

PCB Separator MAESTRO 2/2M



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

MAESTRO 2

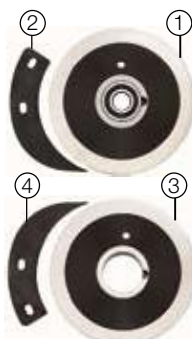
is the reasonable model to start with, suitable for smaller numbers of PCBs. The PCB is fed manually between the circular blades and is thereby separated.

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.

Save Operation

The PCB is held with both hands and fed between the circular blades for separation. 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	MAESTRO 2M 100/200/300 mm/s
Separation length	15 - 300 mm
Mains voltage	MAESTRO 2M Dual voltage 230/115 V ~ 50 - 60 Hz
Earthing stud	Ø 10 mm
Operating temperature	10 - 35° C
Storage/transport temperature	-20 - 50° C
Humidity non-condensing	10 - 85%
Safety regulations	CE, FCC class 1
Weight	MAESTRO 2 16 kg MAESTRO 2M 19 kg
Dim. H x W x D	330 x 195 x 620 mm

Part No.	Description
8930500	PCB Separator MAESTRO 2
8930599	PCB Separator MAESTRO 2M

Pos.	Part No.	Spare parts	PU
1	8930501	Upper circular blade	1
2	8930744	Upper guide	1
3	8930513	Lower circular blade	1
4	8930745	Lower guide	1

PU = Packing Unit

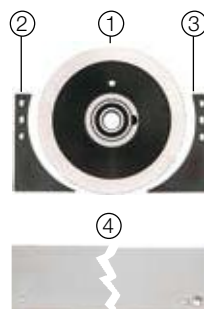
PCB Separator MAESTRO 3E



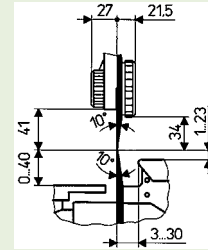
MAESTRO 3E separates both small and large pre-scored PCBs. The table and the rest can be continuously adjusted to the most suitable working position. The slit between the linear blade and the rest can be adjusted to ensure that the side strips fall through and are sorted out.

Safe Operation

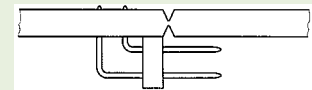
The PCB is placed with its pre-scored groove onto the linear blade and the circular blade is then drawn by hand across the PCB. The clearance between the upper guide and the linear blade is adjustable to ensure that the PCB is only separated in the pre-scored groove.



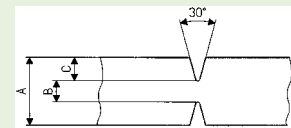
Maximum height of components next to the groove.



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
	Solder side	linear blade
Operation	by hand	
Separation length	max. 450 mm	
Earthing stud	Ø 10 mm	
Operating temperature	10 - 35° C	
Storage/transport temperature	-20 - 50° C	
Humidity, non-condensing	10 - 85%	
Safety regulations	CE, FCC class 1	
Weight	22 kg	
Dim H x W x D	455 x 350 x 700 mm	

Part No.	Description		
8931220	PCB Separator MAESTRO 3E/450		
Pos.	Part No.	Spare parts	PU
1	8930501	Upper circular blade	1
2	8930603	Guide 2 up to serial no. 1999	1
2	8936615	Guide 2 from serial no. 2000	1
3	8930602	Guide 1 up to serial no. 1999	1
3	8936614	Guide 1 from serial no. 2000	1
4	8930668	Linear blade 450/370	1

PU = Packing Unit

PCB Separator 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.

Foto: MAESTRO 4M clean with dust extraction and conveyor belt

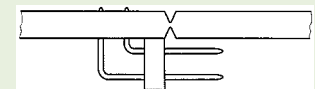
Safe Operation

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.

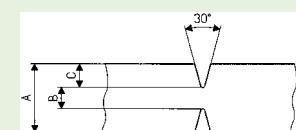


If components project above the groove, the linear blade needs to be cut out. In such a case, contact us.



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.





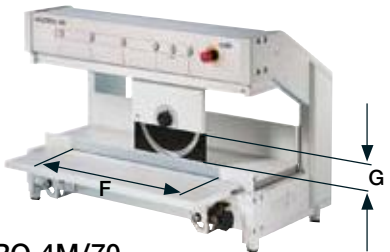
MAESTRO 4M/450
MAESTRO 4M/450 clean

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



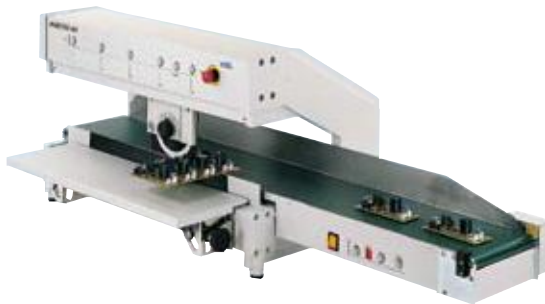
Dust Extraction

The extraction volume can be adjusted on the machine. More information: see page 11.



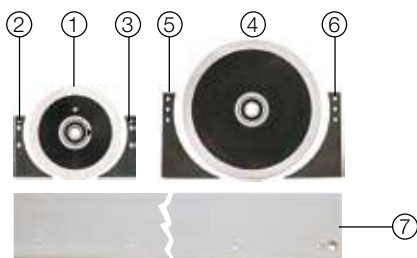
MAESTRO 4M/70

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



Conveyor belt for higher performance

The PCBs are transported out of the machine after separation. The light barrier at the end of the conveyor belt can stop the arriving PCBs.



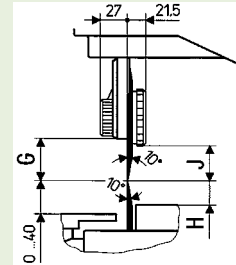
Technical Data PCB Separator

Separation type	Component side	circular blade
	Solder side	linear blade
Operation	Optimized motor driven	
Separation speed	300/500 mm/s	
Mains voltage	Dual voltage 230/115 V~ 50 - 60 Hz	
Earthing stud	Ø 10 mm	
Operating temperature	10 - 35° C	
Storage/transport temperature	-20 - 50° C	
Humidity, non-condensing	10 - 85%	
Safety regulations	CE, FCC class 1	

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 1
Width of table	540 mm
Weight	14 kg

Maximum height of components next to the groove



H

Table	9 - 39
Conveyor belt	5 - 17

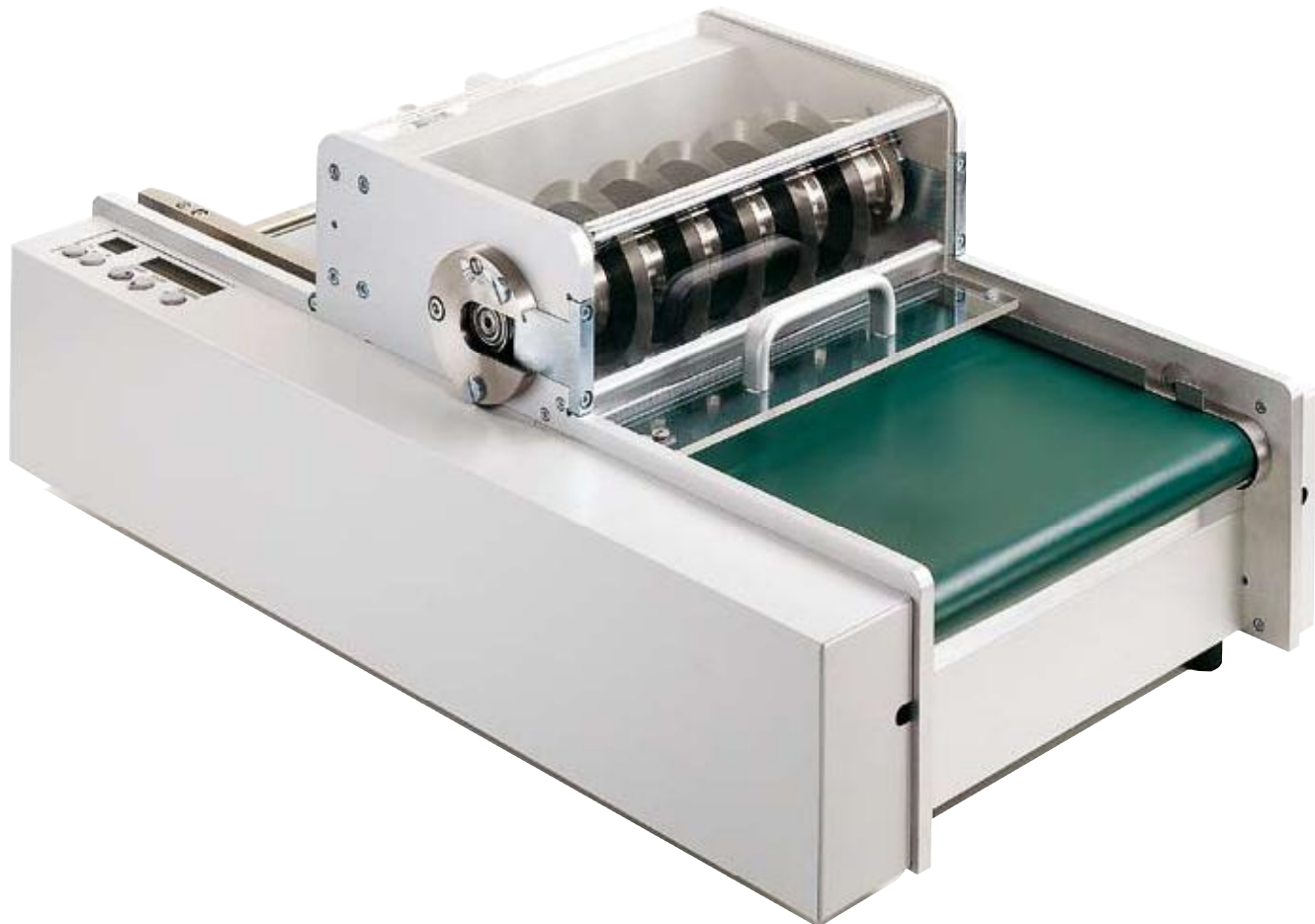
Part No.	Descriptions	Length of devise	Hight of devise	Separation length	Component height before the groove	Component height behind the groove	Weight in kg
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Part No.	Descriptions	F	G	J
8930800	PCB Separator MAESTRO 4M/450	702	434	450
8932660	PCB Separator MAESTRO 4M/450 clean	702	434	450
8931090	PCB Separator MAESTRO 4M/70	702	492	370
8931240	Conveyor belt			

Pos.	Part No.	Spare parts	PU
1	8930501	Upper circular blade	1
2	8930603	Guide 2 up to serial no. 1999	1
2	8936615	Guide 2 from serial no. 2000	1
3	8930602	Guide 1 up to serial no. 1999	1
3	8936614	Guide 1 from serial no. 2000	1
4	8930765	Circular blade passage height 70 mm	1
5	8930756	Guide 2/70	1
6	8930755	Guide 1/70	1
7	8930668	Linear blade 450/370	1

PU = Packing Unit

MAESTRO 5L PCB Separator

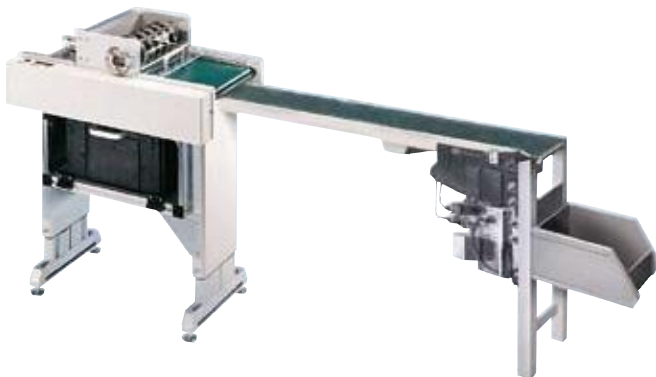


MAESTRO 5L is used most economically whenever large numbers of pre-scored PCBs need to be separated. The well-arranged control panel ensures easy operation. PCB panels with a maximum width of 310 mm can be separated by up to 10 circular blades simultaneously. Sensors are used to monitor the separation process. The PCBs are placed either by hand or they are fed automatically by a loading station. The machine can also be installed in an assembly line. The SMEMA interface is the standard connection for this use. The PCB Separator MAESTRO 5L can be adjusted to your PCB and your individual requirements. For PCB panel widths larger than 310 mm on request.

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.	



The machine is supplied with a height-adjustable base. In this way it can be adapted optimally to every requirement.



MAESTRO 5L Customer-specific application

The separated PCBs are transported by the conveyor belt for further treatment. Workplaces are arranged on the right and on the left of the belt. The side strips drop down into a collecting box.



Dust Extraction

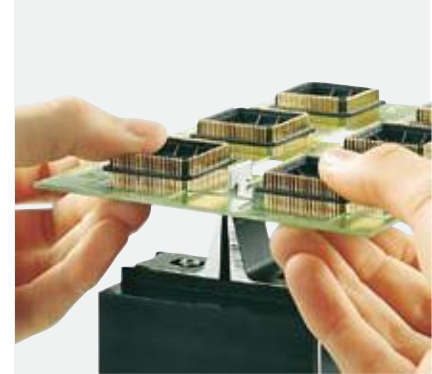
The Dust Extractor can be switched on directly on the PCB Separator. More information: see page 11



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 - 270 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. 10
Width of PCBs	10 - 290 mm
Display	- Separation speed - Separated length or numbers of PCB panels
Keys	- Start, stop, reverse - Setting of separated speed
Sensors	- 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	Dual voltage 230 /115 V~ 50 - 60 Hz
Operating temperature	10 - 35° C
Storage/transport temperature	-20 - 50° C
Humidity non-condensing	10 - 85%
Weight	63 kg
Dimensions with base	height 750 - 1000 mm width 440 mm dept 1100 mm

Part No.	Description	
8934520	PCB Separator MAESTRO 5L Contents of delivery: MAESTRO 5L with base Circular blades on customer request Service tools	
Part No.	Spare parts	PU
8931580	Circular blade width 8 mm	1

HEKTOR 2 Off-cut Remover



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.



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



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

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.

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 1
Weight	2.7 kg
Dimensions H x W x D	170 x 220 x 255 mm

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

Blades with varying thickness on request.		Width of milled groove	Recomended blade thickness	Length of blade	Length of cut	Width of off-cut	PU	
Part No.	Spare parts	B	C	D				
	8932137	Blade 1.5 T	1.5	1.35	17.2	4.7	3.0	1
	8932138	Blade 2.0 T	2.0	1.85	17.2	5.2	3.0	1
	8932191	Blade 2.4 T	2.4	2.25	18.0	5.7	3.0	1
	8932139	Blade 2.5 T	2.5	2.35	18.0	5.7	3.0	1
	8932144	Blade 3.0 T	3.0	2.85	18.0	5.7	2.5	1
	8932122	Blade 1.5 L	1.5	1.35	12.0	4.7	3.0	1
	8932123	Blade 2.0 L	2.0	1.85	12.0	5.2	3.0	1
	8932141	Blade 2.4 L	2.4	2.25	12.0	5.7	3.0	1
	8932124	Blade 2.5 L	2.5	2.35	12.0	5.7	3.0	1
	8932125	Blade 3.0 L	3.0	2.85	12.0	5.7	2.5	1
	8932171	Matrix						

Dust extractor for PCB Separators and Off-Cut Remover 4M/5L



Harmful dusts occur when separating PCB's by scoring, sawing, stamping and milling. These dusts can be removed with the Dust Extractor according to regulations.

When using the Dust Extractor with the PCB the extractor is switched on together with the machine. The extraction volume is adjustable on the machine.



The Industry dust extractor is supplied regularly with a BIA* K1 filter. Glasfibre reinforced plastics and other hazardous materials will be extracted according to EC health regulations.

Accessories

In the cover of the device you find three additional nozzels. The working place and the device can be cleaned quick and easily.

Technical Data		
Power	P max./IEC	1250/1100 W
Amount of air		3120 L/min.
Transmission factor		0,05%.
Capacity		14 L
Sound pressure level		61 dB
automatic filter control		no
Length of vacuumer tube		2.5 m
Length of power cable		12 m
Power supply		230 V~ 50 - 60 Hz
Safety regulations		CE, FCC class 1
Weight		9 kg
Dimensions H x W x D		350 x 400 x 550 mm

Part No.	Description
	
8932620	Industry dust extractor Contents of delivery: 1 Industry dust extractor 10 Paper filter bags BIA U,S,G,C 1 Micro filter BIA K1 3 additional nozzels

Part No.	Spare parts	PU
		
5905493	Paper filter bags BIA U,S,G,C	10

		
8932911	Micro filter BIA K1	1