Plastic Core Cutter

TWIN 4K – 2500

The TWIN 4K is able to cut tubes of each kind
of plastic materials in progressive, single index action

The TWIN 4K is designed and build for
heavy duty operation at maximum performance.
In combination with an easy-to-use operation
the TWIN 4 guarantees best reliability 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!

➢ Working method:

The tube is automatically fed into the machine. The required cutting lengthes are programed and the machine is started. Tube advance is actioned by servo-motor according to the programed length. First a trim cut is made and discharged, then the complete core is divided into the corresponding length. The first and last trim cuts are ejected to the rear of the machine separately from the cut sections.

Available with outside and interior chamfering.
Closest tolerances and perfect cutting surfaces are guaranteed by inline finishing.
The entire operational sequence is PLC-controlled and fully programmable.

The machine is equipped with:

- Siemens Operating Touch Panel
- Self - diagnostic - system
  with fault indication at the terminal.
- Servodrives and Controler
- PLC – process control
- Dual-cutting-system
  programmable via servo devices.
  Station 1: Nose cutting tool for cutting the plastic core
  Station 2: Narrow square for chamfering and smoothing
- Easy tube set-up
  by programming the corresponding data for core- and toolset data
- Minimum - Jet-Lubrication of tooling
  for polished cutting surface and cooling.
- Upper and lower guiding rollers
  with automatic adaptation to the cores diameter.
- Upper guiding roll powered by separately engine
- 3-jaw-chuck, suitable also for heavy core cutting.
- Positionable servo-indexing
- Discharging device for the last trim cut
  with automatic adaptation to the cores diameter.
- Sorting device for first and last trim cuts.
- CE - Safety devices

CE-Conformity & Safety

The TWIN 4K is designed according to the state-of-the-art and valid guidelines for machinery 2006/42/EG including:

- Guidelines for Low Potential Voltage (2006/95/EG)
- Electromagnetic Compatibility (2004/108/EG)

Compliance according following by law requested regulations:
EN 12100-1 / EN 12100-2 / EN 294 / EN 60204-1 / EN 601000-6-1 / EN 61000-6-3

Recuperation

The concept of control (PLC and Servodrives)
complies to the sustainable usage of energy.
Electrical energy not used is returned into the machine's power circuit.

Technical Data:
* depending upon quality and wall of core

For plastic cores (chissel cutting):

ID	appr	69 – 160 mm
OD max	appr	180 mm

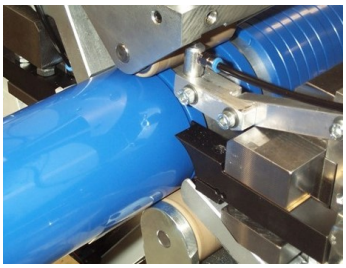
For cardboard cores (circular knife cutting):

ID	appr	50 – 210 mm
OD max	appr	230 mm
Wall thickness	appr	2 – 15 mm
Length of core		
parent length max	appr	2.580 mm
parent length min	appr	1.000 mm
Cutting length		
min K-Version	appr	15 mm
min S-Version	appr	2 mm
max	appr	2.400 mm
Trim cuts		
first cut programmable	appr	0 - 100 mm
last cut min	appr	45 mm
Cutting accuracy *	appr	+/- 0,1 mm
Tube set-up time	appr	10 - 30 min
Electrical installation		400 Volt, 50 Hz 3-phase current with N and PE
Electrical Drives		
Tooling unit via 2 servo-drives		each 2,50 kVA
Cutting head		2,5 kVA
Indexing unit		8,50 kVA
Tube rotation		4,00 kW
Pneumatic installation		60 NL/min at 6 bar
PLC & Servo - Control		Siemens
Machine dimensions (LxWxH) incl. automatic feeding	appr	6,4 x 3,0 x 3,0 m
Net weight	appr	2.500 kg

Cutting System:

2-Chissel (Knife)-Servo-System

- 2-chissel-cutting system
  servo programmable



Clamping Chuck System:

3-Jaw-Chuck

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

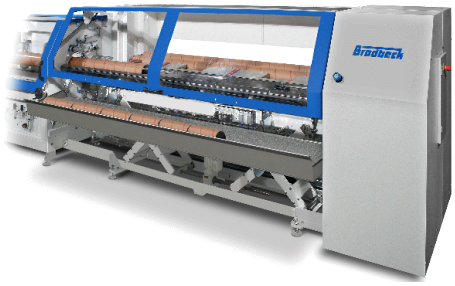
Feeding System:

Standard – Feeding System RBK 2500

Automatic Core Feeder

consisting of:

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



Additional Features:

Chamfer and Finishing

Device for operating following processing steps:

- Outside Chamfer
- Interior Chamfer
- Finishing of cutting surface

By using a squaretool the outside chamfer
is adapted during the cutting process.

The separate rings are servo-positioned symmetrically apart of each other
to open the gap for the squaretool to get in for creating the interior chamfer.
Re-positioning allows the tool to finish the cutting surface.

The complete processing is servo-controlled.

Tooling-Control

both chissels are scanned by a laser sensor.
In case of crashed chissels the PLC will receive
corrsponding data from the sensor.
The machine is stopped immediately

Device for cutting-off the Dead Head

Cutting off the dead head which remains
after injection moulding off plastic cores.

The plastic core is fed-in only up to the dead head.
Withdrawing the cutting head allows the steel to cut it off.
The dead head is ejected by the waste flap.
The flat surface is chamfered and smoothened

Device for Paper Tube Cutting

The TWIN 4K could be used for cutting paper tubes as well.
Therefore the existing cutting chisel units
have to be disengaged and replaced by the units holding the circular knives.

The corresponding software package
could be elected during the booting sequence.

Optional Equipment:

Tube Storage Table AT 2500 with Sensor

placed in front of the machine.
Storage capacity is the re-cut 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:
- Outside diameters from 25 – 180mm
- Wall thickness max. 5 mm
- Cutting Length max. 160 mm

Chips Suction System

capable to handle 24x7-operation
consisting of:

- Industrial vacuum system with pre-selection unit
- System bag size 200 liter

Motor Performance	2.20 kW
Partial Vacuum	2000 mmWC
Air Flow Rate (net)	200 cbm/h

Separately Suction Arm

Vacuum cleaning also with opened protective door

- Additional Hose
- Inclusive valve