

MBM 352 Paper Folder

Instruction Manual

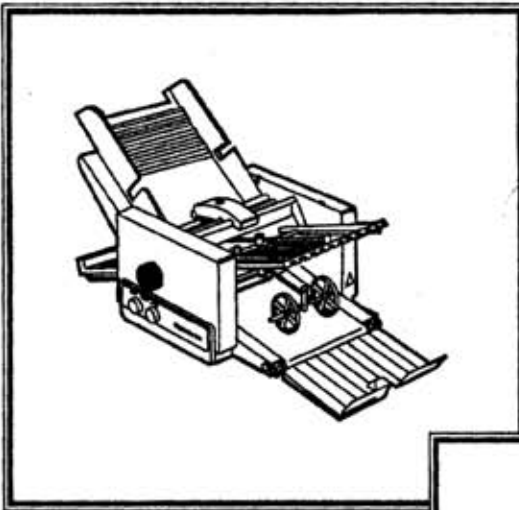


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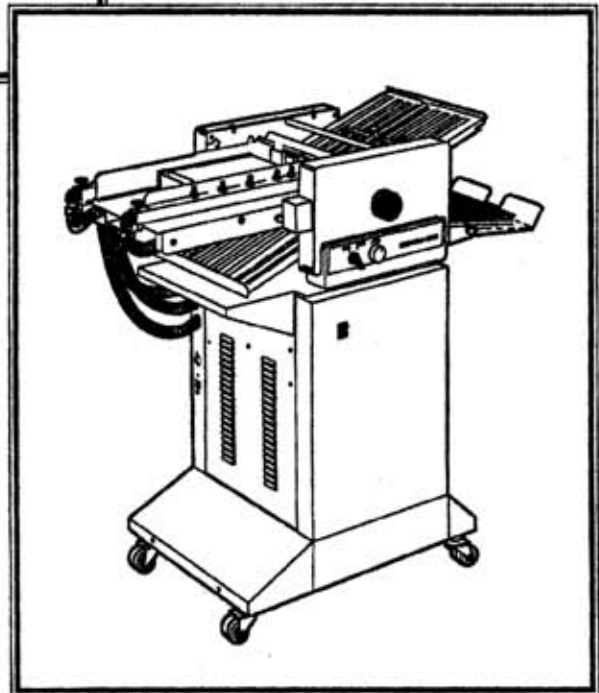
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Operator Manual



352 SERIES AUTOMATIC FOLDERS

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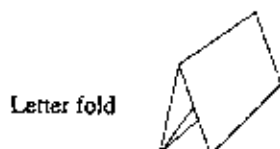
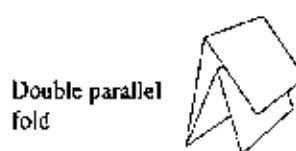
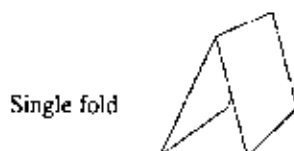
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1. GENERAL

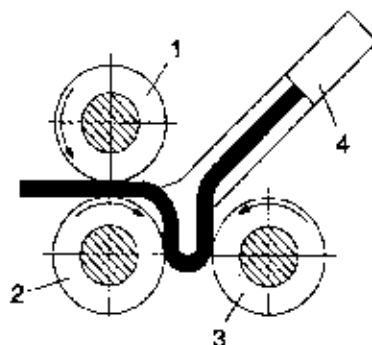
General Description

The machines of the MBM 352 folder line work on the buckle fold principle. They can be used for a wide range of applications because it is possible to choose between different types of feeders or to use one or two fold units.

The most important folds are:



Fold Principle



The infeed rollers (1 and 2) transport the sheet to be folded into the fold plate (4).

As soon as it comes up against the adjustable stop, the sheet forms a buckle because the infeed rollers keep on moving.

The loop gets bigger until the sheet is seized by rollers (2) and (3); this is where the actual fold occurs.

The rollers draw the folded sheet from the fold plate and the infeed rollers and move it on.

2. SPECIFICATIONS

Paper size:	max. size	min. size
<i>Bottom feed, top-loading air feeder S 352:</i>	12.8' x 18'	3.4" x 4.8"
<i>Friction feeder F 352:</i>	14.0' x 21.6"	2.0" x 2.8"
<i>Crossfold unit:</i>	12.8" x 18"	3.4" x 4.8"
Fold length:	14.4"	2"
Long fold plate LFT 35:	16.93"	2"
Speed:	Air feeder:	30,000 sheets/h
	Friction feeder:	20,000 sheets/h doing a half fold on 11" paper, 20 lbs. Bond
Paper weight:	13 lb to 110 lb	
Electrical:	Voltage:	115V
	Current consumption:	max. 10A (without pump) max. 20A (with pump)
	Power consumption:	
	1st fold unit, F 352 or S 352:	300 W
	352 Register System:	400 W
	Crossfold, roller table:	400 W
	Pump:	700 W
Ambient conditions:	Temperature:	59° - 104°F
	Humidity:	50 - 90%
Net weight of machine:	1st fold unit, F 352:	77 lbs.
	1st fold unit, S 352:	99 lbs.
Noise emission:		
	Sound pressure level MBM 352 S:	measured at feeder: 83 dB(A) measured at delivery: 82 dB(A)

3. PROPER HANDLING OF THE MACHINE

The machines of the MBM 352 folder line are built for folding paper. They may also be used for perforating, scoring, slitting, cutting and counting paper using the proper attachments. They are unsuitable for handling other materials, such as foils, plastics and textiles. The manufacturer / distributor is not responsible for damages resulting from such unsuitable applications. Responsibility lies alone with the user.

Installation of the machine, i.e. assembling as well as electrical and pneumatic work should be carried out only by skilled personnel authorized by the manufacturer or his representatives. Additional instructions are provided for this purpose.


Repairs and service should be carried out only by skilled personnel authorized by the manufacturer or his representatives. The interval between inspections including safety-related functions depends on the machine usage. For regular one-shift operation, one inspection per year is recommended.

The folders may be placed on already existing sturdy tables or on mobile stands available from the manufacturer. The machine weight should be considered when choosing a table for the folder. The mobile stands are equipped with casters which can be locked to guarantee the stability of the machine during operation.

The line voltage must correspond to the voltages on the serial plate.

Read the Operator's Manual before working with the machine!

We recommend to carry out all operations and settings in the sequence mentioned in this manual so that nothing is overlooked.

 **The terms "right" or "left" in the following text always refer to the direction of paper travel. Therefore the right side is the operator side.**

4. SAFETY INSTRUCTIONS

4.1 Safety Instructions for Transport and Set-Up

The following instructions and warnings are applied to the packing to ensure appropriate and safe transport:



Top! - Transport in upright position only!

Protect from humidity!

**Fragile!
Handle with care!**

These instructions and warnings must also be observed for transport within the users premises.

For transport to other premises resp. for return shipment the machines must be packed and provided with the same markings.

4.2 Fundamental Safety Instructions

Warnings and Symbols

The following symbols and designations are used in the manual to identify instructions of particular importance:



General instructions and special information on how to use the machine most efficiently.



Instructions designed to prevent injury or extensive equipment damage.

Basic Operation

The machine has been built in accordance with state-of-the-art standards and the recognized safety rules.

Nevertheless, operators and third parties may get injured when working with the machine, or damage to the machine and to other material property may result.

The machine must only be used in a technically perfect condition in accordance with its designated use and the instructions set out in the operator's manual.

Any malfunctions, especially those affecting the safety of the machine, should therefore be rectified immediately.

Organizational Measures

The operator's manual must always be available near the machine. In addition to reading the operator's manual, observe and instruct the user in all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection.

The operator's manual must be supplemented by instructions covering the duties involved in supervising and notifying special organizational features, such as job organization, working sequences or the personnel entrusted with the work.

Personnel entrusted with work on the machine must have read the operator's manual and in particular the chapter on safety before beginning the work.

Reading the instructions after work has begun is too late.

This applies especially to persons working occasionally on the machine, e.g. during setup or maintenance.

Check, at least from time to time, whether the personnel is carrying out the work in compliance with the operator's manual and paying attention to risks and safety factors.

For reasons of safety, long hair must be tied back or otherwise secured, garments must be close-fitting and no jewelry - such as rings - may be worn.

Injury may result from being caught on moving parts.

Observe all safety instructions and warnings attached to the machine.

See to it that safety instructions and warnings attached to the machine are always complete and perfectly legible.

In the event of safety-relevant modifications or changes in the performance of the machine during operation, stop the machine immediately and report the malfunction to the competent person.

Never make any modifications, additions or conversions which might affect safety without the manufacturer's approval. Adhere to prescribed intervals or those specified in the operator's manual for routine checks and inspections.

Selection of Personnel, Basic Responsibilities

Employ only trained or instructed staff and set out clearly the individual responsibilities of the personnel for operation, set-up, maintenance and repair.

Work on the electrical system and equipment of the machine must be carried out only by a skilled electrician or by instructed persons under the supervision and guidance of a skilled electrician and in accordance with electrical engineering rules and regulations.

Standard Operation

Avoid any operational mode that might be detrimental to safety.

Take the necessary precautions to ensure that the machine is used only in a safe and reliable state. Operate the machine only if all protective and safety-oriented devices, such as removable safety devices, emergency stops, sound proofing elements, are in place and fully functional.

In the event of malfunctions, stop the machine immediately and prevent further use.

Have any defects rectified immediately.

During start-up and shut-down procedures, always watch display in accordance with the operator's manual. Before starting up or setting the machine in motion, make sure that nobody is in danger.

Special Work, Maintenance, Repair

Observe the adjusting, maintenance and inspection activities and intervals set out in the operator's manual, including information on the replacement of parts and equipment.

If the machine is completely shut down for maintenance and repair work, it must be secured against inadvertent starting by attaching a warning sign to the main switch.

Always tighten any screw connections that have been loosened during maintenance and repair.

Special Dangers

The electric equipment of machines is to be inspected and checked at regular intervals. Defects such as loose connections or scorched cables must be rectified immediately.

Product-Specific Safety Instructions



Exercise caution in the vicinity of rotating shafts and rollers!
Hair, loose garments and jewelry may get caught!
SERIOUS INJURY MAY RESULT!



Exercise caution in the vicinity of the perforating- and slitting knives!
They have sharp edges for proper function!
SERIOUS INJURY MAY RESULT!

4.3 Cleaning and Maintenance

Regular and proper cleaning contributes to a long life of the machine and a consistent quality. Therefore it is important to clean the machine in regular intervals and above all to remove paper dust.

The interval between maintenance jobs depends on the workload.

It is recommended to clean the machine once a week.



Before cleaning the machine always pull the power plug!



Exercise caution in the vicinity of the perforating- and slitting knives!
They have sharp edges for proper function!
SERIOUS INJURY MAY RESULT!

The maintenance-free flat belt drive needs no greasing or oiling.

The fold rollers consist of polyurethane foam and are impregnated with an antistatic liquid.

The rollers must **not** be washed with cleaning fluids such as roller- or blanket cleaner.

This would damage the antistatic surface and cause folding problems.

If cleaning is required, use a **stiff brush**, no liquids of any kind.

5. SPACE REQUIREMENTS



MBM S 352



MBM F 352

MBM S 352,
register systemMBM S 352 with cross-
fold and register system

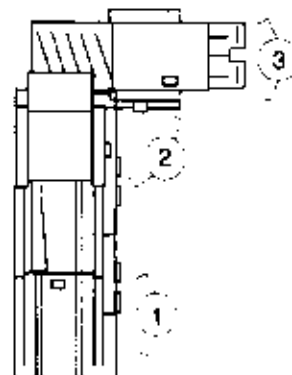
6. OPERATOR POSITIONS

There is no fixed operator position at the machines.

The operator must move between the following positions:

- 1 Feeder section for loading the unfolded paper
- 2 Fold unit for set-up
- 3 Delivery section for removing the folded paper

In addition, the machines are accessible from any other position for cleaning, resetting, jam clearance, service jobs, etc.



7. FRICTION FEEDER F 352

Function

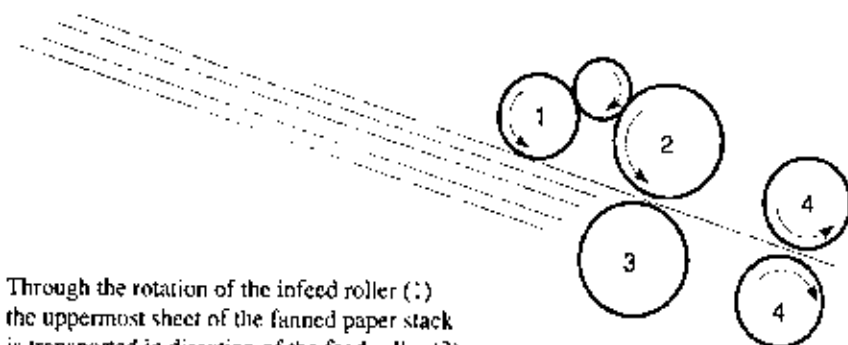
The friction feeder F 352 is especially suitable for separating uncoated and recycled papers.

When handling coated paper such as art- or vellum papers, markings may occur which could impair the quality.

Sheet separation is done by friction from the top of a fanned paper stack.

The feeder is driven by the feed roller (2), which in turn moves the infeed roller (1).

The pressure roller (3) under the feed roller is stationary.

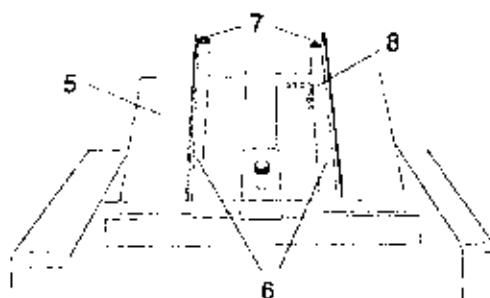


Through the rotation of the infeed roller (1) the uppermost sheet of the fanned paper stack is transported in direction of the feed roller (2).

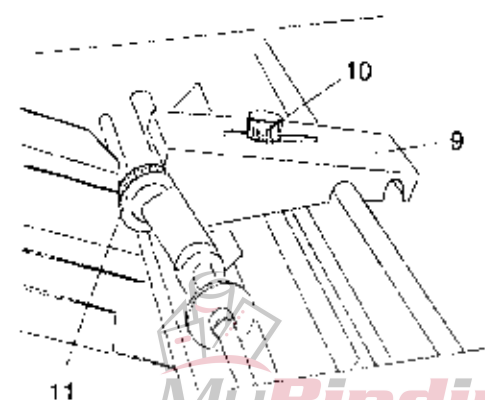
When the sheet reaches the feed roller (2), it is gripped by the roller and the rotating movement moves the sheet on to the first pair of rollers (4) where the actual fold occurs. As soon as the trailing edge of the sheet has left the feed roller, the infeed roller grips the next sheet from the top and again transports it in direction of the feed roller.

Description

- 5 Feed table
- 6 Feed guide left and right
- 7 Knurled nut for adjusting the feed guide
- 8 Guide holes

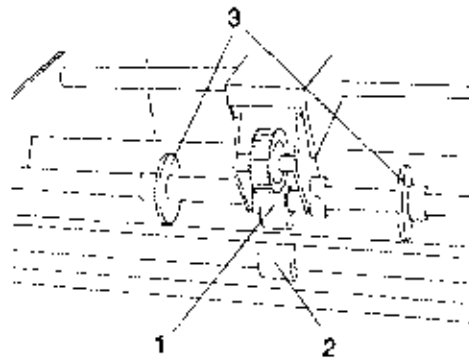


- 9 Feeder
- 10 Knurled nut for changing the contact pressure on the feeder
- 11 Infeed roller

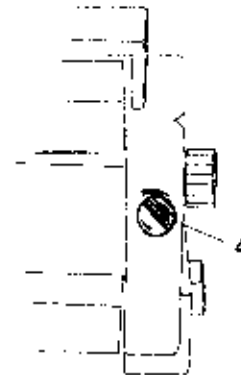


Description


- 1 Feed roller
- 2 Pressure roller
- 3 Hold-down disks



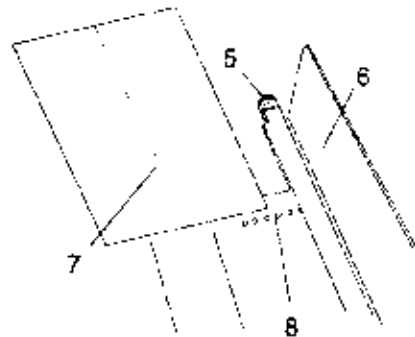
- 4 Paper thickness setting disk



Setting the Format

 When setting the format, care should be taken that the sheets are fed approximately from the center.

- Loosen the knurled nut (5) at the two feed guides by turning it counter-clockwise.
- Set both feed guides roughly to the desired format.
- Manually fold a sample sheet lengthwise down the middle (7).
- Place the sample sheet (7) on the feed table in such a way that the fold is located roughly near the center of the feed roller.
- Place the left feed guide (6) against the sheet, using the locating holes (8) as a guide.
- Tighten the knurled nut (5) of the left feed guide.
- Slide the right feed guide against the edge of the sheet without actually touching it, leaving a gap of approx. 0.020".
- Tighten the knurled nut of the right feed guide.
- Displace the hold-down disks (3) in such a way that they serve as guides about 1" from the edge of the sheet.

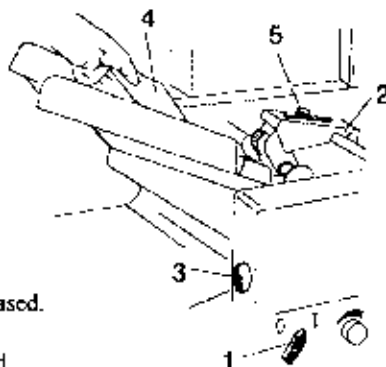


Setting the Sheet Separation



Exercise caution in the vicinity of rotating shafts and rollers!
Hair, loose garments and jewelry may get caught!
SERIOUS INJURY MAY RESULT!

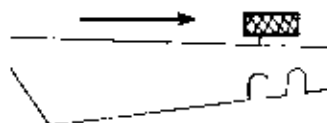
- Switch on the machine - knob (1) in position I.
- Move the feeder until it audibly engages in the rest position (2).
- Push open the setting disk (3) and turn it counter-clockwise by about one turn. This lowers the pressure roller. The gap between feed- and pressure roller is increased.
- Slide an unfolded sheet between feed- and pressure roller and hold it tight (4).



Hold on to the sheet to avoid that it is gripped by the feed roller and then folded.

- Keep the sample sheet in this position and use your other hand to slowly turn the setting disk (3) clockwise until you feel a slight resistance when pulling back the sheet. The gap between feed- and pressure roller is now set to the thickness of the sheets to be folded. Now remove the sample sheet.
- Switch off the machine - knob (1) in position 0.
- Place the setting disk (3) back in rest position to avoid accidental movement. Corrections can be made with the machine running.
- Loosen the knurled nut (5) at the feeder.
By changing the location of the knurled nut the contact pressure at the feeder can be set to the type of paper:

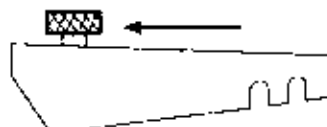
Light grades of paper (below 40 lb):
Only light pressure necessary, push in direction of the delivery section.



