

Theisen & Bonitz



- Collating
- Stitching
- Folding
- Trimming
- Numbering

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This brochure was produced in a one-step process by a tb sprint combination consisting of a collator and a stitching-folding-trimming machine with fore-edge trim, but without head and foot trimming unit.

Theisen & Bonitz

The important manufacturer of precision machines who will be successful in the coming years can reach this goal only by the invention of very versatile and high quality products.

In the past, the available technology determined a certain direction while today the

entire company – including special services for the customer.

The developments in our company have been driven by a close co-operation with and the responses from the users and, thus, from the work place. The ideas and suggestions of today are the basis of



requests of the customers are the most important factors. The dominant role in the national and international competition is played by the customers and their requests and wishes for specialized features of the machines and tailor-made equipment according to their special needs. The confidence in the quality and technology of the products must be obtained every day by the manufacturer. Top performance is required not only from the product but from the

even better and more productive machines of tomorrow.

Because of the constantly increasing international competition and in view of the new market "Europe", it will become more and more difficult to convince with high measures of quality.

Our company's philosophy "precision to the detail" is only one building block for our success. In addition, we offer hard work, dependability and professionalism.



Quality creates confidence

Extensive experience in the construction, manufacturing and sale of graphic machines is necessary to convince the customer with new products of highly guaranteed quality. The market constantly defines new challenges.

most parts in our company with proper computer technology has one major advantage – we control our own precision and quality and can satisfy through our flexibility special requests from our customers. Careful tests of our products



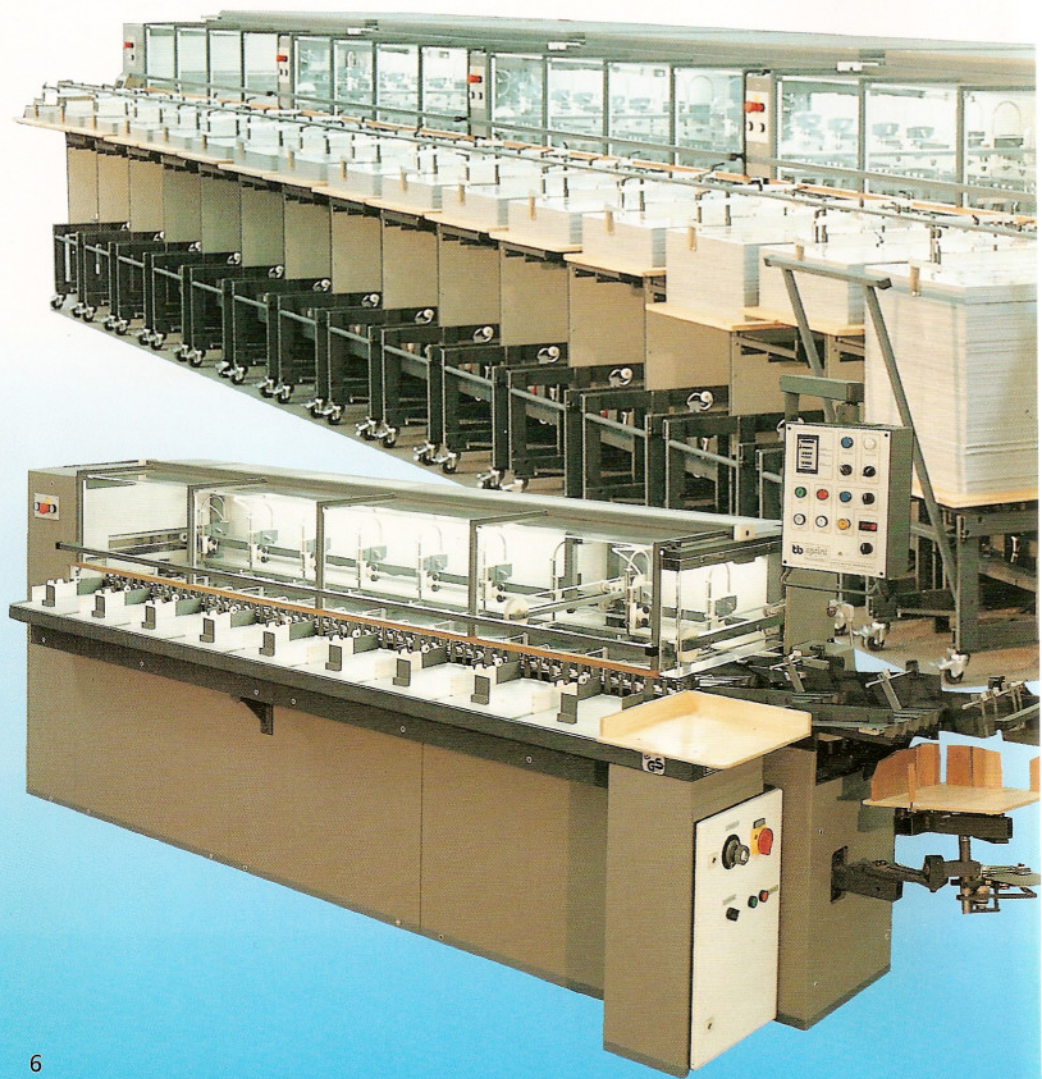
The trend with all machines moves clearly towards refined technical products which quickly convert new ideas to the advantage of mankind. However, the tremendous progress must be supported by solid made-by-hand workmanship. Precision machines, tools and equipment are required for almost all areas in our production. The manufacturing of

insure high quality. The Theisen & Bonitz machines obtained their high technical advances based on long-term tests with millions of actual work processes.

Therefore, it is assured that only products leave our factory which represent the highest standards of durability, quality and dependability.

The construction of the collator series was a great success a decade ago and was responsible for all the succeeding variations of our models. A torsionfree drive technique with superior performance and a reliable sucker-blower system intergrated in a compact steel tube construction with welded bar addition were

the basis of our success. Well adjusted and favorable energy consumption values in connection with CE- and GS-signs and short set-up times result in additional market advantages. Computer programs control the machines and make them more intelligent and more efficient in their average performances.



Collating with proven technology

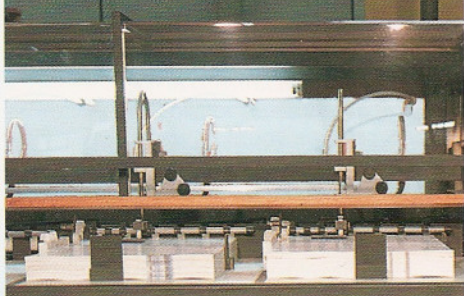


Sensible additional equipment provides further safety. CNC driven work stations support the high and constant quality as required today at every step of the manufacturing process.

Dependability and safety, short set-up times, and quick

job fulfilment, these are just some of the features of the Theisen & Bonitz high performance machines. Based on this claim of quality each new machine will be delivered to the customer in order to become an indispensable co-worker.

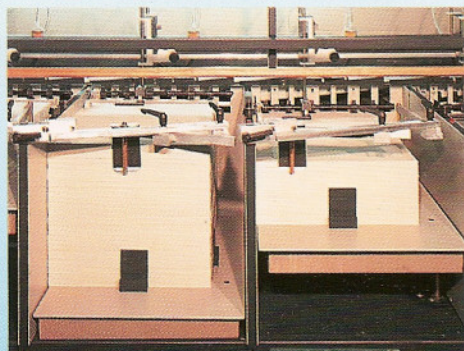
1



Flat pile (FP) **Pile height up to 5 cm (2")**

Short set-up times through magnetic stops. High average performance through continuous feeding during the operation of the machine. Non-stop performance with easy, user-friendly handling.

