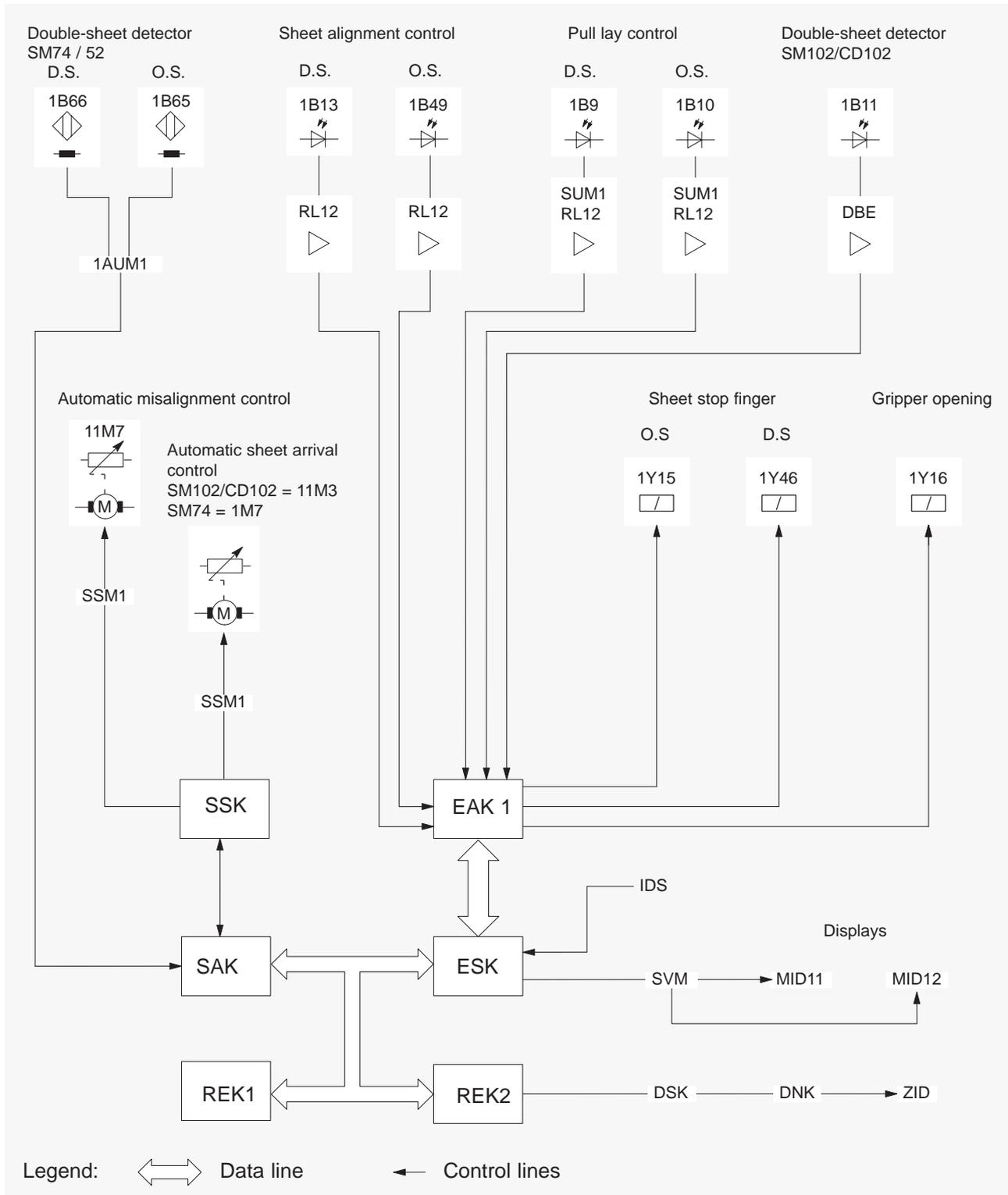


Sheet alignment

Block diagram



Block diagram of sheet alignment

The sheet alignment system consists of:

- the sheet alignment control BAK,
- the pull lay control ZMK,
- the double-sheet detector DBE,
- the automatic sheet arrival control BAR (not on SM52),
- the automatic misalignment control (only on SM102 with Preset and CD102).

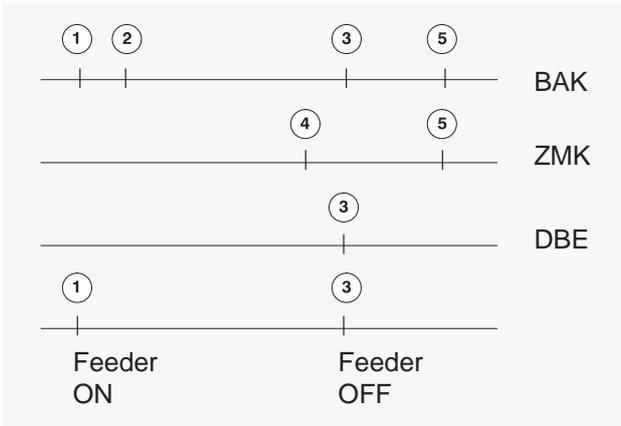
As a result of mechanically controlled sequences of motions, the sheet is aligned with the sheet alignment system before it enters the first printing unit. At the same time, the electronic control system:

- registers the point of time of sheet arrival,
- monitors sheet infeed,
- detects double-sheets.

From different sensors the electronic control system receives information from the area of the front lays at certain interrogation points.

The sensor signals are processed on the processor board 2 (REK2). The REK2 shows the result of the evaluation in the control console display ZID and the press displays MID. Simultaneously, the electronic control system activates various actuators (drives, valves etc.) in the press.

Degree values relevant to sheet alignment



Interrogation points

The illustration opposite shows the different interrogation points in the area of the front lays. The relation between the degree values and the processes in the press is explained in more detail on the next pages. To make the relation clear, the illustration shows the operation points "Feeder ON" and "Feeder OFF".

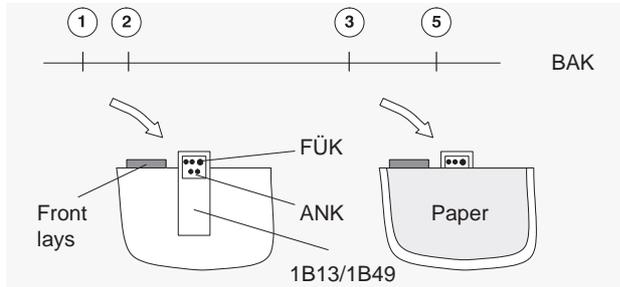
Table of degree values:

	SM52	SM74	SM102	CD 102
①	230°	285°	192.0° ¹ 222.0°	170.0°
②		303°	205.0° ¹ 235.0°	186.0°
③	20°	30°	336.0°	313.0°
④	330°	15°	311.0°	289.0°
⑤	42.5°	72°	3.0°	341.5°

¹ only for presses with Preset feeder

1B13/1B49 Sheet alignment control

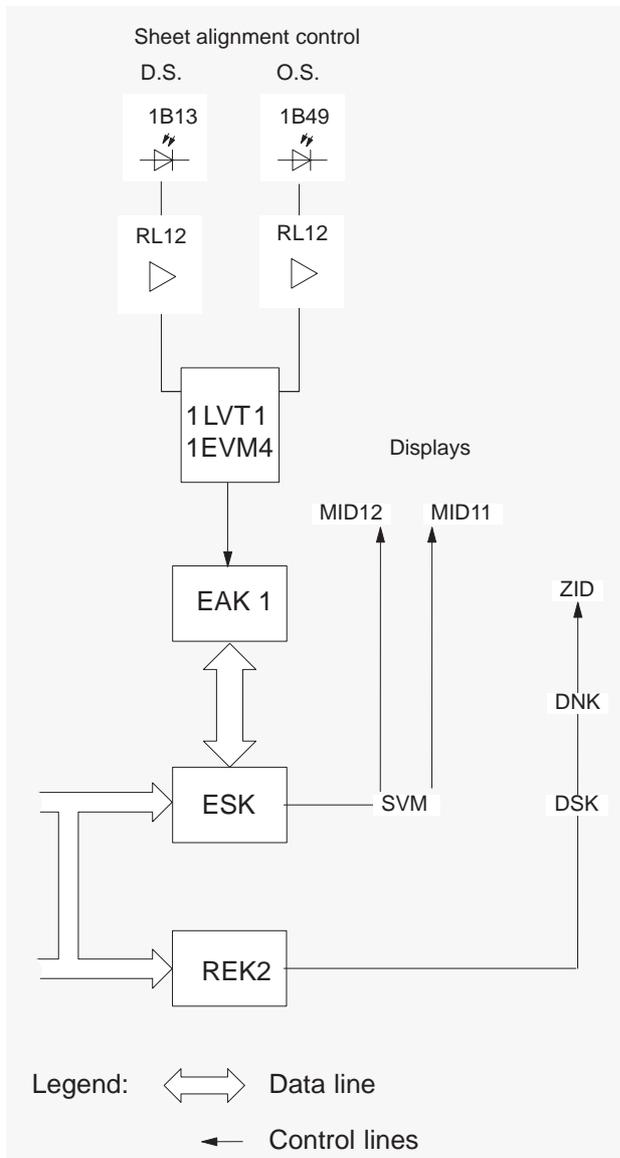
Block diagram



Interrogation points

For correct sheet transfer from the feeder into the first printing unit, the sheet must be placed against the front lays as follows:

- SM52 between 240° ① and 20° ③,
- SM74 between 285° ① and 40° ③,
- SM102 between 222° ① and 336° ③,
- SM102 with Preset between 192° ① and 336° ③,
- CD102 between 170° ① and 313° ③.



Block diagram of sheet alignment control

Optimum sheet arrival ②

- SM74 at 303° ,
- SM102 at 235° ,
- SM102 with Preset at 205° ,
- CD102 at 186° .

The following applies to the degrees listed (see block diagram):

- At ① and paper run: the ANK must not detect paper.
- At ③ and paper run: the ANK must detect paper.
- At ⑤ and paper run: To analyze the information provided by the pull lay control (1B9/1B10) the ANK must detect paper.

The sensors (1B13 and 1B49) of the sheet alignment control register at which point of time the sheets arrive at the front lays. Each sensor housing contains an ANK and FÜK sensor.

ANK = sensor for sheet alignment control
 FÜK = sensor for overshooting control

Note:

Speedmaster SM52 is only equipped with one sensor (1B49) of the sheet alignment control.

The signals of the sensors are transmitted to the amplifiers (RL12) where they are amplified.

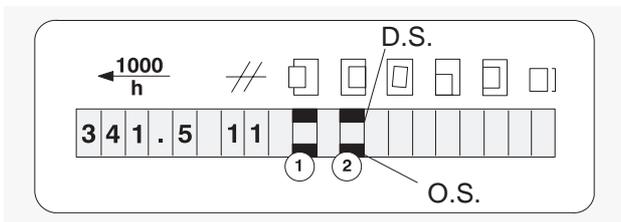
The signals from the amplifiers reach the processor board REK2 via

- the distribution box 1LVT1,
- the input/output distributor module EVM (only SM52),
- the input/output board EAK and
- the input/output control board ESK.

The REK2 analyzes the signals of the sheet alignment control. The evaluated signals are required for the following functions of the printing press:

- sheet alignment at the front lays,
- misaligned-sheet display (trend display),
- automatic sheet arrival control (servo-drive 11M3/1M7),
- automatic misalignment control (servo-drive 11M7).

The REK2 shows the result of the evaluation in the control console display ZID and the press displays MID.



Circuit states displayed in the MID

Circuit states of the ANK and FÜK sensors in the MID

- ① FÜK display
(sensor for overshooting control)
- ② ANK display
(sensor for sheet alignment control)

With the help of the MID on the control panel of the feeder the FÜK sensors ① and ANK sensors ② can be adjusted and monitored. The MID reflects the circuit state of the corresponding sensor on the drive side and on the operator side.

Symbol is lit = sensor detects paper.

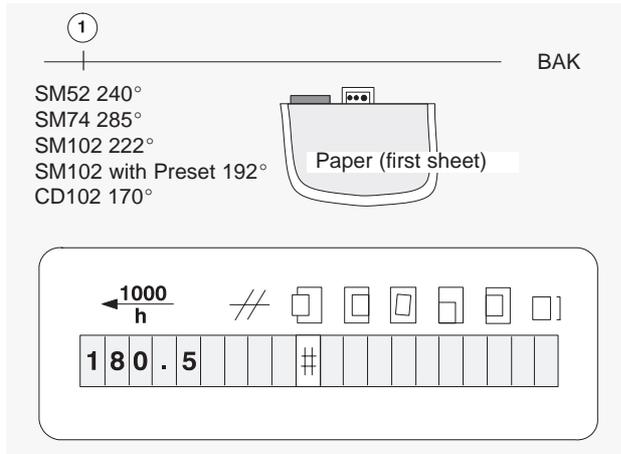
Symbol is not lit = sensor does not detect paper.

The FÜK and ANK displays are visible when the switch "Safe" on the control panel of the feeder is set to "Safe" and the printing speed is ≤ 3500 i.p.h.

Note:

On Speedmaster SM52 the symbols of two sensors are displayed, even though only one sensor is fitted.

Sheet alignment errors detected by the ANK sensors



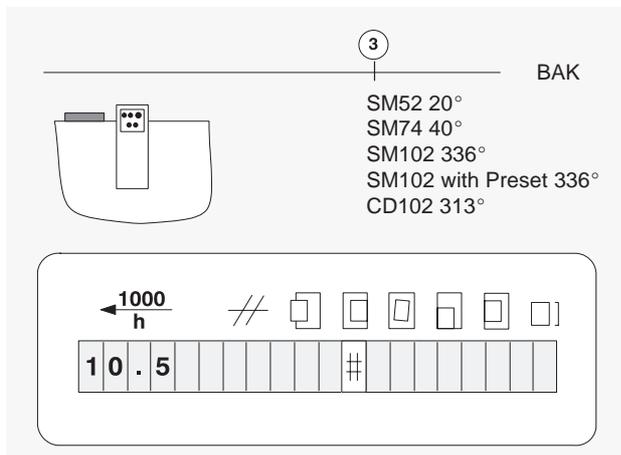
Early sheet

The ANK sensors detect:

- early sheets (first sheet),
- late sheets (missing sheets),
- misaligned sheets.

An early sheet exists if the first sheet of the sheet stream already covers the ANK sensor at press angle ①.

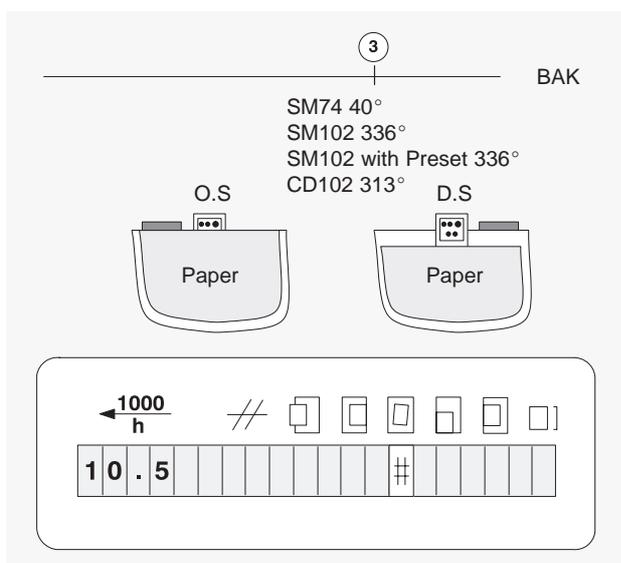
The feeder and press stop immediately. The sheets are held back on the feed table.



Late sheet

A late sheet exists if none of the ANK sensors detects paper at press angle ③.

The feeder stops and the remaining sheets are held back on the feed table. The sheets inside the press are printed and transported to the delivery. The press speed is then reduced to 3000 i.p.h.



Misaligned sheet

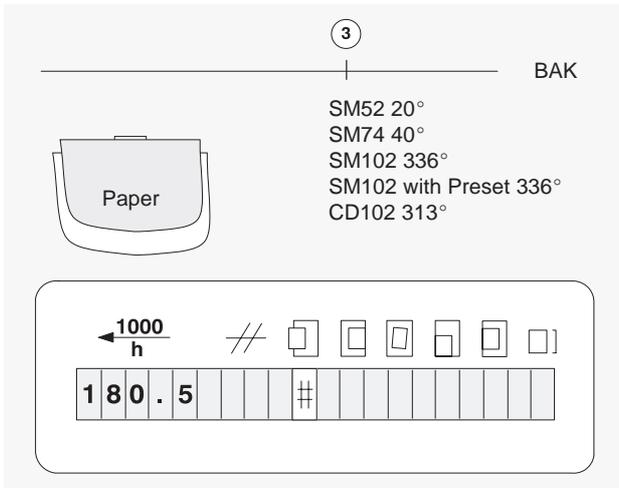
A misaligned sheet exists if only one of the ANK sensors – either on the drive side or on the operator side – detects paper at press angle ③.

The feeder stops and the remaining sheets are held back on the feed table. The sheets inside the press are printed and transported to the delivery. The press speed is then reduced to 3000 i.p.h.

Note:

On SM52 misalignment control is not required.

Sheet alignment error detected by the FÜK sensors



Overshooting sheet

The FÜK sensors detect:

- overshooting sheets.

Given a continuous sheet flow, an overshooting sheet exists if one of the FÜK sensors detects paper at press angle ③.

The feeder and press stop immediately. The shingled sheets remain on the feed table.