Medium weight papers (40 to 60 lb):
The weight of the feeder itself is sufficient, neutral mid-position.



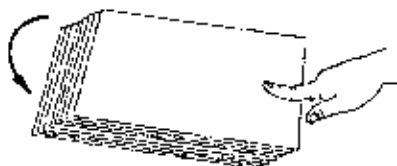
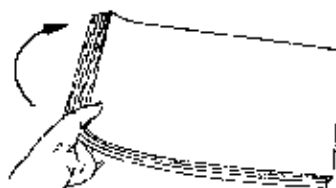
Heavy paper grades (more than 60 lb):
Higher pressure needed, push in direction of feed section.



Fanning the Paper Stack


Proceed as follows to fan out the paper stack before placing it on the feed table:

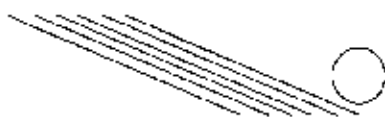
- Grip the left end of the paper stack with your left hand and bend it towards the right.
- Push down the right side of the stack with your right hand.
- While still holding down the right side of the stack, release the left side, which will snap back to its original position. The stack is fanned out slightly. Repeat this procedure once or twice until the stack is fanned out properly.



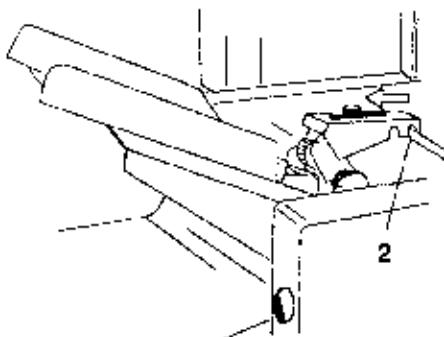
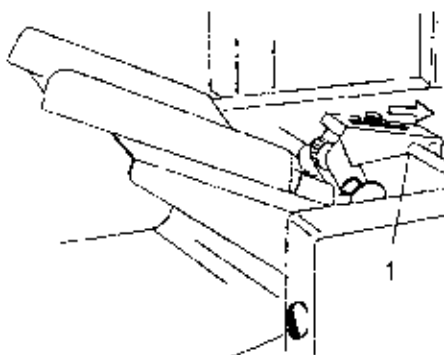
Loading the Feed Table

- Slide the feeder back to rest position (1).
- Place the fanned out stack on the feed table and slide it under the feed- and infeed rollers.

 Position the stack in such a way that the uppermost sheet is located under the feed roller.



- Set the feeder to work position (2).



8. AIR FEEDER S 352

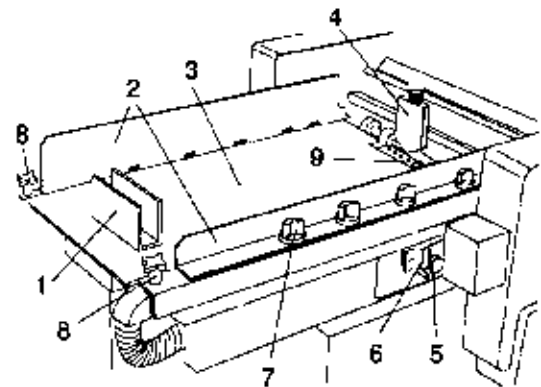
Principle of Operation

The air feeder S 352 is suitable for handling a wide variety of papers. It separates uncoated paper as well as coated, freshly printed or thin papers. The sheets are separated by air and vacuum. Air is supplied from the bottom of the stack both on the left and right side, separating the paper in the stack which now floats on a cushion of air. A rotating suction drum can then separate the sheets from the bottom of the paper stack. This principle has the advantage that paper can be reloaded continuously. There is no need to stop the machine.

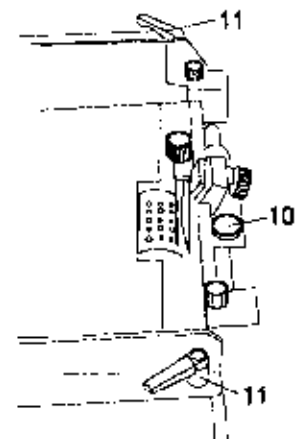
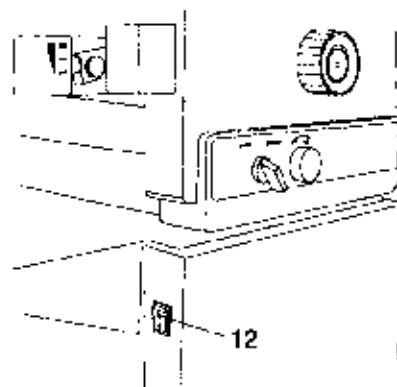
Description

Components and operating elements of the air feeder S 352:

- 1 Rear paper stop
- 2 Air guides left and right
- 3 Feed table
- 4 Front paper stop
- 5 Knurled screw for locking the suction segment
- 6 Lever for adjusting the suction segment
- 7 Air regulating valves
- 8 Knobs for adjusting and locking the air guides
- 9 Suction drum



- 10 Hold-down balls
- 11 Handle for adjusting and locking the air guides
- 12 On/off switch for pump

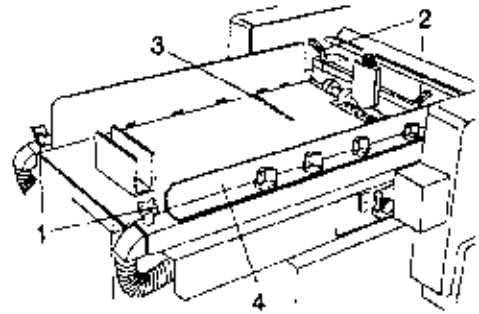


Setting the Format



The paper should be positioned in such a way that it is fed approximately from the center.

- Loosen the knobs (1) by turning them counter-clockwise.
- Loosen the lock levers (2) by turning them counter-clockwise. They can be moved to a convenient position for tightening by lifting and then turning them.
- Set the left air guide to half the paper width with the help of the scale (3).



- Tighten the knob and the lock lever of the left air bracket.
- Place a paper stack of about 50 sheets on the feed table.
- Slide the right feed guide (4) against the stack.



Do not pinch the stack, leave at least 0.020" between paper stack and guide.