2



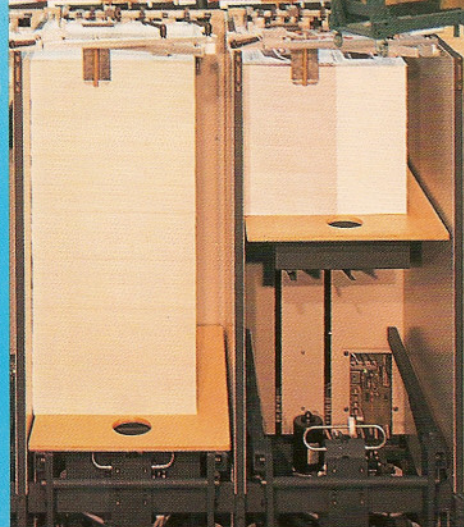
Variable pile (VP) **Pile height up to 30 cm (11³/₄"**

The variable pile feeder with a pile height of 30 cm (11 3/4") can also be used alone or as a flat pile feeder, that is, all good arguments of the flat pile feeder apply to the variable pile feeder as well. The variable pile has magnetic stops and sheet stops. Each work station can be adjusted to its optimal work level and can be loaded during the actual operation.

Mobile preloading system:
Preloading truck with 5 – 7 stations



3



High pile (HP) **Pile height up to 65 cm (25¹/₂"**

Speedy, efficient work performance. Long runs of the machine and misfeeds during loading are mostly avoidable.

Excellent work overview by combined use with the Theisen & Bonitz machine tb sprint 303 with the additional functions of stitching, folding and trimming.

Central up and down pile mechanism with intermediate stop for ergonomically favorable loading.

Mobile preloading system:
Rolling dollies with change plates and preloading stop.

Preloading systems

Short set up and down times of the collators are always important. The new machines had become faster while the loading times unfortunately did not shorten. Now, we offer mobile preloading systems which reduce down times for loading to nearly zero.

The mobility is one important aspect of these systems because the material can be preloaded already at the trimmer or from the pallet. This allows for more time to control quality.

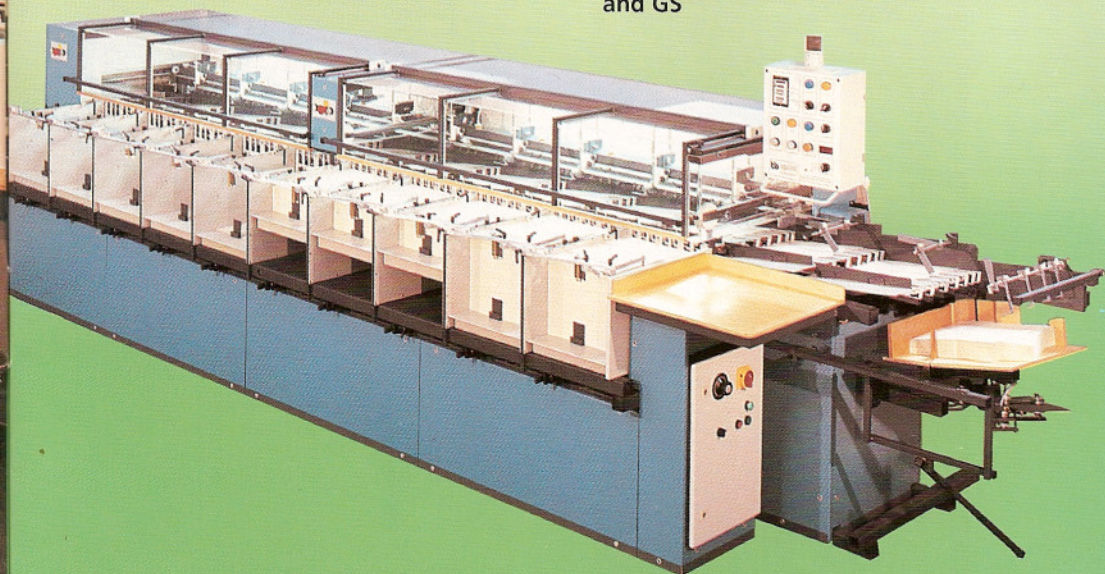
Two mobile preloading systems are available:

- a) for the HP version preloading dollies with change plates and prepping stops can be used. Each preloading dolly can be moved directly with the material into the station. If it is not needed it will remain in the machine and requires no further space.
- b) for the VP version preloading trucks are available for the different stations. The material is then pushed directly from the truck into the individual stations.



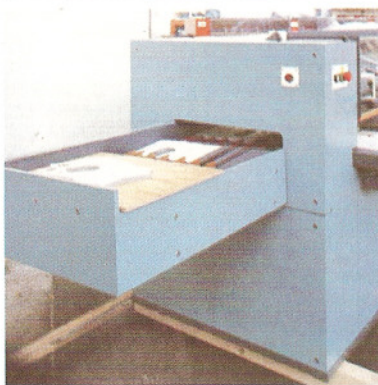
Standard equipment

- optimal suction, format depending on 7 to 10 suckers per station, to be switched on and off individually
- air blowing towers, format depending 5 to 10 towers, to be switched on and off individually
- excellent sheet separation by combining strip-pers with sucker and blower controls as well as concentrated air blowing use
- exact paper transport with guidance angles on the transport table
- maintenance-free electro-pneumatic missed sheet control at each station
- motor adjustable, electro-mechanical
- double sheet control at the delivery
- jogger delivery for normal and criss-cross delivery selected by switch with automatic adjustable jogging intensity
- pressure-vacuum-pump with soundproof hood placed inside the machine
- dazzle-free lighting of the transport table for general view
- automatic, variable speed with digital display
- total and batch counter
- electrical kit for connecting machine e.g. tb sprint 303 or 345 N
- safety performance in CE and GS





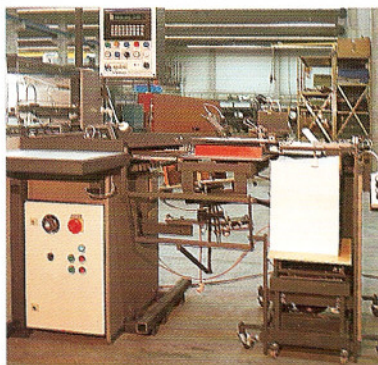
Program-control SPS, eight line display with operator guidance, missed-sheet-repeat without machine stop with the next cycle, in case of double sheet the complete set is separated by a deflector, programable, automatic start and run off, automatic start of the measuring point and self-adjustment of the double sheet detector, 2 interleaving stations with 2. double sheet detector, also to be used as additional missed sheet detector at the delivery, automatic criss-cross in the delivery after preselection of work cycle Special programs on request.



By using left and right **hand feeding stations**, the correct criss-cross sub-sets can be loaded accurately on to the transport tyble during the operation of the machine.



The **magnet pusher** provides an exact alignment while passing the material into a connected machine.