Note:

The press can be started from the feeder even if the FÜK sensor detects the sheet of paper after the fault message "Overshooting sheet". The press stops as soon as the pushbutton "Production run" or the illuminated pushbutton "Feeder ON" is pressed.

Extended functions

The extended functions are only active with the inductive double-sheet detector of SM52 and SM74.

During paper transport:

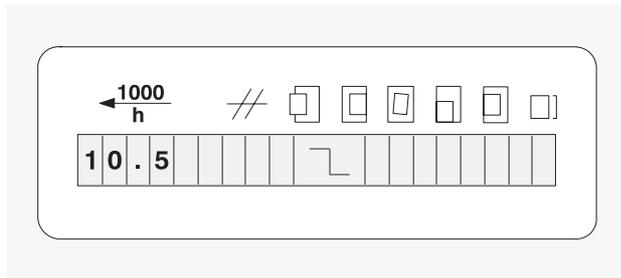
The control system monitors the paper transport on the feed table. For this purpose, the control system needs the signal from the FÜK sensor and the measuring result of the double-sheet detector.

If during paper run the FÜK sensors do not detect a sheet being fed in although the double-sheet detector has registered a good sheet (no double-sheet), the control system switches the feeder off. There is probably a paper jam on the feed table.

Double-sheet detected:

The control system stops the press immediately (emergency stop) if the FÜK sensors detect paper in the case of a double-sheet. Thus multiple sheets do not enter the press.

Misaligned-sheet display (trend display)



Display of misaligned sheet. Drive side advanced.

Good sheet
Optimum sheet arrival

Misaligned sheet, D.S. advanced
Display of misalignment up to max. 18°

Misaligned sheet, O.S. advanced
Display of misalignment up to max. 18°



During paper run or production run, the misaligned-sheet display appears in the MID. This display changes permanently and is a trend indication for the operator. The misaligned-sheet display does not intervene in press control.

The ANK sensors of the sheet alignment control detect the misaligned sheet at the front lays. This misalignment between the drive side D.S. and operator side O.S. is determined and converted into a degree value.

The degree value is represented as a line symbol in the MID (see ill.).

The display is only visible if no

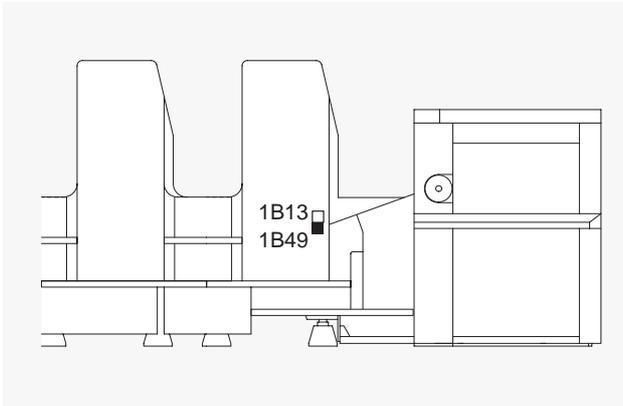
- settings and adjustments,
- fault messages,
- malfunctions
- or other information

are indicated in the MID.

Note:

The fault message "Misaligned sheet" and the misaligned-sheet display are not identical.

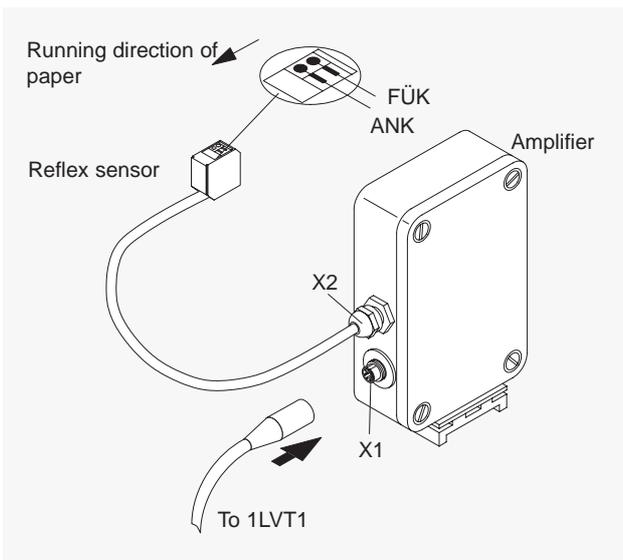
Place of installation



Place of installation of sheet alignment control

The sensors of the sheet alignment control are located at the front lays.

Layout and task



Reflex sensor with amplifier

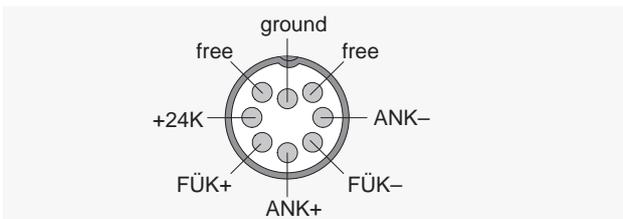
The reflex sensors on the drive side and operator side of the sheet alignment system serve for paper detection. Each reflex sensor has two optical sensors – ANK and FÜK – monitoring the sheet alignment.

The FÜK and ANK sensors are fitted in a housing. Viewed in the running direction of the paper, the paper first covers the ANK sensor.

ANK = sensor for sheet alignment control
 FÜK = sensor for overshooting sheet control

In the amplifier of the reflex sensor, the sensor signals are amplified and transmitted to the electronic control system. The amplifiers of the two reflex sensors are located at the side frame on the O.S., under the feed table.

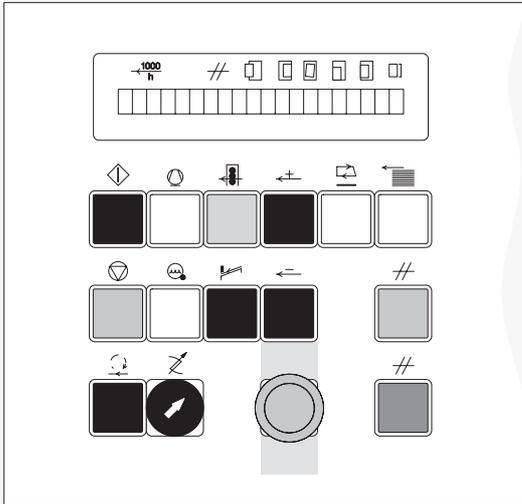
Pin assignment



Pin assignment 1B49: X1/1B13: X1

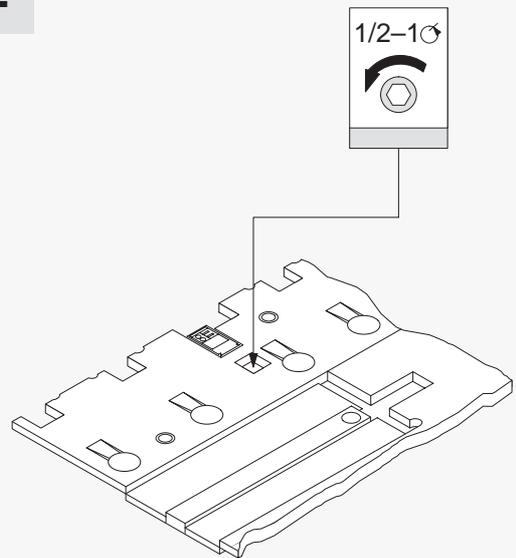
Removal and installation

1



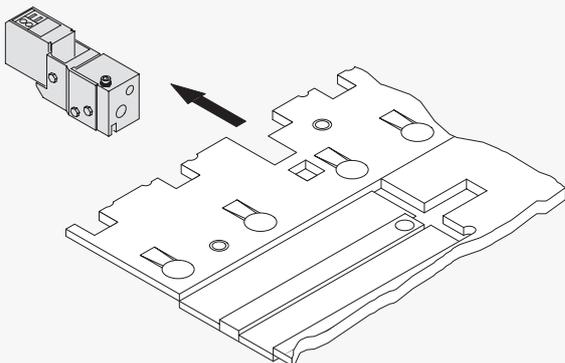
- Position the press:
SM102: 100 ± 3 degrees
CD102: 70 ± 3 degrees

2



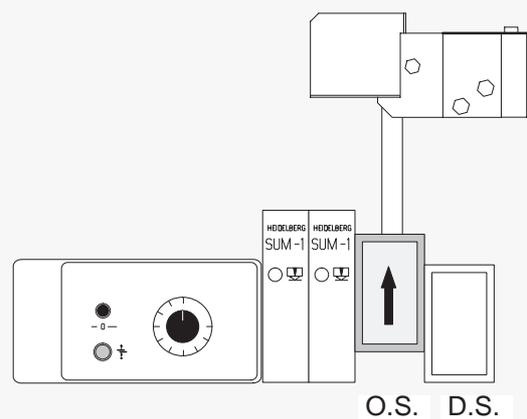
- Loosen the fixing bolt on the brass block (1/2-1 rev.).

3



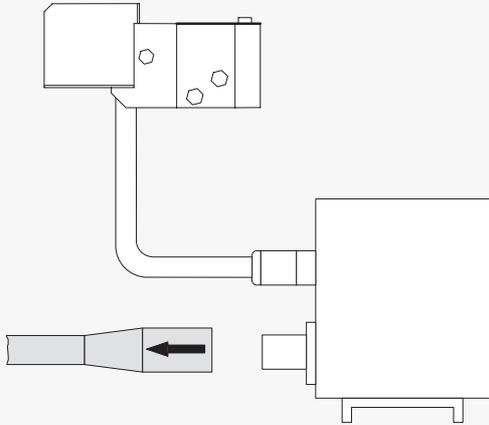
- Pull off the reflex sensor with the brass block towards the front.

4



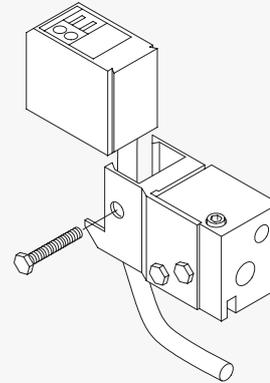
- Remove the amplifier.

5



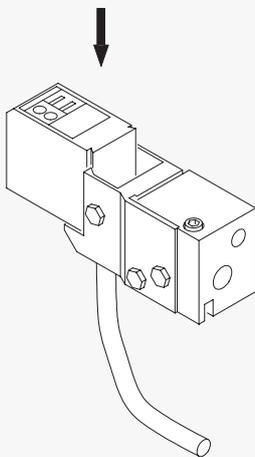
- Disconnect the cable leading to 1LVT1.

6



- Remove the reflex sensor.

7



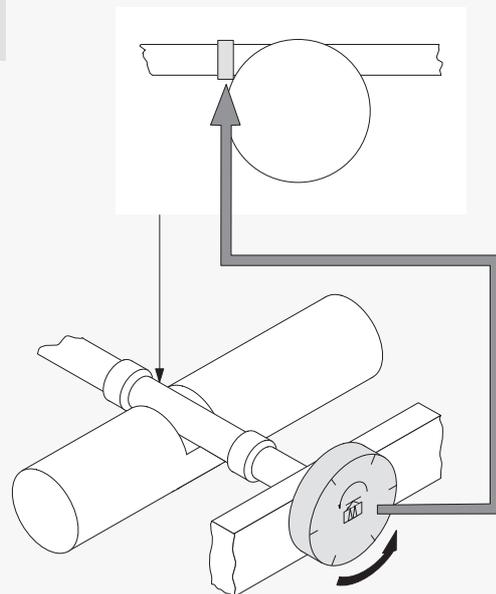
- Push the new reflex sensor in the guide piece of the holder.

Note:

To fix the reflex sensor in position, carefully tighten the fixing bolt (tightening torque approx. 1 Nm).

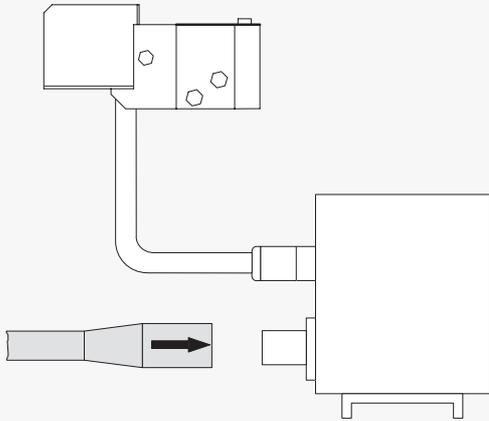
- Tighten the fixing bolt.

8



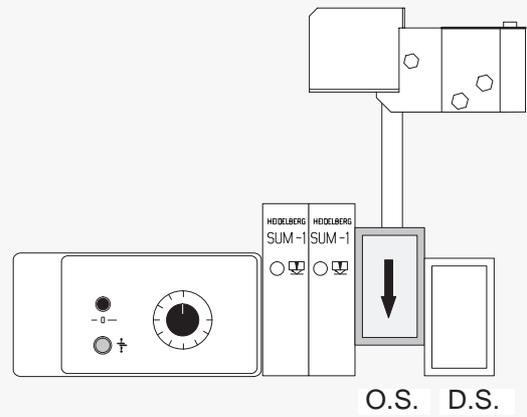
- Turn the handwheel anticlockwise until the end stop comes to rest on the cross bar.

9



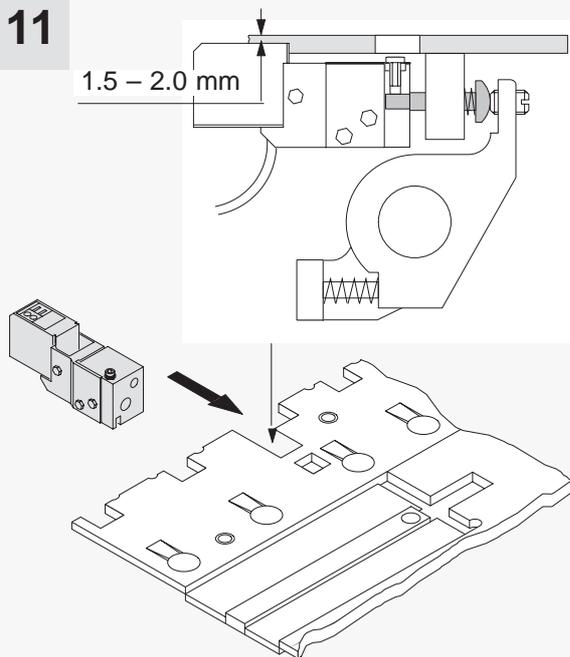
- Connect the cable coming from 1LVT1 to the amplifier.

10



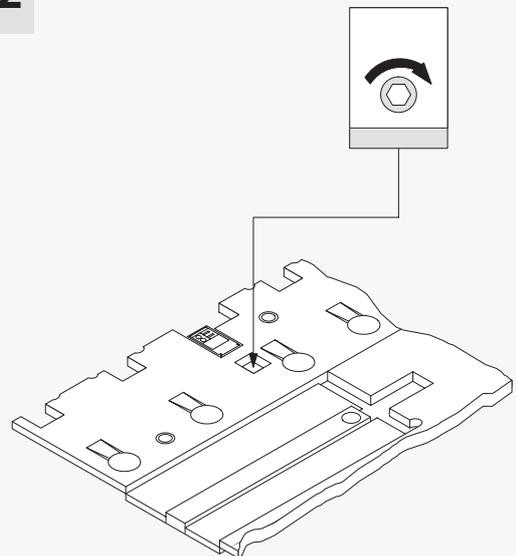
- Fasten the amplifier.

11



- Push the reflex sensor and brass block on the guide pins through to the stop.
- Check the distance (1.5 – 2.0 mm).

12



- Tighten the fixing bolt on the brass block.

Adjustment

1

- Bring the bending in the "0" position.

2

- Press the pushbutton "FORWARD" until the sheet stop fingers are raised.

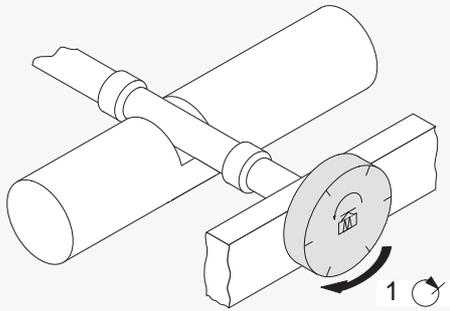
3

- Position the press:
SM102: 333 ± 1 degrees
CD102: 310 ± 1 degrees

4

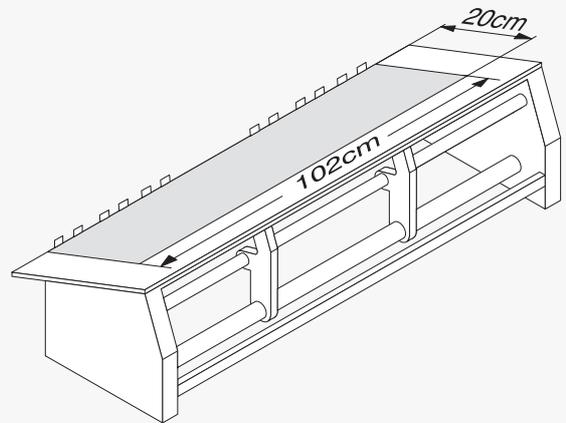
- Turn the handwheel anticlockwise until the end stop comes to rest on the cross bar.

