

Operator's Manual

System 904/A5 Cut Sheet Slitter-Merger on-line with Pagefeeder

05/05/2003

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1. General Description

The cut sheet infeed system consists of a high capacity bulk loader, a suction feeder, an alignment and slitter module, a merger module and an interface to the following device.

The bulk loader has a high capacity and feeds the documents in sequence into the feeder. Because of the bulk loader, the feeder can work at a constant stack height which gives the system a maximum of reliability.

The alignment table presents the documents to the slitter rack. The slitter rack slits the A4 into two A5 documents.

The merge section transfers the A5 documents in sequence into the system pagefeeder.

2. Specification

a) Performance

- Speed: Max. 2,5m/s
- Capacity shingling loader: 2.500 sheet (80 GSM)

b) Paper Sizes

Before Slitting (Infeed):

- Max. Width 305 mm x Length 305 mm (12" x 12")
- Min. Width 203 mm x Length 203 mm (8" x 8")

The System 904/A5 is a specific unit, therefore the infeed size is defined to A4

c) Paper weights

- From 80 GSM to 130 GSM

d) Electrical

- Voltage: 400 V
- Frequency: 50Hz / 60Hz

e) Dimensions

Length x width x height: 3100mm x 1150mm x 1000mm

f) Transfer heights

- Infeed height: approx. 900mm (+60mm)
- Delivery height: approx. 930mm (+60mm)

g) Miscellaneous

- Colour: RAL 7035 light-grey

3. Proper Handling of the Machine / General Information

The machines of the SYSTEM 904/A5 series are built to process paper. They may be used for perforating, scoring, 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 handling. Responsibility lies alone with the user.

Reading the operator's manual and observing the conditions for inspection and maintenance are part of the proper handling of the machine.

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 machine needs a flat surface for installation. The machine weight (see Specifications) should be considered when choosing a location for the machine.

The levelling screws in the undercarriage of the machine can compensate for an uneven floor to a certain degree.

To ensure stability during operation the machine should be secured by means of the levelling screws.

The line voltage must correspond to the values on the name plate.

No harmful emissions are produced.

Read the Operator's Manual before operating the machine!

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

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 rain!



Fragile! Handle with care!

These instructions and warnings must also be observed for transport within the user's premises.

For transport to other premises resp. for return shipment to the manufacturer 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:

Important



(refers to special information on how to use the machine most efficiently)

(refers to 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 technically perfect condition in accordance with its designated use and the instructions set out in the operator's manual, and only by safety-conscious persons who are fully aware of the risks involved in operating the machine.

Any functional disorders, 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 work.

Reading the instructions after work has begun is too late.

This applies especially to persons working only occasionally on the machine, e.g. during setting up 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 security, long hair must be tied back or otherwise secured, garments must be close-fitting and no jewellery - 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 behaviour 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 and Qualification 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.

Safety Instructions Governing Specific Operational Phases

Standard operation

Avoid any operational mode that might be prejudicial 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 displays (if available) 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 in conjunction with utilization of the machine and maintenance and repairs during operation; disposal of parts

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.

Warning of Special Dangers

Electrics

The electrical equipment of machines is to be inspected and checked at regular intervals.

Defects such as loose connections or scorched cables must be rectified immediately.

4.3 Product-Specific Safety Instructions



Exercise caution in the vicinity of rotating shafts, rollers and moving belts! Hair, loose garments or jewellery may get caught - YOU MAY GET INJURED!



Exercise caution when running the machine with the safety covers open and the fold plates removed! Do not get closed to the rotating fold rollers - YOU MAY GET INJURED!



Perforating- and slitting knives have sharp edges for proper function! Exercise caution when removing and installing them! - YOU MAY GET INJURED!

Before installing or removing the scoring-, perforating- or slitting tools, 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.



Before disconnecting resp. connecting an electrical cable, always switch off the main switch or flip the safety switch at the fold system!

Electronic components may be damaged if these instructions are not observed!