The special feature of the **deep pile delivery** is that the pile height can be detected over the entire loading width and can be kept always at the optimum height. Thus, sets up to a total height of 58 cm (22 3/4") can be delivered. A staggered delivery of 2 cm (3/4") is standard. By infeeding with the jogger bridge the position of the standard jogger remains unchanged.

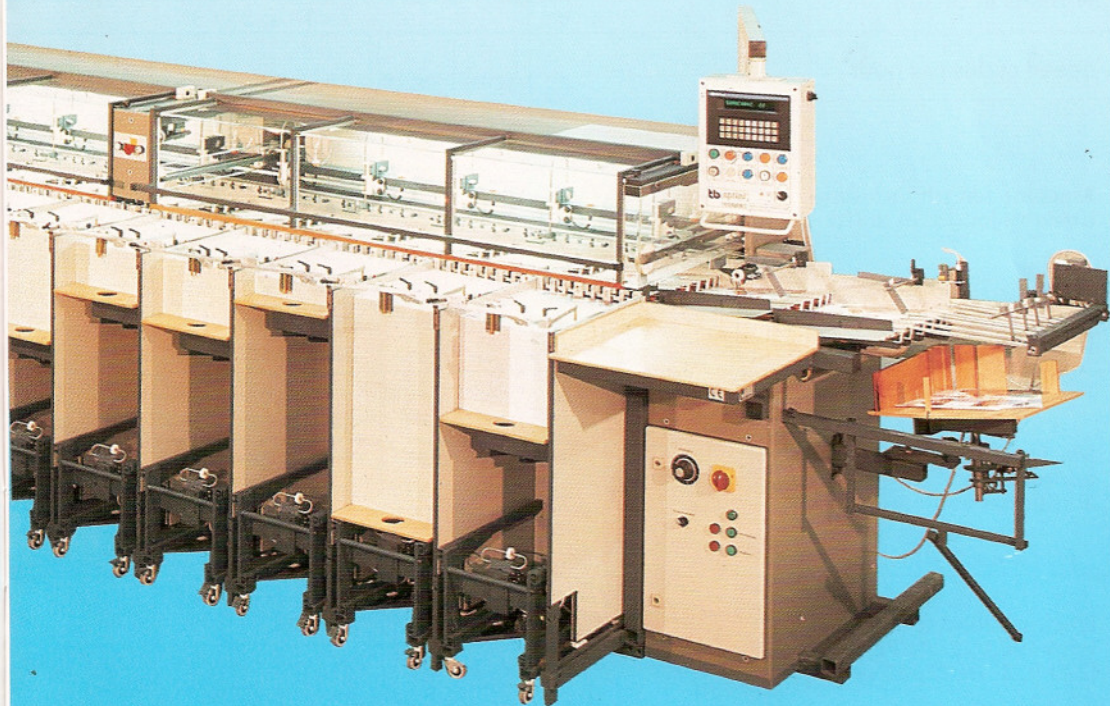
Optional equipment

For all machine types:


- program-control SPS, see top left
- jogger bridge, see page 22
- jam detector above transport table
- hand feeding station, left or right
- magnet pusher for optimal paper aligning with the connected machine
- additional air blowing unit at the side e.g. for foil processing
- electronic missed and double sheet control at each station
- mobile prepiling systems for HP and VP versions
- change stations for calendar boards
- deep pile delivery

Possibilities also without program-control SPS:

- 1 or 2 interleaving stations
- additional missed- and/or double sheet control at the delivery
- double sheet deflector



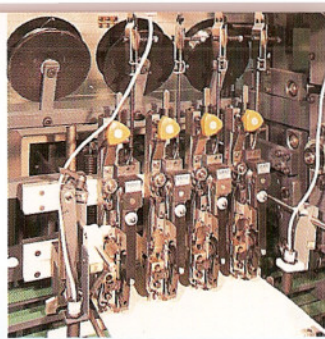
Technical dates

Collator 	407	409	414	421	428	435	442	305	307	310	315	320	325	330	208	212	216	220	B 208	B 212	B 216	B 220		
Number of stations	7	9	14	21	28	35	42	5	7	10	15	20	25	30	8	12	16	20	8	12	16	20		
Formats in cm (in)	in	2 ³ / ₄ x 3 ¹⁵ / ₁₆ " to 9 ⁷ / ₈ x 13 ³ / ₄ "							2 ³ / ₄ x 3 ¹⁵ / ₁₆ " to 13 ³ / ₄ x 19 ¹¹ / ₁₆ "							2 ³ / ₄ x 3 ¹⁵ / ₁₆ " to 18 ¹ / ₈ x 25 ⁹ / ₁₆ "				2 ³ / ₄ x 3 ¹⁵ / ₁₆ " to 19 ¹¹ / ₁₆ x 27 ⁹ / ₁₆ "				
	cm	7 x 10 to 25 x 35							7 x 10 to 35 x 50							7 x 10 to 46 x 65				7 x 10 to 50 x 70				
Speed cycles per hour	4.000	3.800	3.500	3.300	3.100	2.900	2.700	3.500	3.400	3.300	3.100	2.800	2.700	2.600	2.500	2.400	2.300	2.200	2.400	2.300	2.200	2.100		
Machine length including delivery jogger in m (ft)	Basic machine	ft	9'7"	11'5"	16'1"	22'1"	28'11"	35'4"	41'9"	10'3"	12'9"	16'6"	22'9"	28'11"	35'2"	41'5"	17'5"	23'10"	30'3"	36'8"	18'9"	25'8"	32'8"	39'7"
		m	2,92	3,48	4,88	6,84	8,80	10,76	12,72	3,12	3,88	5,02	6,92	8,82	10,72	12,62	5,30	7,26	9,22	11,18	5,70	7,82	9,94	12,06
	with handfeeding station, right	ft	10'6"	12'4"	16'11"	23'5"	29'10"	36'3"	42'8"	11'6"	14'	17'9"	24'	30'3"	36'5"	42'8"	19'	25'5"	31'11"	38'4"	20'6"	27'5"	34'5"	41'4"
with handfeeding station, left	m	3,20	3,76	5,16	7,12	9,08	11,04	13,00	3,50	4,26	5,40	7,30	9,20	11,10	13,00	5,79	7,75	9,71	11,67	6,23	8,35	10,47	12,59	
Machine width in m (ft)	ft	3'8"	3'8"	3'8"	3'8"	3'8"	3'8"	3'8"	4'8"	4'8"	4'8"	4'8"	4'8"	4'8"	4'8"	5'7"	5'7"	5'7"	5'7"	5'11"	5'11"	5'11"	5'11"	
	m	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,70	1,70	1,70	1,70	1,80	1,80	1,80	1,80	
Machine weights in kg (lb) without additional equipment	FP version	lb	1.900	2.290	3.070	4.100	5.340	6.550	7.790	1.990	2.330	3.000	3.860	5.030	6.180	7.350	3.290	4.240	5.520	6.790	3.330	4.300	5.580	6.840
		kg	900	1.040	1.390	1.860	2.420	2.970	3.530	900	1.055	1.360	1.750	2.280	2.800	3.330	1.490	1.920	2.500	3.080	1.510	1.950	2.530	3.100
	VP version	lb	2.450	2.890	3.990	5.490	7.190	8.870	10.560	2.410	3.020	3.970	5.350	7.010	8.710	10.320	4.320	5.820	7.630	9.440	4.610	6.220	8.090	10.080
HP version	kg	1.110	1.310	1.810	2.490	3.260	4.020	4.790	1.090	1.370	1.800	2.425	3.180	3.930	4.680	1.960	2.640	3.460	4.280	2.090	2.820	3.670	4.570	
Electrical load total in kW with 400 V, 3~/N/PE, 50 Hz (220 V, 3~/N/PE, 60 cycles)	FP version	60 Hz	2,5	3,3	5,1	5,1	8,5	8,5	11,3	2,7	3,5	4,8	6,1	8,5	9,7	11,2	5,0	6,1	8,6	11,2	6,1	8,5	11,2	11,7
		50 Hz	2,2	2,9	4,4	4,4	7,4	7,4	9,8	2,3	3,0	4,2	5,3	7,4	8,4	9,7	4,3	5,3	7,5	9,7	5,3	7,4	9,7	10,2
VP and HP version	60 Hz	3,1	4,1	6,2	6,8	10,9	11,5	14,8	3,6	4,7	8,1	8,9	12,2	14,3	16,7	6,3	8,3	11,5	14,8	7,5	10,7	14,8	15,4	
	50 Hz	2,7	3,6	5,4	5,9	9,5	10,0	12,9	3,1	4,1	7,0	7,7	10,6	12,4	14,5	5,5	7,2	10,0	12,9	6,5	9,3	12,2	13,1	
All stations can be delivered between	7 and 42							5 and 30							4 and 20				4 and 20					