- Tighten the knob and the lock lever of the right air guide.

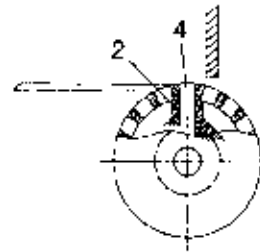
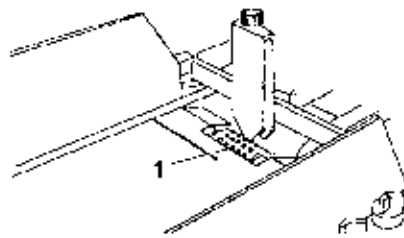
Setting Sheet Separation

Sheet separation is achieved by the combined action of the rotating suction drum, the paper stop and the air.

Paper weight and type of paper have an influence on the setting.

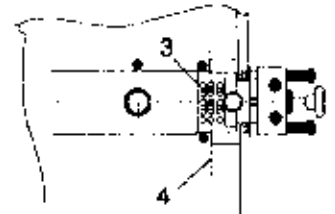
Setting the air:

A suction drum (1) separates the sheets from the bottom of the paper stack. This is achieved by the suction segment (2) inside the suction drum. The angle of the suction segment with respect to the paper stop can be changed to suit the different types of paper.



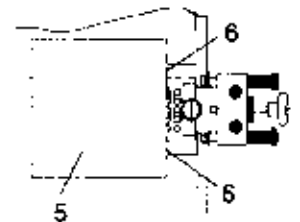
Basic setting:

- By turning the handwheel, move the suction drum (3) to such a position that a row of suction holes is in the uppermost position (4) of the suction drum.



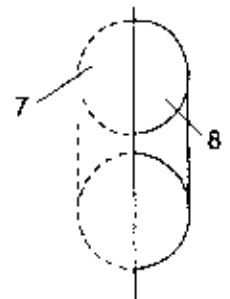
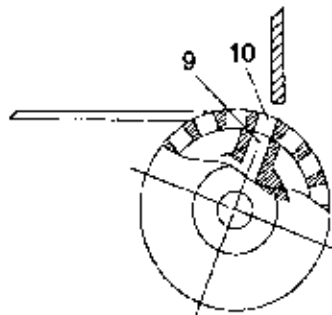
Proper adjustment can be checked as follows:

Place a sheet (5) against the edges of the cutout in the suction drum (6). This marks the centerline of the drum.



The sheet must cover the left half of the suction holes (7), while the right half (8) is still visible.

- Change the angle of the suction segment in such a way that the openings in the suction segment (9) line up with the next row of suction holes (10) in direction of paper travel.

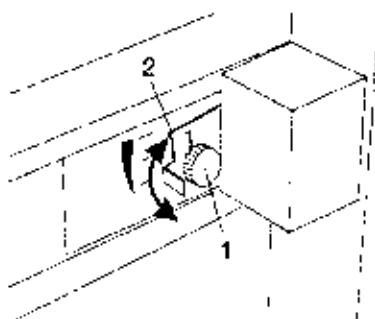


Set the suction segment as follows:

- Loosen the knurled screw (1) by turning it counter-clockwise.
- Move the swivel lever (2) up or down, thus swinging the suction segment to the required position.


Heavy paper grades: move swivel lever up
Light paper grades: move lever down

- Tighten the clamp lever by turning it clockwise.

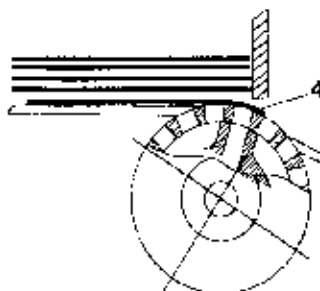


Setting for light paper grades:

Light paper grades easily cling to the curve of the suction drum. Therefore, the suction segment must be tilted in direction of the paper stop.

 For running light-weight paper, first try the setting as described under 'Basic Setting'.

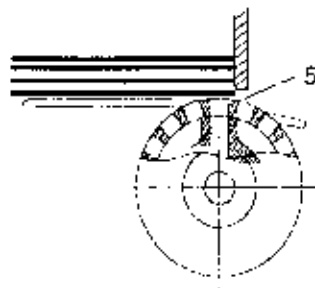
The inclination of the suction segment in this direction has the effect that the paper is wrapped around the suction drum (4). The sheets are easily separated from the stack and double sheets occur very rarely.



Setting for heavy paper grades:


Heavier paper grades do not easily cling to the curve of the suction drum. For this reason, the suction segment must be tilted in direction of the paper stack.

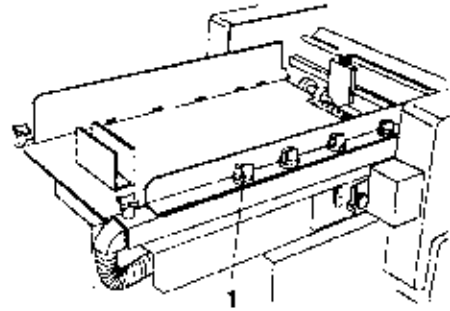
The inclination of the suction segment in this direction has the effect that the paper is wrapped around the suction drum (5) very little. This is sufficient because heavier paper grades are more easily separated from the paper stack.



Air:

Open the valves (1) at both air brackets.

 In most cases it is sufficient to open the second and the last valve (with reference to the format length).

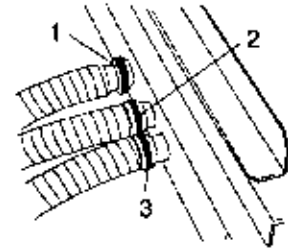


closed open

Air and vacuum:

Air and vacuum can be modified by means of air-regulating valves.

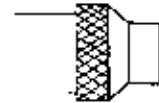
This is necessary because heavy paper grades require more vacuum and air than light paper grades.



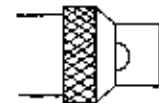
- Valve for vacuum at the suction drum (1)
- Valve for air at the right air guide (2)
- Valve for air at the left air guide (3)

air and vacuum can be modified by means of sliding collars (valves).

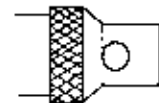
Bleeder hole covered completely: maximum effect



Bleeder hole half open: reduced effect



Bleeder hole completely open: minimum effect



Setting the vacuum:

For setting the vacuum, the machine must be turned on.



Exercise caution in the vicinity of rotating shafts and rollers!
Hair, loose garments and jewelry may get caught!
SERIOUS INJURY MAY RESULT!

