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Brodbeck Maschinen

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machines
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Paper Core Index Cutter
TWIN 4–2500

for burr-free highspeed cutting
of Paper & Soft-Plastic Tubes

The TWIN 4 is designed and build for
heavy duty operation at maximum performance.
In combination with an easy-to-use operation
the TWIN 4 guarantees best reliablitity in a daily use.

Since more than 75 years *BRODBECK-Maschinenbau* is known as
decisive and leading manufacturer of special machinery and equipment, covering the worlds markets.

Reliability, Quality and Innovation are our basics for a relation in partnership to our customers!

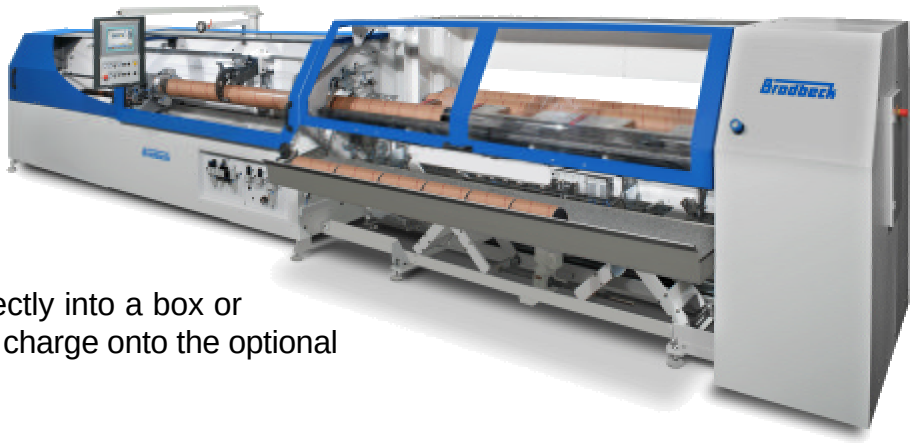
➢ *Method of Operation:*

The tubes are fed fully automatical out from the magazin into the Index Cutter. Alternatively the TWIN 4 -series could be ordered in semi-automatic version with manual parent core loading.

Cutting length(s) and quantity are to be programmed by the operator. The graphic HMI-TouchPanel supports look-and-feel navigation. Cutting data could be transfered to the TWIN 4 by internet communication as well.

The belt driven servo unit pulls in the parent core completely when starting the cutting cycle. The parent core length is scanned in the machine, programming is not needed.

According the programmed length(s) the tube is positioned and cut off using the TWIN-knives (circular knife). First and last trim cut is seperated to the back of the machine.



Cuts pieces are dropped directly into a box or they are ejected as complete charge onto the optional available storage table.

Standard Features TWIN 4:

- Siemens *Touch Panel*
  with *graphical user interface*, incl. *Self-Diagnostic* - System
- Progammable Logic Controller Siemens *PLC-Control*
- Positionable *Servoaxis*
  with maintenance-free *Belt Drive*
- *2-Knives-Cutting System*
  with pneumomechanical controlled *Bell-Crank-Lever-Unit*
  or optional *servoprogramable Knifeaction*
- Top and lower *CoreCutting Support*
  with *automatic* Adaption to core OD. No setup required.
- Pneumatical activated *Waste Scraper*
  with *automatic* Adaption to core OD. No setup required.
- *Waste Sorting*
  for first and last trim cut
- *Adaptive Speed of Rotation*
  The speed of rotation is increased automatically the shorter the core gets.

Data Sheet	TWIN 4-2500			
	2-Knife-BallCrank-Lever-System		2-Knife-Servosystem	
	WingShaped Chuck	3-Jaw Chuck	WingShaped Chuck	3-Jaw Chuck
Core ID	appr. 36mm or appr. 25mm	appr. 36mm or appr. 25mm	-	appr. 36mm or appr. 25mm [1]
	appr. 19mm [1]		-	
Core OD	appr. 230mm		-	appr. 330mm
Wallthickness				
minimum	appr. 2mm			
maximum with fixed knives	appr. 10mm		appr. 10mm	appr. 10mm
maximum with idle Knives	appr. 18mm		appr. 18mm	appr. 20mm
Parent Core Length				
max	appr. 2.580 mm	appr. 2.520 mm	na	appr. 2.580mm
min	appr. 1.000 mm			
on manual feeding	appr. 450 mm			
Cutting Width				
min	2 mm			
max	2.540 mm	2.480 mm	na	2.540 mm
max on semi-automatic	600 mm			
Trim Cuts				
first trim cut programmable	0 - 50 mm			
final trim cut min	appr. 40 mm			
Cutting Tolerances				
up 10mm wall	+/- 0,1 mm			
from 10mm wall	+/- 0,2 mm			
Speed				
Cycle Speed max	appr. 530 cuts/min		appr. 290 cuts/min	
Production Speed [3]	appr. 205 cuts/min ID 76 with w=3mm at Lc=12mm		appr. 110 cuts/min ID 76 with w=8mm at Lc=120mm	
or	appr. 190 cuts/min ID 50 with w=3mm at Lc=50mm		appr. 75 cuts/min ID 152 with w=12mm at Lc=35mm	
Setup-Time	1 - 5 min			
Standard Circular Knife	HSS 120 x 40 x 2 mm			
Electrical Connection	400 Volt, 50 Hz 3 phase current with N and PE			
	10 kVa / 35A fused			
Pneumatical Connection	180 NL/min at 6 bar		100 NL/min at 6 bar	
PLC-Control	Siemens S7-300			
HMI Operation Terminal	Siemens TouchPanel MP 277			
Core Indexing max	120 m/min			
Servocontroller	Siemens Sinamics			
Drive Tube Rotation	5.5 kW			
Cutting Speed max	appr. 250 m/min at 1000 U/min [2]			
Servocontroller	Siemens Sinamics			
Dimensions (LxWxH) **incl. Feeding System**	7,9 x 2,7 x 1,8 m			
Colour	Bi-Color RAL 9003 white-structur RAL 5010 blue-structur			
Net Weight **(incl. feeding unit)**	2.500 kg		3.000 kg	

