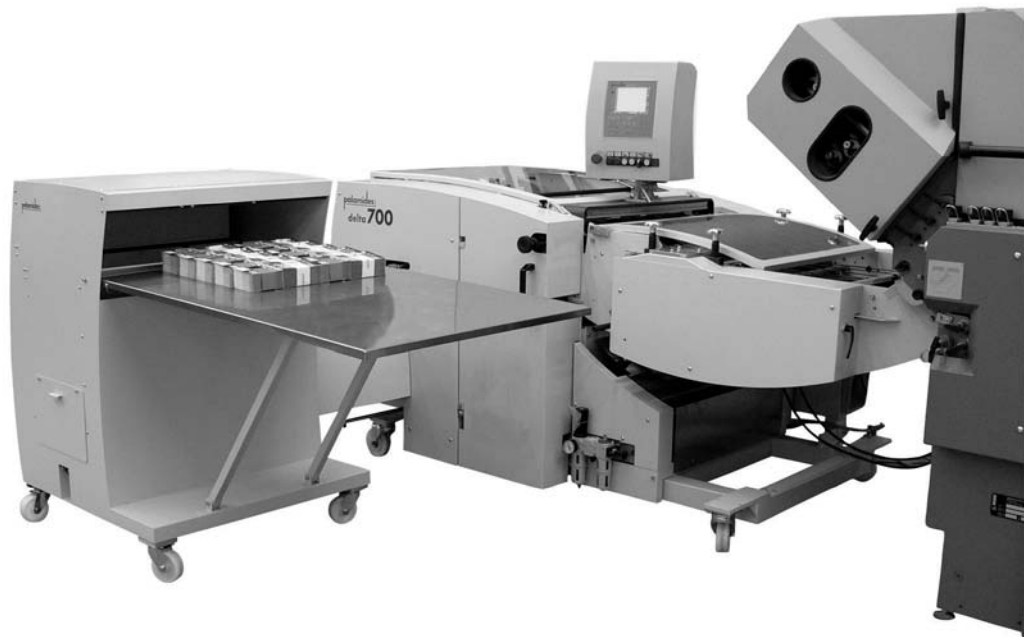


Manual Instruction Automatic Delivery delta

Model 151

April 2005



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Declaration of Conformity

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

We **palamides GmbH**
Benzstr. 14
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 delta
Model 151, 152, 153
Serial number _____

Appropriate EC-Directives:

EC-Machinery Directive (98/37/EG)
EC-Low Tension Directive (73/23/EWG)

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

EN 12100-1; EN 12100-2; EN 294
pr EN 1010 EN 60204-1

Date 16.10.2006
Signature (S. Palamides) 
Identification of the Signatory Managing Director

Preface

You have acquired a technically superior industrial product in the delta automatic delivery and by paying careful attention to the operating instructions, you will achieve the highest levels of reliability and performance.

The delta is a fully automatic delivery system, which greatly rationalises the production process behind the folding machine or saddle stitcher. Depending on the model, up to 5-up work can be simultaneously processed in a very wide format range.

Sophisticated technical detailed solutions are responsible for the outstandingly high production reliability. All sheets are measured at the infeed and, if necessary, are ejected. The pile is bundled directly in the collection shaft using the patented operating process which has been implemented in the delta.

Here, the most important aspect is not the bundling of the packages, but the rationalisation achieved. By using a delta, one person can operate a folding machine rather than 2-3. With a saddle stitcher, the work can easily be taken off the machine by the same operators who load it.

- Rationalisation of the delivery process on saddle stitchers and folding machines.
- Makes use of the top running speed and performance of the producing machines
- Short setting-up times
- High efficiency due to the versatile application possibilities and the large format range
- Pays for itself quickly
- Mark-free delivery (no smearing on freshly printed or sensitive sheets)
- Integrated pressing unit with main and pre-press rollers
- Ergonomically convenient working height for removing bundles
- By using different coloured bands per up-work, different versions (e.g. language versions) can be easily distinguished.

These operating instructions should guide you in operating the stacking delivery correctly, in complying with the safety regulations and in servicing the machine properly.

1 How it works

1.1 Area of application

The delta automatic delivery is primarily a fully automatic delivery system which greatly rationalises the production process after a folding machine or saddle stitcher. The products are counted and bundled in easily handled piles. Products such as advertising brochures, mailings and signatures can be processed.

1.2 How it works

The delta automatic delivery is a fully automatic delivery system for cost-effective packaging of pamphlets, signatures and brochures. Up to 5-up in a very large format range are processed simultaneously. The exceptionally high production reliability is achieved through sophisticated detailed solutions. As a result, all sheets are measured at the infeed and, if necessary, ejected. The pressing unit, which is fitted as standard, together with the jogging device, ensures that pile formation is neat and reliable. The pile is bundled directly in the collection shaft using the patented operating process which has been implemented in the delta. No slipping in the pile, whether unstable products or the smallest package, the delta bundles reliably. Bundling is carried out using a choice of coated Kraft paper or PE film in easily changeable magazines. The bundled packages are laid out on a package lift, which conveys the packages to an ergonomically convenient working height.

Standard equipment

ELECTRONIC FORMAT MONITORING WITH WASTE SHEET DEFLECTOR

Incorrectly folded products are ejected.

ELECTRONIC CONNECTION TO MBO FOLDING MACHINES

Connection to the start/stop function, as well as the sheet call-up function (24-pin design).

ELECTRONIC SHEET COUNTER

Counts the products irrespective of the production machine.

EQUIPMENT FOR PROCESSING MULTIPLE UP-WORK

delta up to 5-up, depending on model.

PRESSING DEVICE

Maximum 3.5t with pre and main pressing rollers.

Options

SMALL FORMAT DEVICE

For processing products up to 90mm x 65mm.

STACKING LEVEL COMPENSATION 70MM

For forming tidy piles of spine stitched brochures and 4-sided folded products.

STACKING LEVEL COMPENSATION 150MM

For products which spread out heavily at the binding edge.

ANTISTATIC DEVICE

For improved processing of products laden with static.

AIR BLAST DEVICE

For smooth processing of difficult products on
Saddle stitchers and from layered folding.

SMALL PACKAGE DEVICE

For creating packages with a pile height of less than 20 mm

SADDLE STITCHER CONNECTION

For operation with saddle stitchers. An appropriate saddle stitcher plug to be provided by the customer.

NAVIGATOR INTERFACE

For operation after MBO folding machines with Navigator control.

STAHL INTERFACE (10-PIN)

For operation after Stahl folding machines with 10-pin plug.

STAHL DIGITAL INTERFACE

For operation after Stahl digital folding machines
(only in connection with a 10-pin Stahl interface).

BARCODE RECOGNITION

For postcode sorting or for the collating function on digital printing machines.

PRINTER'S IMPRINT READER

For reliable separation of single book blocks in book-on-demand lines

CARD INSERTER

To supply a card for the upper and lower side of the pile, which is bundled with it.

2 Technical Data

2.1 Formats

	Infeed width	x	Infeed length
Minimum format (without small package device)	110mm	x	95 mm
Minimum format (with small package device)	90 mm	x	65 mm

delta502

max. for 1-up	510 mm	x	305 mm
max. for 2-up	235 mm	x	305 mm

delta703

max. for 1-up	760 mm	x	305 mm
max. for 2-up	335 mm	x	305 mm
max. for 3-up	235 mm	x	305 mm

delta705

max. for 1-up	760 mm	x	305 mm
max. for 2-up	335 mm	x	305 mm
max. for 3-up	235 mm	x	305 mm
max. for 4-up	175mm	x	305 mm
max. for 5-up	148 mm	x	305 mm

min. package height (without small package device) 20mm

min. package height with small package device) 3mm

max. package height (depends on product) 150 mm

Performance Over 600 Packages/h per up-work
Over 60.000 Products/h per up-work (depends on product)

Speed 15-200m/min

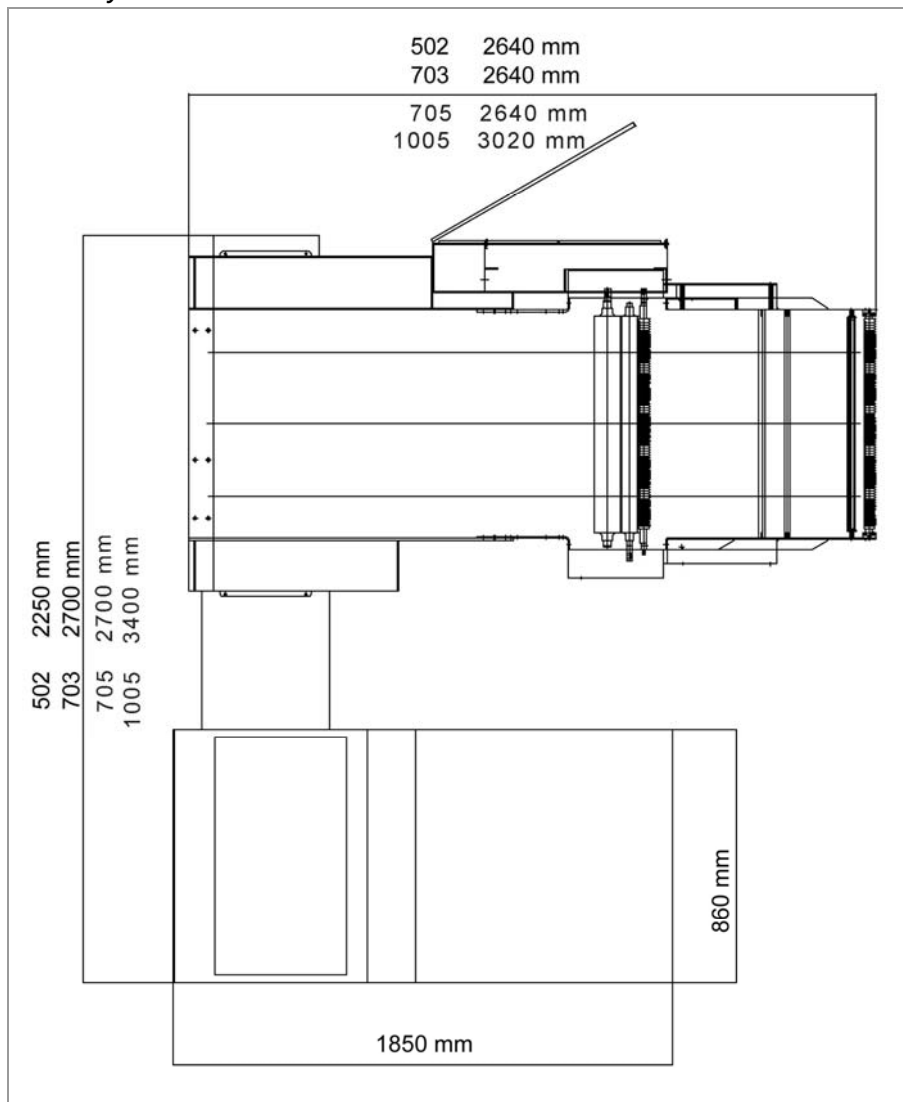
Noise level, measured according to EN 13023:2003 does not exceed 83dB(A) (Measuring device B&K, Type 2221, Serial no. 16 95 9 64, microphone type 4176, no. 1718861, accuracy class 1, acoustic calibrator type 4230, serial no. 1678942)

2.2 Connections

Elec. connection	6 KW
Compressed air consumption	350 ltr/min net, 6 bar, dry, filtered air supplied by the customer

The supply of purified, dry compressed air (6 bar) is not included in delivery.

delta layout



3 Fundamental Safety Advice

3.1 Warning advice and symbols



This symbol means immediate, imminent danger to a person's life or health. Ignoring this warning results in severe consequences for a person's health, up to critical injury.



This symbol means possible, imminent danger to a person's life or health. Ignoring this warning results in severe consequences for a person's health, up to critical injury.



This symbol means a possible dangerous situation. Ignoring this warning results in severe consequences for a person's health and / or damage to property.

3.2 Permitted use

The "delta" Automatic Delivery intended solely as a delivery for folded brochures and spine stitched brochures in paper processing companies. Any other or any additional use is not regarded as a permitted purpose. "Palamides" is not liable for any damage arising from this.

3.3 Safety at work

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. Before you operate the machine, read carefully through all the operating instructions, including the safety and service conditions.
5. The operating instructions must always be handy near the machine.
6. If necessary, supplement the operating instructions with internal safety regulations, as well as with legal accident prevention regulations.
7. If machine personnel changes frequently, make sure that all machine operators are informed, or rather, trained in the previously mentioned points.

8. Never remove the protective, or rather safety devices on the machine and never alter the machine so that safety can no longer be guaranteed.



9. 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.

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

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

12. 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.

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



14. 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**

15. 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.

16. 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.



17. 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!!!

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



19. 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.



20. **>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.

4 Machine installation

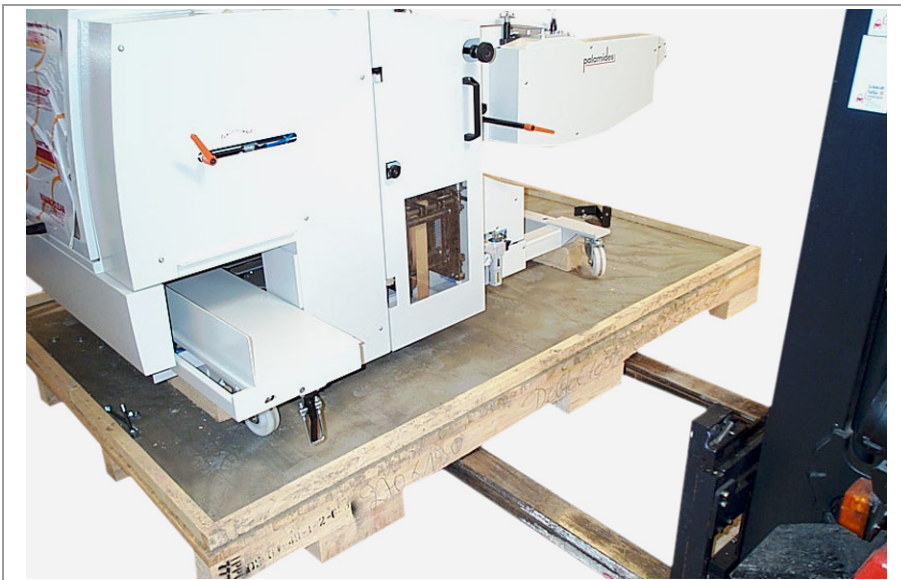
4.1 Transport

Lifting load delta502 (incl. packing)	at least 1400
Lifting load delta700 (incl. packing)	at least 2t
Length of forks delta502	at least 1,20 m
Length of forks delta700	1,40 m

The packaging varies depending on the country being delivered to. However, the pallet has the same design for all packaging variations.

The forks of the forklift truck must be positioned as shown in the photograph below because of the centre of gravity. The machine must be moved carefully in order to prevent it from tilting.

delta

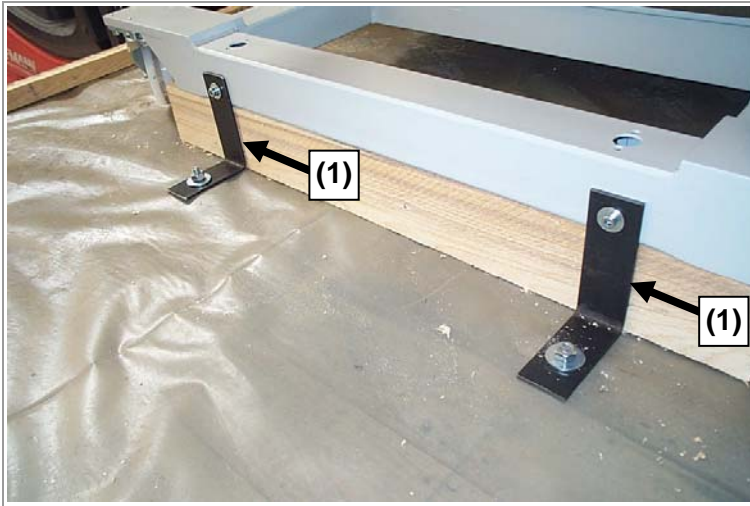


Picture 1784-r

4.2 Unpacking

Remove the plastic packaging or the seaworthy crate from the machine. The machine is secured and screwed down to the transport pallet by metal angled pieces. Remove the screws so that the metal angle pieces (1) can be removed.

