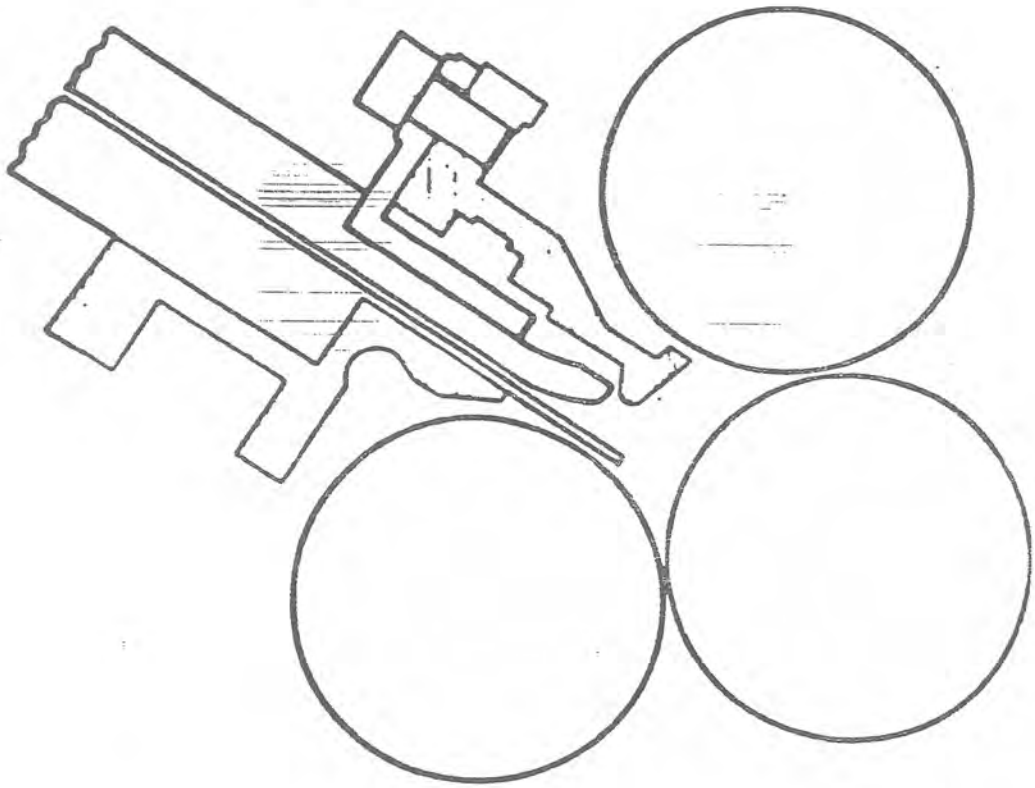
MBO

Paper Folding Machines



T 46
T 49
T 55
B 20/23

Operation and Maintenance Manual

MBO MASCHINENBAU OPPENWEILER Telex 791/4634

The MBO T 49 and T 55 folding machine was developed for folding sheets in the size of 4" x 6" up to 20 x 28 when using a pile feeder or 20x36/22x36 when using a continuous feeder. The running speed can be regulated continuously from 1200 - 5600 inch/min. and can be varied according to size of the sheet or kind of folding.

The basic machine consists of a pile or continuous feeder with the well-proved MBO lattice-type alignment table. The parallel station has four (4) fast setting fold plates with attached swinging deflectors and a new sheet stop adjustment. Well-proved combined rubber-steel spiral rollers with new gearless and noiseless drive adjustable by caliper setting on top of the machine as well as solid and quick changeable knife shafts by plug bearings.

The 8-page station is a roll-a-way buckle folding unit with own drive, noiseless running cross carriers, maximum working width 20"/22, also with four (4) plates etc. as described above.

The 16-page station is also a roll-a-way buckle folding unit as described above, but with only 15" working width and two (2) or four (4) plates at will.

As 8-page or 16-page folding unit also the knife folding unit "K" can be used and can at will be hang-on to the parallel fold or to the 8-page buckle unit. The folding knife is self-timing by a photocell and is independent of the feeder.

The delivery is a hand-on motorized stacker delivery with electronic speed control.

To give the operator a general understanding of the working of the machine, the following description is made in the sequence of the adjustment of the machine from feeder to delivery.

Setting of Sheet Gap

sheet length

0	0	0

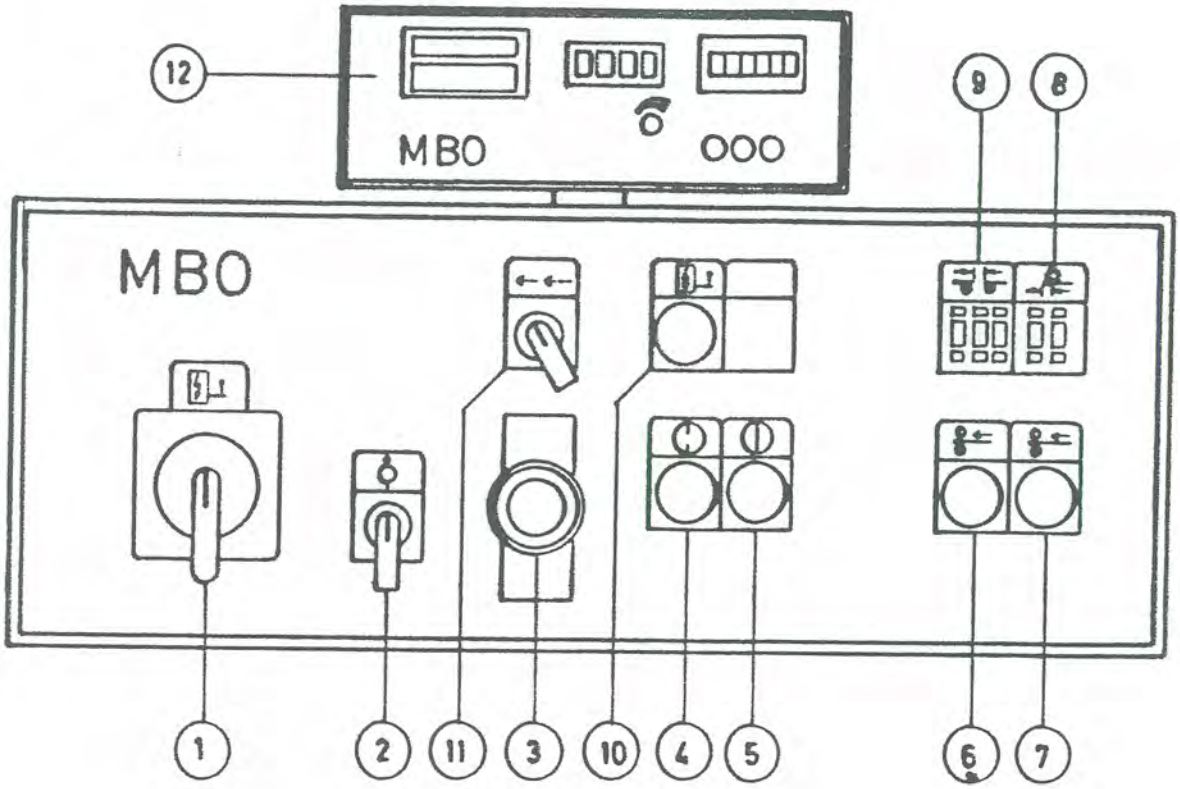
set

0	0

set

sheet length	set	set
inches		
6	020	10
8	025	12
10	030	15
12	035	18
14	040	20
16	045	24
18	050	25
20	055	27
22	060	30
24	065	30
26	070	30
28	075	30
30	080	30

MBO	CONTROL - PANEL for B 23	27.3.84



(1) Main switch

(2) Air pump

(3) Emergency stop

(4) Machine " off " (stop)

(5) Machine " on " (start)

(6) Pilot light for 7

(7) Sheet-feed-button

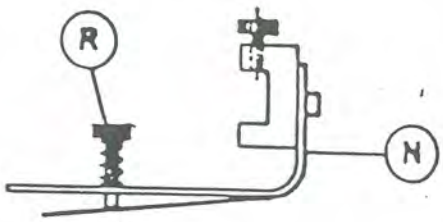
(8) Vacuum length

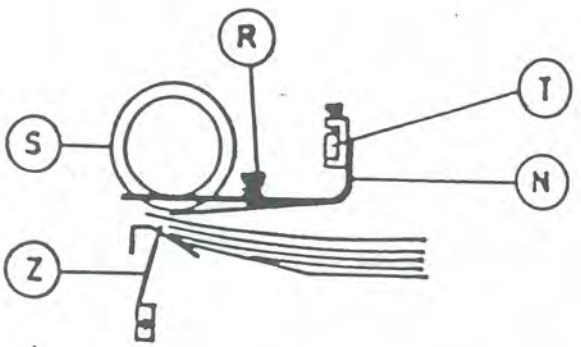
(9) Sheet gap

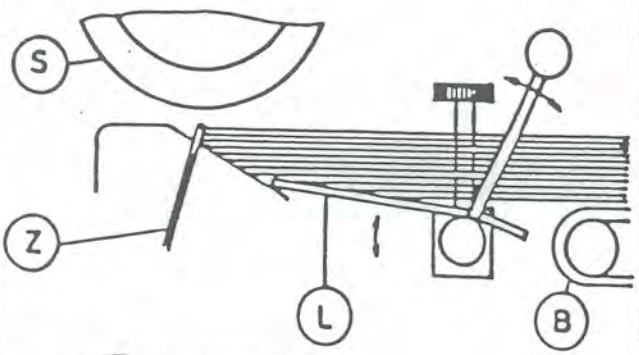
(10) Pilot light for 1

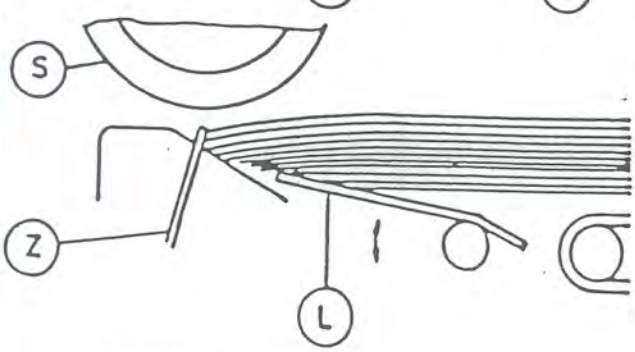
(11) Selector switch for batch impulse

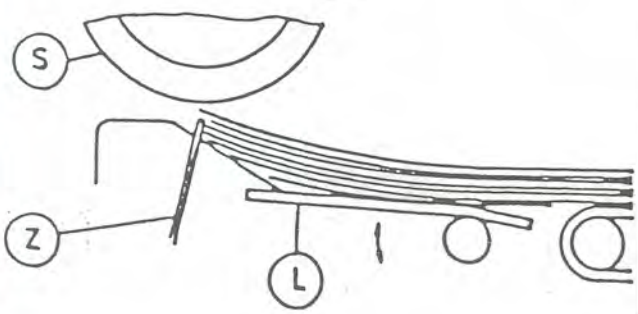
(12) Batch counter











2.7. Sheet hold down

On up-curled sheets it is possible that they over-run tongue (Z) and transport stops to late, this create a lot of doubles-sheets. With the adjustable holddown (N) we can prevent this

2.7.1. Position holddown (N) on left side of suction drum (S) on bar (T)

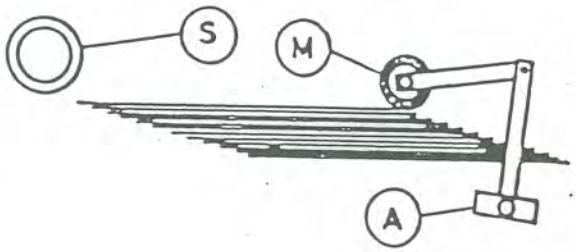
2.7.2. With knurled screw (R) adjust smoother tongue down till sheets are not over riding tongue (Z)