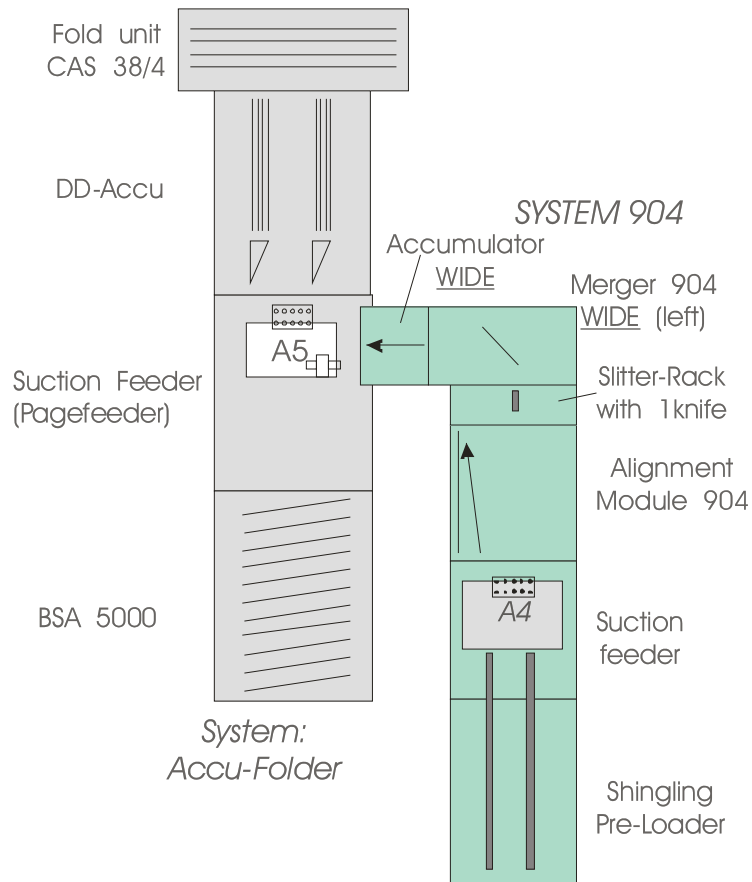


Exercise caution at the delivery end of the fold unit! Do not get close to the rotating delivery shafts - YOU MAY GET INJURED!

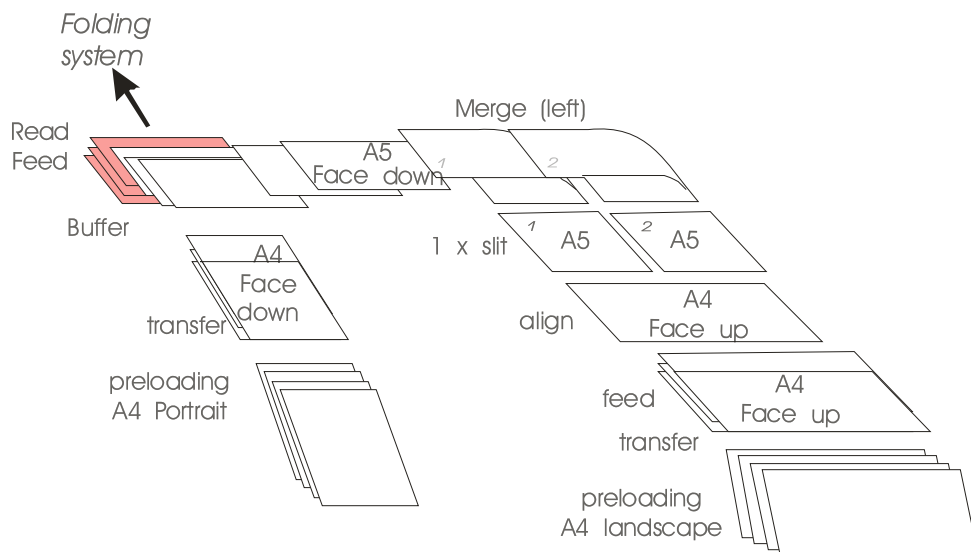
5. Operating Instructions / Method of Operation

Method of operation: The pagefeeder of the system incl. a photocell, which detects the stack height in the feeder. If the stack is low, the suction feeder starts to feed sheets until the stack system pagefeeder is filled.

