Operating instructions

Automatic Delivery BA700

Model 102-13 / -13A / -13B / -14

as of September 2004

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englisch

Contents

Declaration of Conformity

Manufacturer Declaration
according to EC-Machinery Directive 98/37/EG, Annex II A

We **palamides GmbH**
Benzstr. 14
D-71272 Renningen/Germany

hereby declare that because of their design and construction, the machinery/devices detailed below comply with the Health and Safety legislation of the EC-Machinery Directive. This Declaration becomes invalid if an alteration is made which has not been agreed with ourselves.

Product: Automatic Delivery BA700

Model: 102-13, 102-13A, 102-13B, 102-14

Serial number: _____

Appropriate EC-Directives:

EC-Machinery Directive (98/37/EG)

To comply the basic requirements we consulted the following appropriate standards:

EN 292-1; EN 292-2; EN 294
pr EN 1010 EN 60204-1

Date: 04.01.2004

Signature: (S. Palamides)

Identification
Of the Signatory: Managing Director

Preface

You have acquired a technically superior industrial product in the BA700 Delivery and, by paying careful attention to the Operating Instructions, you will achieve the highest levels of reliability and performance.

These Operating Instructions should guide you in operating the automatic delivery correctly, in complying with the safety regulations and in servicing the machine properly

PLEASE NOTE:

We strongly urge using “Certified palamides” Banding Materials. Use of this material will ensure reliability and consistency in production with your palamides Automatic Delivery. If any adjustments are made to this equipment to accommodate material other than the recommended palamides Banding Material, if may result in voiding the warranty.

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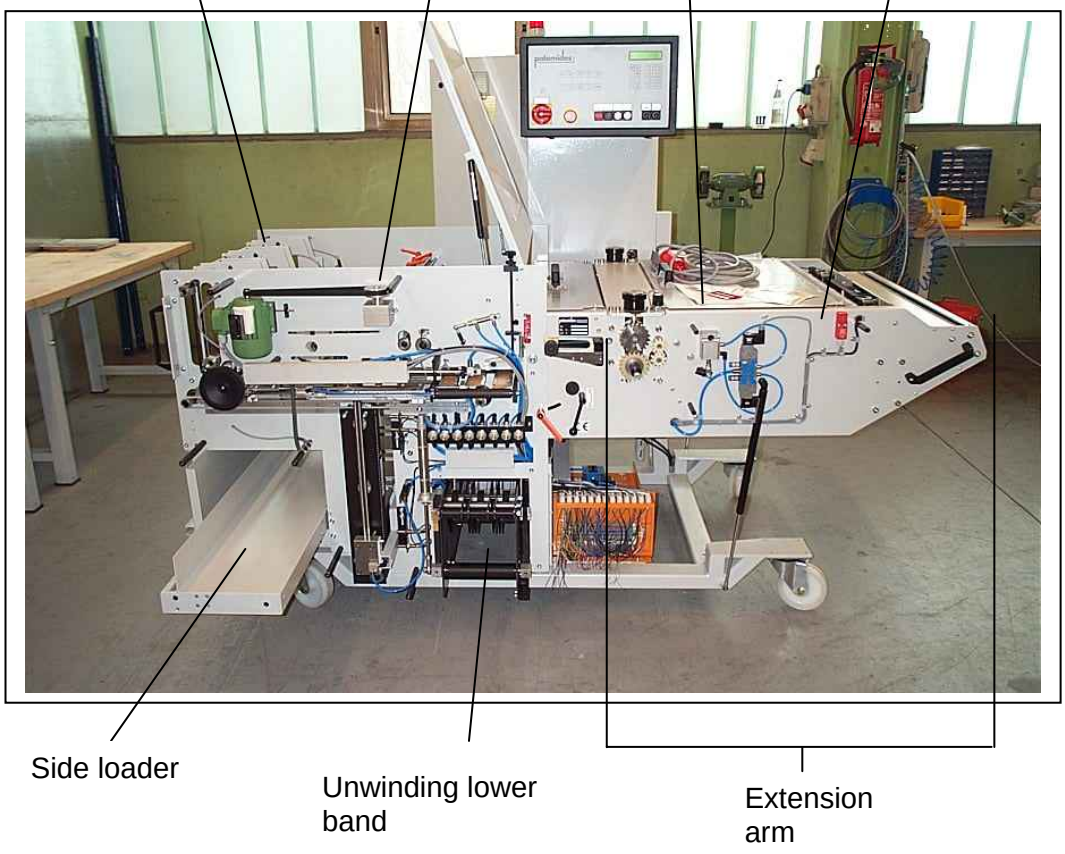
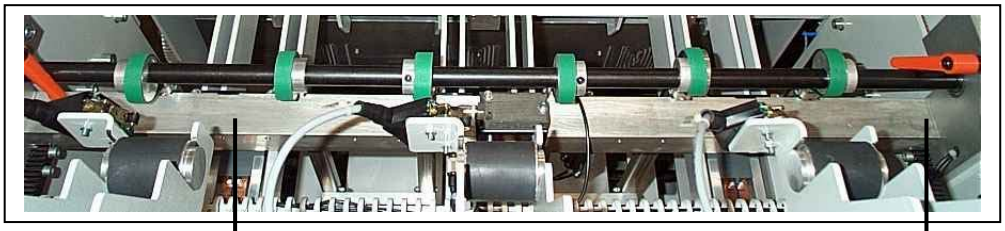
1 Description of the machine parts and groups



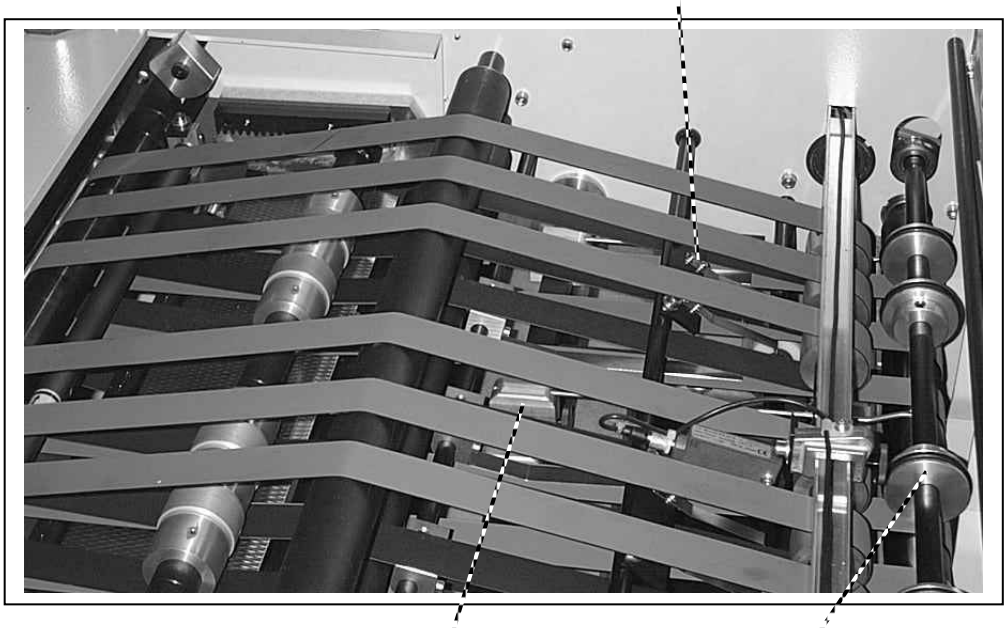

Elevation table
Batch level compensator
Jogging plates


Adjusting frame

Tensioning shaft

Tape turn element

Stopper



Support finger

Presure axle

2 Fundamental Safety Advice

2.1 Warning advice and symbols

Throughout the operating instructions, the following designations, or rather signs are used for especially important statements:

>TIP< Special statements with regard to the economic application of the machine

>ATTENTION!<  Special statements, or rather commands and prohibitions, to prevent damage.

>Danger<  Statements, or rather commands and prohibitions, to prevent injury to persons or extensive damage to property

2.2 Safety at work
Agreed application of the Automatic Delivery

1. At the time of supply, palamides Automatic Deliveries meet all safety-related regulations. For this purpose, moving and rotating parts are covered with safety hoods, which are mechanically, or rather, electrically locked in such a way that no unreasonable interference with the operation exists.
2. It is extremely important with all safety related measures that the operating personnel practice high safety levels and have remaining sources of danger pointed out to them and/or impairment of the machine and other material assets cannot be excluded.
3. The machine may be operated only when in perfect technical condition. Faults which may impair safety are to be removed immediately by trained personnel or personnel from the manufacturer and/or supplier.
4. The machine is only intended for banding folded paper. Banding of other materials goes against agreement. The manufacturer and/or supplier is not responsible for any damage resulting from this.
5. Before you operate the machine, read carefully through all the operating instructions, including the safety and service conditions.
6. The operating instructions must always be handy near the machine.
7. If necessary, supplement the operating instructions with internal safety regulations, as well as with legal accident prevention regulations.
8. If machine personnel changes frequently, make sure that all machine operators are informed, or rather, trained in the previously mentioned points.
9. Never remove the protective, or rather safety devices on the machine and never alter the machine so that safety can no longer be guaranteed.

10. Only use tools which are in perfect condition and take care that no tools are left lying on the machine after adjustment or maintenance work. Tools which may fall into the machine can lead to serious consequences for both man and machine.

11. Pay attention to all safety and danger tips on the machine and keep these tips in a legible / visible condition.

12. Report all audible / visible safety-related machine changes to the appropriate authority in your works.

13. Operating personnel must have long hair tied back and may not wear loose clothing or jewellery, including rings. There is a danger of injury should they get caught up or drawn in.

14. When the machine is running, never try to clean it (rollers, belts), or to rectify faults or set it up.

15. Make sure that no other person switches the machine on while you are busy on it - e.g. whilst setting up or during other work! **>Danger<** Therefore, always press the **EMERGENCY-OFF Button**

16. Do not immediately switch the machine back on if it stops for some unknown reason. Make sure first that the machine is in perfect condition and that no other person is busy on the machine.

17. If you have to carry out extensive mechanical / electrical maintenance or repair work to the machine, turn off the main switch and, if necessary, secure it with a padlock.

18. Never open the main control cabinet or lower service cabinet! Electric, or rather, electronic work may only be carried out by relevant authorised personnel or by the manufacturer's or supplier's personnel. **>MORTAL DANGER<** with the control cabinet OPEN! With the control cabinet opened, even with the main switch **turned off,** there is still electrical current on the main terminal clamps!!!

19. Report any exposed cables or electrical connections to the appropriate authority in your works.

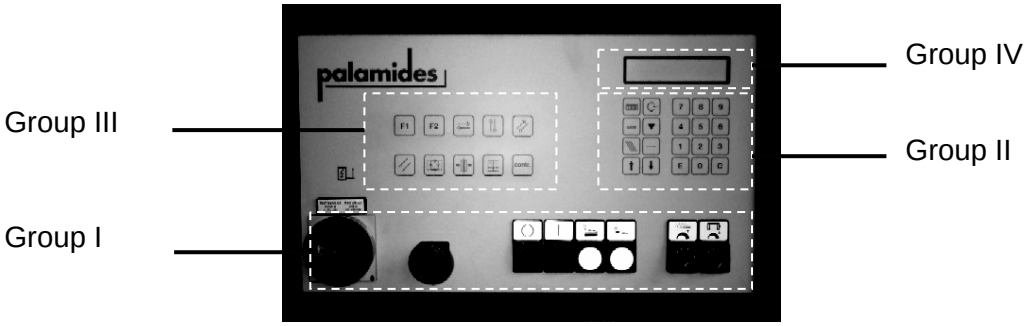
20. According to the latest safety regulations, the machine must stop if one of the safety hoods is opened. The hoods, which serve both as safety and noise dampening hoods, contain electrical switches. These switches may never be dismantled or bridged, as this would mean **>DANGER<** to the life and limb of the operator.

21. **>DANGER<** In order to stop the hoods from closing themselves, it is necessary to ensure that the hoods are completely opened as far as they will go.

3 How to run the machine

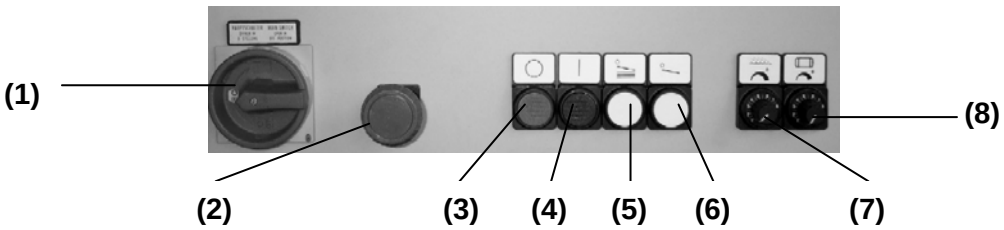
3.1 Main control panel

The main control panel is divided into four groups. These four groups can be seen on the picture opposite.



Group I	Electrical buttons to switch on and operate the machine.
Group II	Electronic keys to set up the machine
Group III	Electronic keys to operate the machine manually.
Group IV	Display and indicator elements to display messages.

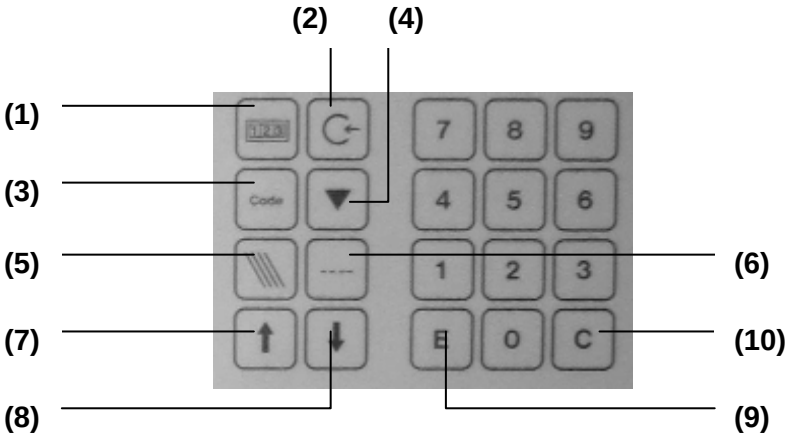
Group I



(1)	Main switch	This switches the power supply to the BA700 on and off. **N.B.** Certain areas in the control panel remain under current even when the main switch is switched off. **N.B.** Unplug the power supply plug only when the main switch is switched off. There is a **danger** to electronic component parts.
(2)	Emergency-Off-Button	This is used during dangerous situations for switching the equipment off quickly. When it is pressed, the switch is locked and the machine can only be started again after the switch is pulled out (by turning it clockwise). **Note:** None of the data is erased when the Emergency-Off button is pressed. This means that, after a new start, work continues from the same position where it stopped before the Emergency-Off button was activated.

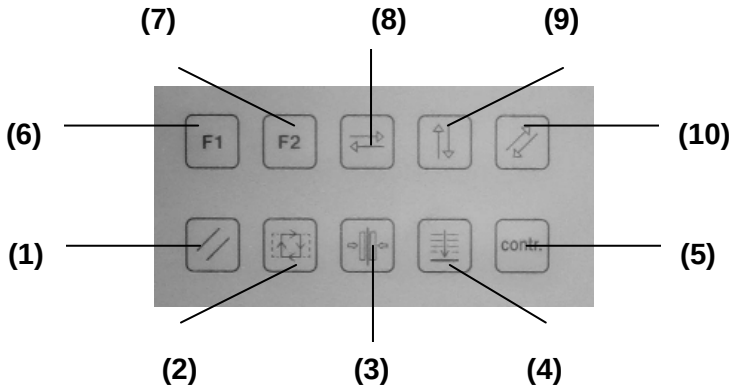
(3)	Stop button	Switches off the machine Erases errors. When a fault has been removed mechanically, the error message will still be shown on the display. After the Stop button has been pressed, this message will be erased. **Note:** None of the data is erased when the Stop button is pressed. This means that, after a new start, work continues from the same position where it stopped before the Stop button was activated.
(4)	Start button	Starts the machine **Note:** After pressing the start button, the equipment still needs a few seconds before it is operational. During this time, any products coming along will be ejected via the waste sheet deflector.
(5)	Sheet input button	This button only has a function if the BA700 has been connected either to an MBO folding machine using a standard (24-pole) plug, or to a Stahl folding machine using a Stahl interface. **Connection with MBO:** By pressing the sheet-input button once, the sheet supply on the folding machine's feeder is switched on. By pressing the sheet-input button again the sheet supply is switched off. **Connection with Stahl:** By pressing the sheet-input button, the sheet supply on the folding machine's feeder is switched on. Pressing the sheet input button again has no effect.
(6)	Single sheet button	This button only has a function if the BA700 has been connected either to an MBO folding machine using a standard (24 pole) plug, or to a Stahl folding machine using a Stahl interface. **Connection with MBO:** By pressing the single sheet button, one single sheet will be delivered by the folding machine's feeder. **Connection with Stahl:** By pressing the single sheet button, the sheet supply from the folding machine's feeder is switched off. Pressing the sheet input button again has no effect.
(7)	Potentiometer 1	The speed of the transport belts, which lead from the press station to the shaft, can be altered by using the potentiometer's regulator.
(8)	Potentiometer 2	The speed of the round belts, which lead to the press station, can be altered by using the potentiometer's regulator. The speed is shown in metres per minute on the upper right-hand side of the display.