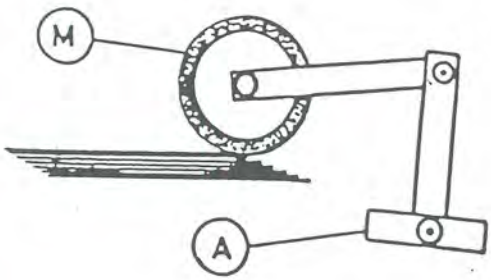
2.8. Guide plate below sheets

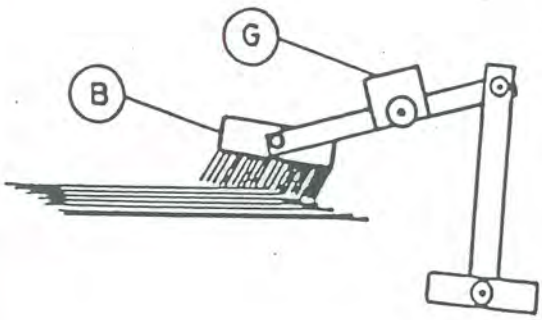
To get best running conditions the bottom plate (L) between transport belt (B) and suctiondrum (S) is adjustable up or down

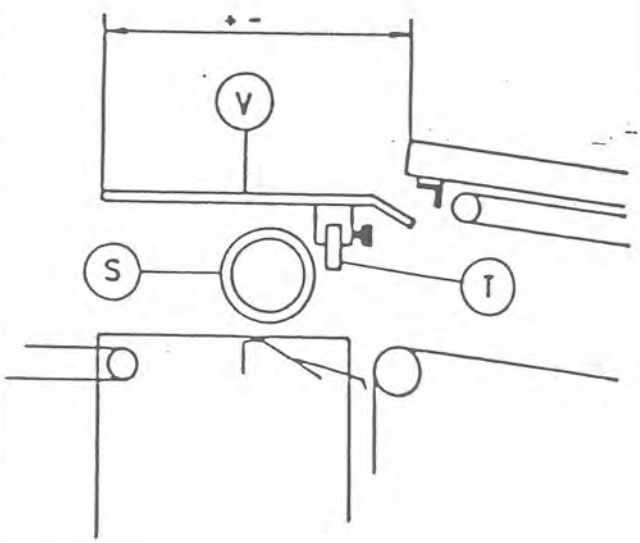
2.8.1. On down curled sheets adjust plate (L) up to a higher position

2.8.2. On up curled sheets adjust plate (L) down to a lower position









2.9. Tail drag

To control the tail end of sheets we use two sc wheels (M) and one brus (B) adjustable at (A)

2.9.1. Adjust wheels (M) on arm (A) to end of sheets, so that 3-5 sheets are held

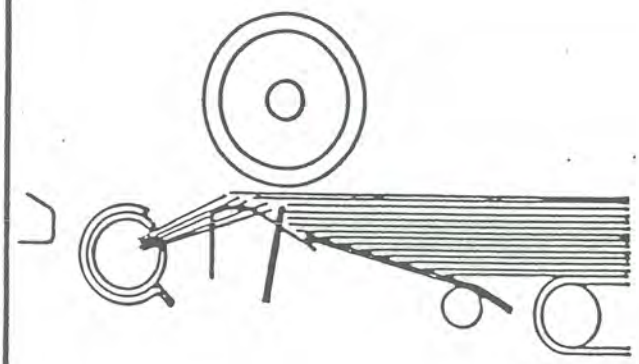
Between the two wheels (there is a brush (B) wi adjustable weight (G)

2.92. If feeder is pulling doublesheets, move weight (G) forwards (tc left) more pressure. If unsteady feeding uppears move weight bac wards (to right).

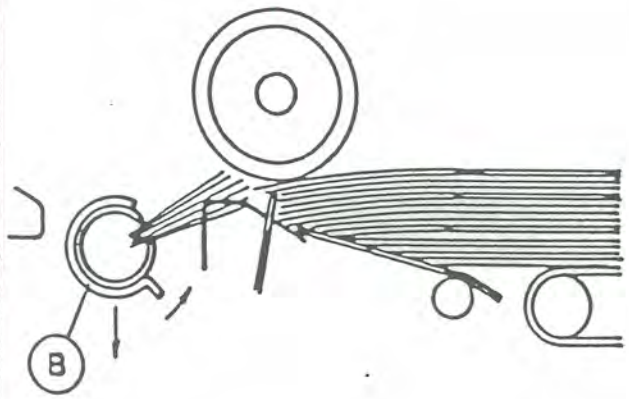
2.10. Loading capacity:

To increase the loadir capacity on top board, there are extension AR ~~elements~~ (V) available They can be mounted or cross bar (T) near suction drum.

(important on large size sheets).

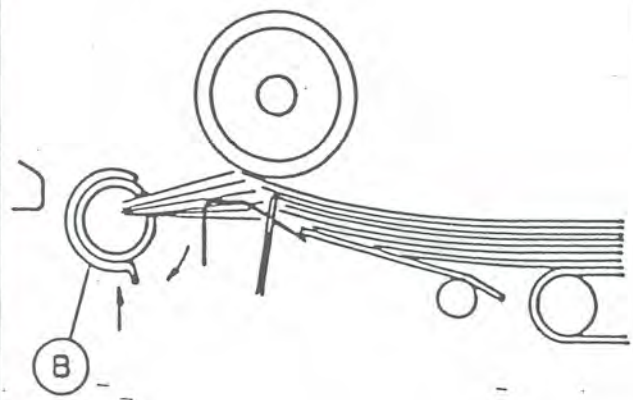


3.1.5. Most efficiency in sheet separation is available if air reache sheets in a flat angle

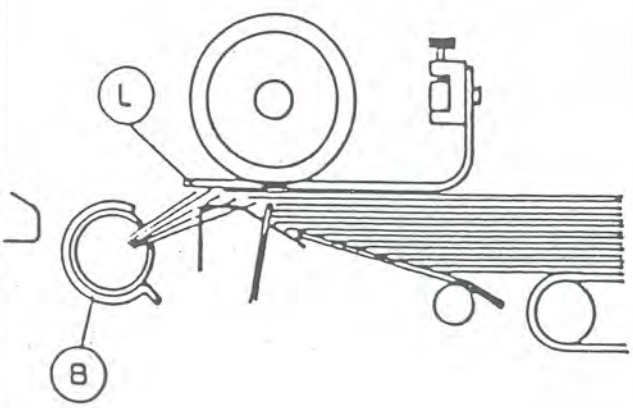


3.1.6. On down curled sheets move airtube (B) down on screw (H) and turne airblast direction up WITH lever (F)

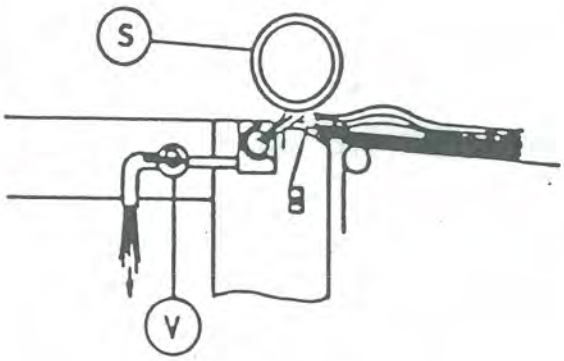
3.1.7. On up curled sheets move airtube (B) on screw (H) up and turns airblast direction down WITH lever (F)



3.1.8. If airtube is TURNED too far up, a lot of air escapes over sheets to atmosphere (bad separation, doublesheets)



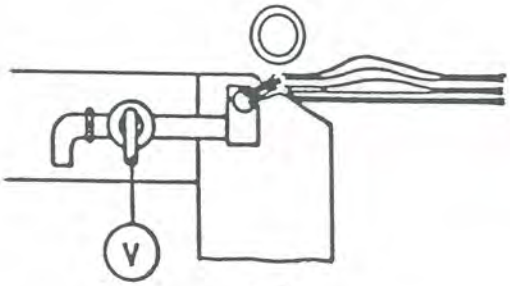
3.1.9. The best result we only get, if the rippled air guide plates (L) are used. The air goes along the plate to sheets and provides best separation. Keep plate (L) over air hole.



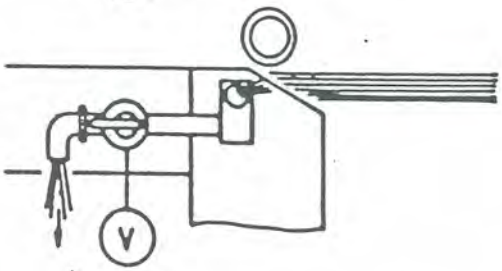
3.2. To ~~many~~ MUCH airblast

The new turbo type air pump supplys ~~many~~ ENOUGH air-blast. FOR ALL SHEET SIZE If handling small size sheets, the top sheets ~~are~~ blow~~ing~~ back benea~~th~~ ~~of~~ suction drum.

To avoid this, air can be released on a valve on each side of feeder

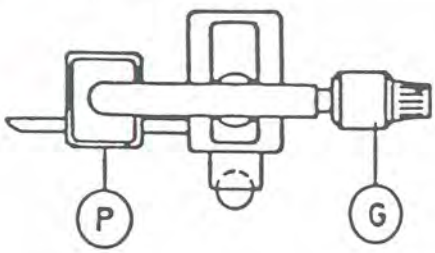


3.2.1. Valve (V) closed maximum airblast

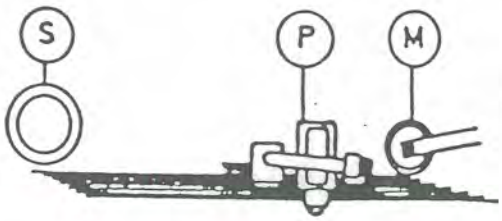


3.2.2. Valve (V) open minimum airblast

3.3. Side blower:

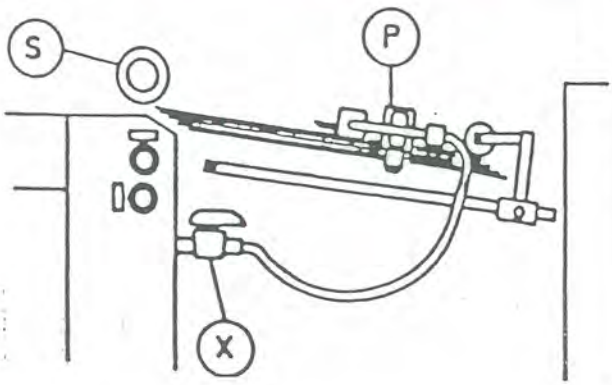


On left hand side of feeder is ~~a~~ AN adjust~~ing~~ ABLE air nozzle (P) Depend~~s~~ING on sheet size, this airnozzle can be moved back- or forward: This blower should lif the rear half of sheet:

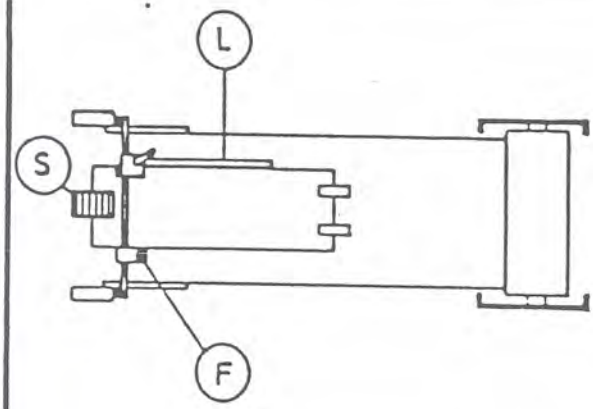


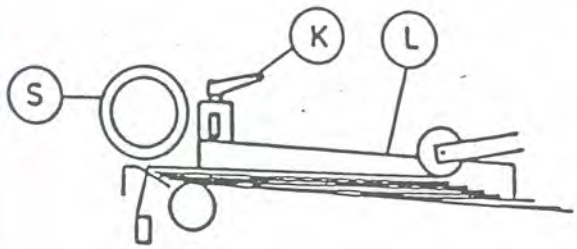
3.3.1. Place blower in rear half of sheets.