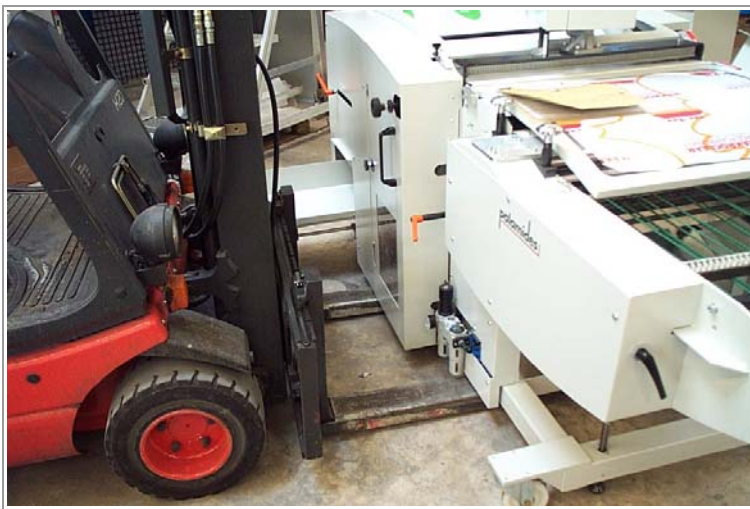
Check the machine for any transport damage. If there are any faults or damage, contact the supplier or the transport company immediately, giving the machine description and serial number.

Metal angled pieces

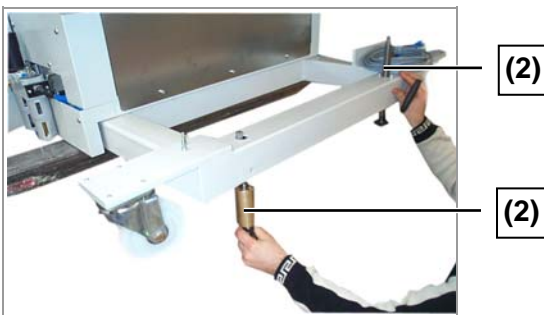
Picture 8467

The machine can then be taken off the pallet using a forklift truck. The forks of the forklift truck must be positioned as shown in the photograph below because of the centre of gravity. The machine must be moved carefully in order to prevent it from tilting.

TIP: Screw the adjustable feet (2) in the holes. The adjustable feet are part of the accessories in the tool box delivered with the machine. They are screwed into the machine frame.

View

Picture 1779



Picture 1782

4.3 Cleaning

The machine must be cleaned with a soft cloth before commissioning. All bare metal parts must be freed from rustproofing using a clean cloth.

4.4 Positioning the machine

The machine can be pushed into place and secured there using the adjusting feet.

4.5 Electrical connection

Check that the electrical supply meets requirements. Details about the distribution voltage, frequency, fuse protection and connection specific to the country in question can be taken from the wiring diagram. The wiring diagram is in the documentation folder.

4.6 Checks before first commissioning

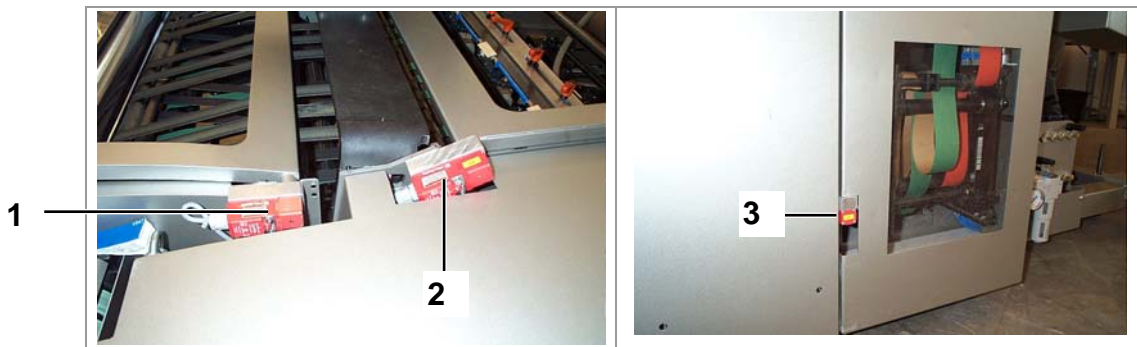
4.6.1 Control box

During transport, it is possible that the screws on the electrical terminals are loosened. In order to ensure trouble-free operation, it is necessary to tighten up the terminals of the relays and contactors.

4.6.2 Safety hoods function

Before the machine is integrated into the production process, the function of every safety hood switch must be checked, in order to ensure that the machine functions perfectly.

View



Picture 1725

Picture 1724

(1)	Circuit breaker hood press	Signals the controls that the hood is open.
(2)	Circuit breaker hood shaft	Signals the controls that the hood is open
(3)	Circuit breaker door	Signals the controls that the door is open

5 Description of the machine parts

5.1 Machine group designation

This chapter contains the designations for individual machine groups.

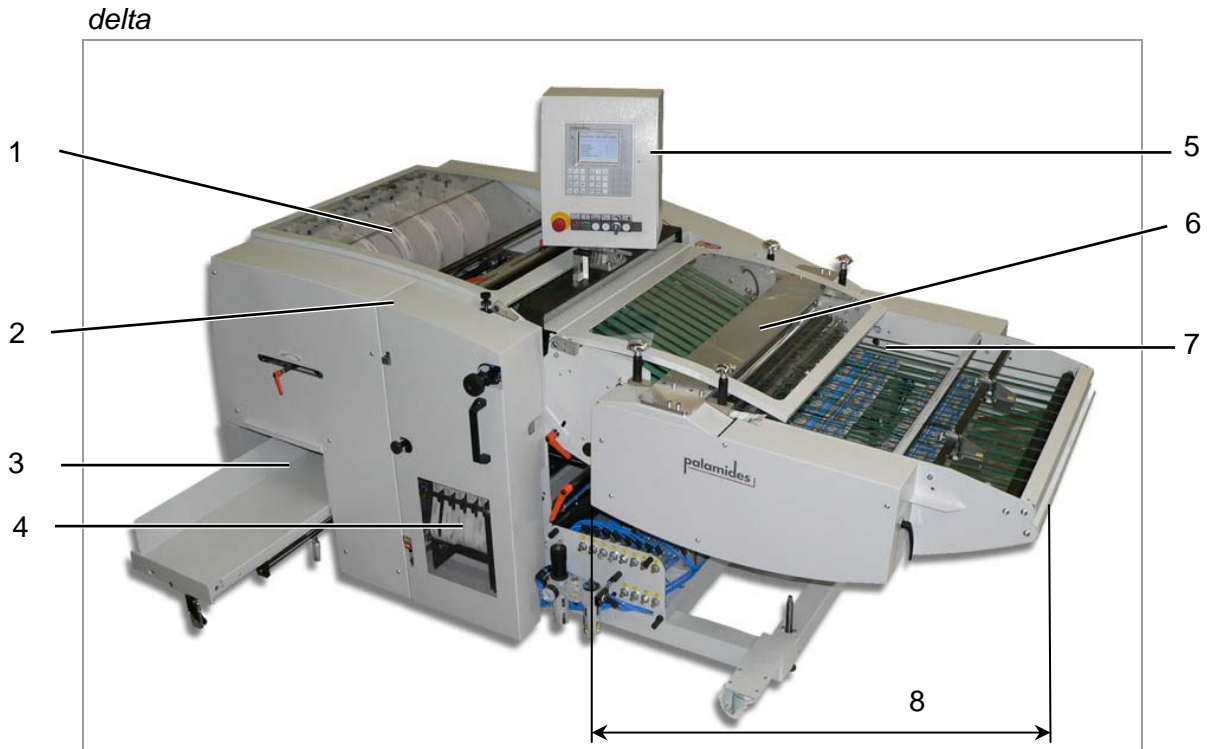


Abb.1040841r

1	Upper band unwinding	5	Operating controls
2	Jogging gear	6	Pressing unit
3	Side loader	7	Round belts infeed
4	Lower band unwinding	8	Delivery

Package lift left and right side view

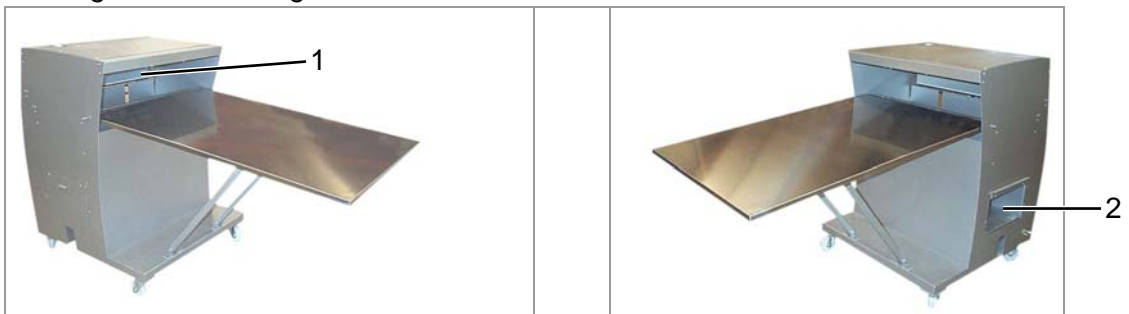


Abb.1601

Abb.1598

1	Package lift ejector	2	Package lift table
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View to the front

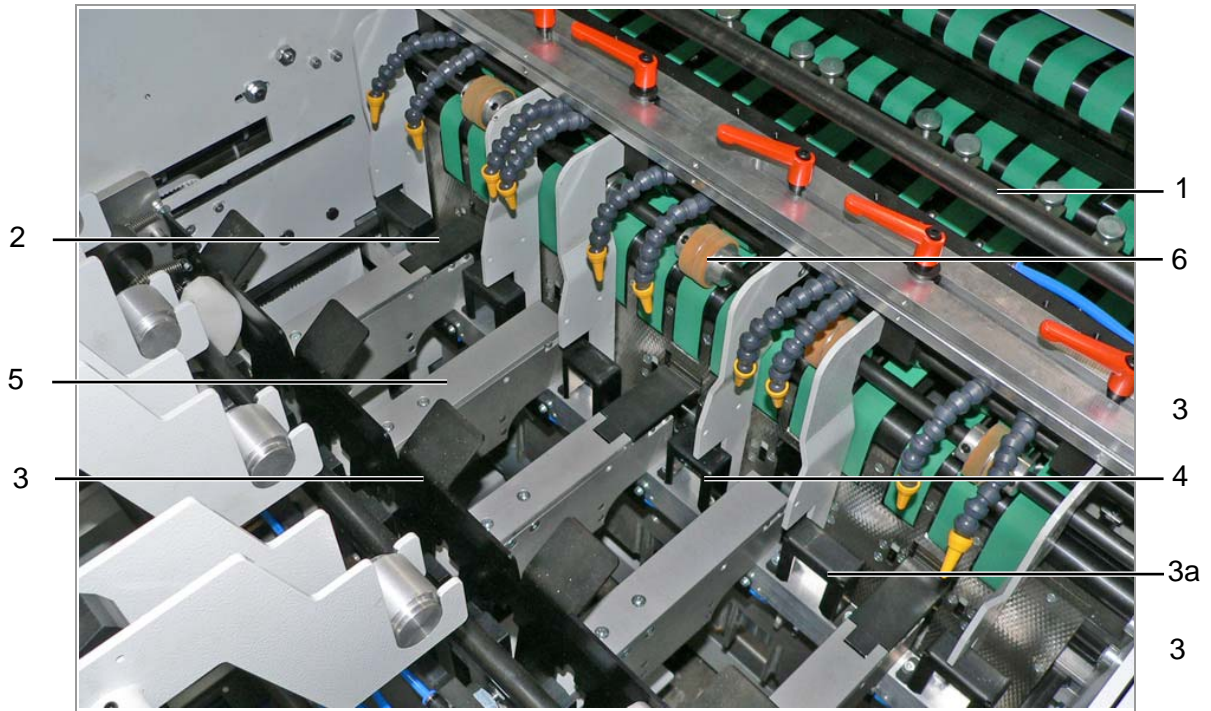


Abb. 1040884

1	Upper band pressure shaft	4	Elevation table
2	Stacking level compensation	5	Dummy plate
3	Rear jogger	6	Contact pressure axle
3a	Rear jogger adjustment	7	Complete adjusting frame

