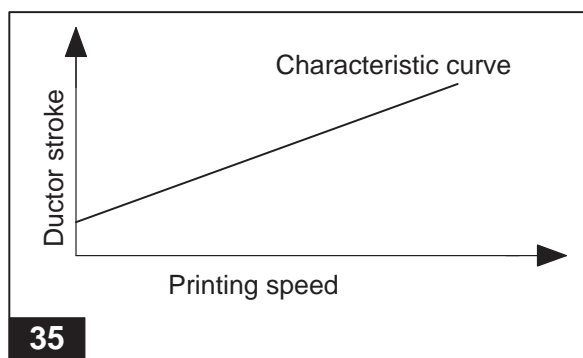
ink fountain roller stroke;



dampening ductor stroke;

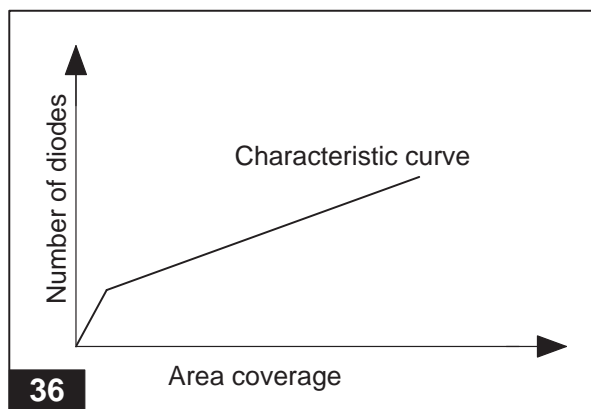


varnish ductor stroke.



It can be seen from the course of the characteristic curve in Figure 35, that the ductor stroke will continuously rise along with an increase of the printing speed. In this case, the value for the ductor stroke in the production run display will **not** change.

Ink-presetting characteristic curves



If the area coverage in the zone rises, the ink-presetting characteristic curves will effect a wider opening of the ink fountain zones (the number of fine diodes in the ink zone display). In Figure 36, it can be seen that the ink fountain zones in the lower value range of area coverage are less open than in the case of higher area coverage values.

However, the characteristic curves preset by HEIDELBERG are only "mean values". Depending on the paper, the ink etc. as well as on the ambient conditions in the print shop (temperature, humidity, etc.) the behaviour of the press will vary. In order to be able to take these different conditions into consideration, the characteristic curves can be changed and thus individually adjusted to the conditions at the press.

If the "Characteristic curves" (Fig. 31, ③) button in the service display is actuated, Figure 37 will appear on the display.



- Select a characteristic curve symbol and then one of the characteristic curves to reach the corresponding characteristic curve display (Fig. 38).

10.2 Change characteristic curves

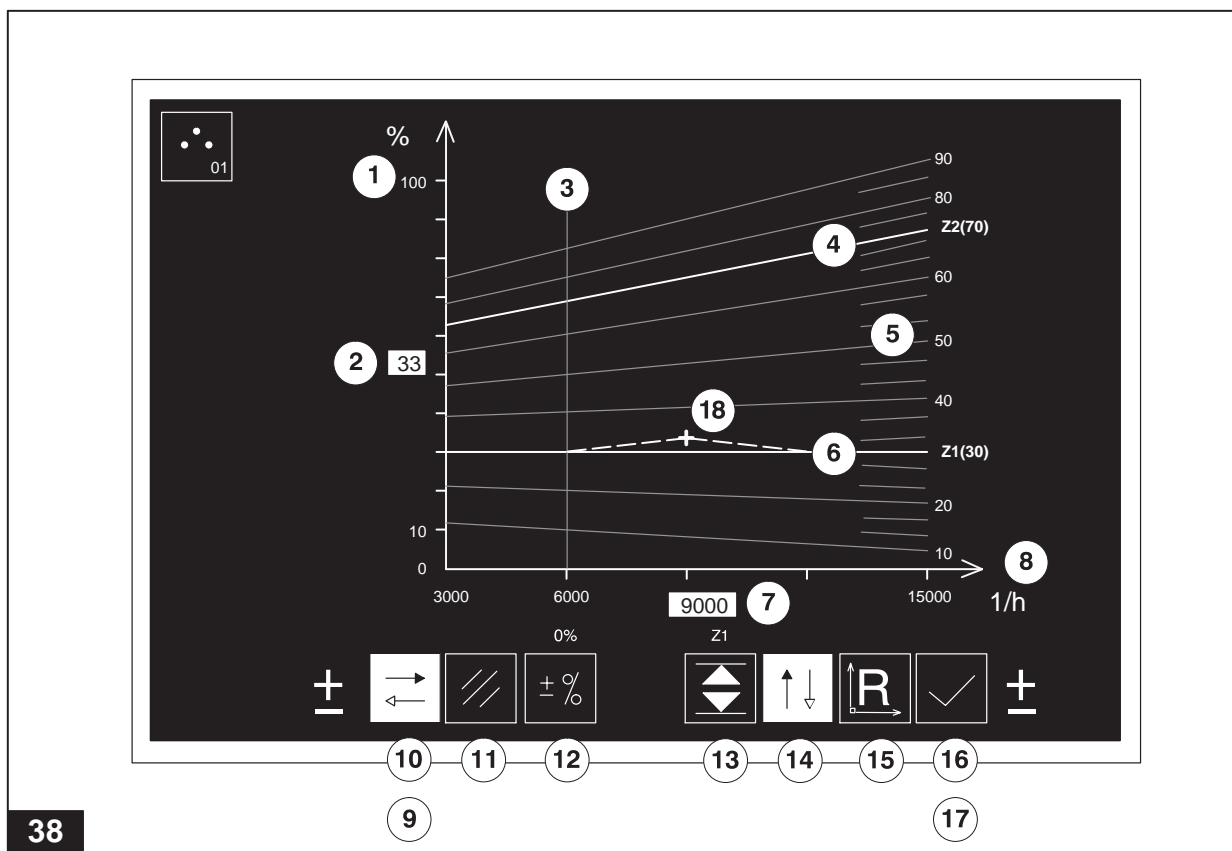
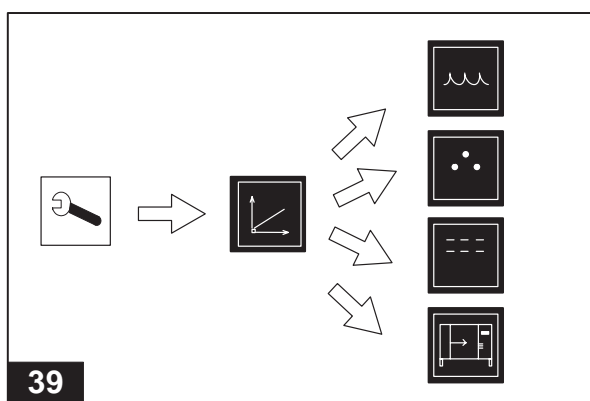


Figure 38 shows the characteristic curves for the ink fountain roller stroke of the Speedmaster 102.

The characteristic curves display is called from the SERVICE DISPLAY main menu (button sequence Fig. 39).



The numbers ⑦ and ② highlighted white on the horizontal and the vertical axes show the current position of the cursor (white cross, Fig. 38, ⑱) in the display window.

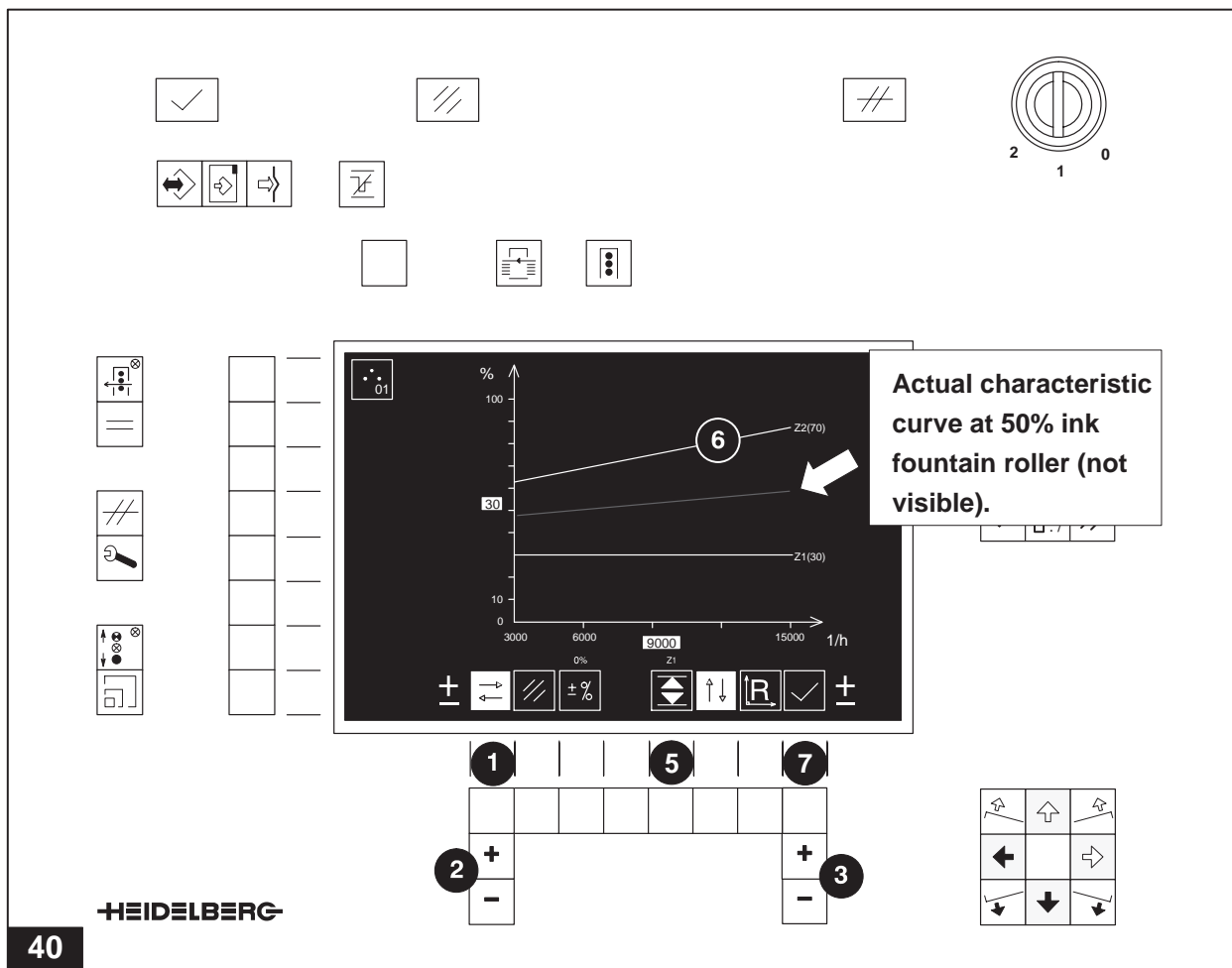
Example in Figure 38:

- ⑦: 9000 = printing speed 9000 i.p.h.
- ②: 33 = ink fountain roller stroke at 33%
- ① Display ink fountain roller stroke.
Here, the vertical axis shows the ink fountain roller stroke from 0 to 100%. In the case of the SM 74 and the SM 52, the speed of the ink fountain roller motor (1/min) is displayed (see also page 45).
- ② Cursor position ink fountain roller stroke.
Indicates the ink fountain roller stroke at the position of the cursor.
- ③ Theoretical reference curve of the characteristic curves at 6000 i.p.h. (not displayed).
- ④ HDM characteristic curve Z2 (70)
Ink fountain roller value at 6000 i.p.h.: 70%.

- ⑤ Possible characteristic curves for speed compensation (not displayed).
- ⑥ HDM characteristic curve Z1 (30)
Ink fountain roller value at 6000 i.p.h.: 30%.
- ⑦ Cursor position printing speed.
Displays the printing speed at the position of the cursor.
- ⑧ Printing speed display.
The horizontal axis shows the printing speed between 3000 and 15000 impressions per hour (i.p.h.).
- ⑨ Left-hand side +/– buttons on the control console below the display (not visible in Fig. 38):
 - Selection of printing speed support positions (after selection of ⑩ or ⑭).
 - Setting of percentage change (after selection of ⑫).
- ⑩ Selection of support positions (for changing the ink fountain roller stroke and the printing speed, as button ⑭).
- ⑪ Abortion of entry; the display will return to the next lower level.
- ⑫ Percentage shifting of both characteristic curves upward or downward (speed compensation stronger/weaker).
- ⑬ Switchover between the HDM characteristic curves Z1 and Z2.
- ⑭ Selection of the support positions (for changing the ink fountain roller stroke and the printing speed, as button ⑩).
- ⑮ Resetting of the characteristic curves to the initial HDM characteristic curves.
- ⑯ Confirmation of input
- ⑰ Right-hand side +/– buttons on the control console below the display (not visible in Fig. 38)
 - Setting of the ink fountain roller stroke support positions (after selection of ⑩, ⑫ or ⑭).

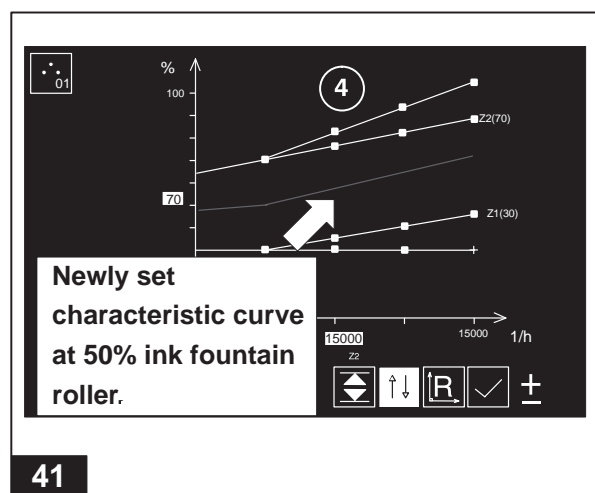
● **Example 1:**

With more than 6000 i.p.h. at 50% ink fountain roller, there will be insufficient ink on the printing sheet. → raise characteristic curves!



- 1 Press the SELECTION OF SUPPORT POSITIONS button (inverse representation of the pictogram).
- 2 Using the left-hand side +-buttons for characteristic curve Z1, select the support position for 9000 i.p.h. (The value will be displayed in the white field at the horizontal axis).
- 3 Using the right-hand side +- buttons, set the required ink fountain roller value. (The value will be displayed in the white field at the vertical axis.)
- 4 Set the support position for 12000 i.p.h. and then the support position for 15000 i.p.h. (see Fig. 41).
- 5 Press the SWITCHOVER CHARACTERISTIC CURVES button. Select characteristic curve Z2.

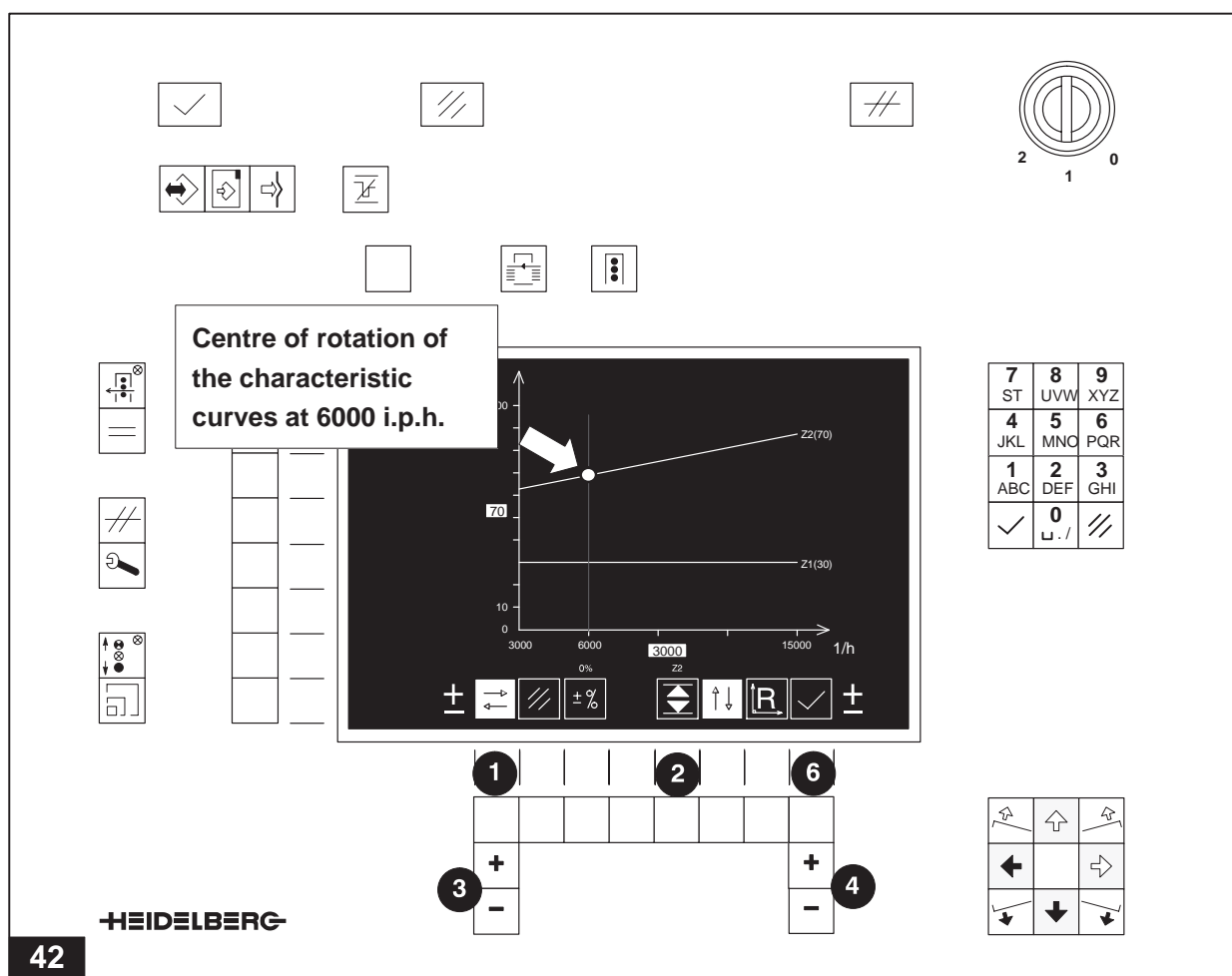
- 6 Set characteristic curve Z2 in the same way as Z1 before (see 2).
- 7 Press the CONFIRMATION OF ENTRY button.



• Example 2

Deactivation of speed-compensated ink supply

—> the two characteristic curves Z1 and Z2 must show a horizontal course.

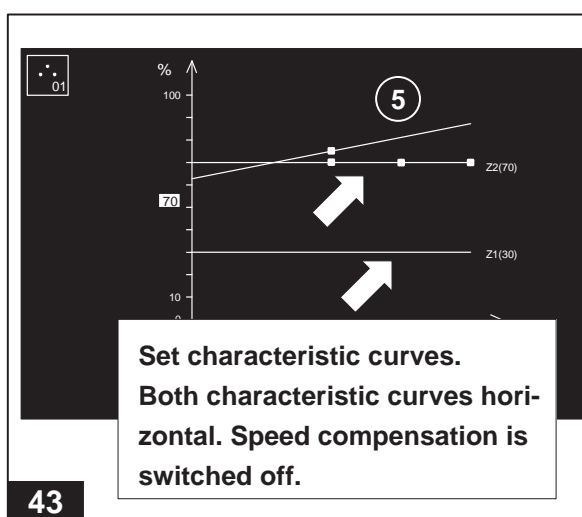


► Note

The ink fountain roller values always refer to 6000 i.p.h. The centre of rotation of the characteristic curve must always lie at this printing speed.

- 1 Press the SELECT THE SUPPORT POSITIONS button (inverse representation of the pictogram).
- 2 Press the SWITCHOVER CHARACTERISTIC CURVES button. Set characteristic curve Z2.
- 3 Using the left-hand side +/- buttons, select the support position for 3000 i.p.h.
- 4 Using the right-hand side + button, set characteristic curve Z2 to the height of the centre of rotation for 6000 i.p.h.

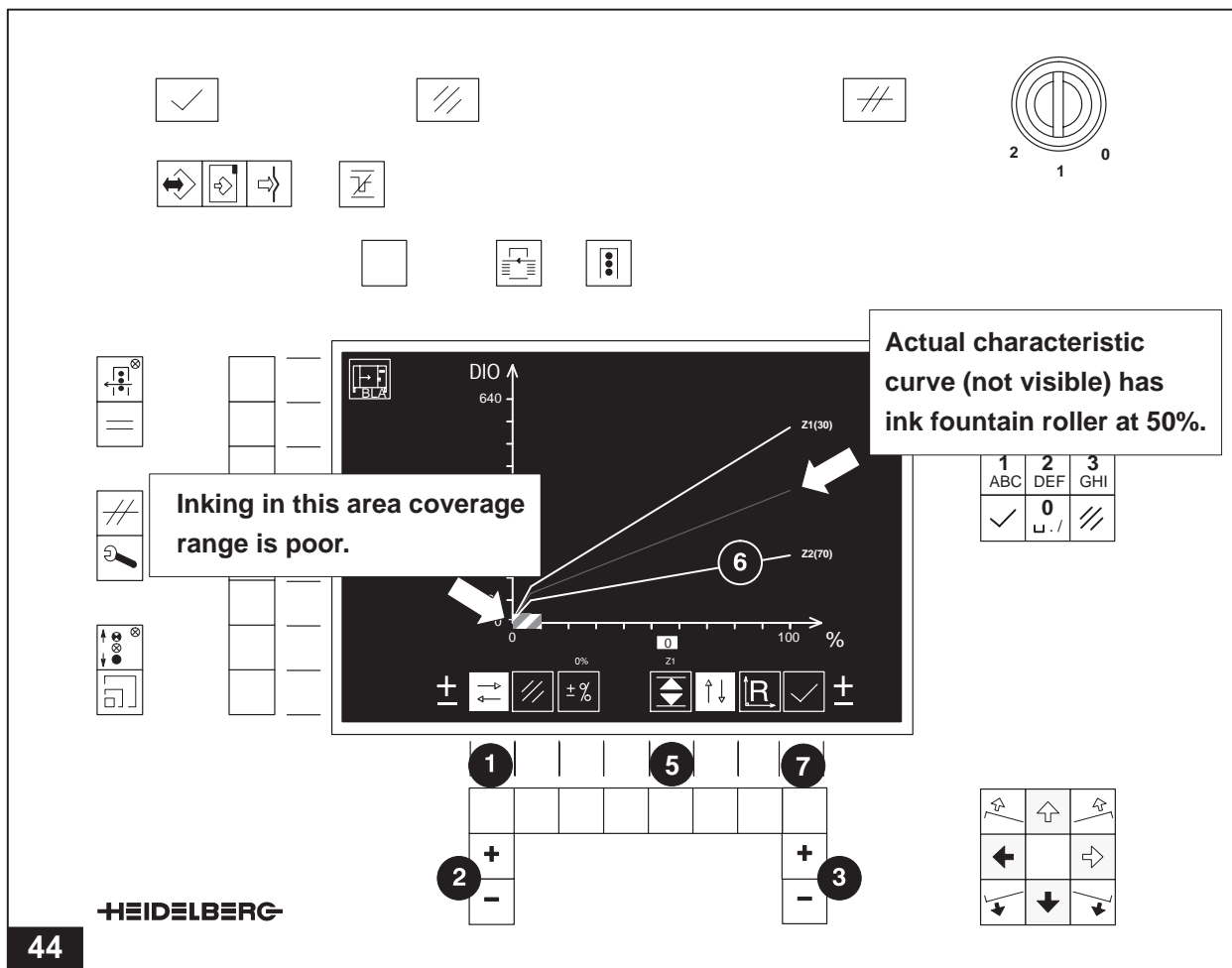
- 5 One after the other, set the support positions for 9000, 12000, 15000 i.p.h. (see Fig. 43).
- 6 Press the CONFIRMATION OF ENTRY button.



• **Example 3**

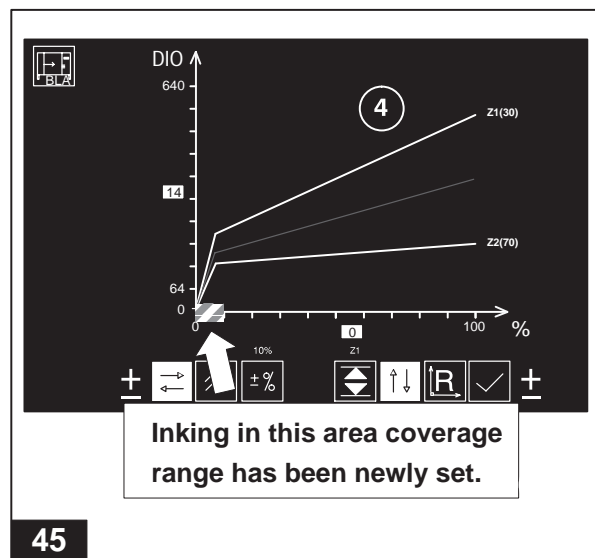
The inking in the area coverage range 0...10% is poor. Ink fountain roller setting 50%.

—> raise characteristic curves!



- 1 Press the SELECT SUPPORT POSITIONS button (inverse representation of the pictogram).
- 2 Using the left-hand side +/- buttons, select support position 0. ("0" will appear in the white field at the horizontal axis.)
- 3 Using the right-hand side + button, select the required diode setting. (The value will appear in the white field at the vertical axis.)
- 4 One after the other, select the support positions 1, 5 and 10 and set them (see Fig. 45).
- 5 Press the SWITCHOVER CHARACTERISTIC CURVES button. Select characteristic curve Z2 (70).
- 6 Set characteristic curve Z2 in the same way as Z1 (see 2).

- 7 Press the CONFIRMATION OF ENTRY button.



10.3 Speed-compensated characteristic curves

Display

The speed-compensated characteristic curves are used to control the stroke of ink fountain roller, dampening and varnish ductor. Depending on the type of press, ink fountain rollers and ductors move differently:

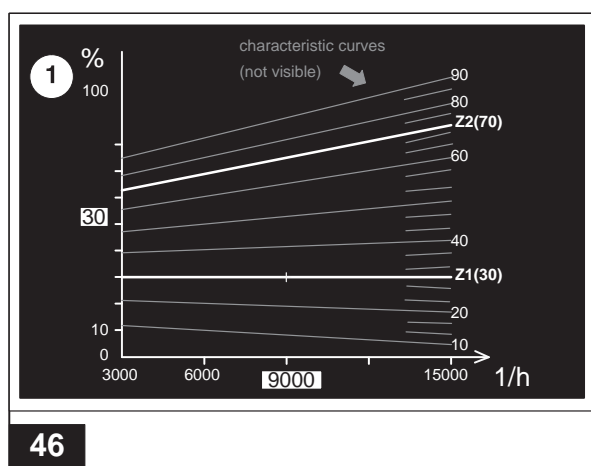
SM 102

Ink fountain roller: movement by steps
Dampening, varnish ductor: continuous movement

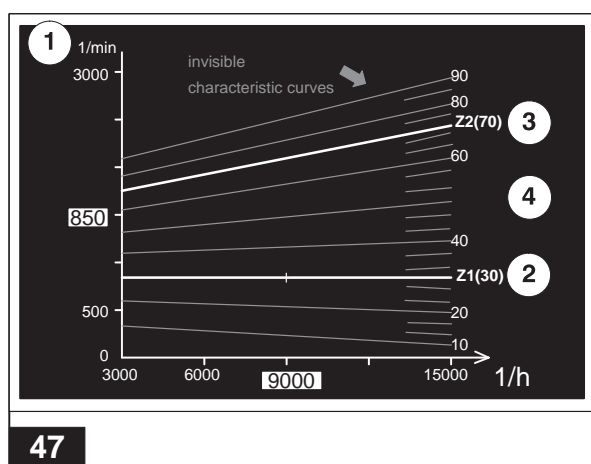
SM 74, SM 52

All ink fountain rollers and ductors: continuous movement

In the case of stepwise movement, the stroke of ink fountain roller and ductors is shown in percent at the vertical axis (Fig. 46, ①)



In the case of continuous movement, the unit for the stroke of ink fountain roller and ductors is the speed of the ductor motor in 1/min and is shown at the vertical axis (Fig. 47, ①).



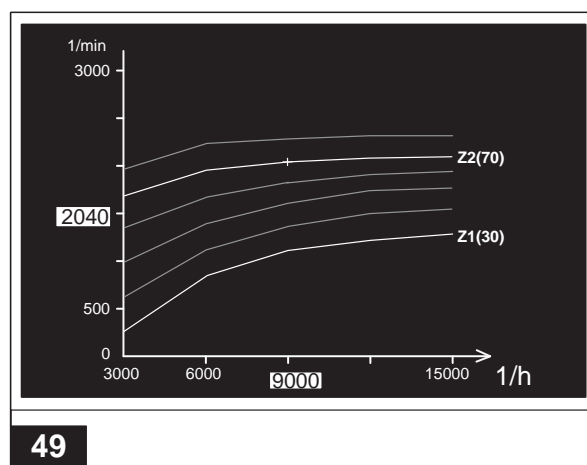
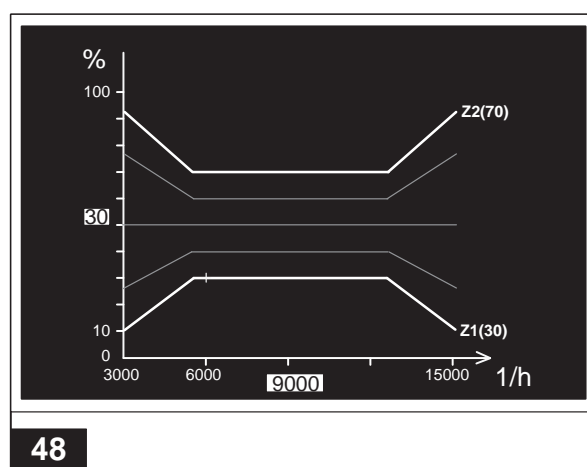
Each ductor stroke (percentage or speed) requires its own characteristic curve. Since all of these characteristic curves closely resemble one another, only two of them will be shown in the display:

Ink fountain roller and
varnish ductor: 30% and 70% (Fig. 47, ②, ③)
Dampening ductor: 20% and 60%

All other characteristic curves are available in the press, but not visible on the display.

By using the two characteristic curves shown, the course of all other characteristic curves can be determined. As shown in Figure 47, the course of the characteristic curve ② is horizontal and becomes steeper as the ductor stroke increases. The characteristic curve for 50% ink fountain roller/ductor stroke thus has a "mean" rise which lies between the stroke at 30% and 70% (Fig. 47, ④).

The interdependence between the characteristic curves applies to all types and shapes of characteristic curve (e.g. Fig. 48 and 49).



Change characteristic curves

The course of **all** characteristic curves is calculated on the basis of the two curves shown (30% and 70% or 20% and 60%). If one of these curves is changed, this will thus always affect **all** other characteristic curves.

There are two possibilities for changing characteristic curves: percentagewise or by support positions.

1. Percentage change:

All characteristic curves will change by the selected percentage of their original value (e.g. by 30%). This change refers to the entire characteristic curve.

2. Change by support positions:

Individual points on the characteristic curve are selected and changed. When doing so, only one of the visible characteristic curves is changed. The other characteristic curves (not visible) will also change, but the degree by which this takes place will be increasingly lower as they approach the other visible characteristic curve in each case. The support positions are at 3000, 6000, 9000, 12000 and 15000 i.p.h.;

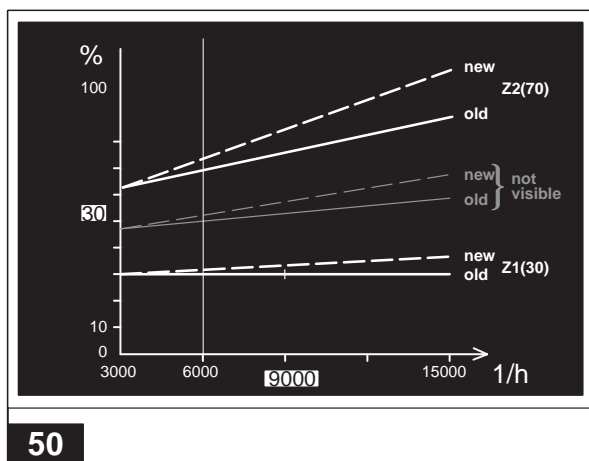
► Note

Changes via the support positions are preferable.

Example : The 50% characteristic curve should be steeper in the range from 6000 i.p.h. on up.

Percentage change:

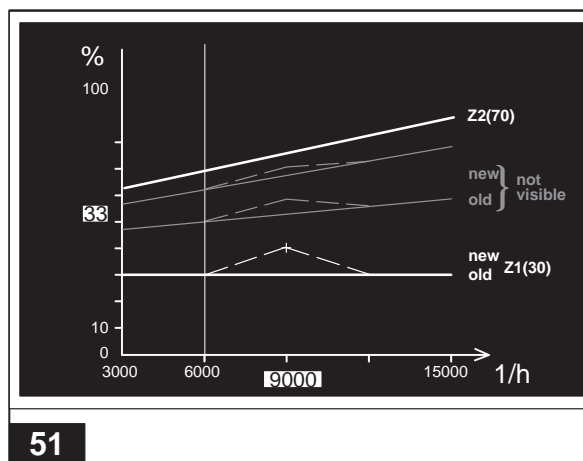
One of the two visible characteristic curves is changed. In the case of the 70% characteristic curve, this change will have a far greater effect than for the 30% or 50% curve (Fig. 50). The range below 6000 i.p.h. will also change.



50

Change via support positions:

The 30% characteristic curve is selected, and the support position at, for example, 9000 i.p.h. is changed. All other characteristic curves up to 70% change as well, but the degree of change will become ever smaller. Characteristic curve Z2 will ultimately not change at all (Fig. 51).



51

Use this method to change characteristic curve Z1 at the remaining support positions (but not at 6000 i.p.h., see below).

Calibration to 6000 i.p.h.

The press is calibrated for 6000 i.p.h., i.e. at this printing speed the press will print exactly with the ink fountain roller stroke which has been set in the production run display.

Example :

Production run display:

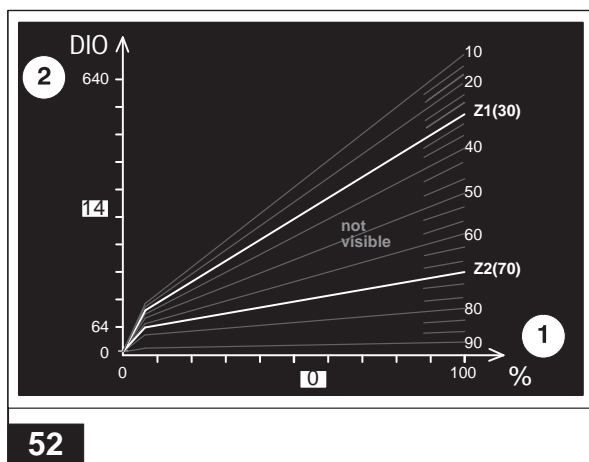
Ink fountain roller stroke = 50%

At 6000 i.p.h., the press prints at an ink fountain roller stroke of exactly 50%.

Whenever characteristic curves are changed, the ink fountain roller stroke at 6000 i.p.h. should therefore **not** be changed because the printed image was optimized to this printing speed during calibration.

Calibration of the press: see page 51.

10.4 Characteristic curves for manipulated ink zone variables from area coverage values



Characteristic curves for the calculation of manipulated ink zone variables from the zonal area coverage values at a given ink fountain roller stroke. Here, a steeper characteristic curve will cause an increase in the ink volume by opening the ink fountain zones in the ink fountain.

Horizontal axis: Area coverage
Unit: % (Fig. 52, ①)
Vertical axis: Ink fountain zone opening
Unit: half fine diodes
(Fig. 52, ②)

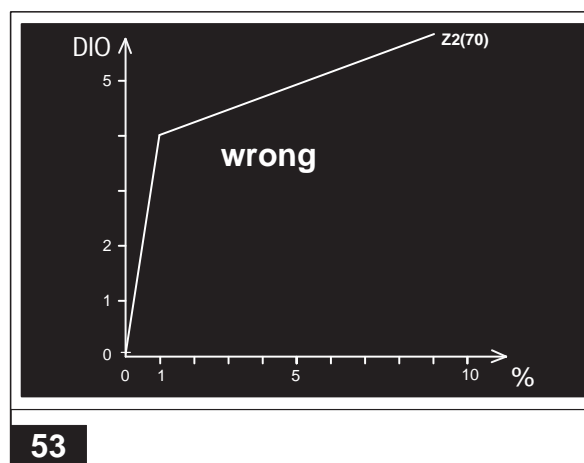
Basically the same rules apply to a change of characteristic curves as explained for speed-compensated characteristic curves. Differences exist in the following:

- Support positions:
Selection of the support positions at an area coverage of 1, 5, 10, 20, 40, 70 and 100%.
- Visible characteristic curves:
The characteristic curve Z2(70%) lies below characteristic curve Z1 (30%) because the ink fountain zone opening at an ink fountain roller stroke at 70% must be smaller than that at 30%.

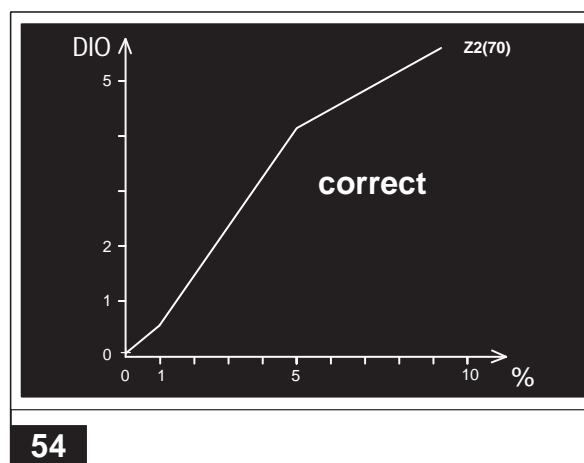
Change of characteristic curves

If characteristic curves are changed for ink pre-etting, the following should be observed:

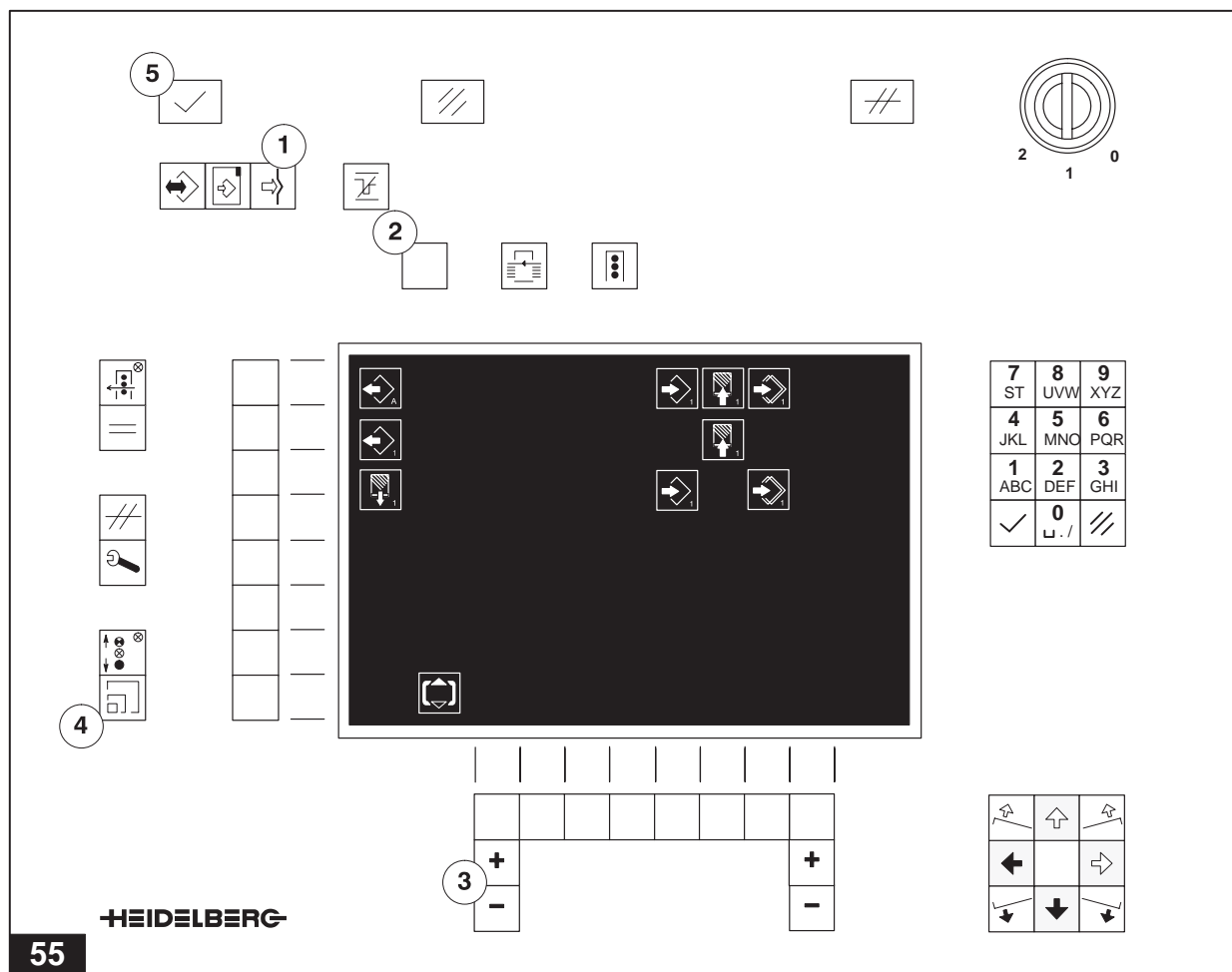
In the range of an area coverage between 0 and 1%, the characteristic curves must not rise steeply; otherwise, the ink volume transferred at low area coverage values will be too large (Fig. 53).



More favourable is a flat rise between 0% and 1%, followed by a steeper one up to 5%. In this way, the correct ink volume will be transferred also to areas of low area coverage (Fig. 54). This is why the factory settings at the 0% and 1% support positions should be maintained and no changes made before the 5% support position.

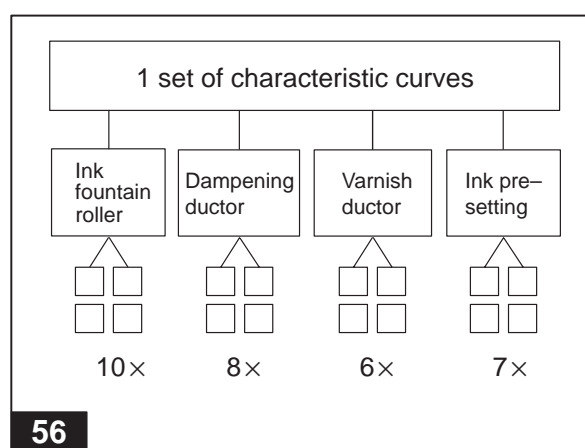


10.5 Store/load characteristic curves



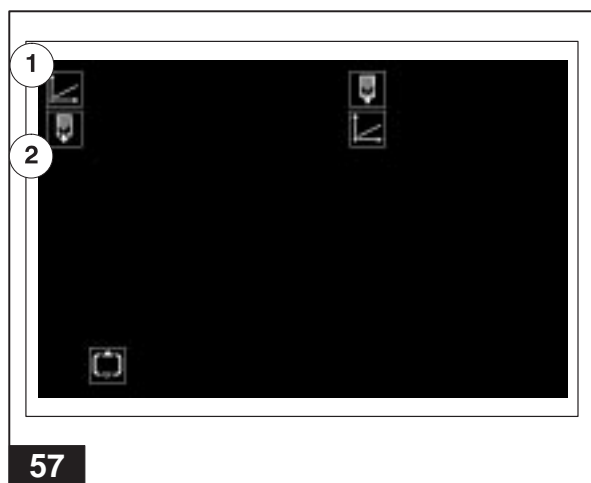
Characteristic curves can be stored on the job memory card. Three variants are possible:

- storing of the complete set of characteristic curves, i.e. all types of characteristic curve;
- storing of one specific type of characteristic curve (e.g. only the characteristic curves for area coverage);
- storing of the characteristic ink curve for a specific colour (e.g. characteristic curve for the area coverage of the colour cyan).



A maximum of 1 complete set of characteristic curves can be stored on one memory card. Different variants of one type of characteristic curve, however, cannot be stored. If a characteristic curve (a type/set of characteristic curves) is changed and then stored, the corresponding old characteristic curve (the old type/set of characteristic curves) on the memory card will be overwritten (see schematic representation in Fig. 56).

- 1 Call up the "Data transfer" menu (Fig. 55, ①).
- 2 Press the "Scroll" (Fig. 55, ②) button. Figure 57 will appear on the ZID central console display.



Source selection

- ① The characteristic curves are written from the press memory onto the job memory card.
- ② The characteristic curves are loaded from the job memory card into the press memory.

Characteristic curve selection

A total of 7 types of characteristic curve are available for selection:

- 8 dampening ductor characteristic curves
- 10 ink fountain roller characteristic curves
- 6 varnish ductor characteristic curves
- 7 ink presetting characteristic curves
- characteristic curve for "Dead beat"
- characteristic curve for CPC 2 follow-up
- characteristic curve for preinking

► Note

The characteristic curves for "Dead beat", CPC 2 follow-up and preinking **cannot be changed** by the user.

The following variants are available for storing characteristic curves:

- storing of the complete set of characteristic curves;
- storing of one specific type of characteristic curve;
- storing of only one characteristic curve of a specific type

Selection of type of characteristic curve:

Press the left-hand side +/- (Fig. 55, ③) buttons.

Selection of individual characteristic curves:

Press the "Fine display" (Fig. 55, ④) button; then select the desired characteristic curve, using the left-hand side +/- buttons (Fig. 55, ③).

If, for example, the characteristic curve for the ink fountain roller has been selected as type of characteristic curve, one of the following three symbols will appear at the position of Figure 57, ①:



All internal characteristic curves are selected.



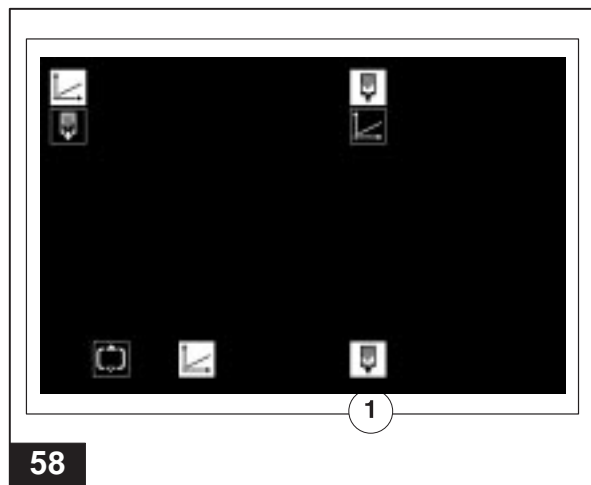
All characteristic curves for the ink fountain roller stroke are selected.



Characteristic curve no. 5 for the ink fountain roller stroke is selected.

► Note

If the memory card is empty, no characteristic curve symbol will appear at the position of Figure 57, ②, and the +/- buttons will have no function.

Target selection

- ① Press the JOB MEMORY CARD button to confirm the target for storing the characteristic curves (memory card or press memory; the symbol will be shown in inverse representation).

Start of storing/loading

Press the Enter button (Fig. 55, ⑤) to start storing or loading. Then indicate on the memory card for which conditions (type of paper, ink, etc.) the stored set of characteristic curves is valid.

10.6 Calibration of press

Due to the fact that the printing press is calibrated to 6000 i.p.h. (see page 48), it must be ensured that the characteristic curves at 6000 i.p.h. for the ink fountain roller and ink presetting are really set to the optimum value.

Calibration of characteristic curve Z1 (30%):

- ➊ In the "Job preparation" menu, determine the characteristic curves used by the press to print the current job (see page 74).
- ➋ In the production run display, set the ink fountain roller stroke to 30% (or 20%) and print at 6000 i.p.h.
- ➌ Using the ink zone keys below the ink zone display, change the setting of the ink fountain zones until the optimum printing result has been achieved.
- ➍ Print at 3000 i.p.h. The printed image will show some underinking.
- ➎ Call up the characteristic curve display and the characteristic curve determined in step ➊. Select the support position for 3000 i.p.h. on the characteristic curve Z1(30% or 20%).
- ➏ Change the characteristic curve using the right-hand side +/- buttons, press "OK" to confirm and wait until the result has become visible in the printed image (while doing so, watch the inking unit's reaction. The change in the printed image will become visible only after a certain period of time). If necessary, correct the characteristic curve again.
- ➐ One after the other, select the support positions for 9000, 12000 and 15000 i.p.h. and change the characteristic curve so that an optimum printed image is reached at any printing speed.

Calibration of characteristic curve Z2 (70%):

- ➊ In the "Job preparation" menu, determine the characteristic curves used by the press to print the current job (unless already done for characteristic curve Z1, see page 74).
- ➋ In the production run display, set the ink fountain roller stroke to 70% (or 60%) and print at 6000 i.p.h.
- ➌ Using the ink zone keys below the ink zone display, change the setting of the ink fountain zones until an optimum printing result has been achieved.
- ➍ Print at 3000 i.p.h. The printed image will show some underinking.
- ➎ Call up the characteristic curve display and the characteristic curve determined in step ➊. Select the support position for 3000 i.p.h. on the characteristic curve Z2 (70% or 60%).

Proceed as described for characteristic curve Z1.

- ➏ Store the characteristic curve or the complete set of characteristic curves (see page 48).

Checking of characteristic curves

To check characteristic curves, set the ink fountain roller stroke at 50%. The printing result must be of consistent quality within a printing speed range between 3000 i.p.h. and 15000 i.p.h., without requiring changes in the ink fountain zones or the ink fountain roller stroke.

Master copy

Characteristic curve designation:

Characteristic curve no.:

Ink fountain roller, support position X, printing speed (1/h)	Actual value (% for SM 102, 1/min for SM 74 and SM 52)	
	Z1	Z2
3000		
6000		
9000		
12000		
15000		

Characteristic curve designation:

Characteristic curve no.:

Dampening ductor, support position X, printing speed (1/h)	Actual value (% for SM 102, 1/min for SM 74 and SM 52)	
	Z1	Z2
3000		
6000		
9000		
12000		
15000		

Characteristic curve designation:

Characteristic curve no.:

Varnish ductor, support position X, printing speed (1/h)	Actual value (% for SM 102, 1/min for SM 74 and SM 52)	
	Z1	Z2
3000		
6000		
9000		
12000		
15000		

Master copy

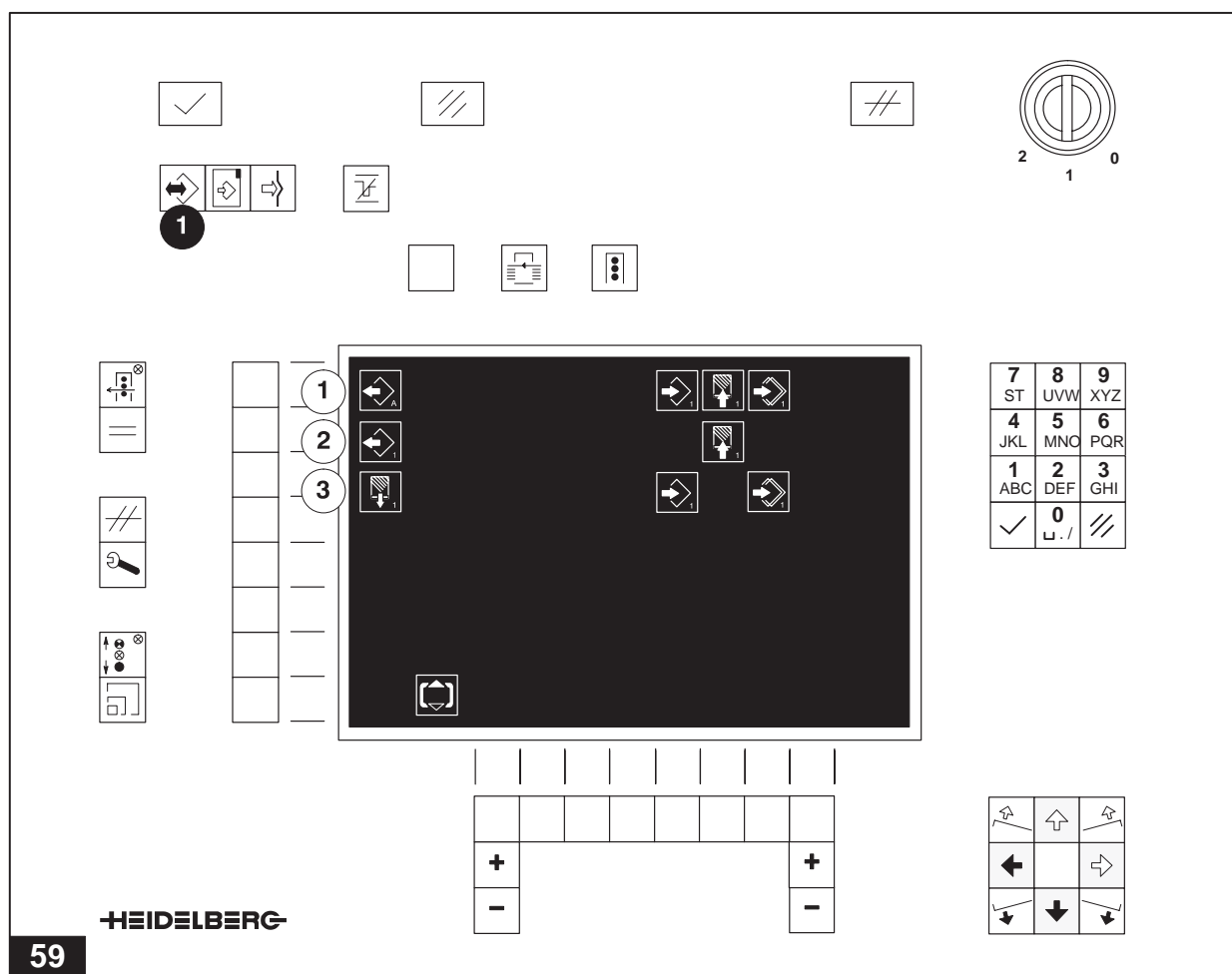
Plate image reader, presetting compensation (own characteristic curves)

Support position X, area coverage value (%)	Diode setting BLA:		Diode setting CYA:		Diode setting MAG:		Diode setting YEL:	
	Z1	Z2	Z1	Z2	Z1	Z2	Z1	Z2
0								
1								
5								
10								
20								
40								
70								
100								

Support position X, area coverage value (%)	Diode setting S1		Diode setting S2		Diode setting S3			
	Z1	Z2	Z1	Z2	Z1	Z2		
0								
1								
5								
10								
20								
40								
70								
100								

11 Data transfer










11.1 Overview



- 1 Press the DATA TRANSFER command button (button lights up).

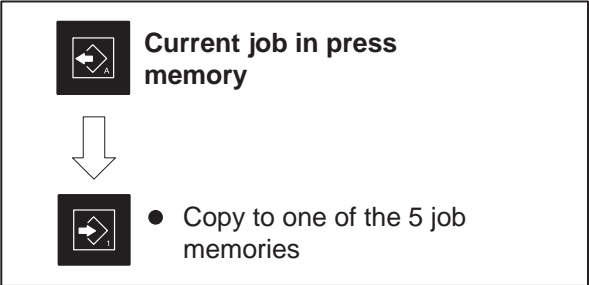
Sources

Targets

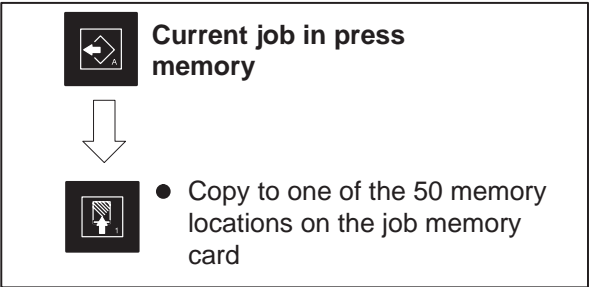
- | | |
|--|---|
| <p>1</p>  <p>Current job in press memory</p> | <p>→</p>  <ul style="list-style-type: none"> • Copy to one of the 5 job memories <p>→</p>  <ul style="list-style-type: none"> • Copy to one of the 50 memory locations on the job memory card <p>→</p>  <ul style="list-style-type: none"> • Combine jobs |
| <p>2</p>  <p>Job in job memory</p> | <p>→</p>  <ul style="list-style-type: none"> • Copy to one of the 50 memory locations on the job memory card |
| <p>3</p>  <p>Job on job memory card</p> | <p>→</p>  <ul style="list-style-type: none"> • Copy to one of the 5 job memories <p>→</p>  <ul style="list-style-type: none"> • Combine jobs |

① **Current job in press memory**
(see page 58)

- Copy to one of the 5 job memories.



- Copy to one of the 50 memory locations on the job memory card.



- Combine jobs.



Job data (colours) can be combined with a job already stored at one of the 5 internal memory locations.

Explanation ref. "Combine jobs"

If the colours for source and target are identical, the colour values of the source will be adopted.

Example 1:
A stored two-colour job is changed to a four-colour job. Additional colours are adopted and colours already stored are retained.

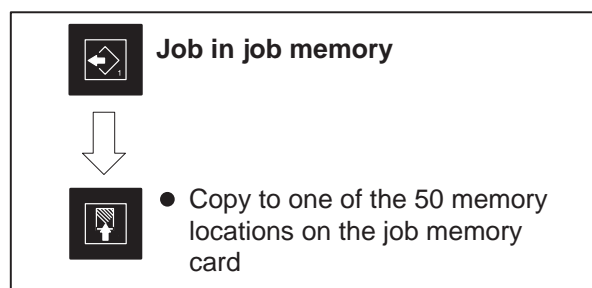
Source	Target	Result
Black 1 Cyan 1	Magenta 2 Yellow 2	Black 1 Cyan 1 Magenta 2 Yellow 2
Black 1 Magenta 1	Magenta 2 Yellow 2	Black 1 <i>Magenta 1</i> Yellow 2

Example 2:
In a stored four-colour job (B, C, M, Y), the settings for the colours magenta and yellow are to be overwritten. Store new settings for magenta and yellow; black and cyan are retained.