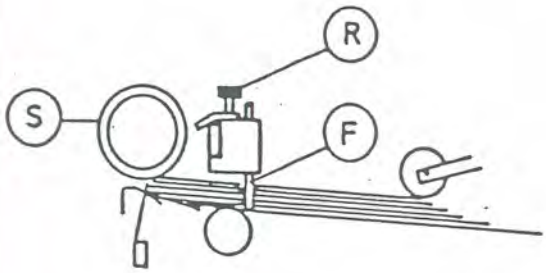
3.3.2. Adjust counter weight (G) to keep balance of blower. Blower should touch slightly the to: of sheets.

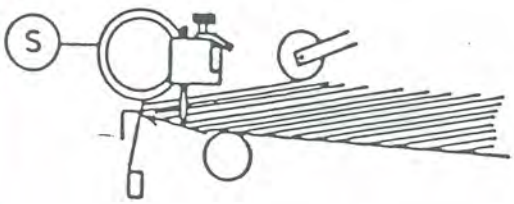


3.3.3. Adjust airblast ~~on~~ BY THIS (X) in a manner, that all top sheets are separa-ted exactly.









4. Sheet guides

In final position there are two guides to hold sheets in position.

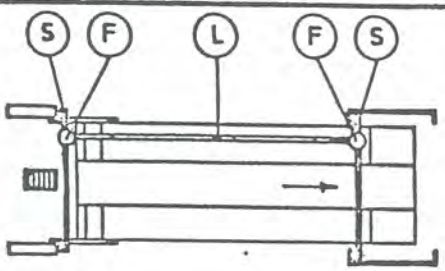
4.1. On right hand side is a side quide (L) .

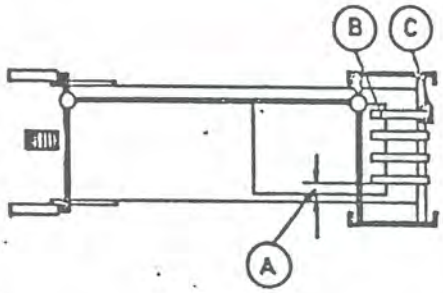
4.2. On left hand side is a quide pin (F)

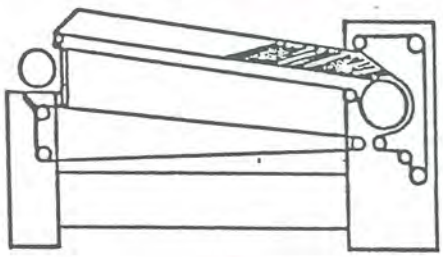
4.1.1. Put side quide (L) on t sheets on right hand si and tighten with set- screw (K)

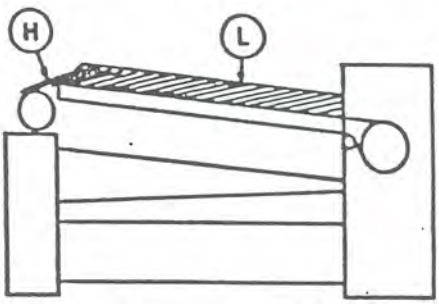
4.2.1. Set ~~quid~~ GUIDE pin (F) approx 2-3 mm (1/8 ") away left hand side of sheet Tighten on setscrew (R)

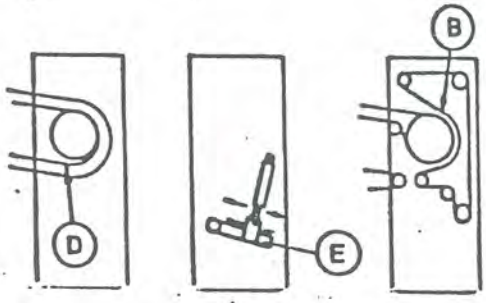
4.2.2. If handling short sheet move guide pin (F) to le side of bar.











1.) Loading of feeder

1.1 Setting of side lay (L)

1.1.1 loosen set screw (F)

1.1.2 set sidelay (L) acording to scale (S) for half width of sheet

Sidelay can be used on either left or rigth side

1.1. Guide tapes (B) adjustment

1.2.1. Set one tape on each side of sheets approx 1-2 inch inside of edge of sheet (A) use quide (C)

1.3. How to load sheets

1.3.1. Put a load of 1 to 11/2 inch of sheets on top table, and fan out, important: all sheets should be "aired" befor loading

1.3.2. Put next load, same manner on table

1.3.3 If tale of stock reach left end of table (H) push the blue sheet feed botton to start morement of tapes around drum towards suction wheel

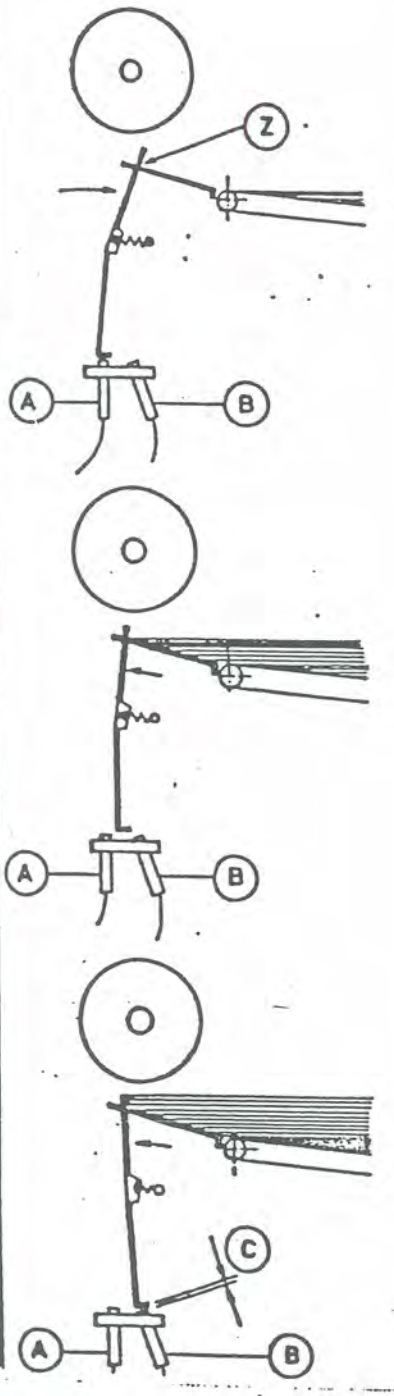
1.3.4. Sheets can be loaded up to top of sidelay (L)

1.4. Adjustment of rear tapes

1.4.1. The tapes (B) around rear drum are adjustable in pressure

1.4.2. Bracket (E) to the right-more bracket (E) to the left-less pressure

1.4.3. Sheets should be hold on to drum with little pressure, or not hanging away more than 1/2 inch at position (D)



2. Sheet-transport-control

Sheet transfer from top boardaround the drum to suction wheel is made with a two speed system

2.1. A feelertongue (Z) is moving to the rigth. If no sheets are under suction drum, in this position sensor (A) switch on transport mechanism to "fast speed"

2.1.1. Fast speed approx 6 feet/min.

2.2. Working Position:

If sheets reache tongue (Z) they push it to the left

2.2.1. The bottom of tongue is leaving sensor (A) and switch transport to "slow speed".

2.2.2. Slow speed approx 2 feet/min.

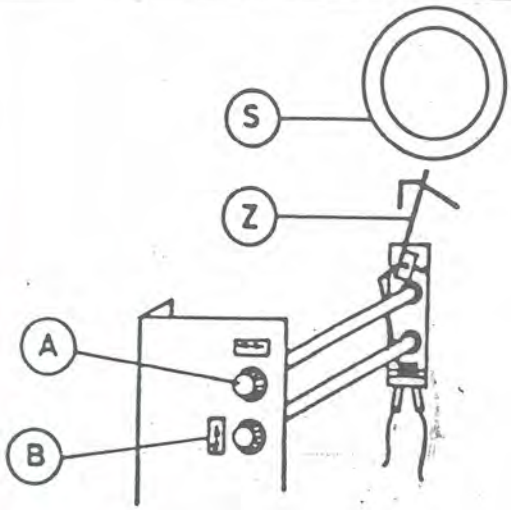
2.3. Final Position:

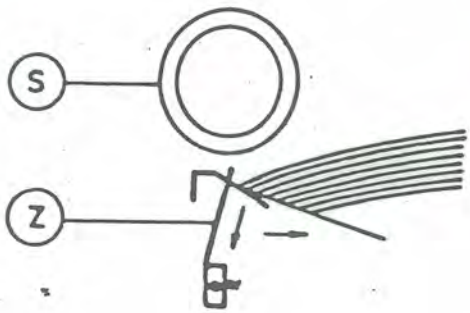
The sheets are pushing tongue (Z) more to the left

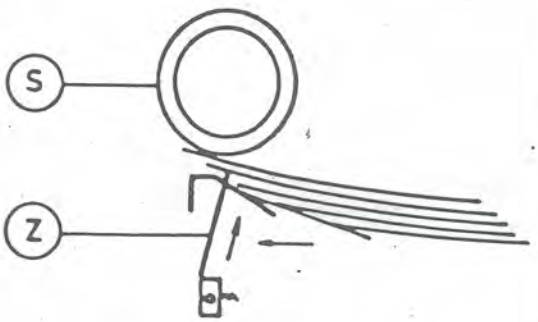
2.3.1. The bottom of tongue is reaching sensor (B) and "stop the transport".

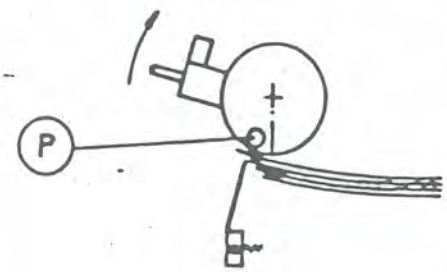
2.4. The distance (C) from bottom of tongue to sensor (A) or (B) must be between 0,5 and 1 mm

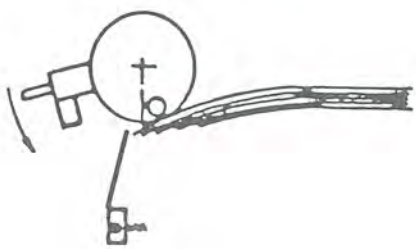
7.2.84











2.5. Adjustment of feeler-tongue

Feeler-tongue (Z) is adjustable in two dimensions This is important if front edge of sheets are curled either up or down

2.5.1. On knob (A) move tongue (Z) forward or back

2.5.2 On knob (B) move tongue (Z) up or down

2.5.3. If using down-curled sheets adjust tongue (Z) down on knob (B)

2.5.4. At same time adjust tongue (Z) back on knob (A) (to right)

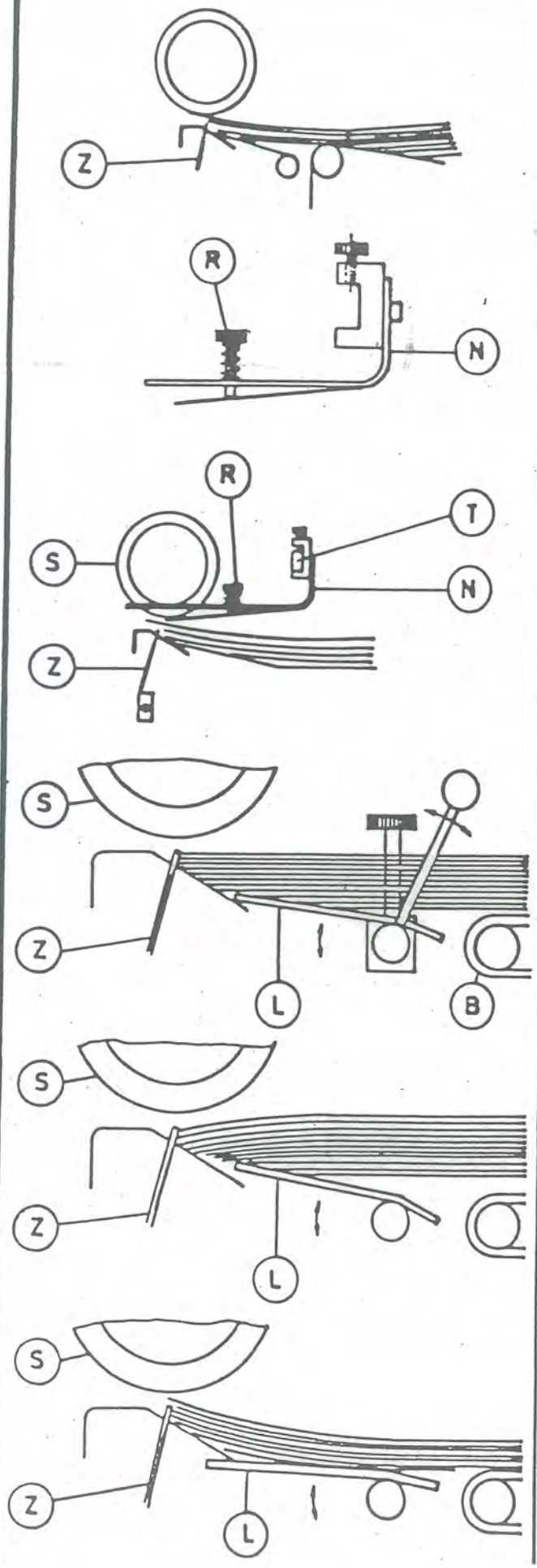
2.5.5 If using up-curled sheet: adjust tongue (Z) up on knob (B) other wise sheets are moving betwee tongue (Z) and suction wheel (S) to fare forwards (overrun)-result are doublesheets.