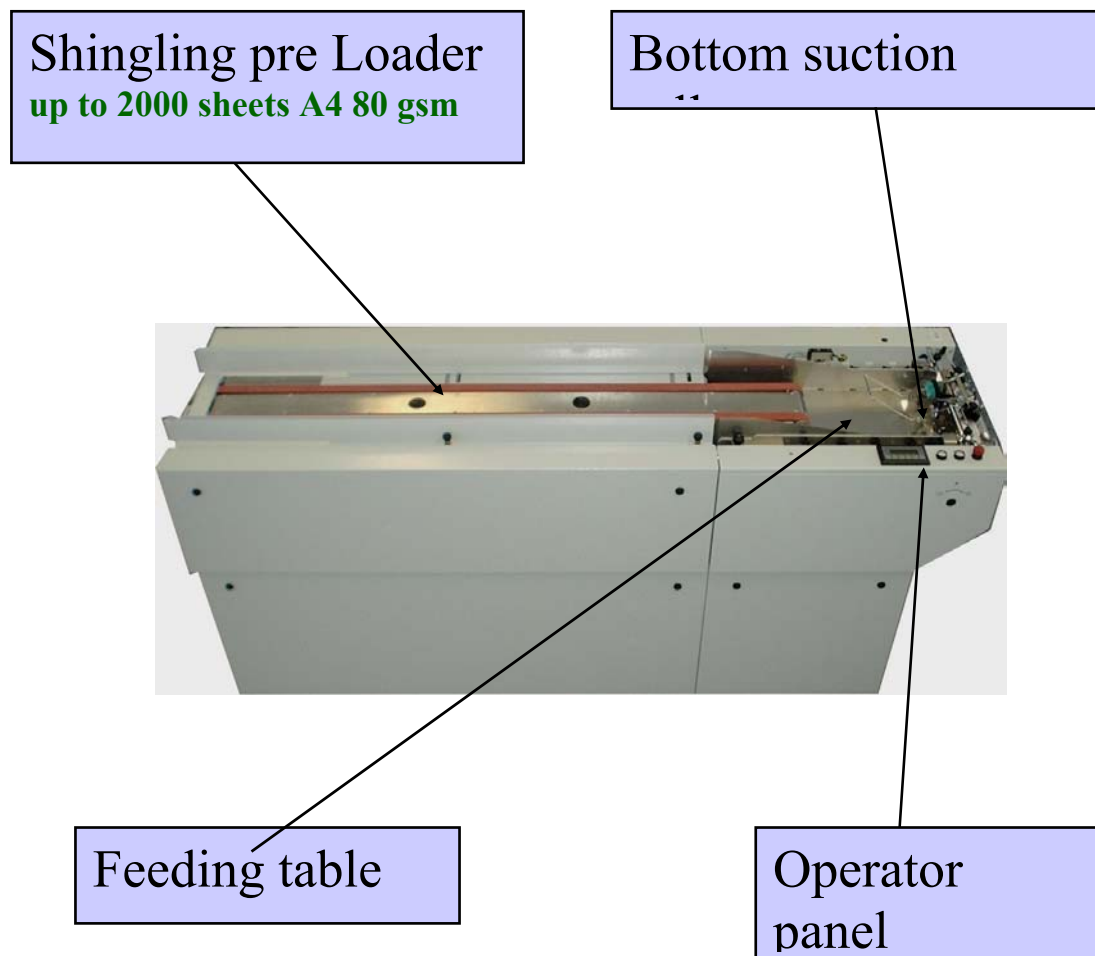
a) System-Layout:



b) Flow-chart



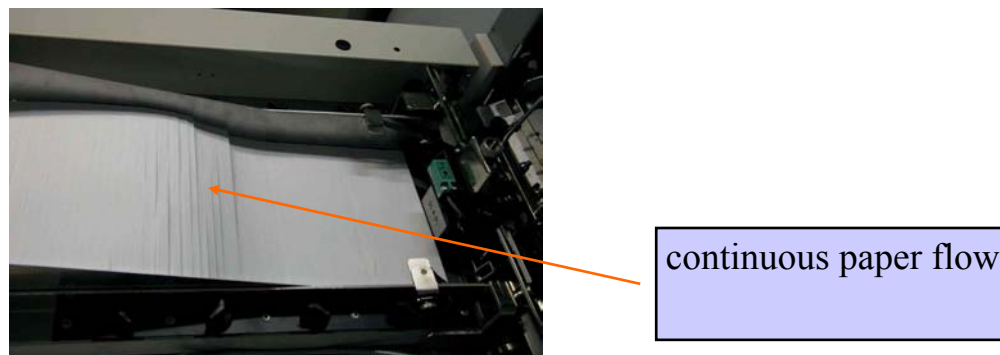
5.1 Loader & Feeder



Loading paper

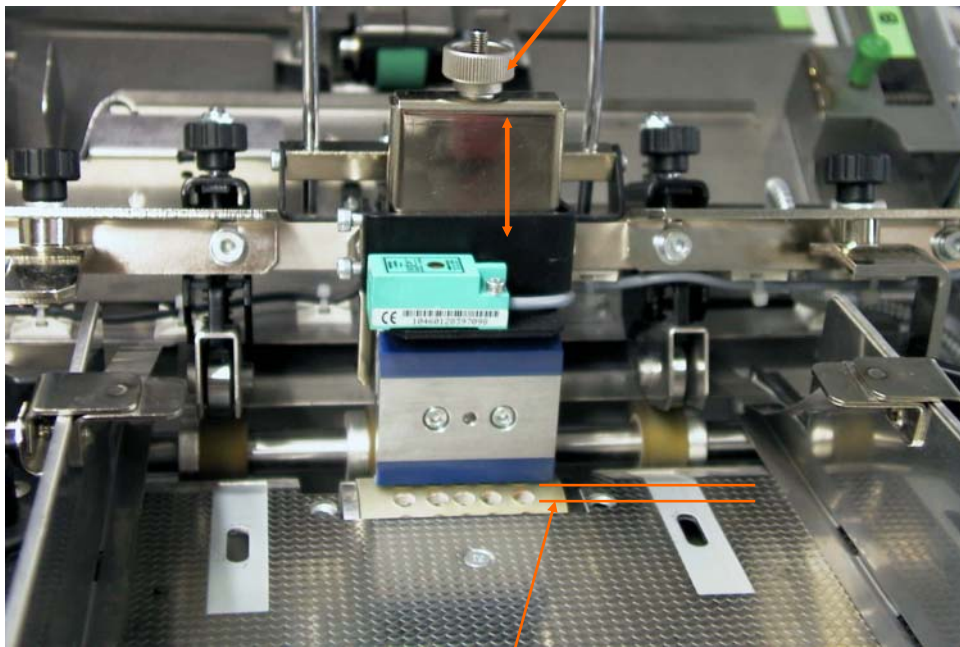
It is necessary to load the paper in the machine with an evenly spread overlap, in the shingling loading station.

To prevent jams during the paper transport from the loading area to the feeding table.



- Sheet separation

Paper thickness:
height adjustment

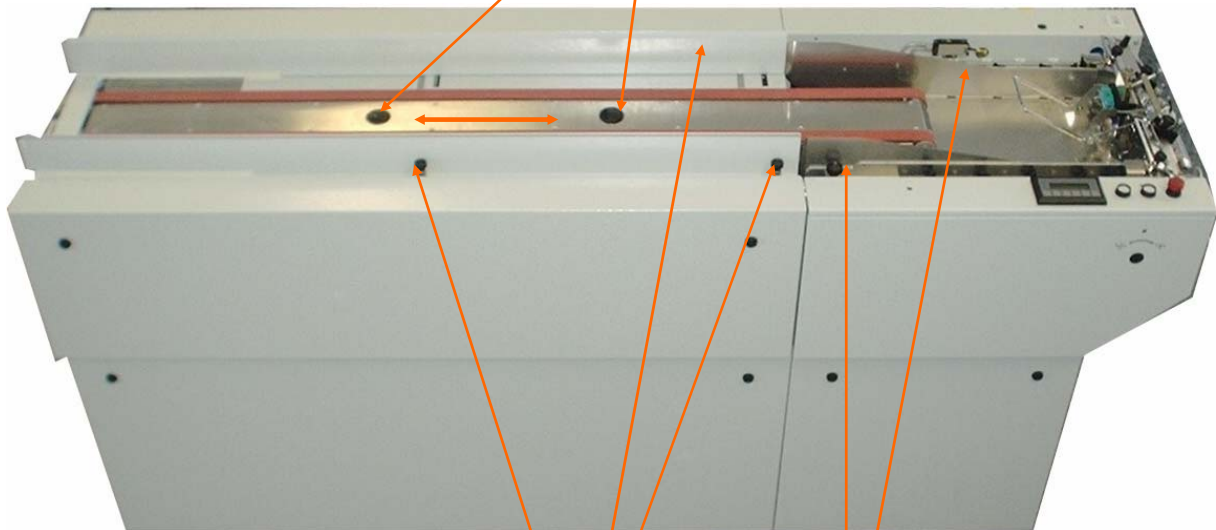


Gap adjustment: Less than the double sheet

- Setting paper format

1. Length adjustment Loader

1. Unlock black screws, turn them left
2. Move the loader manually to adjust the paper length.
3. Re-lock again the black screws



