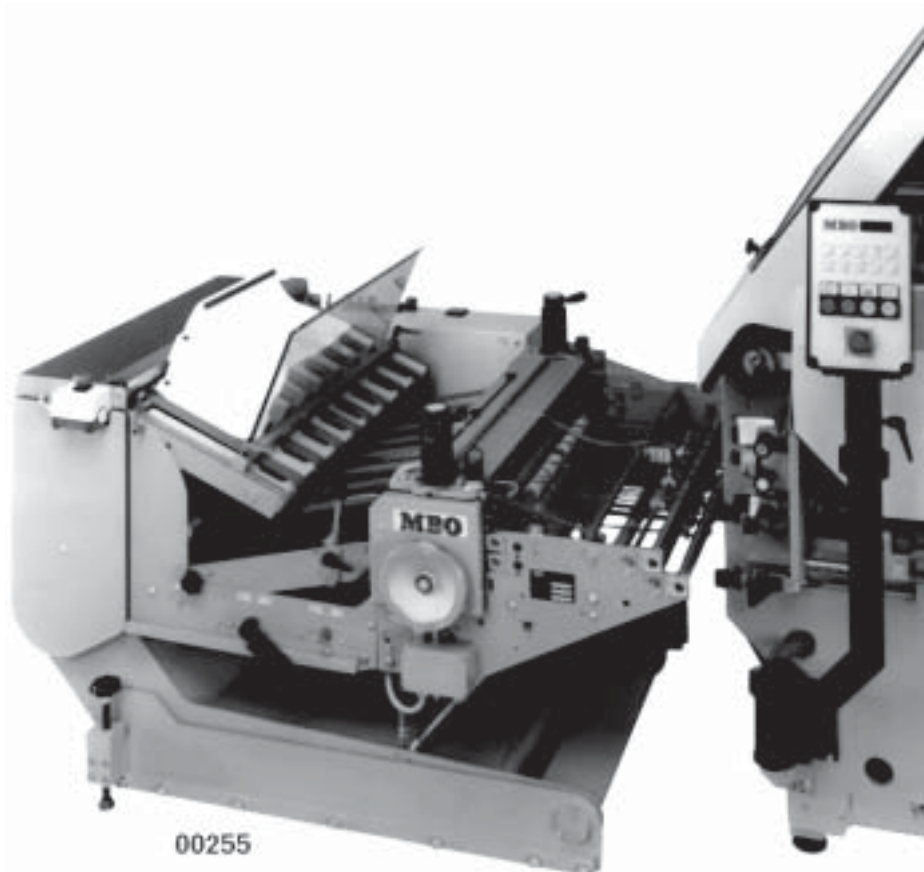




MBO
Folding Technology

Operating Manual

Pile Delivery FA 66 - ME
with Sheet Pressing
and Marking Device



00255

Contents

Prologue	4
1.0 Specifications	5
1.1 Manufacturer	5
1.2 Type: Pile Delivery FA 66 - ME	5
1.3 Technical data	6
1.3.1 Sizes	6
1.4 Documentation:	7
1.5 Information to user / Functioning description	8
2.0 BASIC SAFETY INSTRUCTIONS	9
2.1 Warnings and symbols	9
2.2 Safety at working place - destined use of the delivery	9
2.3 Safety at working place - destined use of the folding machine	11
2.3.1 Check List of machine	11
2.3.2 Checklist of protective hoods	11
3.0 Transportation / Erection / Installation	12
3.1 Transportation	12
3.2 Installation	12
3.3 Erection	13
3.4 Electrical connection	13
4.0 Maintenance	14
4.1 Spare parts procurement	14
4.2 Lubrication	15

4.3	Lubrication / Cleaning	16
4.4	Tensioning of belts and tapes	16
4.4.1	Chain of main drive motor	16
4.4.2	Drive of pressing rollers and infeed tapes	17
4.4.3	Transportation tapes	18
5.0	Operation of the delivery	19
5.1	Control panel	19
5.2	Infeed table	20
5.2.1	Infeed tapes	20
5.2.2	Multiple - up production	21
5.2.3	Marking device	22
5.3	Pressing unit	23
5.4	Collating table	24
5.5	Collecting table	26
5.6	Knock-up table	26
6.0	Final remarks	27

Prologue

With the MBO delivery you have purchased a valuable product. However, it is absolutely imperative to comply with all Safety Regulations and Safety Instructions.

This Operating Manual should also instruct you to correctly operate the MBO delivery and to comply with the Safety Regulations and to maintain it properly.

1.0 Specifications

1.1 Manufacturer

MBO Binder & Co., Maschinenbau Oppenweiler
Grabenstrasse 4, 71570 Oppenweiler
P.O. Box 1169, 71567 Oppenweiler
Telefon 07191/46-0
Fax 07191/4634

1.2 Type: Pile Delivery FA 66 - ME

1.3 Technical data

1.3.1 Sizes

Working width	66 cm
Sheet width min.	10 cm
Sheet width max.	30 cm
Pile height	30 cm
Infeed height	40 cm min.; 95 cm max.
Pressure	2000 kp.
Speed	15-180 m/Min.
Power requirements	1,3 kW

Option:

Integrated batch counter

1.4 Documentation:

Customer: _____

Machine configuration: Pile Delivery FA 66 - ME _____

Machine - No _____

Serial - No.: _____

Electrical data:

Wiring diagram no. _____

Folding unit: _____

Feeder: _____

Delivery: _____

Operating voltage (V/Hz): _____

Control voltage (V/A): _____

Control voltage (V/A): _____

Total rated current (A): _____

Fuse at power supply (A): _____

Conformity Certificate: _____

Noise level (dB/AI): _____

1.5 Information to user / Functioning description

The pile delivery FA 66-ME is a mobile separate unit with own drive for pressing and horizontal piling of single products in one- or multiple-up production. When running multiple-up production the streams may be splitted and therefore be taken off much easier.

With the „ Marking Device „ batches may be counted and laterally stepped.

The pile delivery FA 66-ME is only designed to deliver and press folded sheets. Processing of any other materials should not be attempted. The manufacturer or supplier would not be liable for any damages caused as a result !

2.0 BASIC SAFETY INSTRUCTIONS

2.1 Warnings and symbols

The following designations respectively signs are used for very special instructions



>**NOTICE**< Special instructions with respect to the economical use of the machine.



>**ATTENTION**< Special instructions respectively requirements and prohibitions to avoid injuries and damages.



>**DANGER**< Instructions respectively requirements and prohibitions to prevent personal injuries or extensive damages.

2.2 Safety at working place - destined use of the delivery

2.2.1 MBO deliveries correspond to their stipulated Safety Technical Requirement at the time of their shipment. Therefore, any moveable and rotating parts are covered with protective hoods and are mechanically and electrically interlocked to such an extent as to not unreasonably detract from the operation.

Only one-man operation (unfavourable machine view at drive side)

2.2.2 At all safety technical preventions it is extremely important that the operating personnel achieves sufficient safety experience and is advised of all dangerous sources. The use of the delivery does not exclude danger to life and limb of the operator or third parties, respectively does not exclude the detraction of the machine and any other material assets.

2.2.3 The delivery should only be operated when in good working order. Any malfunctions which may impair the safety must be removed immediately by trained personnel or the manufacturer/supplier.

2.2.4 The delivery is designed to deliver and press folded sheets only. Processing of any other material should not be attempted. The manufacturer or supplier would not be liable for any damage caused as a result.




2.2.5 Carefully read the complete Operating Manual before you operate the delivery, including the Safety and Service Requirements.