Group II



(1)	Batch counter	When this key is pressed, the display shows the standard reading. The top row shows the results per hour and the speed of the press drive. The lower row shows the actual amount of products located in the shaft. By pressing again, the lower row shows the pre-set batch count. The pre-set batch count can also be altered in this mode. **Note**: products considered to be waste, which were ejected via the deflector, are not included.
(2)	Total counter	When this key is pressed, the lower row of the display shows the amount of products which have been moved into the shaft The total count can be deleted in this mode. **Note**: products considered to be waste, which were ejected via the deflector, are not included.
(3)	Code	When this key is pressed and the relevant code entered, the machine parameters can be accessed.
(4)	Setting Sheet	By pressing this key, the next sheet which comes along will be studied by the photocell near the round belts. All sheets coming along after this one will be compared to it and, if necessary, rejected.
(5)	Stream delivery:	By pressing this key, the machine is put into “stream delivery” operating mode. **Note:** This can be seen at the wide transport belts, which only run when sheets are delivered to them.
(6)	Single sheet	By pressing this key, the machine is put into “single sheet” operating mode. **Note:** This can be seen at the wide transport belts, which run permanently.
(7)	Arrow upwards:	Important machine parameters may be accessed directly using this key.
(8)	Arrow downwards:	Important machine parameters may be accessed directly using this key.
(9)	Enter Key	Pressing this key will store newly entered values.
(10)	Delete Key	Pressing this key will delete values called up.

Group III



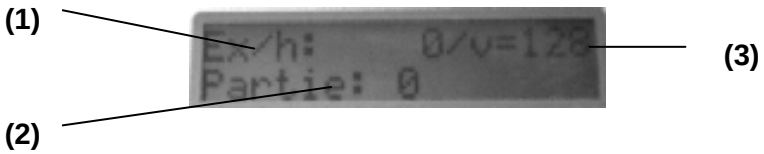
(1)	Starting position	By pressing the starting position key, all movements since last pressing the start button will return to their original positions. **Note:** The "actual amount" on the batch counter will also be reset at Zero. Please ensure that the shafts are free. The pre-set batch amount stays the same. **Note**: This key only reacts if the unit is at a standstill.
(2)	Running out	By pressing the pack remainder key, a packing cycle will start and the unit will be emptied. **Note**: This key only reacts if the unit is at a standstill.
(3)	Manual welding	The manual welding key is used to connect the two loose ends of the band after the band has been exchanged or after a malfunction. Pressing the manual-welding key starts the following processes. 1. The elevation table moves to its lowest position. 2. The pressing rails and the welding die move into the shaft. 3. The welding process starts up. 4. The pressing rails and the welding die move again to their starting positions. **Note**: Ensure that there is sufficient band between the welding dies before manual welding. **Note**: This key only reacts if the unit is at a standstill
(4)	Elevation table downwards	The elevation table downwards key is used to bring the elevation table down to its lowest position so that jammed product causing an error can be released. **Note**: Ensure that the area under the elevation table is clear. **Note**: This key only reacts if the unit is at a standstill.
(5)	Inspection	When the inspection key is pressed, the next oncoming sheet will be ejected.
(6)	F1	Free
(7)	F2	When the F2 key is pressed, the actual test reading for monitoring of the format is shown on the display.
(8)	Side loader	When the side loader key is pressed, the unit is filled with compressed air. When the side loader key is pressed again, the loader moves to the opposite position. When the side loader key is pressed yet again, the side loader moves back to

		its starting position. **Note**: This key only reacts if the unit is at a standstill
(9)	Package lift table	When the package lift table key is pressed, the unit is filled with compressed air. When the package lift table key is pressed again, the loader moves to the opposite position. When the package lift table key is pressed yet again, the package lift table moves back to its starting position. **Note**: This key only reacts if the unit is at a standstill.
(10)	Ejector	When the ejector key is pressed, the unit is filled with compressed air. When the ejector key is pressed again, the ejector moves to the opposite position. When the ejector key is pressed yet again, the ejector moves back to its starting position. **Note**: This key only reacts if the unit is at a standstill.

Group IV

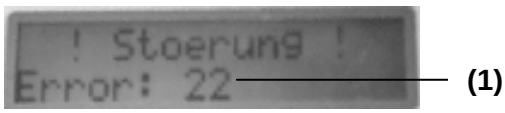
Depending on its status, the display shows various types of information.
In normal operating mode the following is shown:

(1)	Display	Gross performance in sheets per hour.
(2)	Display	Batch counter
(3)	Display	Speed of the round belts in metres per minute



An error is shown:

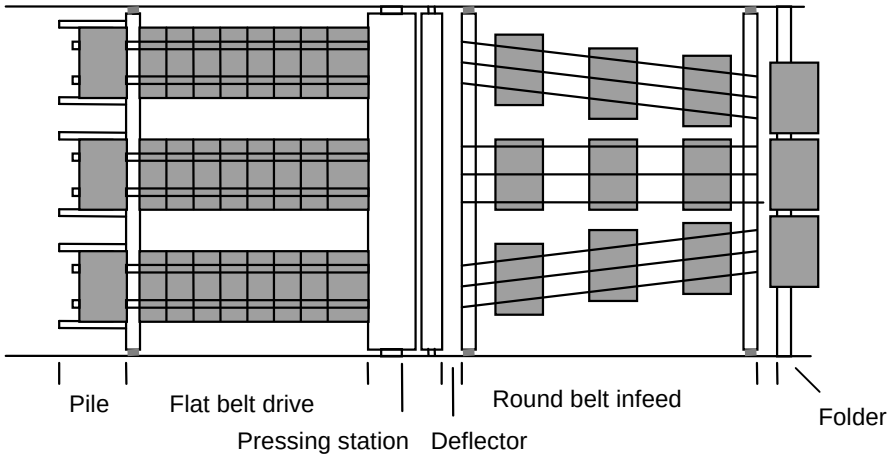
(1)	Display	Error No.



3.2 Infeed and press

The BA700 has to be aligned with the folding machine so that the streams of leaflets are accepted evenly in the relevant shafts (see 2.1). The height of the banding machine's delivery unit is to be adjusted to the exact height of the folding machine. Compare with 2.2 - 2.4.

2.1

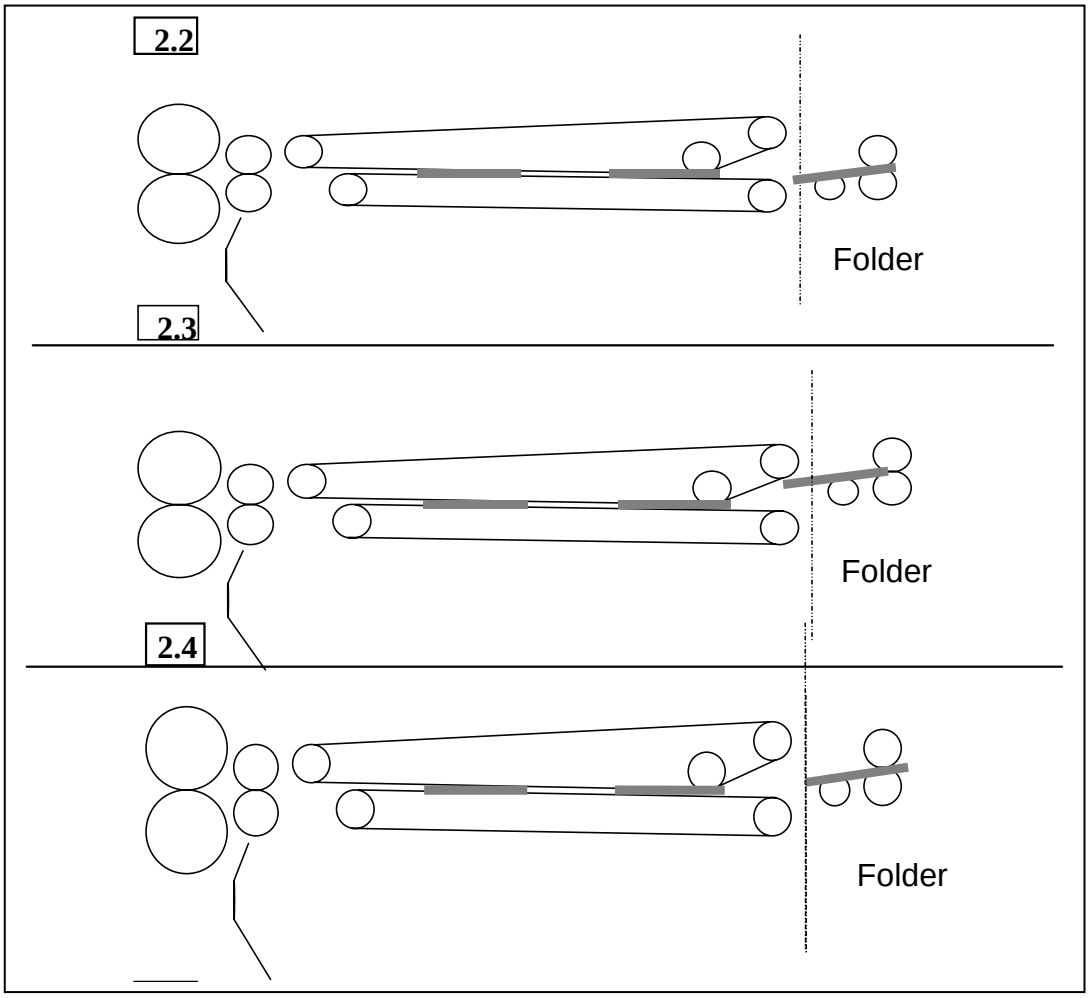


2.1 General view.

2.2 **Wrong**, delivery too high.

2.3 **Wrong**, delivery too low.

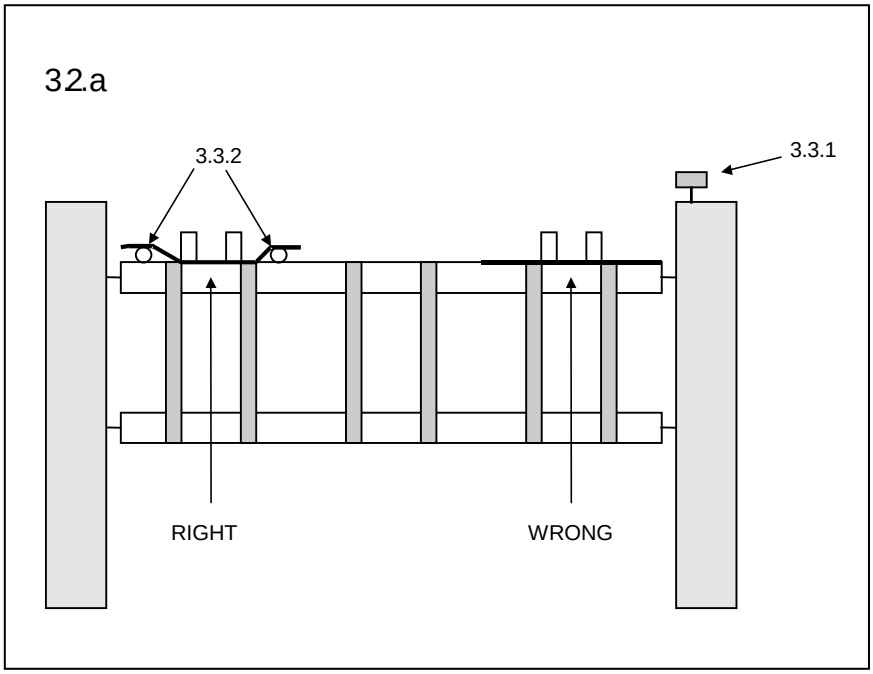
2.4 **Correct**, leaflet hits the round belt opening exactly.



Now adjust the machine using pressing screw. The round belts are now set up so that the leaflets are guided at a slant to the required shaft. This is a rough pre-adjustment. By pressing key “Setting Sheet” and feeding in a sheet, the leaflet, which is to be processed, is checked. This is necessary so that the register sheet is not ejected. The pressing station is now adjusted to the product thickness with the help of setting screws. The infeed is now set up, using round belts, so that the leaflets are fed into the middle of the shafts. With some formats, it can happen, that the sheets are fed in off centre. This does not lead to a restriction in the ability of the machine to function. Using potentiometer the infeed speed is now adjusted so that the distance between each leaflet is not less than 150 mm. Ideally, the speed is +/- 10% of the pre-folding unit.

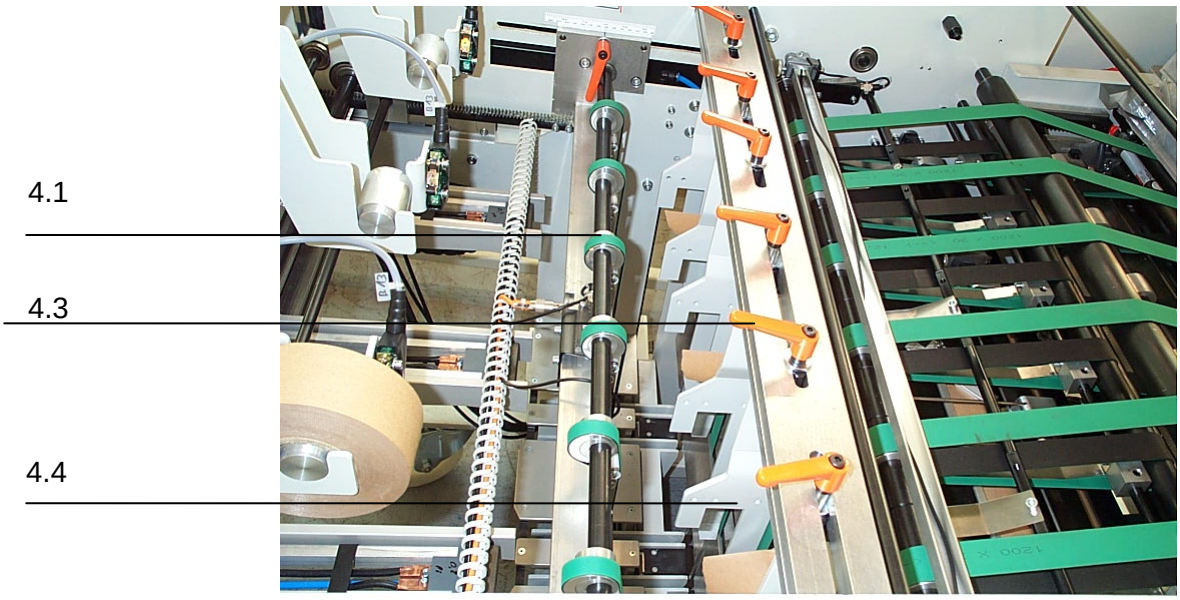
3.3 Layering and shaft infeed

The slope and length of the layering device can be adjusted to the product which is to be processed. It is set up to the product size by adjusting shaft 3.1.1 on handwheel 3.1.2. It is loosened or fixed using knurled screw 3.1.2. The slope is adjusted using the switching handle 3.1.3.
The guide rails 3.2.1 have a very important function. They ensure stabilisation in the direction of feed by bending the sheets; this is significant when stacking up. They are loosened by knurled screws 3.2.2 and adjusted to the relevant format (see 3.2a). The speed is now set up using potentiometer so that the leaflets form a clean unbroken layered stream. Take care here that the infeed runs continuously.
For single sheet infeed, the distance between the leaflets must be at least 100 mm.

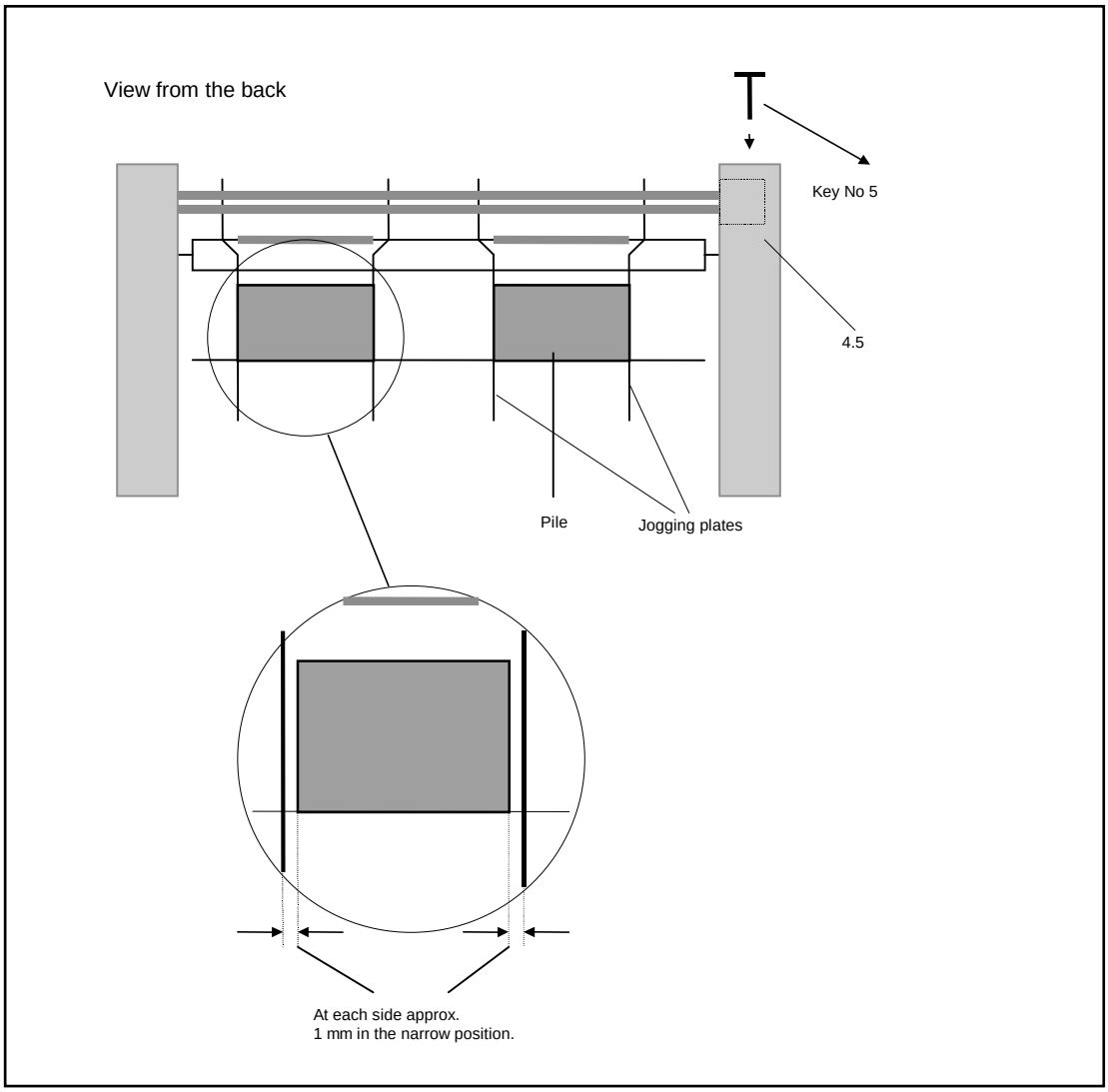


3.4 Shaft

Upon loosening clamping lever 4.1, the shaft's width is adjusted with handwheel 4.2.
Upon loosening clamping lever 4.3, the shaft walls 4.4 are now adjusted to the format.
Ensure that this is carried out at the narrowest position. For this, turn the vibration plate gear with a No. 6 socket head cap screw key (see 4.5).



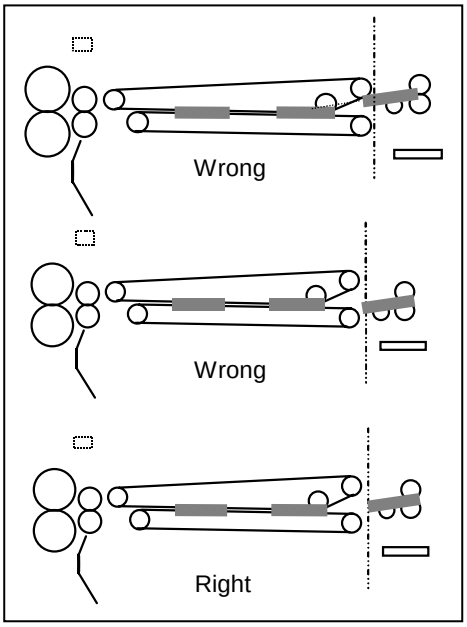
4.2


View from the back
Key No 5
4.5
Pile
Jogging plates
At each side approx.
1 mm in the narrow position.

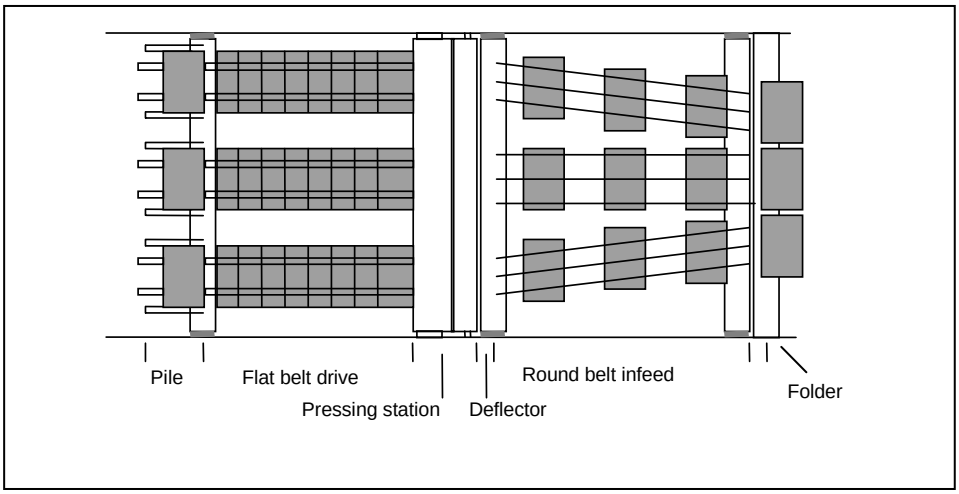
3.5 Quick Check

10 Questions which should be posed after adjustment has been carried out.

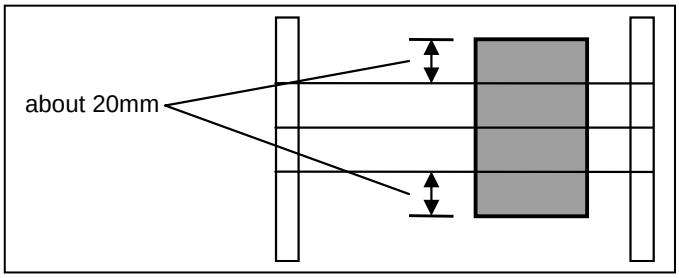
3.5.1 Does the height of the delivery go together with the folding machine?



3.5.2 Will the leaflets be transported in an evenly diagonal manner?



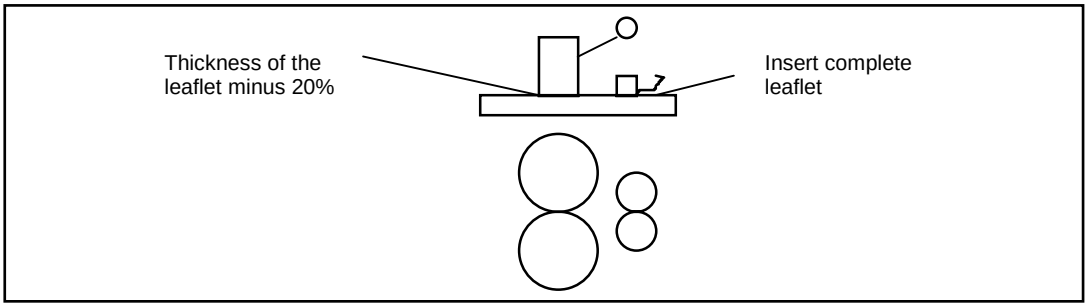
3.5.3 Do the round belts run parallel to each other and are they aligned correctly to the leaflet?



3.5.4 Is the difference in speed between the folding machine and the banding machine more than 10%?

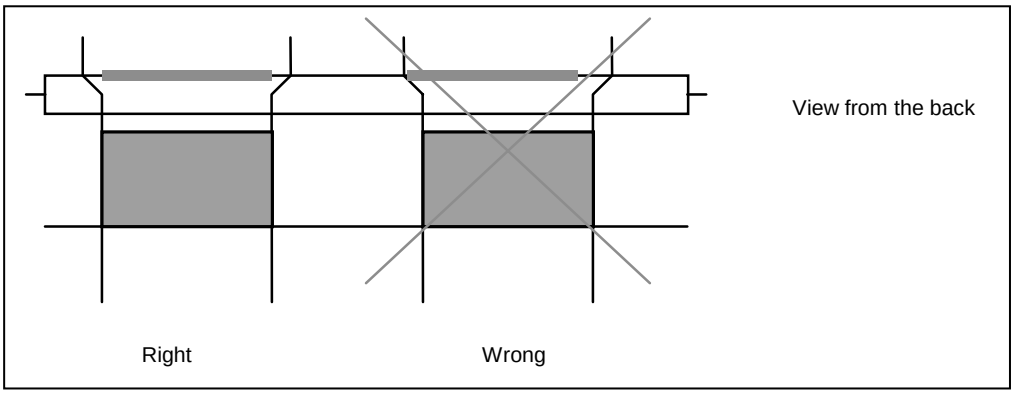
3.5.5 Are the photocells in the counter free?

3.5.6 Is the pressing station adjusted to the product thickness?

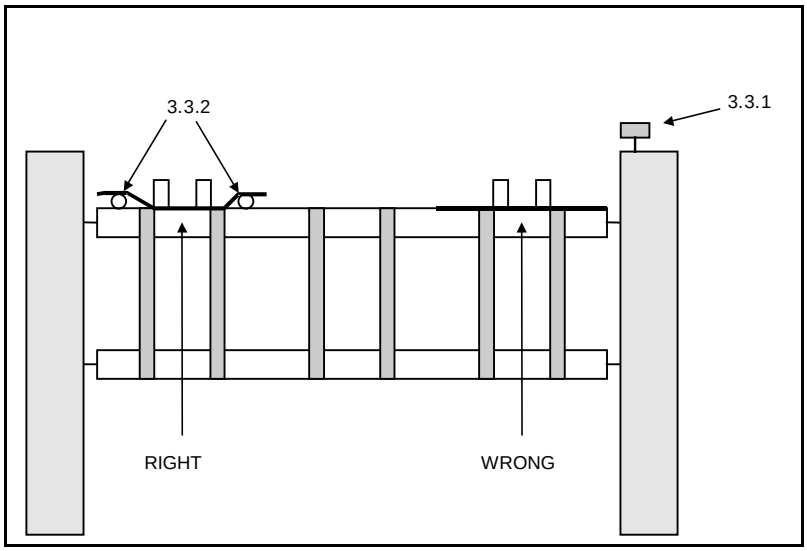


3.5.7 Do the flat belts transport the stream continuously, without raftering?

3.5.8 Is the stream fed in at the mid position?



3.5.9 Were the guide rails in front of the shaft adjusted?



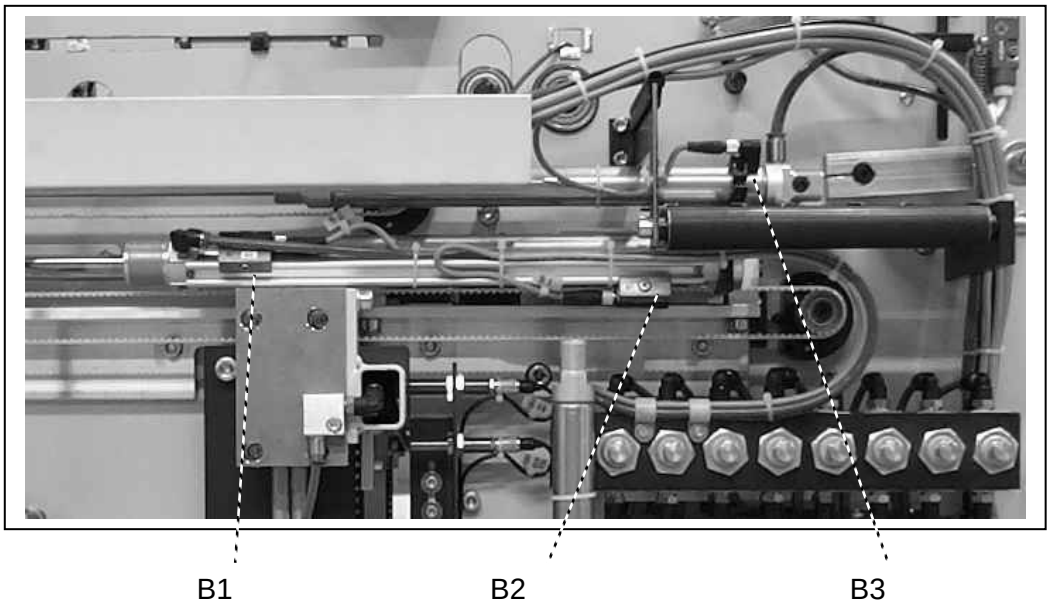
3.5.10 Do the leaflets have some play in the shafts?

4 Sensor Technology

4.1 Sensors used and their functions

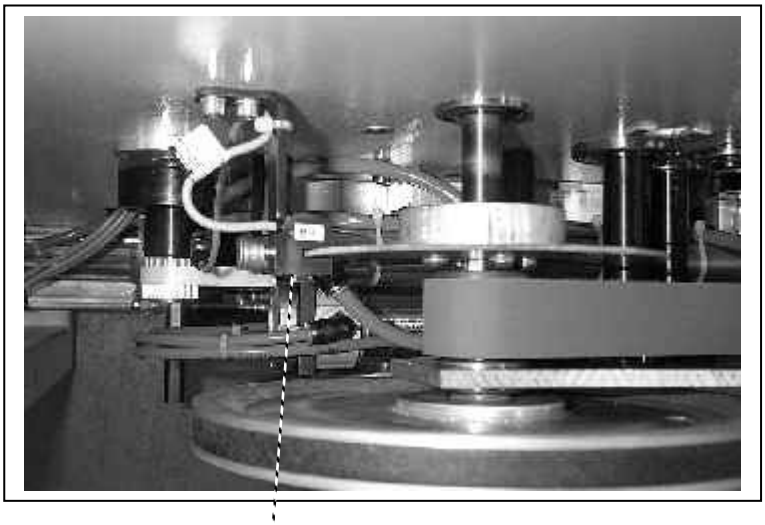
Article-No.	Name	Description	Picture
61.00002	Reflex photocell MLV40 B8, B9, B11, B12, B18, B19	Reflex photocell with a sensing range from 10-40mm	
61.00001	Proximity switch GT3.51 B4, B7	Inductive switch for slot discs	
63.00117	Inductive switch Omron 4mm B14, B15, B20, B21, B5	Inductive switch Reacts to the approach of metal Switching distance 0,1 – 1,0mm	
61.00010	Proximity switch SME-1-S-LED-24B B1, B2	Cylinder switch for FESTO round cylinder 32dia	
61.00011	Proximity switch SMEO-4U-S-LED-24 B B3, B16, B17	Cylinder switch for FESTO round cylinder 25dia	
61.00004	Proximity switch 25/32D.RS B35, B36, B37, B38, B39, B40	Cylinder switch for ORIGA linear drive	
61.00014	Reflex photocell MLV40 B18, B19 at small size	Reflex photocell with a sensing range from 25-90mm.	

4.2 Sensor B 1, B 2 and B3



Sensor	Position/Name	Adjustment
B1	Heat-sealers starting position	Separate welding head manually (either by hand or by code 204). Loosen Sensor B1 and move to the left until the yellow LED goes out. Then move the sensor slowly to the right until the yellow LED lights up again. Now place the sensor a further 2mm to the right and fix it. **N.B. This setting has to been made under pressure**.
B2	Heat-sealers operating position	Move welding head together manually (either by hand or by code 204). Loosen sensor B2 and move to the right until the yellow LED goes out. Then move the Sensor slowly to the left until the yellow LED lights up again. Now place the sensor a further 2mm to the left and fix it **N.B. This setting has to been made under pressure.**
B3	Pressing bars working position	Move pressing bars in manually (either by hand or by code 204). Loosen sensor B3 and move to the right until the yellow LED goes out. Then move the Sensor slowly to the left until the yellow LED lights up again. Now place the sensor a further 2mm to the left and fix it

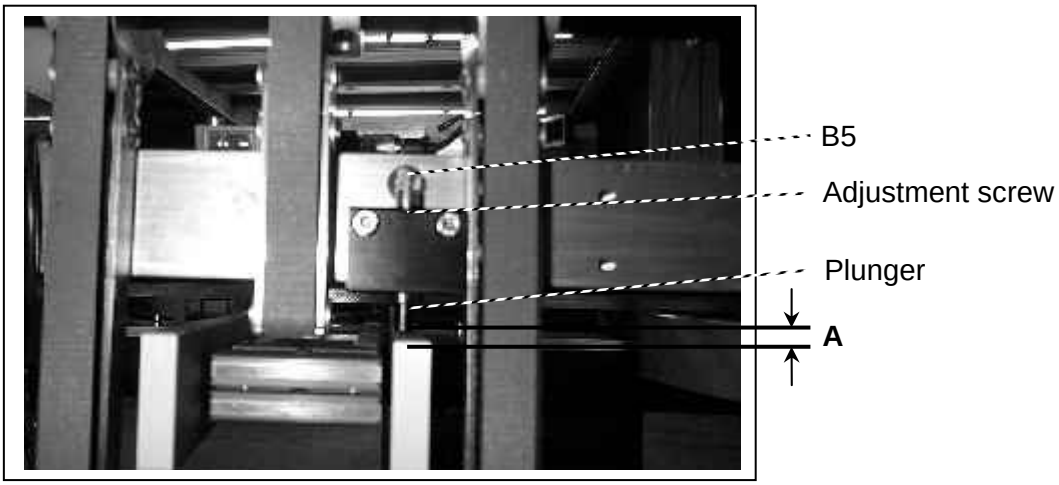
4.3 Sensor B 4

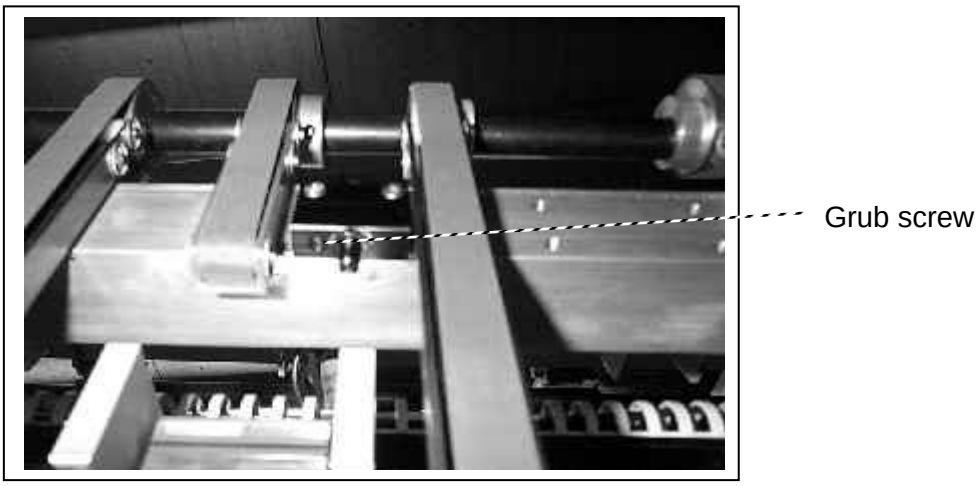


B4

Sensor	Position/Name	Adjustment
B4	Speed counter flat belts	The slot disc must rotate centrally in the sensor's slot. **N.B.** Bearing damage to the slot disc shaft will result in destruction of the sensor.

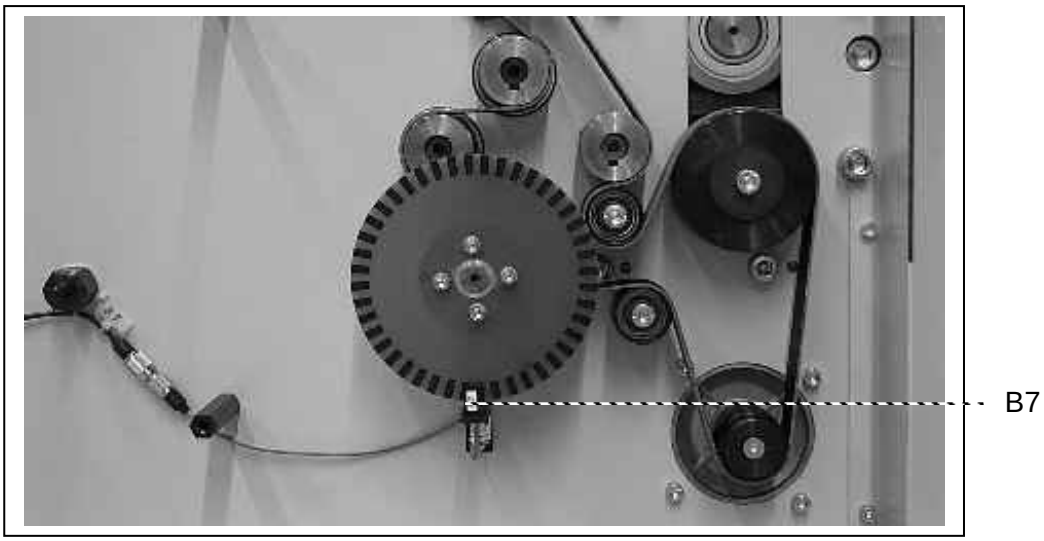
4.4 Sensor B 5





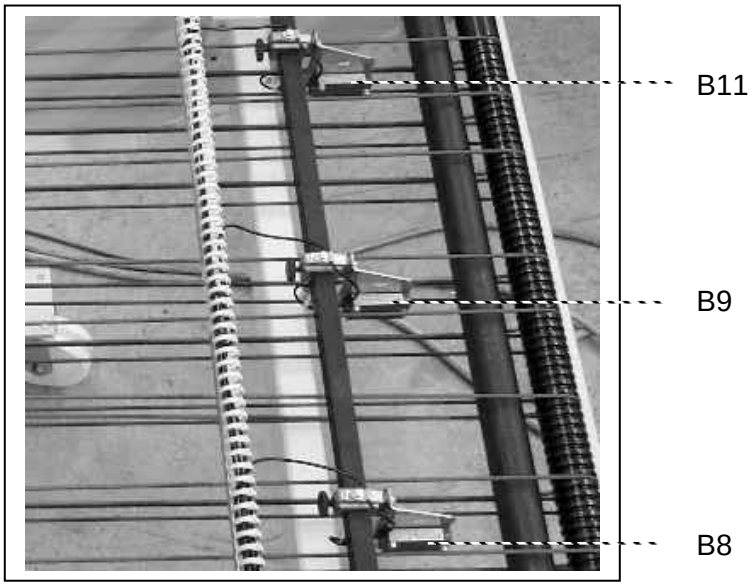
Sensor	Position/Name	Adjustment
B5	Batch pressure	The plunger must be adjusted using the grub screw so that the distance **A** between the plunger and the pressing bar is **1-2mm**. **N.B.** Set the adjusting frame to its largest format and check if measurement **A** is correct with pressing bar both retracted and extended. Start the packaging process with one bundle in the middle shaft and stop it using the stop button as the bundle is being pressed. Call up sensor B5 via code 203. Keep turning adjusting screw (cylinder head cap screw) clockwise until the display shows 0. Unscrew the cylinder head cap screw anti-clockwise until 1 appears on the display. Now unscrew the cylinder head cap screw a further full turn anti-clockwise.

4.5 Sensor B 7



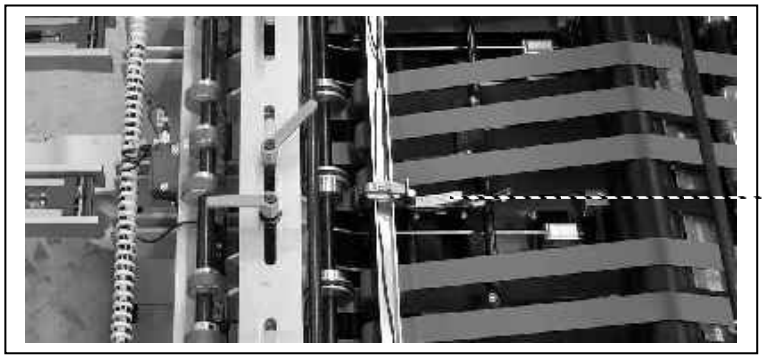
Sensor	Position/Name	Adjustment
B7	Speed counter infeed belts	The slot disc must rotate centrally in the sensor's slot. **N.B.** Bearing damage to the slot disc shaft will result in destruction of the sensor

4.6 Sensor B 8 B 9 and B 11



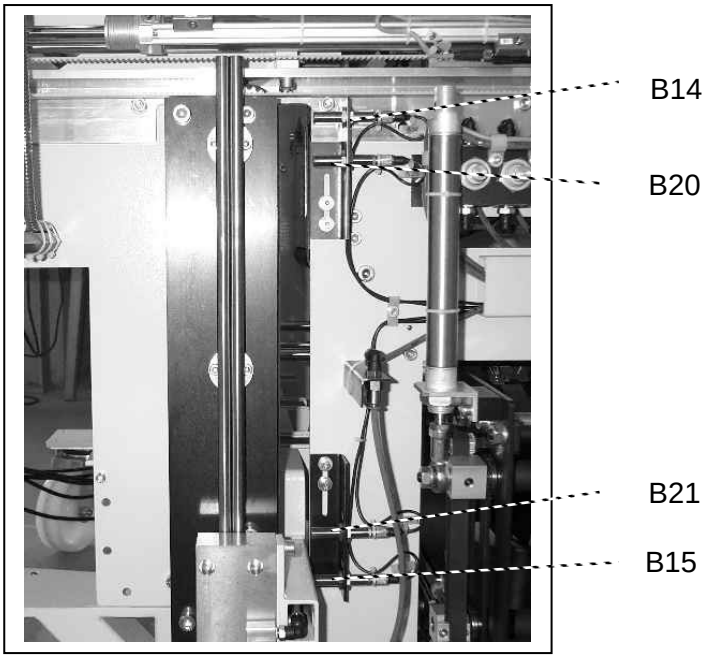
Sensor	Position/Name	Adjustment
B8 B9 B11	Counter lane 1 Counter lane 3 Counter lane 2	The distance to the paper must be approx. 20-30mm

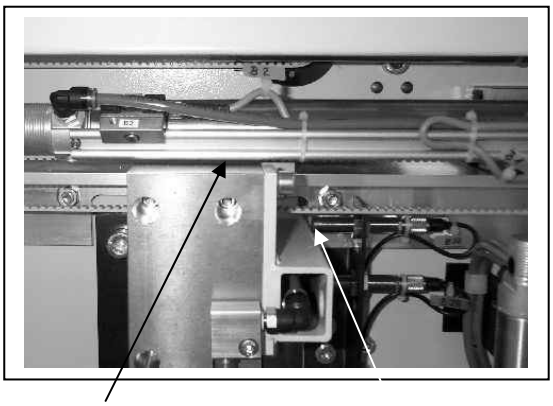
4.7 Sensor B 12



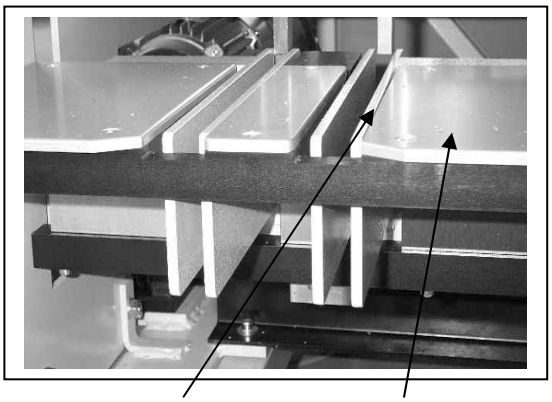
Sensor	Position/Name	Adjustment
B12	Single sheet counter Release, stream counter	The distance to the paper must be approx. 20-30mm

4.8 Sensor B 14, B 15, B 20 and B 21





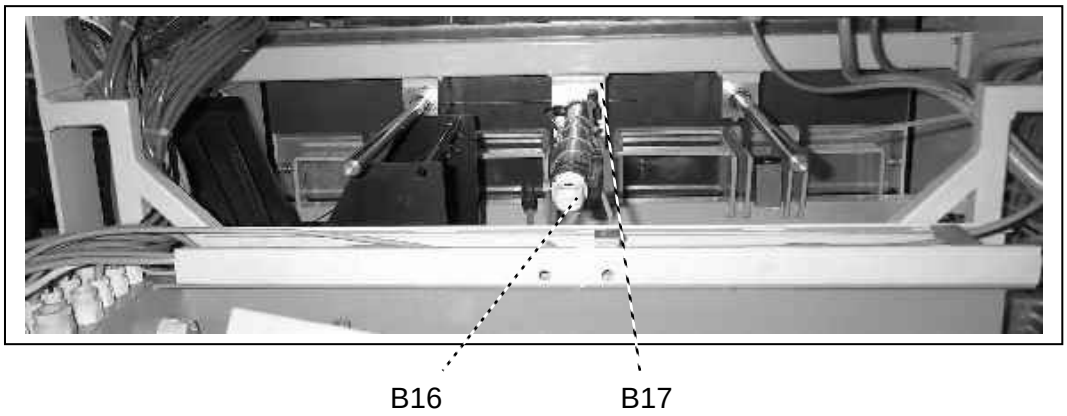
Distance A Distance C



Distance B Base plate

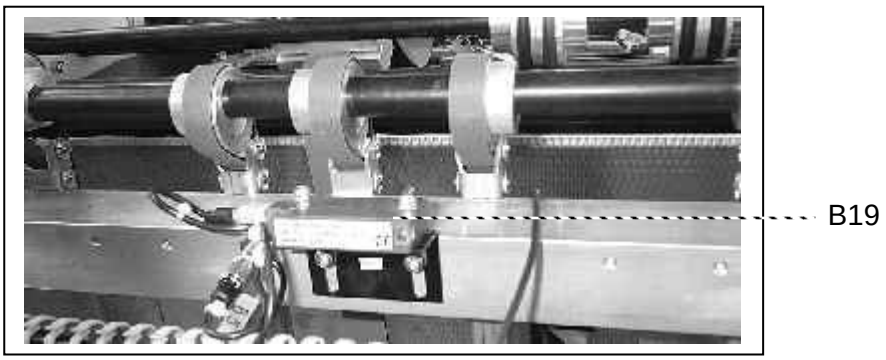
Sensor	Position/Name	Adjustment
B14	Elevation table upper final position	As it moves upwards, the elevation table must stop in good time so that **distance A is a minimum of 2 mm and a maximum of 4mm.** Distance **C** between sensor B14 and the elevation table should be **0,5mm**.
B20	Change-over to slow speed when travelling to the upper final position	The height of sensor B20 is adjusted together with sensor B14. Distance **C** between Sensor B20 and the elevation table should be **0,5mm.**
B15	Elevation table lower final position	As it moves downwards, the elevation table must stop in good time so that distance **B** (upper edge of elevation table to upper edge of base plate) is **+/- 1mm**
B21	Change-over to slow speed when travelling to the lower final position	The height of sensor B21 is adjusted together with sensor B15. Distance **C** between sensor B21 and elevation table should be **0,5mm.**

4.9 Sensor B 16 and B 17



Sensor	Position/Name	Adjustment
B16	Pusher Ground position	When the pusher is moved manually, the pusher must still have 2mm of movement left after the yellow LED on Sensor B16 has lit up
B17	Pusher final working position	When the pusher is moved manually, the pusher must still have 2mm of movement left after the yellow LED on Sensor B17 has lit up

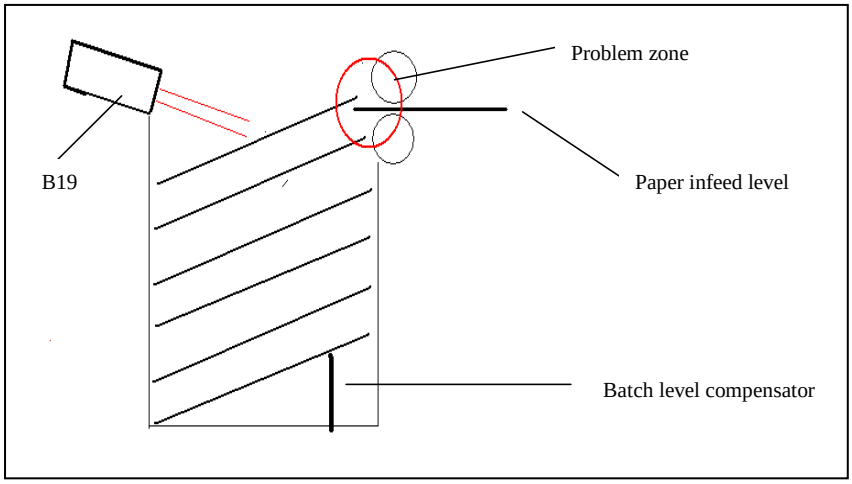
4.10 Sensor B 19



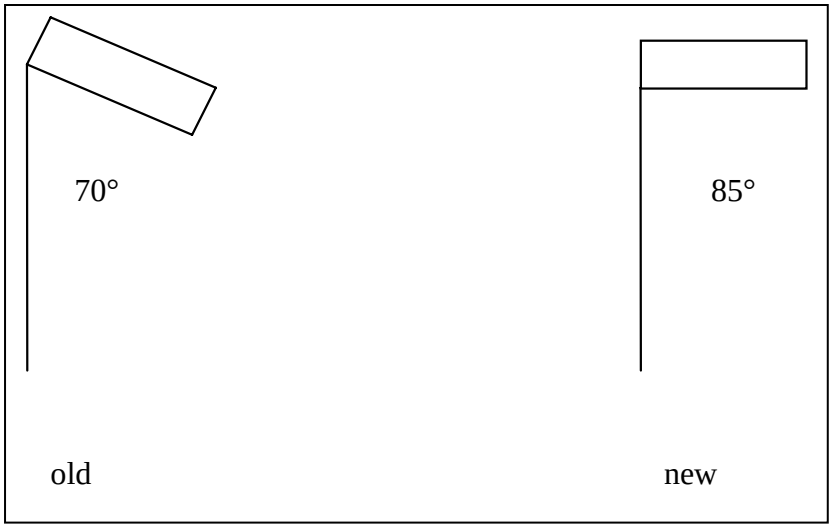
Sensor	Position/Name	Adjustment
B19	Destacking level	Depends on the product. Height adjustable through long wholes.