2. Blowing rails/paper guide

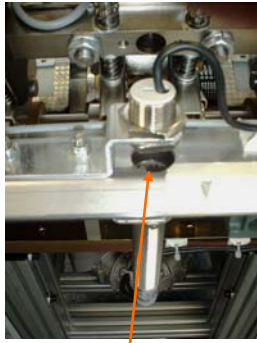
1. Adjust the blowing rails on the paper width. Centered to the machine width. With very little sideplay, but without binding

-Adjustment of suction air/ blowing air

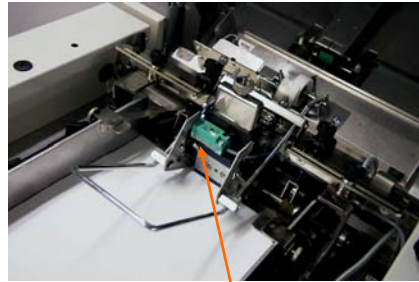
1. Suction air

minus = decrease
plus = increase





Ultra sonic sensor
▶double sheet control



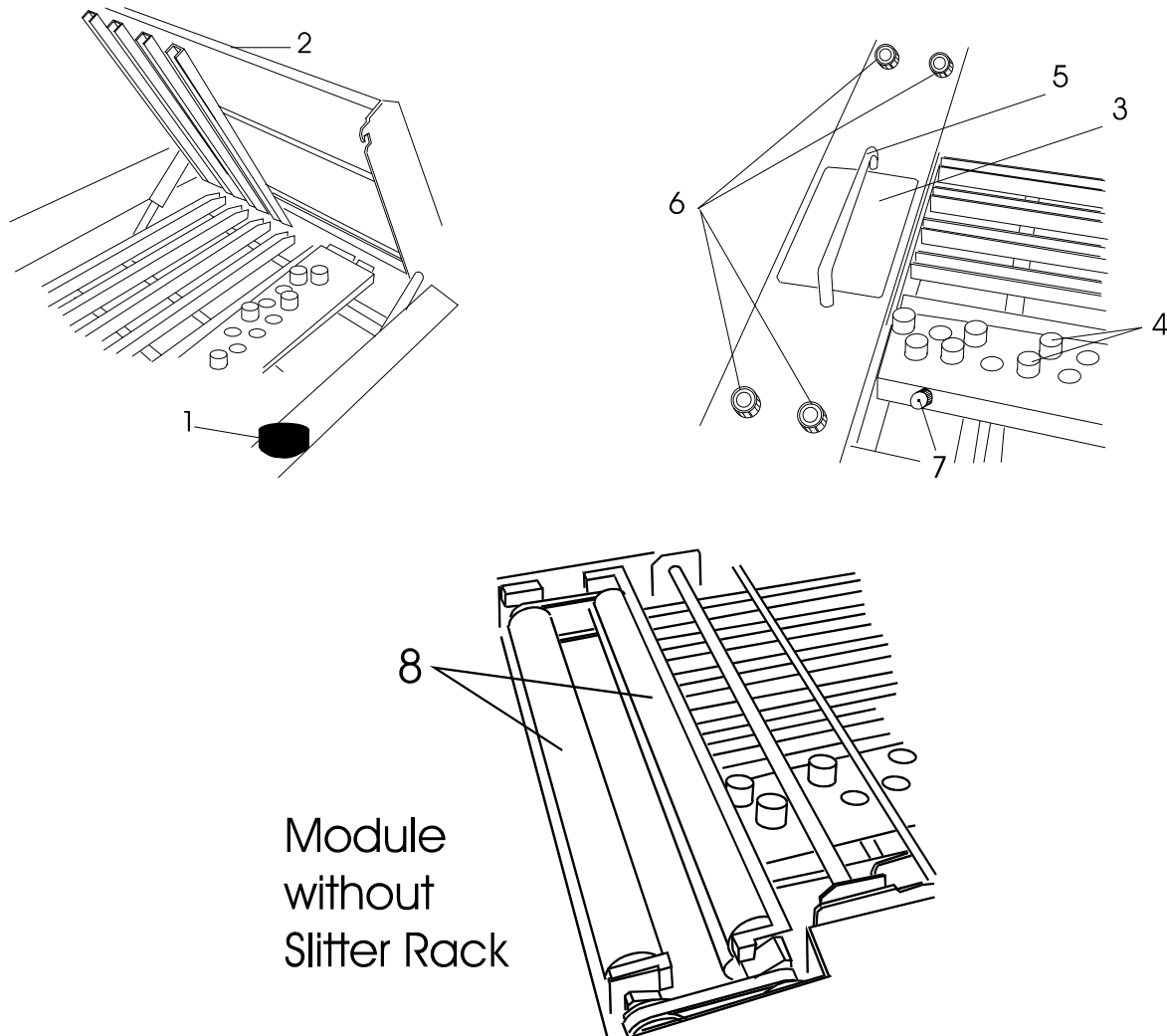
Automatic
feeding height regulation

5.2 Alignment Table

The Alignment Table takes the documents from the feeder and justifies them for proper slitting. This is accomplished by a document