5



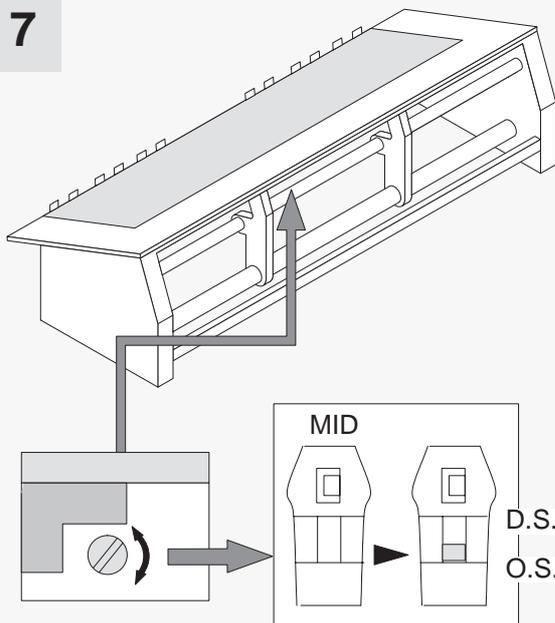
- Turn the handwheel back by one revolution.

6



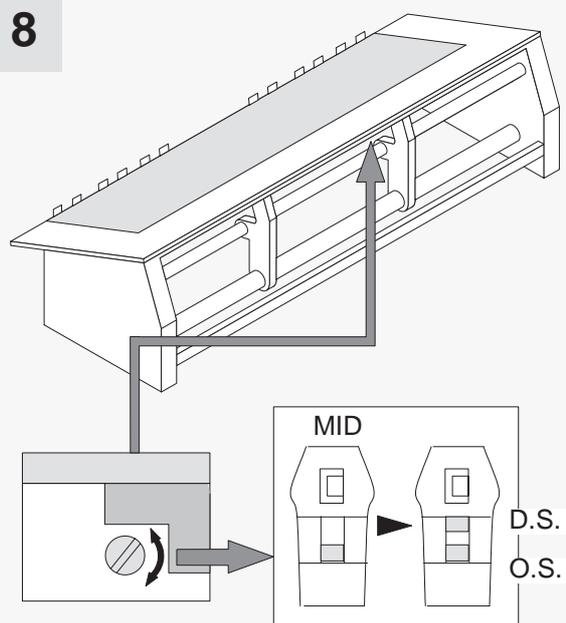
- Place a sheet of paper of max. width (102cm) and approx. 20cm length against the front lays.

7



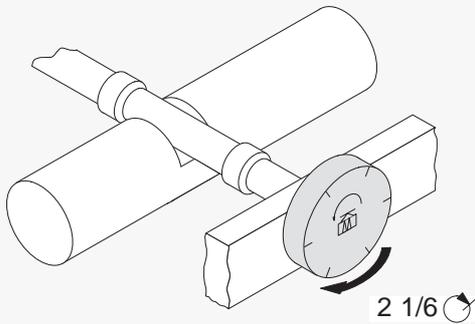
- Turn the adjusting screw until the ANK symbol in the MID just lights up.

8



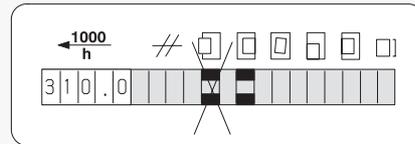
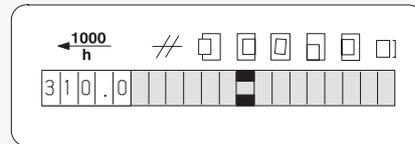
- Turn the adjusting screw until the ANK symbol in the MID just lights up.
- Both ANK symbols in the MID must be lit.

9



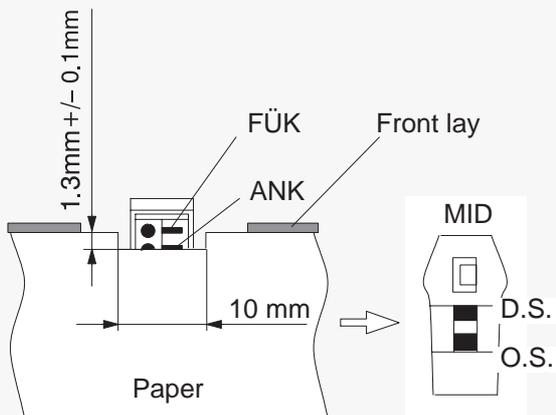
- Turn the handwheel clockwise for 1.3 mm \pm 0.1 mm (2 1/6 revs), using the scale as a reference.

10



- Both ANK symbols must be lit. The FÜK symbols must not be lit.

11



- Check the distance between the front lays and ANK sensor.

Checking the circuit state

EAK2_01			
1	8	0010 1111	....
9	16	1100 0 0	....
17	24	0000 0001	....
25	32	1001 1011	....
33	40	0000 0000	....
41	48	0100 0000	....
49	56	0 0 0000	....
57	64	0000 0000	....
1	8	....	0110 1000
9	16	....	0000 0000
17	24	....	0000 0000
25	32	....	0001 0000
33	40	....	0000 0001
41	48	....	0000 0001
49	56	....	0000 0001
57	64	....	1001 1011

1B13 in the service display of the EAK:

Input 13 = ANK (O.S.)

Input 15 = FÜK (O.S.)

1B49 in the service display of the EAK:

Input 49 = ANK (D.S.)

Input 51 = FÜK (D.S.)

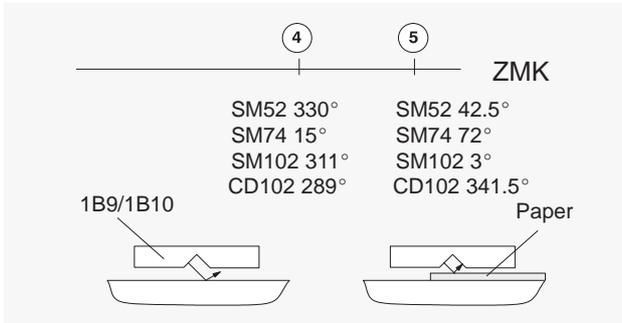
1 = sensor detects paper

0 = sensor does not detect paper

Service display "Present input/output, input/output board EAK"

1B9/1B10 Pull lay control

Block diagram

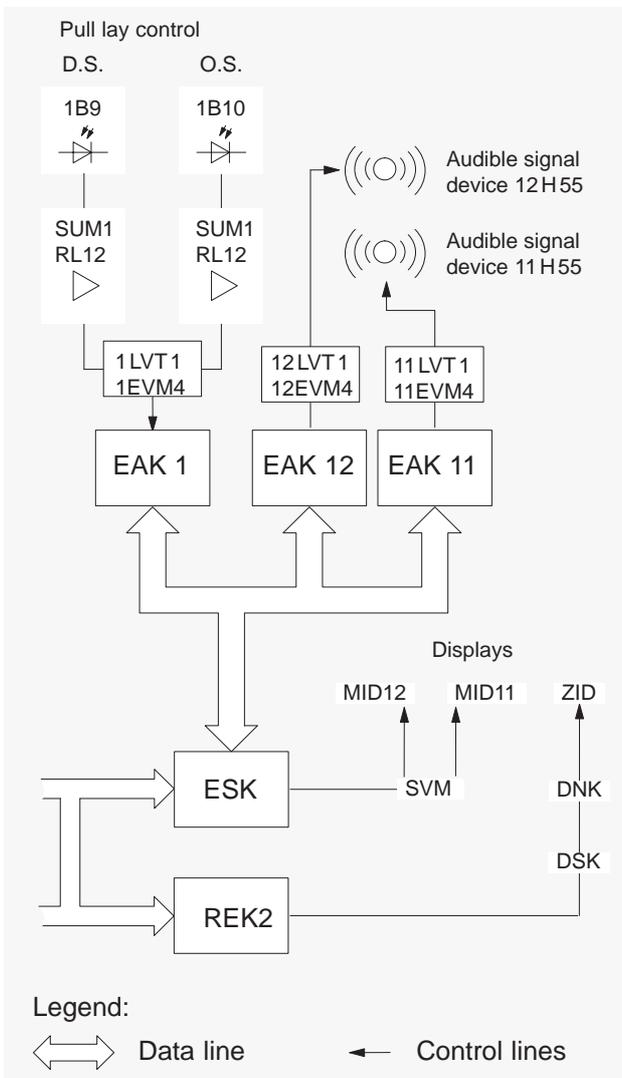


Interrogation points

The pull lay control (ZMK) monitors the entire pull procedure, i. e. the correct sheet infeed and the pull end position.

The following applies to the degrees listed (see block diagram):

- At ④ and paper run:
the ZMK must not detect any paper.
- At ⑤ and paper run:
the ZMK and ANK must detect paper.
- At ⑤ and no paper run:
The ZMK signal is not analyzed because the sheet alignment control does not detect paper.



The reflex sensors on the drive and operator sides serve for paper detection. Depending on the pull direction only one of the two reflex sensors is necessary for monitoring.

The pull direction is entered under the command "Presetting". Only the reflex sensor of the active pull lay is interrogated.

In the signal conversion modules SUM1 the signals of the reflex sensors are amplified. The circuit state of each sensor is signalled by an LED on the corresponding SUM1 (LED is lit = reflex sensor detects paper).

SM52 only:

On SM52 the signals are amplified by the amplifiers of the reflex sensors RL12.

The electronic control system evaluates the signals of the signal conversion modules.

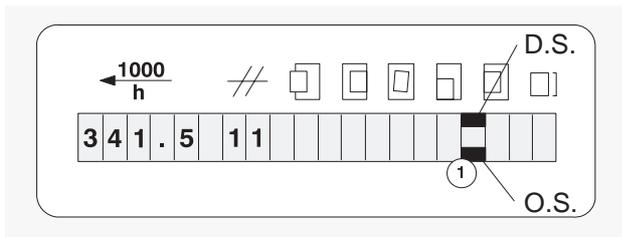
The signals from the amplifiers reach the processor board REK2 via

- the distribution box 1LVT1,
- the input/output distributor module EVM (SM52 only),
- the input/output board EAK,
- the input/output control board ESK.

Block diagram of pull lay control

The REK2 analyzes the signals of the pull lay control. In the case of a pull or sheet infeed error, it passes the fault message to the control console display ZID, the press displays MID and the audible signal devices 11H55 and 12H55.

For an acoustic fault message to be output, the function "Audible signal device / pull lay control" must be switched on in the central control console.



Circuit states displayed in the MID

Circuit states of the ZMK sensors in the MID

① Display of pull lay control

With the help of the MID on the control panel of the feeder, the reflex sensors 1B9 and 1B10 can be monitored.

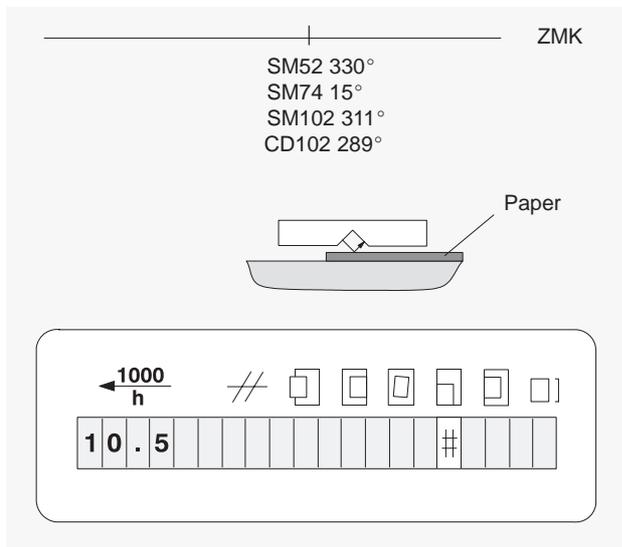
The MID reflects the circuit state of the corresponding sensor.

Symbol is lit = sensor detects paper.

Symbol is not lit = sensor does not detect paper.

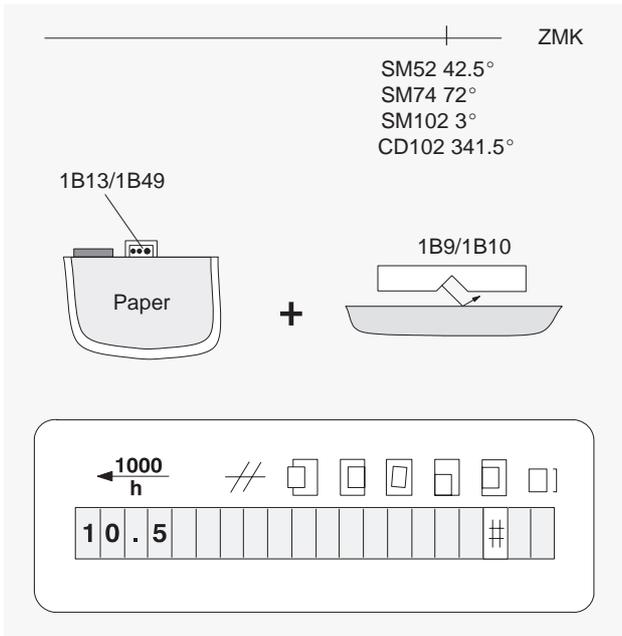
The circuit states of the reflex sensors are visible when the switch "Safe" on the control panel of the feeder is set to "Safe" and the printing speed is ≤ 3500 i.p.h.

When does a sheet infeed error/pull error exist?



Sheet infeed error

A sheet infeed error exists if the sheet is already below the reflex sensor at the interrogation point. The sensor detects paper.

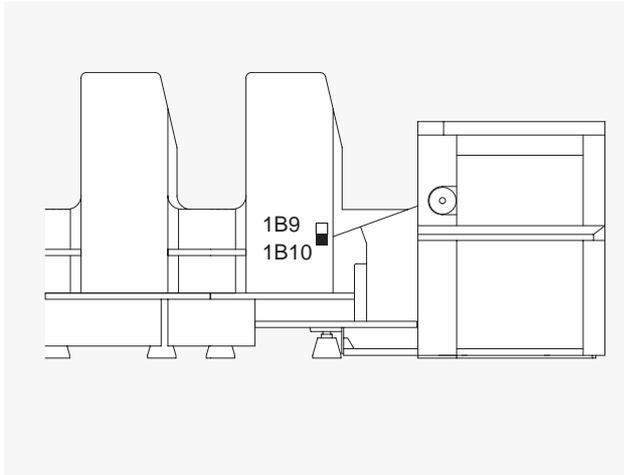


A pull error exists if, at the interrogation point:

- the ANK sensors (1B13/1B49) detect the print sheet and
- the ZMK sensor does not detect the print sheet.

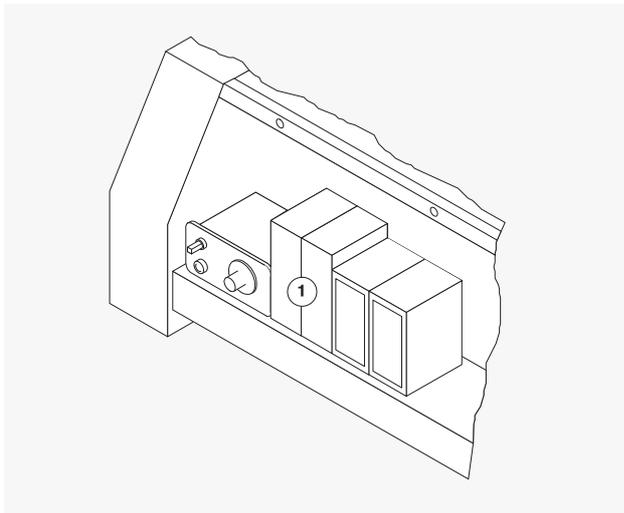
Pull error

Place of installation



The pull lays with the reflex sensors are fitted on two cross bars in front of the transfer gripper drum. One pull lay is fitted on the operator side (1B10) and one on the drive side (1B9).

Place of installation of pull lays

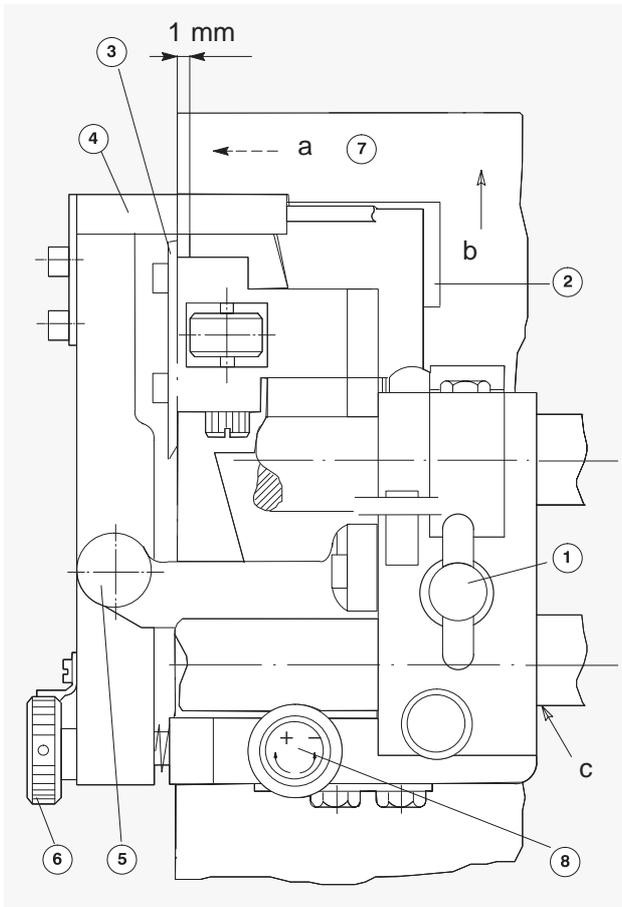


① Signal conversion modules SUM1

Under the feed table, the two signal conversion modules SUM1 are fitted on a support bar. One signal conversion module is allocated to each pull lay.