2.5.6. At same time adjust tongue (Z) to the left (forwards)

2.6. If handling curled sheets the pick up position (P) on suction drum (S) can be changed

2.6.1. On up-curled sheets move pick up position (P) forwards (clockwise)

2.6.2. On down-curled sheets move pick up position (P) backwards (counter clockwise)



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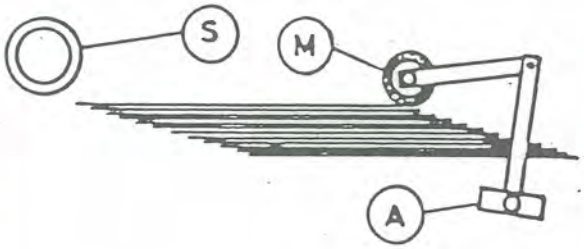

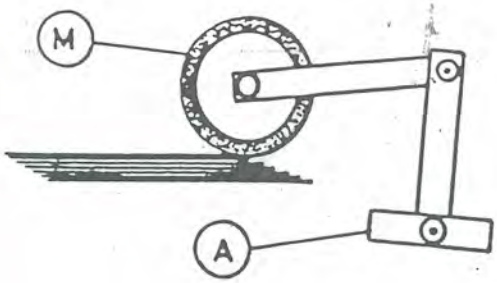

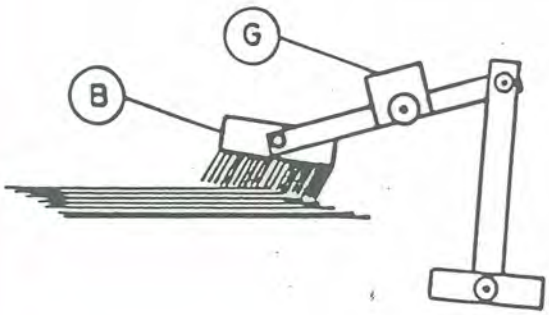

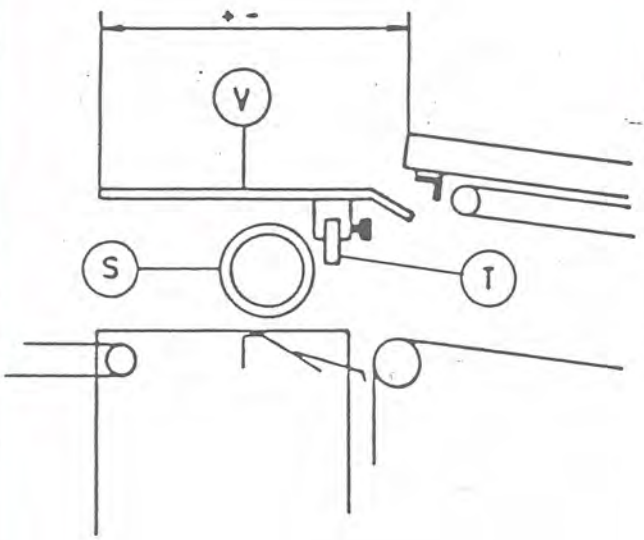

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To control the tail end of sheets we use two sof wheels (M) and one brush (B) adjustable at (A)

2.9.1. Adjust wheels (M) on arm (A) to end of sheets, so that 3-5 sheets are held

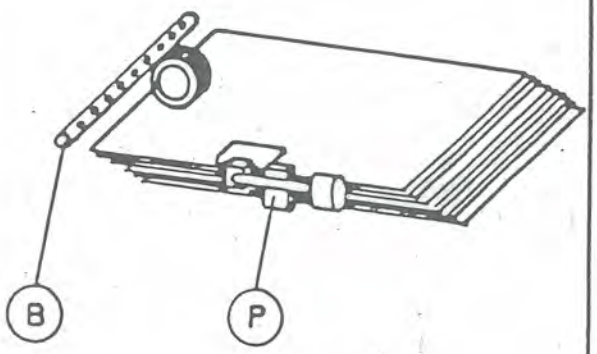
Between the two wheels (M) there is a brush (B) wit adjustable weight (G)

2.92. If feeder is pulling doublesheets, move weight (G) forwards (to left) more pressure. If unsteady feeding uppears move weight backwards (to right).

2.10. Loading capacity:

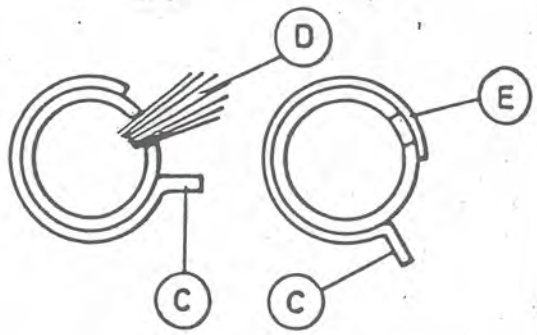
To increase the loading capacity on top board, there are extension ARMS ~~elements~~ (V) available They can be mounted on cross bar (T) near suction drum.

(important on large size sheets).

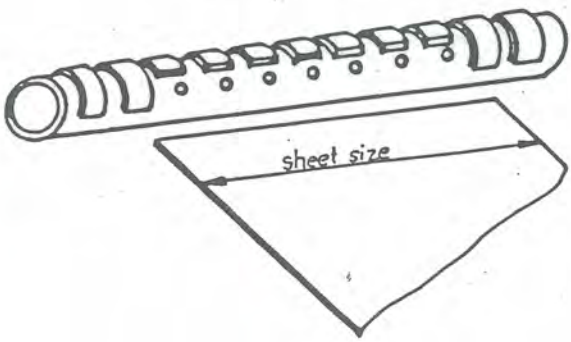


3. Air blast and sheet separation

Lifting and separation of sheets is performed from two sides.
Between suction drum and alignment table is a air-tube (B) across front of sheets.
On left side of feeder is a self adjusting air nozzle (P)

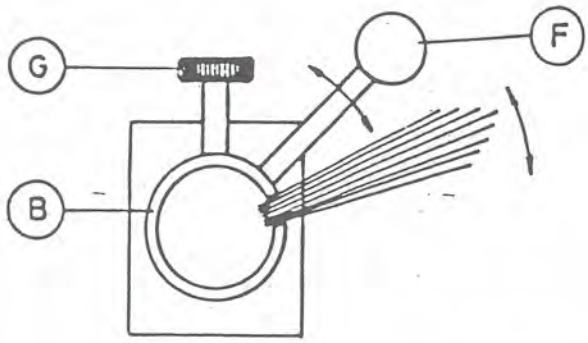


3.1. On airtube (B) are many holes across entire width of feeder. The holes can be open or closed with clips (C) picture (D) open - (E) closed

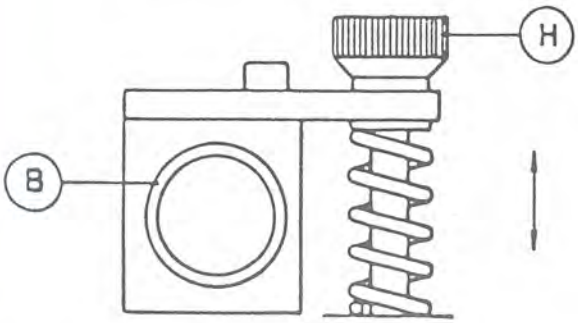


3.1.1. Open all holes along the size of sheet

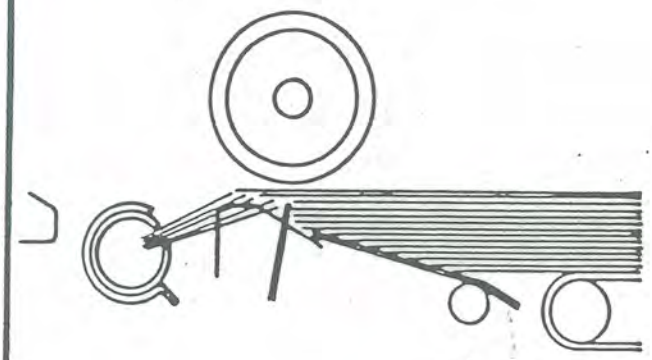
3.1.2. Holes outside of sheet size keep closed with clips (C)



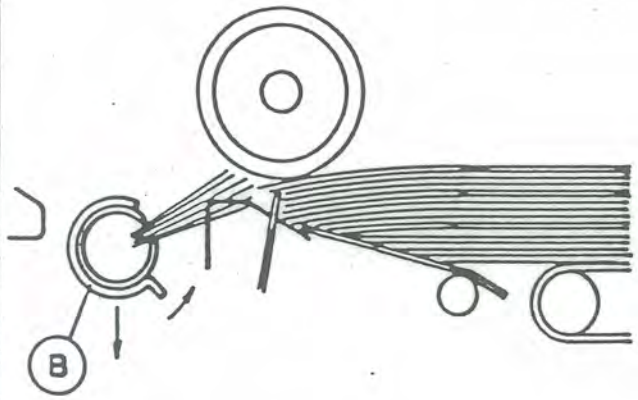
3.1.3. Airtube (B) can be turned with lever (F) and fastened with screw (G)



3.1.4. Airtube (B) is adjustable up or down with knurled screw (H)

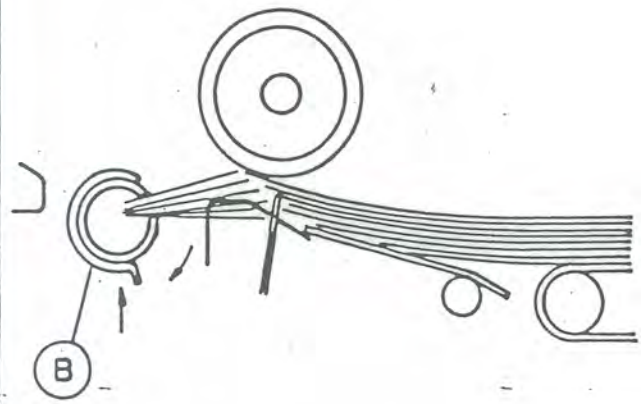


3.1.5. Most efficiency in sheet separation is available if air reaches sheets in a flat angle

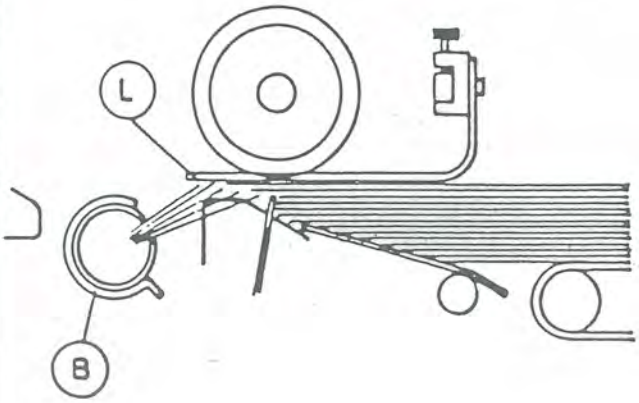


3.1.6. On down curled sheets move airtube (B) down on screw (H) and turn airblast direction up WITH lever (F)

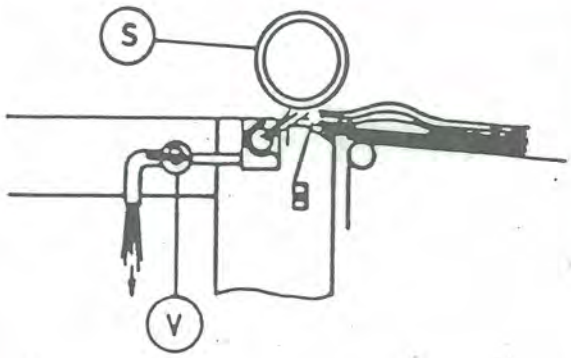
3.1.7. On up curled sheets move airtube (B) on screw (H) up and turn airblast direction down WITH lever (F)