View to the back

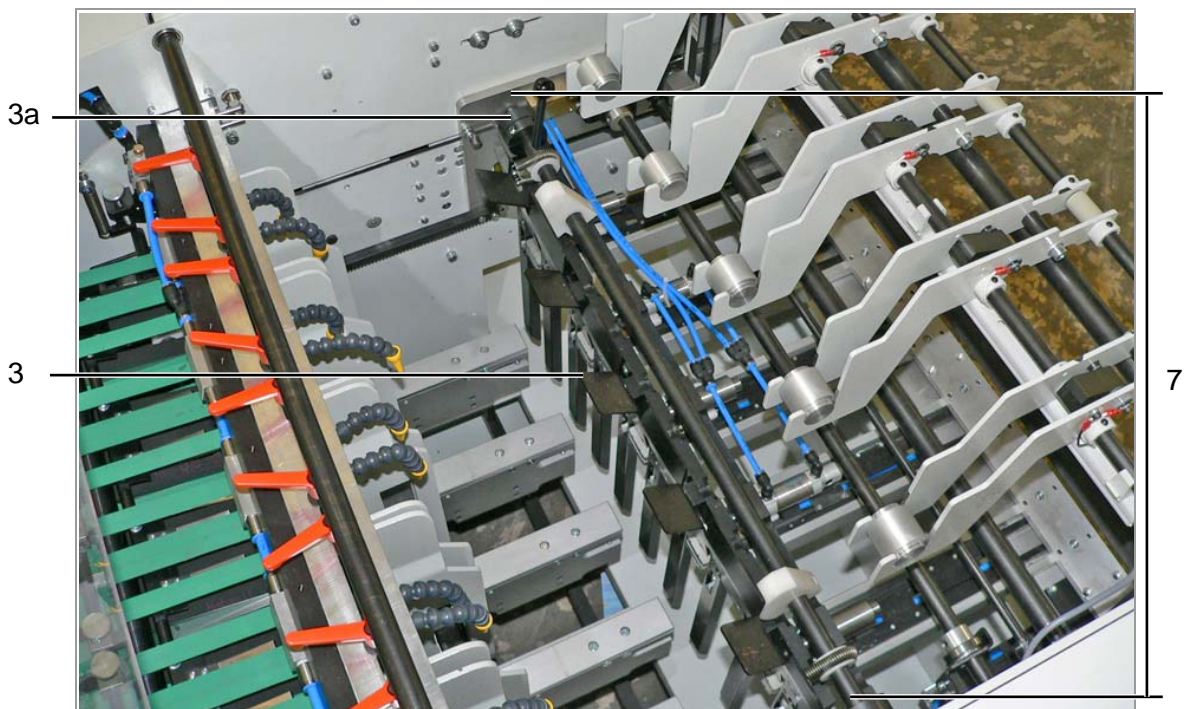


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View

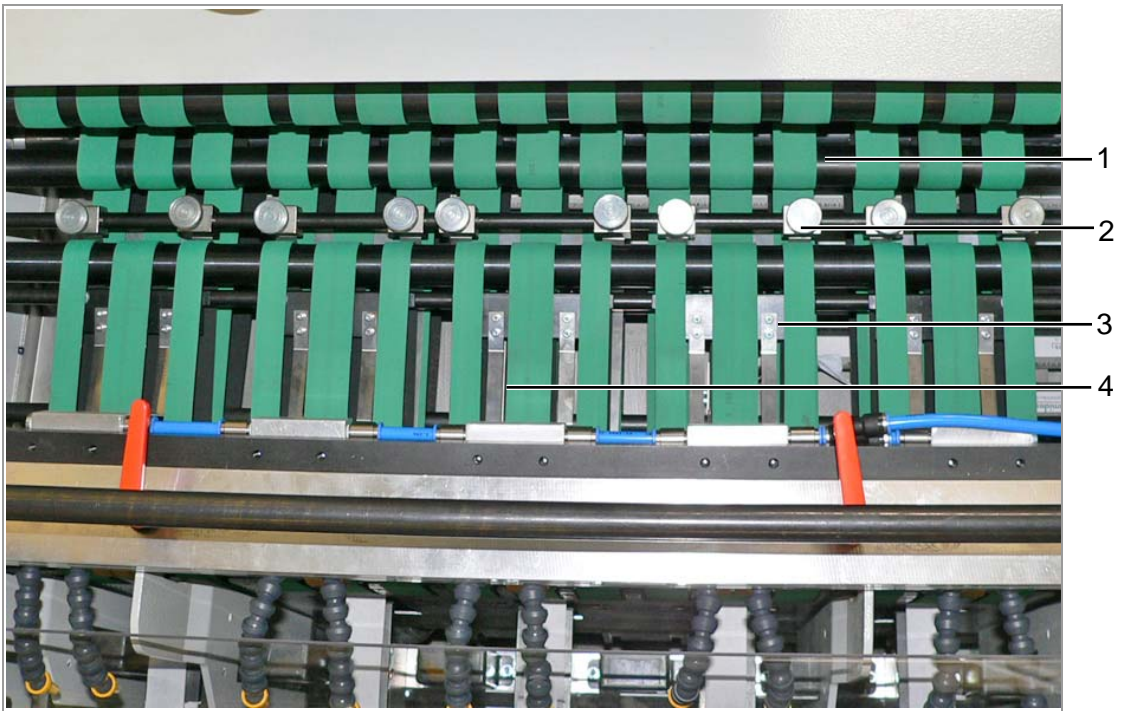


Abb. 1040849

1	Upper belt contact pressure shaft	3	Stopper finger
2	Buffer spring	4	Support finger

View

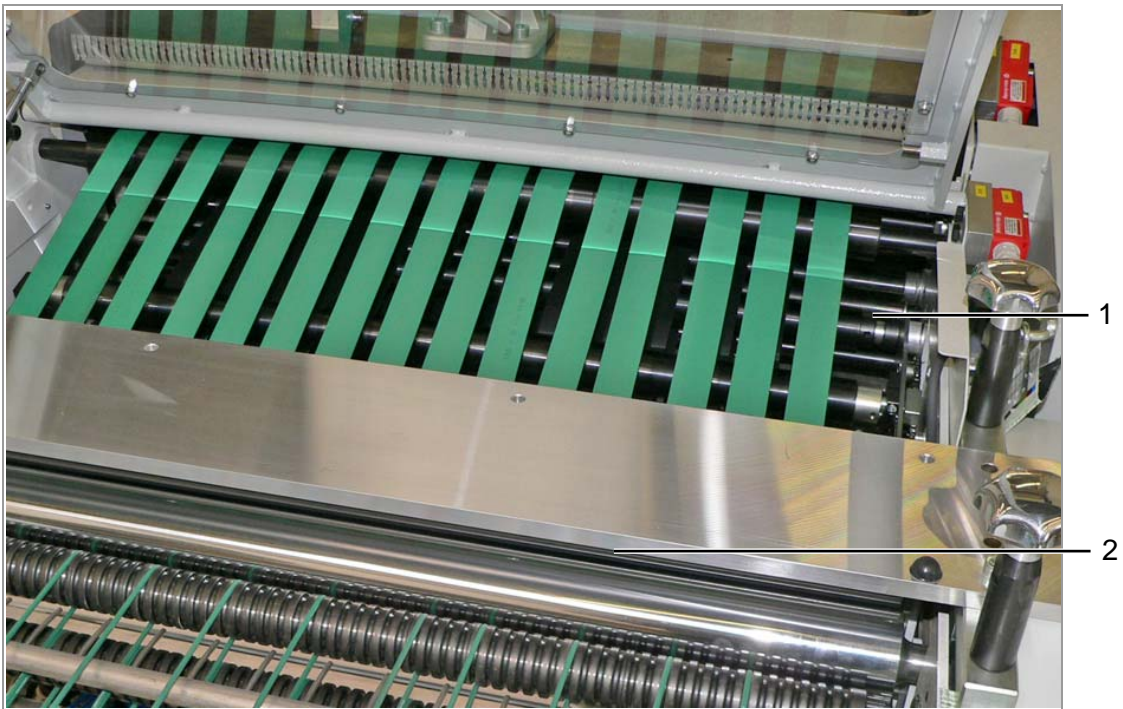


Abb. 1040852

1	Shingling axle	2	Presssing unit
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5.2 Self control mode

Usually, the machine operates at a folding machine or a saddle stitcher. Optional coupling boxes are available for operation at this equipment. The machine is compatible with MBO as standard. The 24-pin plug can be plugged directly into an MBO folding machine. If you wish to work without the appropriate coupling, the machine can be operated using self control mode.

NOTE: There is no communication with the rest of the equipment in self control mode. The rest of the equipment continues to run when there is a fault at the delivery. With self control mode, the delivery must always be monitored.

Standard



Abb.1744

Self control mode

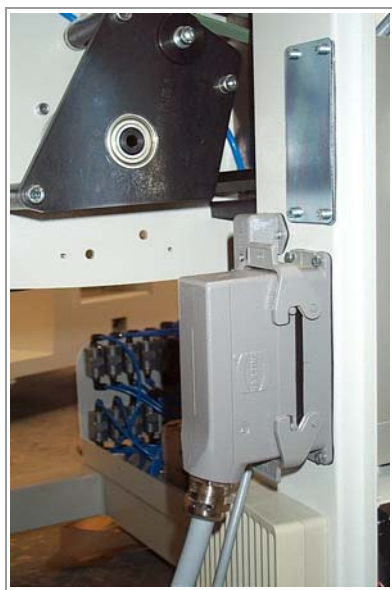


Abb.1743

Navigator inclusive



Abb. 1617

Navigator self control mode



Abb.1619

6 Handling and Operation

6.1 Operating controls

The operating controls have the following functions:

- Operating the machine
- Adjusting the machine
- Information for machine operators
- Information for maintenance personnel
- Information for service technicians

The machine is operated with the assistance of the menu guide on the display. If a key is lit up, this option is activated. If the key flashes, it is waiting for input. The display shows which inputs can be made. Confirm with enter. Repeatedly pressing the option key will lead back to the main menu. Those authorised to service the machine and service engineers have access to certain machine data via submenus.

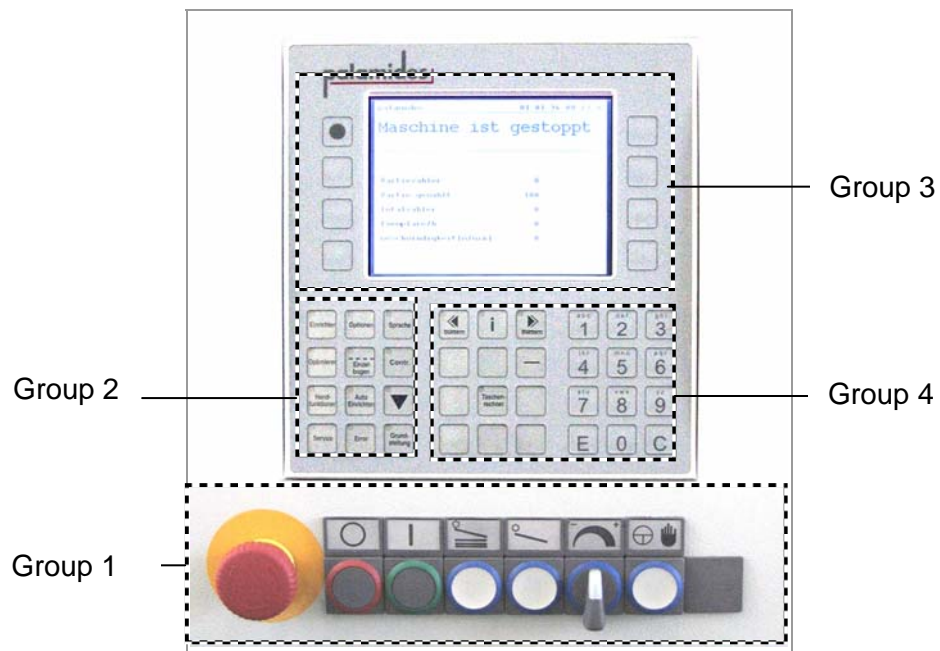


Abb.497

- | | |
|---------|---|
| Group 1 | Switching on and operating the machine
rotary switches - speed |
| Group 2 | Function menu |
| Group 3 | Display |
| Group 4 | Numeric pad, keys for scrolling further menu
guide |

Group1 description

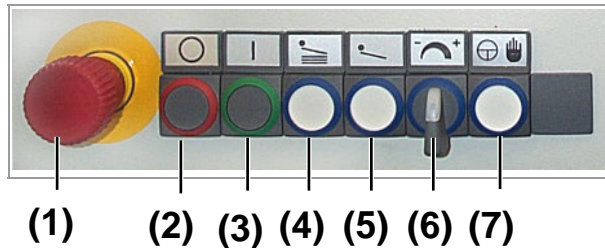


Abb.7677-2

(1)	Emergency-off	Used to switch the equipment off immediately there is a dangerous situation. The switch locks when pressed and the machine can only be restarted by pulling it out (turn the button in a clockwise direction). Note: Data is not deleted when the emergency-off button is pressed. This means that, after re-starting, work continues from the point where it stopped before the emergency-off button was activated.
(2)	Stop	Switches the machine off. Deletes errors. This still shows on the display after mechanical removal of a fault. The message is deleted by pressing the stop button. Note: Data is not deleted when the stop button is pressed. This means that, after re-starting, work continues from the point where it stopped before the stop button was activated.
(3)	Start	Starts the machine Note: After pressing the start button, the equipment needs a few seconds until it is operational. During this time, any products which may be moving through the machine will be ejected via the waste sheet deflector.
(4)	Sheet call-up Only in connection with an MBO folding machine	Sheet call-up to the folding machine. With MBO Navigator connection: Deletes errors on the folding machine.
(5)	Single sheet Only in connection with an MBO folding machine	A single sheet can be called up from the folding machine by pressing this key, e.g. for “calibration” mode.
(6)	Speed press drive with machine running Inching mode With machine stopped	The speed of the press drive can be altered by turning the inching switch so that the machine can be aligned to the speed of the folding machine. Note: In inching mode, the press drive runs forwards or backwards when the switch is activated in single sheet mode. In shingled stream mode, only forwards.
(7)	Preselect inching mode (with pressing unit hood open)	Inching mode is enabled with the hood open by pressing this key. Speed is reduced. Switch (6) lights up and is enabled for inching mode Note: Function 2. Only with open hood. This inching mode is only enabled for the press drive.

Group 2 description

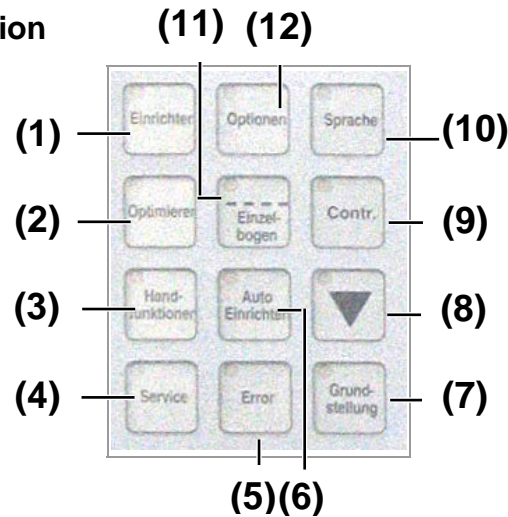
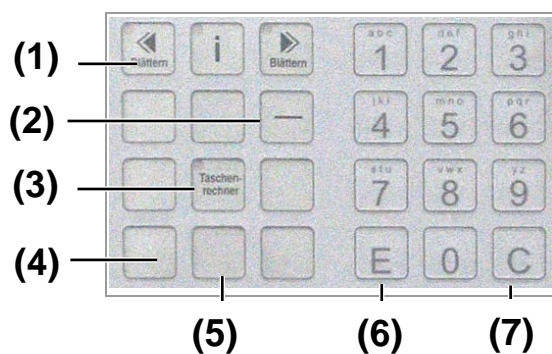


Abb.491

(1)	Set up	All adjustments which are necessary for operation are carried out in this menu
(2)	Optimisation	All adjustments which differ from the default values are carried out in this menu.
(3)	Manual mode	The selected drives are operated manually in this menu
(4)	Service	Service functions are accessed in this menu. Partly password protected.
(5)	Error	The latest errors are shown on the display when this button is pressed. Errors are described during operation.
(6)	Auto set up	First calibrate! The shingling axle will run to the calibrated sheet length by pressing the "auto set up" key
(7)	Home position / remainder packing	1. When the machine has stopped, it is brought to the home position by pressing this key 2. When the machine has started, the function of this key is remainder packing.
(8)	Calibration	The small control light on the key flashes when this key is pressed. The next sheet that comes along will be measured and taken as a reference. The light goes out.
(9)	Inspection sheet	1. The waste sheet deflector ejects the next sheet. 2. The key flashes if it is pressed approx. 3 sec. All further sheets will be ejected until the key is pressed again.
(10)	Language	Choice of language
(11)	Single sheet Activates the single sheet	Alternates between "shingled stream" mode and "single sheet" mode. In single sheet mode the transport belt runs continuously. In shingled stream mode the transport belt only runs when products are fed in.
(12)	Options	All options offered by this machine are displayed when this key is pressed. Optimisation of the options can be carried out here.

Group 4 description



(1)	Scroll	A flashing "scroll" key signals that further menu items are available. These can be accessed by pressing the key.
(2)	Minus	Enters minus values
(3)	Calculator	
(4)	Elevation table down	Only works when the machine has stopped
(5)	Manual welding	Only works when the machine has stopped
(6)	Enter	Saves newly entered values
(7)	Delete	Deletes values called up

Group 3 description

Information which is normally standard and cannot be altered, appears on the display.