Place of installation of signal conversion modules

Adjustment



Adjustment of pull lays

- a) Pull direction of sheet of paper
- b) Running direction of paper
- c) Edge for format adjustment

The adjustment must be made:

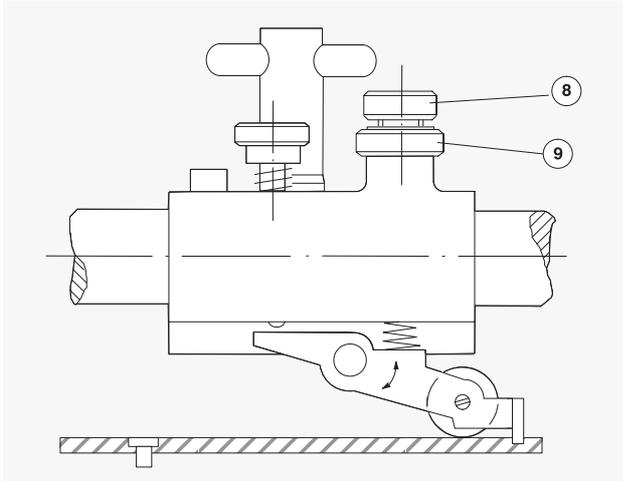
- for the first start-up
- when changing the printing material (paper)
- in the case of frequent fault messages.

- 1 Loosen the tommy bar screw ① and position the pull lay so that it complies with the sheet size at the feeder.
- 2 Move the magnet cover plate ② with recess until it is approx. 1mm away from the pull lay stop ③ .

Note:

The pull lay stop must not lie on the magnet cover plate while the paper is being pulled.

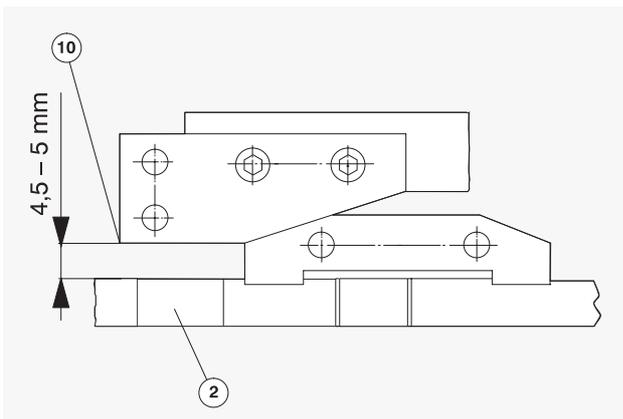
- 3 Set the selector switch "Safe" on the control panel at the feeder to "Safe".
- 4 Press the illuminated pushbutton "Feeder", so that the button is lit. Press the pushbutton "Forward" until the sheet stop fingers are raised.
- 5 Press the pushbutton "Forward" until the pull lay stop is below the upper edge of the sheet metal plate. The pull rail must not have grabbed the sheet yet. The sheet can still be moved.
- 6 Pull the sheet against the pull lay stop; the paper must be under the reflex sensor ④ .
- 7 Loosen the knurled head screw ⑤ a little bit.
- 8 Turn the knurled head screw ⑥ clockwise, until the green LED at the corresponding signal conversion module goes off.
- 9 Turn the knurled head screw ⑥ anticlockwise, until the green LED just lights up.
- 10 Turn the knurled head screw ⑥ anticlockwise for another 10 notch position (= 0.3 mm; corresponds to approx. 1/4 rev. of ⑥).



Pull lay

- 11 Retighten the knurled head screw (5). The LED of the corresponding reflex sensor must still be lit.
- 12 Take out the sheet. The LED of the reflex sensor goes off.
- 13 Adjust the spring pressure with the knurled head screw (8). The pressure the pull roll exerts on the printing material must be so strong that each sheet is pulled reliably to the pull lay stop. The locking nut (9) prevents the pressure from changing once it has been set.

Checking the sensing distance of the reflex sensors



Sensing distance

This check must be carried out:

- during the first start-up
- in the case of frequent fault messages.

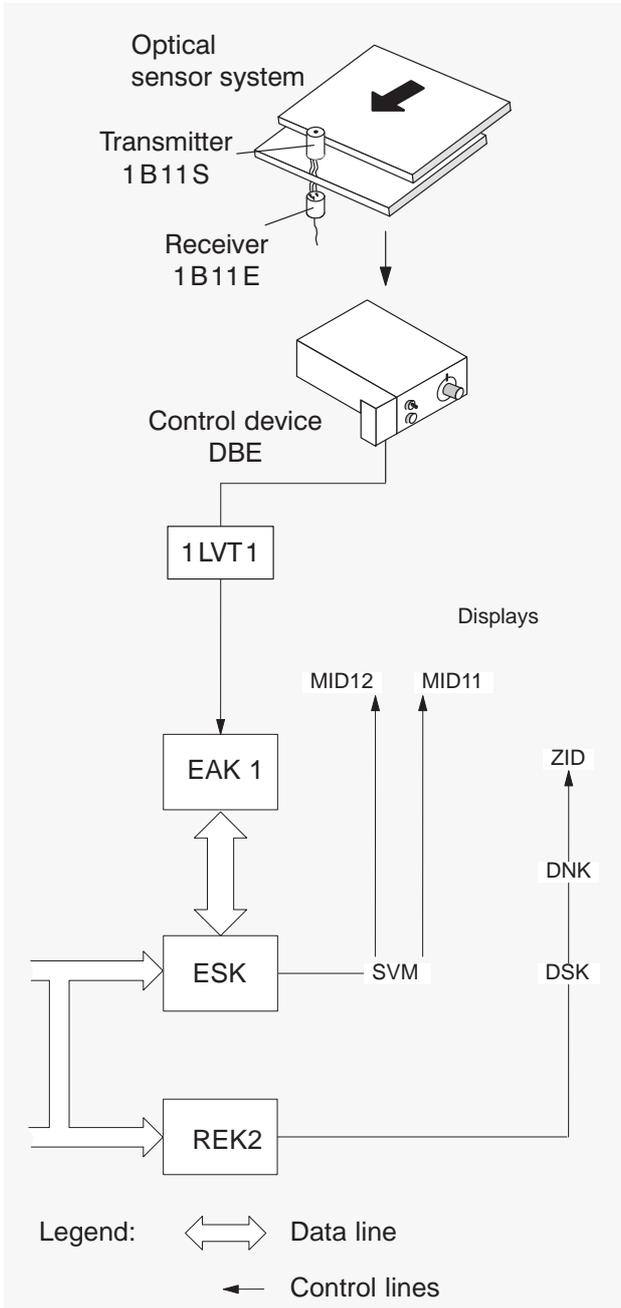
The distance between the lower edge of the reflex sensor (11) and the surface of the magnet cover plate (2) must be 4.5 – 5 mm. When fitting the reflex sensor pay attention to this distance.

- ① Tommy bar screw
- ② Magnet cover plate
- ③ Pull lay stop
- ④ Reflex sensor
- ⑤ Knurled head screw

- ⑥ Knurled head screw
- ⑦ Sheet of paper
- ⑧ Knurled head screw
- ⑨ Locking nut
- ⑩ Lower edge of reflex sensor

1B11 Double-sheet detector

Block diagram



Block diagram of double-sheet detector

The double-sheet detector monitors sheet infeed at the feeder. It detects multiple sheets and irregularities in the sheet flow and thus prevents malfunctions.

An optical sensor system consisting of a transmitter (1B11S) and a separate receiver (1B11E) transmits light through the paper. The receiver supplies a signal. The amplitude of the signal depends on the thickness and nature of the printing material.

The control device DBE supplies the optical sensor system with operating voltage. Apart from this, the control device helps to process the sensor signal and to adjust the double-sheet detector to the printing material used.

Shortly before the sheet enters the first printing unit, the electronic control system checks the amplitude of the signal supplied by the receiver.

Monitoring occurs at the following press angles:

- 336° (SM102),
- 313° (CD102).

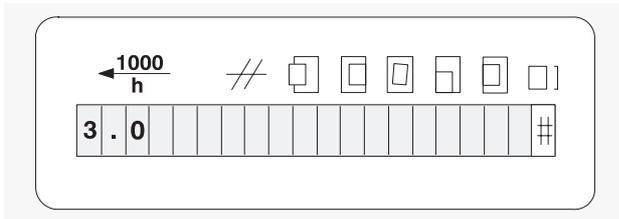
If the light does not pass through the paper at this point, there are two or more sheets.

The signal reaches the processor board REK2 via

- the distribution box 1LVT1,
- the input/output board EAK,
- the input/output control board ESK.

The REK2 analyzes the signals from the double-sheet detector. If there is a double-sheet, REK2 stops the feeder. The electronic control system reduces the press speed to 3000 i.p.h.. Simultaneously, REK2 transmits a fault message to the control console display ZID and the press displays MID.

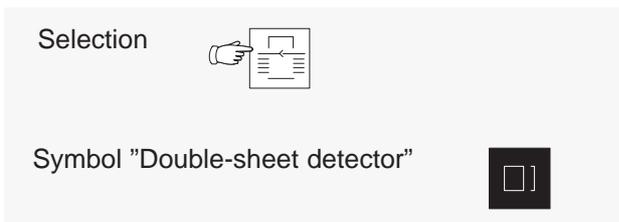
Fault messages in the case of a double-sheet



MID after detection of a double-sheet

Press display MID

In the MID the fault symbol # appears under the pictogram for double-sheet.

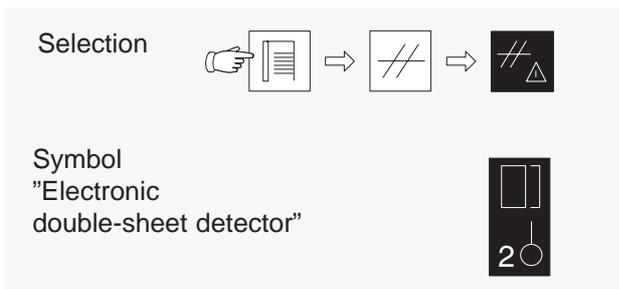


Selection and symbol

Control console display ZID

Selection of the display "Entire press" (production run display).

In this display the symbol "Double-sheet detector" appears if the sensor 1B65 or 1B66 detects a double-sheet.

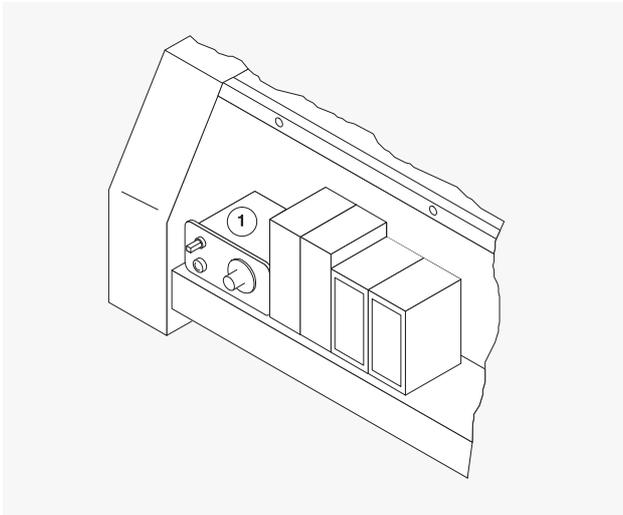


Selection and symbol

Selection of the display "Feeder/warning":

In this display the symbol "Electronic double-sheet detector" appears if the sensor 1B65 or 1B66 detects a double-sheet.

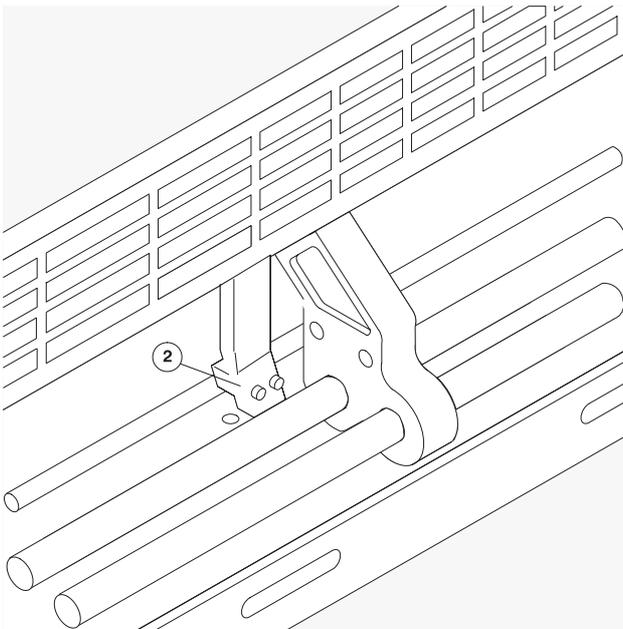
Place of installation



Control device of double-sheet detector

The control device of the double-sheet detector is fitted near the signal conversion modules at the sheet alignment system.

- ① Control device

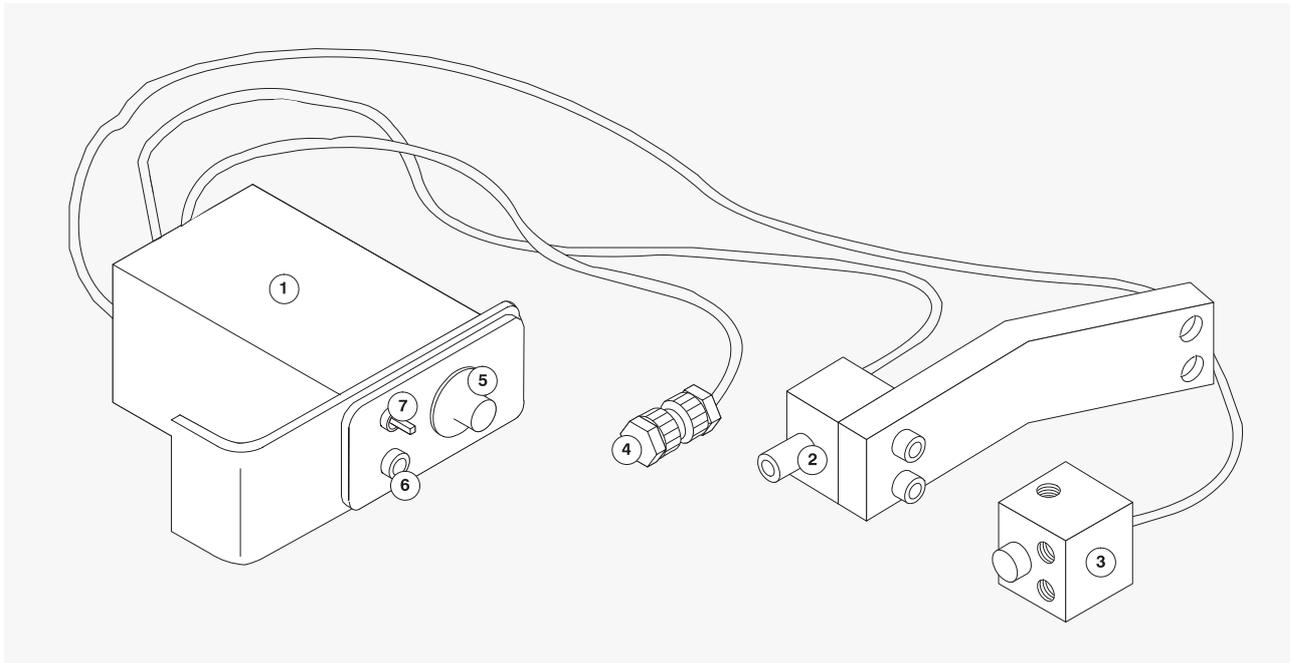


Sensor of double-sheet detector

The sensor is fitted on the press centreline in the area of the front lays.