Special formats upon request: transport table with pushers up to 56 x 75 cm (22 x 29 1/2")
 transport table with chains up to 72 x 102 cm (28 1/4 x 40 1/8")



Collating



Stitching

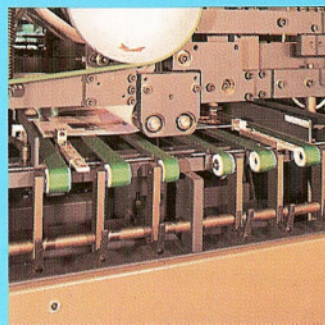
The combination

Collating, stitching, folding and trimming: 4 steps in the process to the final product after printing. All of these performed at the highest level. Comfort of easy handling and use of modern electronic devices have made Theisen & Bonitz machines known throughout the world.

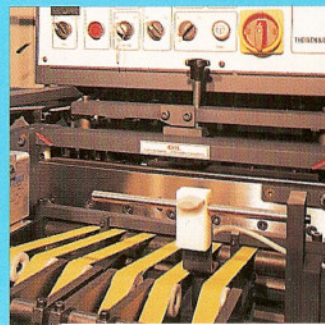
A multitude of technically detailed improvements gives our machines high performance on an every day basis. Only the sum of all advantages provides the basis for the safety and high expectations of average performances which are expected rightfully of our products every day.



Folding



Trimming



**Precision
to the detail**



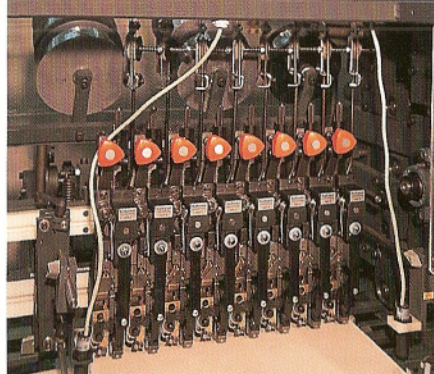
Stitching, folding, trimming - one-step operation

Market specialists have always favored the machine combination consisting of a collator and the additional equipment for stitching, folding and trimming; this machine is now available with edge trimming and die punching devices up to 4 ups and hole punching. In this connection a glance at the configuration of the machine is of interest: almost 80 % of all produced machines have the format series up to 35 x 50 cm (13 3/4" x 19 1/2"). Thus, more than 70 % of all machines are delivered to the customer as combinations including collating, stitching, folding and trimming in one work process. The trend is clear and moves towards the production of brochures.

In the production of brochures it is now possible to process minimum size samples down to 6,5 x 6,5 cm (2 1/2" x 2 1/2"), open 15,4 x 6,5 cm (6" x 2 1/2"), Material friendly folding process is offered through frictionless transfer between folding knife and folding infeed system and a constant high quality is produced even with fresh print without smudging.

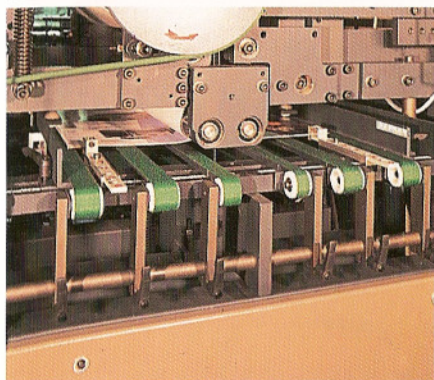
The market of calendar producers also grows steadily. We offer from our program of machines a collator, for example, with 16 stations for sizes up to 56 x 75 cm (22" x 29 1/2"). A stitching-folding-trimming machine for sizes up to 50 x 70 cm (19 1/2" x 27 1/2") includes the Theisen & Bonitz program. The high performance of our machines was increased by 30 %. Large machines and collators with a capacity of 35 feeders are not the exceptions anymore.

We think we know the needs of our customers, evaluate the possibilities and state what we can do to satisfy the expectations. In addition, we make recommendations as they concern changes or rational solutions. On the world market many machines and procedures are offered. But only the professional combination of different technologies in regard to a possibly new product and the required knowledge to do so result in that specialization which is absolutely necessary to be always a step ahead. Our know-how is one of our most important assets.



● Stitching

The standard stitching station has two narrow stitch heads for clamp stitching up to 5 mm (1/5") with wire rolls. The automatic adjustment to the required stitching thickness makes the setting easier. The crosswise adjustment of the clamps to the fold guarantees an exact clamp set. Adjustment systems for normal and loop stitch provide shortest set-up times



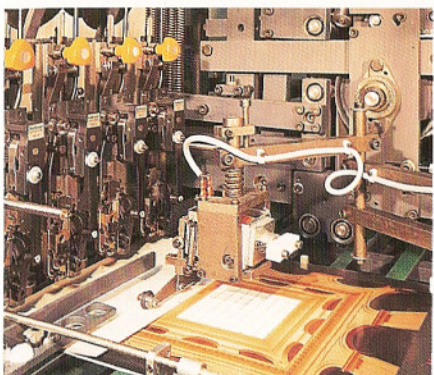
● Folding

The friction-free knife fold with automatic layer height adjustment and after press for e.g. 100 pages with 80 g/qm weight to be processed including freshly printed papers without markings. For block folding, e.g. calendars, the folding knife can be released with one hand movement.



● Trimming

The fore-edge trim is carried out with an upper and a lower knife and together with an exact alignment of the brochures best trimming qualities are achieved by the cut unit because the transport belts are stopped while trimming. Afterwards, the material is passed into cycle controlled stream delivery.