How it works: When collecting products in the pile container the pile height grows. As soon as the Sensor B19 is covered longer than the value of Code 115 by the upper edge of the pile, the table lift will destack slowly until Sensor B19 is free.

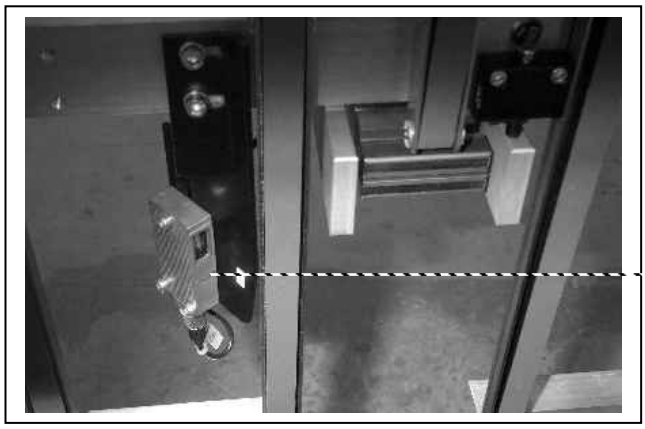
Attention: When the pile is very high the batch level compensator can cause problems. It is possible, that the side of the product which is at the entrance of the pile container will be lifted by the batch level compensator so high, that the following products bang into the pile. This happens mainly in single stream mode.



Note: Since August 1999, sensor B19 has been delivered with a different angled piece. The advantage of this is that the de-stacking steps are much more accurate and the stack level is easier to adjust.



4.11 Sensor B 18

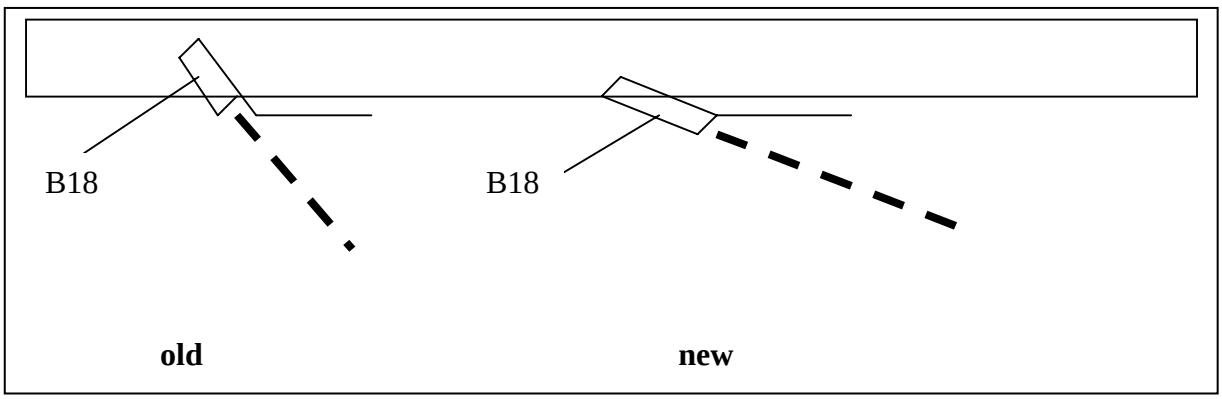


Sensor	Position/Name	Adjustment
B18	Intermediate position	This depends on the product – the height can be adjusted via the slots

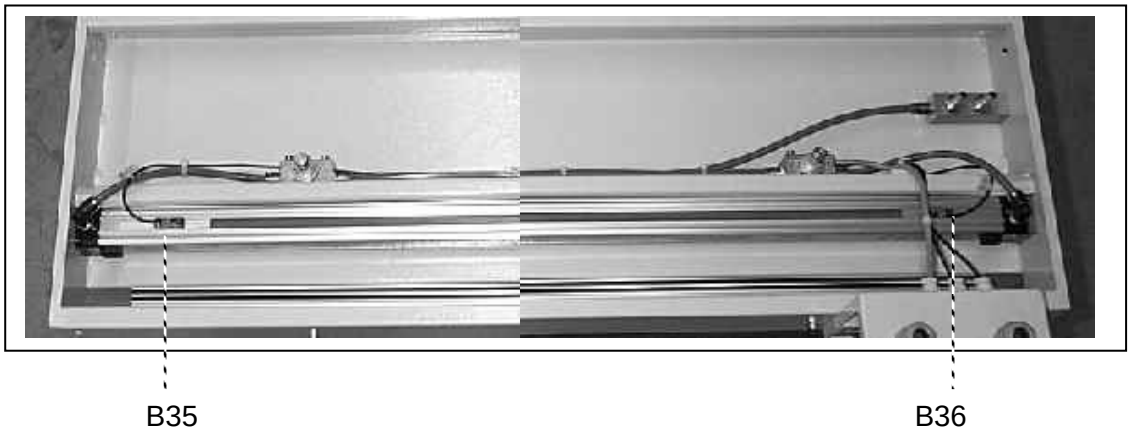
How it works: After reaching the pre-set number of pieces in the batch, the elevation table moves downwards with the stack on top of it until sensor B18 is free again. It then stops and moves upwards to press the stack. Sensor B18 must be positioned so that it recognises the rear side of the stack. The elevation table may be switched off not only by using the possibility for adjustment provided by the slots but also by using code 122.

N.B.: The rear wall of the shaft or the pressing bars should not cover sensor B18 when the elevation table is in the lower final position.

Note: Since August 1999, sensor B18 has been delivered with a different angled piece. Up until that time it is possible that, with smaller formats together with an activated batch level compensator, sensor B18 has sensed into the hollow space under the batch, which was created by the batch level compensator and, therefor, the elevation table has switched off far too early.

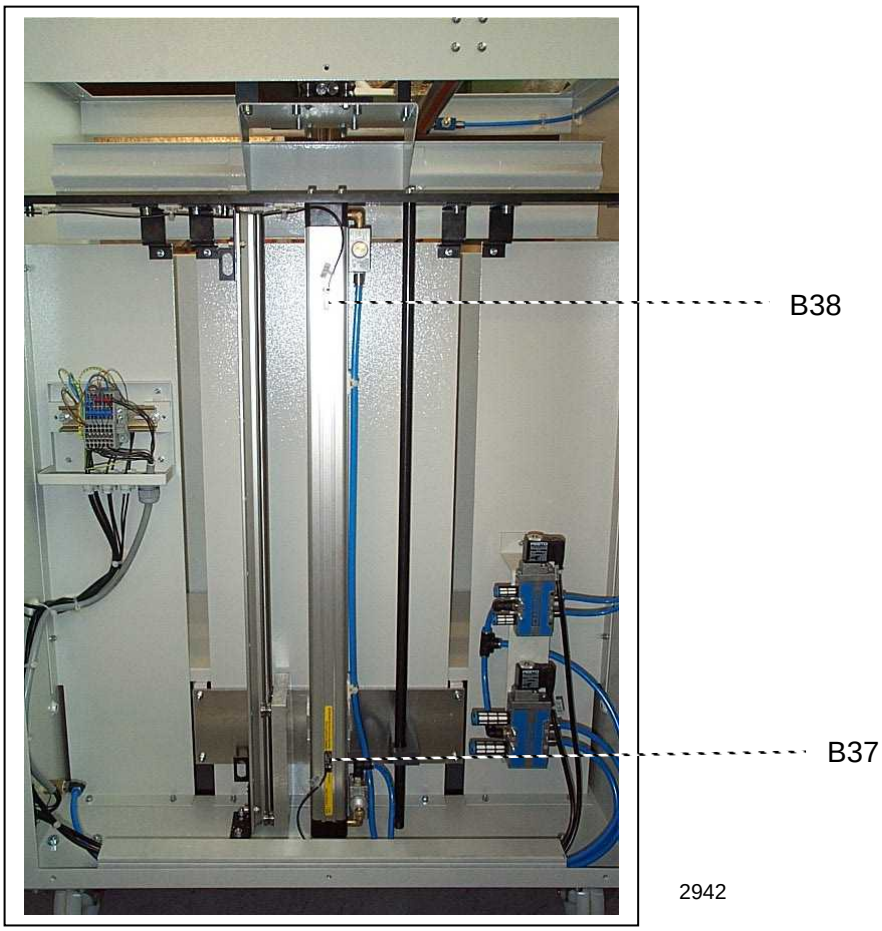


4.12 Sensor B 35 and B 36



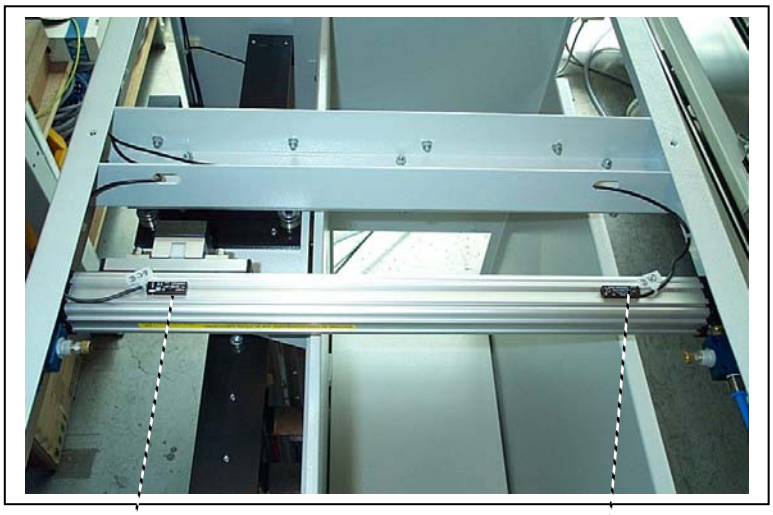
Sensor	Position/Name	Adjustment
B35	Side loader, left, final position (control panel side)	When the side loader is moved manually, the side loader must still have 2mm of movement left after the yellow LED on Sensor B35 has lit up
B36	Side loader, right, final position (operators side)	When the side loader is moved manually, the side loader must still have 2mm of movement left after the yellow LED on Sensor B36 has lit up

4.13 Sensor B 37 and B 38



Sensor	Position/Name	Adjustment
B37	Package lift table, lower final position	When package lift table is moved manually, the package lift table must still have 2 mm of movement left after the yellow LED on Sensor B37 has lit up.
B38	Package lift table, upper final position	When package lift table is moved manually, the package lift table must still have 2 mm of movement left after the yellow LED on Sensor B37 has lit up.

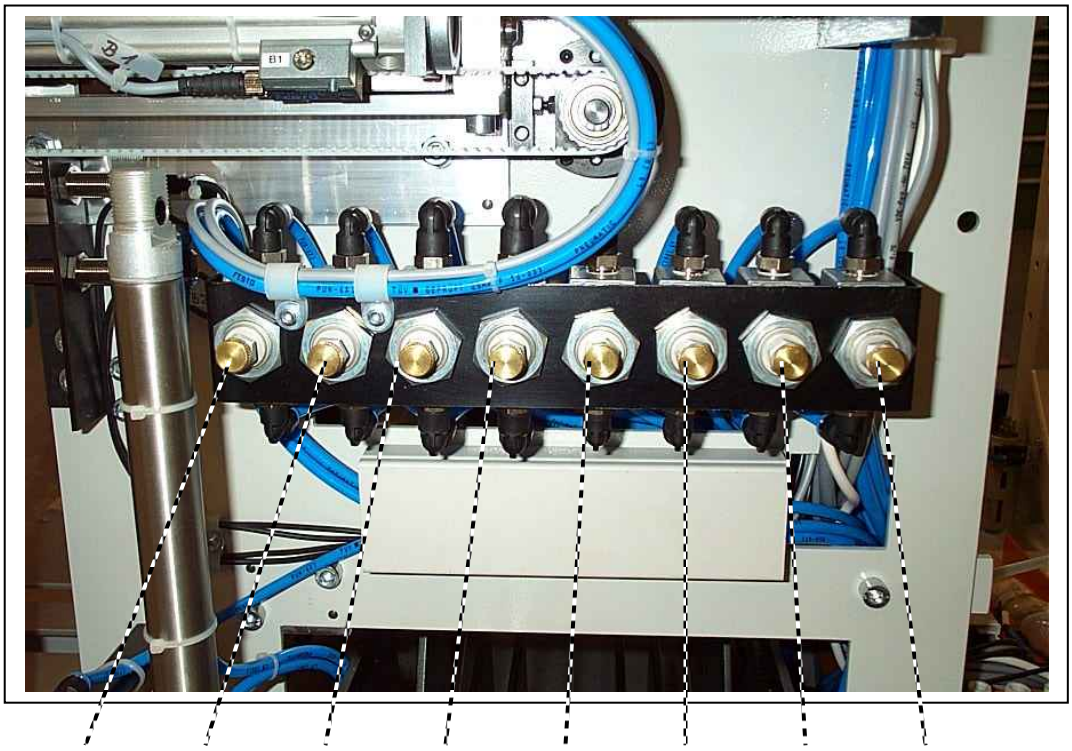
4.14 Sensor B 39 and B 40



Sensor	Position/Name	Adjustment
B39	Pusher ground position	When the package lift ejector is moved manually, at least 75% of Sensor B39 must be covered by the actuator. The distance between sensor and actuator 0,5 – 1 mm
B40	Pusher working position	When the package lift ejector is moved manually, at least 75% of Sensor B40 must be covered by the actuator. The distance between sensor and actuator 0,5 – 1 mm

5 Pneumatics

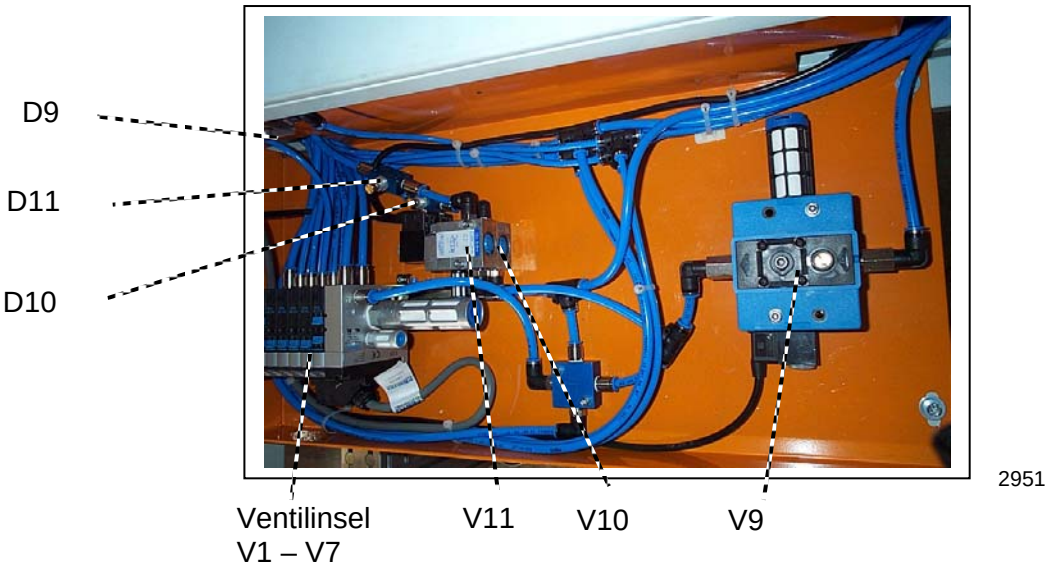
5.1 Throttle rail BA



Because of the arrangement of the throttles, the operating speed of each pneumatic valve can be adjusted centrally.