[1] in Special Design - [2] valid for ID 76 - [3] depending on quality and wall

Cutting Systems:

2-Knife-BallCrank-Lever-System

- 2-Knife – Cutting System
  precise adjustable by ball-crank-lever-unit
- Fixed knives with auto-indexing
  or alternatively idle knives
- Central adujstment of knives by hand wheel

alternatively:

2-Knife-Servo-System

- 2-knife-cutting system
  servo programable
- Fixed knives with auto-indexing
  or alternatively idle knives
- 3-Step Cutting Profil
  When cutting the core, up to three different areas
  are possible to be controlled with three different cutting speeds.

Optional Feature
for 2-Knife-Servo-System

Automatic Knives Set-up

The front and rear knife are scanned by two measuring pins
when running the machine to its start position.

The scanned values are transmitted to the PLC - Control
The machine self-adjusts to the core accordding
the pre-calculated values in the cutting unit control system.

Clamping Chuck Systems:

Multifunctional WingShape-Chuck

- Multifunctional Chuck
  with auto-adaption to core OD
- Clamping range 20 – 230mm

alternatively:

3-Jaw-Chuck

- Heavy-duty chuck
  for big ID with heavy wall
- Clamping range 38 – 330mm

Feeding System:

Standard – FeedingSystem RB 2500

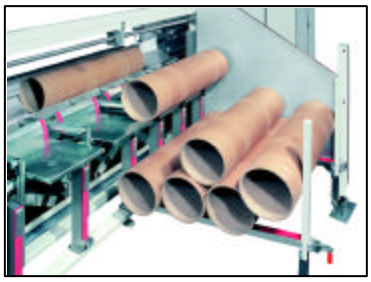
Automatic Core Feeder

consisting of:

- Storage table with tube separation.
- Sorting device for first and final trim cut.
- CEE - Safety devices

Tube Magazines and Storages:

Feeding Magazine RM 2500
for add-on installation to RB 2500



Automatic tube feeding
out from a magazine with vertical conveyor.
Complete bundles of cores
could be placed in the magazin.

consisting of:

- Tube magazine to take complete bundles of cores.
- Vertical conveyor system from the magazine to the feeding prism.
  The complete system works with noise-reduction..

Bundle Storage KS 2500

Automatic tube feeding system
for optional installation
to the standard feeding system RB 2500

- OD handling range: 28 – 330 mm
- Capacity: more than 120 tubes 3"-range
  more than 40 tubes 6"-range
- The cores are to be carried
  to the machine on pallets or carts.
- Two lifting belts are placed around the bundle of tubes.
  Packaging straps are removed.
- The lifting belts are progressively wound up automatically,
  raising the tubes to enter the feeding chute on demand.

Optional Equipment:

Tube Storage Table AT 2500 with Sensor

placed in front of the machine.
Storage capacity is the recut output of about six 3"- parent tubes.

The cut sections are ejected onto the Storage Table.

The machine stops automatically
if the storage capacity is filled and the cut sections are not off-loaded.

3-Point-Roller Support

Steady Support (lunette) for guiding the tube during rotation.
The 3-point-support allows maximum speed of rotation
and thus a significant increase in productivity.

Applicable for OD range 25 – 180mm and maximum wall of 5 mm

Licence: Multi-Lengths - Software

for cutting one tube up into 8 different lengths.
Length of the remaining part is indicated.

Teleservice for PLC-Control

Discharging Belt for Trim Cuts

The first and last trim cuts are ejected
out of the machines back side automatically.
There a conveyor belt transports the trims
into a waste bin provided by customers side.
Unproductive emptying of small carton boxes is avoided.

The Discharging System is integrated in the machines PLC.

Automatic Box-Changer
incl. AutoCUT Softwarepackage

The cut cores are carried outwards of the machine by a conveyor belt and automatically filled into boxes.

The cut pieces are ejected out of the machine onto a conveyor belt which transfers the cores to the Filling Station.
According the pre-programed amount of tubes
the box positioned in the station is filled.

consisting of:

- Conveyor Belt
  with removable side covering
  in order to connect to Storage Tabel AT 2500
  (expedient when cutting longer lenghts).

- Filling Station
  including In – and Outward Transfer of boxes.

- Inward Storage Area
  for appr. 3 – 5 empty boxes

- Outward Storage Area
  for appr. 3 – 5 empty boxes

Tooling:

Tool Sets with spring loaded Cutting Head

Patented *BRODBECK* Cutting System
For each ID one tool set is required.

Price for following ranges of ID´s:	38 – 45 mm ID
	46 – 110 mm ID
	111 – 170 mm ID
	171 – 250 mm ID
	251 – max mm ID

Tool Sets with Polyamid Cutting Head

For each ID one tool set is required.

Price for following ranges of ID´s:	bis 110 mm ID
	111 – 170 mm ID
	171 – max mm ID

Tool Sets with Hardened Steel Head

For each ID one tool set is required.

Price for following ranges of ID´s:	25 – 110 mm ID

Special Design for Tube-ID smaller 38mm (1.5")

versions available:
ID 25mm (1") or 19mm (3/4")

Price: