

## Off-cut Remover HEKTOR 2

# RCAB

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Hektor separates milled PCBs carefully and fast. The off-cut material is removed smoothly and precisely. The matrix consists of two parts. This ensures easy and cost-saving change of the blades. Compressed air is used for the separation process. The operating pressure can be set on the machine. When the foot switch is pressed, the off-cut is punched out. The off-cuts are collected in the collecting box. When the gate is opened the waste material can be extracted.

### Safe Operation

The PCB is slipped with its milled groove over the blade and is placed onto the matrix. The off-cut is pulled under the blade. When the foot switch is pressed, the off-cut is punched out and the waste material is collected inside the machine.

### Technical data

Separation type	Punch blade
PCB thickness	max. 2.5 mm
Air connection	1/4"-plug-in coupler
Operating pressure	typical 4 bar
Mains voltage	10 - 35° C
Storage/transport temperature	-20 - 50° C
Humidity, non-condensing	10 - 85%
Safety regulations	CE, FCC class A
Weight	2.7 kg
Dimensions H x W x D	170 x 220 x 255 mm

Part No.	Description
<b>8932145</b>	<b>Off-Cut Remover Hektor 2</b> Contents of delivery: Hektor 2 with air pressure regulator Foot switch Adapter for dust extraction 1 L-blade – Please choose the size



### T-Blade

With the T-blade off-cuts can be punched out right and left of the blade without turning the PCB.



### L-Blade

The L-blade will be used if there are small distances between the off-cuts.

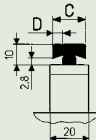
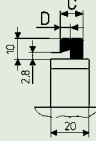
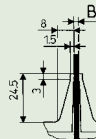
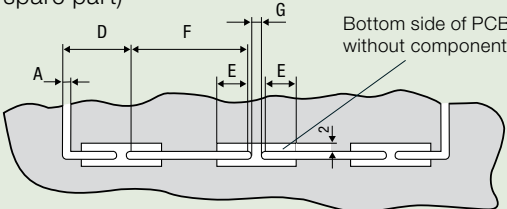


### Matrix

Included in delivery.

### Blades

To ensure the blade will not be jammed in the PCB, the blade should be at least 0.15 mm smaller as the milled groove.

Part No.	Part No.	A	B	C	D	E	F	G	
	<b>8932137.001</b>	Blade 1.5 T	≥1.5	1.35	17.2	4.7	>19.0	>19.0	3.0
	<b>8932138.001</b>	Blade 2.0 T	≥2.0	1.85	17.2	5.2	>19.0	>19.0	3.0
	<b>8932191.001</b>	Blade 2.4 T	≥2.4	2.25	18.0	5.7	>19.0	>19.0	3.0
	<b>8932139.001</b>	Blade 2.5 T	≥2.5	2.35	18.0	5.7	>19.0	>19.0	3.0
	<b>8932144.001</b>	Blade 3.0 T	≥3.0	2.85	18.0	5.7	>19.0	>19.0	2.5
	<b>8932122.001</b>	Blade 1.5 L	≥1.5	1.35	12.0	4.7	>15.0	>13.0	3.0
	<b>8932123.001</b>	Blade 2.0 L	≥2.0	1.85	12.0	5.2	>15.0	>13.0	3.0
	<b>8932141.001</b>	Blade 2.4 L	≥2.4	2.25	12.0	5.7	>15.0	>13.0	3.0
	<b>8932124.001</b>	Blade 2.5 L	≥2.5	2.35	12.0	5.7	>15.0	>13.0	3.0
	<b>8932125.001</b>	Blade 3.0 L	≥3.0	2.85	12.0	5.7	>15.0	>13.0	2.5
	<b>8932171.001</b>	Matrix (as spare part)							

Blades with varying thickness on request.



MAESTRO 2 separates small amount and prototype series of PCBs fast and economically. The compact and stable aluminum frame requires only a minimum of space.

## MAESTRO 2

is the reasonable model to start with, suitable for smaller numbers of PCBs. The PCB is fed manually between the circular blades and is thereby separated.

## MAESTRO 2M motorized

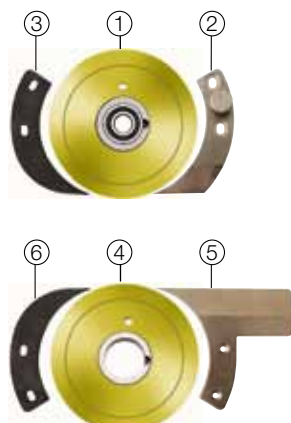
Separates large numbers of PCBs without fatigue of the operator. The lower circular blade is driven by a motor. The PCB is fed between the circular blades where it is seized, transported and separated. Three different speeds can be selected.

## Strain of components

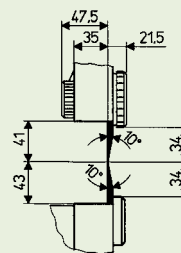
Frequently for critical components an upper limit of tensile stress will be determined. Please ask us regarding possibilities to reduce tensile stress of components.

## Save Operation

The clearance between the upper guide **1** and the lower guide **2** is adjustable to ensure that the PCB is only fed through the machine in the pre-scored groove.

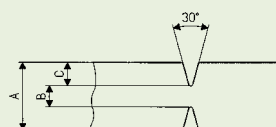


Maximum height of components next to the groove



PCB thickness A	0.8 - 3.2 mm
Remaining PCB thickness B	typical 1/3 of Dim. A max. 0.8 mm
Depth of scoring C	min. 0.25 mm
Increase in external dimensions after separation	0.1 - 0.2 mm

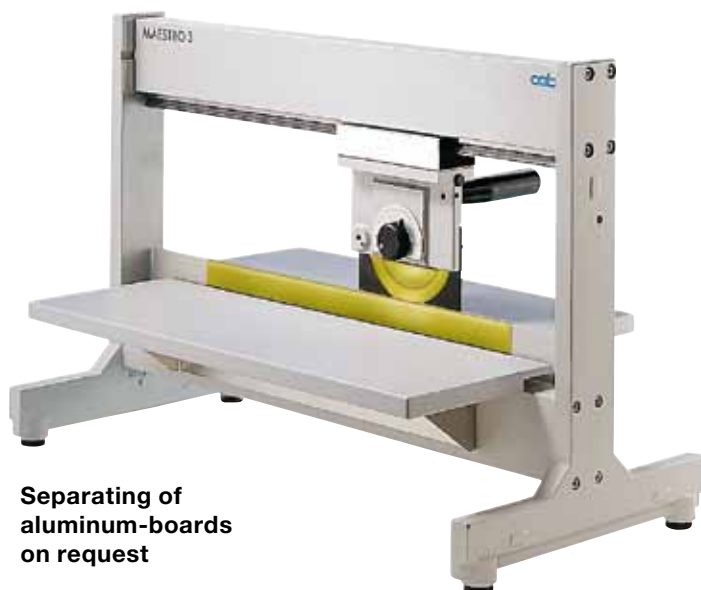
The pre-scored grooves can be interrupted by cutouts with a length of up to approx. 5 mm.



## Technical Data

Separation type	Component side    circular blade Solder side        circular blade
Operation	MAESTRO 2    by hand MAESTRO 2M   motor-driven
Separation speed 2M	100/200/300 mm/s
Separation length	15 - 300 mm
Mains voltage 2M	230/115 V~ 50 - 60 Hz
Earthing stud	Ø 10 mm
Operating temperature	10 - 35° C
Storage/transport temp.	-20 - 50° C
Humidity, not condensing	10 - 85%
Safety regulations	CE, FCC class A
Weight	MAESTRO 2    16 kg MAESTRO 2M   19 kg
Dim. H x W x D	330 x 195 x 620 mm

Part No.		Description	
8933900		PCB Separator MAESTRO 2	
8933935		PCB Separator MAESTRO 2M	
Pos.	Part No.	Spare parts	VP
1	8930509.001	Upper circular blade	1
2	8930522.001	Guide cpl.	1
3	8930744.001	Upper guide	1
4	8933661.001	Lower circular guide	1
5	8930514.001	Guide	1
6	8930745.001	Lower guide	1



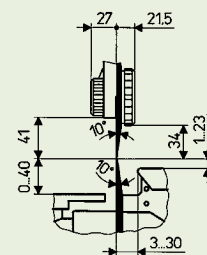
## Separating of aluminum-boards on request

MAESTRO 3E separates both small and large pre-scored PCBs. The table and the rest can be continuously adjusted to the most suitable working position. The slit between the linear blade and the rest can be adjusted to ensure that the side strips fall through and are sorted out.

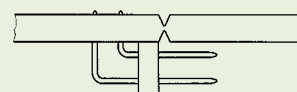
## Safe Operation

The PCB is placed with its pre-scored groove onto the linear blade and the circular blade is then drawn by hand across the PCB. The clearance between the upper guide and the linear blade is adjustable to ensure that the PCB is only separated in the pre-scored groove.

Maximum height of components next to the groove.

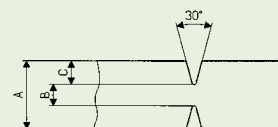


If components project above the groove, the linear blade needs to be cut out. In such a case contact us.



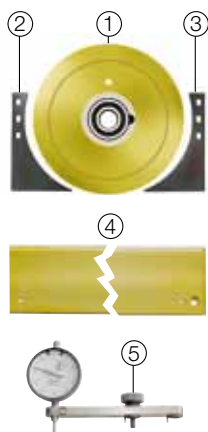
PCB thickness A	0.8 - 3.2 mm
Remaining PCB thickness B	typical 1/3 of Dim. A, max. 0.8 mm
Depth of scoring C	min. 0.25 mm
Increase in external dimensions after separation	0.1 - 0.2 mm

The pre-scored grooves can be interrupted by cutouts with a length of up to approx. 5 mm.



## Technical data

Separation type	Component side	circular blade	linear blade
Solder side			
Operation	by hand		
Separation length	max. 450 mm		
Earthing stud	Ø 10 mm		
Storage/transport temp.	10 - 35° C		
Storage/transport temp.	-20 - 50° C		
Humidity, not condensing	10 - 85%		
Safety regulations	CE, FCC class A		
Weight	22 kg		
Dim H x W x D	455 x 350 x 700 mm		



Part No.		Description	
8933945		PCB Separator MAESTRO 3E/450	
Pos.	Part No.	Consumables	PU
1	8930509.001	Upper circular bladeSchutz	1
2	8930603.001	Guide 2 up to serial no. 1999	1
2	8936615.001	Guide 2 from serial no. 2000	1
3	8930602.001	Guide 1 up to serial no. 1999	1
3	8936614.001	Guide 1 from serial no. 2000	1
4	8933394.001	Linear blade 450/370	1
Pos.	Part No.	Accessories	PU
5	8970208.001	Dial gauge for MAESTRO 3/4M	1



Separating of aluminum-boards  
on request

Picture:  
MAESTRO 4M

MAESTRO 4M separates both small and large PCBs fast and economically. To optimize operation, the separation length can be programmed with the control keys.

Safe Operation

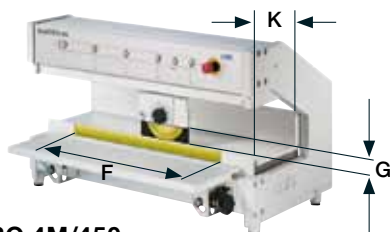
The PCB is placed with its pre-scored groove onto the linear blade. When the foot switch is pressed, the blade carrier with the circular blade moves across the PCB, separating it into individual units.

The clearance between the upper guide and the linear blade is adjustable to ensure that the PCB is only separated in the pre-scored groove. The table can be continuously adjusted with the rotary knob whenever required while the rest can be adjusted in three steps to the most suitable working position.



If components project above the groove, the linear blade needs to be cut out. In such a case, contact us.		
PCB thickness A	0.8 - 3.2 mm	
Remaining PCB thickness B	typical 1/3 of Dim. A, max. 0.8 mm	
Depth of scoring C	min. 0.25 mm	
Increase in external dimensions after separation	0.1 - 0.2 mm	
The pre-scored grooves can be interrupted by cutouts with a length of up to approx. 5 mm.		





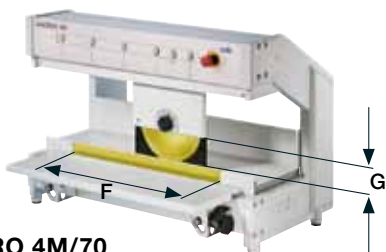
## MAESTRO 4M/450

### MAESTRO 4M/450 clean

Component height at the edge on the PCB max. 40 mm.

### clean-Version

MAESTRO 4M clean is prepared mechanically for dust extraction to remove dust particals with special linear blade.



## MAESTRO 4M/70

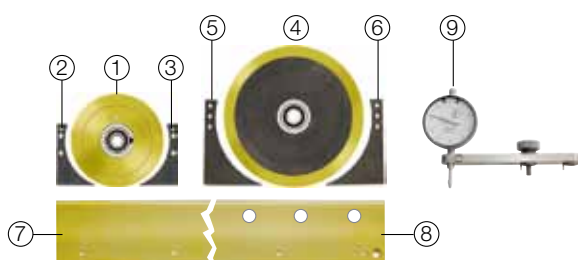
### MAESTRO 4M/70/520

Component height at the edge on the PCB max. 70 mm



### Sideways transport of separated boards

Sideways transport of singled boards. No overlapping of separated boards. Stop of the boards by sensor barrier on the end of the conveyor. Transport length adjustable in 50 mm steps.



### Technical data PCB Separator

Separation type	Component side	circular blade
	Solder side	linear blade
Operation	Optimized motor driven	
Separation speed	300/500 mm/s	
Mains voltage	230/115 V~ 50 - 60 Hz	
Earthing stud	Ø 10 mm	
Operating temperature	10 - 35° C	
Storage/transport temp.	-20 - 50° C	
Humidity, not condensing	10 - 85%	
Safety regulations	CE, FCC class A	

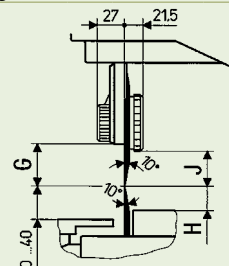
### Technical data Conveyor Belt

Material of conveyor belt	Antistatic
Direction of belt travel	To the right
Belt speed	5/6/7/8/9 m/min.
Light barrier	Can be activated for belt stoppage
Safety regulations	CE, FCC class A
width of belt	170 mm
Weight	14 kg

Maximum height of components next to the groove

H

Table	5 - 35
Conveyor belt	5 - 17



Part No.	Descriptions	Length of device	Hight of device	Separation length	Component height before the groove	Component height behind the groove	max. board depth	Weight in kg
8933955	MAESTRO 4M/450	702	434	450	40	34	200	38
8933950	MAESTRO 4M/450 clean	702	434	450	40	34	200	39
8933960	MAESTRO 4M/600	852	434	600	40	34	200	46
8933965	MAESTRO 4M/70	702	492	370	70	64	200	40
8933905	MAESTRO 4M/70/520	852	492	520	70	64	200	48
8931240	Conveyor belt 450	1200					200	
8932150	Conveyor belt 600	1350					200	

Pos.	Part No.	Consumables	PU
1	8930509.001	Upper circular blade	1
2	8930603.001	Guide 2 up to serial no. 1999	1
2	8936615.001	Guide 2 from serial no. 2000	1
3	8930602.001	Guide 1 up to serial no. 1999	1
3	8936614.001	Guide 1 from serial no. 2000	1
4	8933933.001	Circular blade passage height 70 m	1
5	8930756.001	Guide 2/70	1
6	8930755.001	Guide 1/70	1
7	8933394.001	Linear blade 450/370	1
7	8933682.001	Linear blade 600/520	1
8	8933931.001	Linear blade 450/370 clean	1
Pos.	Part No.	Accessories	PU
9	8970208.001	Dial gauge for MAESTRO 3/4M	1



**MAESTRO 5L with base frame**

is used most economically whenever large numbers of pre-scored PCBs need to be separated. The well-arranged control panel ensures easy operation.

Machine with base frame - adjustable in height for optimal modification for each application.

PCB thickness A	1.0 - 3.2 mm
Remaining PCB thickness B	typical 1/3 of Dim. A min. 0.3 mm, max. 0.6 mm
Depth of scoring C	min. 0.3 mm
Increase in external dimensions after separation	0.1 - 0.2 mm
The pre-scored grooves can be interrupted by cutouts with a length of up to approx. 5 mm.	

## MAESTRO 5L

PCB panels with maximum width of 310 mm can be separated by up to 11 pairs of circular blades simultaneously.

Configuration of the blades is adjusted to your individual PCB also the cover and the guide.

Sensors are used to monitor the separating process.

The PCBs are placed by either by hand or they feed automatically by a loading station. The machine can also be installed in an assembling line. The SMEMA interface is the standard connection for use. New: every machine is automatically prepared for dust extraction and with cleaning brushes for rear-end conveyor.

For PCB panel widths larger than 310 mm on request.

### Technical Data

Separation type	Component side circular blade Solder side circular blade
Operation	motorized
Separation speed	100 - 220 mm/s in 10 steps
Length of PCB panel with light barrier activated with light barrier de-activated	100 - 570 mm > 100 mm
Width of PCB panels	max. 310 mm
Width off-cut	min. 3 mm
Height of components	Component max. 30 mm Solder side max. 10 mm
Number of circular blades	max. 11 on each shaft
Width of PCBs	10 - 300 mm
Display	- Separation speed - Separated length or numbers of PCB panels
Keys	- Start, stop, reverse - Setting of separated speed
Monitoring	- Detection of separation length - Accumulation in front of and behind the blades - Stop the end of the conveyor belt
Interfaces	- Remote start/stop - SMEMA (round 14 pins)
Mains voltage	230 /115 V~ 50 - 60 Hz
Operating temperature	10 - 35° C
Storage/transport temp.	-20 - 50° C
Humidity not condensing	10 - 85%
Weight	63 kg
Dimensions with base frame height width dept	750 - 1000 mm 440 mm 1100 mm



Part No.	Description	
8934520	PCB Separator MAESTRO 5L Contents of delivery: MAESTRO 5L with base prepared for dust extraction Circular blades on customer request Service tools	
Part No.	Consumables	PU
8934803.001	Circular blade width 8 mm	1