Source	Target	Result
Magenta 1 Yellow 1	Black 2 Cyan 2 Magenta 2 Yellow 2	Black 2 Cyan 2 <i>Magenta 1</i> <i>Yellow 1</i>

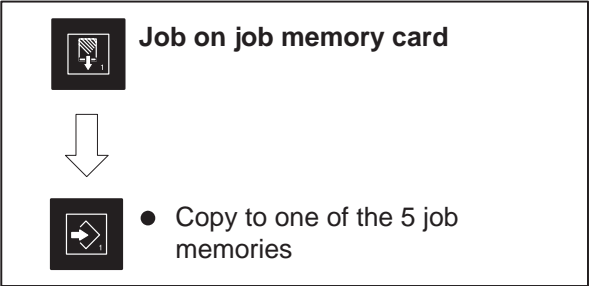
② **Job in job memory (see page 60)**

- Copy to one of the 50 memory locations on the job memory card.

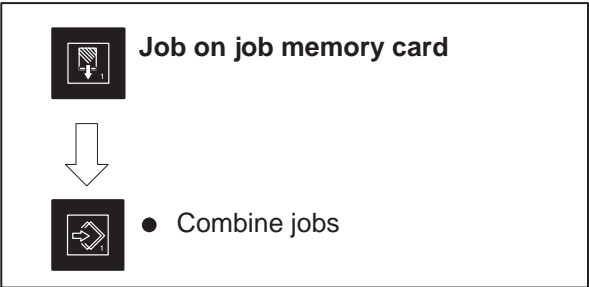


③ Job on job memory card (see page 62)

- Copy to one of the 5 job memories.



- Combine jobs.



Job data (colours) can be stored *in addition* to a job already stored at one of the 5 internal memory locations.

If the colours for source and target are identical, the colour values of the source will be adopted.

Example 1:

A stored two-colour job is changed to a four-colour job. Additional colours are accepted and colours already stored are retained.

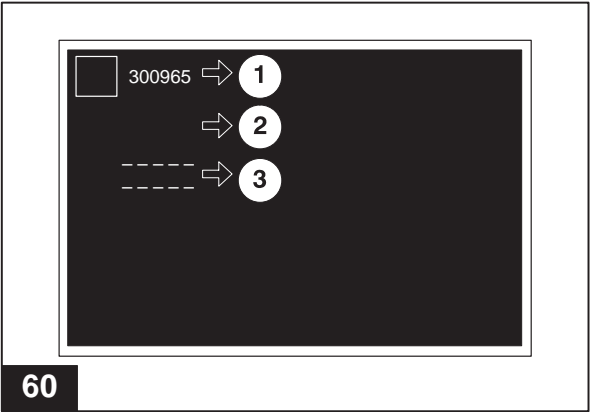
Source	Target	Result
Black 1 Cyan 1	Magenta 2 Yellow 2	Black 1 Cyan 1 Magenta 2 Yellow 2
Black 1 Magenta 1	Magenta 2 Yellow 2	Black 1 <i>Magenta 1</i> Yellow 2

Example 2:

In a stored four-colour job (B, C, M, Y), the settings for the colours magenta and yellow are to be overwritten. Store new settings for magenta and yellow; black and cyan are retained.

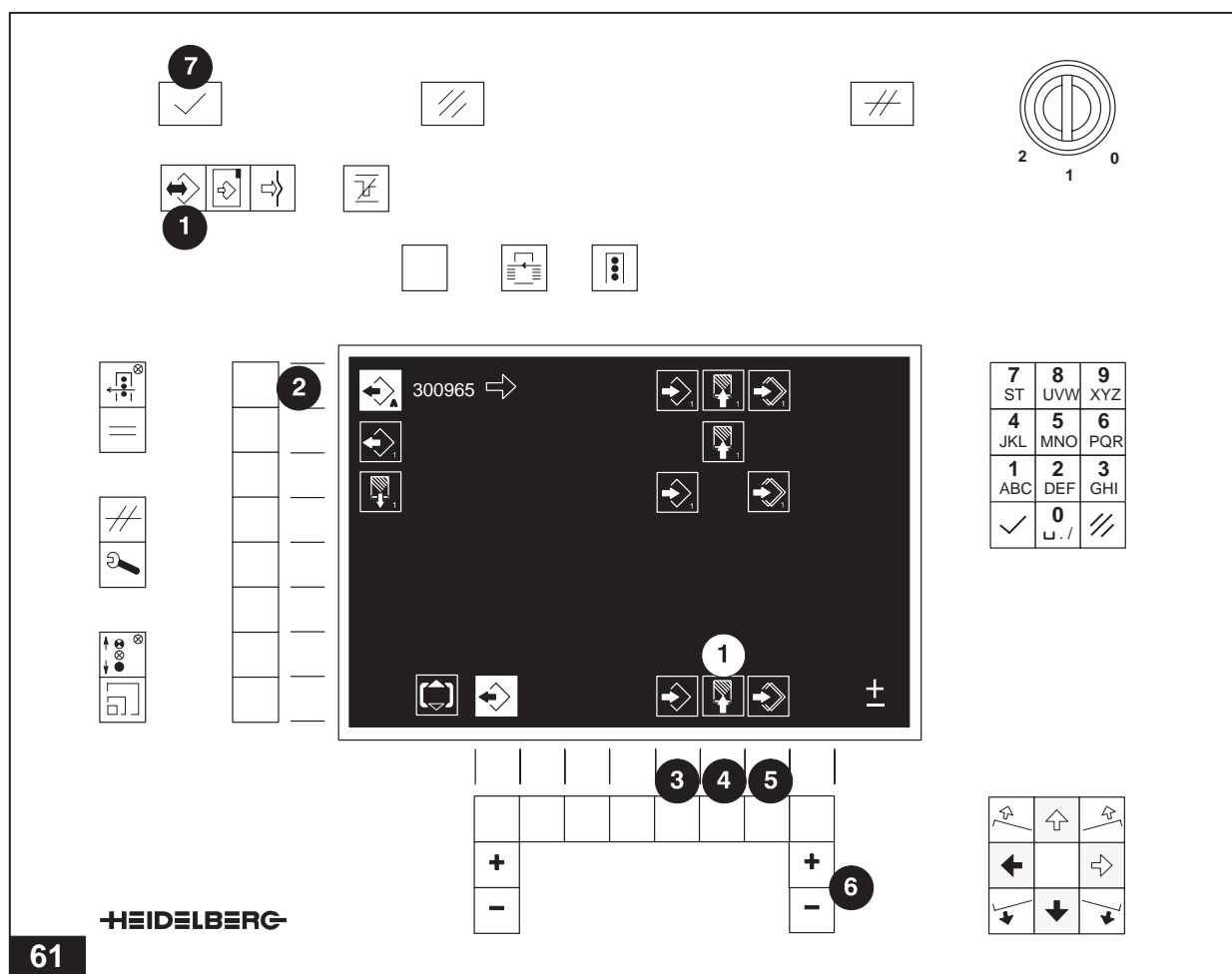
Source	Target	Result
Magenta 1 Yellow 1	Black 2 Cyan 2 Magenta 2 Yellow 2	Black 2 Cyan 2 <i>Magenta 1</i> <i>Yellow 1</i>

Displays for repeat jobs



- ① Job exists, job name defined.
- ② Job exists, *no* job name defined.
- ▶ **Note**
See also page 64
- ③ *No* job available.

11.2 Current job in press memory



① Press the DATA TRANSFER command button (button lights up).

② Press the STORE CURRENT JOB button.

① If no display:
Insert the job memory card.

• Copy the current job to one of the 5 job memories.

③ Press the JOB MEMORY button.

Proceed with ⑥.

• Copy the current job to one of the 50 memory locations on the job memory card.

④ Press the JOB MEMORY CARD button.

Proceed with ⑥.

- **Combine current job with stored job in the job memory.**

⑤ Press the COMBINE JOBS button.

Proceed with ⑥.

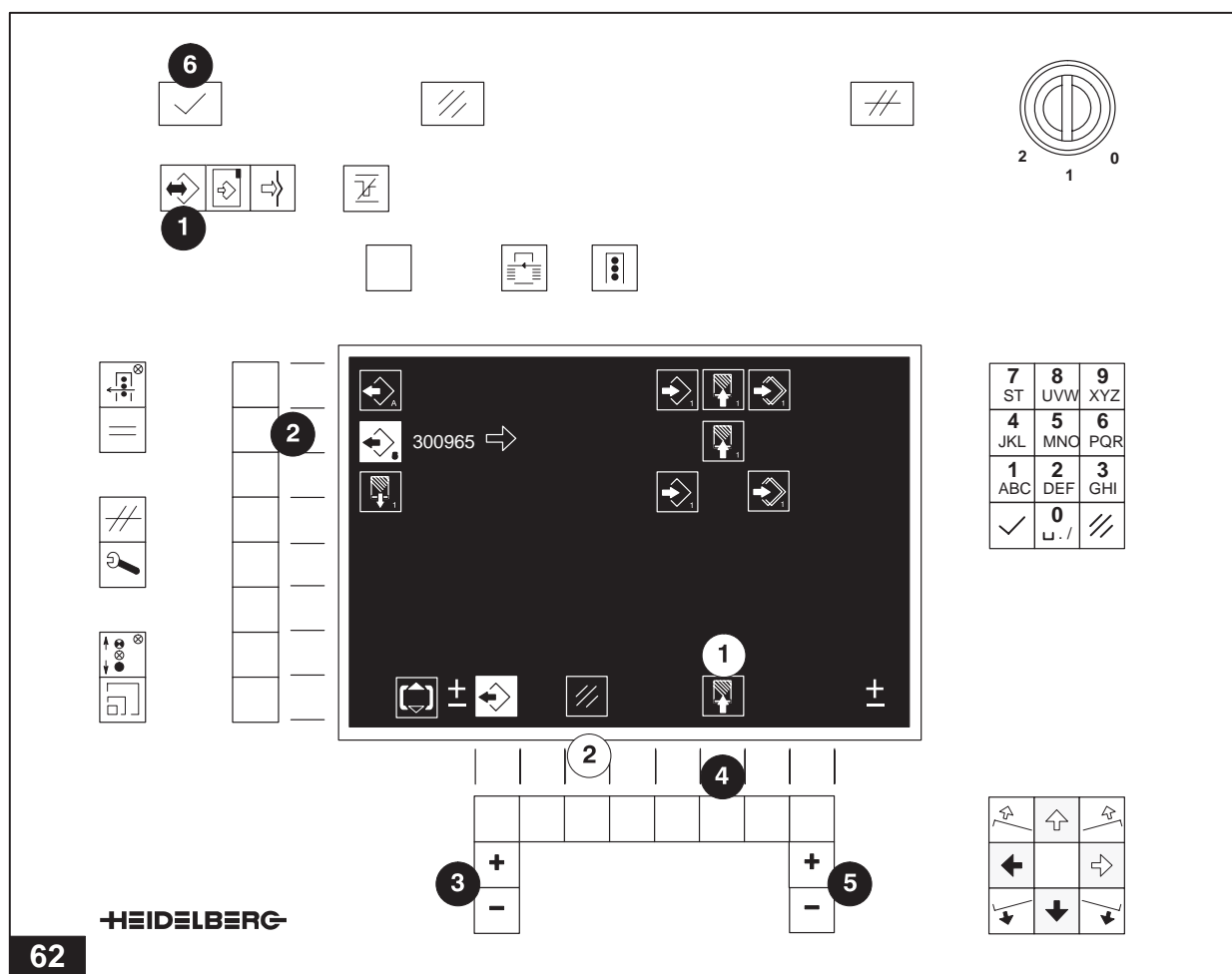
- ⑥ Using the right-hand side +/- buttons, define the respective memory location (job memory 1...5, job memory card 1...50).
- ⑦ Enable the command by pressing the ENTER button.

- ! Caution – danger of data loss if the job memory card is removed**
- **prematurely**

During reading or writing on the job memory card, the red signal lamp will light up. Do not remove the card as long as the lamp is lit: data loss!

Remove the card only after the ENTER button has switched off or the display has changed.

11.3 Job in job memory



- Copy job in the job memory to one of the 50 memory locations on the job memory card.

- ① Press the DATA TRANSFER button (button lights up).
- ② Press the JOB MEMORY button.
- ③ Using the left-hand side +/- buttons, select the job to be copied from the job memory (1...5).
- ① If no display: Insert the job memory card.
- ② DELETE JOB:
Press function button ② and enable command by pressing the ENTER button.

- 4 Press the JOB MEMORY CARD button.
- 5 Using the right-hand side +/- buttons, define the memory location on the job memory card (1...50).

► **Note**

If there is already a repeat job in the defined memory location, then this will be overwritten. Various displays are possible for repeat jobs (see Fig. 60, page 57).

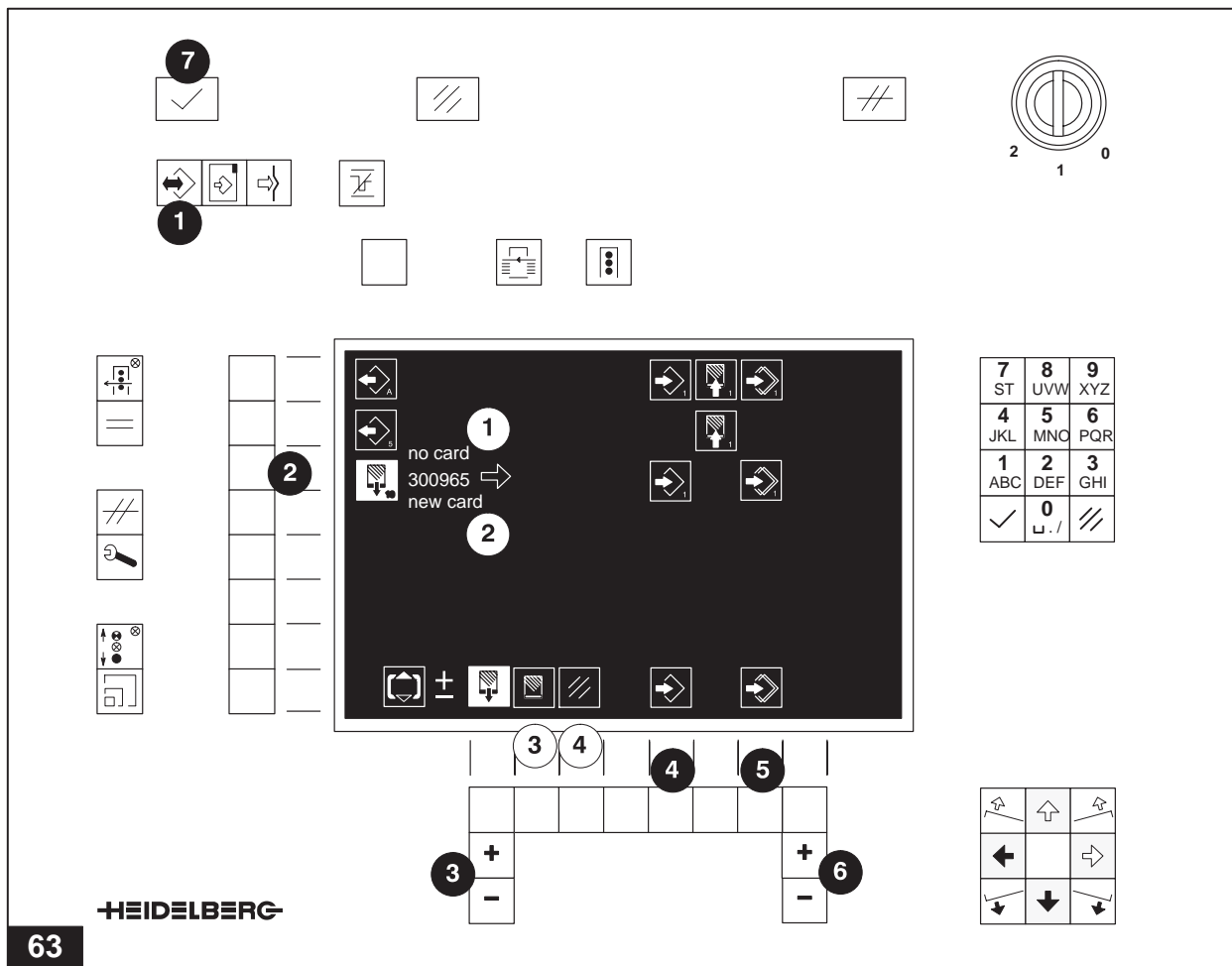
- 6 Enable command by pressing the ENTER button.

! **Caution – Danger of data loss if the job memory card is removed prematurely**

During reading or writing on the job memory card, the red signal lamp will light up. Do not remove card as long as the lamp is lit: data loss!

Remove the card only after the ENTER button has switched off or the display has changed.

11.4 Job on job memory card, formatting of job memory card



- ① Press the DATA TRANSFER command button (button lights up).
- ② Press the JOB MEMORY CARD button.
 - ① If "No card" is displayed: insert job memory card.
 - ② If "New card" is displayed, the job memory card has not been formatted. Press function button ③ and then ENTER button ⑦. The job memory card will be formatted.
- ③ Using the left-hand side +/- buttons, select the job to be copied to the job memory card (1...50).
- ④ DELETE JOB. Press the flashing function button ④ and then the ENTER button ⑦.

Caution – Danger of data loss if the job memory card is removed prematurely

During formatting, the signal lamp will light up. Do not remove card as long as the lamp is lit! Remove card only if the ENTER button has switched off or the display has changed.

- **Copy job to one of the 5 job memories.**

④ Press the JOB MEMORY button.

Proceed with ⑥.

- **Combine job with the stored job in the job memory.**

⑤ Press the COMBINE JOBS button.

⑥ Using the right-hand side +/- buttons, define the internal memory location (1...5).

► **Note**

If there is already a repeat job in the defined memory location, then this will be overwritten. This is not the case with the combine jobs function.

Various displays are possible for repeat jobs (see page 57, Fig. 60).

⑦ Enable command by pressing the ENTER button.