- ② Sensor of double-sheet detector

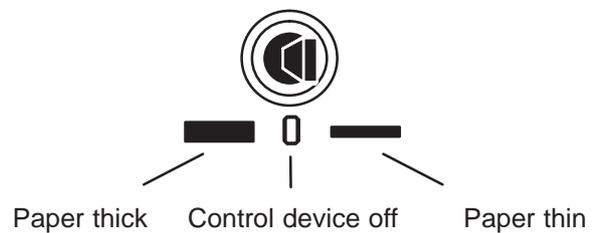
Layout



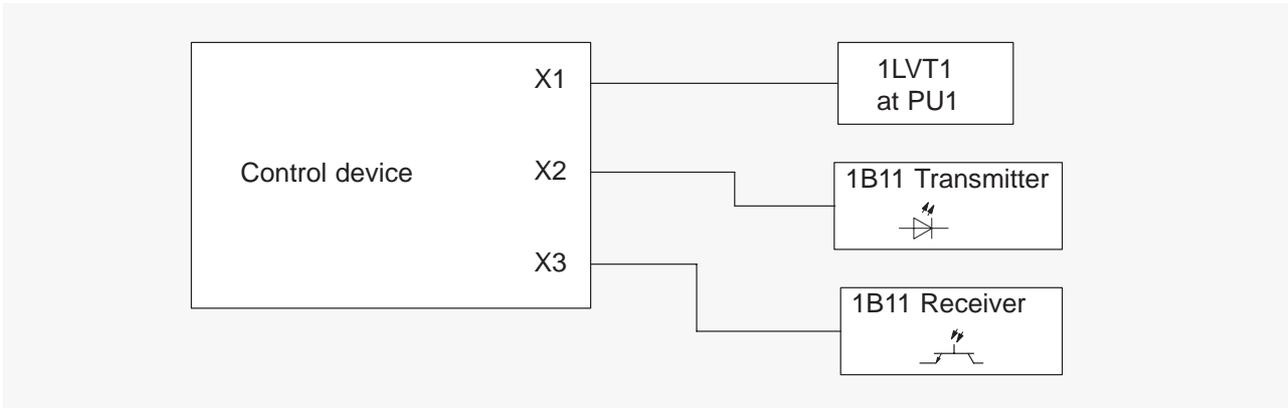
Components of double-sheet detector

- ① Control device of double-sheet detector DBE with operator's controls
- ② 1 B11 S
Transmitter with connecting cable and fixing bracket
- ③ 1 B11 E
Receiver with connecting cable and fastening element
- ④ Cable to distribution box 1LVT1 at PU 1.
It comprises:
 - the power supply for the control device DBE (+24V)
 - the signal line from the control device DBE to the electronics.
- ⑤ Potentiometer for adjustment of sensitivity

- ⑥ The LED  lights up as soon as there are two or more sheets.
- ⑦ Selector switch for adjustment of paper thickness



Connection and pin assignment

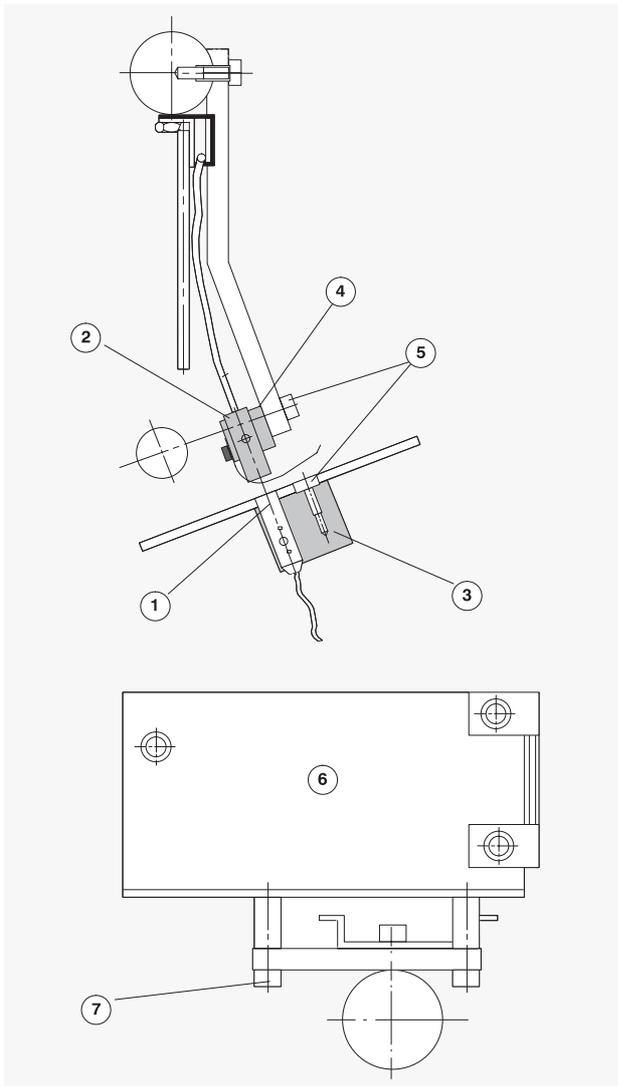


Connection principle

Pin assignment of connector X1:

Contact no. on X 1	Function	Core identification	Terminal in LVT
1	Ground 24 V	- 1	X2: - 1
2	+24 V	+ 1	X2: +
3	-	-	1 -
4	Signal	XE 11	FEM 64 XE 11
5	-	-	-

Removal and installation



Components of double-sheet detector

- ① Receiver – 1 B11 E
- ② Transmitter – 1 B11 S
- ③ Fastening element for receiver
- ④ Fastening element for transmitter
- ⑤ Screws for fastening element
- ⑥ Fixing bracket for control device
- ⑦ Screws for fixing bracket

The transmitter and receiver are each screwed to the fastening elements with one screw.

Each fastening element is held in place by two screws.

The distance between transmitter and receiver must be between 8 mm – 12 mm.

Note:

The upper edge of the receiver 1 B11 E must be flush with the table edge.

The transmitter and receiver must be in perfect alignment, i.e. arranged on the same centreline.

The control device is screwed to the fixing bracket with 3 screws.

The fixing bracket is screwed to the press with two screws.

Adjustment

Attention:

The adjustment must be carried out:

- each time the printing material changes,
- if printed sheets are printed on again.

Prerequisite for adjustment:

- press ready to run,
- paper run possible.

- 1 Check the distance between the transmitter and receiver: required distance 8 – 12 mm. The receiver does not jut out from the table edge.
- 2 Position the press to a press angle of 281 ± 1 degrees (CD102) or 304 ± 1 degrees (SM102) and place a sheet of maximum width against the front lays and pull lay stop.
- 3 Set the selector switch for paper thickness  0  to  and turn the potentiometer anticlockwise to the stop. The LED  is lit.
- 4 Turn the potentiometer slowly clockwise and watch the LED  :

if..
.. LED  goes off:

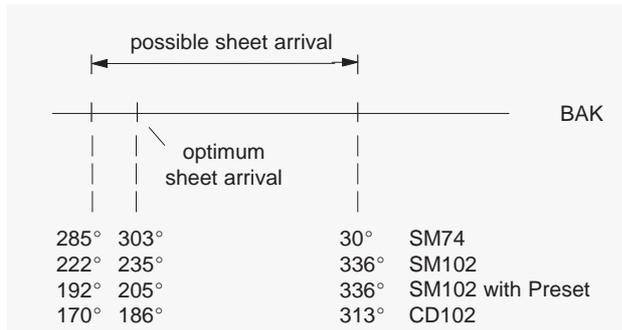
- 5 Continue turning the potentiometer clockwise for another 10 scale marks.
Continue with 8 .

.. LED  does not go off:

- 5 Set the selector switch  0  to  and turn the potentiometer anticlockwise to the stop.
- 6 Turn the potentiometer clockwise until the LED  goes off.
- 7 Continue turning the potentiometer clockwise for another 10 scale marks.

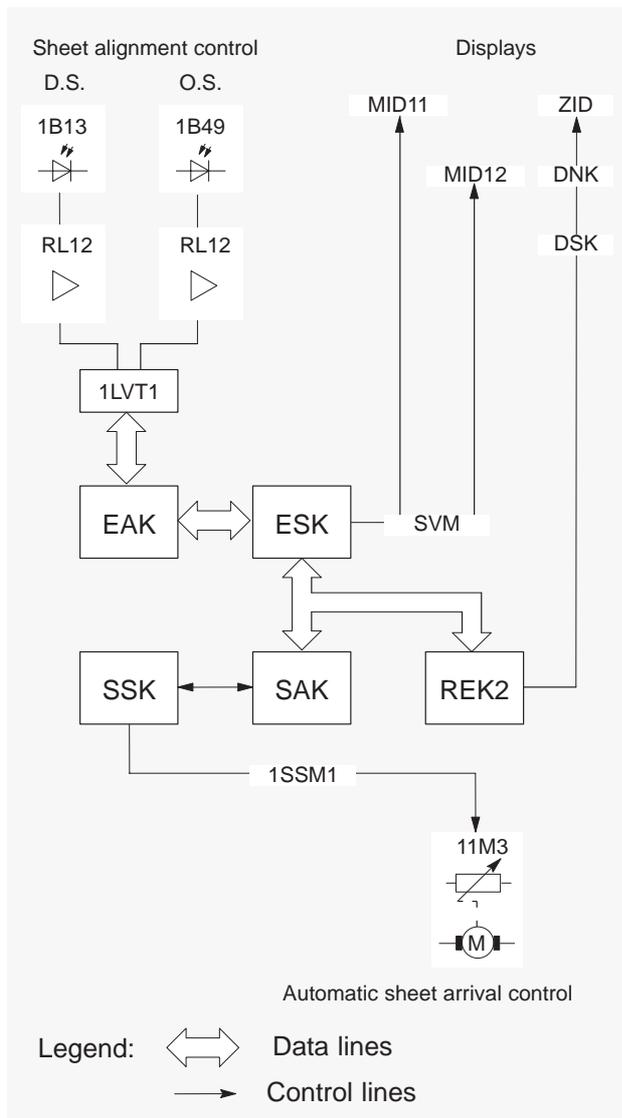
- 8 Check the functioning of the double-sheet detector with a simulated double-sheet.

11M3 Automatic sheet arrival control



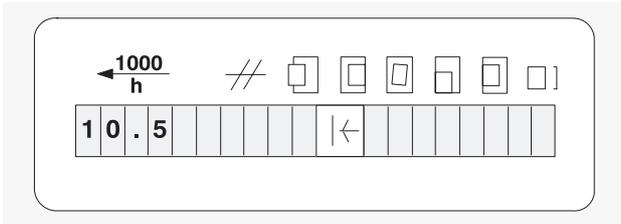
The automatic sheet arrival control influences the transport of the sheets to the front lays. It regulates the shingle stream in such a way that the individual sheets are positioned against the front lays at a certain press angle (see illustration). By means of a servo-drive (11M3) the drive chain of the feeder is adjusted. Thus the point of time of sheet arrival is controlled.

Point of time of sheet arrival



The ANK sensors (1B13/1B49) register when the sheets arrive at the front lays. On the basis of the ANK signals the computer on the processor board REK2 determines the point of time of sheet arrival. If there is a deviation from the optimum sheet arrival, the shingle stream at the feeder must be regulated. REK2 passes the new reference values for sheet arrival to the servo-drive control board SSK. The SSK controls the servo-drive 11M3. If the automatic sheet arrival control reaches the end of its control range in the process, the symbol "End of positioning range" appears in the press displays MID and in the control console display ZID (production run display). The press control system is not affected by this.

Block diagram of automatic sheet arrival control



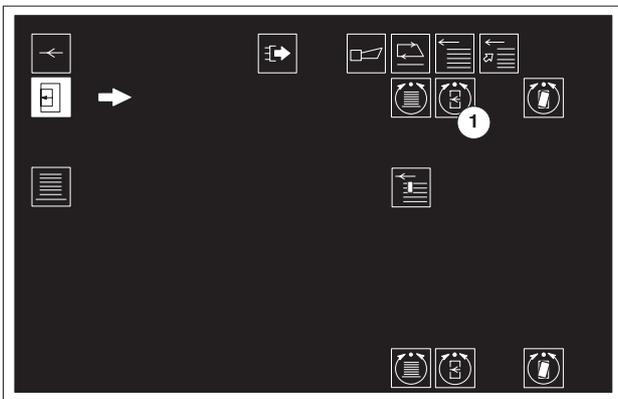
"End of positioning range" displayed in the press display MID

The symbol "End of positioning range" will, however, only disappear when the operator repositions the servo-drive manually. This can be done at the control console by means of the "Sheet arrival control" function.

Activating and inactivating the automatic sheet arrival control



Selecting the automatic sheet arrival control



Preselection/coarse display

① Symbol "Automatic sheet arrival control on / off"

Inactivating and activating the automatic sheet arrival control:

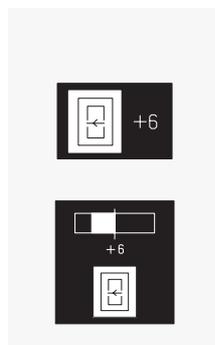
- in the preselection display,
- by means of the function button.

If the symbol is lit, the automatic sheet arrival control is active.

Sheet arrival control

Symbol of the sheet arrival control in the ...

actual value/coarse display



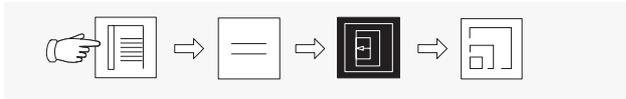
actual value/fine display

The sheet arrival control is automatically activated when the operator switches off the automatic sheet arrival control.

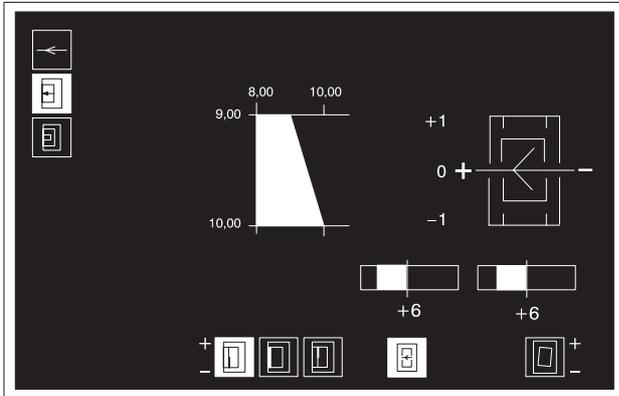
For the sheet arrival control the operator enters a fixed value. The setting is made at the control console by means of the right-hand +/- buttons.

Press model	Setting range	
	Standard version	Preset version
SM102	-2 to +18	-10 to +10
CD102	-10 to +10	
SM74	-4 to +16	

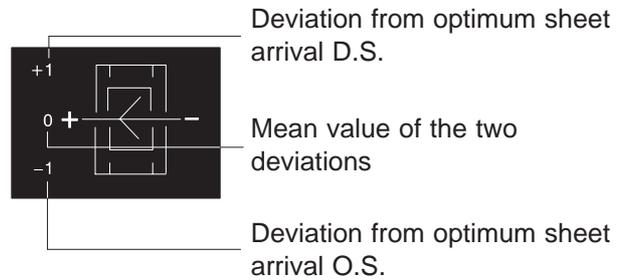
Graphical representation of sheet arrival



Selecting the fine display

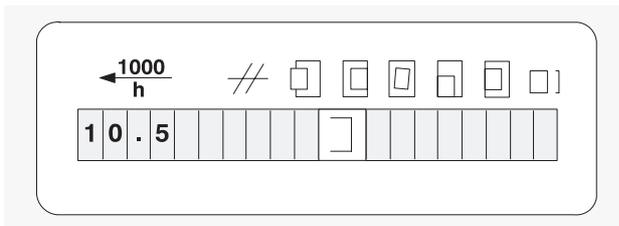


Actual value/fine display



Note:

The display is updated with a delay.



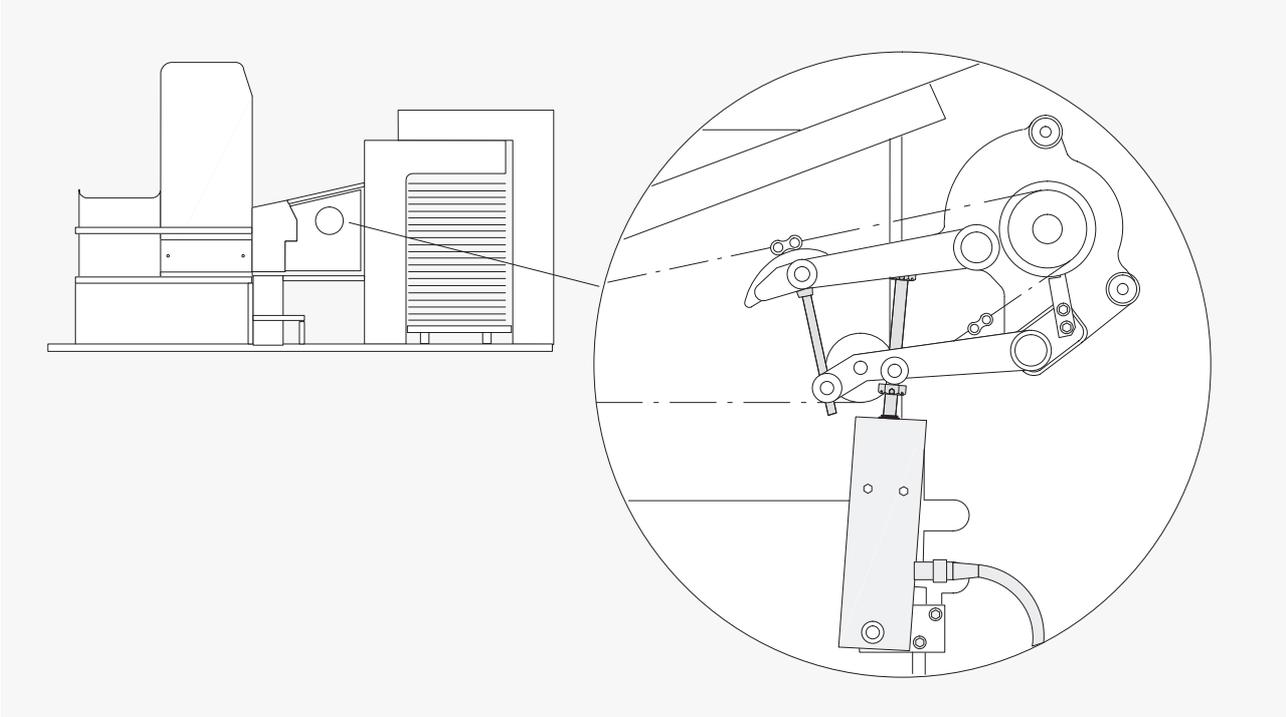
Misaligned-sheet display

The misaligned-sheet display in the MID gives the operator information about sheet arrival.