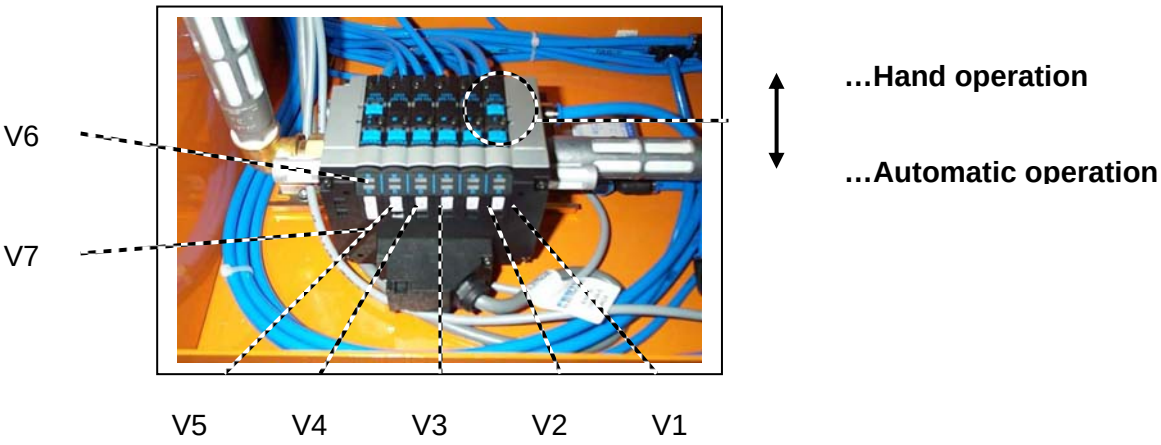
Throttle description	Valve descr.	Function	Time	Output
D 1	V 5	Ejector moves to working position	800 msec	Y 4
D 2	V 5	Ejector moves to starting position	400-600 msec	Y 4
D 3	V 3	Lower band tensioned		Y 5
D 4	V 3	Upper band tensioned		Y 5
D 5	V 1	Pressing bar moves to working position	400 – 450 msec	Y 7
D 6	V 1	Pressing bar moves to starting position	(800 msec)	Y 13 not to measure
D 8	V 2	Welding head moves to working position	1200 msec	Y 6
D 7	V 2	Welding head moves to starting position	1200 msec	Y 6
D 13	V 13	Side loader moves to the left side	2,5 - 3 sec	Y 25
D 14	V 13	Side loader moves to the right side	2,5 – 3 sec	Y 25
D 15	V 14	Package lift moves to working position	3,0 sec	Y 28
D 16	V 14	Package lift moves to starting position	2,0 sec	Y 28

5.2 Ventilschrank BA



Throttle description	Valve descr.	Function
	V1	Pressing bars
	V2	Welding heads
	V3	Band tension
	V4	Stopper device for stream feed
	V6	Knife
	V7	Cooling
	V8	Deflector
	V9	Main valve Rise-delay time after starting machine approx. 1 second
D10	V10	Batch level compensator (optional)
D9		Tape tensioner movement into starting position
D11	V11	Air blow

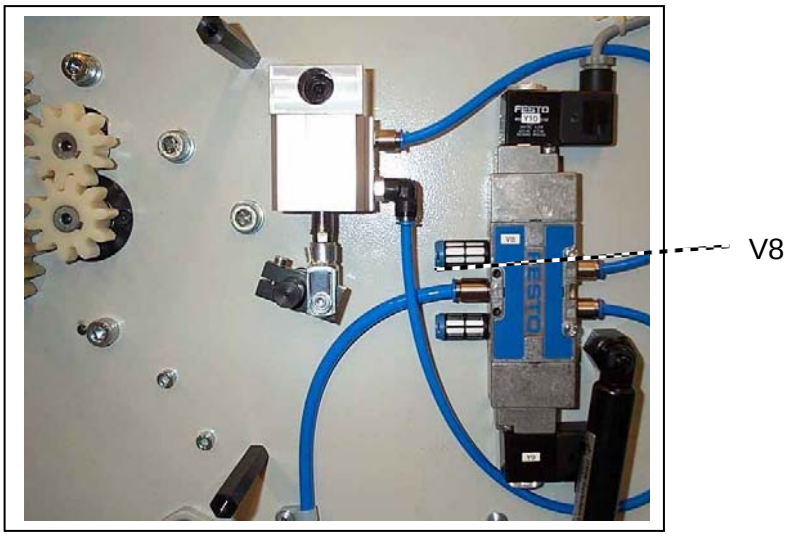
5.3 Valve manifold



Manual operation:

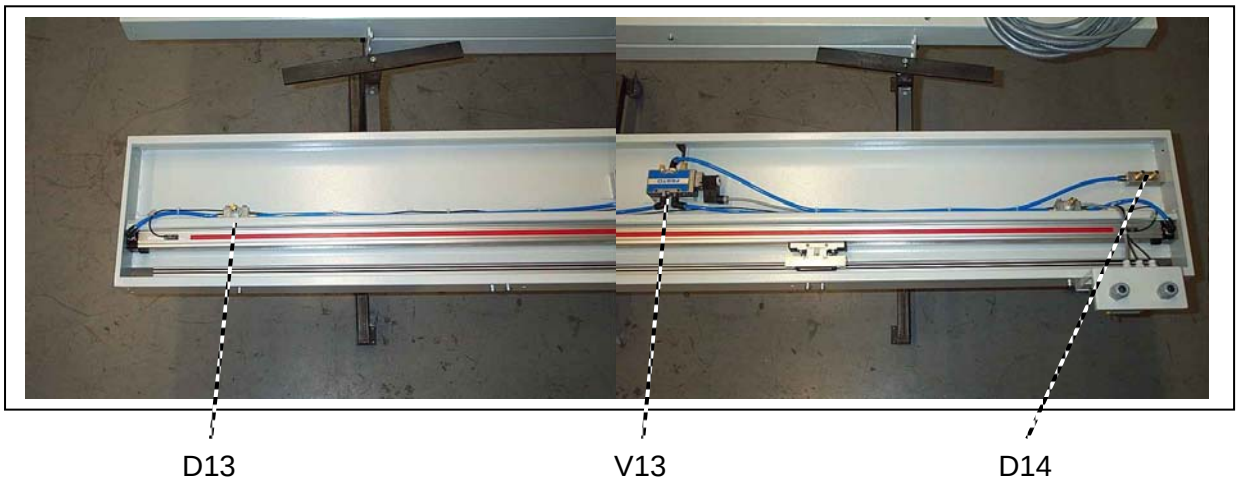
The valves in the valve manifold (V 1 – V 7) can be switched over to manual operation with a snap-in switch, which means that every cylinder can be operated manually.
NB: When starting the machine all switches must be **engaged** in automatic mode.
The main valve (V 9) can be operated by a black button situated on the top.

5.4 Deflector



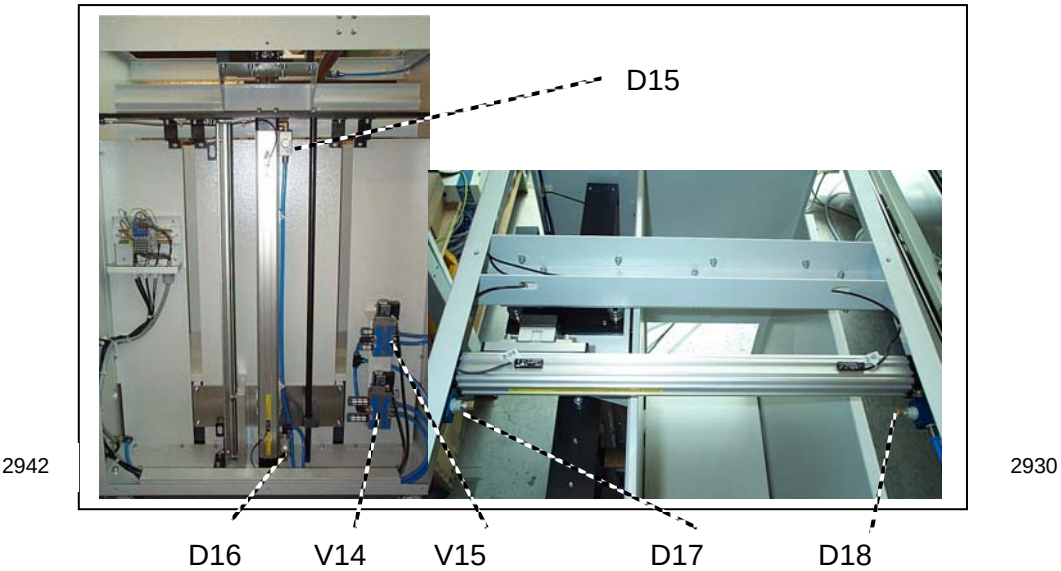
Throttle description	Valve descr.	Function
	V 8	Deflector

5.5 summary side loader



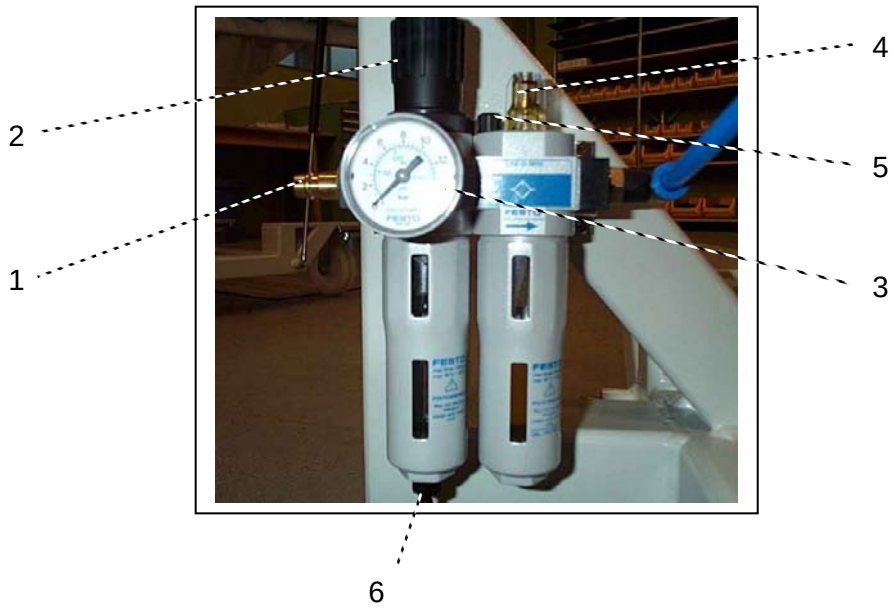
Throttle description	Valve descr.	Function
D13	V13	Side loader moves to the left
D14	V13	Side loader moves to the right

5.6 summary package lift



Throttle description	Valve descr.	Function
D15	V14	Lifting table moves to working position
D16	V14	Lifting table moves to starting position
D17	V15	Ejector package lift moves to starting position
D18	V15	Ejector package lift moves to working position

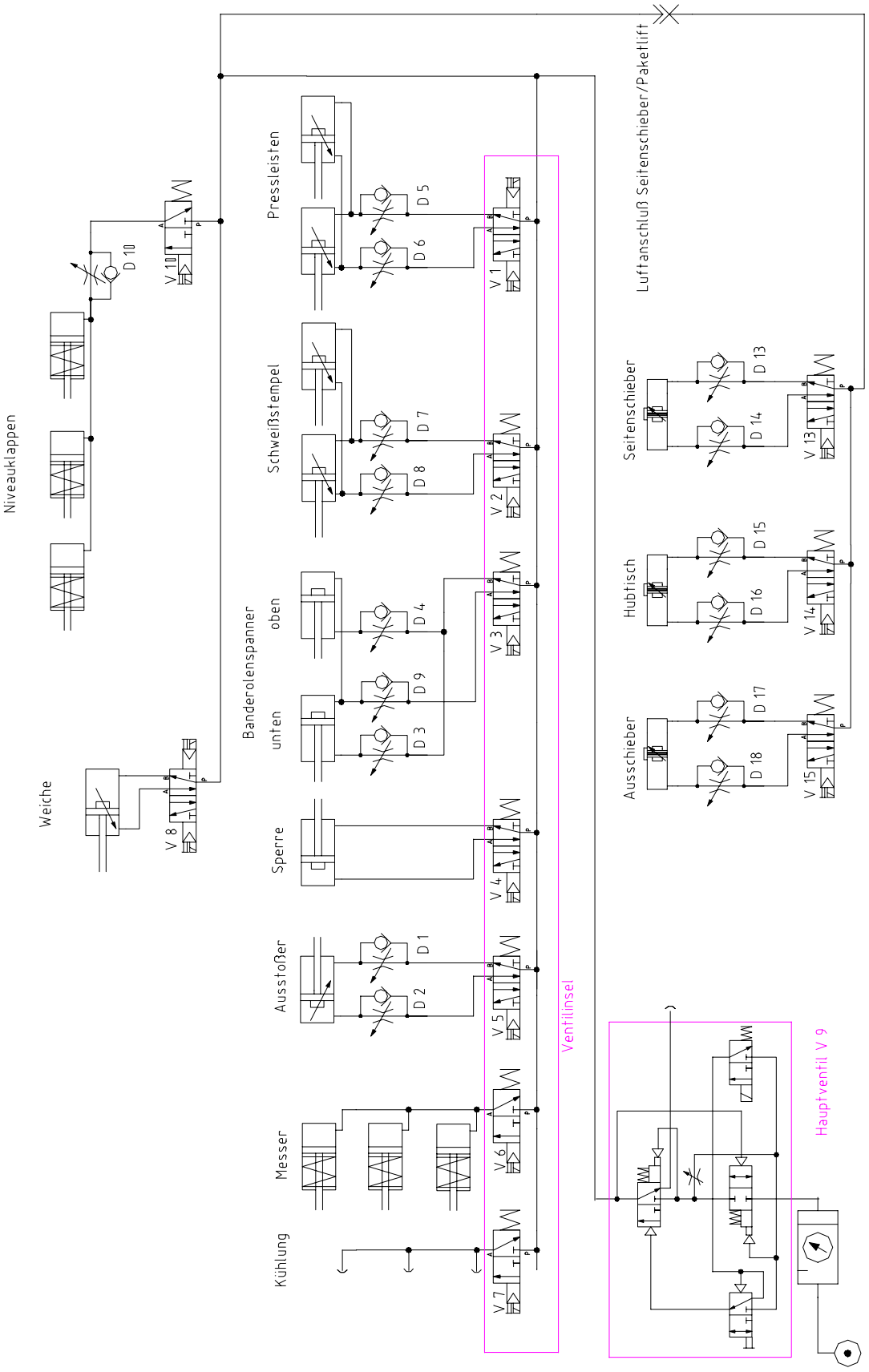
5.7 Service unit



1. Compressed air supply.
2. Control knob for adjusting the working pressure. For trouble-free operation of the BA the standard value must be set at 6 bar.
3. Pressure gauge, shows the set working pressure.
4. Oil nebulizer.
5. Opening for refilling pneumatic oil.
   NB: To be filled only in an unpressurized condition. This means that there may be no pressure at compressed air supply 1. The pneumatic oil can be filled up after removing the screw.
   Only use oil according to ISO 3448 with viscosity class VG32.
   for example: BP Energol HLP 32
   BP Visco 2000(SAE 15W-SC)
   Castrol Hyspin AWS22
   ESSO Arox EP46
   Mobil Rarus 427
   Shell Tellus Oil S32
6. Condensate outlet

Serviceintervalle:

daily: Drain condensate out of the water separator.
weekly: Check level of oil nebulizer.


Niveauklappen
Weiche
Banderolenspanner
oben
unten
Sperre
Ausstoßer
Messer
Kühlung
Schweißstempel
Pressleisten
Luftanschluß Seitenschieber/Paketlift
Seitenschieber
Hubtisch
Ausschieber
Ventilinsel
Hauptventil V 9

6 Electrical control panel BA700

2933

2934

7 Setting the exits manually

Setting the exits manually enables testing and adjusting of the BA700‘s components.

The exits can be called up in normal operation using code 204. However, if the password has already been entered, the exits can be set or deleted manually using the "E" or "C" buttons..

Instruction:

Enter password in code 100 and confirm with "E".
Go to the exit level with code 204 and using the arrow up/down button, press until the required exit appears (see exit list).
Now the exit can be switched on or off by pressing the "E" or "C" buttons.

For moving the elevation table manually

ATTENTION!

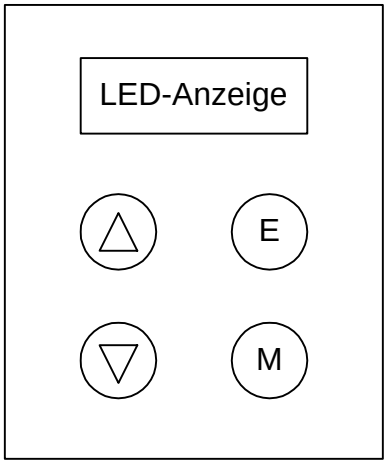
Moving the elevation table up manually is intended for faults under the table. Ensure that nothing is lying on the table when it is moved upwards manually..

Instruction:

Enter password in code 100 and confirm with "E".
Go to the exit level with code 204 and using the arrow up/down button, press until Y18 appears.
Now the table can be moved up or down by pressing the "E" or "C" buttons.

8 Programming of frequency converter

From the fabrication ordernumber 102-8 onwards are the frequency converters password protected.



Keyboard M (Menu)
Downwards move in menu, from STATUS-LEVEL to P-LEVEL to VALUE-LEVEL. Drive stops in operating mode LOCAL.

Keyboard E (Enter)
Upwards move in menu from VALUE-LEVEL to P-LEVEL to STATUS-LEVEL. Please note that the parameter values will be stored during this process. Drive starts in operating mode LOCAL.

Keyboard UP
Scroll through P-LEVEL, increase parameter values. Increases set value in operating mode LOCAL.

Keyboard DOWN
Scroll through P-LEVEL, decreases parameter values. Decreases set value in operating mode LOCAL.