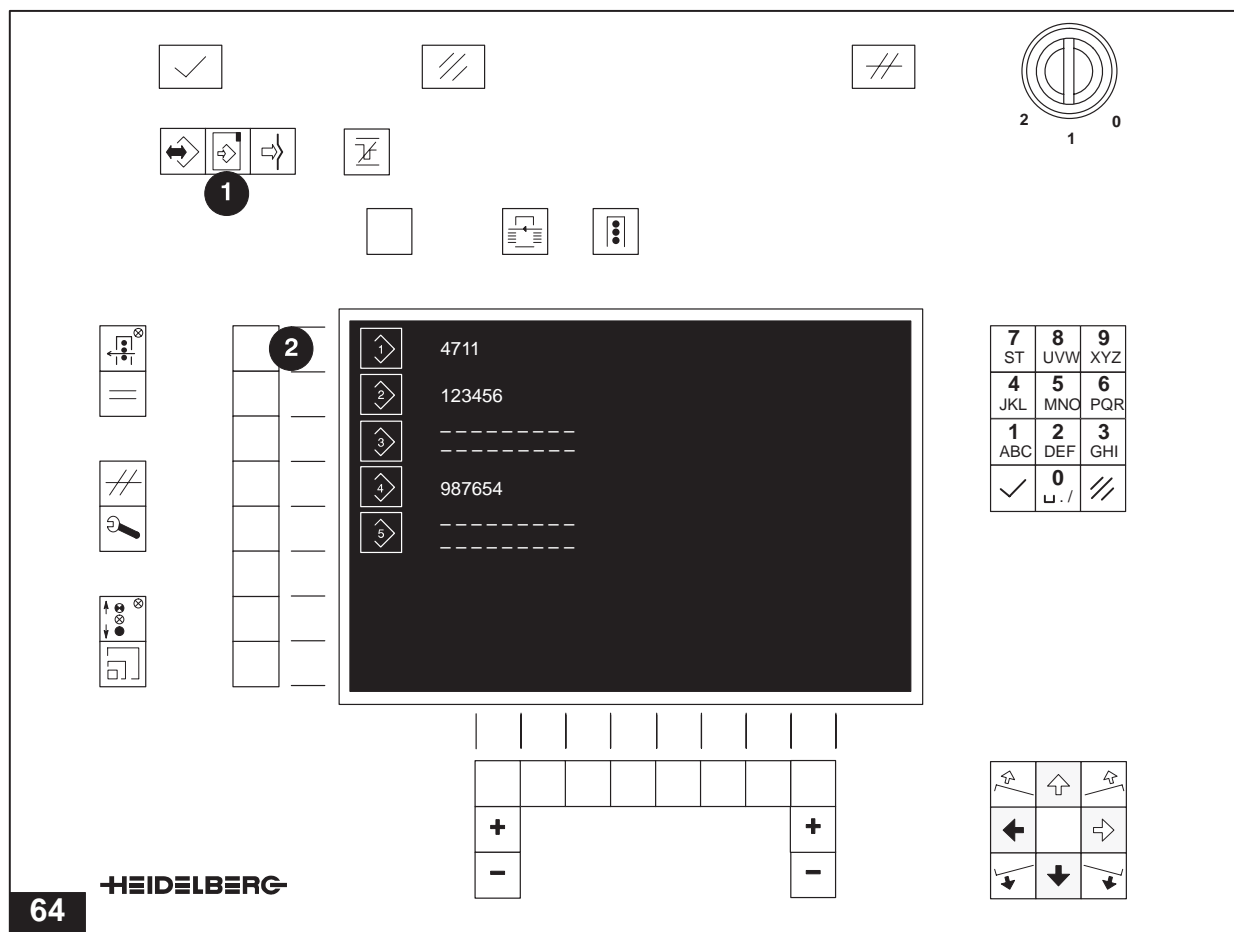
- ! **Caution – Danger of data loss if the job memory card is removed prematurely**

When reading or writing on the job memory card, the red signal lamp will light up. Do not remove card as long as the lamp is lit: data loss!

Remove card only after the ENTER button has switched off or the display has changed.

12 Job preparation

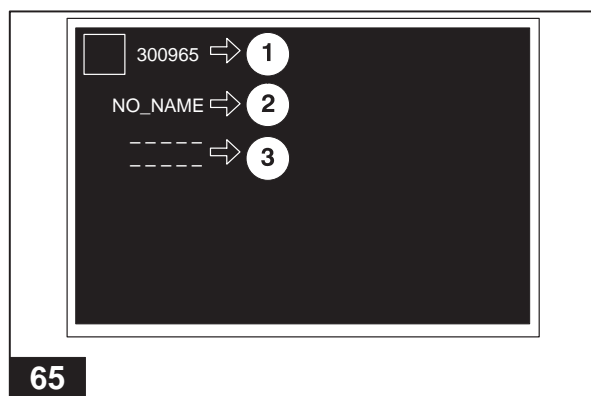
12.1 Select memory location



The command **JOB PREPARATION** is used to set, change and store up to five jobs.

- ① Press the command button **JOB PREPARATION** (button lights up).

Displays for repeat jobs



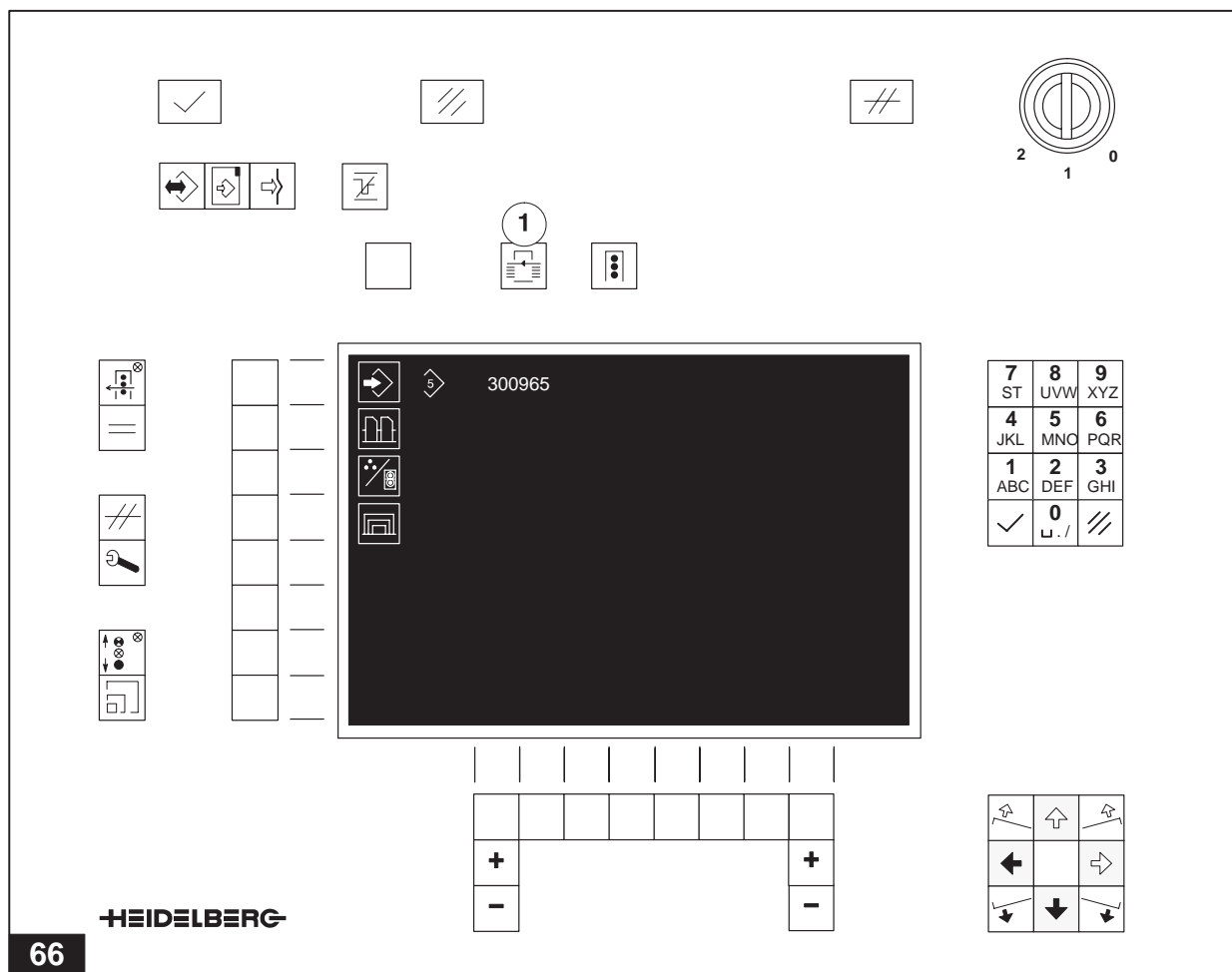
- ① Job exists, job name defined.
- ② Job exists, *no* job name defined.

► Note

If no name is entered under the "Job preparation" command, "NO_NAME" will automatically be allocated as name. The job exists.

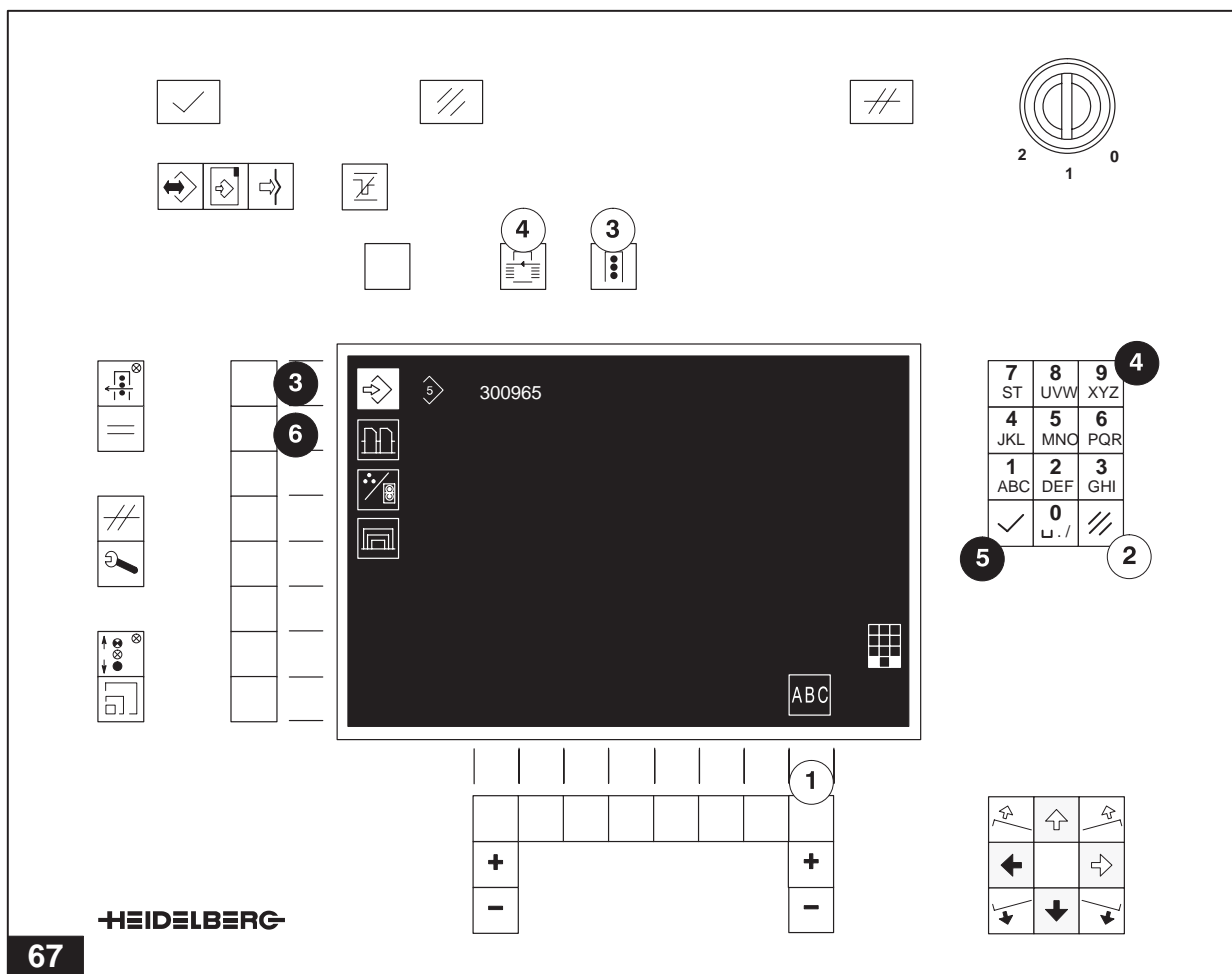
- ③ *No* job exists.
- ② Select the memory location (Fig. 67, page 66 will be displayed).

12.2 Display selection menu GLOBAL PRESS



- ① Upon pressing the selector button GLOBAL PRESS, **each** display under this command will show the GLOBAL PRESS menu.

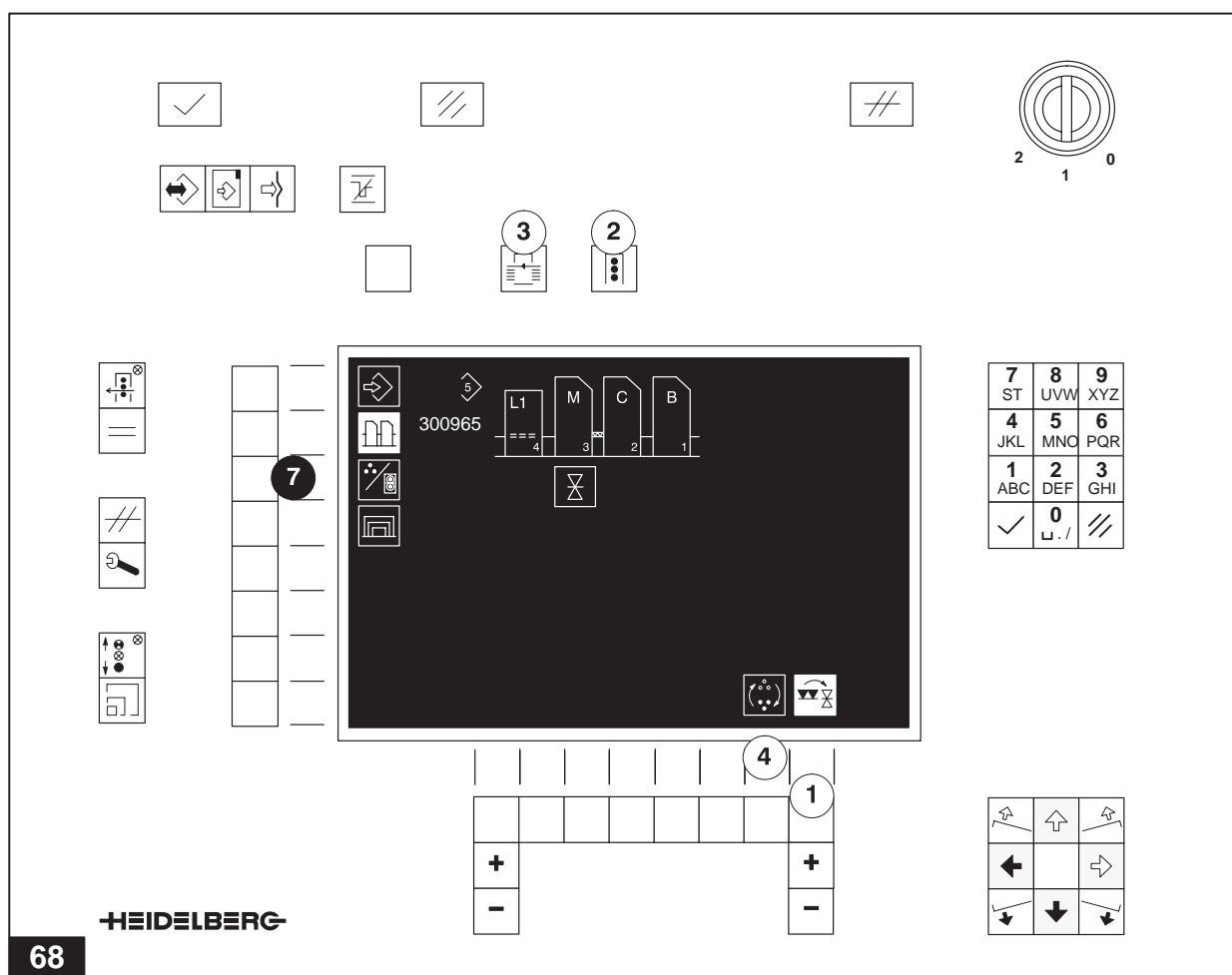
12.3 Enter job name



- ③ Press the JOB MEMORY button.
- ④ Enter or change the job name, using the alphanumeric keypad (max. 24 characters).
 - **Note**
Use function button ① to switch over from entering letters to entering numbers (e.g. if button actuated, the pictogram is shown inversely, for "A" press the "1" once, for "B" press the "1" twice).
 - **Note**
Press the DELETE button ② to correct the last character.
- ⑤ Confirm your entry by pressing the ENTER key on the keypad.
- ⑥ Press the PRESS CONFIGURATION button (the display as shown in Fig. 68, page 67 will appear).
- ③ Upon pressing the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).
- ④ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).

12.4 Sheet reversing device - switching on and off, change colour

Printing press with one sheet reversing device

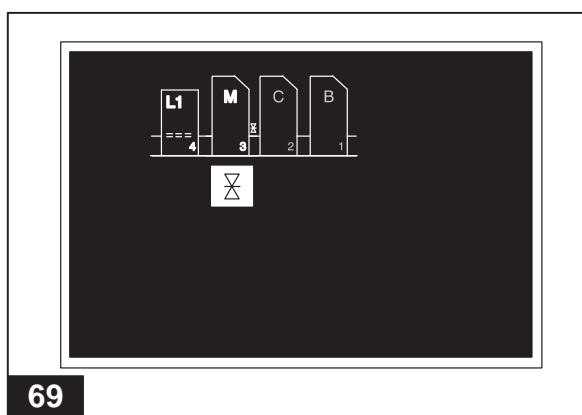


► **Note**

The small symbols straight printing/perfecting are always displayed **in front of the printing unit with sheet reversing device** (counting direction).

- ① Switch on the sheet reversing device.
Inverse display of sheet reversing device;
colour symbols in the printing units behind
the sheet reversing device flashing (initial
state, see Fig. 69).
- ② Upon pressing the selector button
PRINTING UNIT, the printing unit settings
will be displayed (see page 82).
- ③ Upon pressing the selector button GLOBAL,
you will return to the selection menu display
GLOBAL PRESS (see page 65).

- 7 For colour allocation, see page 71.



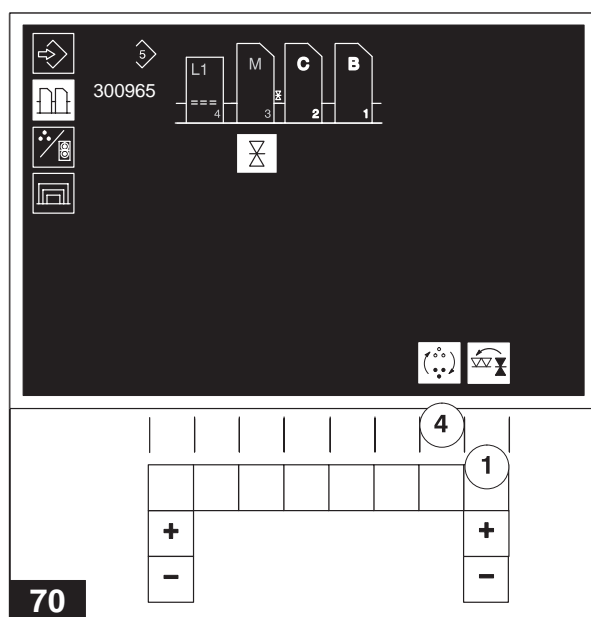
④ Changing the colour

When sheet reversal is active, the colour sets for straight printing and perfecting can be exchanged.

► Note

The colour allocation for the job will **not** be changed.

Press button ④ (the display as shown in Fig. 70 will appear).



The flashing of the colour symbols in the printing units in front of the sheet reversing device indicates that the position of the colour set has changed.

When selecting the "Change Colour" function, always only complete colour sets will be moved. The colour symbols in the printing units, however, will remain unchanged.