- | Optimum sheet arrival
-] Sheet arrives at the front lays before the optimum sheet arrival
- [Sheet arrives at the front lays after the optimum sheet arrival

11M3 Automatic sheet arrival control (standard version)

Place of installation



Printing unit 1 and feeder

Technical data

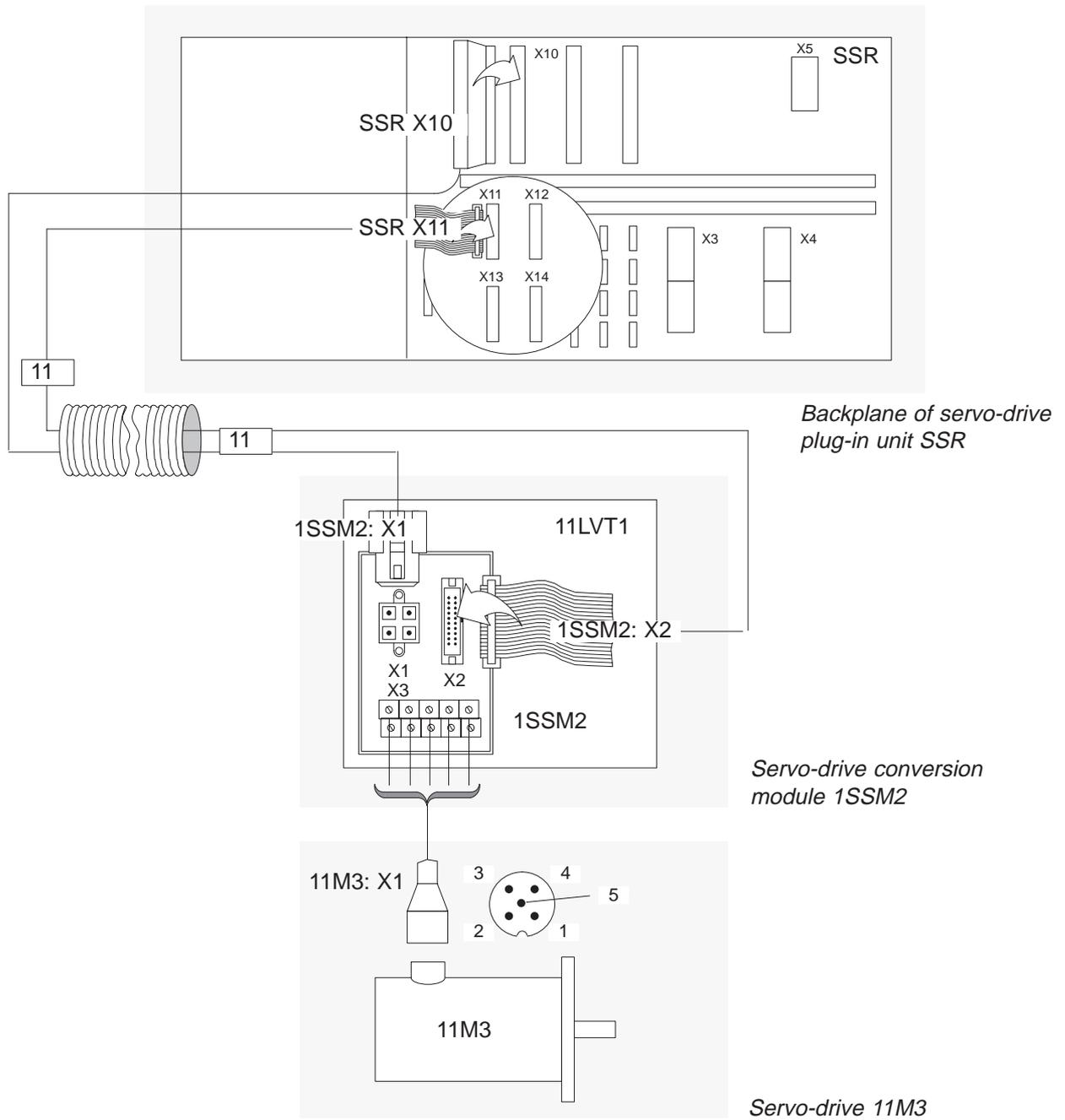
Motor data

- U = 24V DC
- P = 5W

Potentiometer data

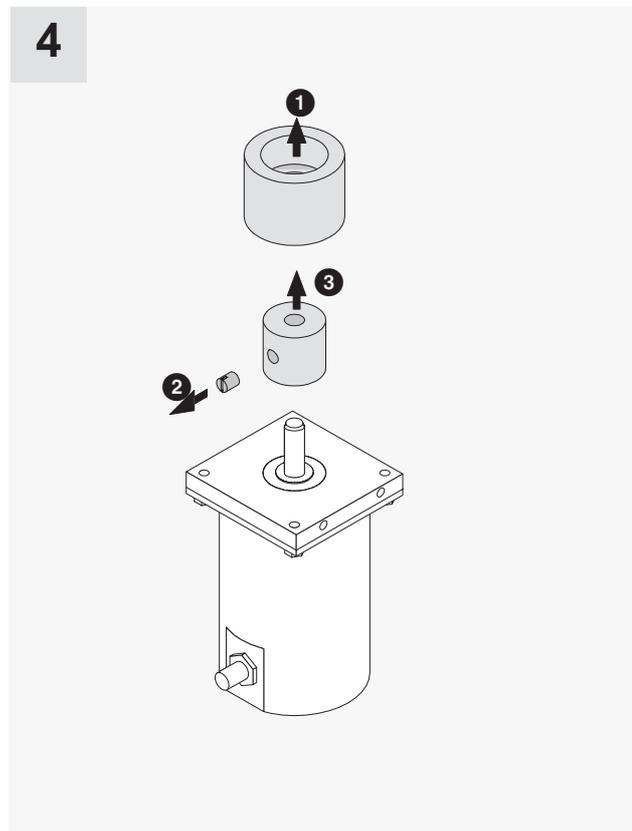
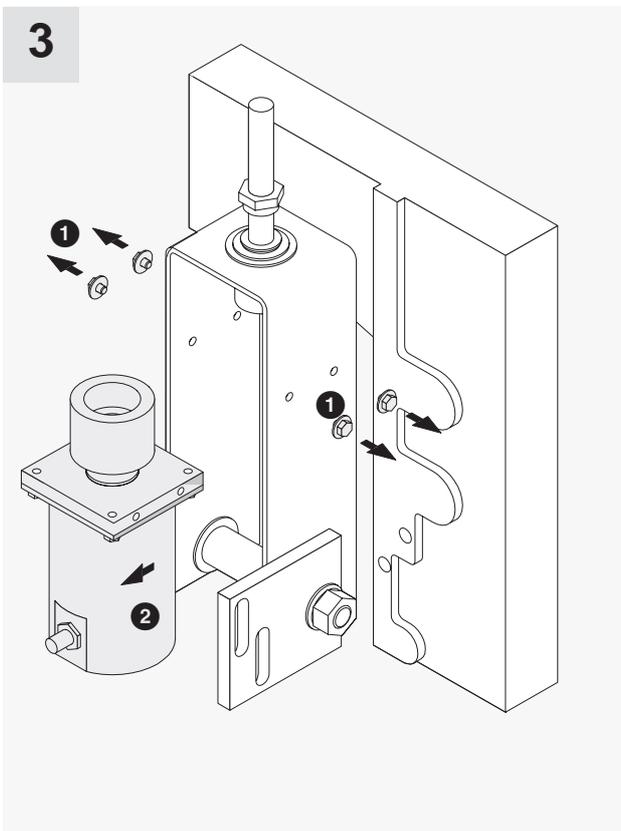
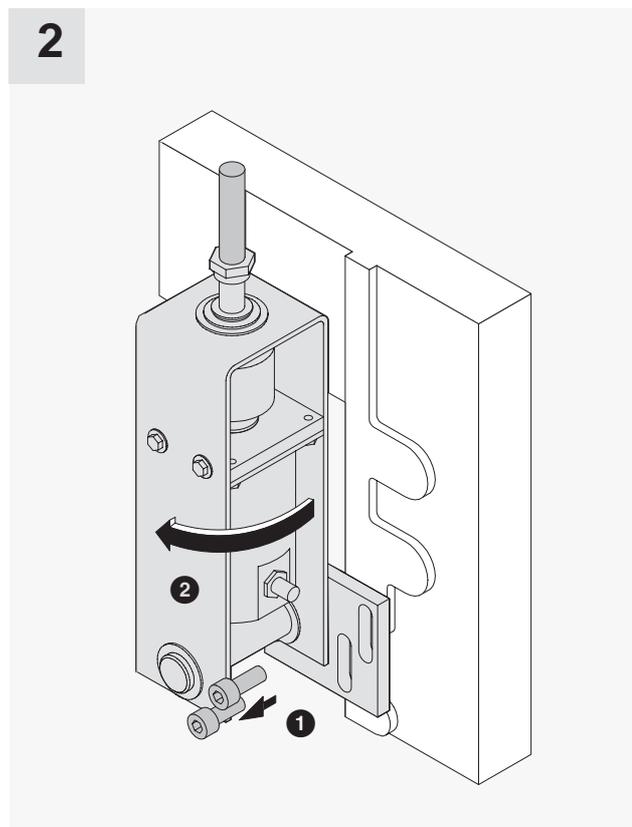
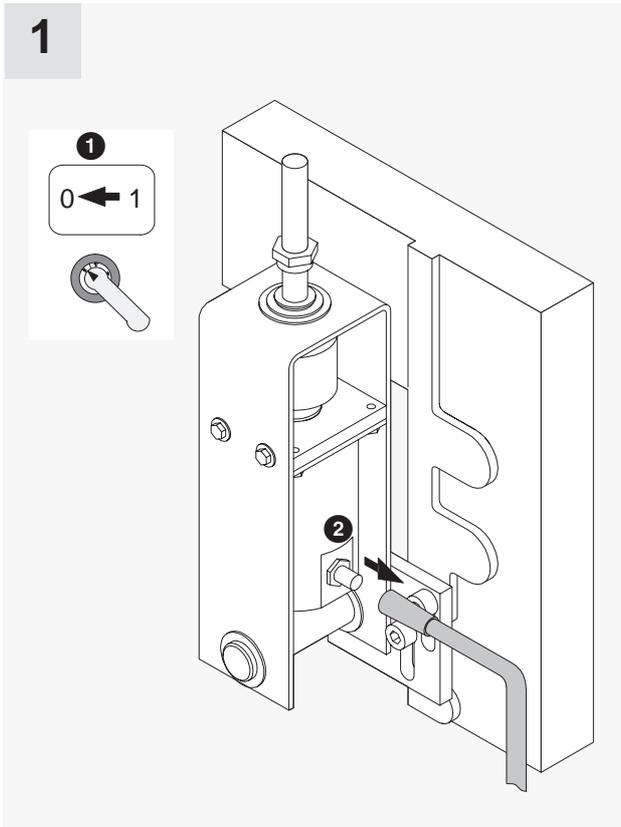
- U = 10V DC
- R = 10K Ω

Interconnection diagram

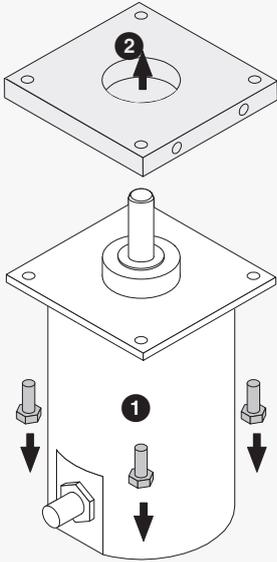


	11M3:X1	1SSM 1	SSR	SIGNAL	
+	Pin 1	X5: A1	X1: 1	X10: B2	Motor+
-	Pin 2	X5: A2	X1: 2	X10: D2	Motor -
10V	Pin 3	X5: A3	X3: 3	X11: 3	10V
0V	Pin 4	X5: A4	X3: 4	X11: 4	Tap
	Pin 5	X5: A5	X3: 5	X11: 5	⊥

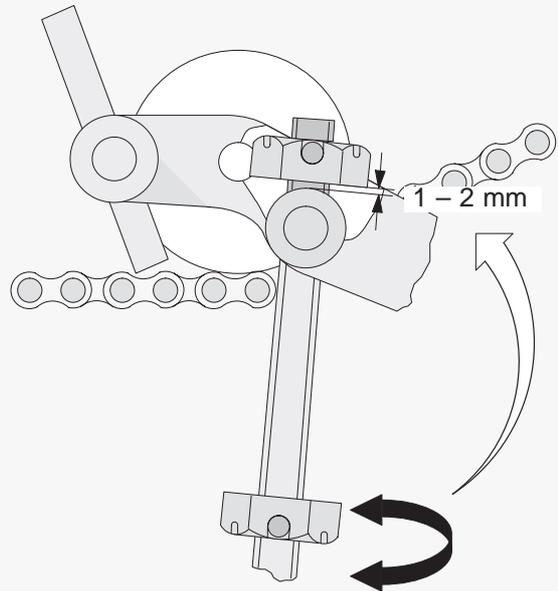
Removal and installation



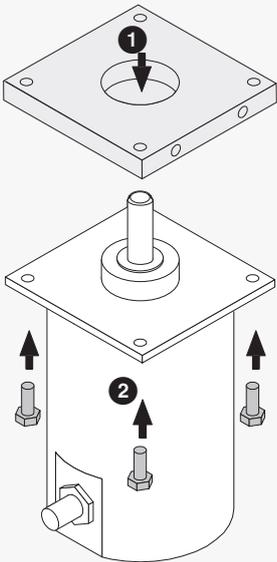
5



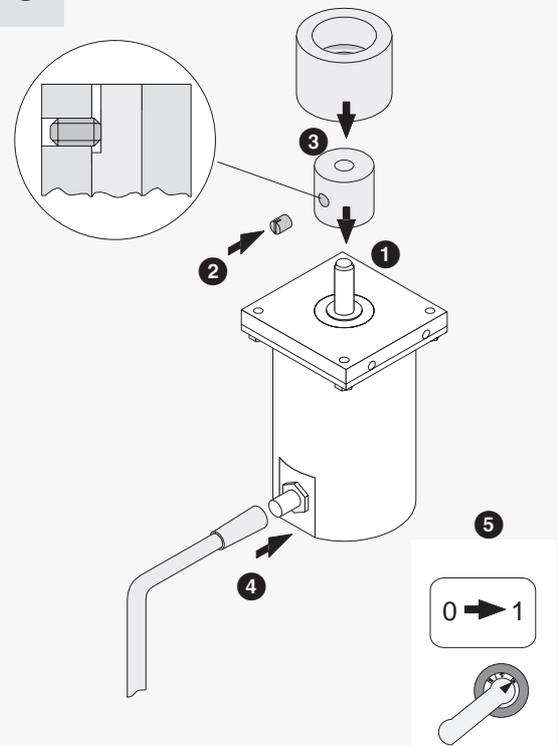
6



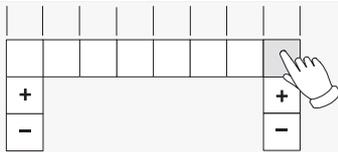
7



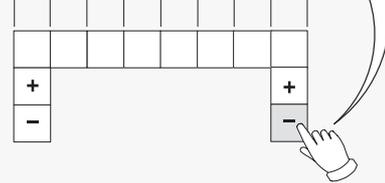
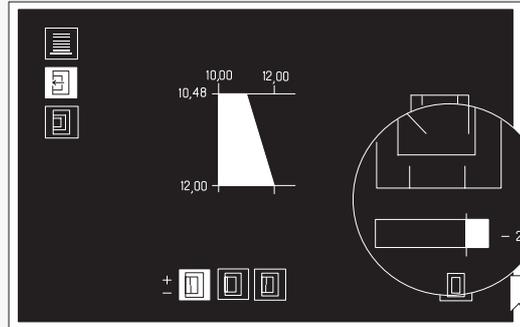
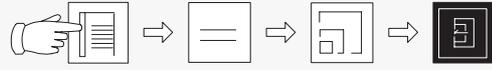
8