Abb.1937-03

(1)	Homepage	Back to the homepage
(2)	Status line	
(3)	Menu items	Selection and display of menu items
(4)	Standard info	

Standard information:

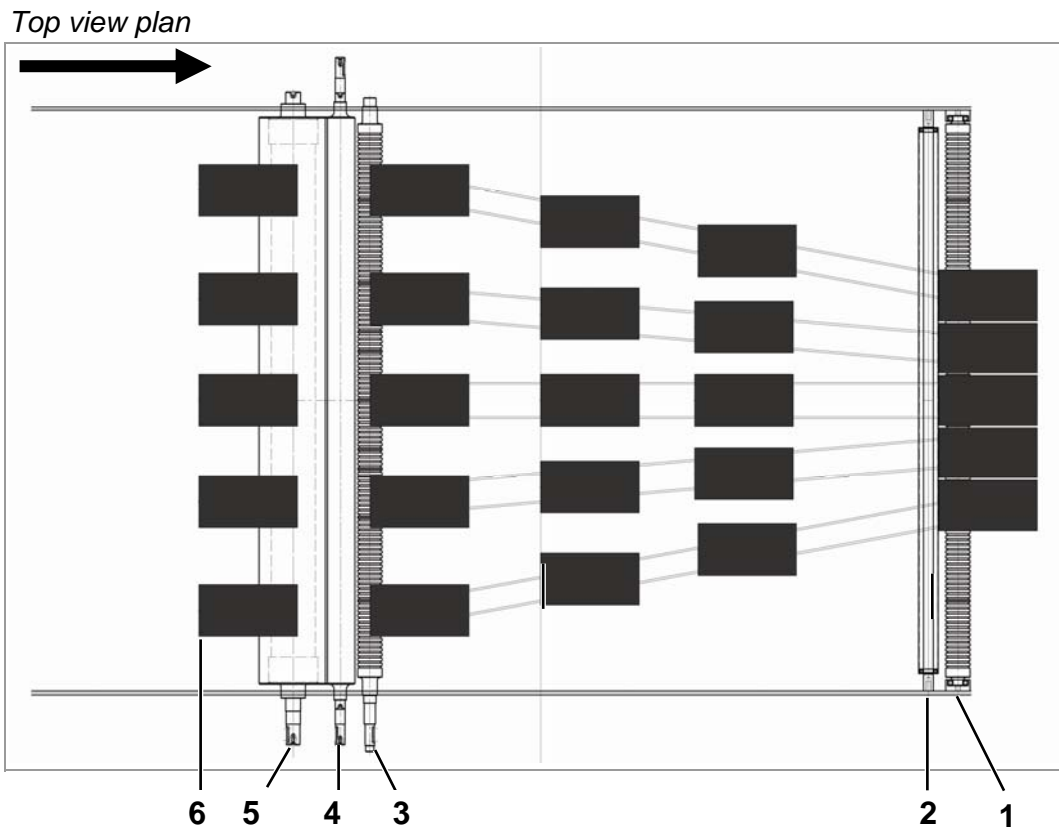
Batch counter	0
Batch selected	50
Total counter	0
Examples / h	0
Speed (m/min)	0



Machine damage by pulling the power supply plug.
Electronic components can be damaged.
Only pull the power plug when the main switch is switched off..

6.2 Plan of the delta automatic delivery

The delta must be aligned to the folding machine so that the product stream is transferred evenly and assigned to the relevant shafts. The height of the delivery must then be aligned exactly to the height of the folding machine. The product stream must be conveyed to the relevant shafts. The round belts must be parallel so that the products are not twisted..



1	Folding machine	4	Pre press roller
2	Round belt shaft 1	5	Main press roller
3	Round belt shaft 2	6	Shaft infeed

6.3

6.4 Installing the automatic delivery

1. Place the machine in the middle in front of the folding machine.
2. Lock the adjusting feet (1). Spanner 12 (picture 1726)

Adjusting feet

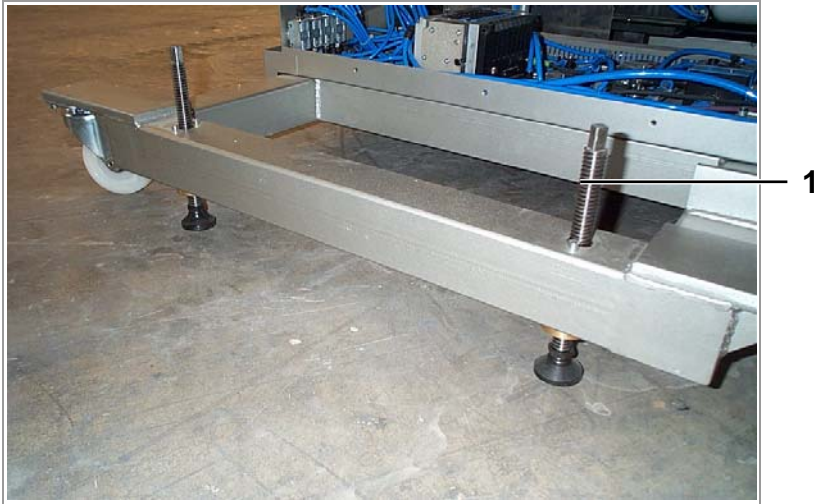


Abb.1726

1. Establish power supply
2. Establish connection to the folding machine
3. Connect compressed air

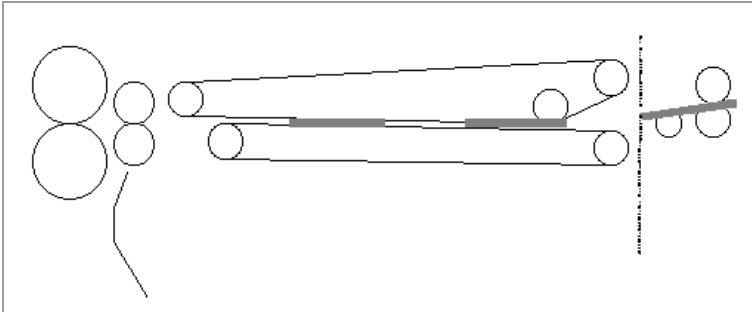


Risk of stumbling over connecting cables and hoses.
Lay cables and hoses so that there are no places forming a tripping hazard

Clamping lever

Abb.1040834

4. Open lever (2) on the delivery
5. Adjust delivery
6. Switch on main switch

Plan of the side view of the delivery

Brochure strikes the round belt opening exactly

7 Setting up the machine

Setting the machine up for new jobs is described here. Each step is described in the order that has proved itself in practise.

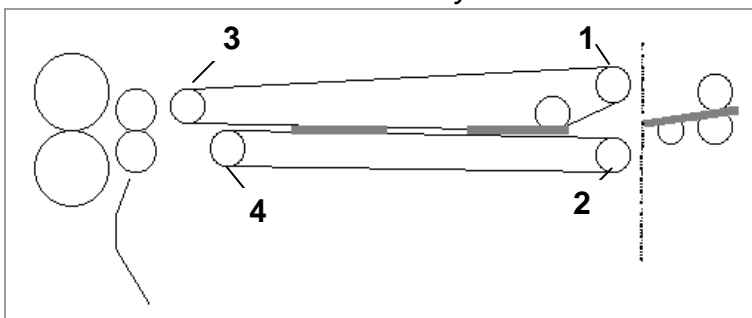
7.1 Infeed through the round belts

The round belts take the products from the folding machine or saddle stitcher. For multiple up work, the products must be spread out. The angled infeed aligns the product to the pile containers.

Note the sequence for adjustments:

1. upper round belt shaft 1
2. lower round belt shaft 2
3. upper round belt shaft 3
4. lower round belt shaft 4

Plan of the side view of the delivery



TOOLS REQUIRED:

Allen key or screwdriver



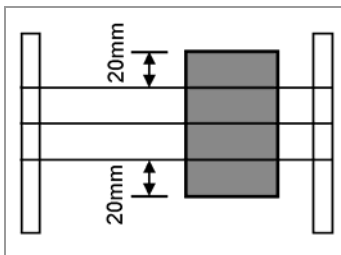
Danger of being caught in running belts.
Tools or fingers can be pulled in.

Let the belts run very slowly. Set the press drive at minimum speed for this..

Adjust upper round belts of shaft 1:

1. Loosen two infeed photocells BEX 02.01 and BEX02.02.
 - ⇒ Three belts are provided for each up-work as standard.
 2. Open safety hood.
 3. Set to inching mode and turn speed regulator.
 4. Move the middle belt to the middle of the product.
- Move both outer belts up to 20-30mm to the edge of the product.

View



Adjustment of the round belts

Upper round belt view

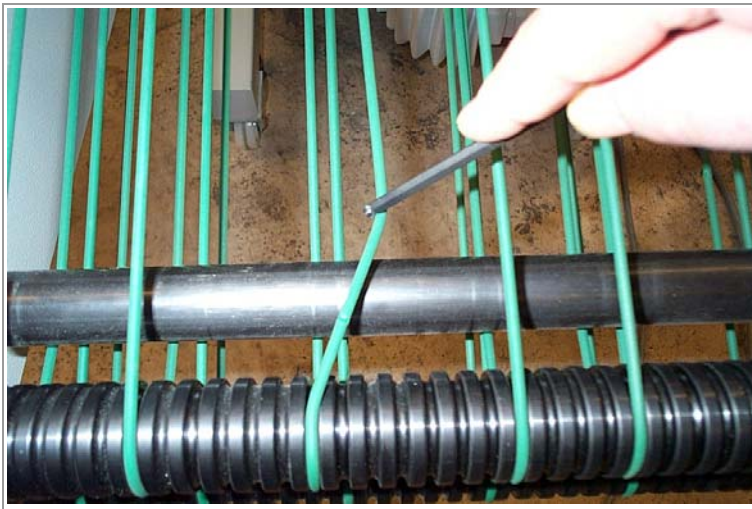
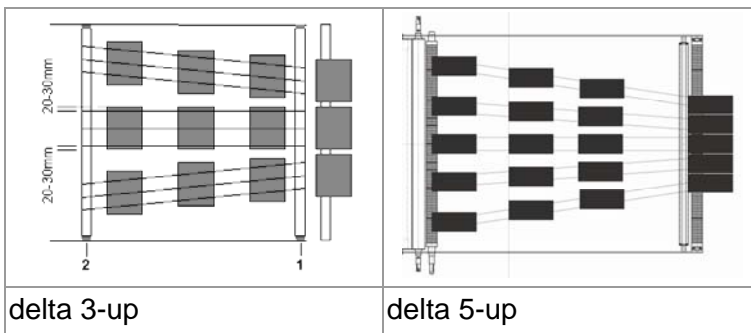


Abb.8879

1. Carry out this adjustment for each up-work of the product.

View



Re-adjust the round belts for each up-work

Adjust lower round belts of shaft 2:

1. Set the lower belts exactly below the upper belts.

Obere Rundriemen der Welle 3 einstellen:

- ⇒ The products are driven along the course of the round belts. Set the round belts of shaft 3 so that there is an exact allocation to the relevant shaft.
1. Align belt (2) to the transport belt (1).
⇒ see picture 1040837
 2. Align both outside belts parallel to each other. In doing so, pay attention to the number of grooves on round belt shaft 1.
 3. Use the number of grooves to adjust both outer belts. This will ensure that the product is not fed in at an angle.

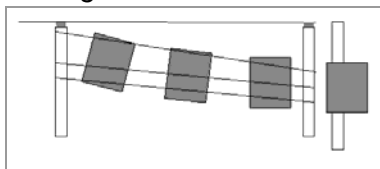
Round belt adjustment



Abb. 1040837

1	Transport belt	3	Photocell
2	Round belt		

Wrong



Adjust lower round belts of shaft 4:

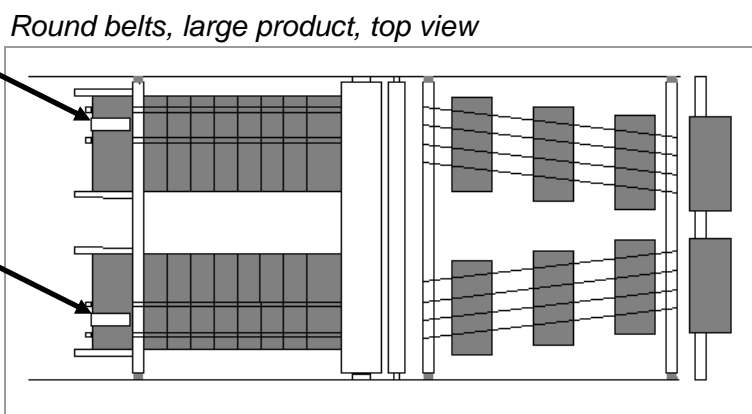
1. Place the lower belts exactly under the upper belts.
2. Repeat these steps for all up-works of the product.

Position photocells

1. Fix the photocells between the round belts.
 - ⇒ On both outside streams
2. All belts must run freely.
3. Ensure that the round belts do not touch the photocells or their cables.
4. Ensure that there are no round belts under the photocell.
 - ⇒ The diode on the photocell does not light up

Adjustment for large formats

- ☞ For large formats, the products cannot be fed into the middle of the shaft. The band is then no longer in the middle of the product. This has no adverse effect on functionality.



7.2 Presse drive

The round belts and the folding machine must run at the same speed. This guarantees trouble-free transfer of the products.

1. Adjust the speed using the press drive inching switch.
 - With the machine started
2. The difference in speed between the production machine and the delivery may not be more than 10%.
3. Speed is shown in the display.

7.3 Pressing unit

The pressing unit consists of pre and main pressing rollers. The pre-press rollers press any trapped air out of the product. The main press rollers press the product with up to 3.5t.

Adjust pressing unit: (1)

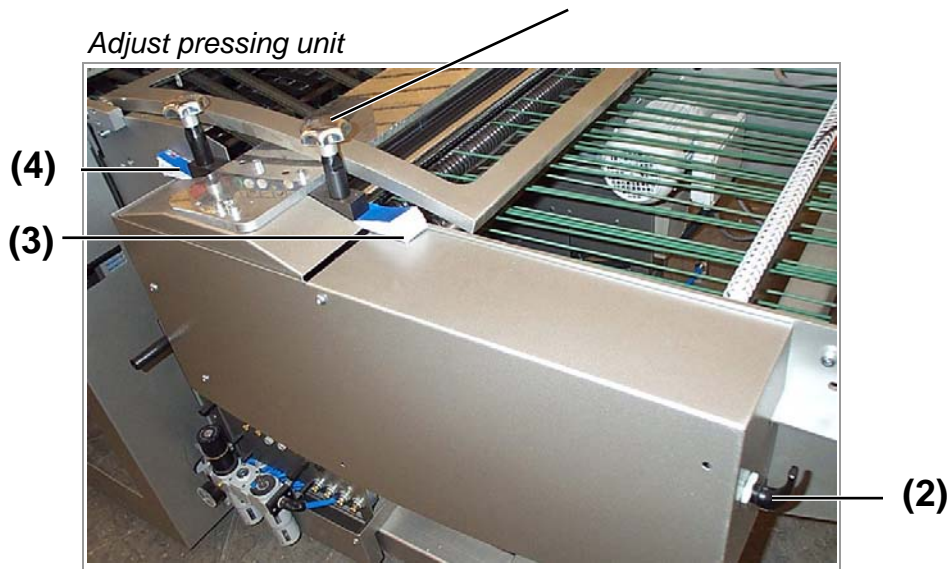


Abb.1735

1. Loosen all four star handles (1).
2. Open lever (2).
3. Put under 75% of the product (4).
4. Put under 50% of the product (3).
5. Carry out the adjustment on both sides
6. Close the lever
7. Re-tighten the star handles.

TIP: Tighten only by hand

NOTE: Check product for marking

7.4 Sheet calibration

This function saves the linear measurement of the product being processed. All further sheets are compared to this reference value. Photocells BEX2.1 und BEX2.2 measure the sheet format.

1. Position infeed photocells BEX2.1 and BEX2.2 on the delivery above the product.
2. Press the following sequence of keys.

1	Home position
2	Start
3	Calibrate, key flashes
4	Single sheet call-up

Control panel

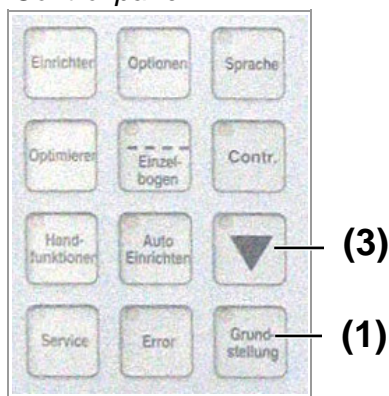


Abb.491

Control panel

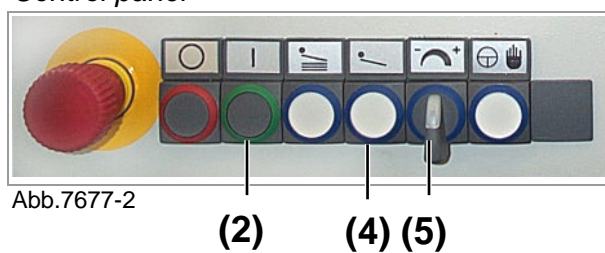


Abb.7677-2

7.5 Auto set up

The shingling axle adjusts automatically to the length of the product.