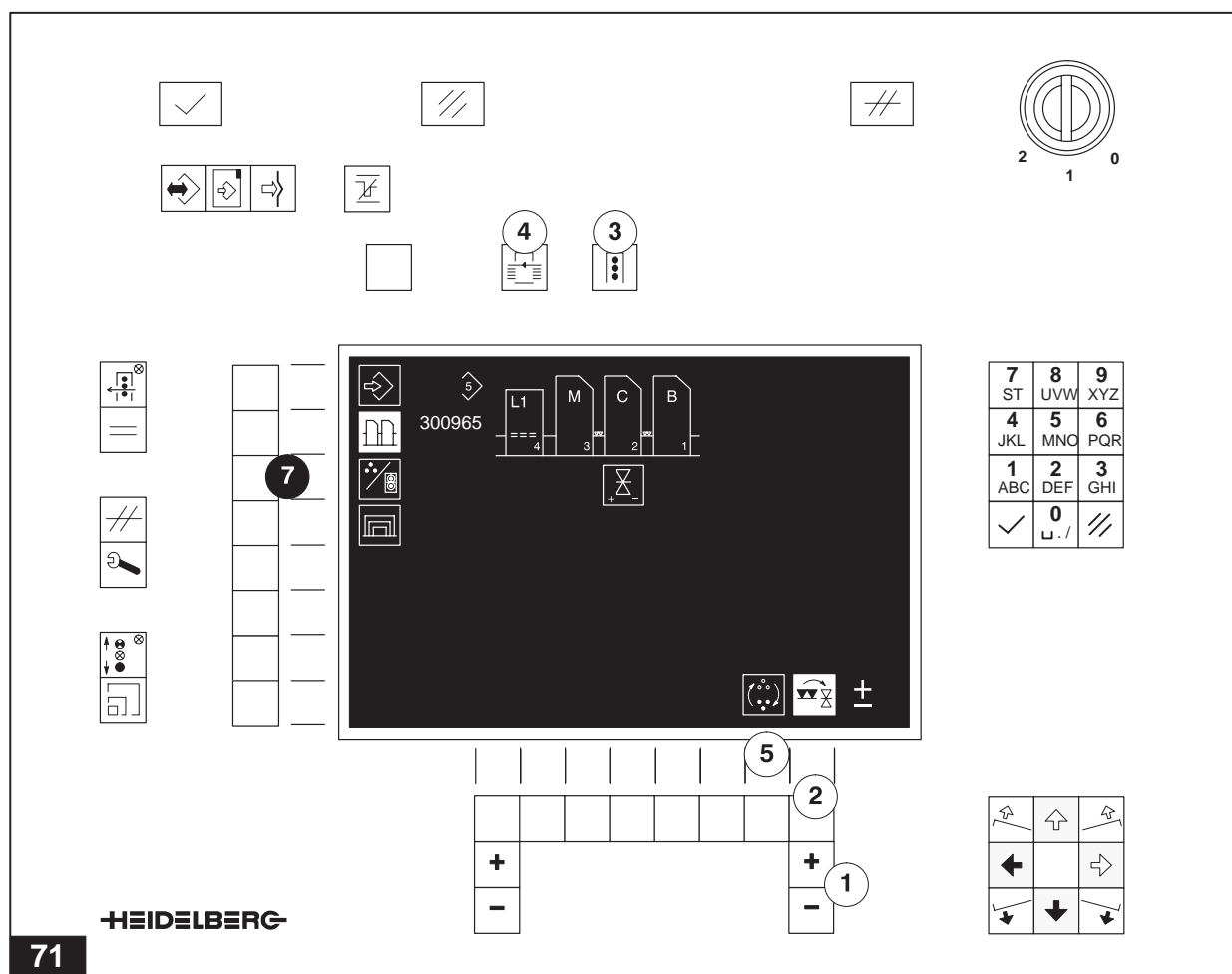
The colour allocation can be changed as required (see page 71).

► Note

Allocate a new job name to identify the changed job before it is entered.

- ① Switch off the sheet reversing device.
Switch from straight printing and perfecting to straight printing.

Printing press with two sheet reversing devices

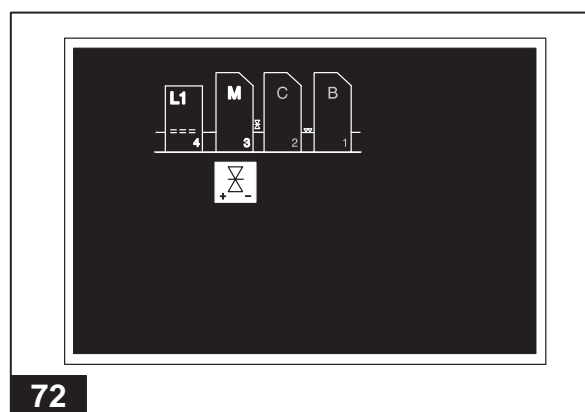


► Note

The small symbols straight printing/perfecting are always displayed **in front of the printing units with sheet reversing device** (counting direction).

- ① Allocate the sheet reversal symbol to the respective printing unit, using the right-hand side +/- buttons ①.

Upon confirmation of selection via button ②, the sheet reversing device will be switched on. Display for sheet reversal inverse; colour symbols in the printing units behind the sheet reversing device will flash (initial state, see Fig. 72).



- ③ Upon pressing of the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).
- ④ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).
- ⑦ For colour allocation, see page 71.

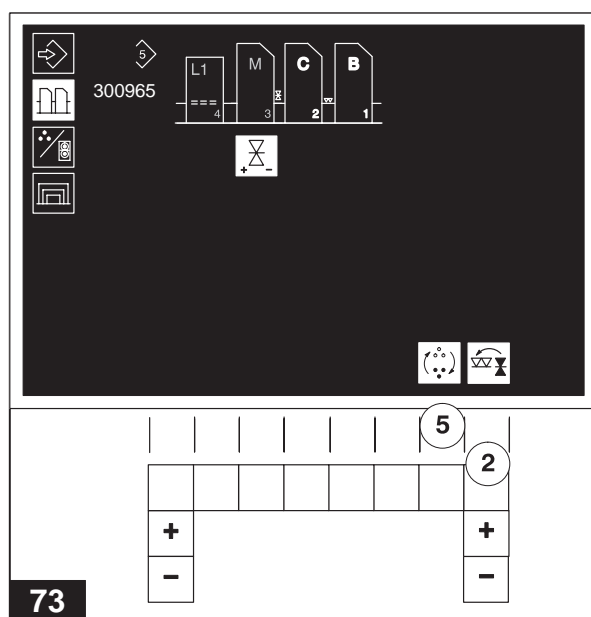
⑤ Changing the colour

When sheet reversal is active, the colour sets for straight printing and perfecting can be exchanged.

► Note

The colour allocation for the job will **not** be changed.

Press the button ⑤ (the display as shown in Fig. 73 will appear).



The flashing of the colour symbols in the printing units in front of the sheet reversing device indicates the change in position of the colour set. When selecting the function "Change colour", only complete colour sets will be moved. The colour symbols in the printing units, however, will remain unchanged.

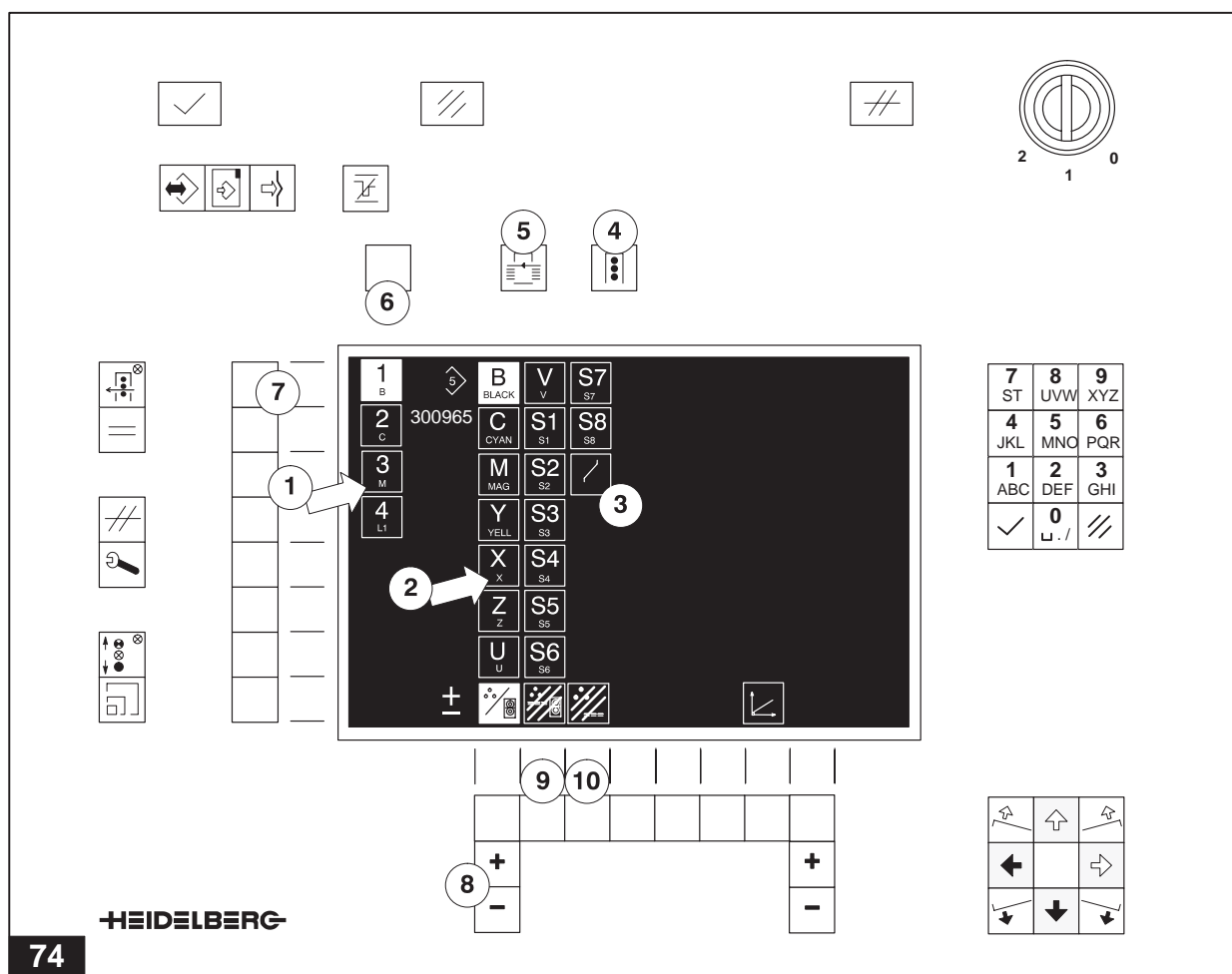
The colour allocation can be changed as required (see page 71).

► Note

Allocate a new job name to identify the changed job before it is entered.

- ② Switch off the sheet reversing device.
Switch from straight printing and perfecting to straight printing.

12.5 Colour allocation



Using this display, the printer can delete, change and individually or completely reallocate colours and thus the colour values in the printing units.

- ① The colour allocation shows the colours and varnishes *allocated* to printing units 1 ... 4. These colours/varnishes contain specific values (e.g. ink fountain zone opening, ink fountain roller stroke, etc.).
- ② In addition, in the colour column (B...S8) the *existing* colours (existing colour values) will be shown by a flashing light.
- ③ When allocating the symbol ③ "Switch off printing unit", the ink fountain zone in the selected printing unit will be closed and the ink fountain roller stroke will be set to minimum (e.g. 5-printing unit press and 4-colour job).

- ④ Upon pressing the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).
- ⑤ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).
- ⑥ Using the function button SWITCHOVER, you can switch between the previously selected printing unit groups (before/after the set sheet reversal) and more than eight printing units.

Reallocation of individual colours:

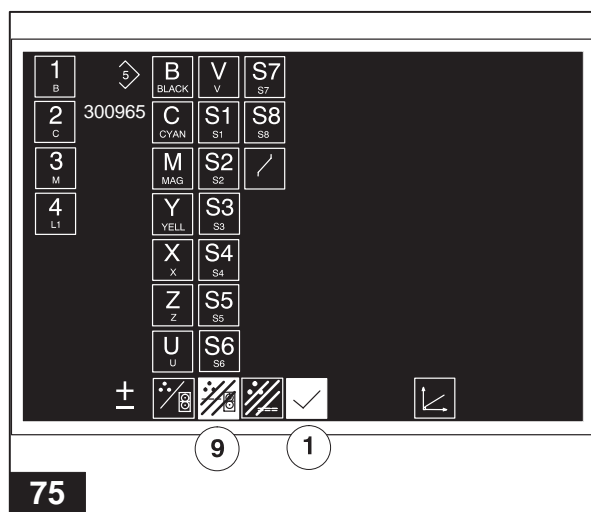
- ⑦ Select the printing unit. (Default will be the first printing unit, pictogram shown inversely).
- ⑧ Using the left-hand side +/- buttons, allocate the required colours to the individual printing units.

⑨ **Delete *allocation* of colours (colour values) and varnishes to printing units:**

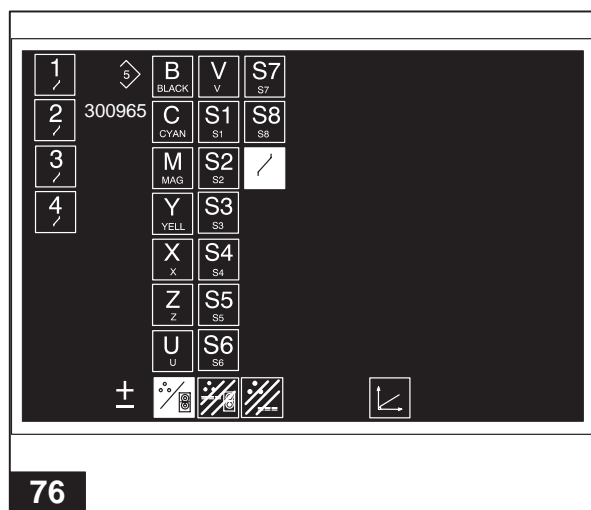
► **Note**

Varnishes allocated to the **coating units** will also be removed!

Press button ⑨ (the display as shown in Fig. 75 will appear).



Press the SELECTION CONFIRMATION button ① (the display as shown in Fig. 76 will appear).



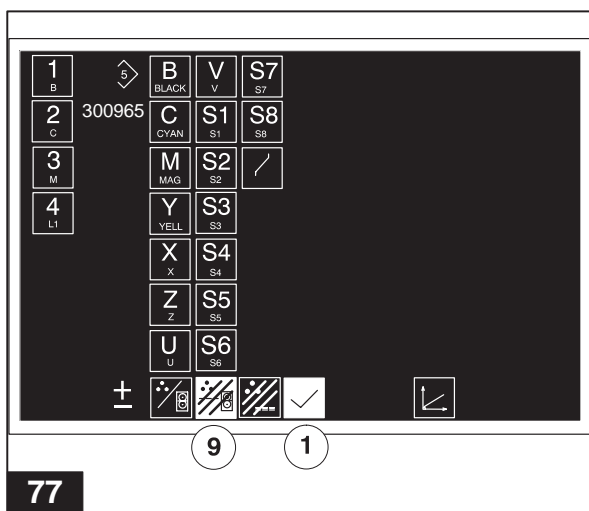
All *allocated* colours are removed from the printing units. *Existing* colours (colour values) will flash in the colour column.

Now all colours (with and without colour values) can be allocated to the printing units:

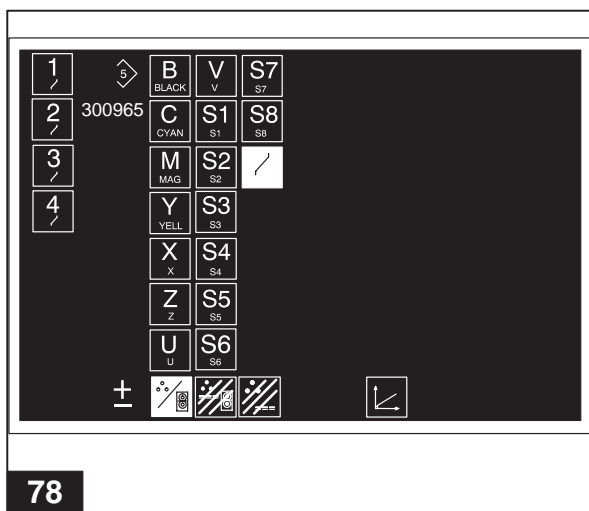
- Select the printing unit.
- Using the left-hand side +/- buttons, allocate the required colours to the individual printing units.

⑩ Delete *existing* colours (colour values) in the printing units:

Press button ⑨ (the display as shown in Fig. 77 will appear).



Press SELECTION CONFIRMATION button ① (the display as shown in Fig. 78 will appear).

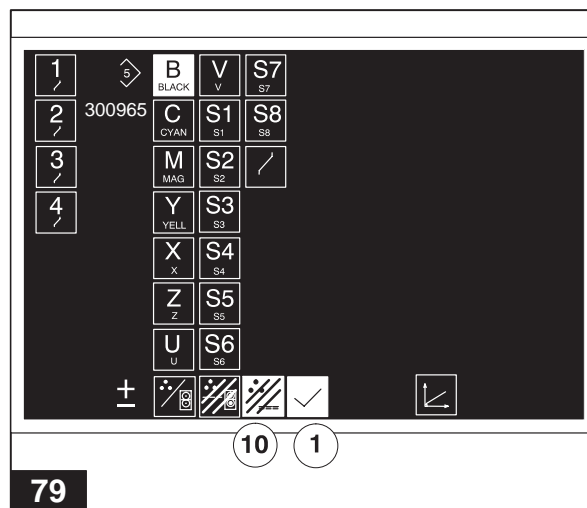


Allocated colours are removed from the printing units. *Existing* colours will flash in the colour column.

Press button ⑩ Delete *existing* colours (the display as shown in Fig. 79 will appear).

► **Note**

Only colours which are **not** allocated can be deleted.



The first existing colour is selected (e.g. black, inverse representation of the pictogram).

- Select colour using the left-hand side +/- buttons.
- Press the SELECTION CONFIRMATION button ①.

The selected *existing* colour is removed from the colour column.

► **Note**

This function is needed, for example, for the Data Transfer command "Combine jobs". It allows the addition of individual colours/varnishes to an existing job without overwriting the remaining colours/varnishes.

Colours can be reallocated using the HEIDELBERG default values:

- Select the printing unit.
- Using the left-hand side +/- buttons, select individual colours from the colour column.

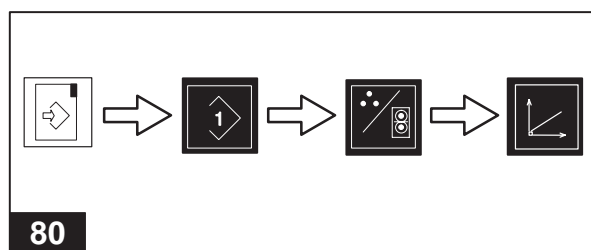
For varnish allocation, see Fig. 82, page 75.

- ⑤ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).

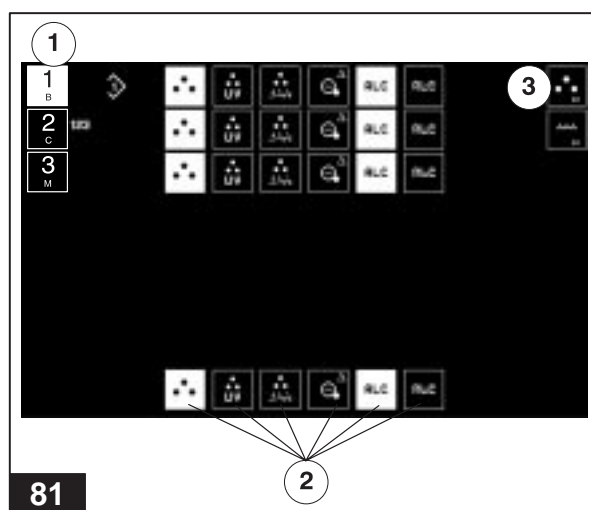
12.6 Allocate characteristic curves

In the JOB PREPARATION menu, select the required printing process (Alcolor, waterless, UV inks, Vario operation, etc.). Depending on the selected printing process, the control will allocate the appropriate characteristic curves to the printing units.

Button sequence:



The display as shown in Fig. 81 appears on the ZID control console display.