belt and rollers which guide the document to an adjustable alignment edge. The document is then fed into a set of slitting knives. Perforating knives are also possible.

Description

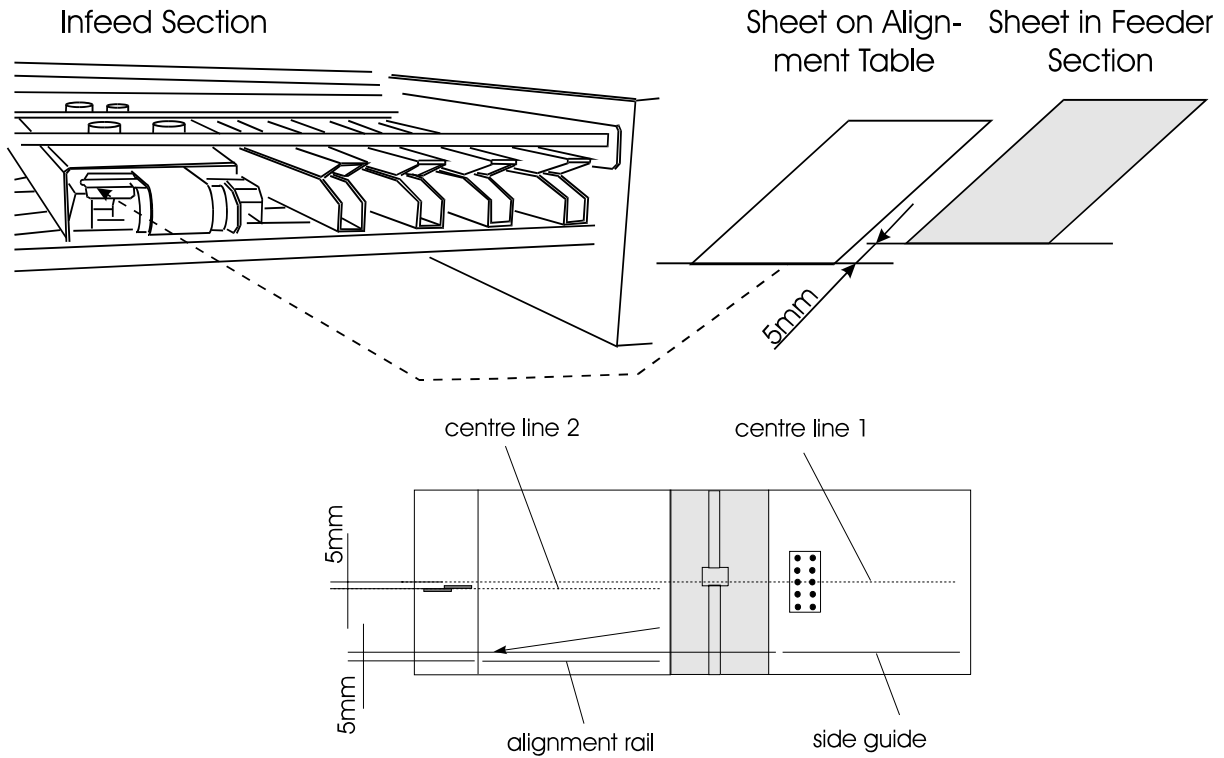
- | | | | |
|---|------------------------------------|---|--|
| 1 | Adjustment knob for alignment rail | 2 | Liftable paper guide rack (upper part) |
| 3 | Window | 4 | Ball cages |
| 5 | Handle of the slitter rack | 6 | Knurled screws to remove the slitter rack |
| 7 | Fine adjustment knob alignment | 8 | Transport PU-rollers (for accurate slitting) |
- No adjustments required.