Following parameter values must be entered:

BA700 102-13 - 102-14

Parameter	Frequency converter A13 Press drive	Frequency converter A14 Belt drive	Frequency converter A15 Lifting table drive
		1,5KW	
P1	5,2	3,6	35
P2	54,4	88	65
P3	0,3	0,3	0,3
P4	1	0,3	0,1
P5	150	75	125
P6	10	10	13
P7	50	50	40
P8	2,5	2,5	9
P9	25	25	25
P10	102	102	102
P11		0	0
P12		0	0
P13		0	0
P14		0	0
P15		0	0

9 Programming of frequency converter 1

BA700 102-13B – BA700RS-02B

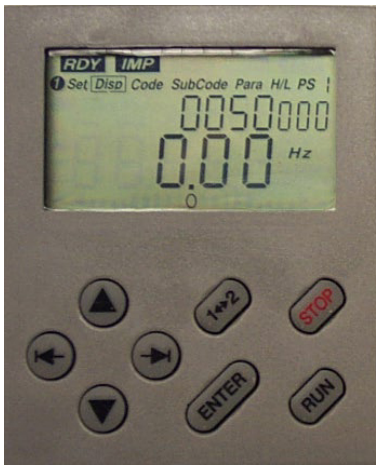
From the BA700 102-13B and BA700RS-02B model ranges onwards, the frequency converters are equipped with a control element (2). Details of loading and reading the data using the operating panel are shown below. Only for the 0.75 KW frequency converter.

Frequency converter / control element

BA700

9743

1. Pull control plug (1).
2. Load data

Basic state	*Button*		
	→	Choose parameter “code“ menu	
	▲	Set parameter to 0002	
	→	Confirm skips “para“	
	▲	Set to 10	
	enter	Load data “load“	

3. To readout data, proceed as described in steps 1-4.:
   Now enter the value 20 and confirm. The display shows save instead of load.

10 Belts

10.1 BA700

BA700 102-07 – 102-14

Belt	Size	Tension	Length	Article-number
Lower roundbelts			1.580 x 4 mm	22.00017
Upper roundbelts			1.610 x 4 mm	22.00052
drivebelt press Unit			1.073 x 27 mm	22.00021
drivebelt stream infeed			1.625 x 27 mm	22.00019
Lower belt stream infeed			1.650 x 30 mm	22.00038 meter ware
Upper belt stream infeed			1.200 x 30 mm	22.00037
joggingbelt			700 x 15 mm	22.00008
joggingbelt small sheet			280 x 15 mm	22.00049
lower belt Small sheet			1.260 x 30 mm	22.00010 meter ware

11 Inputs

BA700 102-12 – 102-14

Nr.	description		
IN01.1	Counter Lane 1	B8	white-red
IN01.2	Counter Lane 2	B11	brown-red
IN01.3	Counter Lane 3	B9	white-black
IN01.4	Table lower position, pre switch off	B21	yellow pink
IN01.6	Table upper final position	B14	brown-black
IN01.7	Table lower final position	B15	grey-green
IN01.8	Speed counter infeed belts	B7	white-pink
IN01.9	Speed counter flat belts	B4	yellow-brown
IN01.10	Pressing bars working position	B3	white-yellow
IN01.11	Batch pressure	B5	white-grey
IN01.12	Table middle position	B18	white-blue
IN01.13	Pusher working position	B17	pink-green
IN01.14	Table upper position, pre switch off	B20	grey-brown
IN01.15	Counters free	B12	pink-brown
IN02.1	Emergency Stop S1	B26	
IN02.2	Emergency Stop Q1		
IN02.3	Emergency Stop K6 Error		
IN02.4	Emergency Stop external (MBO)	B28	
IN02.5	Hood	B30	
IN02.6	Hood external (MBO)		
IN02.7	Head-Save	B25	
IN02.8	Emergency Stop driver press		
IN02.9	Emergency Stop driver band		
IN02.10	Emergency Stop driver table		
IN02.11	temperature		
IN02.12	K33 function		
IN02.13	Error message external (MBO)		
IN02.14	START signal	B27	
IN02.15	STOP - signal	B29	
IN02.16	Pusher ground position	B16	yellow-grey
IN03.1	Heat-sealers ground position	B1	white-green
IN03.2	Heat-sealers working position	B2	brown-green
IN03.4	Tape END	B13	green-blue
IN03.5	Table level while sheet feeding	B19	brown-blue
IN03.6	shaft save		yellow-blue
IN03.8	S-Pusher position end right	B36	
IN03.9	Batch table upper position	B38	
IN03.10	Batch table lower position	B37	
IN03.11	Pusher ground position	B39	
IN03.12	Pusher working position	B40	
IN03.13	S-Pusher position end left	B35	

12 Outputs

BA700 102-12 – 102-14

Nr.	description		
OUT01.1	Main valve	Y2	white
OUT01.2	Knife	Y3	grey-pink
OUT01.3	Pusher	Y4	violet
OUT01.4	Tape tension	Y5	red
OUT01.5	Heat Sealers	Y6	blue
OUT01.6	Pressing bars working position	Y7	grey
OUT01.7	Stopper	Y8	black
OUT01.8	Deflector reject	Y9	brown
OUT01.9	Deflector pass through	Y10	green
OUT01.10	Batch Clap	Y11	yellow
OUT01.11	Cooler	Y12	red-blue
OUT01.12	Pressing bars ground position	Y14	pink
OUT01.13	S-Pusher left	Y25	
OUT01.14	Batch table up	Y28	
OUT01.15	Pusher out	Y29	
OUT01.16			
OUT02.1	Heat-sealing	Y17	
OUT02.2	Table Start	Y23	
OUT02.3	Table down	Y18	
OUT02.4	Table slow speed	Y20	
OUT02.5	Table high speed	Y21	
OUT02.6	Error-message	Y22	
OUT02.7	Flat - belt Start	Y24	
OUT02.8	Signal Lamp	Y34	
OUT02.9	Brake K34	Y33	
OUT02.10	contactor K8	Y35	
OUT02.11	clearing K36	Y36	
OUT02.12	stop MBO while installing	Y37	
OUT02.13	Tape Drive Start	Y38	
OUT02.14	Tape Drive rewards	Y39	
OUT02.15			
OUT02.16			

13 Code list TC166 BA700 BA900

Code nr.	Password protected	Set value	Unit	Title	Description
100	no			Password	1021
102				Program version	
103	no	45	1/100 sec	Heating time paper	Heating time for paper banding
104	no	150	1/100 sec	Cooling time paper	Cooling time for paper banding
105				Cycle counter	
106	yes	40	1/100 sec	Heating delay	Delay in heating (Y17) depends on B2
108	yes	0	1/100 sec	Delay 1	Delay in moving elevation table up (Y18) after reaching intermediate position (B18)
109	yes	0	1/100 sec	Delay 2	Delay in moving elevation table up (Y18) after ejecting the banded parcels depends on B16
110	yes	100	1/100 sec	Delay 3	After completing a package cycle, the machine only goes to destacking mode after this length of time
111	no	4	2,35mm	Tolerance	Tolerance depends on calibrated value
112	no	250	1,00mm	Direction counter 1	In stream feeding mode, the stream is gathered together for this length after reaching the pre-selected batch piece value
113	no	130	1,00mm	Direction counter 2	After reaching the pre-selected batch piece value the elevation table, in stream delivery mode, only moves to the intermediate position after this value has elapsed
114	no	80	1,00mm	Direction counter 3	After reaching the pre-selected batch piece value the elevation table, in single sheet mode, only moves to the intermediate position after this value has elapsed
115	yes	100	1/100 sec	Delay 4	Photocell B19 must be continuously covered for this length of time so that the elevation table is destacking.
116	yes	50	in % of the sheet length	Direction counter 5	In stream delivery mode, this is the maximum the belts move the sheet forward as it arrives. The distance is calculated from the calibrated value. Standard value is 50% of the calibrated sheet length.
117	yes	100	1/100 sec	Delay5	Compensation for t he reaction of the deflector
118	yes	115	1,00mm	Direction counter 6	In stream delivery mode, the start is triggered by photocells B8/B9/B11. The transport belts start after this value has elapsed

Code nr.	Password protected	Set value	Unit	Title	Description
119	no	0 1 2 3		Language 1 Language 2 Language 3 Language 4	German German English Dutch
120	no	0			Photocell counter lane (B8, B9, B11), 0 = all, 1, 2 or 3
121	yes	2000	1/1000 sec	Delay 16	Welding protection
122	no	2	1/100 sec	Delay 6	After reaching the pre-selected batch piece value, the elevation table moves into the intermediate position and stops after photocell B18 is released. Photocell B18 must remain free for at least this period of time before the elevation table stops.
123	no	50	1/100 sec	Delay 7	After reaching the intermediate position, the elevation table moves upwards until press sensor B5 responds. This is the maximum value during which it moves up. After this value, the elevation table is stopped and the welding process is triggered independently from B5.
124	no	0	1/100 sec	Delay 8	Only in connection with the option "Batch level compensator". Usually, the batch level gates are set so that they retract when they reach the intermediate position. This retraction can be delayed by increasing this value.
125	yes	100	1/100 sec	Delay 9	After activation, the pressing guides must be extended at the latest after this length of time (B3). If not, the machine will stop with Error 16.
126	no	1			Running out of banding, the machine stops with Error 42 (see also code 127).
127	no	200	cycles		Cycle selection after display of end of banding until machine stops with Error 42
128	no	0	each	Counter	Only in connection with the option "Batch level compensator". After reaching this value, the batch level gates are set by the batch counter.
129	no	min 1			Flashing rate of signal indicator
130	no	0 1	not active active		Operation of the banding delivery without package lift Operation of the banding delivery with package lift.
131	no	1 0	left right		Operation of the package lift on the operator side Operation of the package lift on the control box side
132	no	1,2,3,4,5 o. 6		Packing cycle	The package lift will start after thiese cycles have elapsed
133	yes	50	1/100 sec	Delay 10	After ejecting the banded stacks, the side loader will start after this amount of time has elapsed.
134	yes	50	1/100 sec	Delay 11	After conveying the banded stacks to the package lift using the side loader, the lift table will start after this value has elapsed.

Code nr.	Password protected	Set value	Unit	Title	Description
135					
136	no				Set-up time
137	yes	0 1	not active active		Cycle time reduction - Welding heads starts as the same time as elevation table "up".
140					Display for actual sheet length
141					Display for the result of the measurement of the last bad sheets.
142			m/min		Display for the speed of the transport belts
143			date		Last software change
144	yes		1/1000 sec	Delay 12	Welding time monitoring - if the heating dies are heated for a long time, the machine is stopped with Error 18
145	no				Display for cycles until machine stops with Error 42 running out of banding.
150	yes	0 1	not active active		By activating Total Reset, all memory will be deleted. All variable values will be deleted. All code values will return to basic setup
170	no	0 1			Operating mode paper banding Operating mode plastic PE-banding
171	no	40	1/100 sec	Delay 13	Heating time for PE-banding
172	no	3	1/100 sec	Delay 14	Cutting time for PE-banding
173	no	100	1/100 sec	Delay 15	Cooling time for PE-banding
175	yes	1		Delay 17	Starting delay for small-package facility
176	yes	1		Delay 18	Switch-off delay for small-package facility
203	no				Input display - Inputs can be checked during operation using cursor up / cursor down keys
204	no				Output display - Outputs can be checked during operation using cursor up / cursor down keys

14 Code list TC161

BA700 102-13B
BA900 103- from 15

Software: BAx07-16 / TC161
Software: BAx07-17 / TC161

Check software version:
Code: 102

Code-Nr.	Password protected	Set value	Limit -	Limit +	Unit	Title	Description
100	no					Password	1021
102						Program version	
103	no	450	300	1000	ms	Heating time paper	Heating time for paper banding
104	no	1500	500	4000	ms	Cooling time paper	Cooling time for paper banding
105						Cycle counter	
106	yes	400	100	800	ms	Heating delay	Delay in heating (Y17) depends on B2
107	no	750	100	2000	ms	Timing pressing rails	In single sheet mode (in the operating position) the start of the pressing rails is delayed by the set time.
108	yes	0	0		ms	Delay 1	Delay in moving elevation table up (Y18) after reaching intermediate position (B18)
109	yes	0	0		ms	Delay 2	Delay in moving elevation table up (Y18) after ejecting the banded parcels depends on B16
110	yes	1000	0		ms	Delay 3	After completing a package cycle, the machine only goes to destacking mode after this length of time
111	no	10	0		mm	Tolerance	Tolerance depends on calibrated value
112	no	200	0		mm	Direction counter 1	In stream feeding mode, the stream is gathered together for this length after reaching the pre-selected batch piece value
113	no	130	0		mm	Direction counter 2	After reaching the pre-selected batch piece value the elevation table, in stream delivery mode, only moves to the intermediate position after this value has elapsed
114	no	80	0		ms	Direction counter 3	After reaching the pre-selected batch piece value the elevation table, in single sheet mode, only moves to the intermediate position after this time has elapsed
115	yes	1000	0		ms	Delay 4	Photocell B19 must be continuously covered for this length of time so that the elevation table goes down

Code-Nr.	Password protected	Set value	Limit -	Limit +	Unit	Title	Description
116	yes	50	0			Direction counter 5	In stream delivery mode, this is the maximum the belts move the sheet forward as it arrives. The distance is calculated from the calibrated value. Standard value is 50% of the calibrated sheet length.
117	yes	50	0	200	in % of the sheet length	Max. distance	Maximum distance of the deflector before a reaction has to occur.
118	yes	259	0		mm	Direction counter 6	In stream delivery mode, the start is triggered by photocells B8/B9/B11. The transport belts start after this value has elapsed
119	no	0 1 2 3	0	3		Language 1 Language 2 Language 3 Language 4	German English Dutch
120	no	0					Photocell on the sheet run 0=all, 1=B8, 2=B11, 3=B9
121	yes	2000	1000	5000	ms	Delay 16	Welding time monitoring. If the heating dies are heated for a long time, the machine stops with error 18.
122	no	20	20	5000	ms	Delay 6	After reaching the pre-selected batch piece value, the elevation table moves into the intermediate position and stops after photocell B18 is released. Photocell B18 must remain free for at least this period of time before the elevation table stops.
123	no	300	0	10000	ms	Delay 7	After reaching the intermediate position, the elevation table moves upwards until press sensor B5 responds. This is the maximum value during which it moves up. After this value, the elevation table is stopped and the welding process is triggered independently from B5.
124	no	1500			ms	Delay 8	Only in connection with the option "Batch level compensator". Usually, the batch level gates are set so that they retract when they reach the intermediate position. This retraction can be delayed by increasing this value.
125	yes	1500			ms	Delay 9	After activation, the pressing guides must be extended at the latest after this length of time (B3). If not, the machine will stop with Error 16.
126	no	1					Running out of banding, the machine stops with Error 42 (see also code 127).

Code-Nr.	Password protected	Set value	Limit -	Limit +	Unit	Title	Description
127	no	1			Zyklen		Cycle selection after display of end of banding until machine stops with Error 42
128	no	0			Stück	Counter	Only in connection with the option "Batch level compensator". After reaching this value, the batch level gates are set by the batch counter.
129	no	1000	10000	100	ms		Flashing rate of signal indicator
130	no	0 1			nicht aktiv aktiv		Operation of the banding delivery without package lift Operation of the banding delivery with package lift.
131	no	1 0			links rechts		Operation of the package lift on the operator side Operation of the package lift on the control box side
132	no	1,2,3,4,5 o. 6				Packing cycle	The package lift will start after these cycles have elapsed
133	yes	500	500		ms	Delay 10	After ejecting the banded stacks, the side loader will start after this amount of time has elapsed.
134	yes	500	500		ms	Delay 11	After conveying the banded stacks to the package lift using the side loader, the lift table will start after this value has elapsed.
136	yes	100					This time elapses after start is pressed. The machine starts.
138	yes	15			m/min	Monitoring of set-up speed	For press drive
139	yes	8			m/min	Monitoring of set-up speed	For band drive
140							Display for actual sheet length
141					mm		Display for the result of the measurement of the last bad sheets.
142					m/min		Display for the speed of the transport belts
143					date		Last software change
145					cycle		Display for cycles until machine stops with Error 42 running out of banding.
150	yes	0 1			not active active		By activating Total Reset, all memory will be deleted. All variable values will be deleted. All code values will return to basic setup
151	yes PW2	0					Erase RAM
152	yes PW2	0					Erase RAM and switch over to programming mode.