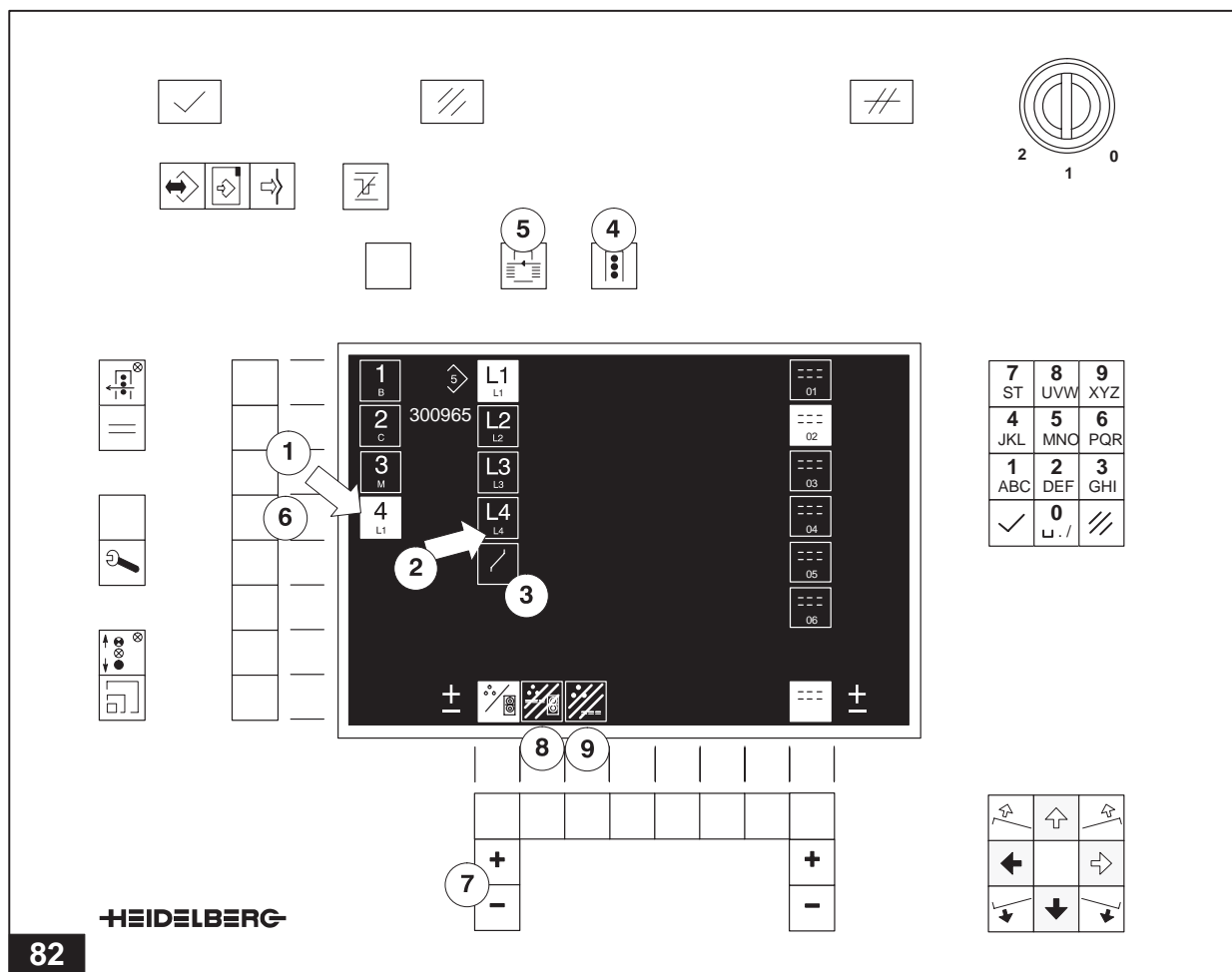


- ① Select a printing unit
(button ① Fig. 81; here: PU 1)
- ② Allocate a printing process to the selected printing unit (Buttons ② Fig. 81; here: offset inks with alcohol).

The characteristic curves allocated to the printing unit by the control will appear in the upper right-hand corner of the ZID (Fig. 81, ③).
(here: ink fountain roller stroke characteristic curve no. 01, dampening ductor characteristic curve 01).

Using this button sequence, allocate characteristic curves to all printing units. The settings will be stored upon exit of display.

12.7 Varnish allocation



Using this display, the printer can delete, change and individually or globally reallocate varnishes and thus the varnish values in the coating units.

- ① The varnish allocation shows the varnishes *allocated* to the coating units. These varnishes contain specific varnish values (e.g. dampening values, etc.).
- ② In addition, in the varnish column (L1 ... L4) the *existing* varnishes (existing varnish values) are shown by a flashing light.
- ③ Upon allocation of symbol ③, the coating unit will be switched off (varnish ductor stroke will be set to minimum).

- ④ Upon pressing the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).

- ⑤ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).

Reallocation of individual varnishes:

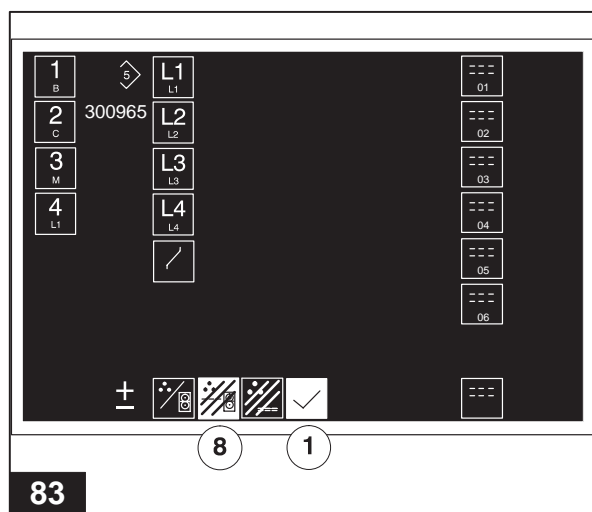
- ⑥ In the case of several coating units: Select the coating unit (default will be the first coating unit; inverse representation of pictogram).
- ⑦ Using the left-hand side +/- buttons, allocate the required varnishes to the individual coating units.

⑧ **Delete *allocated* varnishes (varnish values) and colours for the units:**

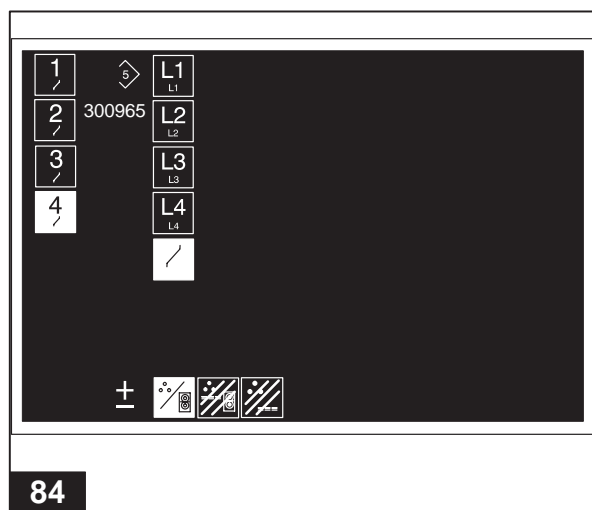
► **Note**

Colours allocated to the **printing units** will also be removed!

Press button ⑧ (the display as shown in Fig. 83 will appear).



Press SELECTION CONFIRMATION button ① and select coating unit again (the display as shown in Fig. 84 will appear).

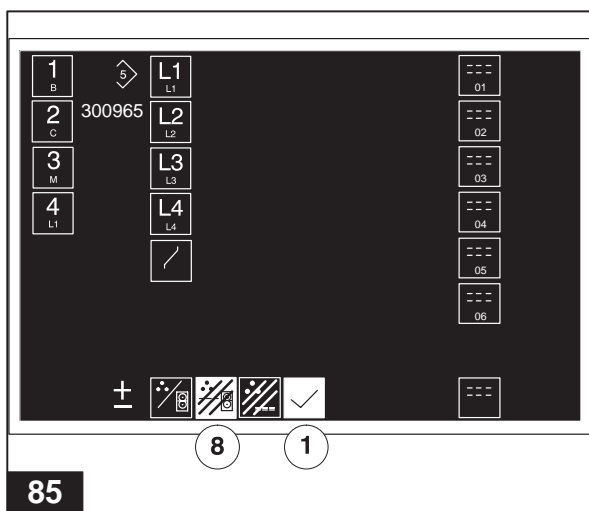


All *allocated* varnishes are removed from the coating units. *Existing* varnishes (varnish values) will flash in the varnish column. Now all varnishes (with and without varnish values) can be allocated to the coating units:

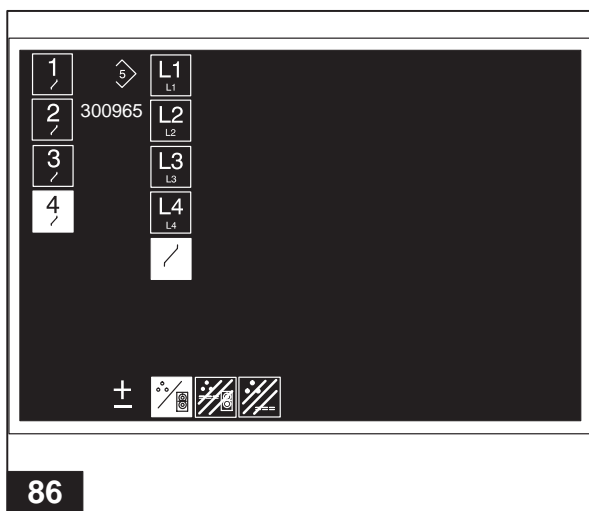
- Select the coating unit.
- Using the left-hand side +/- buttons, allocate the required varnishes to the individual coating units.

⑨ Delete *existing* varnishes (varnish values) in the coating units:

Press button ⑧ (the display as shown in Fig. 85 will appear).



Press SELECTION CONFIRMATION button ① and reselect coating unit (the display as shown in Fig. 86 will appear).

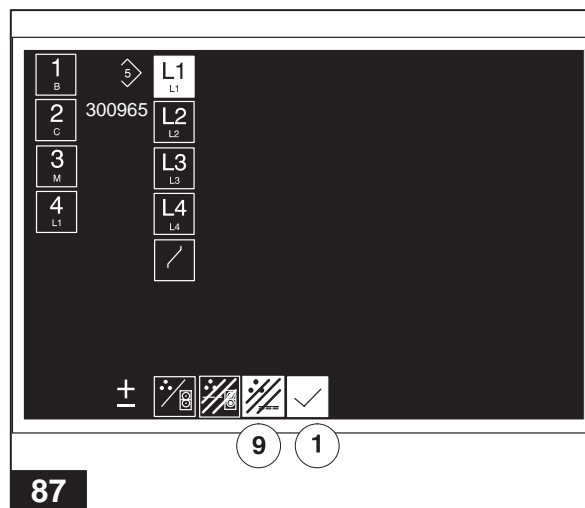


Allocated varnishes are removed from the coating units. *Existing* varnishes (varnish values) will flash in the varnish column.

Press the Delete *Existing* varnishes button ⑨ (the display as shown in Fig. 87 will appear).

► **Note**

Only varnishes which are **not** allocated can be deleted.



The first existing varnish is selected (e.g. L1, inverse pictogram).

- Select varnish using the left-hand side +/- buttons.
- Press the SELECTION CONFIRMATION button ①.

Selected *existing* varnish will be removed from the varnish column.

► **Note**

This function is required, for example, for the data transfer command "Combine jobs". It allows the addition of individual colours/varnishes to an existing job without overwriting the remaining colours/varnishes.

Varnishes can be reallocated using the HEIDELBERG default values:

- Select coating unit.
- Using the left-hand side +/- buttons, select individual varnishes from the varnish column.

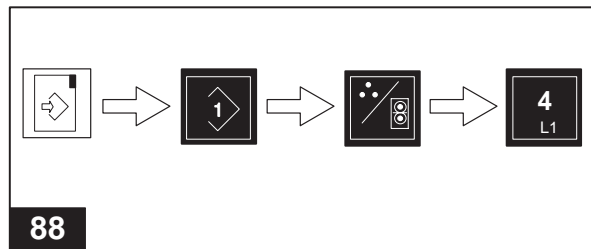
For colour allocation, see Fig. 74, page 71.

- ⑤ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).

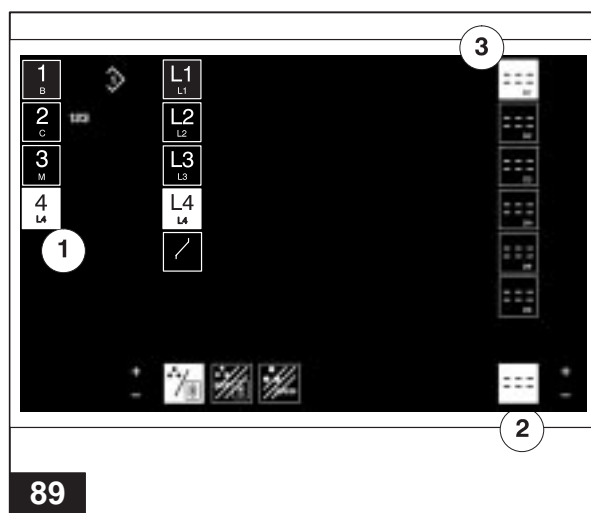
12.8 Allocate characteristic curves for varnishes

As in the case of printing units, different characteristic curves can also be allocated to the coating unit.

Button sequence:



In the ZID central console display, the display as shown in Fig. 89 will appear.



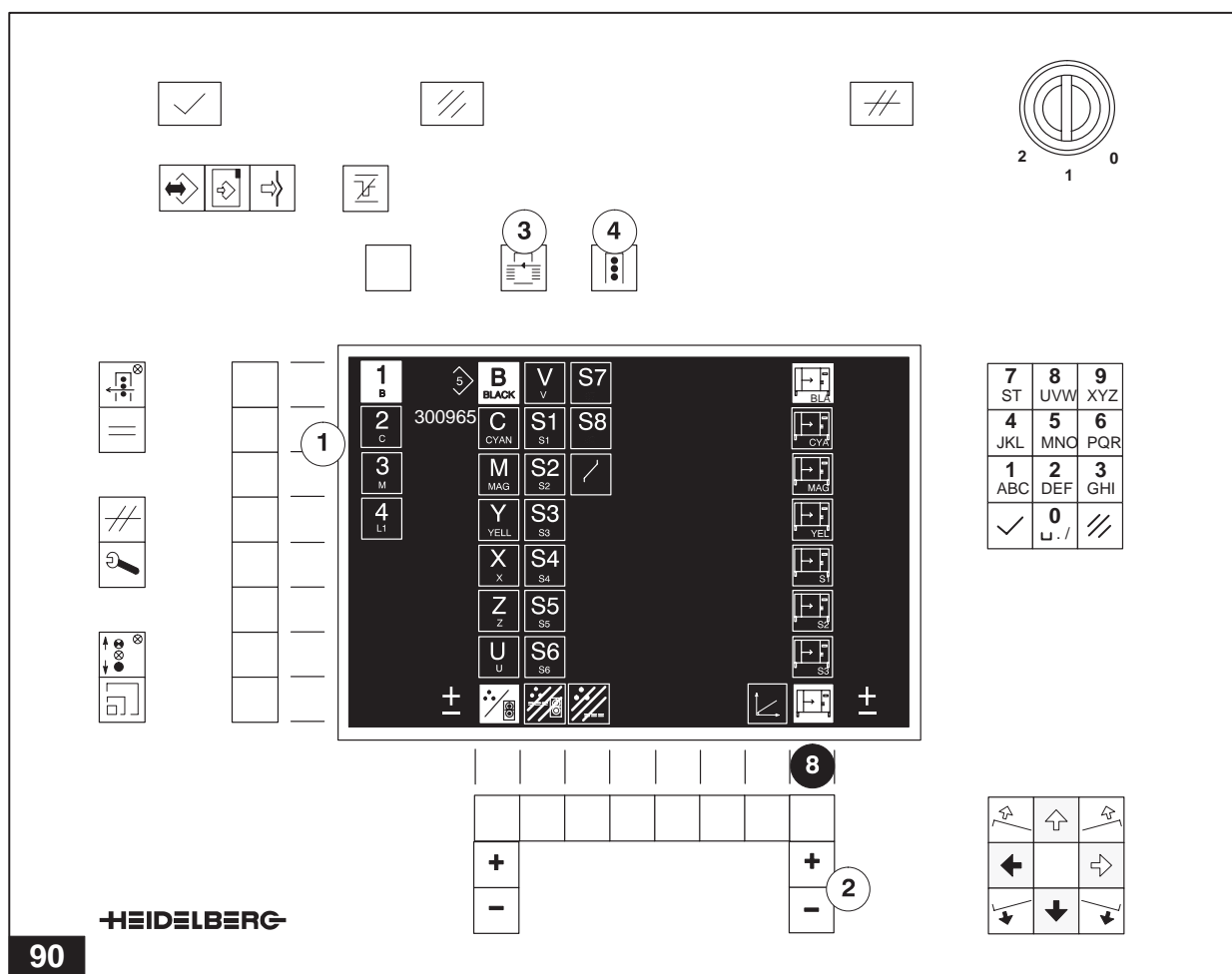
The coating unit symbol (Fig. 89, ①) is shown in inverse representation.

- ① Using the right-hand side +/- buttons (Fig. 89, ②), select a characteristic curve.

The symbol for the selected characteristic curve will be shown inversely (Fig. 89, ③).

- ② The setting will be stored upon exit of display.

12.9 Allocate characteristic curves from the plate image reader to a colour



If area coverage values for a colour exist in a job (job measured by the plate image reader), the characteristic curve symbols will appear in this display.

Different characteristic curves can be allocated to the colours.

To convert area coverage values (e.g. determined using the plate image reader) into manipulated ink zone values, to each colour *B* *S8* one of the characteristic curves *BLA* *S3* can be allocated. Using this allocated characteristic curve, the manipulated ink zone values will be calculated.

Changes to the characteristic curves (see page 39 ff.) are taken into consideration in this calculation.

- ① Select printing unit/colour.
- ② Using the right-hand side +/– buttons, allocate characteristic curve.