3.1.8. If airtube is TURNED too far up, a lot of air escapes over sheets to atmosphere (bad separation, doublesheets)



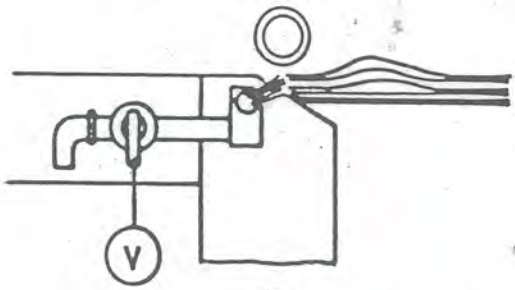
3.1.9. The best result we only get, if the rippled air guide plates (L) are used. The air goes along the plate to sheets and provides best separation. Keep plate (L) over air-hole.



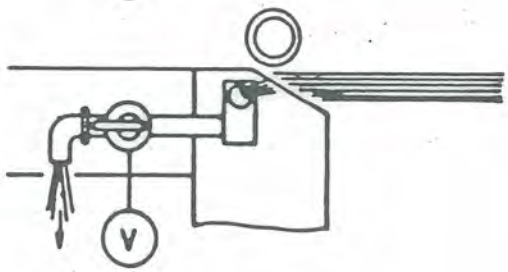
3.2. To ~~many~~ MUCH airblast

The new turbo type air-pump supplys ~~many~~ ENOUGH air-blast. FOR ALL SHEET SIZES If handling small size sheets, the top sheets MA ~~are~~ blow~~ing~~ back beneat ~~of~~ suction drum.

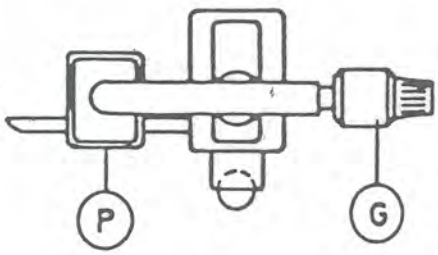
To avoid this, air can be released on a valve (V) on each side of feeder



3.2.1. Valve (V) closed maximum airblast

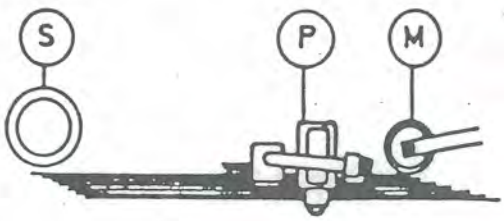


3.2.2. Valve (V) open minimum airblast



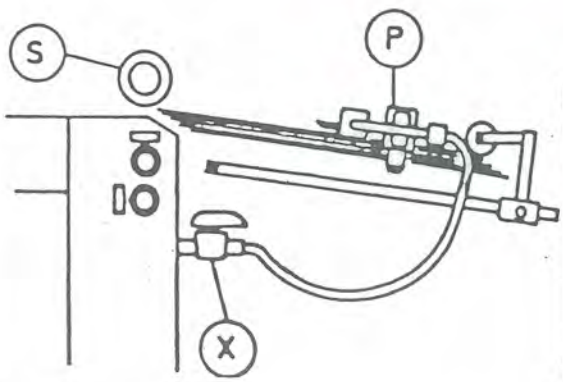
3.3. Side blower:

On left hand side of feeder is ~~a roll~~ AN adjust~~ing~~ ARLE ING air nozzle (P) Depends on sheet size, this airnozzle can be moved back- or forwards. This blower should lift the rear half of sheets.

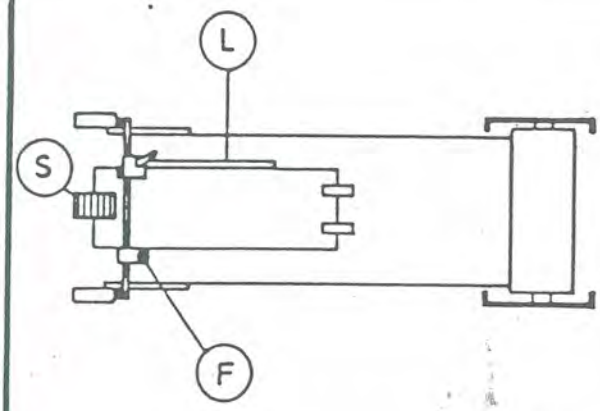


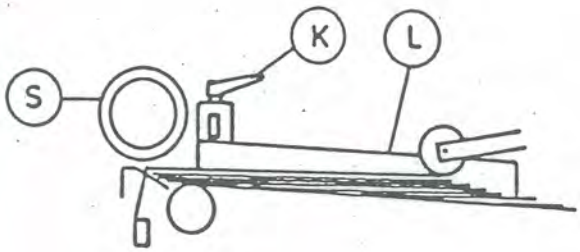
3.3.1. Place blower in rear half of sheets.

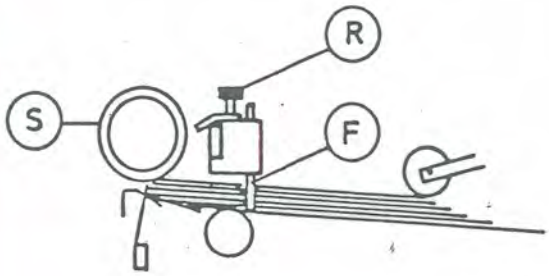
3.3.2. Adjust counter weight (G) to keep balance of blower. Blower should touch slightly the top of sheets.

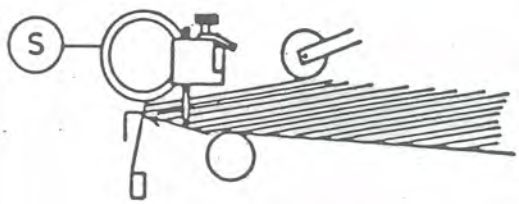


3.3.3. Adjust airblast ~~on~~ BY THIS VALVE (X) in a manner, that all top sheets are separated exactly.









4. Sheet guides

In final position there are two guides to hold sheets in position.

4.1. On right hand side is a side quide (L) .

4.2. On left hand side is a quide pin (F)

4.1.1. Put side quide (L) on to sheets on right hand side and tighten with set-screw (K)

4.2.1. Set ~~quide~~ GUIDE pin (F) approx. 2-3 mm (1/8 ") away FROM left hand side of sheets. Tighten on setscrew (R) .

4.2.2. If handling short sheets move guide pin (F) to left side of bar.

The Feeder Air and Vacuum Pump is turned on by the switch No. 2 on main panel.

Open the necessary slots on Air tube across the front of pile, use enough air to separate 5 to 10 sheets of the pile. The Air tube can be adjusted up or down on the black knurled knob on left side of tube or can be rotated on handle also on left side of tube.

If sheets are curled on the lead edge of the pile, the following can be adjusted to give better running conditions:
The position of vacuum is controlled by the disc located behind the vacuum wheel. There is a red mark near the top of the disc. A corresponding mark is located on the casting next to the disc. When the red marks are in alignment, vacuum is emitted from the bottom slot. A handle is located on the front of disc and can be used to adjust "where" the vacuum is applied to the paper. If paper is curled down, the red mark should be moved clock-wise. The normal position of the disc is when the red marks in alignment for normal flat paper under the vacuum wheel.

The Caliper

The caliper-type double sheet detector is located on the register table guide. A lever is provided on the side of the caliper, which is used for inserting a single piece of paper of the stock to be run between the avils.

To check the caliper for proper setting, start the folder, take a strip of the same material and insert it between the segment and the lower roller. The sheet feed mechanism should not stop. If two pieces of paper are inserted between the segment and the lower roller, the sheet feed mechanism should stop. If an adjustment is required, a knurled locking nut and screw are provided to raise or lower the top segment wheel to create the sensitivity required.

Register Table

As the sheet leaves the feeder, it enters upon a single belt of the register table, the belt advancing the sheet to the parallel folding section and at the same time moving the left side edge of the sheet against the side guide for accurate register.

The side guide can be positioned by loosening the two plastic knobs located on guide block of machine. Slide the side guide to correspond with the scale located on the shaft on which the guide slides. Graduations on the scale represent half width of the sheet. This size should correspond with the setting of the loading side guide on the feeder. A micrometer adjustment is provided for the side guide. It is located at the right of the main guide. The ball rails can be equipped with plastic and/or metal balls to keep the sheet to the guide. The first five holes from the vacuum wheel should always be filled with the metal balls to exert sufficient pressure on the sheet to accelerate the sheet to intended speed. Plastic balls are used after the first five metal balls when the paper is light weight. For medium up to heavy weight use as many steel balls as necessary.

In order to insure accurate folding, scoring, perforating and slitting, in the parallel section it is imperative that the sheets be fed squarely from the register table into the Nr. 1 and Nr.2 folding rollers of the parallel section. A single adjustment is provided in center of register table side guide. When sheet is not square to the fold rollers and the plastic knob is loosened, the knurled collar can be moved to compensate the setting.

Parallel Folding Station

The sheet is advanced from the register table to the parallel folding section where, by means of the fold plates, deflectors and fold rollers the sheet receives one, two, three or four parallel folds. Graduated scales are provided on all fold plates for setting fold plate-sheet stops according to fold size requirements. All fold plates are equipped with swinging deflectors for ease in positioning the deflector.

Since all folding sections are similar, including slitter shaft adjustments, only the parallel section will be referred to.

Fold Plates

The No. 1 and No. 2 fold plate has a depth of 21". All other plates have a depth of 14½". The minimum size fold each plate can produce is 1 3/4".

How to determine fold plates to be used

Fold by hand a sheet of the job to be run, making the necessary folds as per the imposition requirements for that signature. Then check the folios and determine the gripper and register edges of the sheet. Select the fold plate or plates to be used to make the required fold or folds, in folding section being made ready, as determined by the requirements to the hand-folded signate.

How to position fold plate deflectors

After determining the fold plates to be used for the particular job to be run, position the deflectors. Lower the deflectors on those fold plates not to be used and raise the deflectors on those fold plates that are to be used. This is done in the following manner:

To position fold plate deflector, loosen the lock handle located on the operator's side of each section. One handle is used for each plate. Slide the plate away from the fold rollers and swing the deflector into the position required.

How to make preliminary fold plate sheet stop settings

The fold plate sheet stops are adjustable to accomodate the various sizes of folds within the range of each fold plate. The preliminary setting is made by means of a graduated scale and pointer.

Different Settings

This section is prepared for the convenience of the folder operator. No attempt has been made to show all of the impositions that come within the range of the T 49 and T 55 MBO folder. Many impositions, in addition to those shown here, may be made if the occasion demands.

Fold plates to be used are designated as No. 1, 2, 3 and 4 - 8-page section. The roller and slitter shaft calipers are located on each side frame and are numbered 1 through 6.

The caliper No. 1 operates the roller marked No. 2 on the drawing and No. 2 caliper operates No. 3 roller etc.