1. Press the following sequence of keys:

1	Calibrate sheet
2	Auto calibrate

7.6 Shingling device

After the pressing unit, the products are taken over by the transport belts. The shingled stream is formed at the shingling axle.

Shingle formation is automatically calculated and adjusted when the sheet is calibrated

The lower belts after the pressing unit can be adjusted in height. The shingling axle (2) is adjusted to the product's size using the "auto calibrate" function. The shingling axle can be readjusted in the "manual function" menu. This takes place using the manual function key on the operating controls. The upper / lower belt pressing force must be lowered for thick products. This takes place by turning the shingling axle by up to $\pm 90^\circ$. The shingling axle is supported eccentrically.

Adjust infeed angle:

Shingling axle

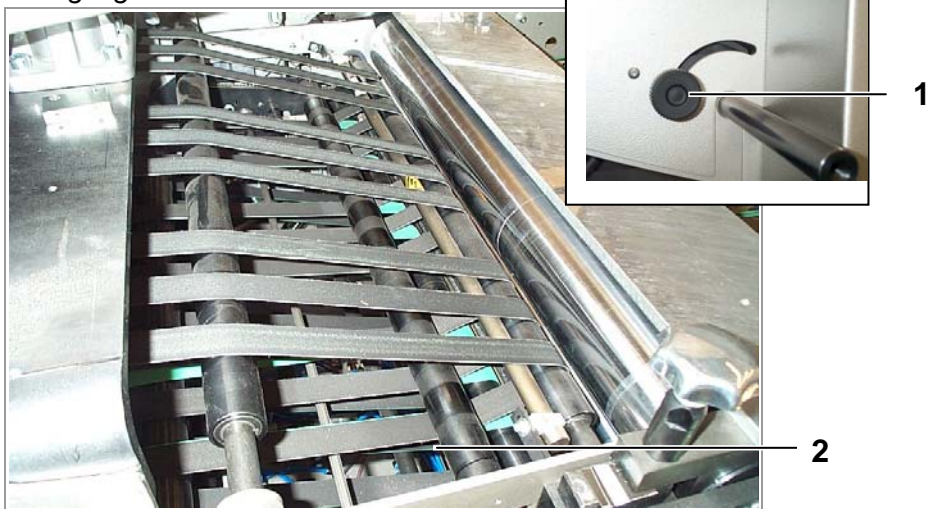


Abb.1616

1. Loosen knurled screw (1)
2. Adjust lower belts (2)
3. Tighten knurled screw

Reduce upper/lower belt pressing force:

Shingling axle

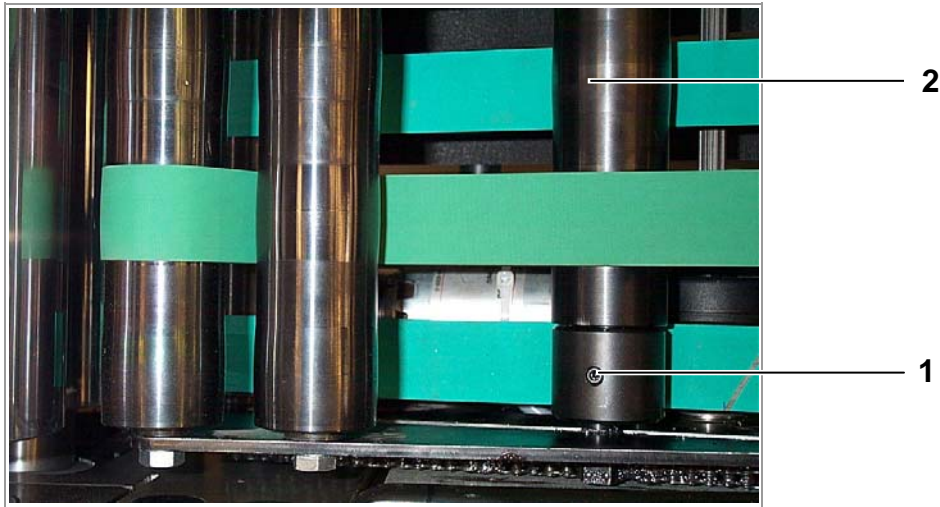


Abb.8921

1. Loosen set screw (1)
2. Adjust the shingling axle (2) to the thickness of the product
3. Tighten set screw

7.7 Shaft infeed

Adjust upper belt:

In addition, the product can be fed by adjusting the upper belts.

1. Turn the knurled screw (4)
- ⇒ The upper belt pressure shaft (3) is adjusted

Upper belt pressure shaft

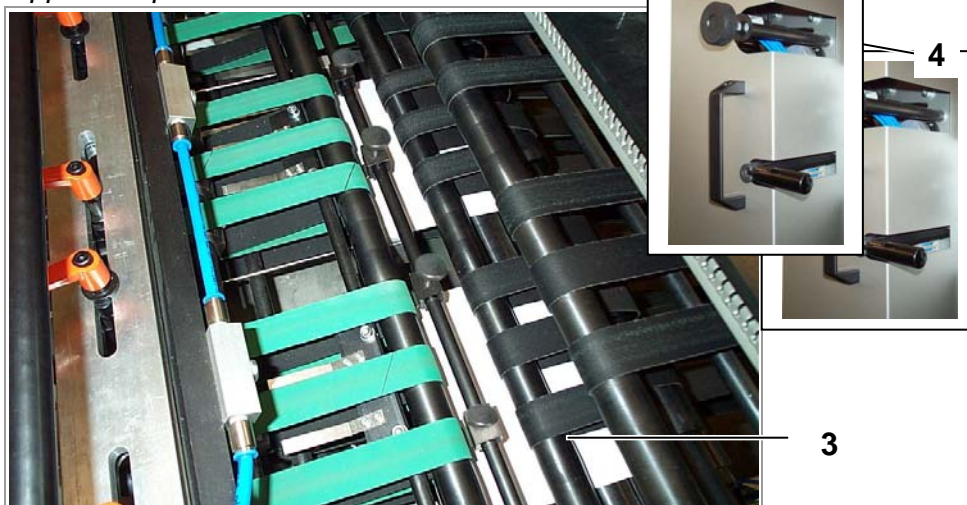


Abb.1653

Adjust support finger:

The product is additionally stabilised by raising the support finger so that it does not bend into the shaft.

TIP: Important adjustment for smooth operation.

1. Lift the stop rocker (7) and let it engage
2. Loosen knurled screw (6)
3. Adjust the support finger (5) to the format
4. Loosen the stop rocker holder and locking button (8)
5. Engage the stop rocker back down

Support finger

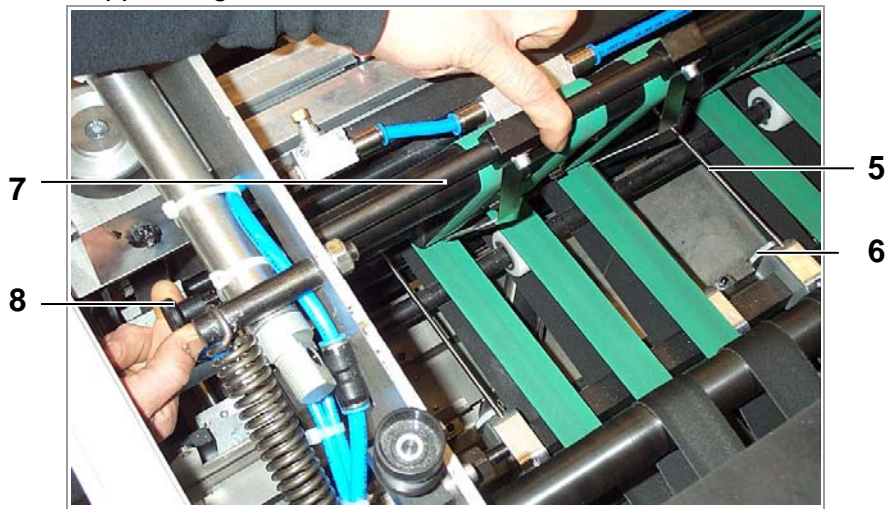


Abb.1658

Adjust pressure axle/ contact rollers:

1. Adjust the pressure axle (9) using the knurled screw (10)
 - ⇒ Adjust equally on both sides
 - ⇒ Loosen the set screw on the contact rollers (11)
 - ⇒ Adjust the contact rollers to the product
 - ⇒ Tighten set screw

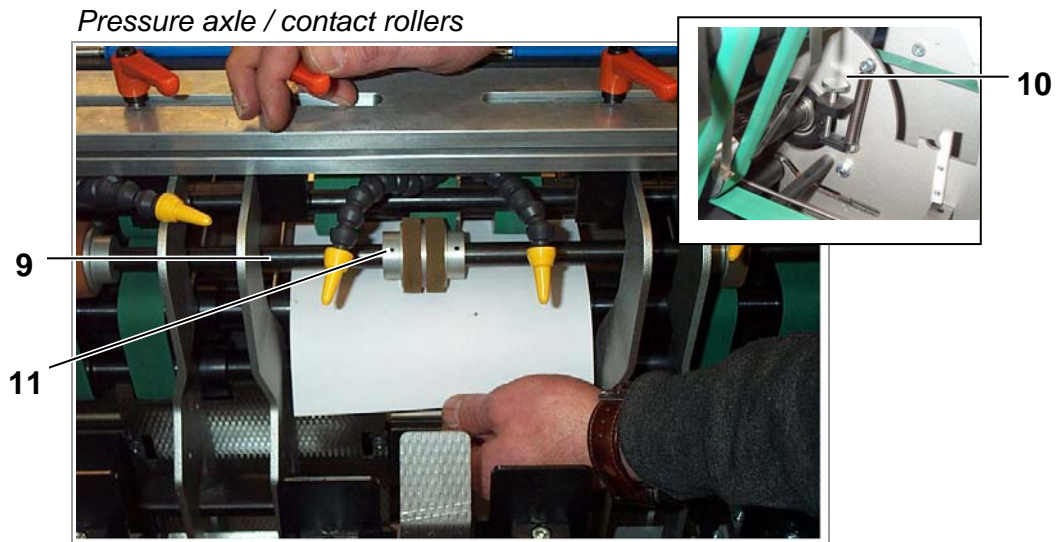
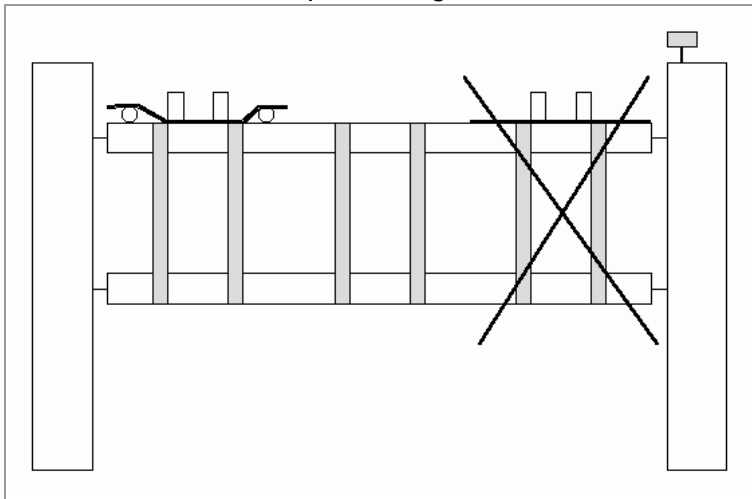


Abb.1654

Knurled screw contour pre-setting

3.2.a

7.8 Shaftt

The products are stacked in the shaft and knocked-up by jogging plates. This ensures that a tidy pile is formed. Two lateral jogging plates and the back jogger on the adjusting frame undertake this function.

Adjust lateral jogging plates:

Two jogging plates are required per up-work.

Jogging plates

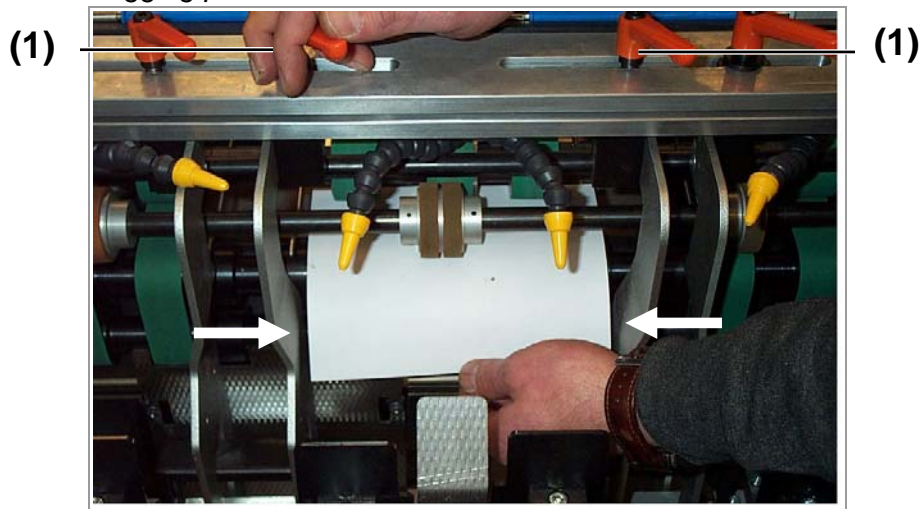


Abb.1654

1. Loosen lever (1)
 2. Adjust both jogging plates to the height of the product
- ⇒ The jogging plates are located in the narrowest position when the machine stops

Set the adjusting frame to the product length:



Abb.1731

1. Loosen lever (1)

2. Set the adjusting frame to the product width, by turning the knurled screw (2)

Adjusting the angle of the rear jogging plate

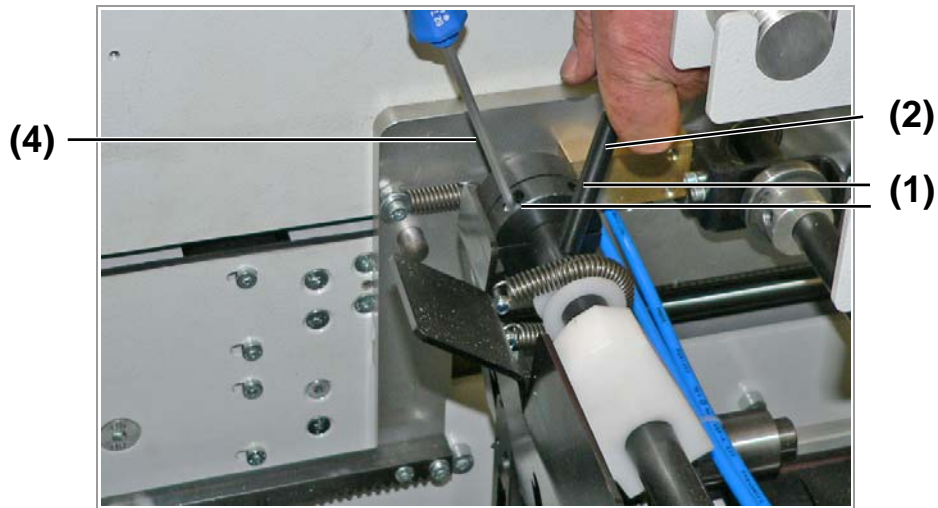


Abb.1040864

1. Loosen both screws (1) using allen key no. 4.
2. Set the angle of the jogging plate to the products.
⇒ by adjusting the lever (2).
3. Tighten both screws again (1).

7.9 Delivery unit

By adjusting the side loader to the required delivery side, the machine automatically identifies the delivery direction. Adjustable in 4 delivery directions.