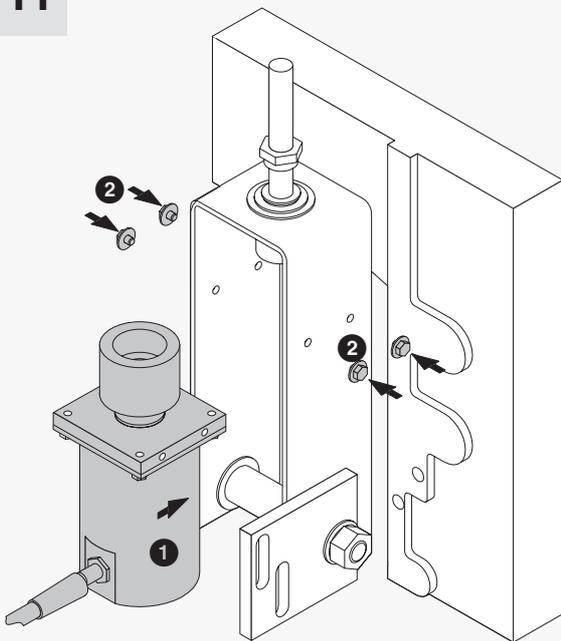
9



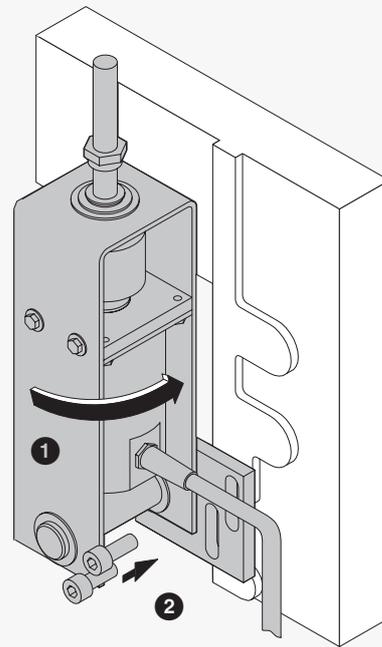
10



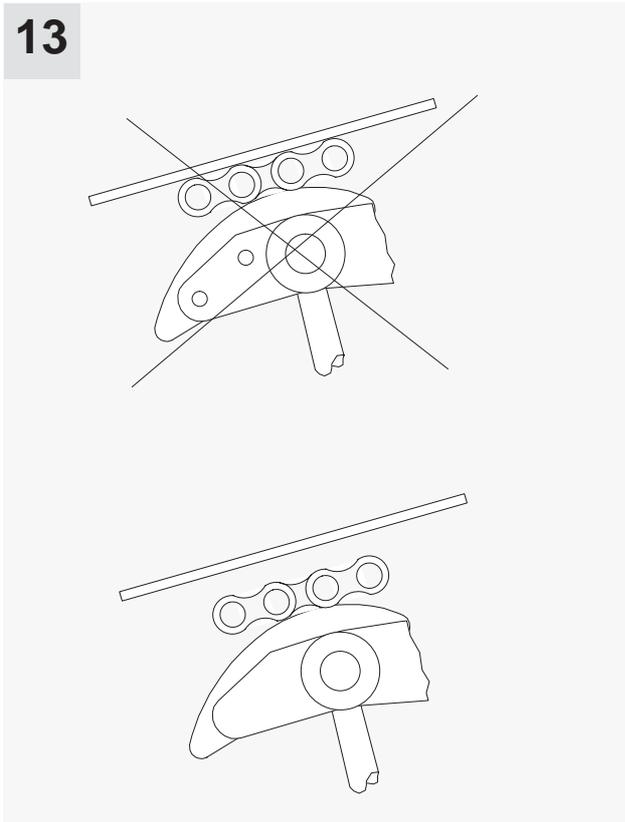
11



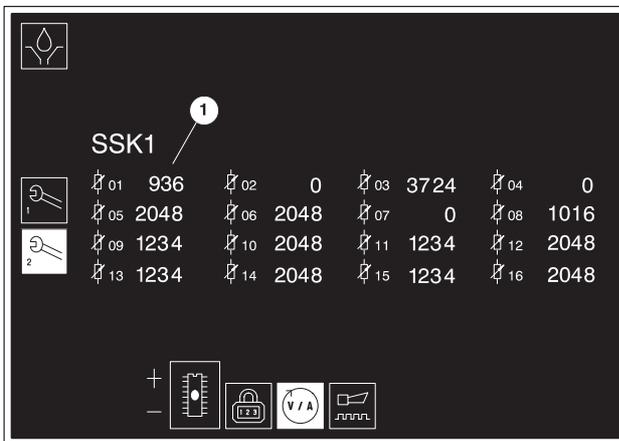
12



13



Checking the operating range



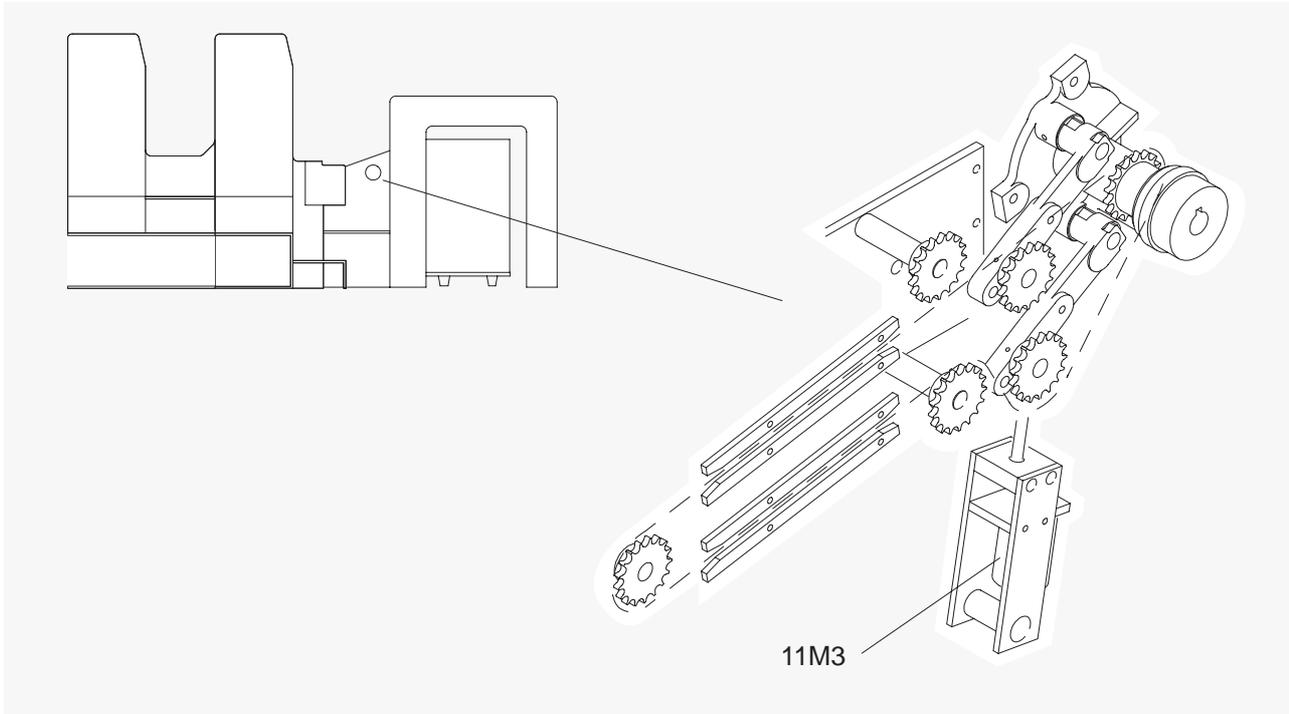
Service display "Values, actual value servo-drives"

① Servo-drive "Automatic sheet arrival control" 11M3

Input	Incremental value
+ 18	3134 ± 4 inc
- 2	963 ± 4 inc

11M3 Automatic sheet arrival control (Preset version)

Place of installation



Operator side

Technical data

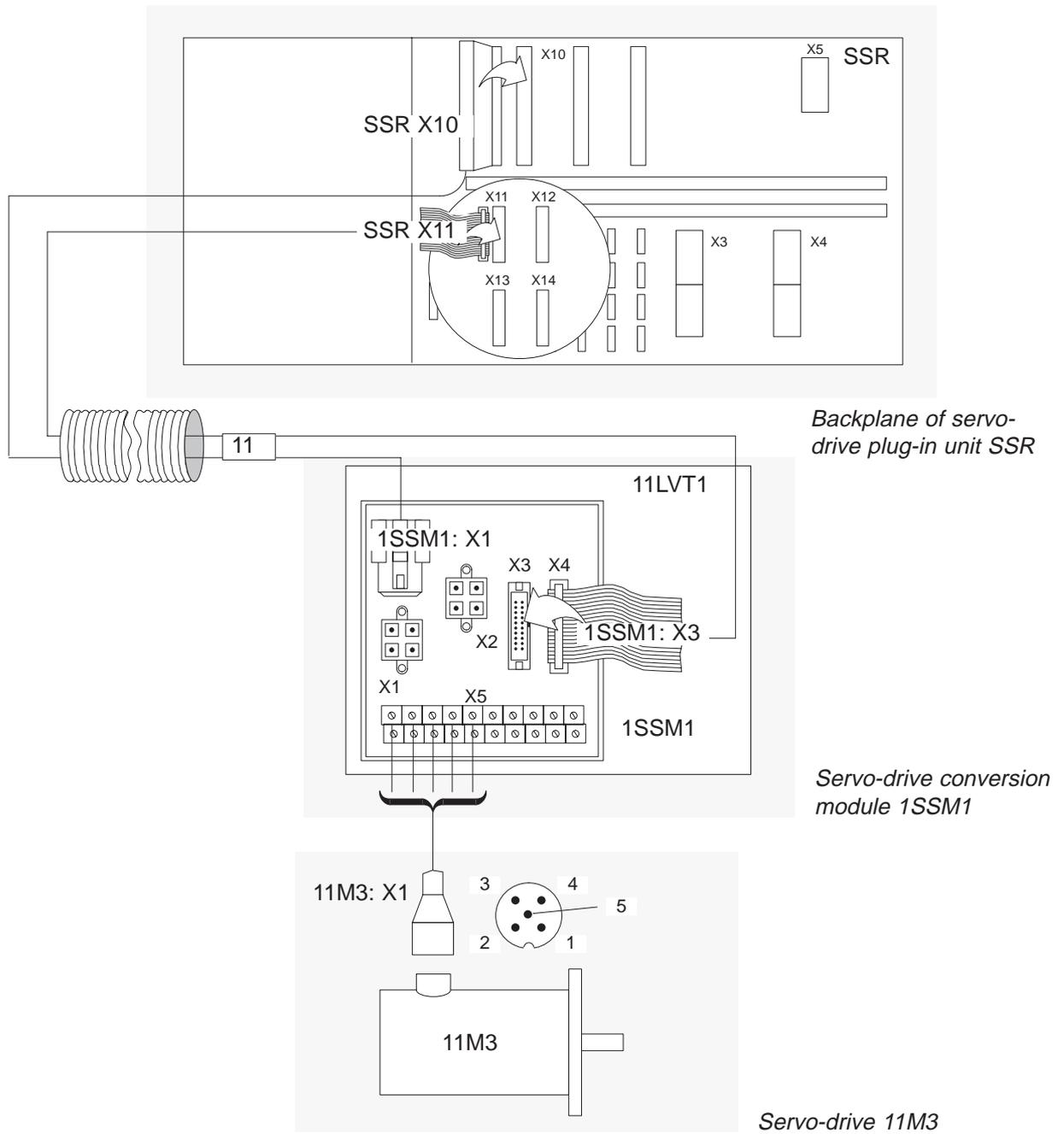
Motor data

- U = 24V DC
- P = 5W

Potentiometer data

- U = 10V DC
- R = 10K Ω

Interconnection diagram



	11M3:X1	1SSM 1	SSR
	Pin 1	X5: A1	X1: 1
	Pin 2	X5: A2	X1: 2
	Pin 3	X5: A3	X3: 3
	Pin 4	X5: A4	X3: 4
	Pin 5	X5: A5	X3: 5
			X10: B2
			X10: D2
			X11: 3
			X11: 4
			X11: 5

Removal and installation

1

- Remove the servo-drive "Automatic sheet arrival control 11M3".

2

2.0 mm
(approx. 1 rev.)

- Turn the mechanism against the upper stop.
- Set the distance to 2.0 mm.

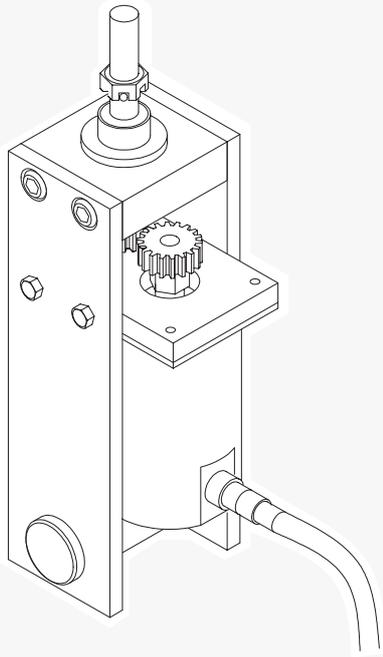
3

SSK1															
01	3891 ± 2	02	3871	03	2456	04	462	05	2048	06	2048	07	2048	08	1646
09	3015	10	1072	11	3724	12	571	13	704	14	704	15	2048	16	2048

11M3: X1

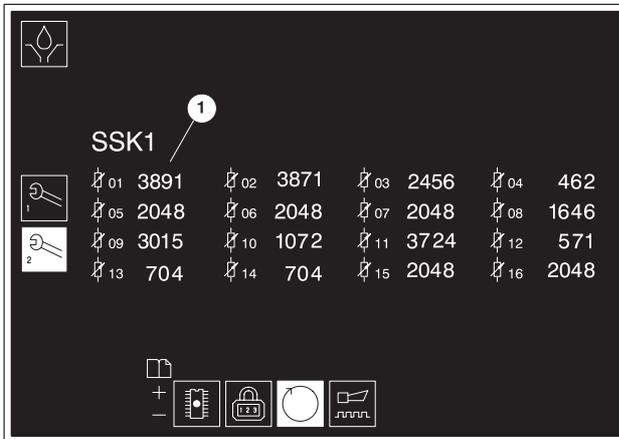
- Fit the servo-drive to the mounting plate.
- Insert plug 11M3: X1.
- Set to 3891 ± 2 inc.

4



– Install the servo-drive.

Checking the operating range

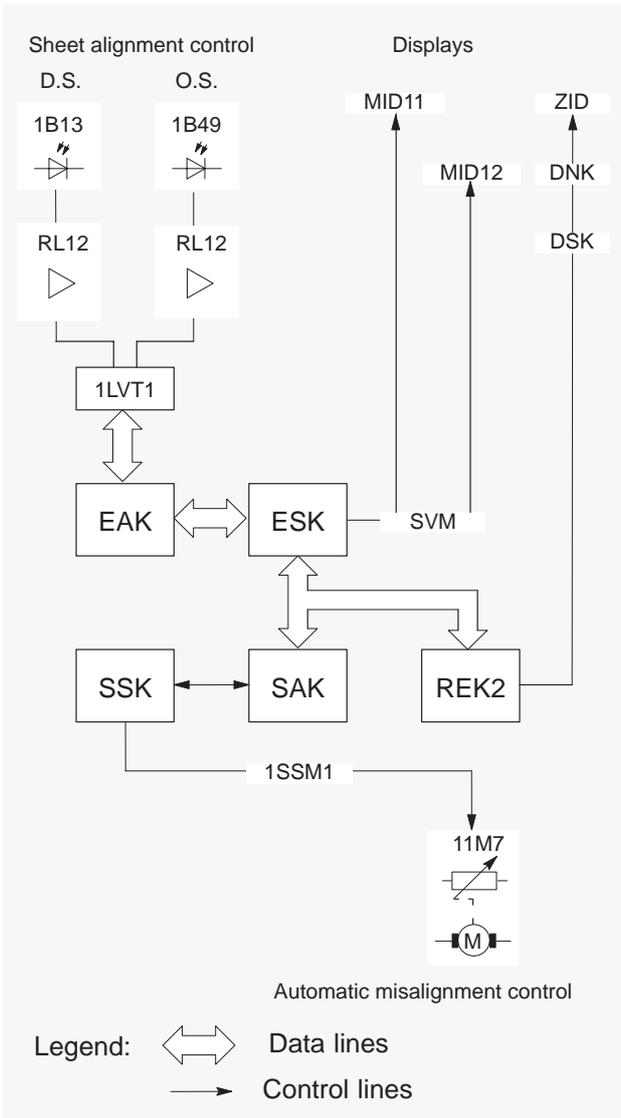


Service display "Values, actual value servo-drives"

① Servo-drive "Automatic sheet arrival control" 11M3

Input	Incremental value
+ 10	205 ± 4 inc
- 10	3891 ± 4 inc

11M7 Automatic misalignment control



Block diagram of automatic misalignment control

The automatic misalignment control influences the position of the sheet in such a way that it arrives parallel to the front lays.

Automatic control is effected through:

- the servo-drive 11M7,
- the guide rail (D.S.) of the forwarding suckers at the suction head.

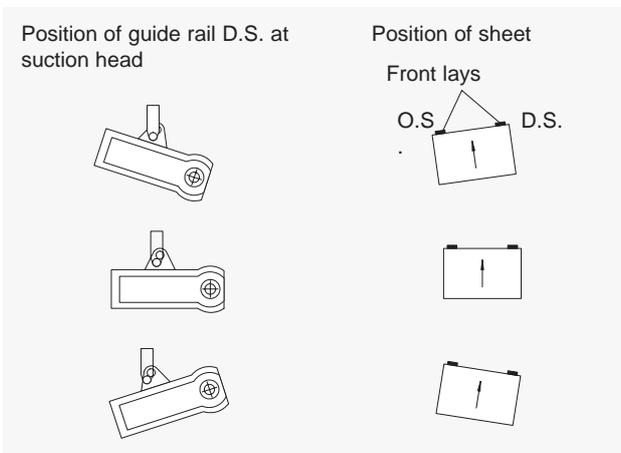
The misalignment is registered:

- by the ANK sensors on the D.S. and O.S.

The deviation between the registered values is an indication of the misalignment of the sheets in relation to the front lays (not to the feed table).

If the misalignment exceeds three degrees, the automatic control compensates for the deviation.

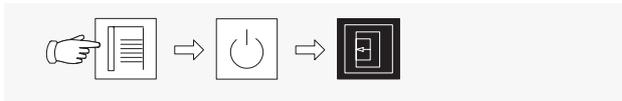
The automatic misalignment control does not intervene in press control.



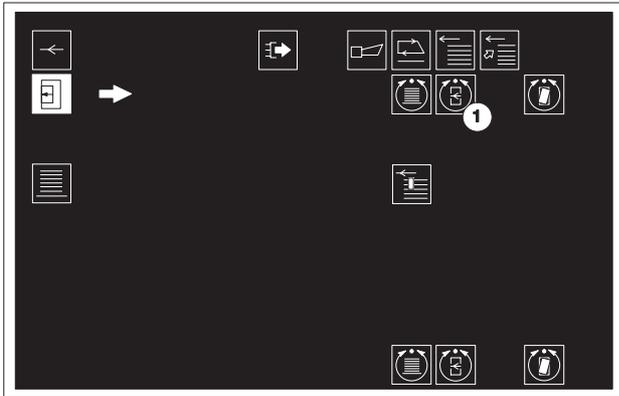
Principle of the misalignment correction

The graphical representation on the left shows the mechanical principle of the misalignment correction.