To set the rollers to the calipers, the following procedure is used:

A. Slide all fold plates away from the fold rollers.

B. Insert one piece of paper under each caliper on both ends of the roller with the lever provided.

C. Using the same paper, insert strips about 2" wide between the stationary roller and roller No. 2 approximately 3" from each end.

D. Turn handwheel in the direction paper normally travels, and at the same time "Feel" the drag on the paper.

E. The drag should be light, never so much that the paper breaks when holding it with one hand and turning the handwheel with the other.

F. Turning thecaliper clockwise loosens the roller drag, counter clockwise increases the drag.

G. When this procedure has been used on all rollers including the slitter shafts, the scales on thecaliper can be positioned to read zero by holding the caliper to prevent it from turning and sliding the friction-held scale to zero.

H. When necessary, slight adjustments can be made to increase or decrease the pressure on the sheet, but you can always return to the original zero setting.

Illustrations No. 1 - four pages parallel "upfold"

Caliper No. 1 - insert single paper thickness

Caliper No. 2 - 6 - two paper ticknesses

No. 1 plate stop, set at half sheet length
Deflectors No. 2 - 4 in position
Four pages parallel "downfold"
Caliper No. 1 and 2 - insert single paper thickness
Caliper No. 3 - 6 - two paper tickness
No. 1 deflector in position
No. 2 plate stop, set to half sheet lenght,
No. 3 and 4 deflectors in position.

(Two or more 4-page sections may be folded and cut apart on folder)

Illustrations No. 2 - Double parallel fold - 8 pages

Caliper No. 1 - insert single paper thickness
Caliper No. 2 - two paperthicknesses
Caliper No. 3 - 6 - four paper thicknesses
No. 1 plate stop set at half sheet length
No. 2 plate stop set to one-quarter sheet length
No. 3 and 4 deflectors in position

Illustrations No. 3a- Six pages parallel "letterfold"

Calipers No. 1 and 2 - insert single paper thickness
Calipers No. 3 - 6 - insert three thicknesses of paper
No. 1 plate stop, set to two-thirds sheet length
No. 2 plate stop, set to one-third sheet length
No. 3 and four deflectors in position

Note: Operator must use large sheet gap on register table when using this imposition(see sheet spacing)

Illustrations No. 3b - Six pages parallel "letterfold)

Calipers No. 1 - 3 - insert single paper thickness
Calipers No. 4 - 6 - insert three paper thicknesses
No. 1 fold plate stop, set to one-third sheet length
No. 3 fold plate stop, set to one-third sheet length
No. 2 and 4 deflectors in position

Illustrations No. 4 - Six pages "accordion"

Calipers No. 1 and 2 - insert single paper thickness
Calipers No. 3 - 6 - insert three paper thicknesses
No. 1 and 2 plate stop, set to one-third sheet length
No. 3 and 4 deflectors in position

Illustrations No. 5 - Eight page "accordion"

Caliper No. 1 - 3 - insert single paper thickness
Caliper No. 4 - 6 - insert four paper thicknesses
No. 1 - 3 plate stop, set to one-quarter of sheet length
No. 4 deflector in position

Illustrations No. 6 - ten pages "accordion"

Calipers No. 1 - 4 - insert single paper thickness
Calipers No. 5 and 6 - insert five paper thicknesses
No. 1 - 4 plate stops, set to one-fifth length

Illustrations No. 7 - Twelve pages "parallel"

Caliper No. 1 - insert single paper thickness
Calipers No. 2 - 4 - insert two paper thicknesses
Calipers No. 5 and 6 - insert six paper thicknesses
No. 1 fold plate stop, set to half sheet length
No. 2 and 4 plate stops, set to one-sixth sheet length
No. 3 fold plate deflector in position

Illustrations No. 8 - Eight pages right angle "upfold"

Set parallel section as described in illustration No. 1
8-page section to be set as follows:
Caliper No. 1 - insert two paper thicknesses
Caliper No. 2 - 6 - insert four paper thicknesses
No. 1 plate stop, set to one-half of sheet width
Deflectors No. 2 - 4 are used

If a "downfold" is required in the 8-page section, set as follows:
Calipers No. 1 and 2 - insert two paper thicknesses
Calipers No. 3 - 6 - insert four paper thicknesses
No. 1 plate deflector in position
No. 2 plate stop, set to one-half of sheet width
No. 3 and 4 deflectors in position

Illustrations No. 9 - Sixteen pages (oblong)

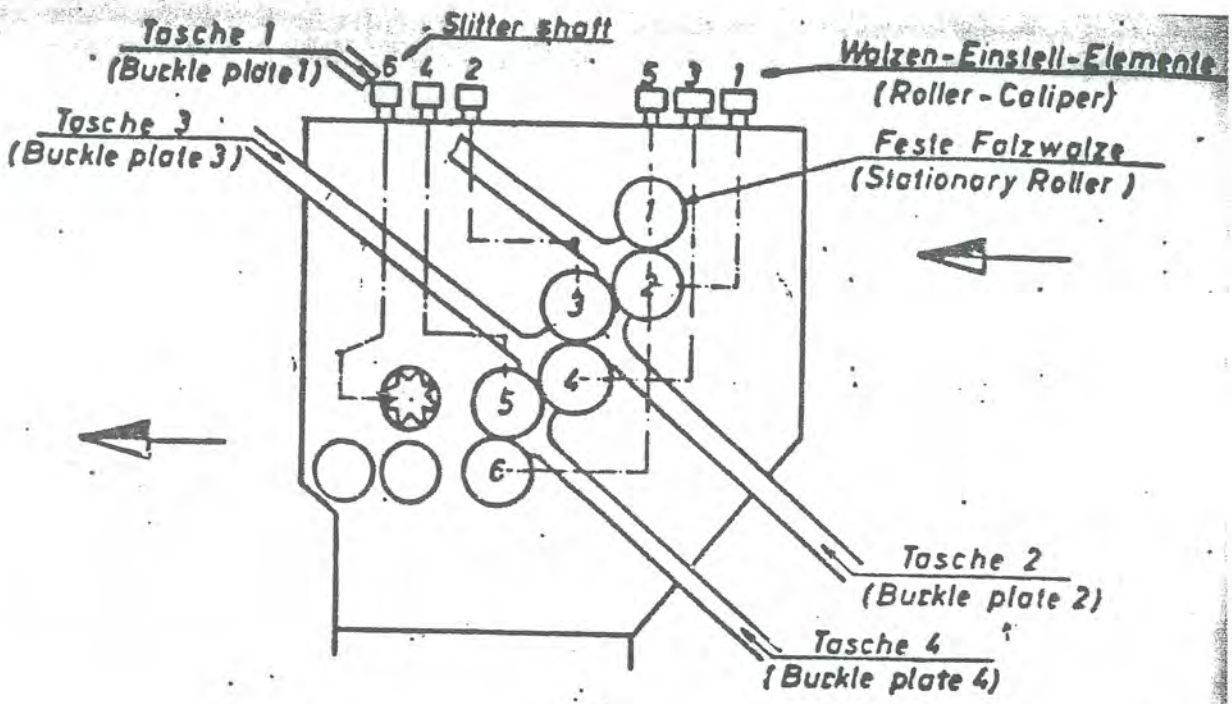
Set parallel section as described in illustration No. 2
8 - page section to be set as follows:
Caliper No. 1 - insert four paper thicknesses
Calipers No. 2 - 6 - insert eight paper thicknesses
No. 1 plate stop, set to one-half of sheet width
No. 2 - 4 plate deflectors in position

Illustrations No. 10 - Twelve page right angle

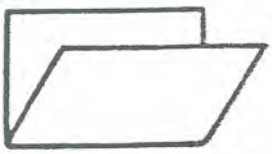
Set parallel section as described in illustration NO.3b
8-page section to be set as follows:
Caliper No. 1 - insert four paper thicknesses
Caliper No 2 - 6 - insert eight paper thicknesses
No. 1 plate stop, set to one-half of sheet width
No. 2 - 4 plate deflectors in position

Illustrations No. 11 - Twelve pages accordion and right angle

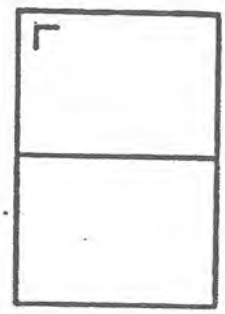
Set parallel section as described in illustration No. 4
8-page section to be set as follows:
Caliper No. 1 - insert three paper thicknesses
Calipers No. 2 - 6 - insert six paper thicknesses
No. 1 plate stop, set to one-half of sheet width
No. 2 - 4 plate deflectors in position



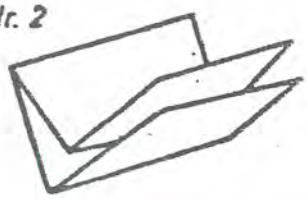
Nr. 1



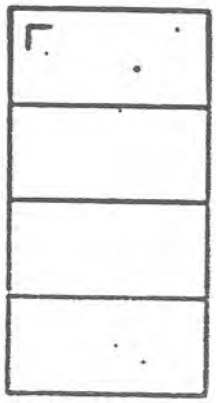
4 Seiten Parallelbruch
(Four Pages Parallel)



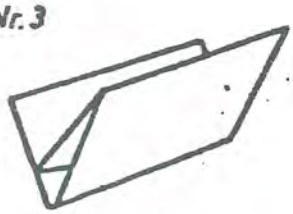
Nr. 2



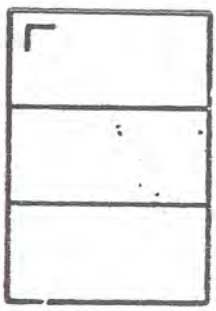
Doppel-Parallelfalz
(Double Parallel Fold
8 Pages)



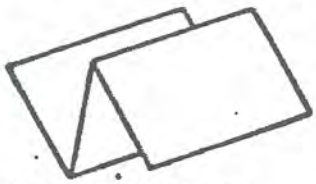
Nr. 3



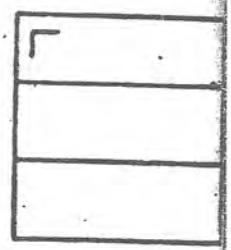
6 Seiten Wickelfalz
(Six Pages Parallel)



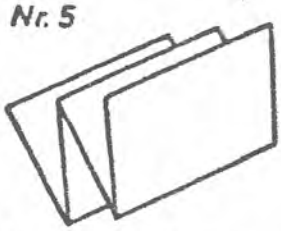
Nr. 4



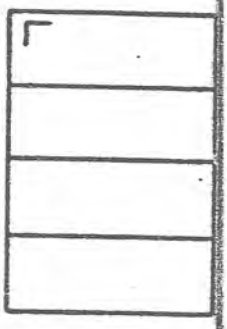
6 Seiten Zickzack
(Six Pages Accordion)



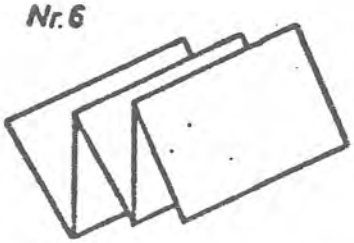
Nr. 5



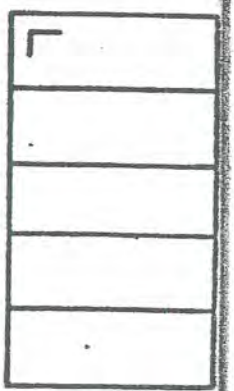
8 Seiten Zickzack
(Eight Pages Accordion)



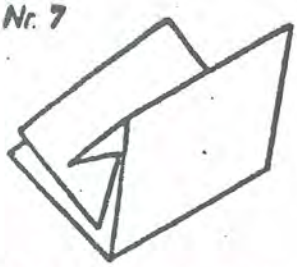
Nr. 6

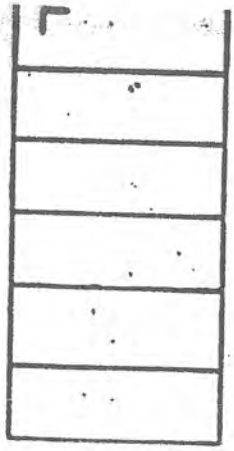


10 Seiten Zickzack
(Ten Pages Accordion)



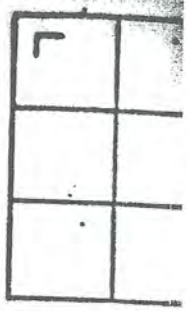
Nr. 7





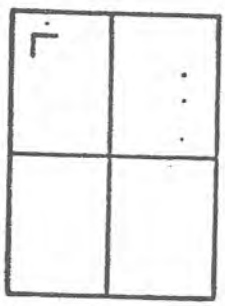
12 Seiten Parallelfalz
(Twelve Pages Parallel)

Nr. 10



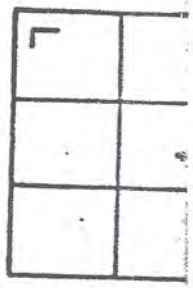
12 Seiten Kreuzbruch
(Twelve Pages Right Angle)

Nr. 8



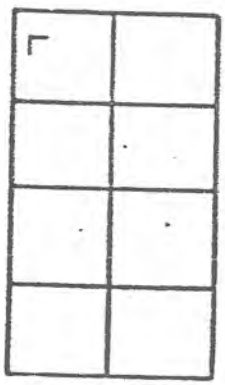
8 Seiten Werkfalz
(Eight Pages Right Angle)

Nr. 11



12 Seiten Zickzack und Kreuzbruch
(Twelve Pages Accordion and Right A

Nr. 9



16 Seiten Querformat
(Sixteen Pages)
(oblong

How to remove and replace slitter shafts

The perforators, scorers, slitters, edge trimmers, and rubber rollers are mounted on the slitter shafts. These shafts are constructed for easy removal from the folding sections when a change in set-up is required.