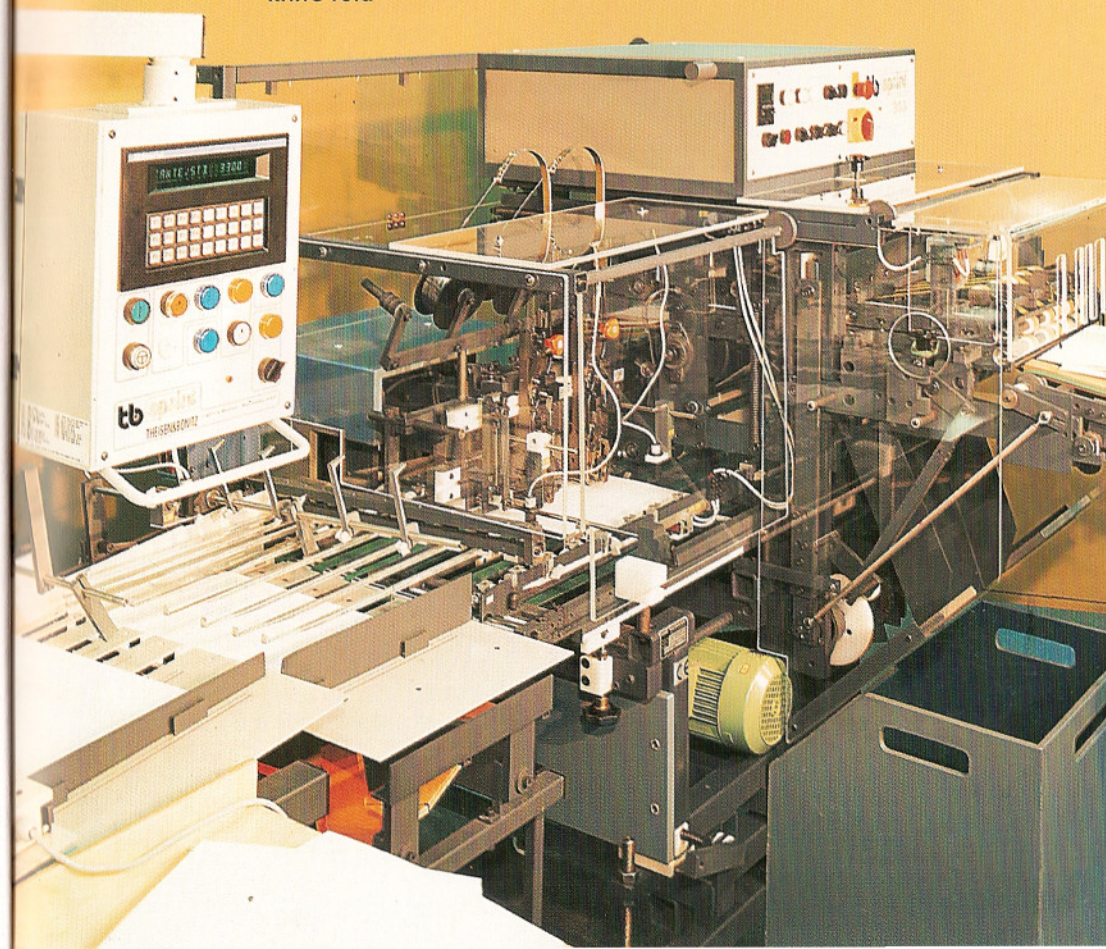


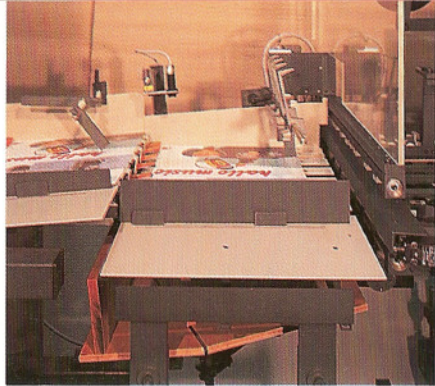
● Calendar

Calendar stitching up to the maximum format can be carried out by the stitcher-folder-trimmer. At the top edge the clamps can be placed up to 3 mm (1/8") from the edge. This makes it possible e.g. to achieve with the tb sprint 303 head stitching of single sheets up to a format of 35 x 35 cm (13 3/4 x 13 3/4") parallel to each side. With the special equipment "pusher for the head side" a shorter cover can be exactly aligned before stitching.

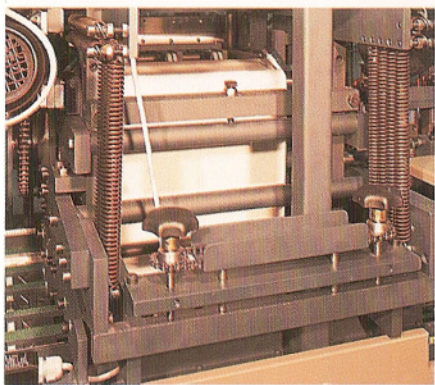
The versatile machine

- brochure stitch with precise adjustment of the clamp in the fold
- mini brochures down to 6,5 x 6,5 cm (2 1/2 x 2 1/2") with one clamp and 6,5 x 9 cm (2 1/2 x 3 1/2") with two clamps
- stitchings up to 5 mm (1/5") with automatic adjustment to thickness
- folding with friction-free knife fold
- brochure press before trimming
- fore-edge trim with a top and bottom knife
- stream delivery with driven transport rolls for precise delivery, also with mini formats
- delivery table for block and brochure stitch
- safety performance in CE and GS

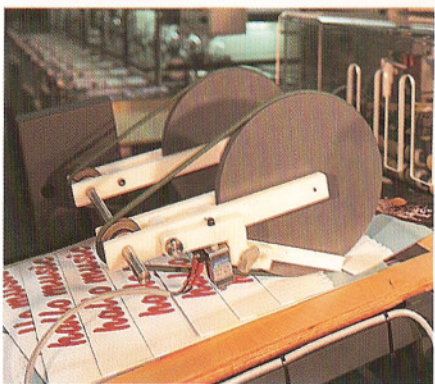




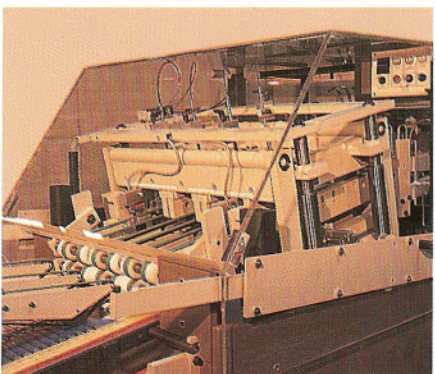
- Today, the **jogger bridge** is an indispensable part in the transfer to the stitcher-folder-trimmer or other machines. This unit allows the greatest flexibility with the shortest set-up times in the process from pure collating to the finished brochures.



- The brochures are additionally soft-pressed with 1,3t (2800 lb) in the **press fold unit**. The fold is getting much more sharp-edged, in particular in the case of thick materials.



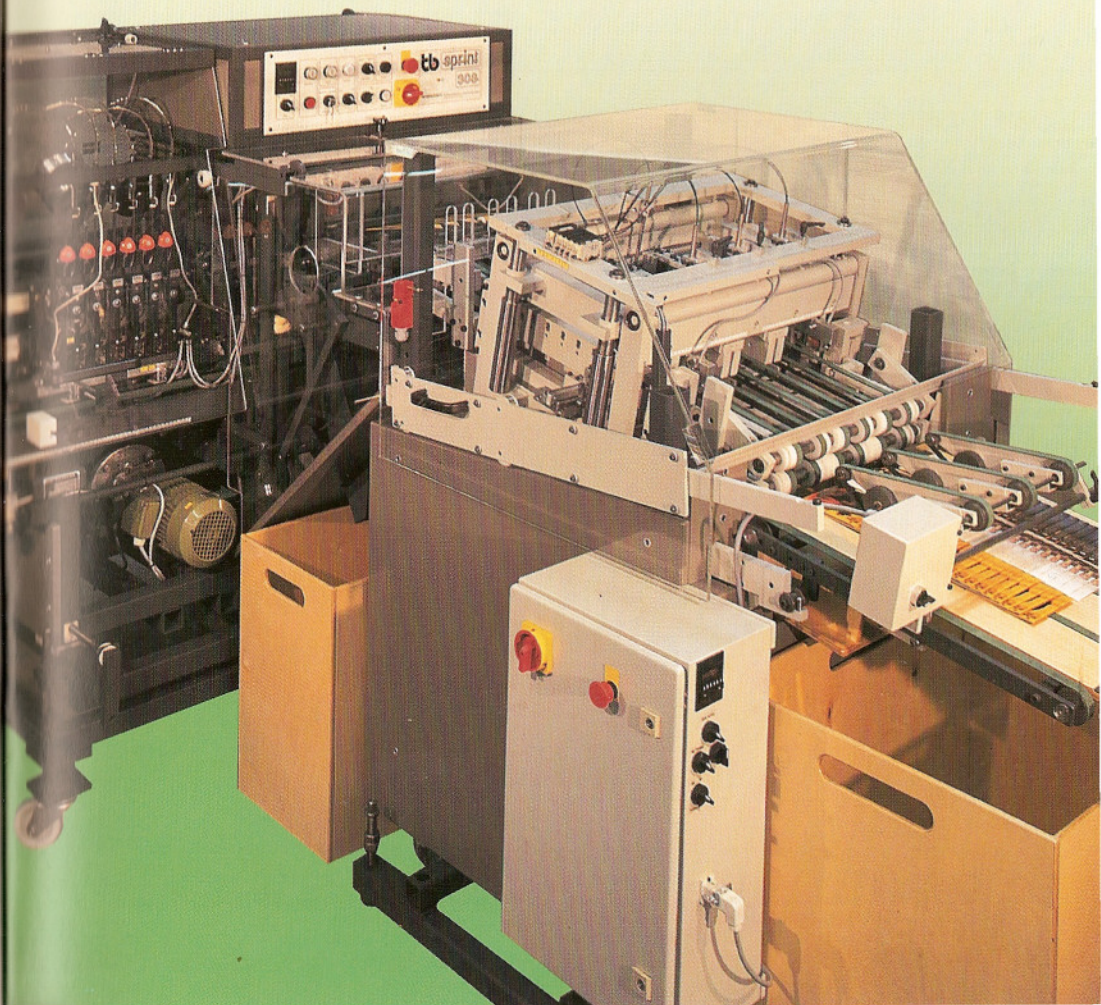
- The **booklet counter** with batch lift wheel deflector marks the counted brochure quantity by a slanted brochure which can be well recognized in the delivery.



- **Additional unit for head and foot trimming.** Formats from 6,5 x 9 cm (2 9/16 x 3 9/16") up to 25 x 42,8 cm (9 13/16 x 16 7/8"). Infeed formats max. 45,8 x 25 cm (18 x 9 13/16"), min. 9,6 x 6,5 cm (3 13/16 x 2 9/16"). An increase up to 3 die punch units is possible with this machine. We offer an additional unit for hole punching.

Optional equipment

- infeed roller for 6-page covers and small cross-format products
 - jogger for head and foot side (shorter cover)
 - press fold unit up to 1.3 t (2800 lb)
 - booklet counter with batch separator
 - loop and normal stitch heads
 - jogger bridge
 - hand feeding station
 - paper waste box
- Connecting machine for:
- head and foot trim
 - head and foot trim with up to 3 die punches
 - head and foot trim with hole punch unit



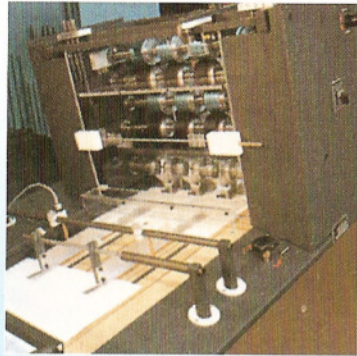
Technical dates

Stitcher-folder-trimmer tb sprint		303	301	303 S	203 S	203	201	
Open formats cm (in)	max.	in	13 ³ / ₄ x 19 ¹¹ / ₁₆	13 ³ / ₄ x 19 ¹¹ / ₁₆	19 ¹¹ / ₁₆ x 19 ¹¹ / ₁₆	13 ³ / ₄ x 27 ⁹ / ₁₆	19 ¹¹ / ₁₆ x 27 ⁹ / ₁₆	19 ¹¹ / ₁₆ x 27 ⁹ / ₁₆
		cm	35 x 50	35 x 50	50 x 50	35 x 70	50 x 70	50 x 70
	min.	in	2 ⁹ / ₁₆ x 6 ¹ / ₈	4 x 7 ⁷ / ₈	2 ⁹ / ₁₆ x 6 ¹ / ₈	2 ⁹ / ₁₆ x 6 ¹ / ₈	2 ⁹ / ₁₆ x 6 ¹ / ₈	4 x 7 ⁷ / ₈
		cm	6,5 x 15,5	10 x 20	6,5 x 15,5	6,5 x 15,5	6,5 x 15,5	10 x 20
Booklet formats cm (in)	max.	in	9 ⁷ / ₈ x 13 ³ / ₄	–	9 ⁷ / ₈ x 19 ¹¹ / ₁₆	13 ³ / ₄ x 13 ³ / ₄	13 ³ / ₄ x 19 ¹¹ / ₁₆	–
		cm	25 x 35	–	25 x 50	35 x 35	35 x 50	–
	min.	in	2 ⁹ / ₁₆ x 2 ⁹ / ₁₆	–	2 ⁹ / ₁₆ x 2 ⁹ / ₁₆	2 ⁹ / ₁₆ x 2 ⁹ / ₁₆	2 ⁹ / ₁₆ x 2 ⁹ / ₁₆	–
		cm	6,5 x 6,5	–	6,5 x 6,5	6,5 x 6,5	6,5 x 6,5	–
Speed Cycles per hour		Depending on combination and formats e.g. 407 up to 4.000 with min.-formats e.g. 310 up to 3.100 with max.-formats				Depending on combination and formats up to 2.600		
Length m (ft)	ft	4'11"	6'7"	5'11"	4'11"	5'11"	7'7"	
	m	1,47	2,00	1,80	1,47	1,80	2,30	
Width m (ft)	ft	7'7"	5'	7'7"	8'7"	8'7"	5'11"	
	m	2,30	1,50	2,30	2,60	2,60	1,80	
Weight kg (lb)	lb	1.770	1.440	1.990	1.990	2.200	1.880	
	kg	800	650	900	900	1.000	850	
Electrical load total in kW with 400 V, 3~/N/PE, 50 Hz		2,2	1,8	2,2	2,2	2,2	1,8	
220 V, 3~/N/PE, 60 cycles		1,9	1,6	1,9	1,9	1,9	1,6	
Stitching heads max.		6	6	8	6	6	8	
Brochure stitching		X	–	X	X	X	–	
Calendar stitching with delivery table		X	X	X	X	X	X	
Folding		X	–	X	X	X	–	
Fore-edge trim		X	–	X	X	X	–	
Stream delivery		X	–	X	X	X	–	



12 tb sprint collators with more than 300 stations in VP version

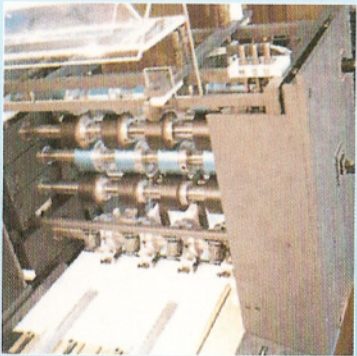
Standard equipment



①

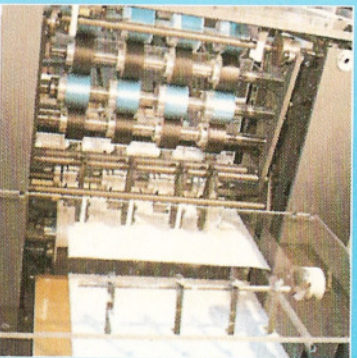
Two jogging stations, ink and distributor rollers, numbering device with 2 mounting rings and 1 numbering unit each, 7 digits, Gothic engraving, figure height 5 mm (1/16"), backward numbering, straight or convex for maximal 10 copies with CP-paper 40 g/qm (1 oz), delivery jogger, 6 delivery pushers for inline production, foot switch for offline production.

Sizes up to 35 x 50 cm
(13 3/4" x 19 3/4")
Speed up to 2500 cycles/hr.
Electrical load 0,58 kW
Voltage 400 V, 3 ~/N/PE, 50 Hz (220 V, 3 ~/N/PE, 60 cycles)
Dimensions:
length: 1,75 m (96")
width: 1,30 m (51")
height: 1,50-1,70 m
(59" to 67")
weight: 600 kg (1200 lb)



②

① *Exact paper alignment with two automatic adjustable jogger stations before crash numbering. For correct adapted set up, the machine is equipped with slow speed as well as a unit for printing and numbering.*



③

② *Each mounting ring for numbering units has its own color and distributor roller sets. Thus, different colors are possible for each mounting ring. A maximum of 4 mounting rings with 4 numbering units each can be installed.*

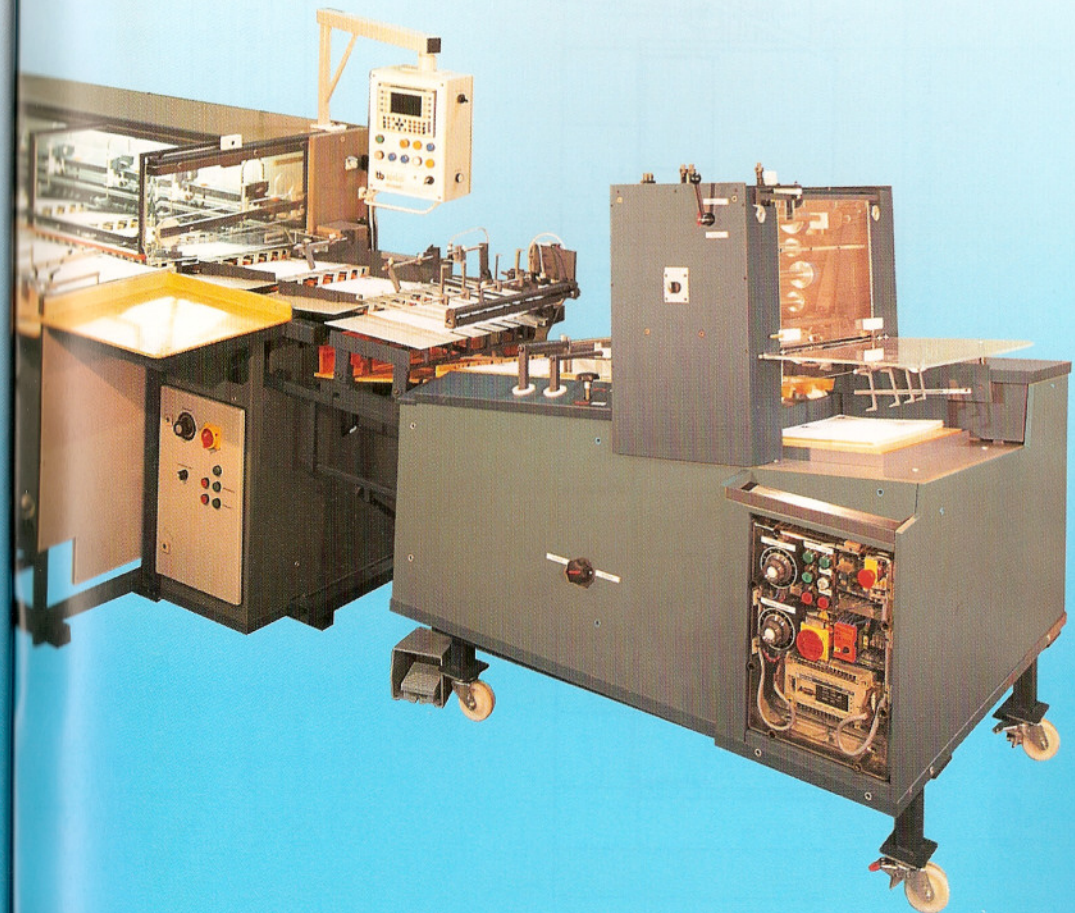
③ *The crash numbered sets are jumped in an automatic adjustable jogger, correctly jogged for the finishing process. The material can be removed during operation of the machine.*