2.2.6 The Operating Manual should be kept with the delivery at all times.

2.2.7 Complete the Operating Manual, if necessary with internal Safety Instructions as well as with the legal Regulations for Prevention of Accidents.

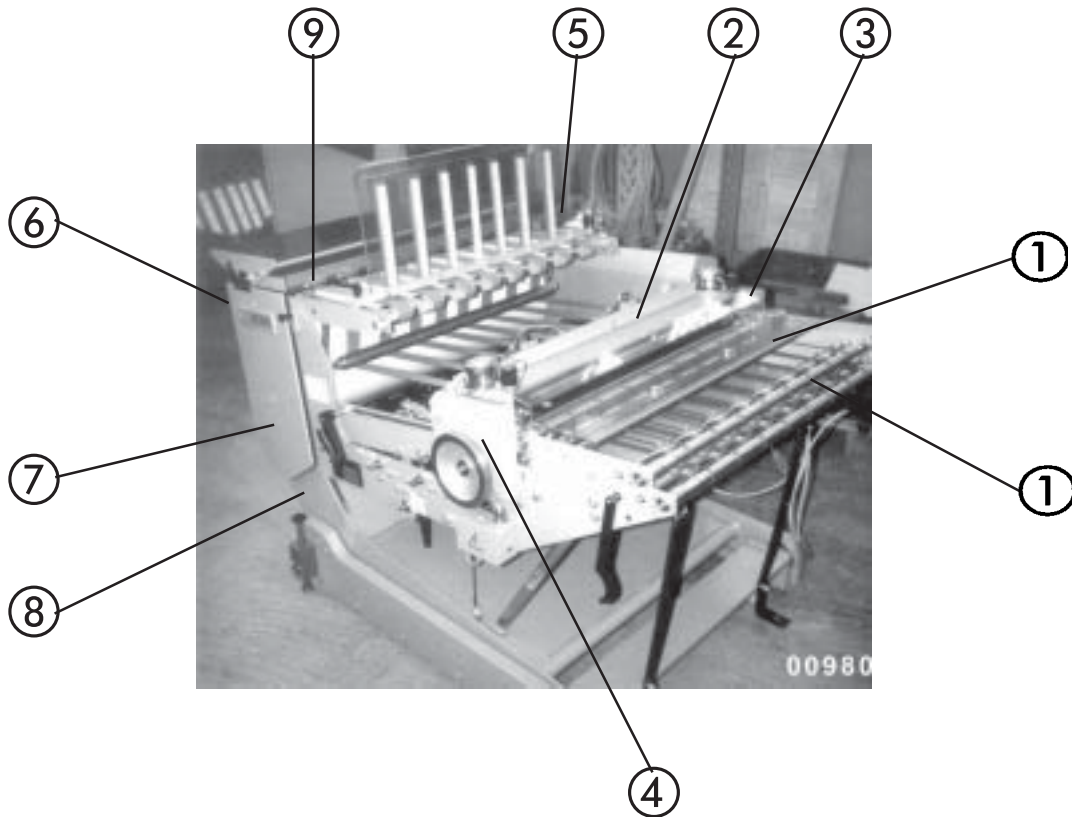
2.2.8 If more than one operator, ensure that all operators are trained and informed.

2.2.9 Never remove guards or safety interlocks as the machine will no longer be protected.

- 2.2.10 Never use any tools which are not in a perfect condition and make sure that no tools are left on the machine after completion of settings and maintenance. Tools which fall into the machine may cause serious injuries and damages.
- 2.2.11 Note that all Safety Instructions are kept in a legible and visible condition.
- 2.2.12 Any audible and visible change on the machine in relation to the safety must be reported to the supervisor or manager of your company immediately.
- 2.2.13 The operating personnel should be aware that loose clothing, jewellery or hair can cause serious injuries if caught in the machine.
- 2.2.14 It is absolutely prohibited to clean rollers, eliminate malfunctions, or to undertake adjustments while the machine is on operation.
>DANGER< Always activate the **EMERGENCY-STOP button**.
- 
- 2.2.15 Make sure that no other person starts the machine while you are working on it.
> DANGER < Always activate the **EMERGENCY-STOP button** or turn OFF the main switch.
- 
- 2.2.16 Check all the machine stoppages prior to starting the machine. You should never switch on the machine without first checking that the machine is in good working order and that no other person is making adjustments.
- 2.2.17 Turn off the main switch and secure it, if necessary, with a lock if you are required to undertake extensive mechanical or electrical maintenance and repair works.
- 2.2.18 Never open the main or sub-control panel! Only authorized personnel should gain access to the electronic control cabinets as there are no user serviceable parts.
> DANGER < if control cabinet is open! All main terminals could be alive even though the main switch has been turned off.
- 
- 2.2.19 Any damaged cables or electrical connections must be reported to the competent authorities of your company.
- 2.2.20 Machine connections must be installed in such a manner that no cables, tubes or hoses are left trailing.

2.3 Safety at working place - destined use of the folding machine

2.3.1 Check List of machine



2.3.2 Checklist of protective hoods

Pos.	Designation	Function contro	Visual contro	Result	Remarks
1	Protections against contact, infeed - Marking dev				
2	Protections against contact, pressing				
3	Protection of drive Tape running of pressing				
4	Protection of drive, pressing unit				
5	Covering Drive of drum				
6	Protection against contact, drum				
7	Covering Bearing of drum				
8	Covering Drive motor				
9	Covering, tape deviation				
	Date	Name		Signature	

3.0 Transportation / Erection / Installation

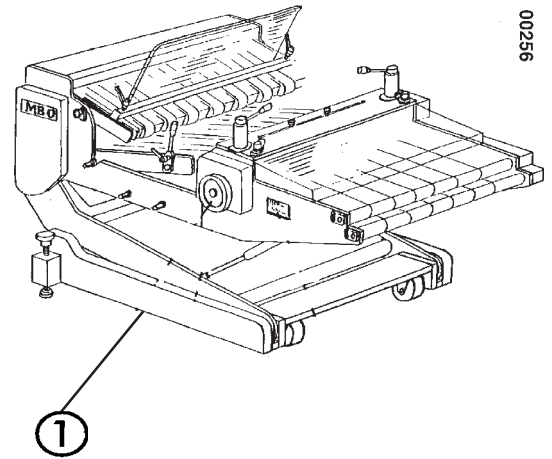
This part of the Operating Manual is directed to the competent service personnel and internal authorized personnel.

3.1 Transportation

The **FA 66-ME** is delivered on a pallet or in a crate. Move it to its final destination as close as possible. Unscrew the delivery off the pallet. Put ropes beneath the moving mechanism **1** and lift it with a forklift off the pallet.

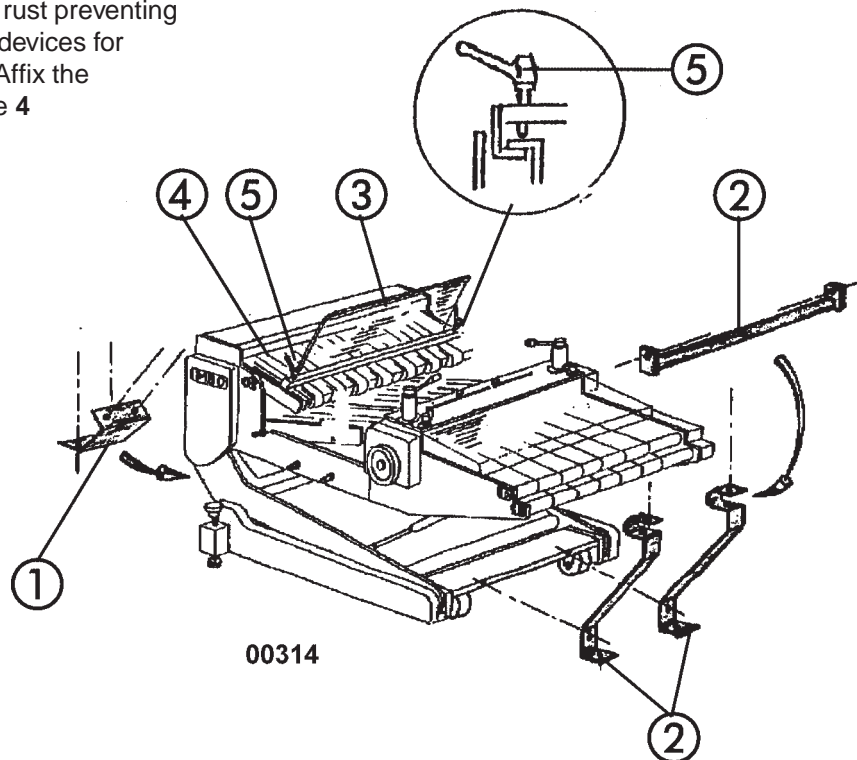


> **ATTENTION** < Secure the unit against injuries or falling over !



3.2 Installation

Clean the FA 66-ME off rust preventing agents. Remove safety devices for transportation **1** and **2**. Affix the sheet stop **3** at pile table **4** and fasten it with knurled grip **5**.

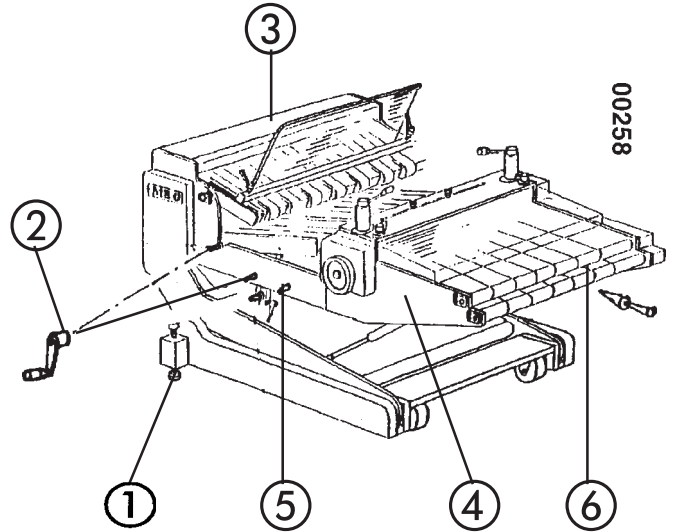


3.3 Erection



Place the FA 66-ME to the exit of the folding machine and secure it with supporting screws **1** against displacement.

> **NOTICE** < The centre of sheet should match with the centre of the delivery! Set the table **3** into an ergonomically favourable pick-up height through the crank **2**. Adjust the infeed table **4** to the necessary height. For this purpose, insert crank **2** into square **5**. Exit height of folding machine is infeed height **6** between the upper and lower infeed tapes.

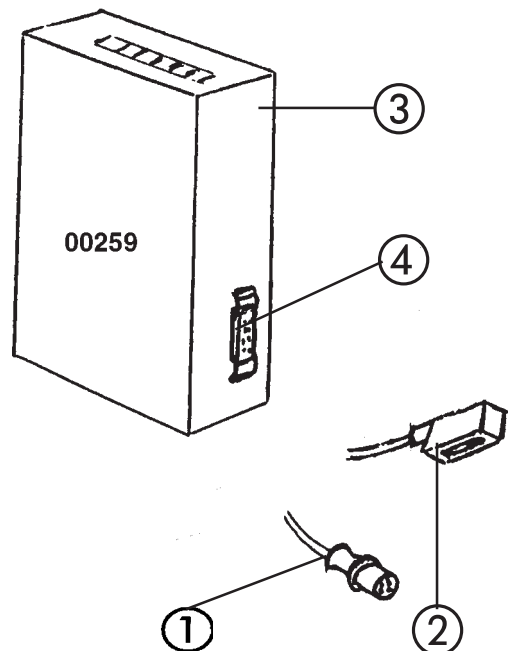


3.4 Electrical connection

Connect the FA 66-ME with the folding machine through power plug **1** and control plug **2**. Due to its own drive, the FA 66-ME may also be connected to foreign folders. For this purpose, insert power plug **1** to power supply and control plug **2** into „ self control „ socket **4** at control panel **3**. Both units must be turned ON and OFF separately.



> **DANGER** < Please bear in mind that, if connected with foreign folders, there is no joint disconnection of the FA 66-ME and the foreign machine. Manufacturer will not be liable for any damages or injuries caused by the missing safety disconnection!



4.0 Maintenance

This part is directed to the competent service personnel or internal authorized personnel.

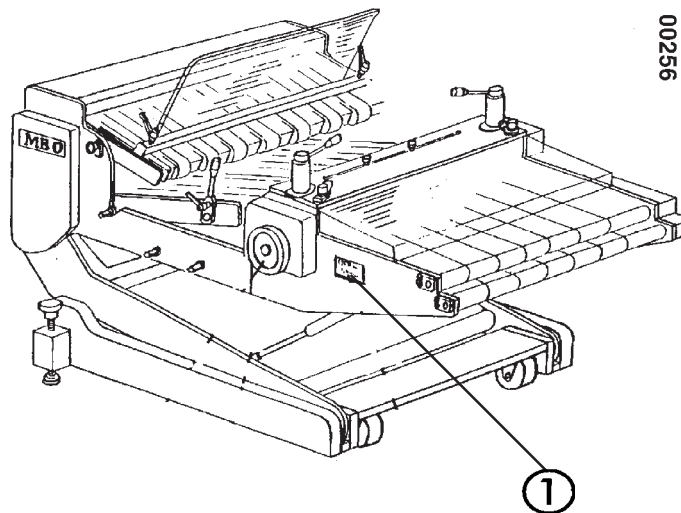


> **DANGER** < No cleanings nor maintenance works should be carried out unless the electrical supply is isolated. Always turn OFF the isolator on the control cabinet and secure it with a safety lock !

4.1 Spare parts procurement



> **ATTENTION** < Only use the spare parts supplied or recommended by the manufacturer. It is absolutely imperative to indicate type and/or serial number of machine when you order spare parts - see machine label 1.

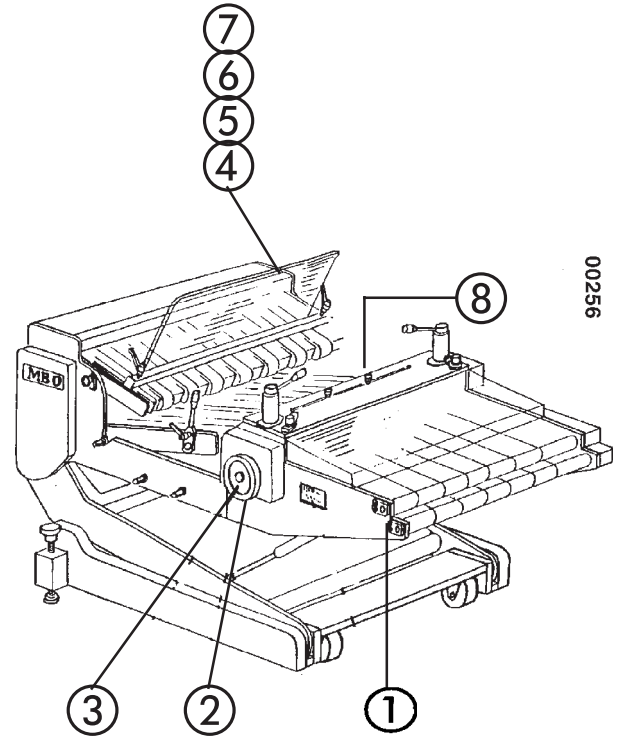


4.2 Lubrication

Clean bearings of marking axles **1** weekly, and provide them with a slight touch of oil.

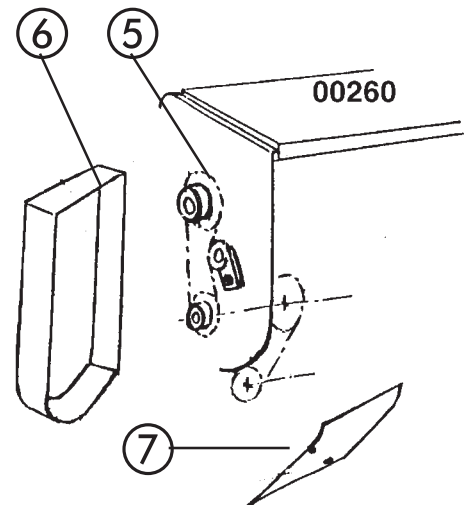
Lubricate the nipple **2** behind the handwheel **3** with a slight touch of oil monthly.

Clean drive chains **4** and **5** and provide a slight touch of oil monthly.



Prior thereto, remove guards **6** and **7** and replace them after lubricating works have been completed.

Clean the setting chains **8** for the collector roller monthly, and provide it with a slight touch of oil.



4.3 Lubrication / Cleaning



> **NOTICE** < Generally, the machine should be cleaned after each job, particularly moveable parts which have been changed due to change of sheet size, because heavy dust may cause reduction of function.

4.4 Tensioning of belts and tapes



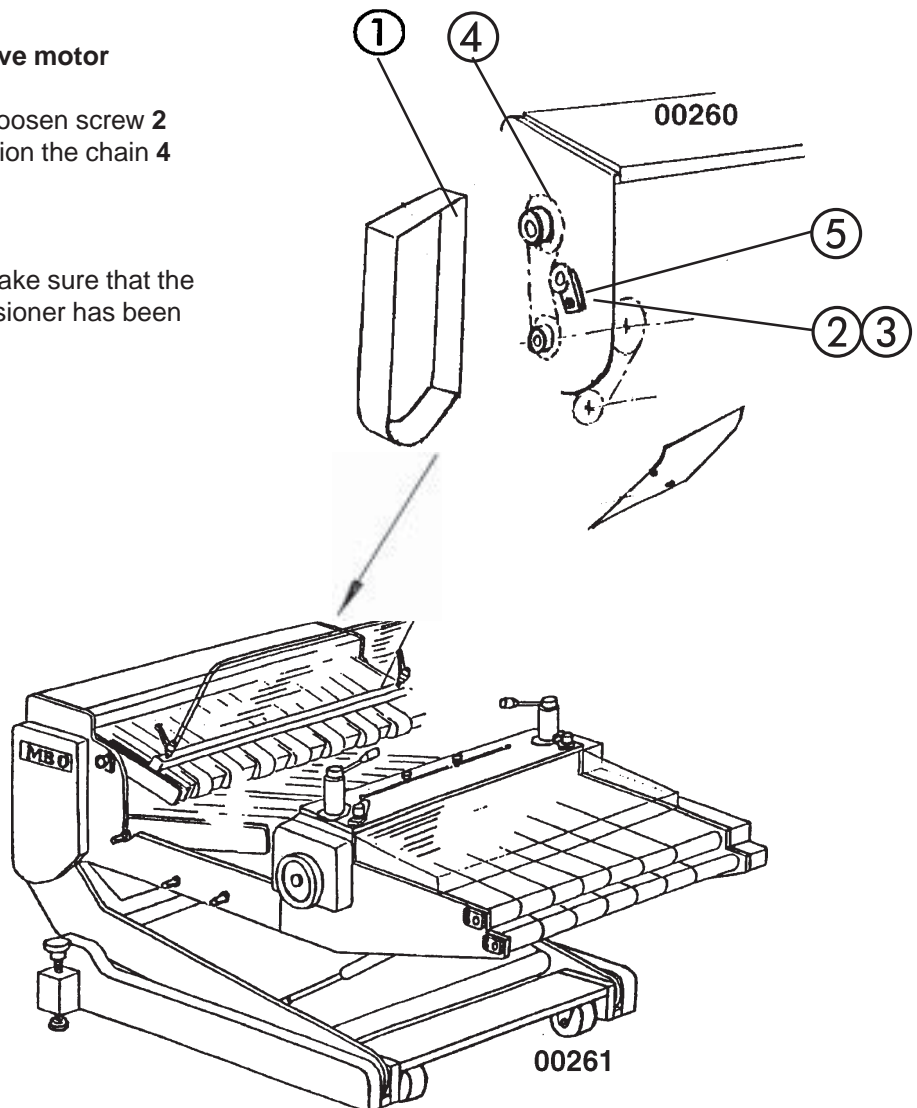
> **NOTICE** < Check the tension of drive tapes and chains monthly; if necessary, retension them.

4.4.1 Chain of main drive motor

Remove guard 1, loosen screw 2 and nut 3 and tension the chain 4 with tensioner 5.



> **ATTENTION** < Make sure that the screw at chain tensioner has been fastened again.