To remove the slitter shafts, loosen the Allen type cap screw in the brass housing which holds the polished knobs. Pull the polished knob with one hand while supporting the slitter shaft with your other hand. Move the slitter shaft in the same direction approximately ½ inch to remove shafts from the folding section.

To install, reverse the above procedure, making sure that the pin fits into the slot and all end play is removed by pushing the polished knobs in. Then tighten the Allen type cap screw.

How to install and adjust scorers

The scorer blade fits on a holder and is secured to the holder by means of a tightening collar with holes. A spanner wrench is provided for removing or tightening the collar.

When installing scorers for a right angle fold, using an "up" fold plate, put scorer blade assembly on the upper slitter shaft with the locking collar facing to the drive side of the machine; if a fold is to be made in a "down" fold plate, the scorer assembly should be installed on the lower shaft with the locking collar facing to the right toward the operator's side of the machine. Facing the scorer assembly on the shafts as directed above will prevent the locking collar from loosening itself during operation.

A radius is provided on each side of the steel collars. These collars have to be positioned on both sides of the blade. The depth of the score can be varied by increasing or decreasing the gap between the collar and the blade.

How to install perforators

The perforator blades are mounted on the slitter shaft by means of the same holders and locking collars that are used for the scorer blades (refer to paragraph "How to install and adjust scorers). The plate has a flat side and must be assembled to the holder with the sharpened side facing the locking collar (see Instruction sheet E 1). The perforator blade assembly should be installed on the upper shaft with the locking collar facing the drive side of the section.

The lower knife is a hardened steel collar that has two sharp edges. One of the sharp edges should be positioned against the flat side of the perforator blade. Do not force together, just allow them to contact each other.

When blade and lower knife are in position, attach a stripper on the square bar located above the slitter shafts near the perforator.

A 15 notch blade is used for heavy to medium weight paper
A 12 notch blade is used for light weight paper
There are more different blades available see TM 35.

How to install slitters

A slitter blade is mounted on the upper slitter shaft by means of the same holder and locking collar that is used for the score blade (refer to paragraph "How to install and adjust scorers"). The slitter blade assembly should be installed with the locking collar facing the drive side of the section. The lower knife is a hardened steel collar that has sharp edges on both sides. It is the same steel collar that is used for perforating. One of the sharp edges should be positioned against the flat side of the knife. Do not force them together, just allow them to contact each other. No stripper is required when slitting material.

How to install center bleed trim

To accomplish a center bleed trim, use the special knife holder with spacer washers. Assemble a knife, flat side against the holder, with the required amount of spacer washers, an d a second knife with the flat side facing the locking collar. The holder is large enough to do ¼" up to ½" of center bleed trimming. On the lower shaft two hardened steel collars are required. Position each lower knife to just contact the flat side of the cutting knives. A center bleed trim "stripper" is fastened to the bar below the slitter shafts. The flat steel finger is placed between the lower knives to remove the portion being cut. The waste then falls to the floor.

>sition scorers, perforators, slitters and rubber rollers

ypace rubber collars on the top shaft and steel collars equally placed on the ft on either side of the knife or counter knife. The rubber rollers serve e the sheet from the fold rollers, support the sheet being slit, perforated and convey the sheet to the cross carrier or the stacker delivery.

sition cross carrier side lay

carrier side guide is adjustable to accomodate the various sizes of s folded in the preceding section. Use a signature folded by the parallel nd place the signature on the cross carrier diagonal rollers and insert it he guide edge. Loosen the large plastic knob that retains the adjustable ove the guide in or out as required, until the edge of the sheet opposite edge is approximately ½ inch inside of side frame.

he spring steel guidesuniformly across the width of the signature so that will be guided into the side guide.

ie aluminum guide bars across the width of the signature so that the will be guided into the fold rollers of the 8-page section.

lc and metal balls supplied with the cross carrier side guide serve the se as those on the register table. The number of balls to be used and ribution along the cross carrier side guide is dependent upon the weight, ype of material being run.

o assure accurate folding in the 8-page section, the cross carrier side be adjusted by using the "skew" adjustment located on top of the side e small plastic knob serves as a lock and the knurled collar is an eccentric. sheets coming from the parallel section onto the cross carrier, a height can be made. The rear leg of the cross carrier has a single locking l used to maintain the position of the 8-page section. To raise or lower carrier, loosen the locking knob and lift or lower complete cross carrier ten the locking knob.

Universal Stacker Delivery

The stacker supplied with the folder is easily attached at either the parallel or the 8-page folding sections to delivery work completed at either station.

When work is completed at anyone of the folding sections, the signatures are delivered onto the stacker delivery belt. Stacker rollers are attached to a shaft across the stacker and are adjustable for various sizes of signatures. The stacker rollers receive the folded edge of the signature and hold it down on the stacker belts.

To prevent signatures from inserting, which may occur when stacking springy signatures, the stacker may be lowered in a different position. A variable speed motor controls the speed of the stacker belt. The speed is regulated by means of the control knob on the delivery control panel. By increasing or decreasing the stacker belt speed the operator can create the most desired "shingling" for proper stacking of the signatures.

The stacker is supplied with two (2) electric cords, one for the stacker motor and the other for the control of the complete folder. When using the stacker with the parallel section, the cords plug in the main panel. When using the 8-page section the cord for the controls remains the same and the cord for the delivery motor plugs into the 8-page section.

Summary

The quality and quantity of work that can be produced with an MBO folder is dependent upon the care with which the operator makes the required settings and adjustments. Jam-ups or inaccurate folding, which are not due to stock conditions or mechanical failure, can usually by traced to inaccurate settings or adjustments. In the event that trouble of this nature may occur, the operator should check to make sure, that all settings and adjustments have been made in accordance with the instructions in this book.

Caution

In the event of mechanical failure, any corrective work must be performed by, or under the supervision of someone thoroughly familiar with the mechanical operation of the machine. Failure to comply with this caution may result in damage to the machine. In order to avoid personal injury, do not work on the machine while it is in motion,

do not attempt to work over machine with wrenches or screw drivers while machine is in motion.

Lubrication

The complete machine is equipped with sealed ball bearings.

MBO	PERFORATORS, SLITTERS AND CREASERS ON SLITTING SHAFTS OF 30mm DIA.	TM 35

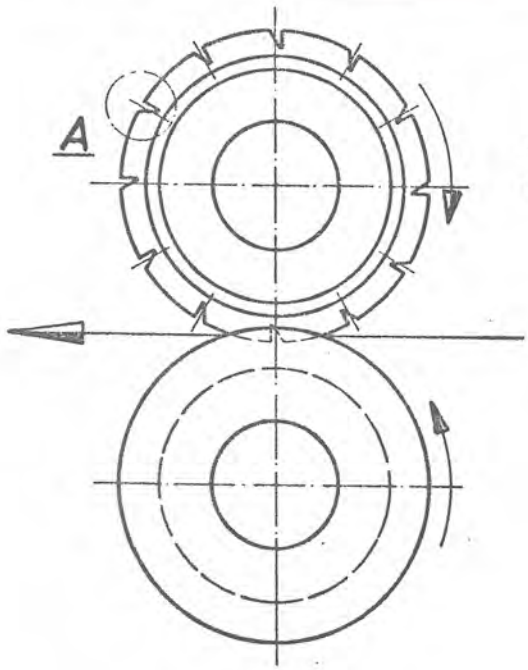
FOR USE WITH: T52 VARIOMATIC
T48 ECONOMIC
K52 COMPACT
T49
T55
B23

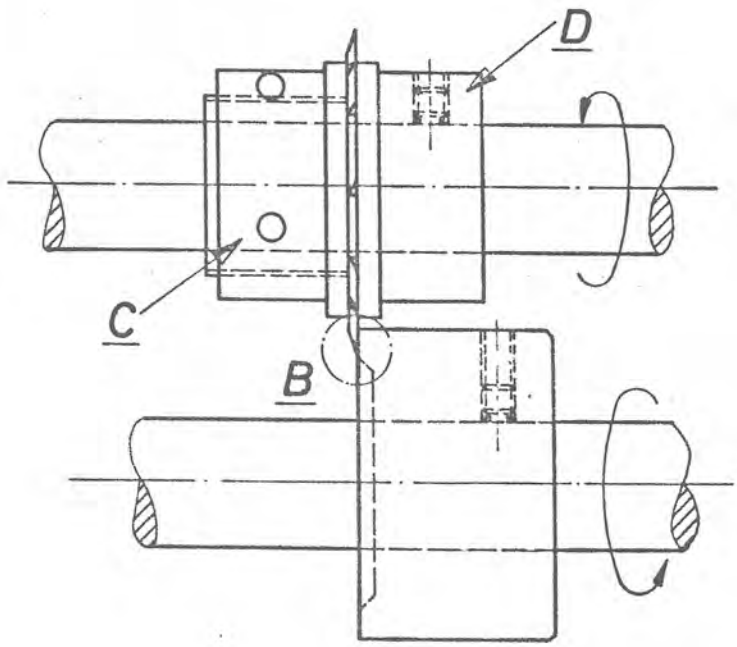
MBO

PERFORATORS, SLITTERS AND CREASERS
ON SLITTER SHAFTS OF 30 mm ø
T 48, T 49, T 52, T 55 and K 52

TM35

	Part number	bore ø	outer ø	no.'s of teeth	bridge width	U s e
Creaser	2.05591.020	35	51,5	-	-	standardized creaser
Creaser	2.05591.080	35	50,8	-	-	for creasing against rubber roller for jackets or paper of 150 - 250 gsm (over 100 lbs.)
Slitter	2.05591.010	35	53,5	-	0.5	standardized slitter
Slitter	2.05591.090	35	53,5	-	1.0	H.S.S. slitter for extra clean edges e.g. finished product
Perforator	2.05591.030	35	53,0 θ	15	3.0	standardized perforator for head perforation on three-fold-work
Perforator	2.05591.040	35	53,0 θ	22	4.0	for head perforation on three-fold-work for automatic sewing to avoid 'dog-ears' in upper margin. Watch for creases.
Perforator	2.05591.070	35	53,0 θ	12	3.0	for head perforation on three-fold-work for thin papers (min. creases).
Perforator	2.05591.050	35	52,5 θ	42	1.5	tear-off perforator knife
Perforator	2.05591.060	35	52,5 θ	70	1.2	tear-off perforator knife
Perforator	2.05591.100	35	54,0	9	8.0	for punch perforation (for notch binding)
Perforator	2.05591.110	35	53,0	16	5.0	for spine perforation and perfect binding
Perforator	2.05591.120	35	53,0	10	5.0	for spine perforation and perfect binding
						interpretation of θ = slotted knife