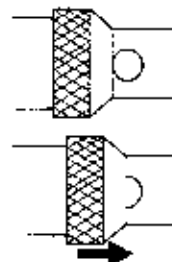


Do not get close to rotating shafts and rollers while the machine is running and the noise-absorbing cover is open!
SERIOUS INJURY MAY RESULT!



Exercise caution in the vicinity of the perforating- and slitting knives!
They have sharp edges for proper function!
SERIOUS INJURY MAY RESULT!

- Open the bleeder hole for setting the minimum effect.
- Start the machine.
- Slowly slide the collar over the bleeder hole. Observe sheet separation while doing this.



At first no sheets are pulled off the stack or they are pulled off irregularly.
 The more the collar covers the bleeder hole, the smoother the paper transport.



Leave the collar in the position where even separation is obtained.



Make sure that much vacuum does not cause feeding of double sheets.


- Switch off the machine.


Adjusting the front paper stop:

The position of the front paper stop (1) can be adjusted in a horizontal and vertical direction.

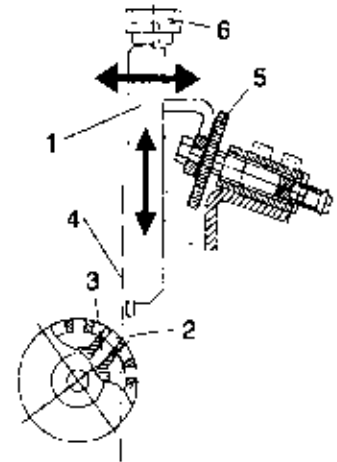
Adjusting the horizontal position:

The horizontal position of the front paper stop determines the suction point on the paper and in turn depends on the position of the suction segment in the suction drum.

 The inclination of the suction segment must be set correctly before making the horizontal adjustment (see page 23/24).


 When the suction segment is adjusted, the horizontal position must also be changed accordingly.

- Turn the handwheel until the openings of the suction drum (2) are exactly above the openings of the suction segment (3).
- Adjust the horizontal position of the front paper stop in such a way that it forms a vertical line (4) with the leading edge of the suction openings. To achieve this, turn the knurled screw (5) counter-clockwise or clockwise.

*Adjusting the vertical position:*

The respective paper thickness is set by adjusting the vertical position of the front paper stop. Proceed as follows:

- Place a stack of about 50 sheets on the feed table.
- Switch on the pump.
- Start the machine (switch position I).

 **Exercise caution in the vicinity of rotating shafts and rollers!
Hair, loose garments and jewelry may get caught!
SERIOUS INJURY MAY RESULT!**

- By turning the knurled screw (6), adjust the vertical position of the paper stop in such a way that only one sheet is pulled off the stack.
- Switch off the machine (switch position 0).

Setting the Sheet Gap

The sheet gap can be changed by means of a set screw (1).

This adjustment changes the speed of the suction drum, i.e. the gap between sheets is the result of the speed difference between feed drum and fold rollers.

- **Small gap between sheets:**

Turn the screw (1) all the way clockwise by means of a 2-mm Allen key.

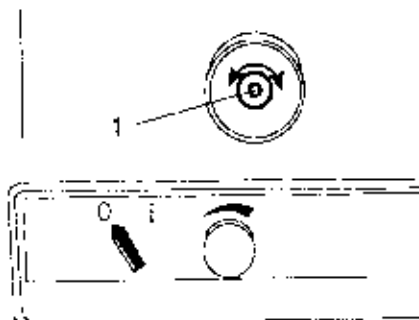
For all parallel folds with the exception of letter fold in fold plate 1 and 2.

- **Large gap between sheets:**

Turn the set screw (1) all the way counter-clockwise by means of a 2-mm Allen key. To be used when the sheet length in the first fold plate is larger than half the length of the unfolded sheet (example: letter fold in fold plates 1 and 2).

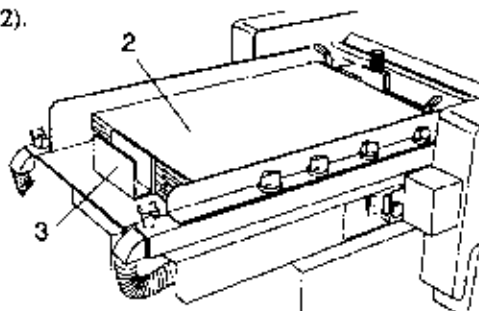


The feed speed has no influence on the speed of the fold rollers.
Folding speed is set separately.



Positioning the Paper Stack

- Fan the paper stack to avoid double sheets.
- Place the stack on the feed table (2).
- Position the rear paper stop (3).
It prevents the paper from sliding off towards the rear.



9. PERFORATING-, SCORING AND SLITTING TOOLS

The following perforating-, scoring- and slitting tools are available:

- | | | | |
|----------------|------------------|-----------|-----------|
| • Perforating: | standard, short | Order-no. | 9.100.031 |
| | standard, medium | | 9.100.032 |
| | blade, short | | 9.100.035 |
| | blade, medium | | 9.100.036 |
| | blade, long | | 9.100.037 |
| • Scoring: | narrow | Order-no. | 9.100.017 |
| | medium | | 9.100.018 |
| | wide | | 9.100.019 |
| • Slitting | | Order-no. | 9.100.027 |



Perforating- and slitting knives have sharp edges for proper function! Exercise caution when removing and installing them! SERIOUS INJURY MAY RESULT!



Before installing or removing scoring-, perforating- or slitting tool.. always PULL the power plug. This will ensure that no other person will be able to start the machine while you are working on it.

The perforating-, scoring- and slitting tools consist of an upper and a lower part, which have to be mounted on the upper resp. lower delivery shaft. The tools are split, therefore it is not necessary to remove the delivery shafts when exchanging the tools.

Perforating

Purpose of perforating:

- To avoid creasing when making crossfolds.
Air can escape from the folded sheet through the perforations.

Various perforating knives are available which differ in the type and number of teeth. Their usage is determined by the type of paper and the kind of perforating job.



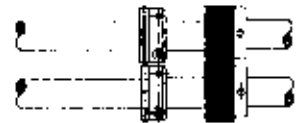
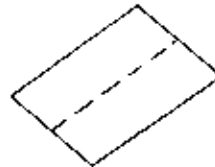
Thin paper: short cuts, many teeth
Heavy paper: long cuts, few teeth

There are two general types of perforations:

1.) Push-through:

Push-through perforations 9.100.031 and 9.100.032 run in the groove of a roller. Make sure that the perforating knife runs exactly in the center of the groove of its counterpart.