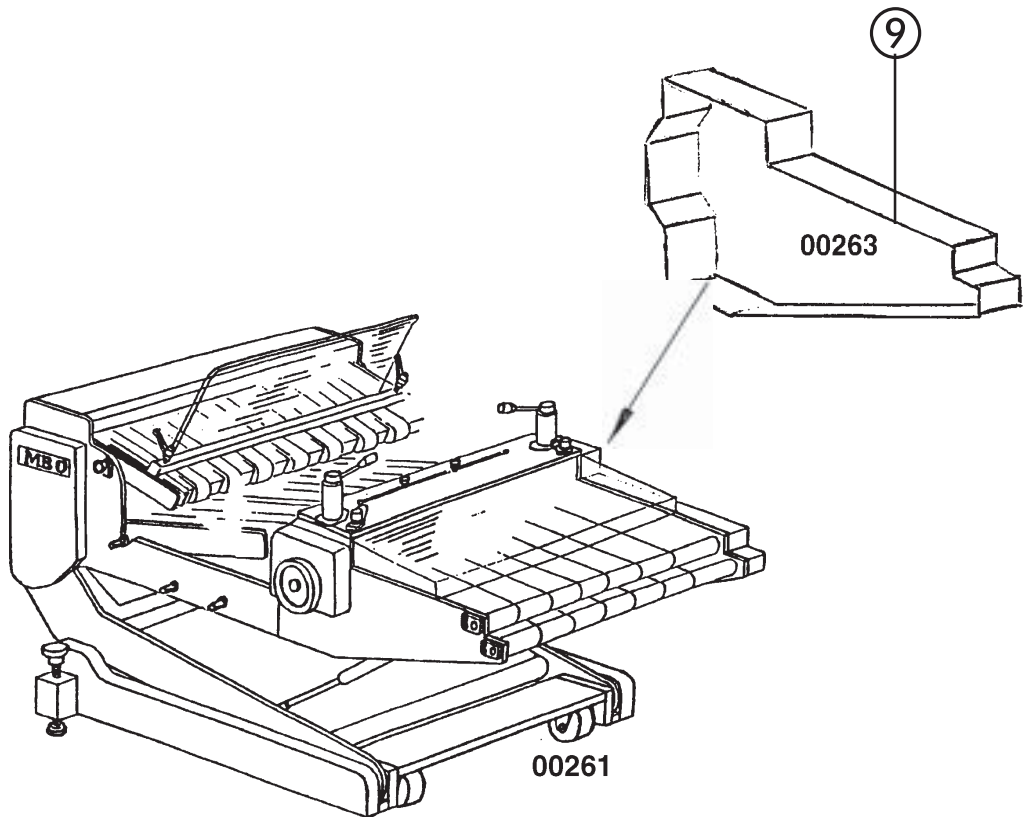
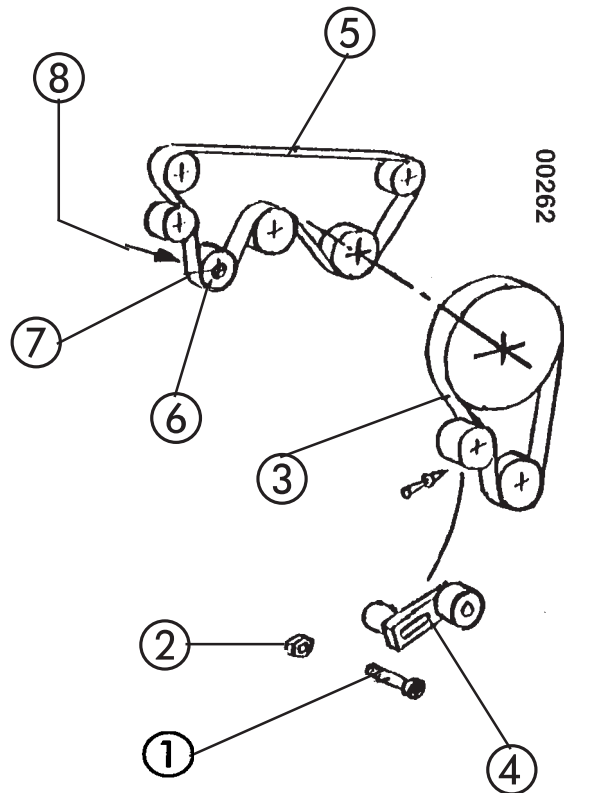


4.4.2 Drive of pressing rollers and infeed tapes

Loosen the screw 1 with nut 2 at the inside, tension the Poly V-belt 3 with belt tensioner 4.

Prior you tension the drive belt 5 with tensioning roller 6, loosen the screw 7 with nut 8 at the inside.

Refasten screws 7 with nuts 8 again and replace protective hood 9.



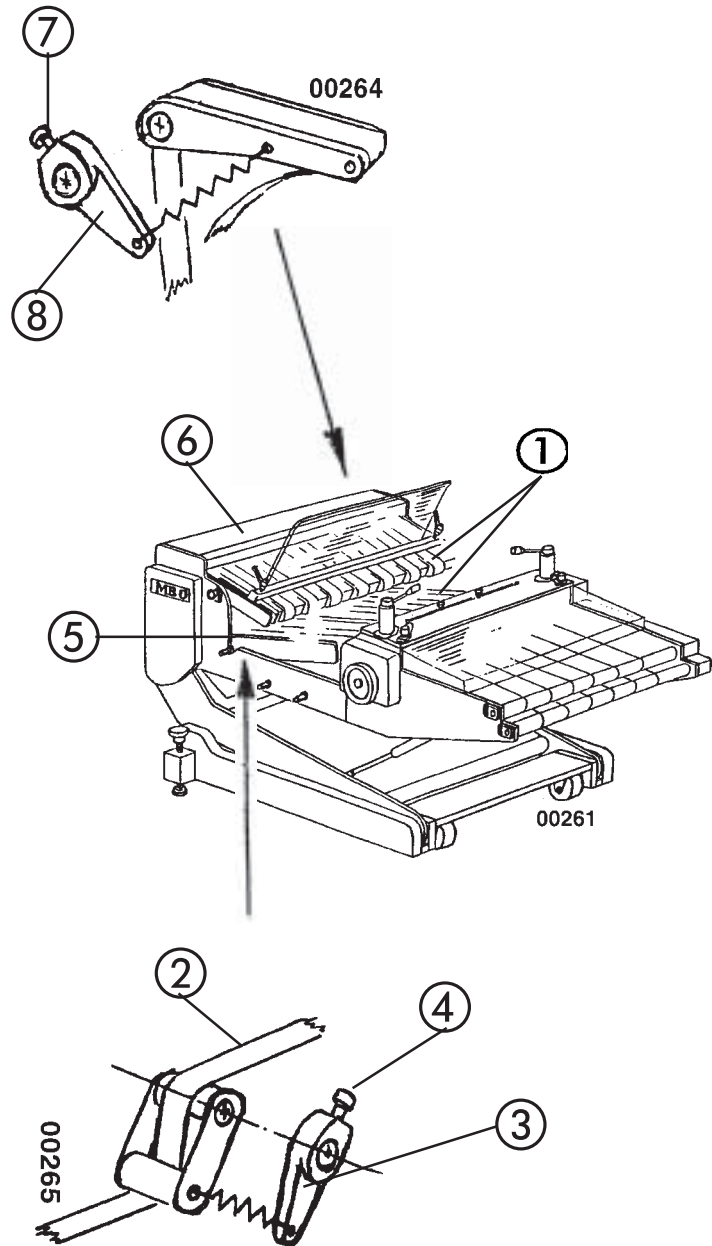
4.4.3 Transportation tapes

The internal transport tapes **1** are automatically tensioned with springs, the external transport tapes **2** are individually tensioned with tensioning lever **3**. Retension, if necessary: loosen the screw **4** and twist tensioning lever **3**.

Increase the tape pressure for smooth and heavy products at exit of deflector drum **5**:
remove knock-up table **6**, loosen the screw **7** and increase the pressure through tensioning lever **8**.
Retension screw **7** and replace knock-up table **6**. Decrease the tape pressure for sensitive and unsteady products.



>DANGER< Make sure that during these works no one else can operate the delivery! **Push EMERGENCY STOP** button or turn OFF main switch or pull power plug!

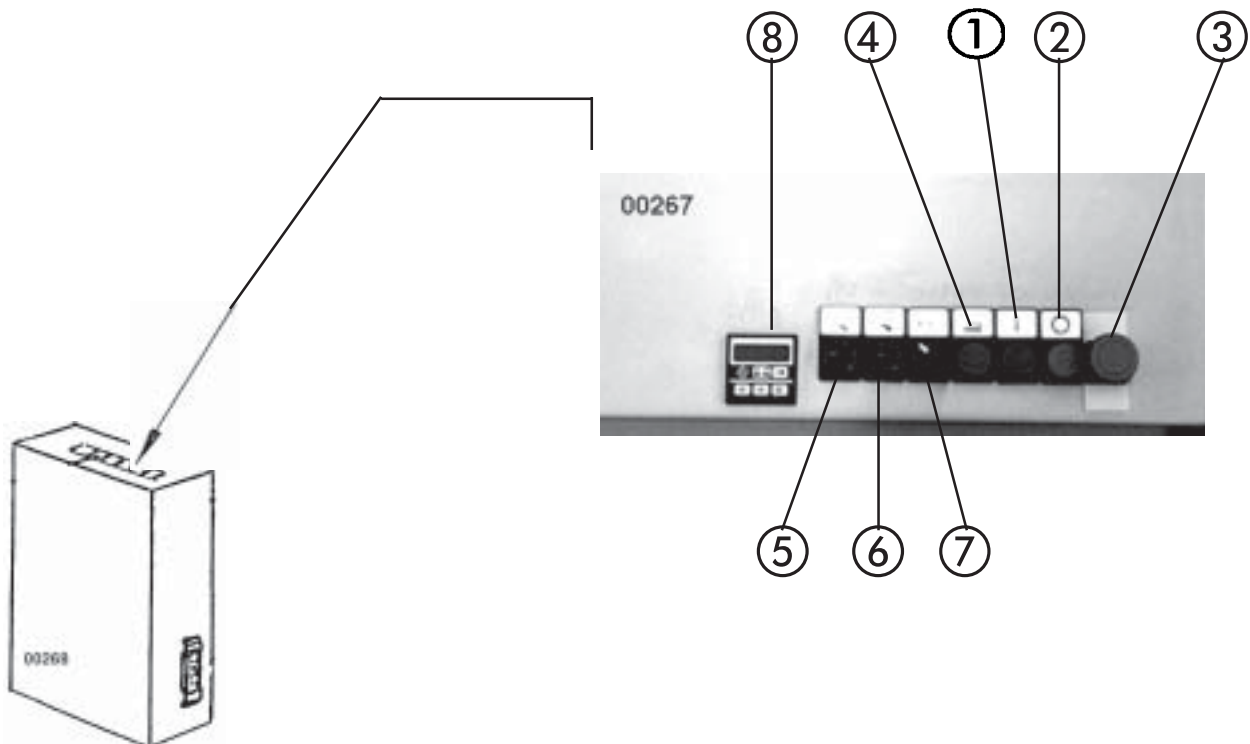


5.0 Operation of the delivery

5.1 Control panel

- 1 Green button for machine START
- 2 Red button for machine STOP
- 3 Red mushroom button for EMERGENCY STOP
- 4 Blue button for SHEET INFEED
- 5 Potentiometre for infinite speed regulation of infeed tapes and pressing rollers
- 6 Potentiometre for infinite speed regulation of tapes after the pressing rollers
- 7 Selector switch to control the tapes after the pressing rollers
 - a) continuous running, e.g. to empty the delivery at the end of a production
 - b) Photocell control during production; tapes will stop when sheet infeed is interrupted

- 8 Batch counter „ IVO „, only if delivery is equipped with this option.
See attached Operating Manual for functioning description. If the delivery is not equipped with a batch counter „ IVO „, the marking device is controlled through the batch counter of the folding machine. Functioning description: see Operating Manual „ Folding Machine „.



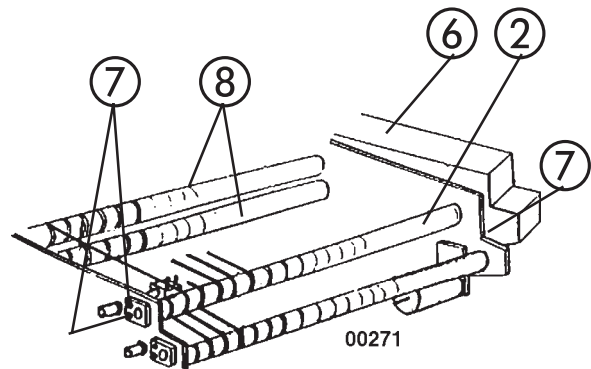
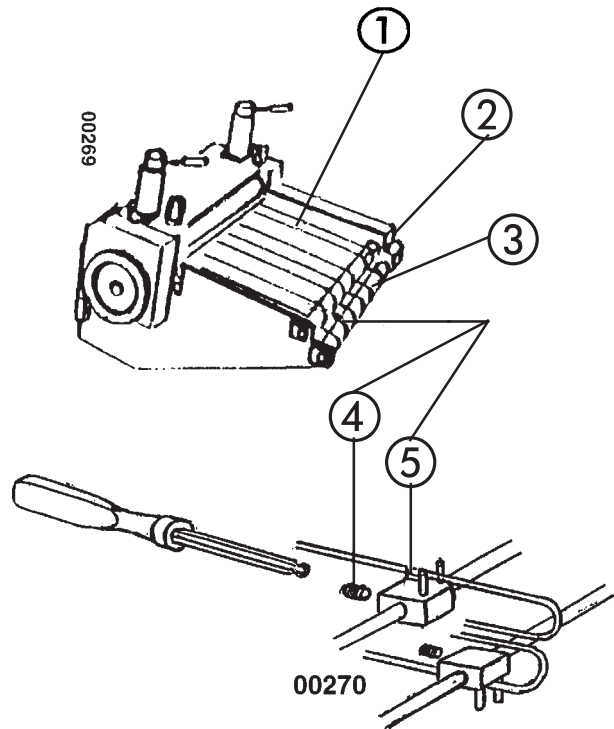
5.2 Infeed table

5.2.1 Infeed tapes

The products coming from the folding machine are taken over by the round belts 1.

Positioning on tape rollers 2 and 3:
loosen the screw 4 and move the guide 5.

Set the distance between the upper and lower round belts for exact transportation:
remove guard 6, loosen screws with nuts 7 and adjust the tape rollers 2 or 8.
Please bear in mind that they must be equal at both sides ! Refasten the nuts 7 and replace guard 6.



>DANGER< For these works it is absolutely imperative to push the **EMERGENCY STOP** switch or turn OFF the main switch!
Risk of injury!

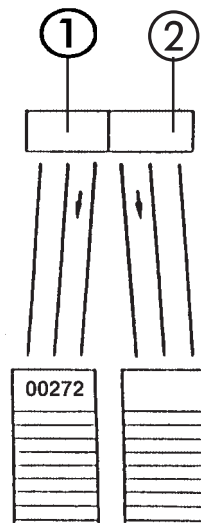
5.2.2 Multiple - up production

If signatures in the folding machine are cut in two - or three - up productions:
Place the individual groups of round belts 1, 2 and 3 crosswise to each other or spread them!
Change the position of round belts only laterally at infeed or exit of the infeed table: see item 5.2.1
At least two round belts are required for each up-production.

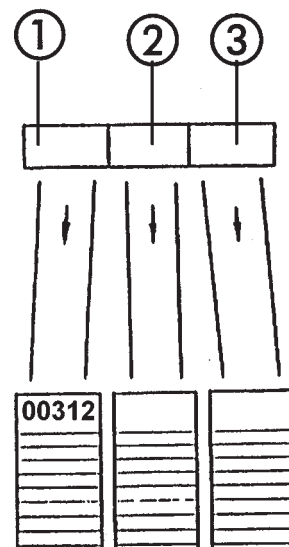


>**DANGER**< Push the **EMERGENCY STOP** switch for this work or turn OFF the main switch of the machine.
Risk of injury!

Two - up



Three - up



5.2.3 Marking device

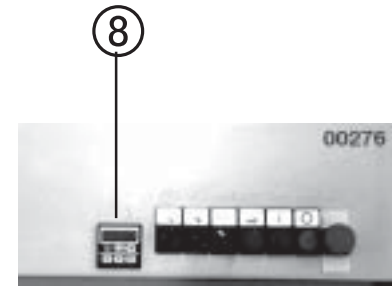
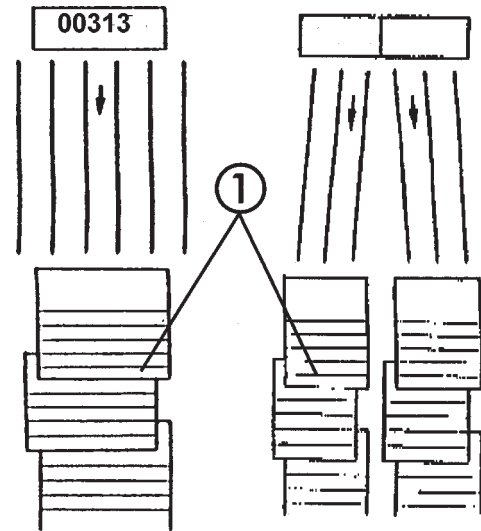


>NOTICE< This device enables you to exactly remove batches of a desired quantity to each other 1, to grant a precise removal of equal batches.

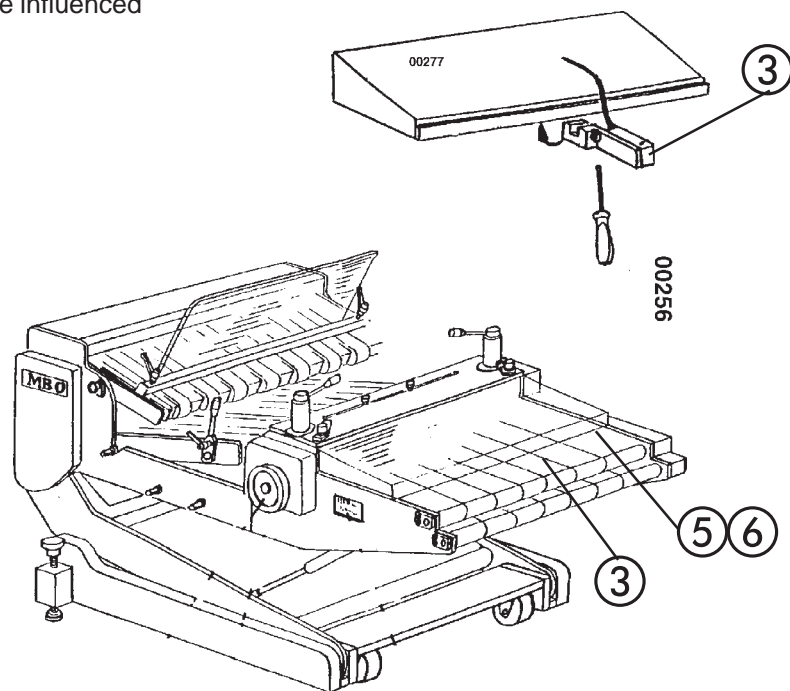
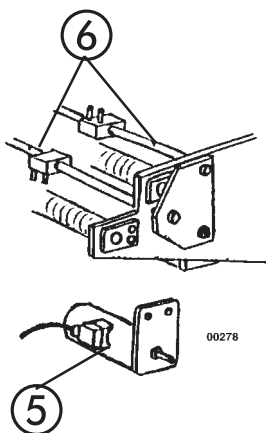
The desired quantity of product of each batch is entered into the batch counter IVO 8 (see enclosed Operating Manual IVO).

If the FA 66 is not equipped with a batch counter, the marking device is controlled through the batch counter of the folding machine (see Operating Manual „Folding Machine“).

Place a photocell 3 above the paper. Functioning control: the green diode must be lightening if a sheet is passing the photocell. If a batch reaches its preselected quantity the round belts should be moved left or right by the electro solenoid 5 and marking rods 6.



>NOTICE< Place the photocell to such an extend that it cannot be influenced by the marking rod 6.

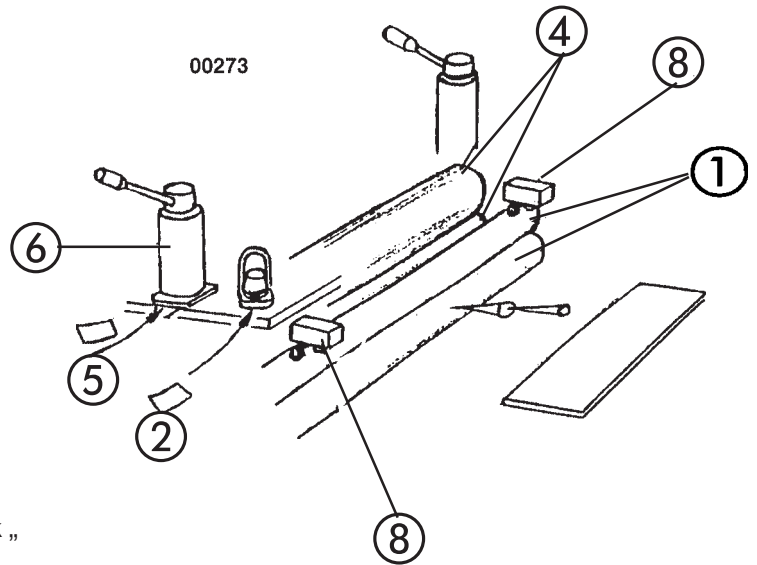


5.3 Pressing unit

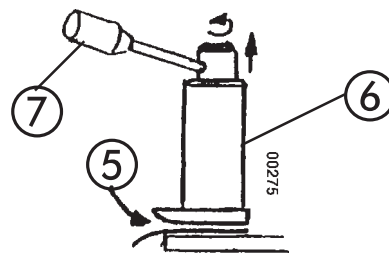
Adjustment of pre-pressing rollers 1 :
insert a paper strip 2
into setting element 3
(normally full product thickness).

Setting of main pressing rollers 4:
insert a paper strip 5
into setting element 6
(1/2 - 3/4 of product thickness).
Turn lever 7 for opening to left,
and for closing to right (clockwise).

In case of a product being „ too thick „,
the microswitches 8 will turn
off the complete machine.

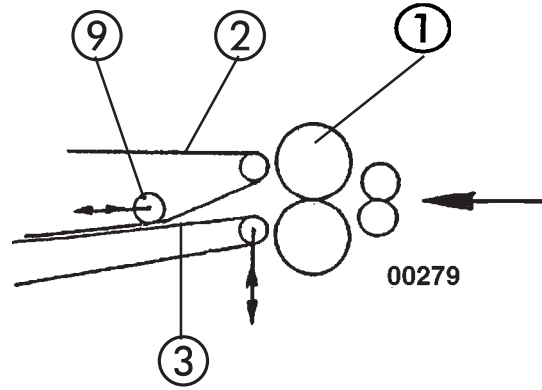


>DANGER< Please bear in mind
that the machine will only turn off if
the FA 66-ME is connected with an
MBO machine!



5.4 Collating table

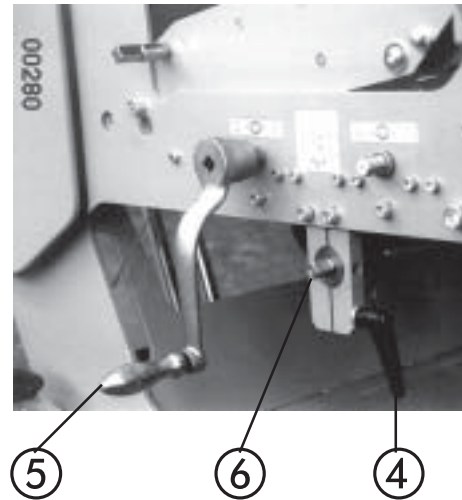
After leaving the pressing rollers 1 the folded product falls between the external 2 and internal 3 transport tapes. The falling height is adjustable between 1 and 3 for various products: loosen the clamping lever 4 and turn with crank 5 at square 6.



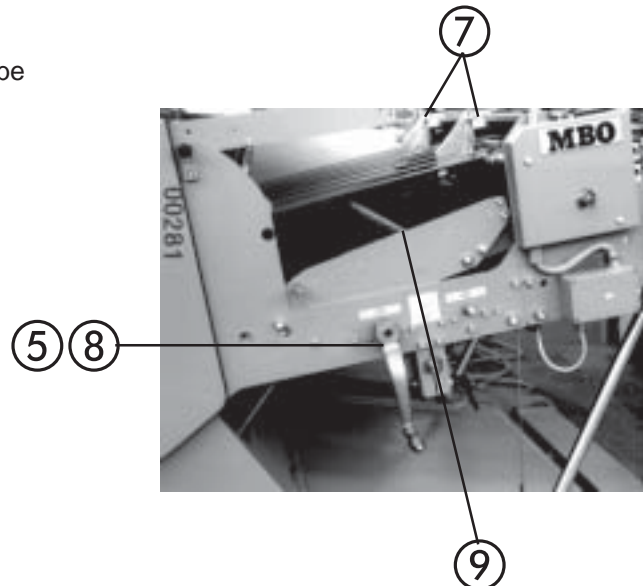
>NOTICE< The falling height for sensitive products should be lesser than for bulky products.

The photocell 7 (functioning control: lightening of the green diode) controls the external 2 and internal 3 transport tapes.

Insert crank 5 at square 8 and turn the smoother roller 9 carefully into the direction of the pressing rollers during running.



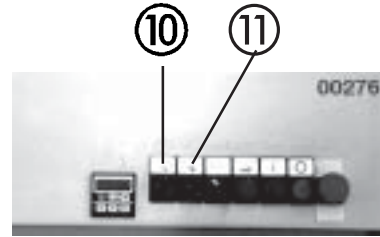
>NOTICE< The folded product should be caught before leaving the range of the photocell 7.



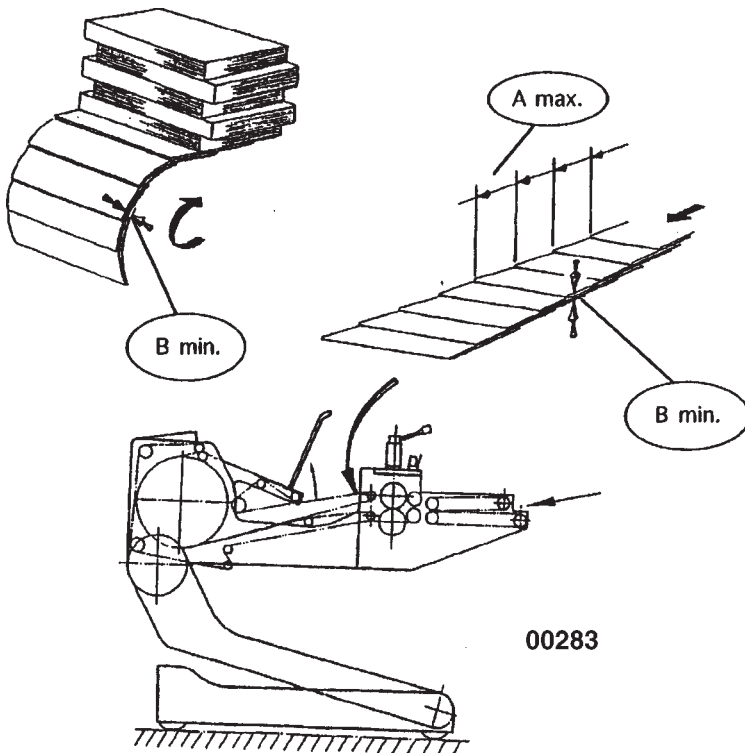
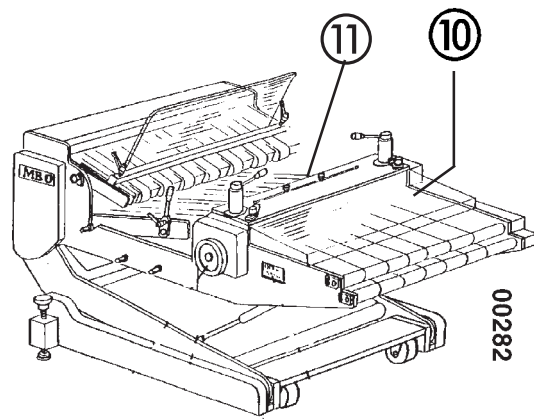
see also next page

Continuation

Please note that a wide shingle shape (A) will create a tight shingle stream (B). Set the speeds of 10 and 11 to such an extend that transport tapes will run continuously at production.

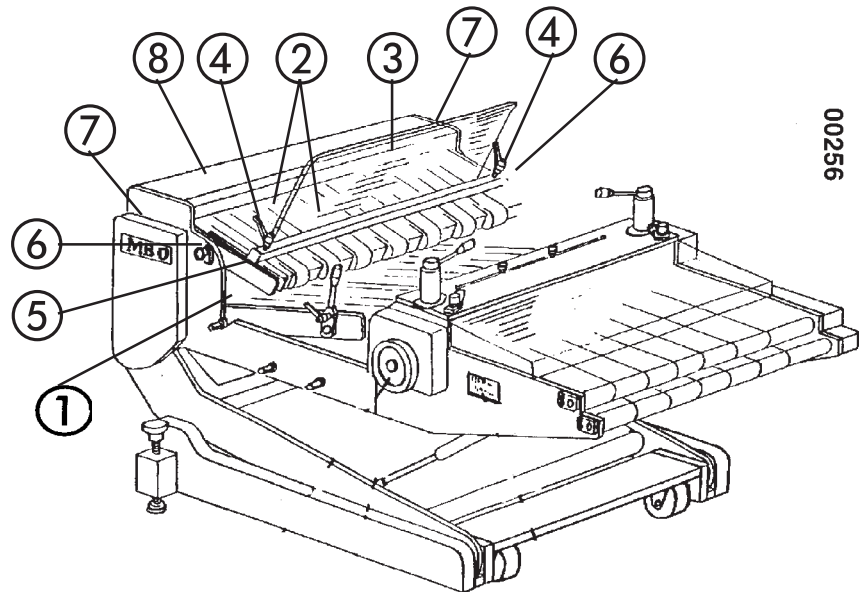


Two-up production:
Use both photocells!



5.5 Collecting table

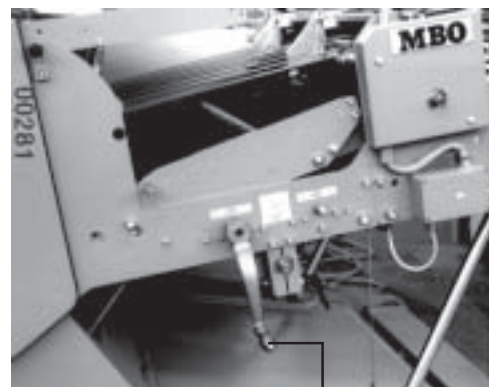
The signatures are transported onto the collecting table **2** around the deflector drum **1**.
Set the sheet stop **3** in accordance to the width of product:
loosen both clamping levers **4** and read off the measures at scale **5**.
The inclination of the collecting table **2** can be altered for various product conditions:
loosen both locking bolts **6**.



00256

5.6 Knock-up table

Loosen the clamping lever **7** and set table **8** into horizontal position.
Height adjustments at **9**.



9

6.0 Final remarks

You have now reached the end of this Operating Manual. We hope that you understood everything, if so, then our efforts to prepare this Manual have been worthwhile. Of course, we accept comments and wish to thank you for any suggestions to improve it. Even we are not perfect! We wish you much pleasure and success with this machine. Should you, however, still have problems with it, please do not hesitate to contact our technicians or supervisors who will be able to assist you.



Änderungen vorbehalten
Alterations reserved
sous reserve de modifications

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