Activating and inactivating the automatic misalignment control



Selecting the automatic misalignment control



Preselection/coarse display

① Symbol "Automatic misalignment control on / off"

Inactivating and activating the automatic misalignment control:

- in the preselection display,
- by means of the function button.

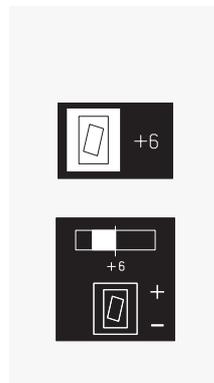
If the symbol is lit, the automatic misalignment control is active.

Misalignment control

Symbol of the misalignment control in the ...

actual value/coarse display

actual value/fine display



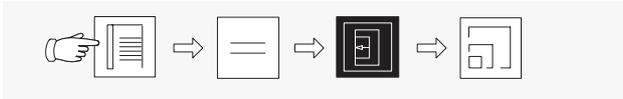
The misalignment control is automatically activated when the operator switches off the automatic misalignment control.

For the misalignment control the operator enters a fixed value. The setting is made at the control console by means of the right-hand +/- buttons.

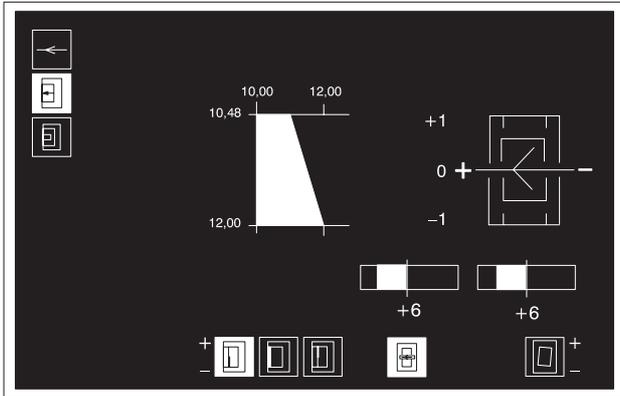
Press model Setting range

SM102	-10 to +10
CD102	-10 to +10

Graphical representation of sheet arrival

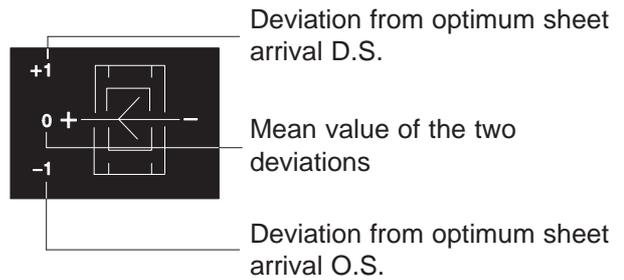


Selecting the fine display



Actual value/fine display

The graphical representation of sheet arrival also gives the operator information about the misalignment of the sheets.

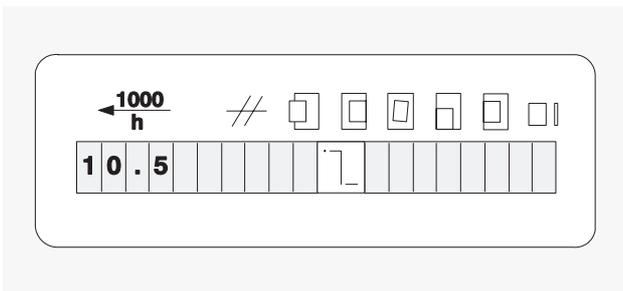


Note:

The display is updated with a delay.

During paper run or production run the misaligned-sheet display appears in the MID.

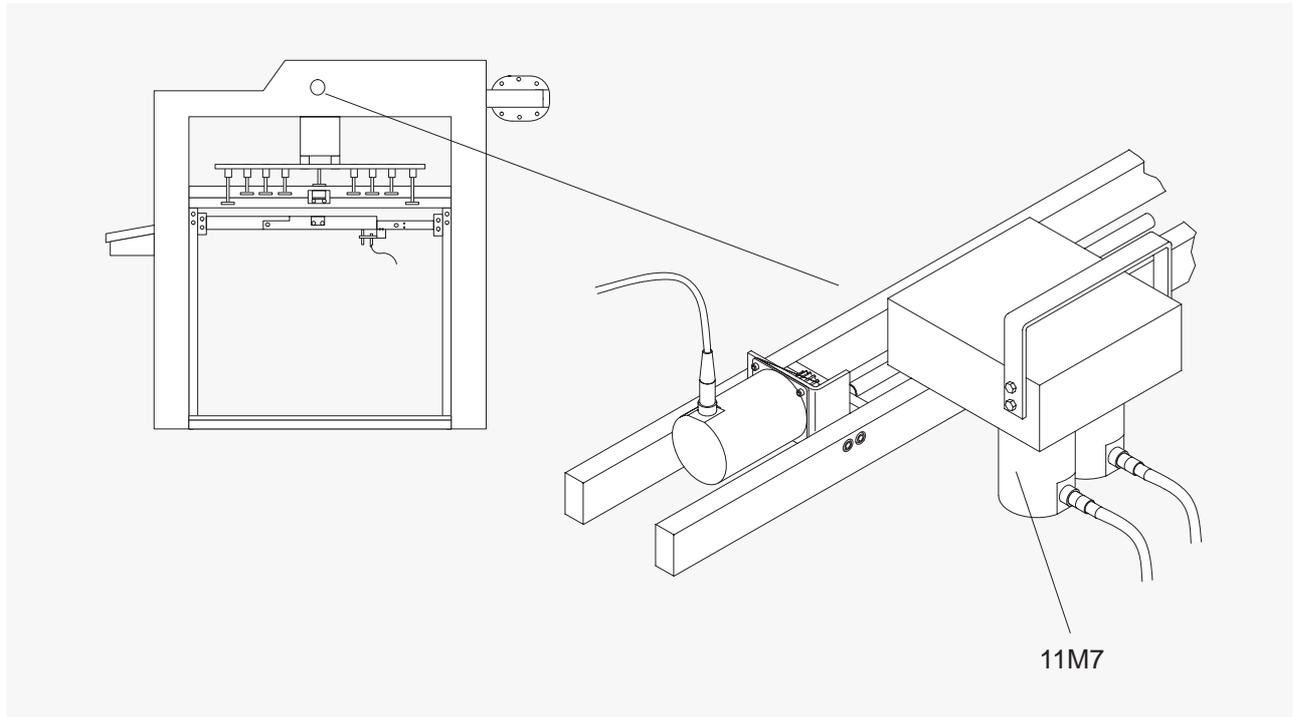
This display changes permanently and is a trend indication for the operator.



Misaligned-sheet display

- | Good sheet optimum sheet arrival
- ┌ Misaligned sheet, D.S. advanced display of misalignment up to max. 18°
- └ Misaligned sheet, O.S. advanced display of misalignment up to max. 18°

Place of installation

*Preset feeder*

Technical data

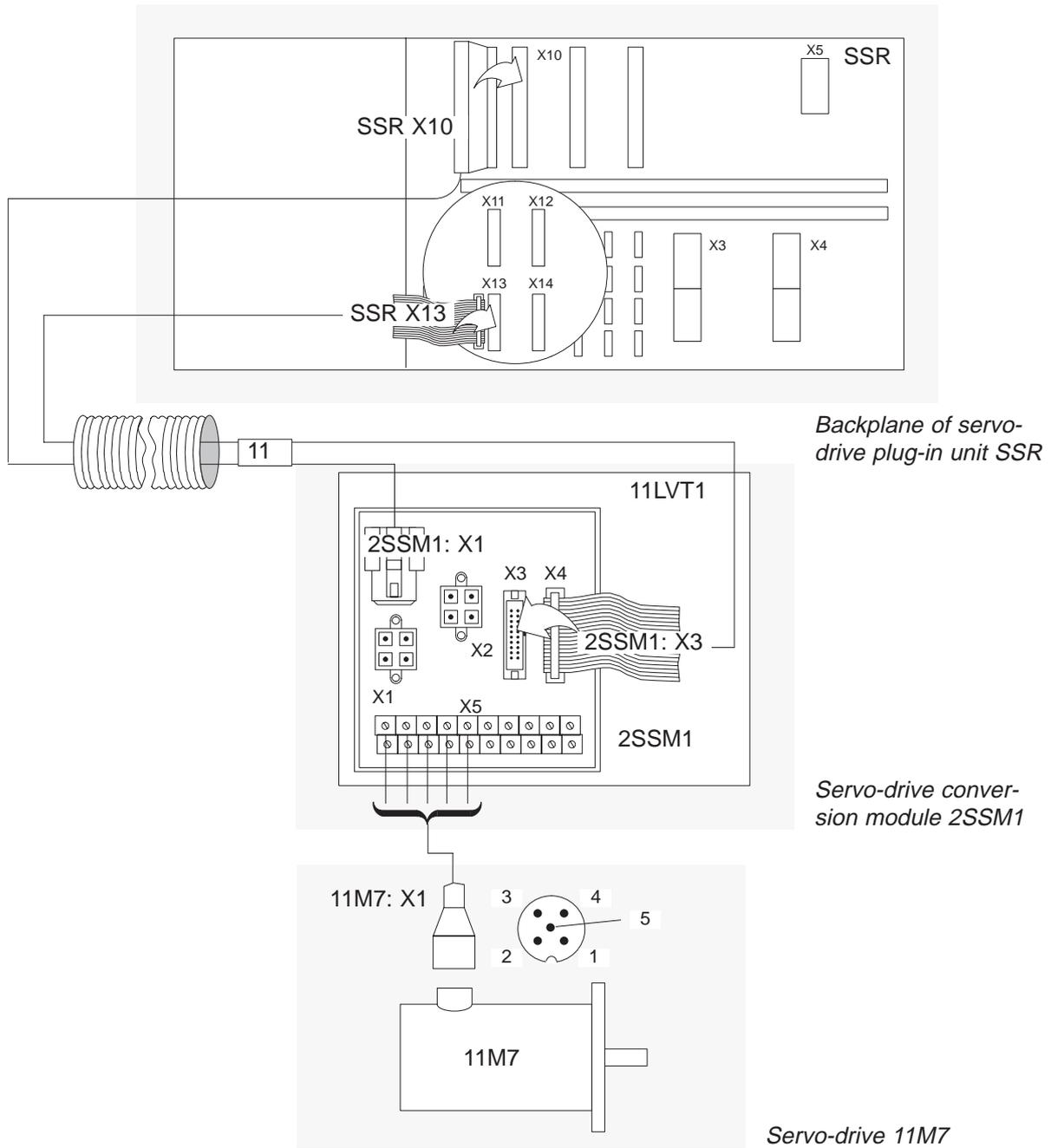
Motor data

- U = 24V DC
- P = 5W

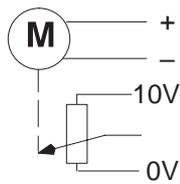
Potentiometer data

- U = 10V DC
- R = 10K Ω

Interconnection diagram

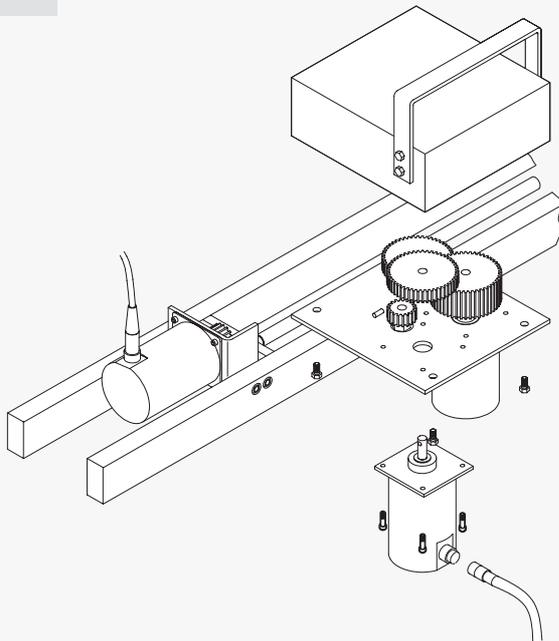


	11M7:X1	2SSM 1	SSR
Pin 1	X5: A1	X1: 1	X10: B10
Pin 2	X5: A2	X1: 2	X10: D10
Pin 3	X5: A3	X3: 3	X13: 3
Pin 4	X5: A4	X3: 4	X13: 4
Pin 5	X5: A5	X3: 5	X13: 5



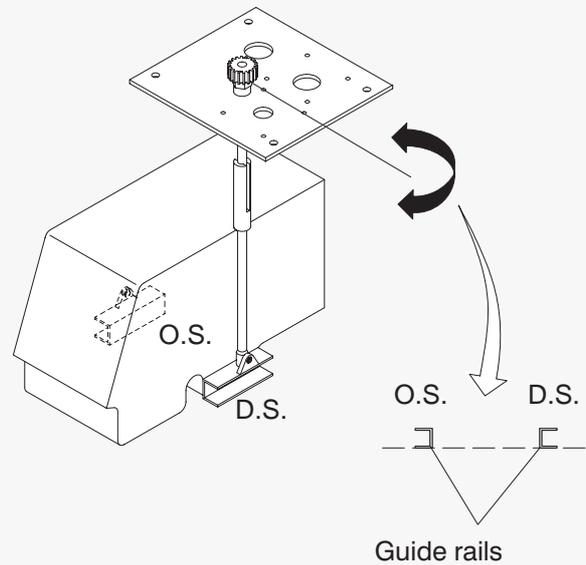
Removal and installation

1



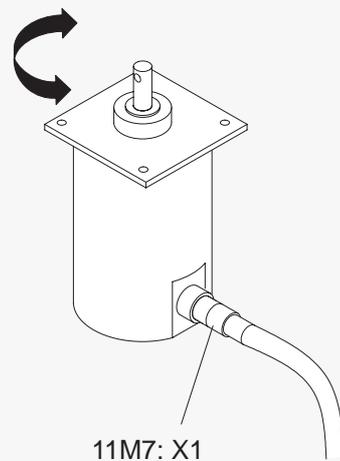
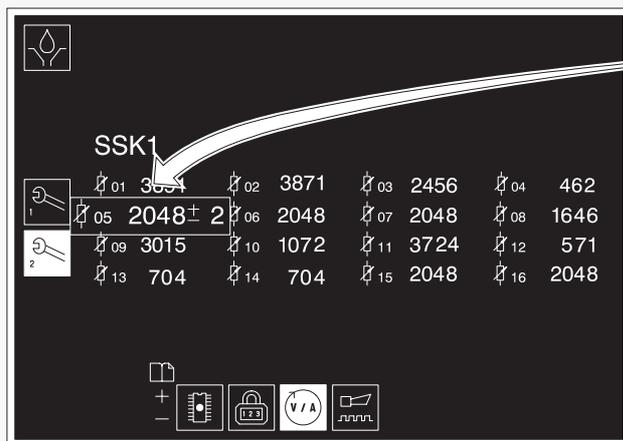
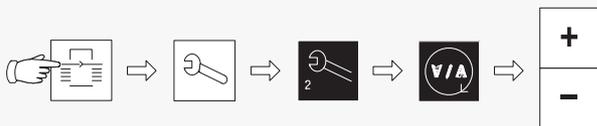
- Remove the servo-drive "Automatic misalignment control" 11M7.

2



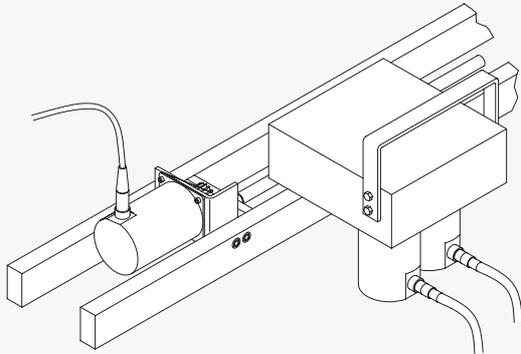
- Position the guide rails of the forwarding suckers parallel to each other.

3



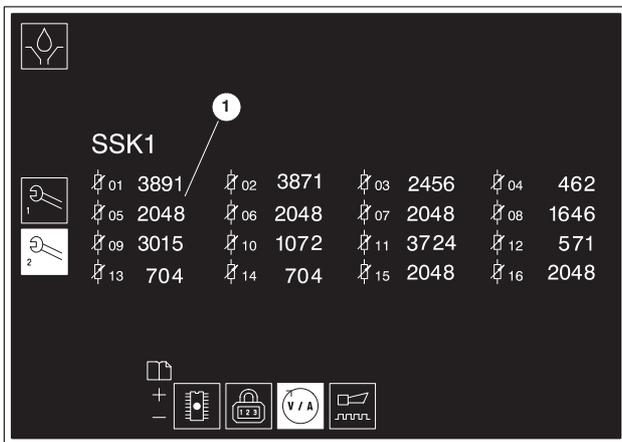
- Insert plug 11M7: X1.
- Set to 2048±2 inc.

4



– Install the servo-drive.

Checking the operating range



Service display "Values, actual value servo-drives"

① Servo-drive "Automatic misalignment control" 11M7

Input	Incremental value
- 10	1434 ± 2 inc
+ 10	2662 ± 2 inc