Adjusting the side loader to the package lift



Abb.1040836

Package lift



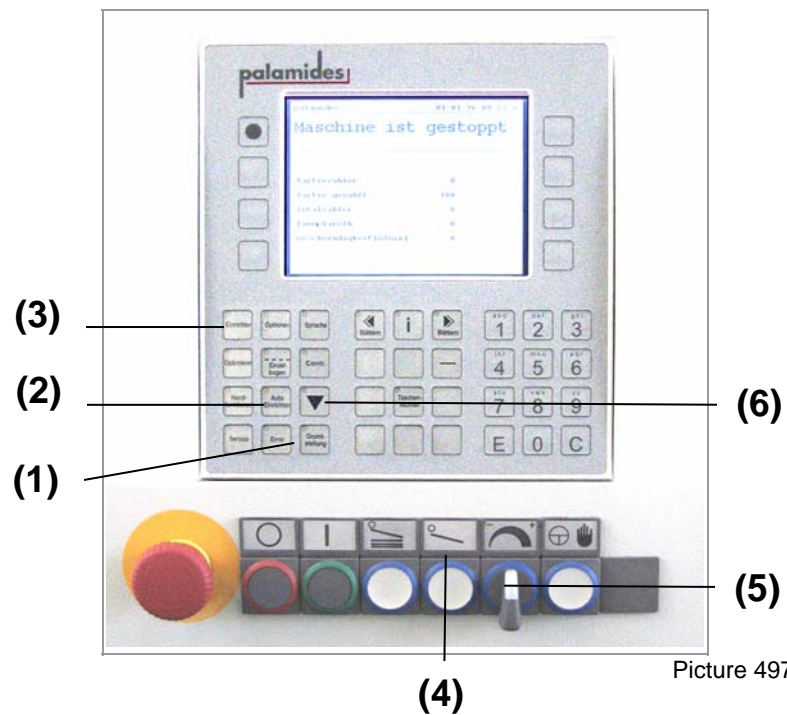
(1)

Abb.1598



Danger of being crushed by pusher moving upwards.
Tools or fingers can be pulled in.
Do not reach into open area (1).

7.10 Adjustments at the operator controls



Picture 497

1	Home position	4	Single sheet call-up
2	Auto set up	5	Inching button
3	Set up	6	Calibrate

Changing values:

1. Select menu
2. Select function
3. Enter value
4. Confirm with "E"
5. if required, delete with "C"

7.10.1 Batch counter

The batch amount is the number of products per package

1. Press the set-up key on the operator controls
⇒ Enter the number of pieces in the batch and press “E”.

7.10.2 Stacking level compensation

Enter the amount at which the stacking level compensator should activate.
0 = switched off.

7.10.3 Sheet thickness

The destacking amount is calculated by entering the sheet thickness. The destacking process repeats itself once the destacking amount is reached.

1. Measure the height of 10 sheets at the spine.
2. Press the set-up button on the operator controls and follow the instructions.

Reduce the value if the machine destacks too quickly
Increase the value if the machine destacks too slowly

Measuring device



Picture 1921

7.10.4 Total counter

Set by entering a user-defined value, or set to zero

7.10.5 Package lift cycles

Number of packaging cycles until the package lift starts.

7.10.6 Load default values

The factory settings for this menu are loaded by entering 1

7.10.7 Band type

The type of band can be selected here. Paper or PE.

7.10.8 Jogging function in the packaging cycle

The jogging function during the packaging cycle can be blocked here

0 = normal

1 = continuous operation in the packaging cycle

7.11 Single sheet operation

Single sheet mode is recommended for sensitive or freshly-printed products, thick products or a low folding speed.

Choose single sheet operation for products with a sensitive surface e.g. pages of books or art printing. It is possible that these products could be marked during shingling or when the stopper reaches into the shingled stream. Single sheet operation should also be chosen for freshly-printed products. These products tend to rub against each other as the products are pushed on top of each other during shingle formation.

The [shingled stream / single sheet] key alternates between these two operating modes. Single sheet mode can be recognised by the transport belts running permanently.

7.12 Shingled stream operation

Shingled stream operation is suitable for non sensitive products, small formats or high production speed, e.g. newspaper inserts, mailings, flyers.

The transport belt is timed with photocells BEX2.1 and BEX2.2 and only runs when products are fed in. Shingle formation can be increased or decreased as required. This is carried out in the optimisation menu.

8 Optimisation menu

Adjustments which deviate from the default values can be made in the optimisation menu.

8.1 Package compression

Adjustment to package compression during production.
The values lie between -200 mm and +200 mm. The higher the value the stronger the pressure on the package.

8.2 Intermediate position

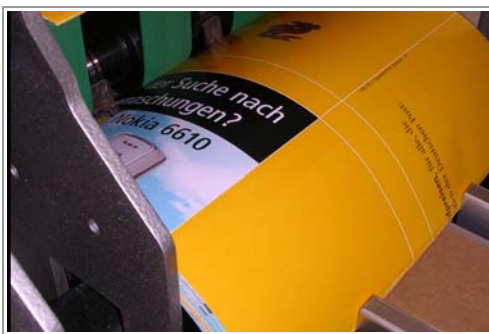
The intermediate position starts after the last product in the stack has fallen on to the elevation table. The intermediate position is required so that the pressing rails can be retracted.

For products which spring open, it can be necessary to lower the intermediate position so that there is enough room for the pressing rails to retract.
The setting range lies between -200 mm and +200 mm. Ideally, after reaching the intermediate position, the upper edge of the package is approx. 20 mm under the pressing rails.

8.3 Pressing rails earlier / later

After reaching the intermediate position, the pressing rails move to their working position. The package can be pressed. Depending on the format, it could make sense to move the pressing rails to the working position earlier or later. The smaller the value, the earlier the pressing rails are started.

Pressing rails started too soon



Picture 932

Pressing rails started too late



Picture 933

8.4 Sheet gap (only in single sheet mode)

The sheet gap in single sheet mode can be adjusted here. Adjustment made in mm.

8.5 Sheet fall time (only in single sheet mode)

The sheet fall time can be entered here. Enter in msec.

8.6 Shingling

Overlapping in the shingled stream can be adjusted in the shingling menu item. The values can be varied from 40% - 90%. At 40%, the products will overlap 40%.

8.7 Stop

The stop time can be adjusted proportionally until the interruption in the shingled steam is sufficient for the pressing rails to extend. Values can be set at 10% to 150%. Default value 75%.

8.8 Amount of folding errors

The number of recognised folding errors at which the machine will stop can be entered here. 0 = switched off.

8.9 Load default values

Default values are loaded by entering 1.

8.10 Tolerance

All products are measured by the delivery's infeed photocell. Now, extra tolerance to the reference value, which is measured by the calibrate key, can be entered in 0.1 mm. Products which exceed this value + the tolerance value are ejected via the waste sheet deflector.

8.11 Jogging time

The jogging frequency can be adjusted here. The set time in msec. units corresponds to one full phase.

8.12 Jogging motor

Jogging can be adjusted if required. The lower the value, the slower the jogging frequency. All joggers, back joggers and side joggers are simultaneously set with this adjustment.

8.13 Pre-collection finger delay (not active on the delta705)

In the working position, extension of the pre-collection finger can be delayed with this adjustment. Adjustment depends on the product and the speed. The greater this value, the later the pre-collection finger retracts

8.14 Stacking level compensation delay OUT (not active on the delta705)

As the elevation table returns from the intermediate position to the pressing unit, the flaps on the stacking level compensator are reset. Resetting the stacking level compensator is delayed by increasing this value.

This can be necessary for spines that spread out excessively at the spine.

8.15 Welding time

This adjustment determines for how long the band is welded. Band type is selected in the option menu. Paper or plastic film. The welding time is chosen depending on the material.

8.16 Cooling time

This adjustment determines for how long the band is cooled. Band type is selected in the option menu. Paper or plastic film. The cooling time is chosen depending on the material.

8.17 Sheet recognition

In double stream, it could happen that products arrive offset in the delivery. Ejection of the products can be cancelled by changing sheet recognition via a photocell.

8.18 Shingling belt speed (only in single sheet mode)

Constant speed for the shingling belt in m/sec. .

0 = automatic mode

9 Quick set-up

Short introduction for quickly setting-up the machine:
More detailed information can be found on the pages indicated.

9.1 Mechanical set-up

- | | |
|---|---|
| 1. Set up machine to the previous machine and lock the adjusting feet | Page 25 |
| 2. Adjust delivery's height | Page 25 |
| 3. Call up one product from the folding machine or saddle stitcher and adjust round belts | Page 20 |
| 4. Set infeed photocell | Page 19 |
| 5. Adjust pressing unit | Page 31 |
| - Folding machine | 1. Pre press roller 75% |
| | 2. Main press roller 50% |
| - Saddle stitcher | 1. Pre press roller 125% |
| | 2. Main press roller approx. 100% or more |

Controls:

- | | |
|---|---------|
| 1. Press calibrate key | Page 37 |
| 2. Call up product | |
| 3. Press auto calibrate key | Page 32 |
| 6. Call up the product and allow it to run up to the shaft by pressing the rocker switch. | Page 37 |
| 7. Adjust lateral jogging plates to the product. | Page 37 |
| 8. Adjust adjusting frame to the product width | Page 34 |
| 9. Adjust support finger under the product edges. | Page 34 |

9.2 Controls

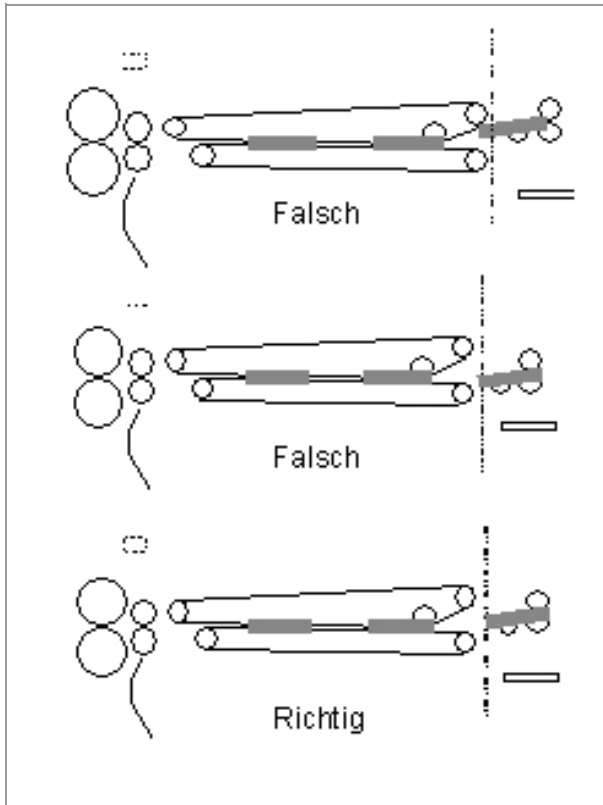
- | | |
|--|---------|
| 1. Enter amount | Page 39 |
| 2. Set total counter to zero | Page 41 |
| 3. Select single sheet or shingled stream depending on the product and speed. | Page 42 |
| 4. Align the round belt's speed on the folding machine or saddle stitcher +/- 10%. | Page 30 |

10 Quick Check

9 questions that you should ask yourself after set up.

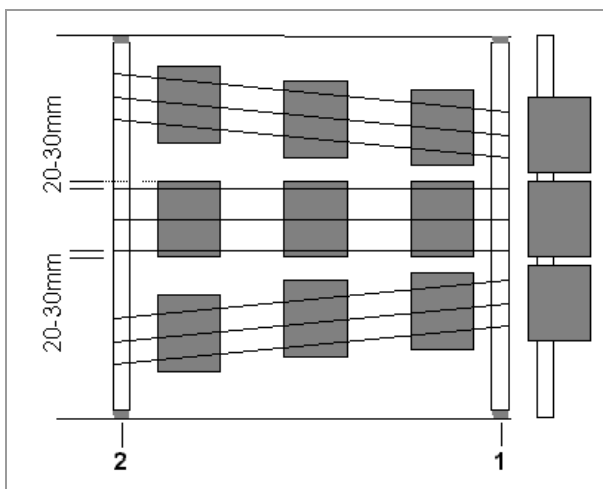
1. Is the height of the delivery to the folding machine correct?

Plan



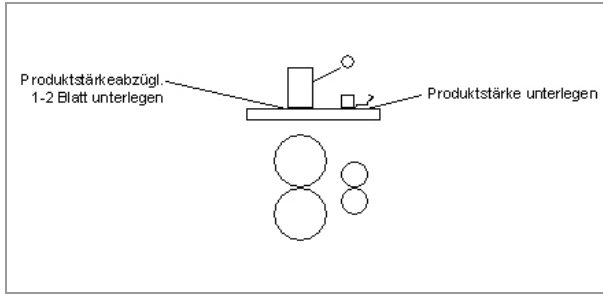
2. Are the brochures conveyed at an equally slanted angle?
3. Are the round belts running parallel to each other and are they adjusted correctly to the product?

View



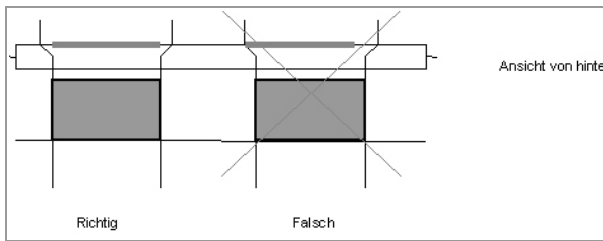
4. Is the difference in speed between the folding machine and the automatic bundling delivery less than 10%?
5. Are the infeed photocells free?
6. Have the pre and main pressing rollers been adjusted to the product thickness?

View



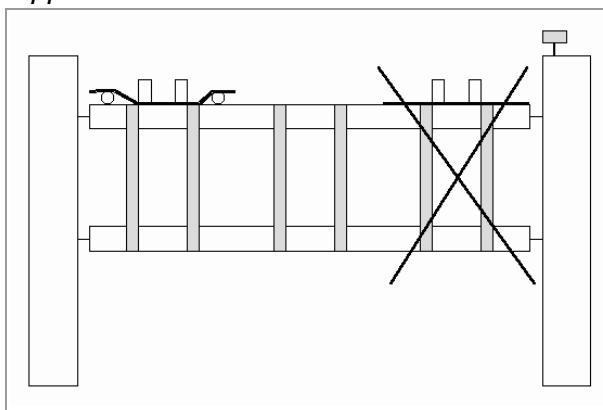
7. Do the transport belts convey the shingled stream continuously without faltering?
8. Are the shingled streams fed into the middle of the shafts?

View



9. Have the support fingers in front of the shaft been adjusted?

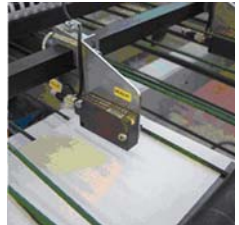

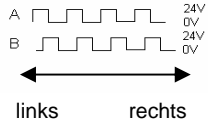

Upper round belts view



3.2.a

11 Sensors, Pneumatics, Motors

11.1 The sensors used and their function

Article No.	Description	Functional principle	Picture
61.00002	<p>Reflection light scanner TW10-40mm</p> <p>Reflection light scanner with background shielding</p> <p>B8, B9....</p>	<p>A transmitter sends out light in the infrared range, which reflects from the detected object and is sent back to the receiver in the light scanner. Objects, which are more than 40 mm away are suppressed by this. When an object is detected, the LED on the scanner lights up and the output returns 24V DC.</p> <p>.</p>	
61.00025 61.00026	Rotary pulse encoder	<p>Rotary pulse encoders convert rotational turns into impulses. These signals can be evaluated so that conclusions can be drawn about the paths covered.</p> <p>The encoders fitted by palamides are equipped with two impulse tracks, which also enable recognition of the direction of rotation (left/right turning). The second track (B-track) is placed at 90° to the A-track.</p> <p>Encoders with 32 and 200 impulses respectively are used on the delta. As the sensors do not have any sort of display, their function can be checked under service / TPU counter.</p>	 
63.00117	Inductive proximity switch	<p>If a metal part penetrates the working area of the sensor, losses occur in the eddy current of the magnetic field shown by the sensor. These are recognised by the sensor and it sends a signal with 24V DC to its output.</p> <p>At the same time its status is signalled to the terminal by a LED. Generally, the nearer the detected metal object is, the quicker the sensor switches.</p>	

11.2 Sensors

Delta sensors overview

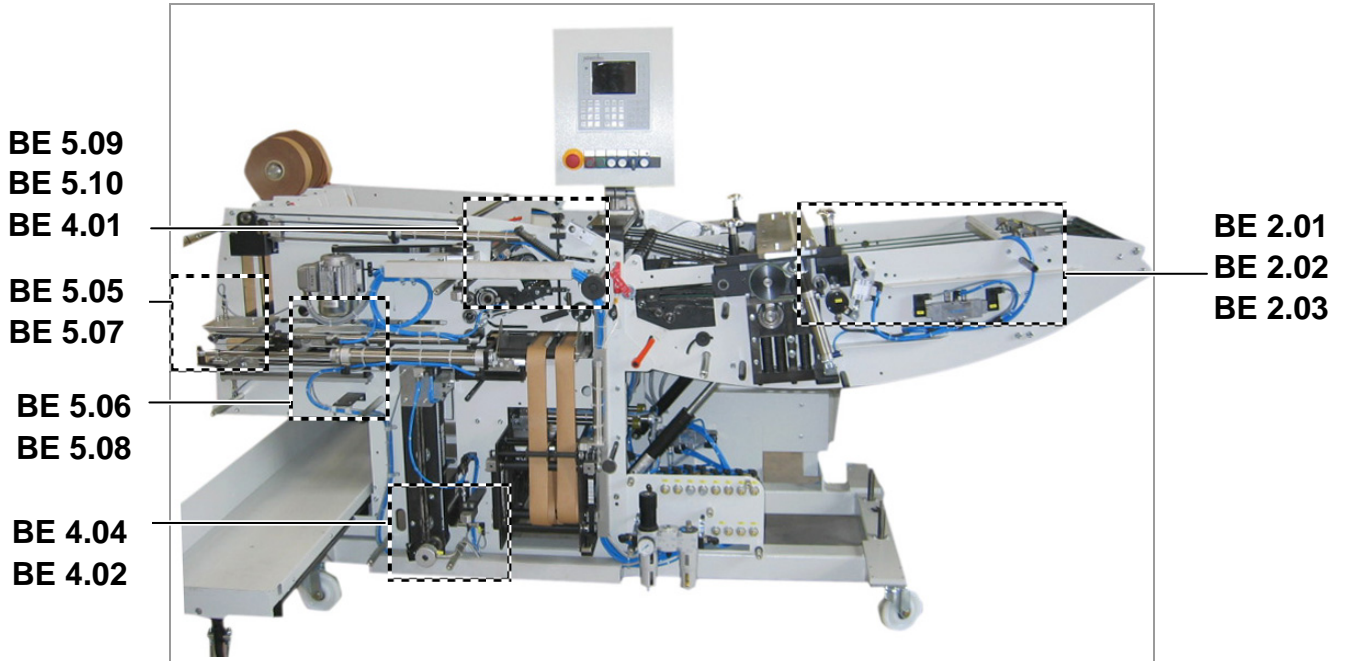


Abb.575-5

Delta sensors overview

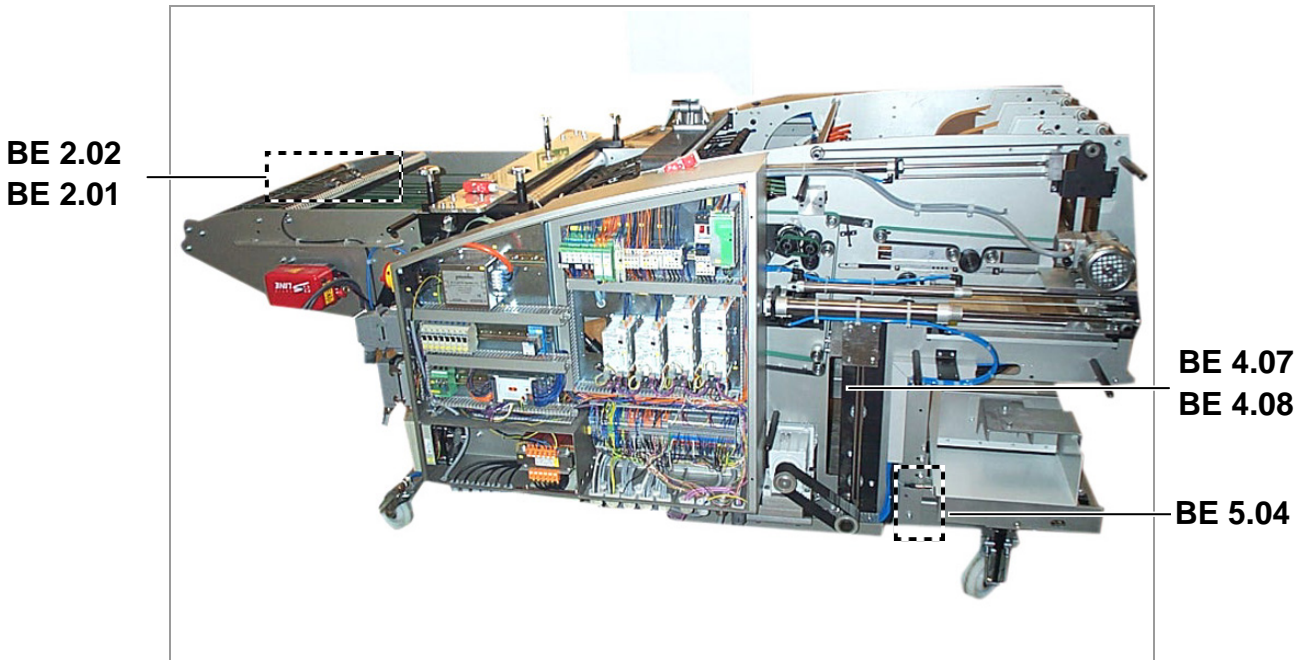


Abb.1589-r

Sensors BEX 2.1 and BEX 2.2

Delivery

BEX2.1

BEX2.2

Abb.567

Sensor	Position/ Description	Function
BEX2.1	Sensor sheet measurement	Count and measure sheets
BEX2.2	Sensor sheet measurement	Count and measure sheets

Shaft encoder BEX 2.03

Press shaft encoder

BEX 2.03



Abb. 550

Sensor	Position/ Description	Function
BEX 2.03	Press shaft encoder	The current rotational speed is sent to the controls

Shaft encoder BE 4.01

Belt drive shaft encoder

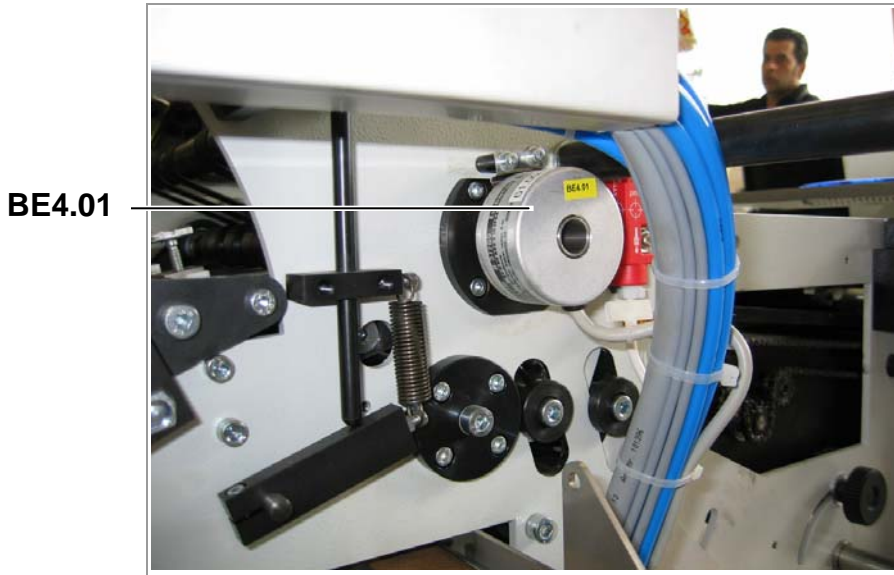


Abb.552

Sensor	Position/ Description	Function
BE4.01	Belt drive shaft encoder	Rotational speed control of the belt drive

Shaft encoder BE 4.02

Elevation table shaft encoder



Abb.565

Sensor	Position/ Description	Function
BE4.02	Elevation table shaft encoder	Determines the position of the elevation table
BE4.04	Sensor	Elevation table home position

Sensor BE 4.05

Right side loader



Abb.07

Sensor	Position/ Description	Function
BE 4.05	Right side loader	
BE 4.06	Left side loader	

Sensor BE 4.07 und BE 4.08

Ejector shaft encoder

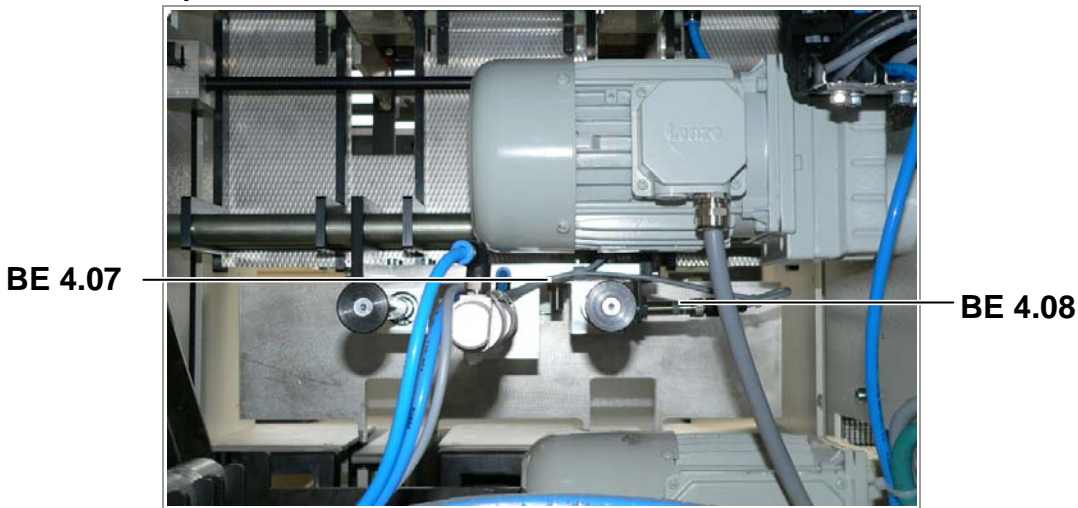


Abb. 1030565

Sensor	Position/ Description	Function
BE 4.07	Ejector in home position	
BE 4.08	Ejector in operating position	

Sensor 5.04

Package lift right side



Abb. 569

Sensor	Position/ Description	Function
BE 5.04	Package lift right side	When activated, the package lift is located on the right hand side

Sensor BE 5.05

Pressing rails



BE 5.05

Abb.570

Sensor	Position/ Description	Function
BE 5.05	Pressing rails in home position	

Sensor BE 5.08 and Sensor BE 5.06*Pressing rails*

BE 5.08

BE 5.06

Abb.571

Sensor	Position/ Description	Function
BE 5.08	Welding die in operating position	
BE 5.06	Pressing rails in operating position	

Sensor BE 5.07*Welding die in home position*

BE 5.07

Abb.578

Sensor	Position/ Description	Function
BE 5.07	Welding die in home position	

Sensors BE 5.09 and BE 5.10

Jogging plate sensors

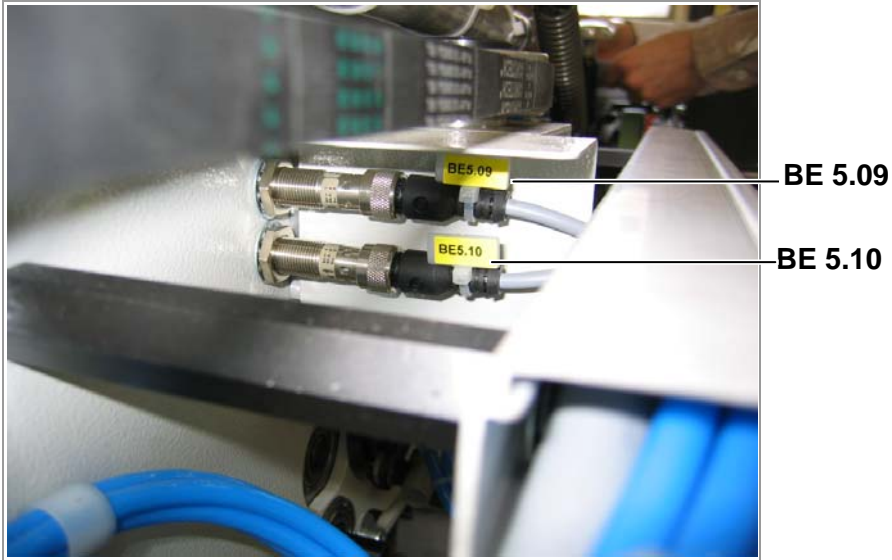


Abb.580

Sensor	Position/ Description	Function
BE 5.09.	Jogging plate narrowest position	
BE 5.10	Jogging plate widest position	

Sensors BE11, BE11.02 and BE11.04

Package lift

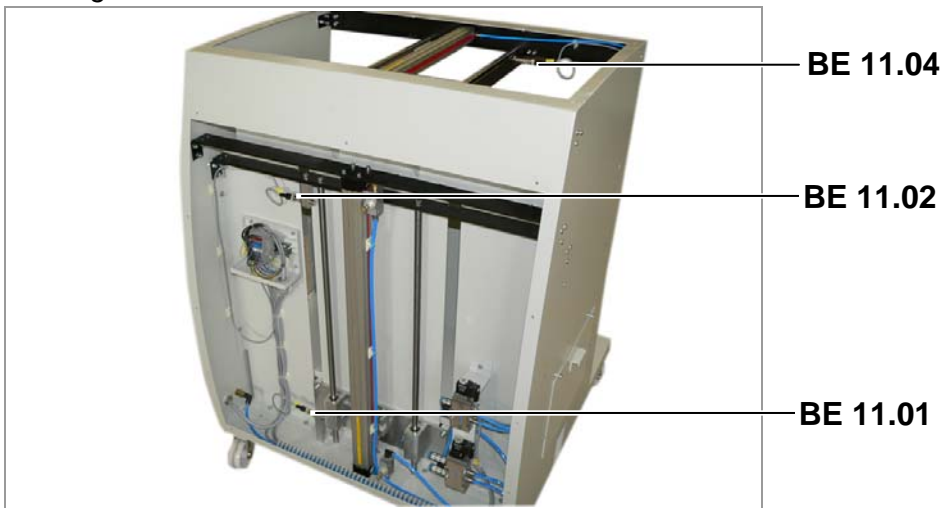
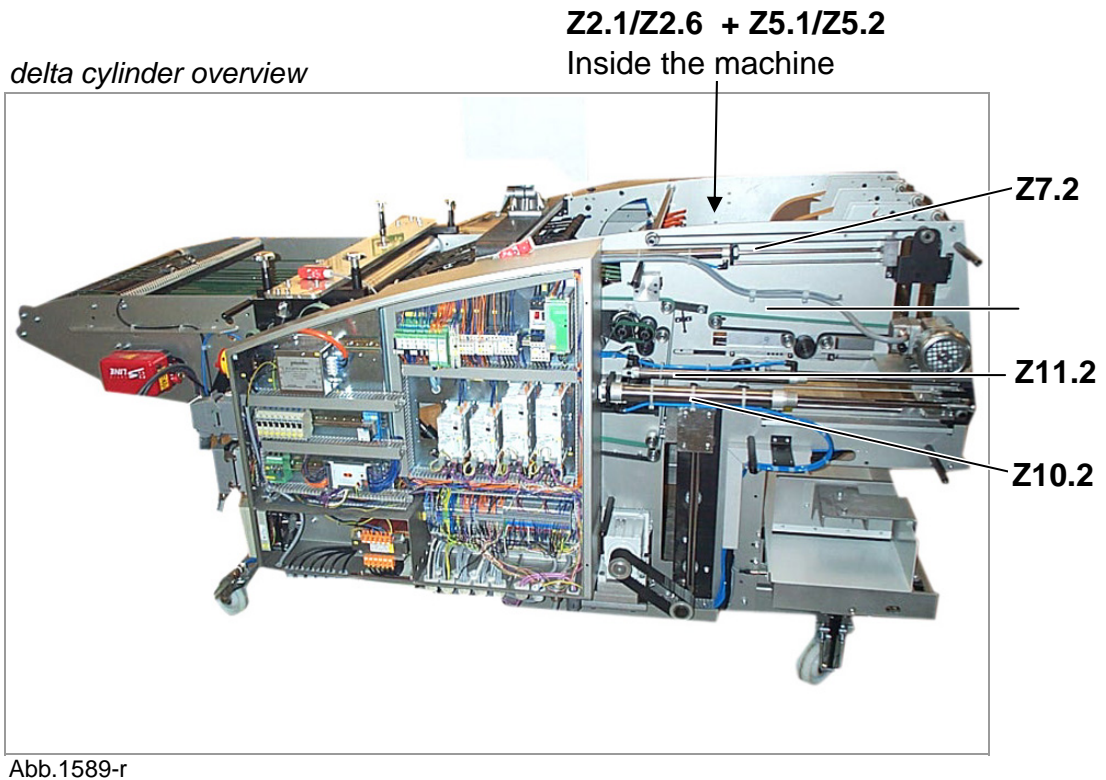
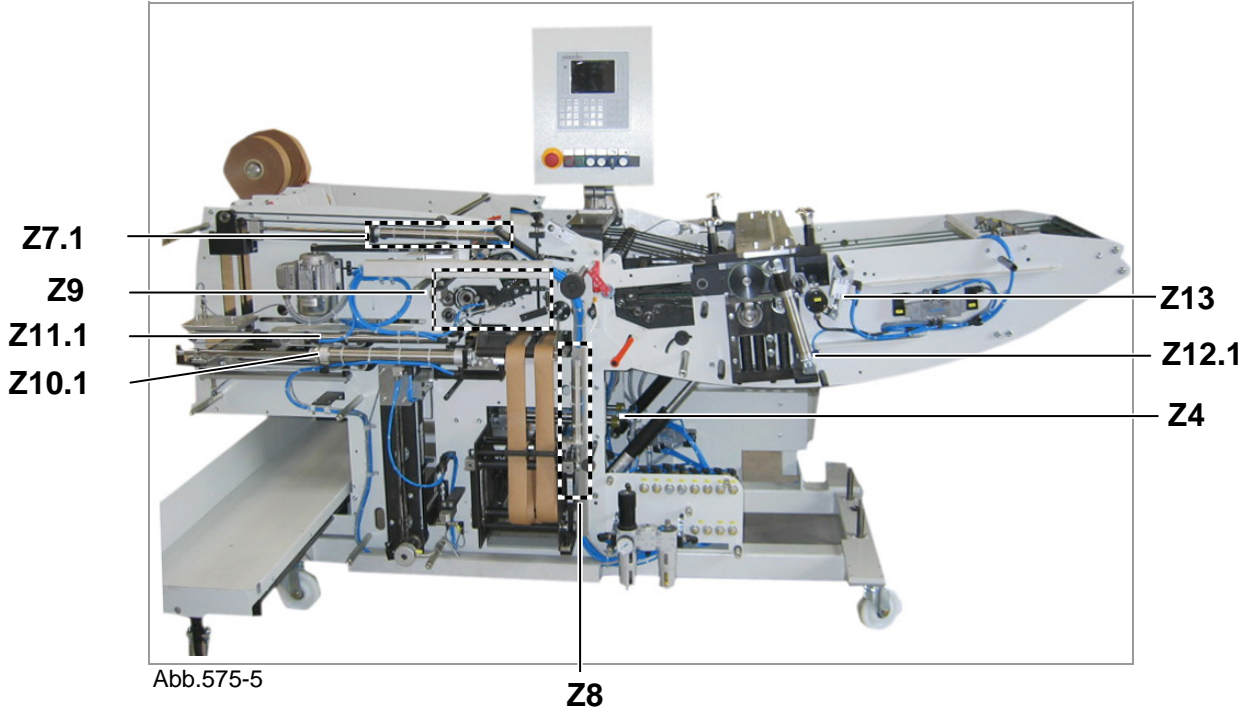


Abb.1030537

Sensor	Position/ Description	Function
BE11.01	Package lift down	
BE11.02	Package lift up	
BE11.04	Slider operating position	

11.3 Cylinder

delta cylinder overview



Waste sheet deflector cylinder

Open waste sheet deflector / pressing unit



Abb.550

Cylinder	Position/ Description	Function
Z12.1	Open pressing unit left	
Z13	Waste sheet deflector	

Stopper cylinder

Stopper cylinder

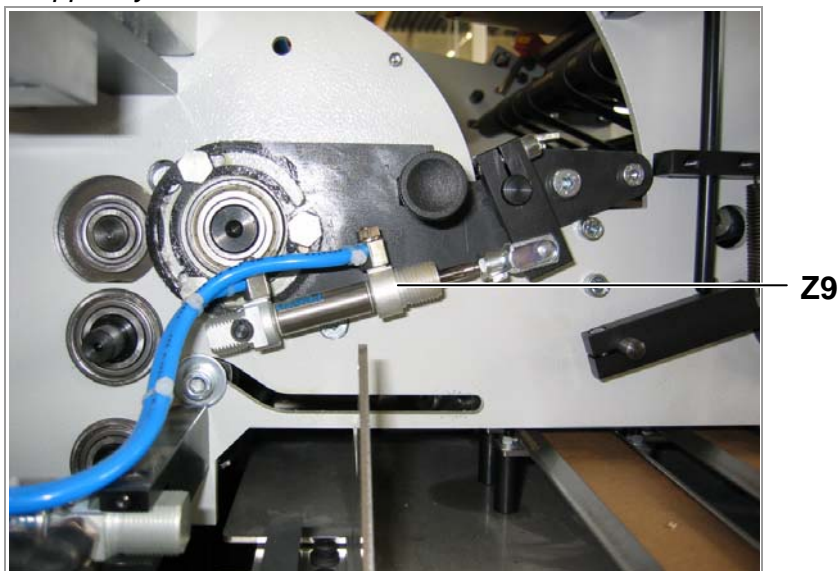


Abb.553

Cylinder	Position/ Description	Function
Z9	Stopper	

Cylinder shaft narrower/wider / small format

Shaft



Abb.558

Cylinder	Position/ Description	Function
Z2.1-Z2.6	Small format option (pre-collection fingers)	
Z5.1/Z5.2	Shaft narrower/wider	

Ejector cylinder

Ejector



Abb.556

Cylinder	Position/ Description	Function
Z4	Ejector	

essing rails / welding die cylinder

Pressing rails / welding die t

Z2.1 – Z2.6



Z5.1 / Z5.2

Abb.558

Cylinder	Position/ Description	Function
Z10.1	Welding die left	
Z11.1	Pressing rails left	

Band tensioner cylinder

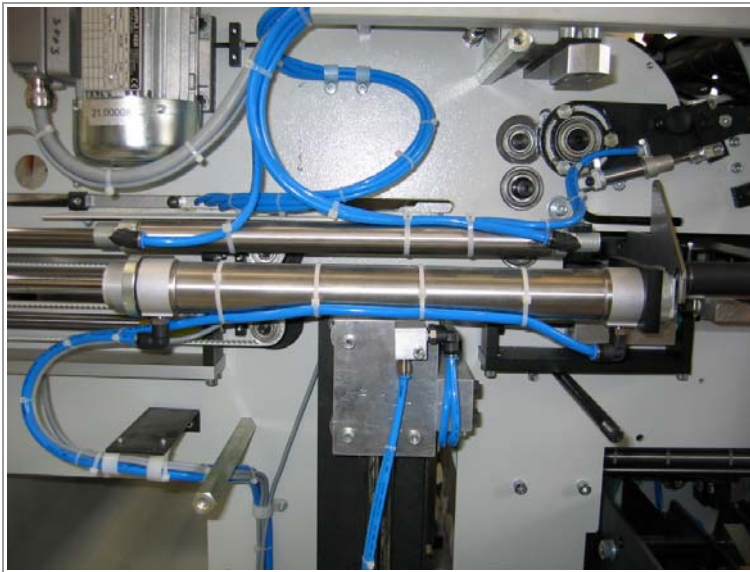


Abb.8560

Cylinder	Position/ Description	Function
Z8	Upper band tensioner	

Pressing rails / welding die cylinder

Package lift

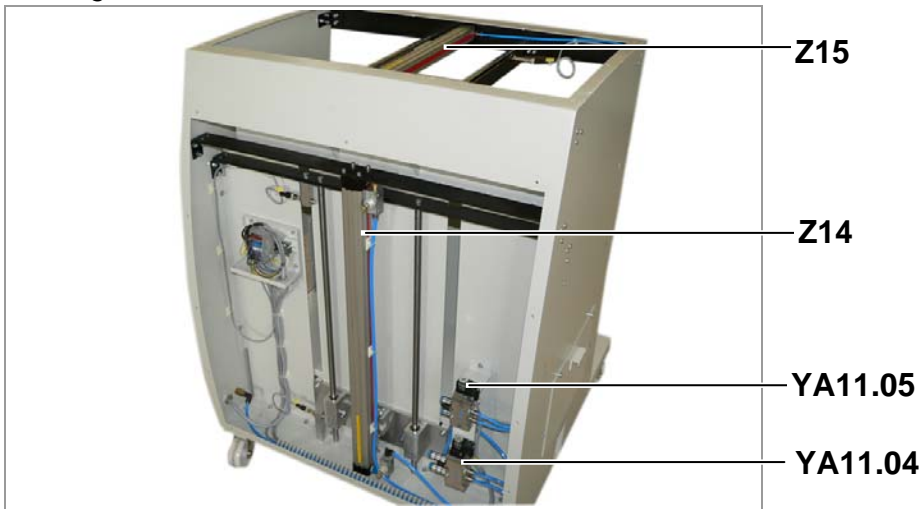


Abb.1030574

Cylinder	Position/ Description	Funktion
Z15	Slider cylinder	
Z14.	Package table cylinder	
YA11.04	Valve V10	Package lift upwards
YA11.05	Valve V11	Extend slider

Side loader cylinder

Right side loader



Abb.07

Cylinder	Position/ Description	Function
Z1	Side loader cylinder	

11.4 Motors

Delta motors overview

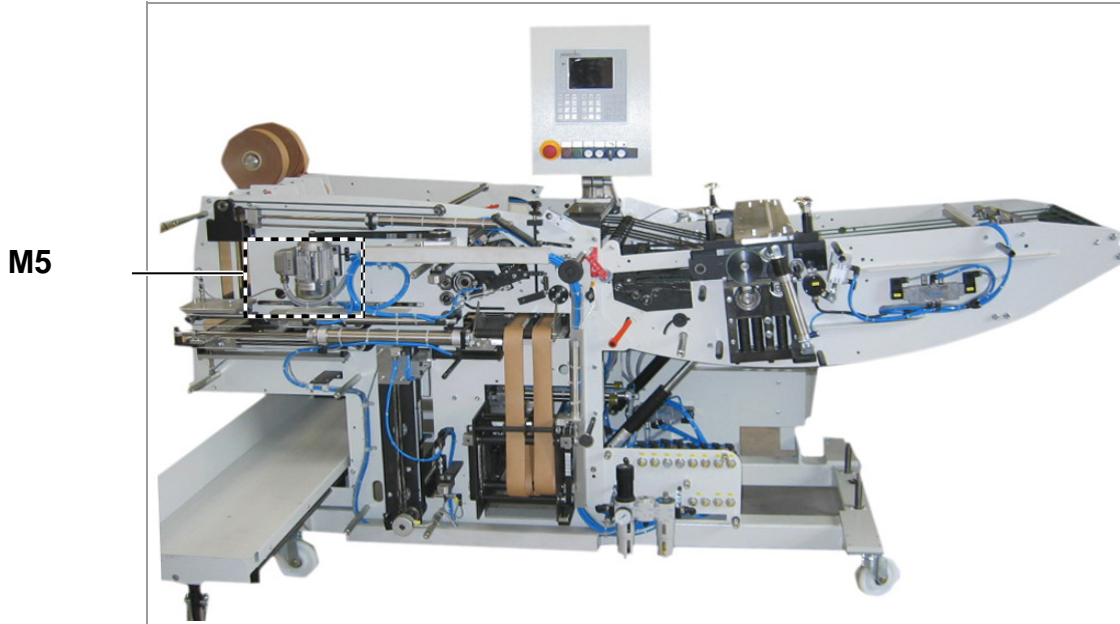


Abb.575-5

Delta motors overview

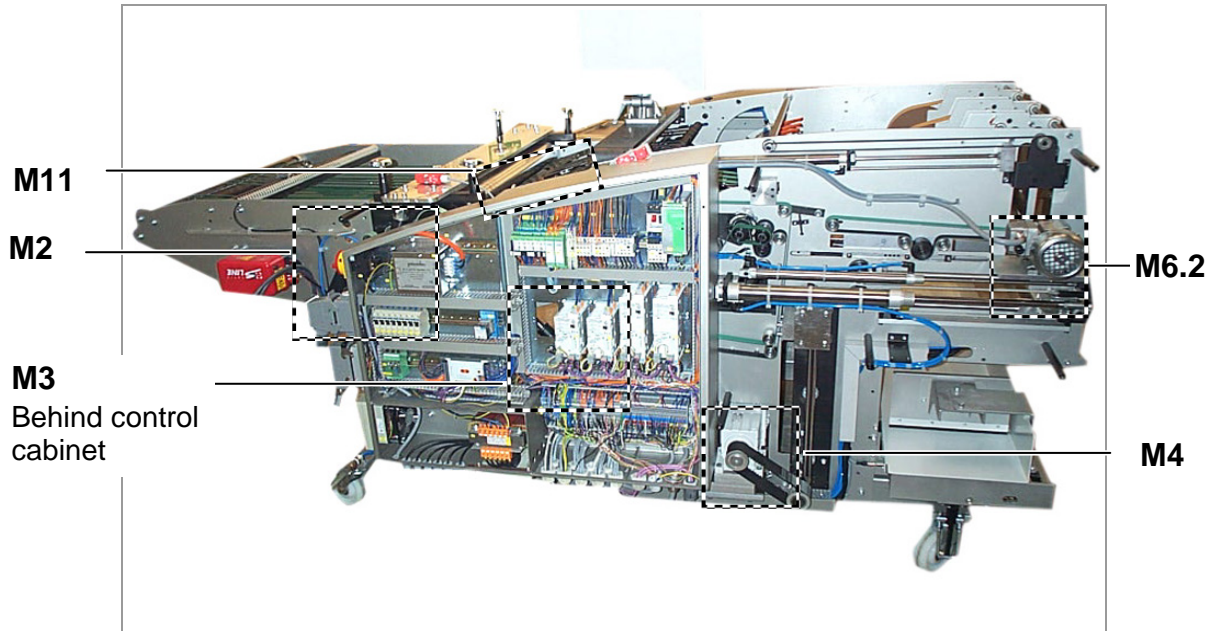


Abb.1589-r

M2	Press	M5	Side jogger
M3	Belt drive	M6	Shaft rear wall jogger
M4	Elevation table	M11	Format adjustment