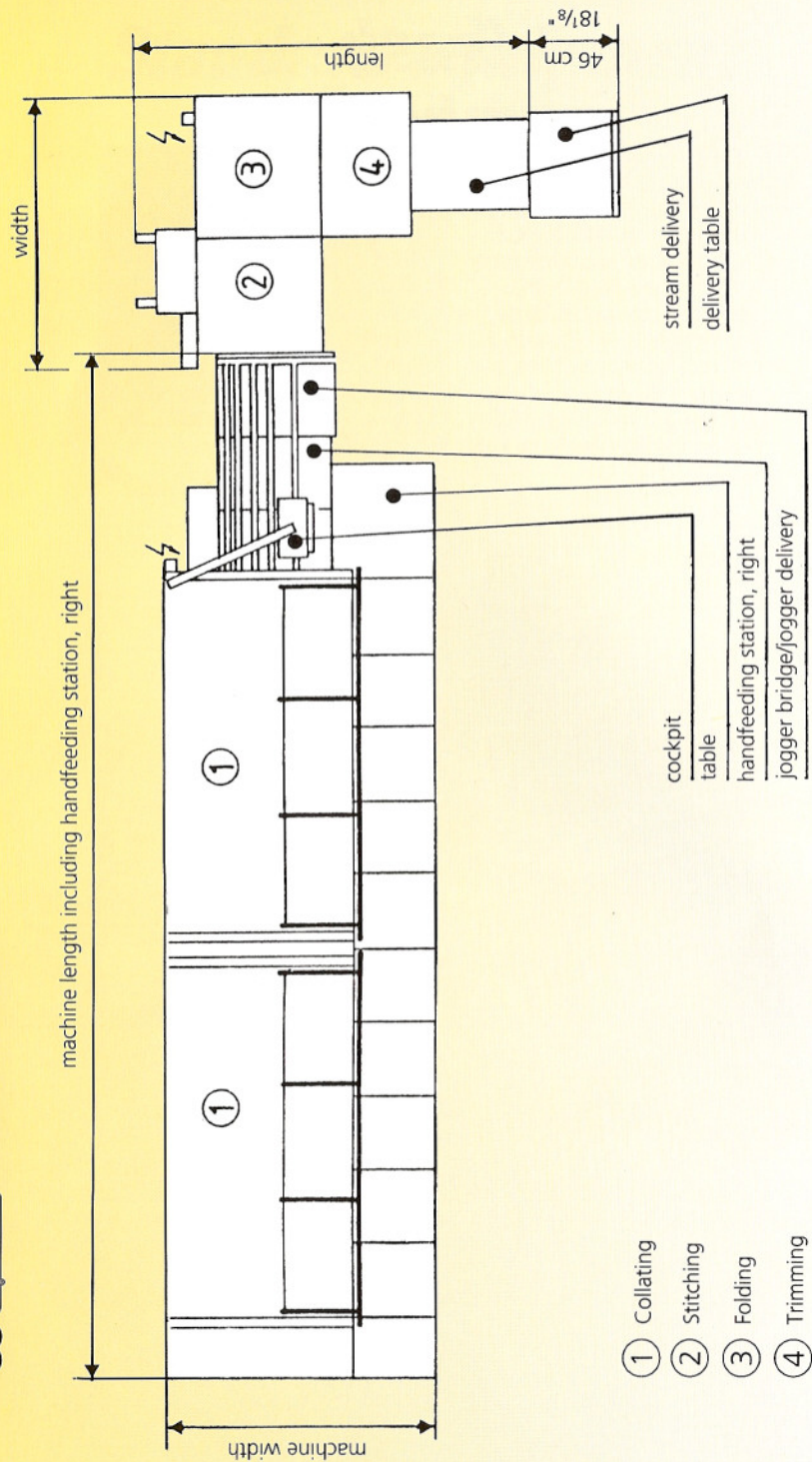
Crash numbering

The rotary crash numbering machine tb sprint 345 N is normally used in combination with a tb sprint collator. However, it is also suitable for offline operation. Two photocell impulses control the drive system.

The machine handles form sets and single sheets. For in-

line operation the numbering machine is simply connected to the tb sprint collator. Numbering is possible on the entire area except for a small outer edge. This can be done because the mounting rings, impression cylinders and sliding elements are individually adjustable.





- ① Collating
- ② Stitching
- ③ Folding
- ④ Trimming

Offer

Collator



_____	DM _____
programme-control SPS up to 10 stations	DM _____
each further 10 stations _____ x _____	DM _____
hand feeding station left/right	DM _____
jam detector	DM _____
jogger bridge	DM _____
magnet pusher	DM _____
_____	DM _____
_____	DM _____
_____	DM _____
packing	DM _____
price ex works Burscheid	DM _____ DM _____

Stitcher-folder-trimmer



_____	DM _____
infeed roller	DM _____
press fold	DM _____
booklet counter with batch separator	DM _____
normal stitch head à DM _____ x _____	DM _____
loop stitch head à DM _____ x _____	DM _____
_____	DM _____
_____	DM _____
packing	DM _____
price ex works Burscheid	DM _____ DM _____

Connecting machine with top + bottom trim

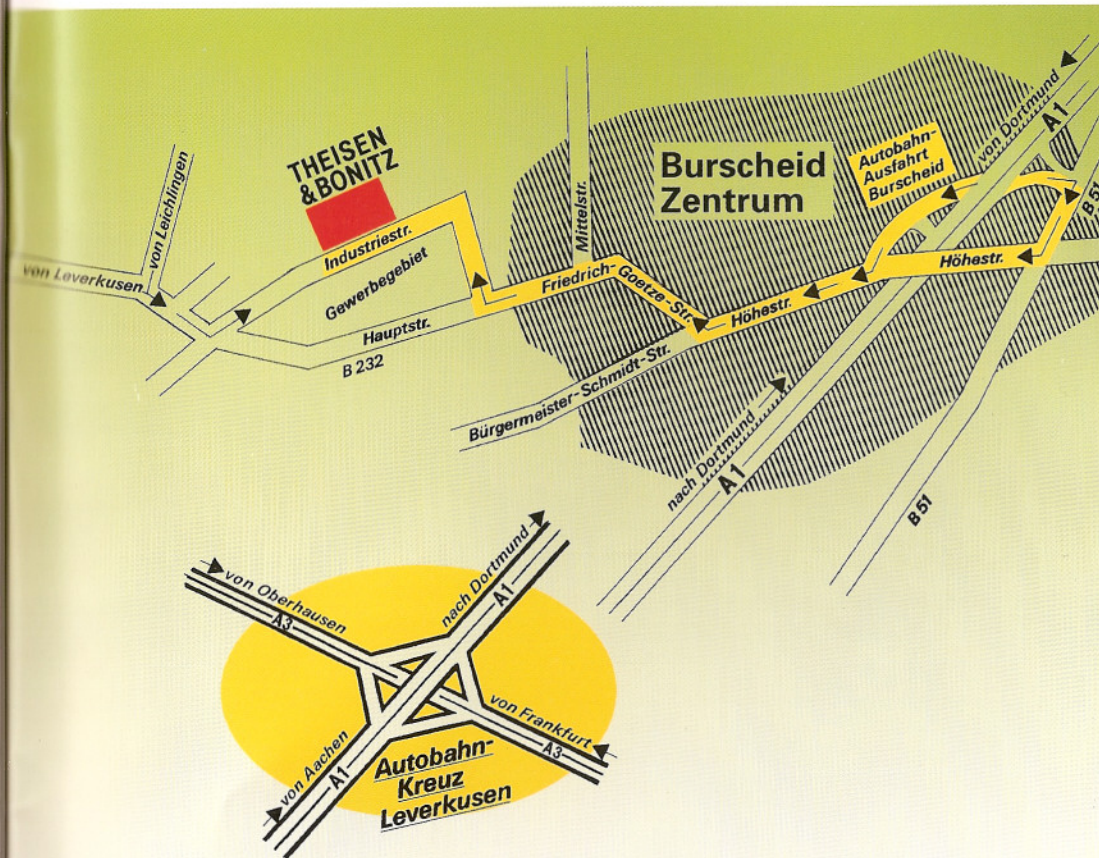
_____	DM _____
die punch ____ mm (____") à DM _____ x _____	DM _____
hole punch ____ mm (____") à DM _____ x _____	DM _____
packing	DM _____
price ex works Burscheid	DM _____ DM _____

price ex works Burscheid

transport costs	aprox. DM _____
FOB costs	aprox. DM _____
total price FOB	DM _____

Notes

How to find us



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