Code-Nr.	Password protected	Set value	Limit -	Limit +	Unit	Title	Description
170	yes	0 1					Operating mode paper banding Operating mode plastic PE-banding
171	no	400	300	800	ms.	Delay 13	Heating time for PE-banding
172	no	300	200	3000	ms	Delay 14	Cutting time for PE-banding
173	no	1000	300	10000	ms	Delay 15	Cooling time for PE-banding
175	yes	10	0	5000	ms	Delay 17	Starting delay for small-package facility
176	yes	10	0	5000	ms	Delay 18	Switch-off delay for small-package facility
177	yes	2500	0	5000	ms	Waiting time valve manually	left
178	yes	2500	0	5000	ms	Waiting time valve manually	right
181	yes	0	2000		ms	Delay external stop signal	
182	yes	2500	0	5000	ms	Waiting time valve	Side loader left
183	yes	2500	0	5000	ms	Waiting time valve	Side loader right
185	yes	50	0		ms	Delay19	Reaction time of the deflector valve
186	yes	50	0		ms	Duration	How long the deflector valve is activated.
196		BA700				Display BA type	BA700, BA900, BA700-A
197	yes					Automatic sheet counter	Simulates the sheet counter. The product infeed can be simulated.
203	no						Input display - Inputs can be checked during operation using cursor up / cursor down keys
204	no						Output display - Outputs can be checked during operation using cursor up / cursor down keys

15 Error list TC166

BA700 102-12 – 102-14
BA900 103-11 – 103-15

Software: 102F-103.h86
BA707-16a

Error nr.	Conditions	In- / Output	Description	Possible Causes
04	Machine Start	B8/B9/B11	Photocells covered for longer then 2 seconds whilst press drive is running **Infeed press**	1. Paper jam before pressing rollers 2. Photocell or cable defective
05	Machine Start	B7	There is no signal transmitted from the slotted disc initiator B7 to the control system **Drive slip press**	1. Drive belt defective 2. Motor/frequency converter M1 defective 3. Sensor B7 defective
06	Machine Start Single Sheet Operation	B12	The photocell B12 before the shaft, is covered for longer than 2 seconds whilst the belts are running	1. Paper jam before shaft 2. Single sheet mode selected during stream delivery operating mode 3. Input IN01.15 problem 4. Photocell wrongly adjusted and sensing continuously
07	Machine Start Belt Drive Start	B4/Y24	There is no signal transmitted from the slotted disc initiator B4 to the control system	1. V-belt defective 2. Motor/frequency converter M2 defective 3. Sensor B4 defective 4. Input IN01.9 problem
09	Machine Start Packing cycle	B18/B15	Photocell B18 is covered when the elevation table has moved completely down after bundling	1. Paper jam under pressing bars 2. Vertical belt has slipped off 3. Sensor B15 or sensor/cable B18 defective
10	Machine Start	B5/Y18	If elevation table should move upwards (Y18), pressing sensor B5 is operated.	1. Paper jam under pressing bars 2. Check pressing sensor's mechanical function
11	Machine Start Packing cycle	B16	After ejecting bundled parcels, the reverse movement of the ejector last longer than 2 seconds.	1. Paper jam in ejector area 2. Sensor B16 wrongly adjusted or defective 3. Input IN02.16 problem 4. Air pressure too low 5. Throttle D2 adjusted wrongly
12	Machine Start Packing cycle		Bundling cycle has not been completed before the next bundling cycle commences.	1. Number of pieces in batch too low 2. Bundling cycle interrupted by a fault 3. The machine's cycle time is exceeded

Error nr.	Conditions	In- / Output	Description	Possible Causes
13	Machine Start Packing cycle	B35 oder B36	Side loader is not in the normal position	1. Paper jam in the vicinity of the side loader 2. Side loader too slow 3. Sensor defective 4. Side loader is not connected 5. Air hose is not connected 6. Air pressure too low 7. Input IN03.8 / IN3.13 problem
14	Machine Start Packing cycle	B38	Lifting table is not in the normal position	1. Paper jam in the vicinity of the package lift 2. Sensor defective 3. Package lift too slow 4. Package lift plug loose or not connected 5. Air hose is not connected 6. Air pressure too low 7. Input IN03.9 problem
15	Machine Start Packing cycle	B39	Package lift ejector is not in the normal position	1. Paper jam in the vicinity of the package lift 2. Sensor defective
16	Machine Start Packing cycle	B3/Y7	The pressing bars need more than 2 seconds to move into the shaft	1. Paper jam in front of pressing bars 2. Air pressure too low 3. Sensor defective or wrongly adjusted 4. Support pressing bars moving against jogging plates
17	Machine Start Packing cycle		Elevation table moves right to the top during packing cycle; Protection of welding dies	1. No stack or too small a stack 2. Sensor B14 defective or malfunctioning
18	Machine Start Welding		Welding process takes too long	1. Relay K7 defective 2. Relay K5 defective or wrongly adjusted (1.0) 3. Code 121 wrongly adjusted (2000)
20	Machine Start Packing cycle	B18/B15	Elevation table does not stop at the intermediate position, but continues to move right down	1. Photocell B18 positioned in the wrong place 2. Paper jam in the vicinity of photocell B18 3. Photocell B18 or its cable defective 4. Sensor B15 covered or defective
21	Map Device		Shaft protection with map device	1. Paper jam in the shaft 2. Sensor B100/101/102 or its cable defective 3. Input IN03.6 problem

Error nr.	Conditions	In- / Output	Description	Possible Causes
22		B30	Guard open	1. BA guard open 2. Folding machine guard open 3. Lower banding door of the BA open 4. Cover under the press (BA900) open/released 5. Cover in front of the press (B900) open 6. Cover after the press (BA900) open 7. Input IN02.5 or input IN02.6 problem 8. Wrong adapter used to connect with MBO folding machine with 18-pin plug
23			Emergency-Off folding machine	1. Error message from the folding machine 2. Input IN02.13 problem
24			Emergency-Off button S1	1. Emergency-Off button on BA 700 pressed or defective 2. Input IN02.1 problem
25			Emergency-Off protective motor switch Q4	1. Protective motor switch on the jogging drive has switched off
26	Emergency-Off	K6	Emergency-Off contactor K6 malfunction	1. Emergency-Off contactor K6 does not fall away 2. Fuses F10 or F11 defective 3. Power unit defective 4. One of the sensor cables defective
27	Guard open	K33	Guard contactor K33 malfunction	1. Guard contactor K33 does not fall away
28		B45	Temperature switch-off of the motors	1. Temperature switch in the motors Press drive motor too hot Belt drive motor too hot Elevation table drive motor too hot 2. Output 02.10 defective 3. Input IN02.11 problem 4. Code 123>50 adjusted
29	Machine Start Packing cycle Elevation Table down	B15	Elevation table moves to delivery position and takes too long	1. There is material under the elevation table 2. Elevation table down does not function 3. Sensor B15 or B21 defective 4. Elevation table motor defective 5. Frequency converter 6. Input IN01.7 problem (B15)

Error nr.	Conditions	In- / Output	Description	Possible Causes
30	Machine Start Packing cycle	B14	Elevation table moves to starting position and takes too long	1. Elevation table system fault (Motor, FRQ, etc.) 2. Parcel between pressing bars & elevation table 3. Sensors B14 or B20 defective 4. Input IN01.6 problem (B14) 5. Elevation table knocks against the jogging plates (bent)
31	Machine Start Packing cycle	B2	Time for extending welding die exceeded welding die moves to working position	1. Paper between the welding dies 2. Air pressure 3. Sensor B2 defective or wrongly adjusted 4. Input IN03.2 problem
32	Machine Start Packing cycle	B1	Time for retacting welding die exceeded welding die moves to normal position	1. Defective cylinder 2. Air pressure 3. Obstacle 4. Sensor B1 defective or wrongly adjusted 5. Input IN03.1 problem 6. Linear bearing defective
34	Machine Start Open Guard		Drives turn at too high a speed during jogging operation	1. Frequency converter defective 2. Tacho defective 3. Frequency converter set to wrong parameters
35	Destacking without counter release	B12	Sensor B12 do not aware the product batch counter does not count, destacking sensor covered.	1. Sensor B12 wrongly adjusted or defective
37		B41	Frequency converter pressing drive has switched off	1. Fault with frequency converter A13 2. Protective motor switch Q3 has switched off
38		B42	Frequency converter belt drive has switched off	1. Fault with frequency converter A14 2. Protective motor switch Q3 has switched off
39		B43	Frequency converter elevator table drive has switched off	1. Fault with frequency converter A15 2. Protective motor switch Q3 has switched off

Error nr.	Conditions	In- / Output	Description	Possible Causes
40	Machine Start Packing cycle Stop-Reset-Start	B17	Time for moving out ejectors exceeded	1. Package jam in front of the ejector 2. Air pressure 3. Cylinder, cylinder switch 4. Sensor B17 defective 5. Input IN01.13 problem 6. Throttle D1 defective 7. Elevation table's lowest position set too low
41	Machine Start Normal position	B16 B1	Machine goes into normal position and table does not go up	1. Air pressure 2. Cylinder, cylinder switch ejector 3. Sensor B16 defective or wrongly adjusted 4. Sensor B1 defective 5. Input IN03.1 problem
42	Machine Start Band End	B13	After "band end" has been shown on the display, the machine switches off after the pre-programmed number of cycles has been reached	1. Change tapes 2. Change quantity of cycles with code 127 3. Cable defective 4. Input IN03.4 problem
48		B16	Elevation table moves down B16 is not covered	1. Package jam in front of the ejector 2. Air pressure 3. Cylinder, cylinder switch
49		B16 B1	Elevation table moves up B16 or B1 are not covered	1. Package jam in front of the ejector 2. Air pressure 3. Cylinder, cylinder switch

16 Error list TC161

BA700 102-13B
BA900 103-from15

Software: BAx07-16 / TC161
Software: BAx07-17 / TC161

Check Software version:
Code: 102

Error nr.	Conditions	In- / Output	Description	Possible Causes
04	Machine Start	B8/B9/B11	Photocells covered for longer then 2 seconds whilst press drive is running **Infeed press**	3. Sensor B8, B9 or B11 covered 4. Sensor wrongly adjusted 5. Input problem 6. A Sensor can see the round belts
05	Machine Start	B7	There is no signal transmitted from the slotted disc initiator B7 to the control system **Drive slip press**	4. Drive belt defective 5. Motor/frequency converter M1 defective 6. Sensor B7 defective
06	Machine Start Single Sheet Operation	B12	The photocell B12 before the shaft, is covered for longer than 2 seconds whilst the belts are running	5. Paper jam before shaft 6. Single sheet mode selected during stream delivery operating mode 7. Input IN01.15 problem 8. Photocell wrongly adjusted and sensing continuously
07	Machine Start Belt Drive Start	B4/Y24	There is no signal transmitted from the slotted disc initiator B4 to the control system	5. V-belt defective 6. Motor/frequency converter M2 defective 7. Sensor B4 defective 8. Input IN01.9 problem
09	Machine Start Packing cycle	B18/B15	Photocell B18 is covered when the elevation table has moved completely down after bundling	4. Paper jam under pressing bars 5. Vertical belt has slipped off 6. Sensor B15 or sensor/cable B18 defective
10	Machine Start	B5/Y18	If elevation table should move upwards (Y18), pressing sensor B5 is operated.	3. Paper jam under pressing bars 4. Check pressing sensor's mechanical function
11	Machine Start Packing cycle	B16	After ejecting bundled parcels, the reverse movement of the ejector last longer than 2 seconds.	6. Paper jam in ejector area 7. Sensor B16 wrongly adjusted or defective 8. Input IN02.16 problem 9. Air pressure too low 10. Throttle D2 adjusted wrongly
12	Machine Start Packing cycle		Bundling cycle has not been completed before the next bundling cycle commences.	4. Number of pieces in batch too low 5. Bundling cycle interrupted by a fault 6. The machine's cycle time is exceeded

Error nr.	Conditions	In- / Output	Description	Possible Causes
13	Machine Start Packing cycle	B35 oder B36	Side loader is not in the normal position	8. Paper jam in the vicinity of the side loader 9. Side loader too slow 10. Sensor defective 11. Side loader is not connected 12. Air hose is not connected 13. Air pressure too low 14. Input IN03.8 / IN3.13 problem
14	Machine Start Packing cycle	B38	Lifting table is not in the normal position	8. Paper jam in the vicinity of the package lift 9. Sensor defective 10. Package lift too slow 11. Package lift plug loose or not connected 12. Air hose is not connected 13. Air pressure too low 14. Input IN03.9/IN3.10 defective
15	Machine Start Packing cycle	B39	Package lift ejector is not in the normal position	3. Paper jam in the vicinity of the package lift 4. Sensor IN3.11defective
16	Machine Start Packing cycle	B3/Y7	The pressing bars need more than 2 seconds to move into the shaft	5. Paper jam in front of pressing bars 6. Air pressure too low 7. Sensor defective or wrongly adjusted 8. Support pressing bars moving against jogging plates
17	Machine Start Packing cycle		Elevation table moves right to the top during packing cycle; Protection of welding dies	3. No stack or too small a stack 4. Sensor B14 defective or malfunctioning
18	Machine Start Welding		Welding process takes too long	4. Relay K7 defective 5. Relay K5 defective or wrongly adjusted (1.0) 6. Code 121 wrongly adjusted (2000)
20	Machine Start Packing cycle	B18/B15	Elevation table does not stop at the intermediate position, but continues to move right down	5. Photocell B18 positioned in the wrong place 6. Paper jam in the vicinity of photocell B18 7. Photocell B18 or its cable defective 8. Sensor B15 IN 1.12 covered or defective
21	Map Device		Shaft protection with map device	4. Paper jam in the shaft 5. Sensor B100/101/102 or its cable defective 6. Input IN03.6 problem

Error nr.	Conditions	In- / Output	Description	Possible Causes
22		B30	Guard open	9. BA guard open 10. Folding machine guard open 11. Lower banding door of the BA open 12. Cover under the press open/released 13. Cover in front of the press open 14. Cover after the press open 15. Input IN02.5 or input IN02.6 problem 16. Wrong adapter used to connect with MBO folding machine with 18-pin plug
23			Emergency-Off folding machine	3. Error message from the folding machine 4. Input IN02.13 problem
24			Emergency-Off button S1	3. Emergency-Off button on BA 700 pressed or defective 4. Input IN02.1 problem
25			Emergency-Off protective motor switch Q4	2. Protective motor switch on the jogging drive has switched off
26	Emergency-Off	K6	Emergency-Off contactor K6 malfunction	5. Emergency-Off contactor K6 does not fall away 6. Fuses F10 or F11 defective 7. Power unit defective 8. One of the sensor cables defective
27	Guard open	K33	Guard contactor K33 malfunction	1. Guard contactor K33 does not fall away
28		B45	Temperature switch-off of the motors	5. Temperature switch in the motors Press drive motor too hot Belt drive motor too hot Elevation table drive motor too hot 6. Output 02.10 defective 7. Input IN02.11 problem 8. Code 123>50 adjusted
29	Machine Start Packing cycle Elevation Table down	B15	Elevation table moves to delivery position and takes too long	7. There is material under the elevation table 8. Elevation table down does not function 9. Sensor B15 or B21 defective 10. Elevation table motor defective 11. Frequency converter 12. Input IN01.7 problem (B15)

Error nr.	Conditions	In- / Output	Description	Possible Causes
30	Machine Start Packing cycle	B14	Elevation table moves to starting position and takes too long	6. Elevation table system fault (Motor, FRQ, etc.) 7. Parcel between pressing bars & elevation table 8. Sensors B14 or B20 defective 9. Input IN01.6 problem (B14) 10. Elevation table knocks against the jogging plates (bent)
31	Machine Start Packing cycle	B2	Time for extending welding die exceeded welding die moves to working position	5. Paper between the welding dies 6. Air pressure 7. Sensor B2 defective or wrongly adjusted 8. Input IN03.2 problem
32	Machine Start Packing cycle	B1	Time for retacting welding die exceeded welding die moves to normal position	7. Defective cylinder 8. Air pressure 9. Obstacle 10. Sensor B1 defective or wrongly adjusted 11. Input IN03.1 problem 12. Linear bearing defective
34	Machine Start Open Guard		Drives turn at too high a speed during jogging operation	4. Frequency converter defective 5. Tacho defective 6. Frequency converter set to wrong parameters
35	Destacking without counter release	B12	Sensor B12 do not aware the product batch counter does not count, destacking sensor covered.	2. Sensor B12/B19 defective 3. Sensor B12/B19 not on the product 4. Sensor B12/B19 wrongly adjusted
37		B41	Frequency converter pressing drive has switched off	3. Fault with frequency converter A13 4. Protective motor switch Q3 has switched off 5. Further information on the FU-Display
38		B42	Frequency converter belt drive has switched off	3. Fault with frequency converter A14 4. Protective motor switch Q3 has switched off 5. Further information on the FU-Display
39		B43	Frequency converter elevator table drive has switched off	3. Fault with frequency converter A15 4. Protective motor switch Q3 has switched off 5. Further information on the FU-Display

Error nr.	Conditions	In- / Output	Description	Possible Causes
40	Machine Start Packing cycle Stop-Reset-Start	B17	Time for moving out ejectors exceeded	8. Package jam in front of the ejector 9. Air pressure 10. Cylinder, cylinder switch 11. Sensor B17 defective 12. Input IN01.13 problem 13. Throttle D1 defective 14. Elevation table's lowest position set too low
41	Machine Start Normal position	B16 B1	Machine goes into normal position and table does not go up	6. Air pressure 7. Cylinder, cylinder switch ejector 8. Sensor B16 defective or wrongly adjusted 9. Sensor B1 defective 10. Input IN03.1 problem
42	Machine Start Band End	B13	After "band end" has been shown on the display, the machine switches off after the pre-programmed number of cycles has been reached	5. Change tapes 6. Change quantity of cycles with code 127 7. Cable defective 8. Input IN03.4 problem
48		B16	Elevation table moves down B16 is not covered	4. Package jam in front of the ejector 5. Air pressure 6. Cylinder, cylinder switch
49		B16 B1	Elevation table moves up B16 or B1 are not covered	4. Package jam in front of the ejector 5. Air pressure 6. Cylinder, cylinder switch