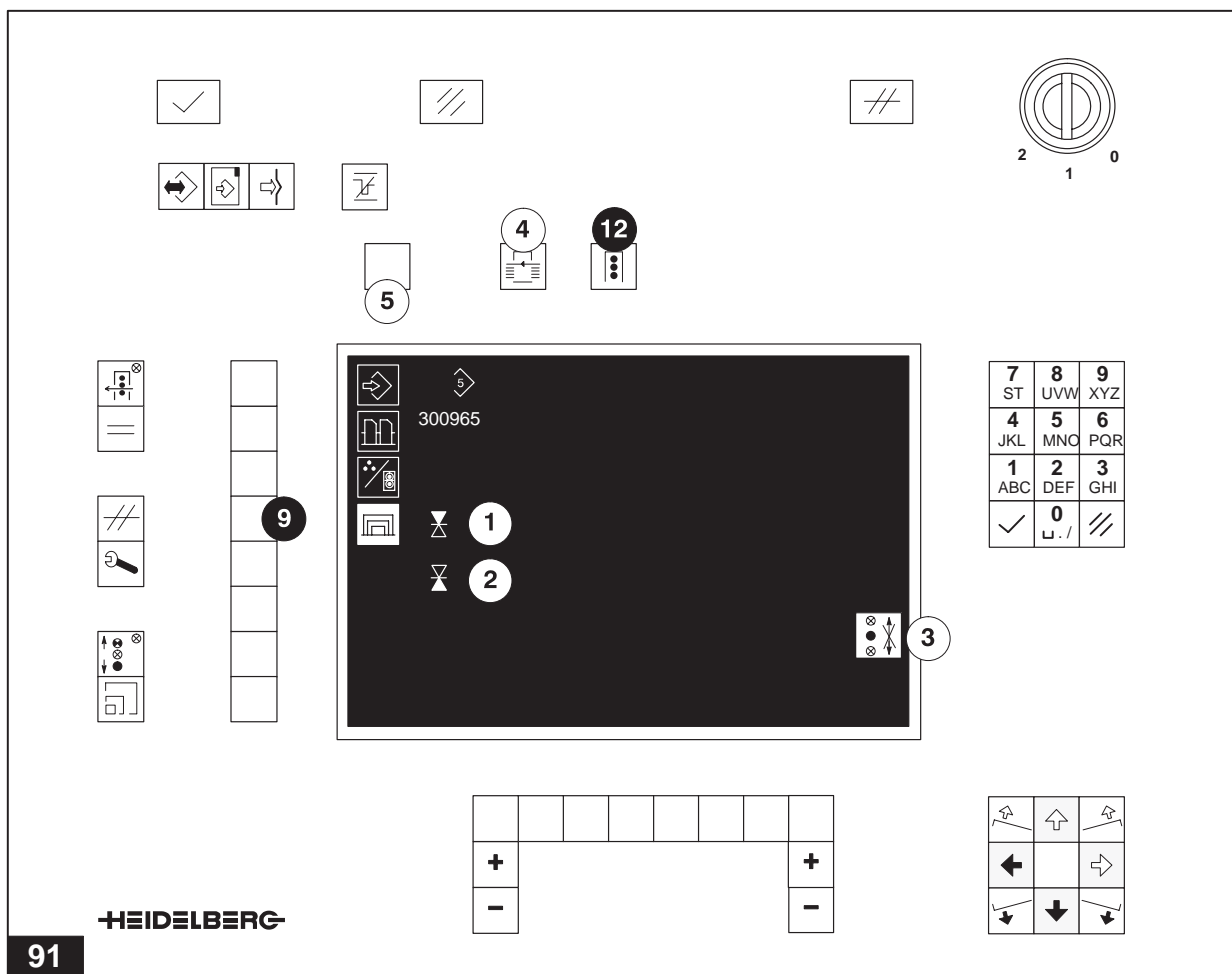
► Note

Allocated characteristic curves will automatically be changed with change in colour.

- ③ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).
- ④ Upon pressing the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).

- ⑧ Allocate characteristic curve to the selected colour

12.10 Format limitation



Shut off the ink fountain zones which lie outside the printing format in all inking units.

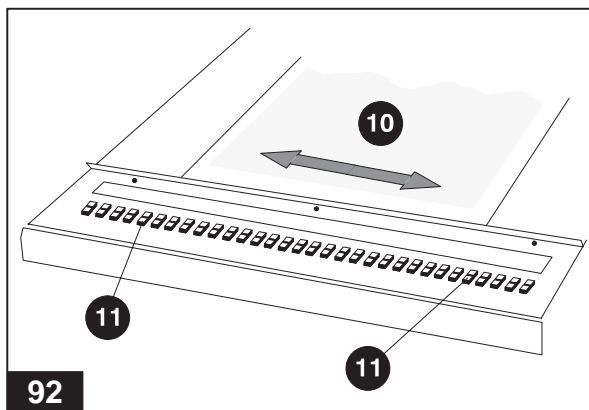
- ⑨ Press the FORMAT SETTING button. The disable diodes will flash. Display ③ Disable LED Active will appear.

► **Note**

The format limitation can be set to different values before and after sheet reversal.

- ① This pictogram will only appear when the sheet reversing device is switched on: display **before** sheet reversal.
- ② This pictogram will only appear when the sheet reversing device is switched on: display **after** sheet reversal.
- ③ Display Disable LED Active.
- ④ Upon pressing the selector button GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).
- ⑤ Using the function button SWITCHOVER, you can switch between the previously selected printing unit groups (before/after the set sheet reversal).

- 10 Align the printing sheet centrally on the CPC 1-04 control unit (Fig. 92).



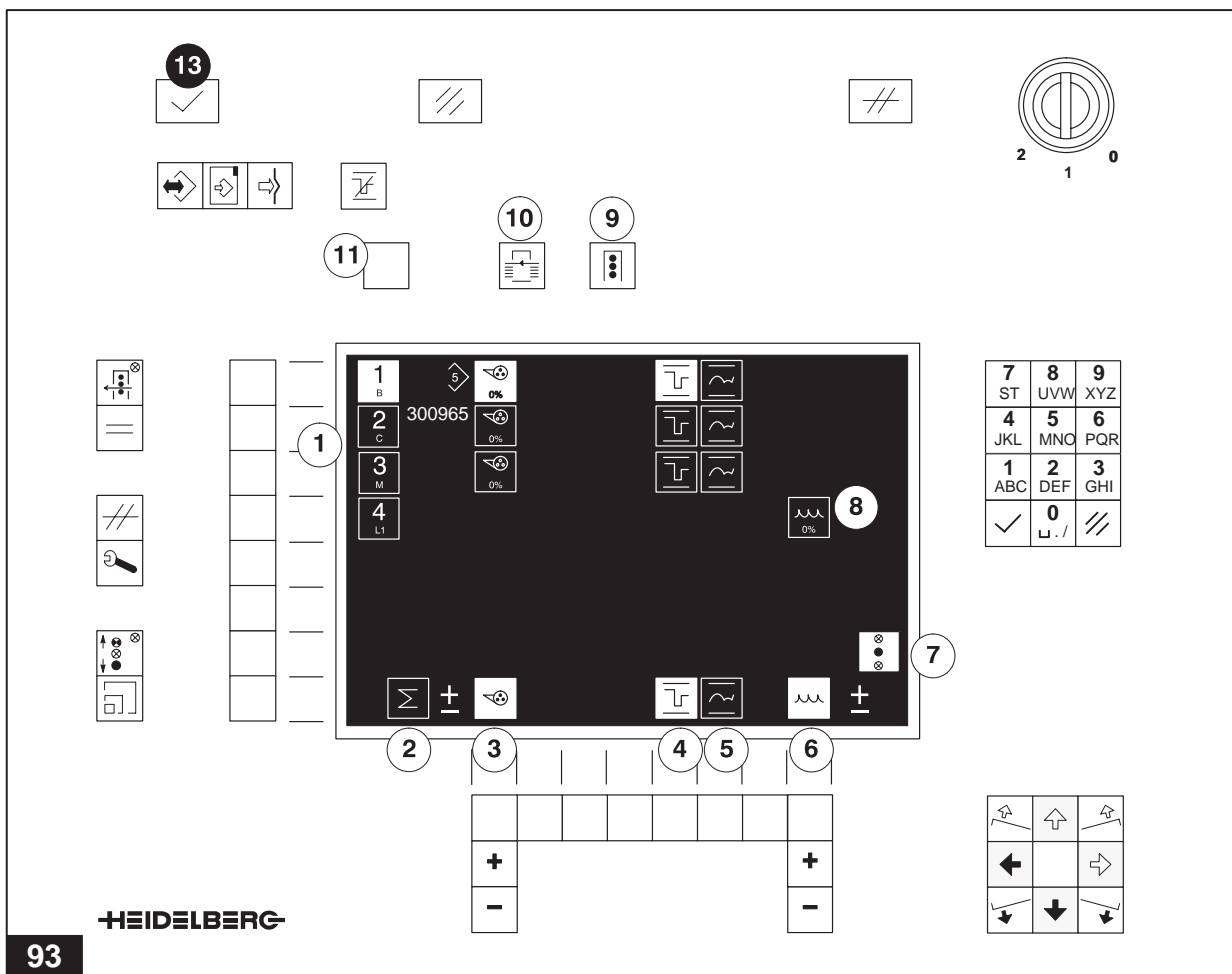
- 11 On both sides, press the first minus ink zone button which lies outside the format (Fig. 92).
The disable diodes of the disabled zones will light up, the light-emitting diodes of the zones within the format will continue to flash.

► **Note**

Disabled zones can be opened up again by using the Plus ink zone keys.

- 12 Upon pressing the selector button PRINTING UNIT, the printing unit settings will be displayed (see page 82).

12.11 Ink fountain roller and register functions, light pen



- ① Select printing unit (default: PU1; inverse representation of pictogram).

Upon selection of the printing unit, the ink fountain zone setting ⑦ including the ink zone keys will be active. The light pen functions ④ and ⑤ can be selected.

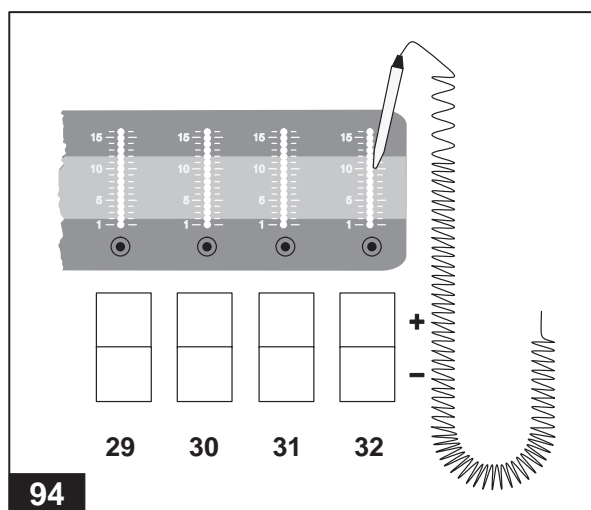
- ② Total Mode will only appear if all printing units have been selected (upon pressing of ⑨).
- ③ Set the ink fountain roller. Using the left-hand side +/- buttons, set the speed for the ink fountain roller. Setting range 5...95%.

► **Note**

The function "Set register to zero" of older versions is no longer available at this location but can be called up in the CPTronic.

Using the light pen (Fig. 94, page 83), the light-emitting diodes of the ink zone display will be moved so as to correspond to the area coverage of the job.

- ④ **Set Ink Fountain Zones Identical/Ink Fountain Zones in Gradations.**
In the case of Ink Fountain Zones Identical/Ink Fountain Zones in Gradations, *all* ink fountains zones located to the *right* of the set zone will also be set.

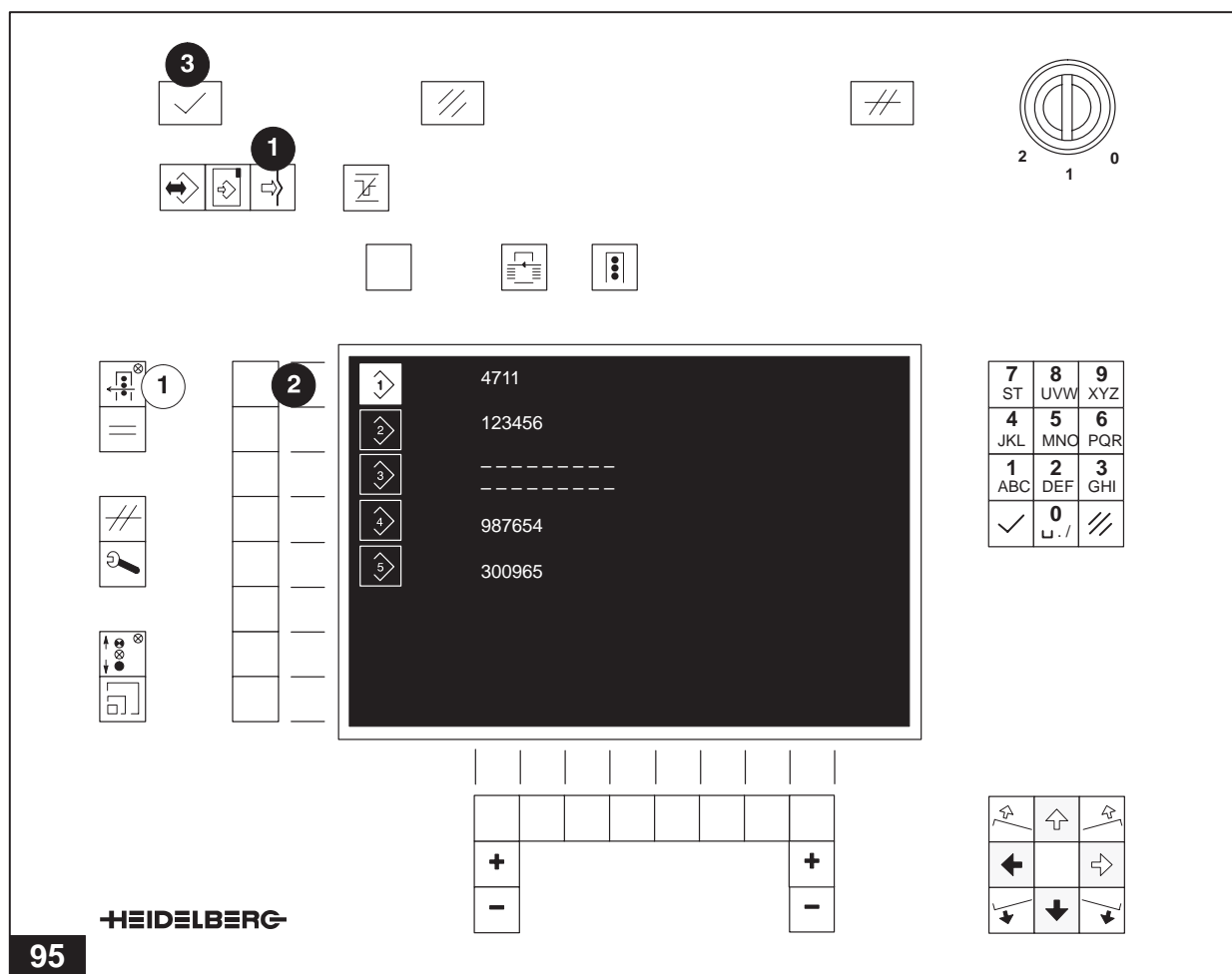


- ⑤ **Random setting of ink fountain zones.**
In the case of random ink fountain zones, *each zone must be separately set.*
- ⑥ Setting of the varnish ductor.
Using the right-hand side +/– buttons, set the speed for the varnish ductor.
Setting range: 0...99%.
- ⑦ The ink fountain zone setting display is activated.
- ⑧ Display of varnish values in coating unit.
- ⑨ Upon pressing the selector button PRINTING UNIT, total mode ② will be activated.
- ⑩ Upon pressing the selector switch GLOBAL, you will return to the selection menu display GLOBAL PRESS (see page 65).
- ⑪ Using the function button SWITCHOVER, you can switch between the previously selected printing unit groups (before/after the set sheet reversal).
- ⑬ Enable command JOB PREPARATION by pressing the ENTER button.

► **Note**

Values which have been set will be stored in the selected job memory.

13 Positioning



Upon selection of **POSITIONING**, a job will be transmitted from the job memory to the printing press.

► **Note**

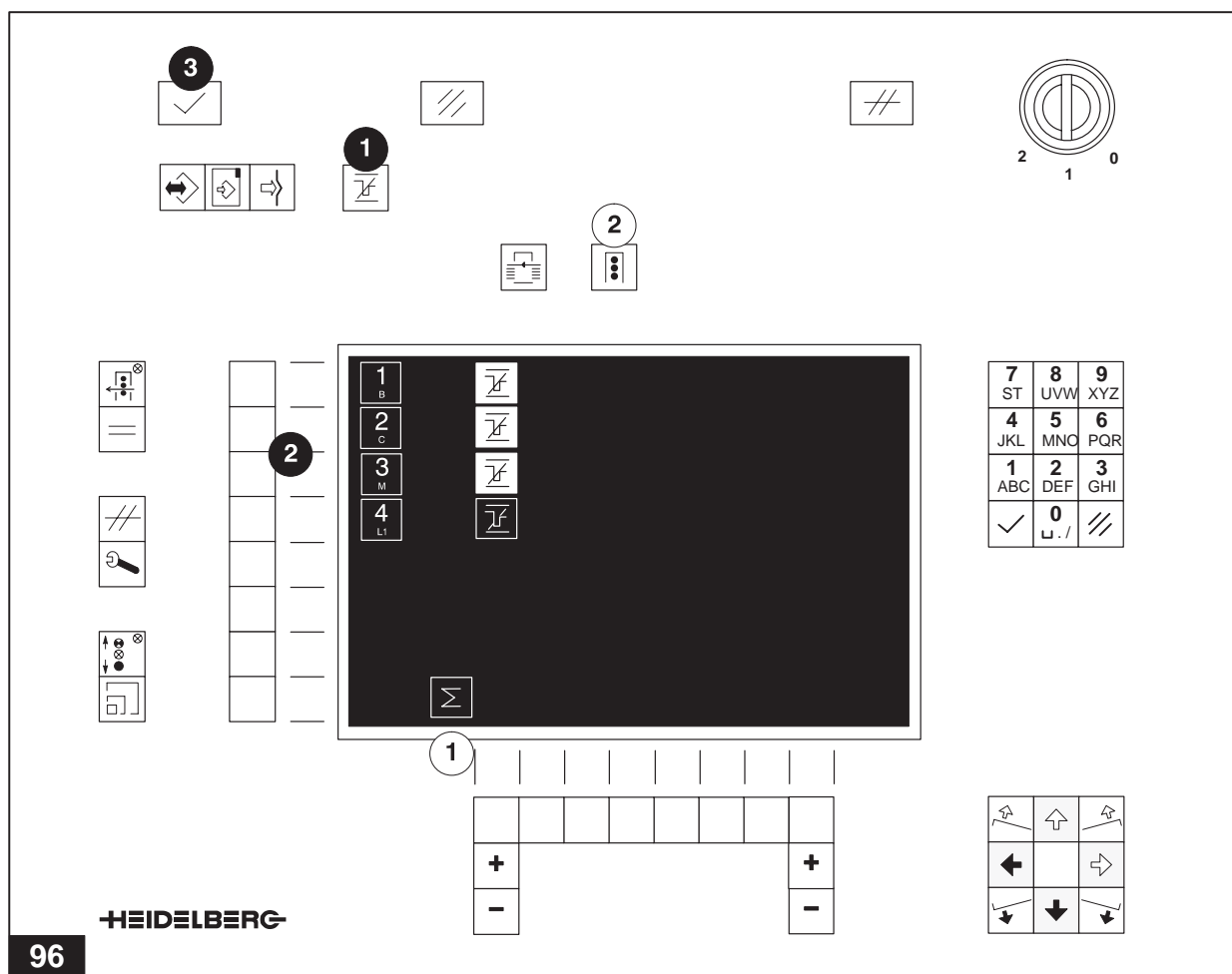
Put the press into operation!

- ① Press command button **POSITIONING** (button will light up).
- ② Select the memory location (presetting: first job, inverse pictogram).
- ③ Enable command by pressing the **ENTER** button.

► **Note**

The register/in fountain roller and ink zone settings can be checked using the **PRODUCTION RUN DISPLAY** ① menu: The values on the display as well as the coarse diodes on the ink zone display will flash.

14 Ink shut-off



In all or in selected printing units, all ink fountain zones will be shut off and the ink stripe width set to maximum.

► **Note**

Put press into operation!

If the press does not rotate, then on execution of command the ink fountain zones will be shut off but the ink stripe width not set.

- 1 Press the command button INK SHUT-OFF (button lights up).
- 1 Total mode will appear only if all printing units have been selected (default: inverse representation of all ink shut-off pictograms).
- 2 Upon pressing the selector button PRINTING UNIT, all printing units will be reselected (after completion of individual selection).

- 2 Select printing unit (inverse representation of the pictograms).
- 3 Enable command by pressing the ENTER button.

► **Note**

The name of the job in the press memory will no longer be displayed after execution of command, as the job has been deleted from the job memory.

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