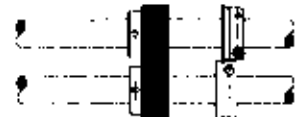
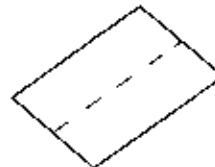
If the setting is not precise, this may lead to inaccurate perforations and premature wear of the tools.



2.) Knife:

The counterpart of knife perforations 9.100.035, 9.100.036 and 9.100.037 is a rotary knife.

Position the upper and lower tools so that they touch each other lightly like the two knives of a pair of scissors.

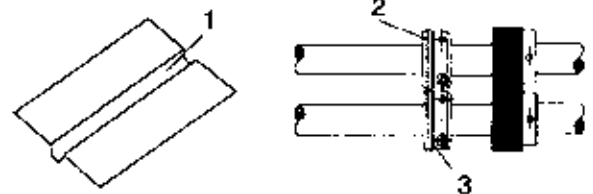


Scoring

Purpose of scoring:

- To create of a hinge-type zone to aid the subsequent crossfold if the sheet cannot be perforated for functional reasons.

Scoring (1) is done with a male scoring wheel and a female counterpart. A groove is pressed into the paper when it passes between the tools. The texture of the material remains intact.



The male scoring wheel can be attached on the upper or lower ejector shaft, depending on the subsequent type of fold.

- Upper ejector shaft: subsequent fold in fold plate 1 or 3
- Lower ejector shaft: subsequent fold in fold plate 2 or 4

Scoring wheels with different widths are available for scoring, depending on the paper thickness.

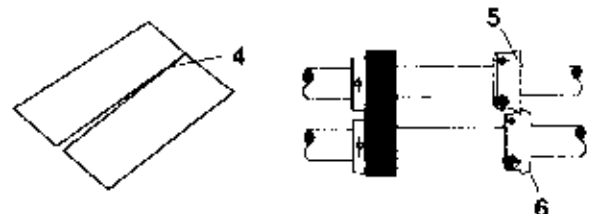
- Thin paper: narrow scoring wheel
- Heavy paper: wide scoring wheel
- The scoring disk (2) is used in conjunction with a grooved counterpart (3). Make sure that the scoring disk runs exactly in the center of its groove. If the setting is not precise, this may lead to inaccurate perforations and premature wear of the tools.

Slitting

Purpose of slitting:

- Slitting, trimming and strip cutting.

An upper (5) and a lower knife (6) are required for slitting. The lower knife must be positioned close to the upper knife.

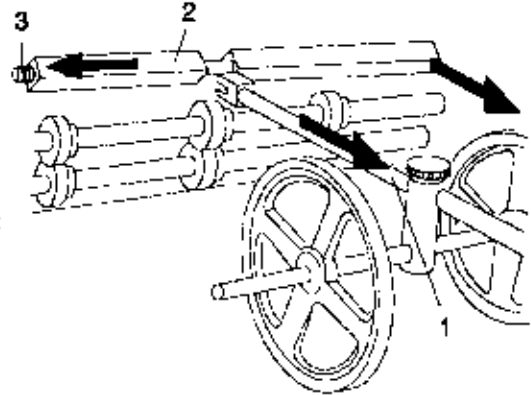


Installation of the Tools

The guide rod of the hold-down rollers (1) and the square shaft (2) can be removed to improve the accessibility for installing the tools.

Proceed as follows:

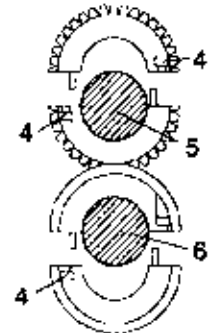
- Pull the guide rod from the square shaft (1). The guide rod is attached with a leaf spring.
- Press the square shaft against the spring (3) at the side and tilt it out of the locating hole in the side plate.
- Install the hold-down rollers in reverse order.




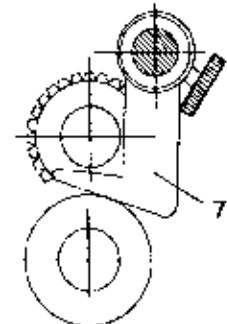
The perforating-, scoring- and slitting tools may be positioned anywhere on the ejector shaft. To determine the correct position, run an unfolded sheet through the fold unit by turning the handwheel and marking the correct position of tool on the sample sheet.

The perforating-, scoring- and slitting tools are installed as follows:

- Loosen the two Allen screws (4) on the perforating-, scoring- and slitting tools. The screws are secured against loss. Now it is possible to separate the two parts of the tool.
- Connect both parts of the tool on the upper (5) and lower (6) ejector shaft.
- Slightly tighten both Allen screws.
- Slide the assembled tool to the exact location on the ejector shaft.
- Tighten the two Allen screws.



-  When perforating and slitting, the paper - especially light paper grades - may stick to the knife. Install a stripper (7) to prevent this from happening. The stripper should be located as close as possible without touching it.



10. TROUBLE SHOOTING GUIDE

Problem:	see number.							
	1	2	3	4	5			
Intermittent and irregular paper feed	1	2	3	4	5			
Creasing	2	6	7	8	9	23	24	
Several sheets fed together	10	11	12	13				
Paper jam at the entrance into the fold plates	14	15						
No feed	16	17	18					
Out-of-square folds	19							
Points	20							
Fold variations	21	22						
Folded sheets run into each other	25	26	27					
Sheets not evenly fanned on delivery	26	27	28	29				
Folder does not run	30							
Sheet gap cannot be set although display indicates changes in sheet gap	31	32						

No:	Possible Cause:	Remedy:
1	Guide bracket set too narrow	Set with a little more side play
2	Gap between feed- and pressure roller too narrow	Increase gap with setting disk
3	Infeed roller pressure insufficient or infeed roller worn	Increase pressure with knurled nut on feeder or replace roller
4	Hold-down pressure too high	Slide the hold-down disks on the feed shaft outward somewhat
5	Feed shaft drive belt worn	Replace belt
6	Infeed roller pressure too strong	Reduce with knurled nut
7	Speed too high	Reduce speed
8	Paper runs at an angle	Correct with guides
9	Pressure of first pair of folding rollers too strong or uneven	Have pressure and parallel alignment set by our service engineer

No:	Possible Cause:	Remedy:
10	Gap between feed- and pressure roller too wide	Narrow gap by turning setting disk
11	Paper stop is not set at the correct height	Change height by means of setting screw
12	Too much vacuum	Reduce vacuum
13	Air brackets are not set parallel	Adjust air brackets according to scale
14	Feed speed of suction drum too high	Set hand wheel to slow feed speed
15	Gap between sheets is too narrow	Adjust air flow. Move suction segment against the rotation of the suction drum
16	Pump is not switched on	Switch on pump
17	Suction drum is loose	Tighten suction drum (3 Allen screws)
18	Timing belt pulley is loose	Tighten timing belt pulley
19	Sheets are not fed at right angles	Align sheet guide on the feeder or right-angle table
20	Sheets are not cut at right angles	Adapt fold plate stop to the sheet by adjusting the knurled screw
21	Fold plate stop not set correctly	Readjust with fine adjustment screw
22	Change of fold speed	Set regular speed, check fold
23	Steel balls too heavy	Use plastic balls
24	Insufficient guidance by balls	Shift ball cages
25	Distance between ejector rollers and hold-down rollers too short	Increase distance
26	Ejector rollers on knife shafts are not distributed evenly across paper width	Arrange ejector rollers evenly across the paper width
27	Ejector rollers worn	Replace rollers
28	Paper feed irregular	Correct setting
29	Delivery belt is slack	Tension belt or replace, if necessary
30	Paper jam, safety system has switched off the machine	Clear jam, switch the machine off and then on again.

No:	Possible Cause:	Remedy:
31	Setting of sheet gap photodetector too sensitive or not sensitive enough. Red LED on photodetector is on continuously or not on at all	Using a screwdriver, reduce sensor sensitivity at potentiometer of sheet gap photodetector until LED goes out. Then check function of photodetector as follows: Place a paper strip under the detector; LED (red) comes on Remove paper strip from under the photodetector; LED (red) goes out
32	Sheet gap photodetector dirty	Clean bottom of photodetector with a soft cloth or a brush

MBM 352S FOLDER

GBC#	VENDOR#	DESCRIPTION
1723596	3.500.274	FEED ROLLER
1723597	3.004.029	STOP PAWL
1723598	4.001.294	COUNTER PRESSURE ROLLER
1723632	1.033.141	ROUND BELT
1723644	1.033.016	ROUND BELT
1723645	1.030.427	SWITCH
1723647	4.004.389	GEAR
1723651	4.004.465	GEAR
1723653	4.006.465	GEAR
1723655	4.004.415	GEAR
1723705	4.005.622	GEAR
1723706	1.033.018	ROUND BELT
1723708	3.500.174	GEAR
1723709	4.004.420	PCB
1723710	1.037.129	O-RING
1723711	4.004.422	PHOTO DETECTOR
1723633	1.033.139	ROUND BELT
1723643	1.031.093	FLAT BELT
1723707	1.030.193	G FUSE
1723782	2.012.350	KNURLED KNOB
1723784	4.001.909	ROLLER CPL
1723785	4.001.910	ROLLER CPL
1723786	4.001.918	ROLLEER CPL
1723787	4.001.919	ROLLER CPL
1723788	3.500.515	TRANSPORT ROLLER
1723874	M0.510.161	ANTISTATIC PAINT
1724528	1.027.295	CLAMP LEVER
1724558	2.026.556	PAPER STOP
1724578	M4.004.403	MOTOR 110V
1724722	2.027.622	CLAMP PLATE L SHAPE
1723000	3.500.262	INFEED ROLLER
1724749	1.017.440	VACUUM PLUG
1724750	1.140.001	THUMBSCREW
1724757	1.030.427	SWITCH
1724836	3.000.710	TRANSPORT BELT
1724863	4.006.075	HAND WHEEL CPL.
1724864	4.007.024	FOLD PLATE 1 CPL.
1724865	4.006.407	COVER
1724867	1.027.332	KNOB
1724868	1.017.638	COVER
1724869	1.191.027	SHIM
1726029	2.012.520	KNURLED SCREW (CENTER)
1726030	4.004.138	PULLEY
1726031	4.004.401	ENCODER DISC
1726032	4.004.139	HAND WHEEL ASSY CPL.
1726033	2.006.594	SCREW
1726037	9100232	MED PERFORATING TOOL
1726038	1.029.939	POTENTIOMETER
1726039	4.005.581	TRANSPORT ROLLERS CPL.
1726049	1.033.017	ROUND BELT
1726052	1.033.015	V-BELT
1726061	1.033.005	TIMING BELT

MBM 352S FOLDER

1726062	1.033.008	TIMING BELT
1726087	1.030.553	PC BOARD
1726113	4.006.304	STACKER PLATE CPL.
1726206	4.004.307	VALVE
1726207	4.004.308	KNOB
1726220	5.616.002	PLASTIC BALL
1726228	3.500.019	TRANSPORT ROLLER CPL.
1726249	4.006.607	ANTI STATIC BRUSH
1726285	4.004.420	PC BOARD DRIVE MOTOR
1726293	M5.604.012	Y CONNECTOR
1726294	M1.017.440	PLUG
1726381	1.029.368	OVERLOAD PROT SWITCH
1726382	1.030.195	FUSE HOLDER
1726418	3.000.383	KNURLED SCREW
1726419	4.006.308	FANNED DELIVERY CPL.
1726483	9.100.032	MEDIUM PERF WHEEL O/S *
1726559	M1143003	SCREW
1726579	5.616.003	STEEL BALLS
1726597	2001439	BRASS DISC (CONTROL KNOB)
1726598	2006-594	SCREW 2.5MM (CONTROL KNOB)
1726601	0629	PERF STRIP TOOL O/S*
1726603	4006-541	LEFT STRIPPER N/S *
1726604	4006-540	RIGHT STRIPPER N/S *
1726605	0691	PERF WHEEL KIT N/S *
1726765	3.500.098	FEED ROLLER
1726908	AA-10538	SPRING ASSY STACKER
1726913	4.006.1531	HOLD DOWN COMPLETE
1727052	4.007.025	FOLD PLATE 2 CPL.
1727256	1.027.360	SCREW WITH KNOB
1727335	M3000.763	THIN WASHER
1727336	M1019.184	THICK WASHER
1727713	1.023.742	PLASTIC C CLIP
1727756	M1135001	KEY FOR #2 FOLD ROLLER
1727757	4003897	VACUUM DRUM
1727771	1.033.051	FLAT BELT
1728535	4.004.131	PULLEY
1728675	1.000.102	FEED COVER SPRING
1728676	1.027.342	PLASTC C CLIP

- OLD STYLE – ROUND SHAFT
- NEW STYLE – SQUARE SHAFT