A When installing perforator, note angle of notch

B Flat side of perforator and cutting knife must contact sharp side of lower knife

C The threaded nut of the knife holder **D** tightens against the running direction of the shaft

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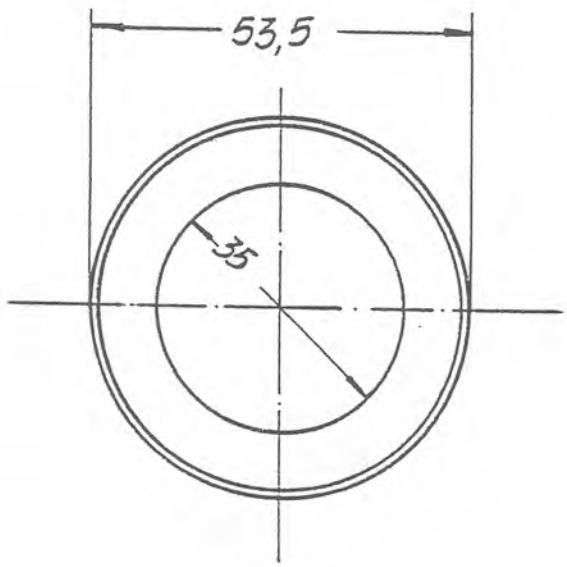

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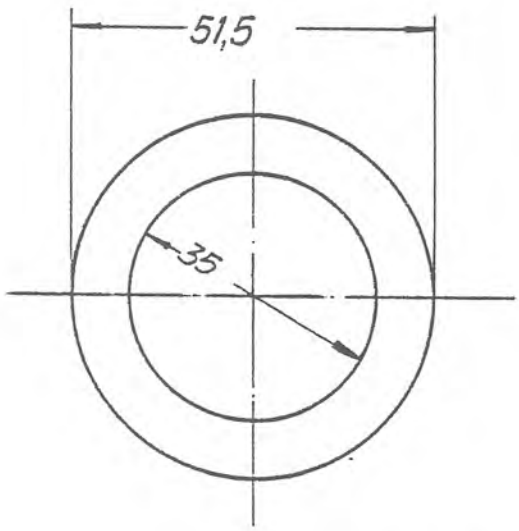
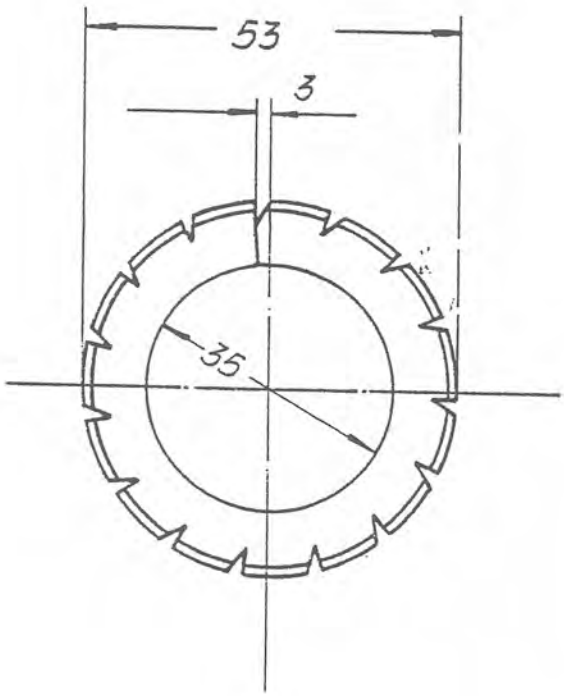


0,8 dick

MBO	Perforiermesser 15 Zähne Bestell-Nr. 2.0.5591.030	



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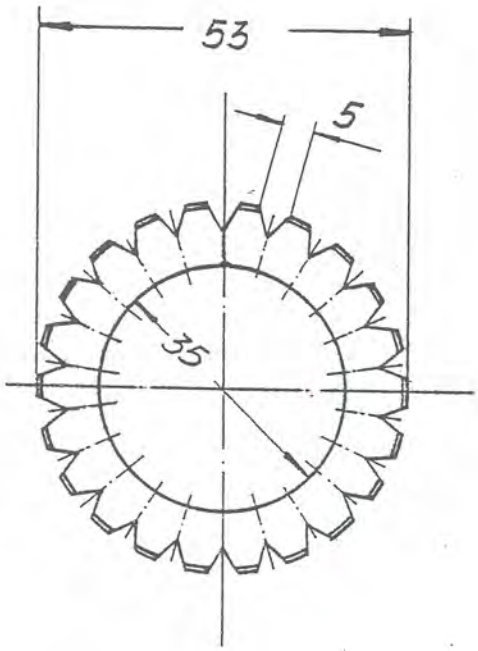

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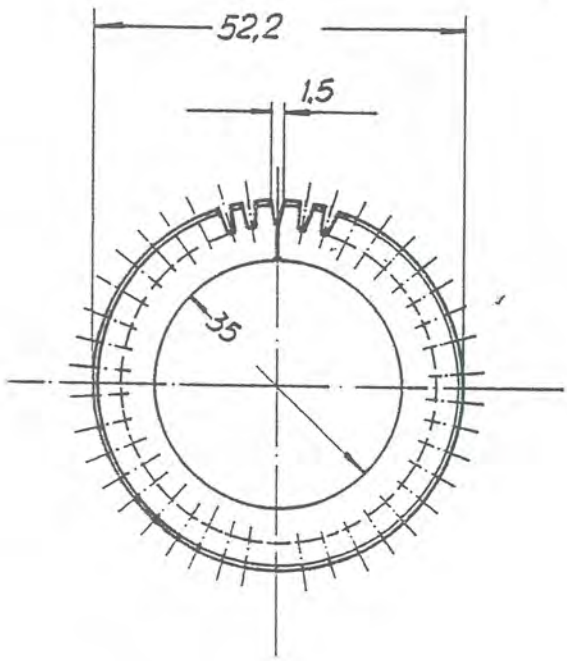

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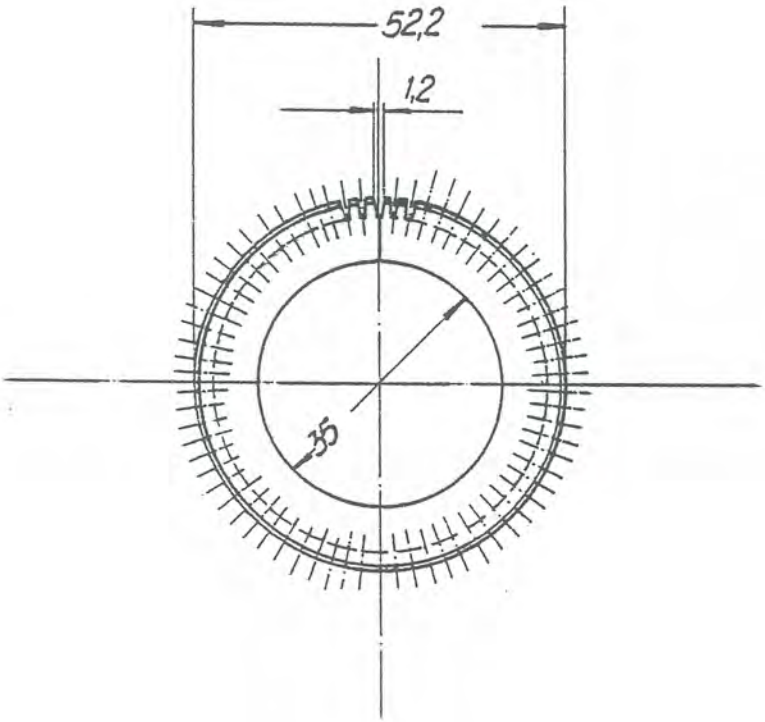

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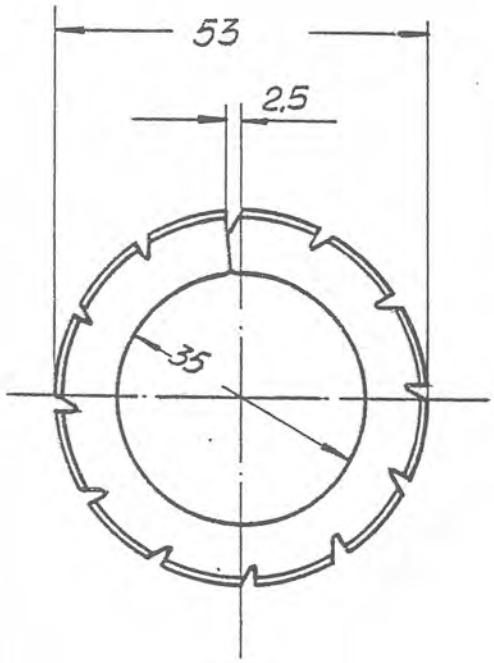

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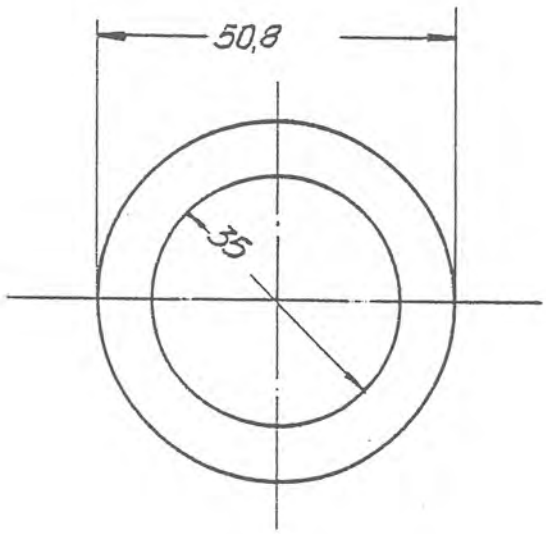

0,8 dick

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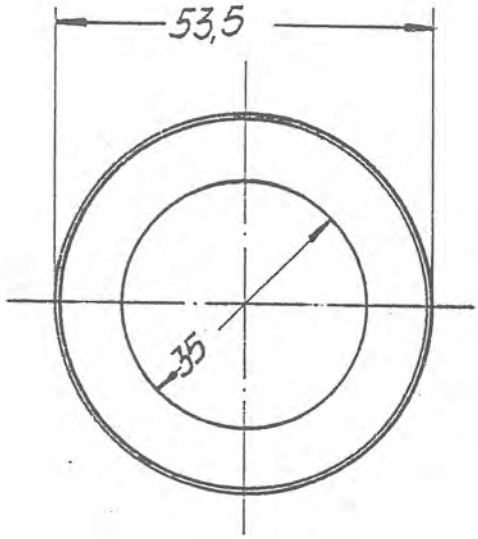

Werkstoff-Nr. 1.3343

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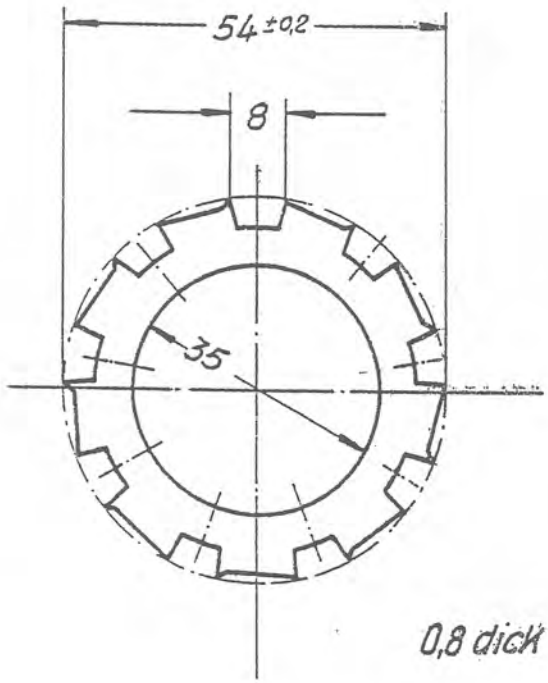

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