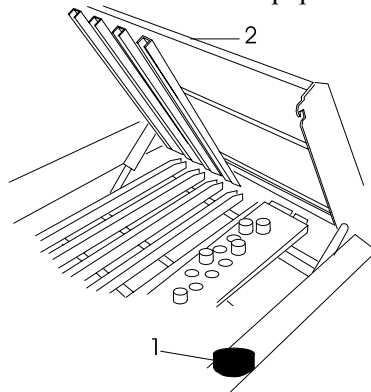
The Alignment Table aligns and justifies documents to a straight edge before they are slit. This insures that when a document is slit by the knives it is slit squarely and consistently. The Alignment Table has an adjustment knob on the left hand side of the machine which positions the aligning edge. This adjustment permits different sized documents to always be fed correctly from the feeder. This adjustment can also be used to make minor adjustment to the document slitting positions.

Setting the Paper Transport

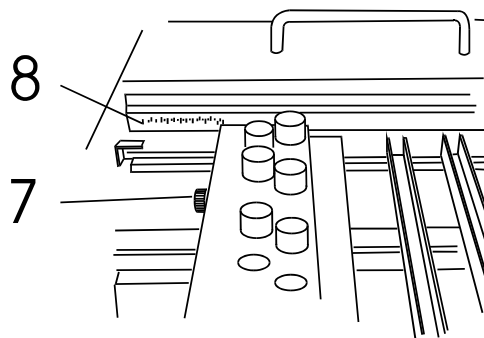
1. Make sure the feeder is set up properly and the documents are being fed correctly. Adjust the distance of the left side of the document exiting the feeder and the alignment rail to approx. 5mm.



2. Turn the knob on the left hand side of the Alignment Table to position the aligning edge. The aligning edge should be positioned to the left of the paper as it exists the feeder.

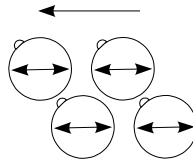


3. A scale (8) on the alignment rail gives an indication of the position of the alignment rail.



Ball Cages

The ball cages (4) can get fouled with paper dust. Remove the ball cage and blow out paper dust before replacing. The cage, with the ball in it, can be pulled out using a slight rocking motion. Be sure to have a good grip on the cage or it can fall into the Alignment Table. Replace the cage with the arrow in proper orientation.

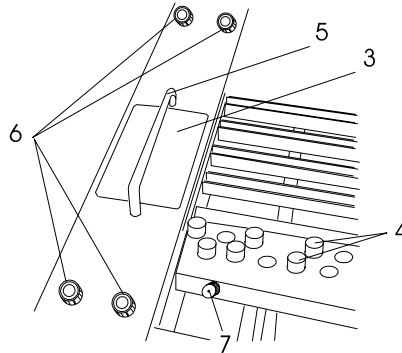


The arrangement of plastic and stainless steel balls has significance relative to different paper stocks and sizes. Nominal placement is provided at initial setup and should provide proper alignment characteristics. If changes are made, keep in mind that stainless steel balls provide greater friction, producing firm movement of the paper through the Alignment Table. For heavier or longer stocks, position the stainless steel balls closer to the infeed end of the Alignment Table.

5.3 Slitter Rack

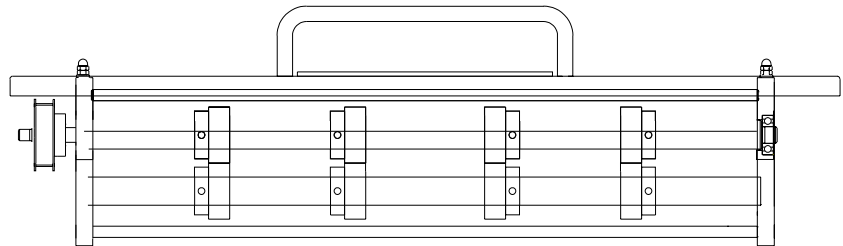
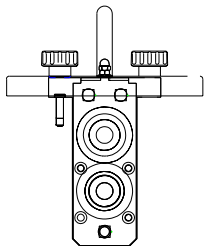
The Slitter Rack should only be adjusted by a Customer Service Engineer. However, there will be times when the operator will need to change Slitter Racks for different jobs.

1. Remove the four thumbscrews (6) from the top of the Slitter Rack.



2. Carefully remove the Slitter Rack (5) from the Alignment Table.
3. Carefully position the alternate Slitter Rack.
4. Replace the thumbscrews (6).

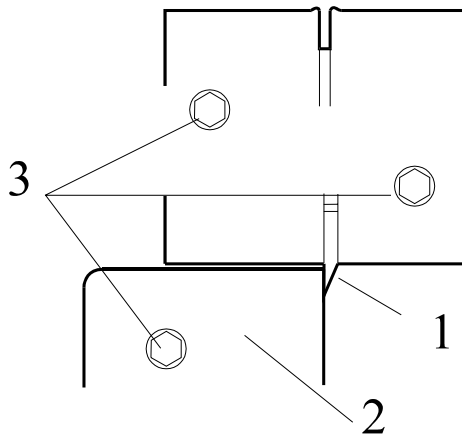
The window (3) gives the possibility to monitor a jam in the slitter rack.



Adjust the Slitting Knife

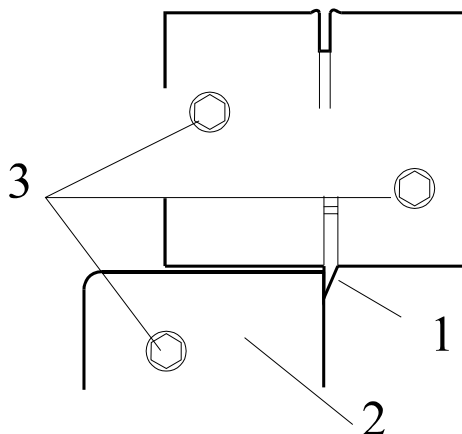
NOTE: Before the slitter knives are adjusted the Alignment Table must be adjusted for the correct document.

1. Mark the slit position on a sheet of paper.
2. Open cover.
3. Slide marked sheet under ball assemblies and alignment edge.
4. Start and stop the motor.
5. Remove marked sheet and measure distance between slits and marks.
6. Remove the Slitter Rack and adjust the knife position by loosening the screws (3) and move knife (1) and shearing block (2).



NOTE: The shearing block may be installed to the right or left of the knife.

7. To adjust slits to the left:
 - a) Loosen both set screws on shearing block. Both shafts turn easily.
 - b) Tighten set screws.
 - c) Loosen both set screws on knife.
 - d) Move knife by the correct measurement.
 - e) Tighten set screws.
 - f) Loosen both set screws on shearing block. Both shafts turn easily.
 - g) Slide shearing block against knife.
 - h) Tighten set screws.



NOTE: When positioning knives, be sure that the knives are only lightly touching the shearing block. The shearing block spring must not be fully compressed. If a knife is forced against a shearing block or the shearing block is fully compressed, the knife will quickly become dull.

8. Carefully reinstall the Slitter Rack.
9. Feed another sheet of paper into the Slitter Rack and check that the new knife position is accurate.
10. Repeat adjustment as required.

5.4 Merger - Accu



1. Hand-feed a document then convey it through the alignment table using the hand wheel. Stop when the edge of the paper is at the merge tubes.
2. Note the position of the slits relative to the merge tubes.
3. Open the Merge Unit cover and loosen the thumbscrews which anchor the merge tube (one at top of merge tube and the other on underside of Merge Unit).
4. Position the merge plates so that the side of the slit document is in line with the edge of the merge tube bottom tab (see figure).
5. Close the Merge Unit cover and run the machine at normal speed to check the adjustment.
6. Repeat adjustment if necessary.

Accumulator

An accumulator is positioned at the exit of the merger. The accumulator feeds a set of sheets as a brick into the following feeder.



Entry to Pagefeeder:

