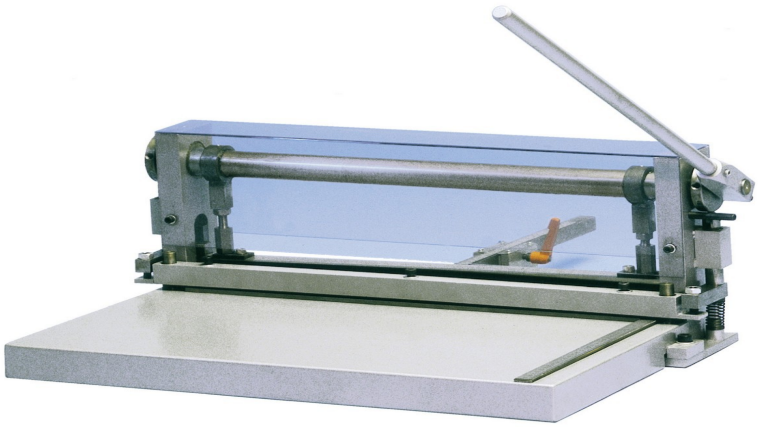
Board Cutter NE-CUT

Translation of the Original Instructions



➔ Read before use

➔ Pay heed to all safety regulations

➔ Keep at a safe place to refer to in the future

Table of Content

Description

NE-CUT is designed to cut FR4 PCB boards up to 3.0 mm or aluminium up to 2 mm thickness. Depending on customer application cutting of steel (depending on the alloy up 0.8 mm) and plastic (up to 5 mm) is also possible same as paper or film material.

The transparent hood allows to cut single sheets by eye sight.

Features

- Cutting width max. 530 mm
- Two knifes made of hardened and ground steel
- Spring loaded built-in clamping unit in the front
- front side stop with metric scale (0.1 mm tolerance repeatability)
- Fully adjustable back stop with metric scale for batch work (0.1 mm tolerance repeatability)
- Adjustment range of back stop 0 - 300 mm
- Smallest cutting size (front) 45 mm
- Durable full steel construction
- All angular and dimension determining parts adjustable
- Simple exchange of blades
- Adjustable cutting angle
- Adjustable clearance

Technical Data

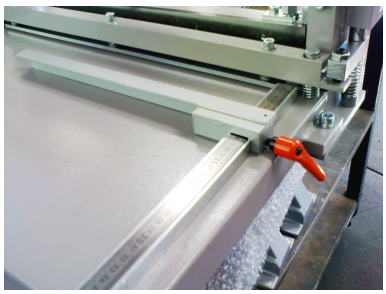
Dimensions (L x H x D):	74 cm x 29 cm x 45 cm
Weight:	66 kg
Cutting Length:	max. 530 mm
Adjustment range of back stop:	0 - 300 mm
Smallest cutting size (front)	45 mm
max. Board Thickness FR4	3.0 mm
max. Board Thickness Aluminium	2.0 mm
max. Board Thickness Plastic	5.0 mm
max. Board Thickness Steel	0.8 mm

Annotation: the board cutter is preset for board thickness up to 3.0 mm. If you need to cut thicker material you need to adjust the upper blade and the clamping unit.

Technical changes reserved

Possible Options

parallel front stop (similar to picture 1)



Picture 1

EG-Declaration of Conformity

CE **EG-Konformitätserklärung/Declaration of Conformity**

Hersteller / Supplier:	Bungard Elektronik GmbH & Co. KG Rilkestraße 1 51570 Windeck Germany
Bevollmächtigte Person für die Zusammenstellung der technischen Unterlagen: Person in charge	Jürgen Bungard, Geschäftsführer /general director Rilkestraße 1 51570 Windeck Germany
Product:	Plattenschere / Board Cutter Ne-Cut

Hiermit erklären wir, dass die oben beschriebenen Maschinen allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht.

Die oben genannte Maschine erfüllt die Anforderungen der nachfolgend genannten Richtlinien und Normen:

We hereby declare that the machines described above complies with all relevant provisions of the Machinery Directive 2006/42/EC.
The above machine meets the requirements of the following guidelines and standards:

- **Maschinenrichtlinie 2006/42/EG / Machinery Directive 2006/42/EC**

- **DIN EN 60204-1** Sicherheit von Maschinen - Elektrische Ausrüstung von Maschinen - Teil 1: Allgemeine Anforderungen / Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- **DIN EN ISO 14121-1** Sicherheit von Maschinen - Risikobeurteilung - Teil 1: Leitsätze / Safety of machinery - Risk assessment - Part 1: Principles
- **DIN EN ISO 12100-1** Sicherheit von Maschinen - Allgemeine Gestaltungsleitsätze, Risikobeurteilung und Risikominderung / Safety of machinery - Basic concepts, risk assessment and risk reduction
- **Maschinenrichtlinie / Machinery Directive 2006/42/EG/37/EG**

Windeck, 10.02.16

Jürgen Bungard Geschäftsführer

Intended Use

NE-CUT is specially designed to cut FR4 PCB boards up to 3.0 mm or aluminium up to 2 mm thickness. Depending on customer application cutting of steel (depending on the alloy up 0.8 mm) and plastic (up to 5 mm) is also possible same as paper or film material. The board cutter is preset for board thickness up to 3.0 mm. If you need to cut thicker material you need to adjust the upper blade and the clamping unit.

All other applications require our written consent, or happen at your own risk and peril.

Safety Regulations

Generally

Please read the following text carefully and pay particular attention to information on safety and commissioning.

Keep this folder at a safe place. It contains information which is also for later maintenance and cleaning of importance.

The machines are not designed to be embedded or interconnection with other machines or systems. They may only be used in specially equipped rooms and be operated by qualified personnel. Keep away children and pets!

Transport

Only use suitable lifting and transport equipment such as forklifts or pallet trucks . Secure the machine against sliding / tilting

Operation site

The site should be level, site- and slip-resistant. Unrestricted access to the rear of the machine is required for the installation of add-on parts ; later on it enables you to easily remove the cuttings .

Operating

All dangerous parts are covered as far as technically possible and reasonable. The gap between table and clamping device is only 5 mm, so it is almost impossible to get your hand into the blade while the clamping device is mounted.

The only source of danger is behind the machine. Never pull the lever while you or anybody else is working behind the machine. Especially when somebody is trying to remove the cut boards from behind the machine.

Always were cut proof gloves when handling the blades. Secure the loose blades from being touched or from falling down.

For very small sections, it may happen that they stick under the knife. Caution, risk of injury! Lower the upper knife till the cutting gap is closed before putting your hands into the cutting area.

Set Up

Take over from the transport agent

After receiving and unpacking check the machine for possible transport damages. In case of transport damage, please inform your insurance, the transport company and the manufacturer / supplier.

Transport to operation site

Only use suitable lifting and transport equipment such as fork-lifts or pallet trucks . Secure the machine against sliding / tilting

First take out the filling material and then the disassembled parts. Bring the latter to the place where you want to operate the machine.

Remove the transport screws (picture 2)!!

Because of its heavy weight carry the Ne-Cut only with two persons. Hold on one hand to the table and the other under the ground plate.

Picture 2

For transport reasons some parts of the Ne-Cut are disassembled:

1. back stop with metric scale
2. the lever

Picture 3

Operation Site

The Operation place should be solid, even and not slippery. The room should have a non-corrosive atmosphere. A good access to the rear is important to assemble the counter bar and later on it will enable you to remove the cut boards easily.

Make sure to have enough light in the room. If necessary install a separate light source next to the machine in order to have a clear sight over the cutting area.

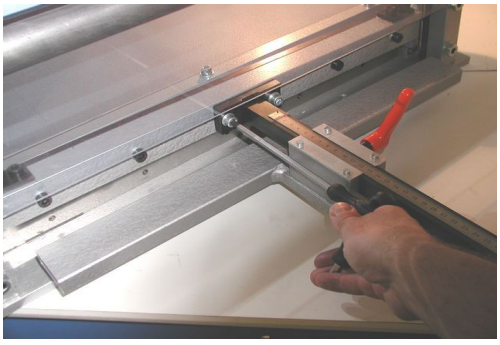
Mounting

Mount now the add-on-parts. All you need is a set of Allen keys and a set of jaw wrenches.

1. Lever (picture 3): Stick the lever into the opening on the right side of the eccentric axis, the chamfer pointing to the right. Tighten the lever with the headless Allen key screw.

2. back stop with metric scale (picture 4): When you look from the rear to the upper blade beam you see two loosely mounted Allen key screws. Unscrew them and adjust here horizontally the flange of the slide beam. Tighten the screws hand tight.

Set the counter-bar to a deliberate position. Loosen the red lever (you can change position of the knob by lifting and turning).



Picture 4

Turn the lever up and back to its home position. Take a wide board and scoop it first against the front side counter bar and then against the rear counter bare.

Pull the lever until the clamping unit fixes the board. In this position you can adjust the height of the rear counter bar until it lies smooth against the board. Now tighten the Allen key screws.

The parallelity of the rear counter bare was pre-adjusted and proved before the machine left the company. However it happens sometimes that the rear counter bare does not fit after disassembly. The reason for this could be a an unevenness of the finishing coat. If you happen to notice a disparallelity after some test cuts, please read chapter **adjustment** how to scale the counter bare again.

Operating

Adjust the size of the board to be cut with the rear counter bare: Loosen the orange knob by lifting and turning. Slide the counter bare to the rough dimension of the board, tighten the knob a little bit and adjust the zero position mark precisely by knocking against the skid of the counter bare. Then tight the knob firmly. Place the board against the front counter bare and push it against the rear counter bare.

Pull the lever to the front and down. The downholder (clamping unit) will clamp the board and then the blade will cut it. Pull the lever all the way back, so the clamping unit releases the board.

If you place the board precisely to the scale of the front counter bare, you can even perform some cuts without adjusting the rear counter bare. Or you can trim the rims of the board by sight. If you work without the rear counter bare, it can happen that the board is pushed back by the blade for about 0,1-0,2 mm. That is a general side effect of the cutting procedure and no defect of the machine. To reduce this effect we offer as an option a front parallel counter bare.

Please make sure to take out regularly the cuts and the oddments from the ground plate of the machine. If the oddments are very small, they might stick underneath the blade. Attention: risk of injury! Lower the upper blade until the gap between upper and lower blade is closed before you remove these small parts.

Disassembly

Dismount the **rear counter bar** only for transport reason, because you have to go through the adjustment procedure again after you mount the counter bare . This procedure is described in the chapters **Set Up** and **Adjustment**. The counter bare itself can be slid off the beam after the knob is loose.

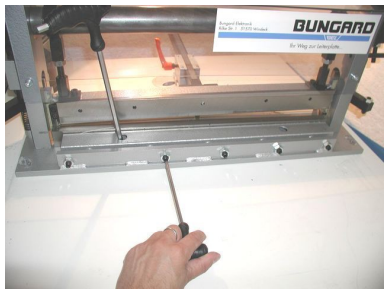
For safety reasons always keep the **clamping unit** in its position. Nevertheless you can remove the clamping unit by pressing it down on the side till it comes free from the press beams which connect the clamping unit with the lowering mechanism.

Turn away the press beams and lift the clamping unit.

If you need to have access to the lower blade you must remove the **machine table**. Loosen the two screws which connect the table to the ground plate (Picture 5). After remounting the table you have to control the perpendicularity of the table and if needed, readjust the scale of the front counter bare (see chapter adjustment).

Picture 5

After you removed clamping unit and table you see a square pipe which holds the lower blade (Picture 6). You can reach the attachment screws through the big top holes. Loosen the screws and take out the square pipe with the lower blade. If you unfasten the screw coupling you can remove the lower blade.



Picture 6

In order to remove the **upper blade** just loosen the screws of the upper blade beam.

Please pay attention to the alignment of the blades: do not change the angles of the blades when regrinding them and remount the blades into the same position they were before. After remounting the blades you need to readjust the gap between the two blades (see chapter **Adjustment**).

Attention, danger of injury! Always were cut proof gloves when handling the blades. Secure the loose blades from being touched or from falling down.

Under normal conditions it is not necessary to dismount the upper blade beam, the eccentric axis or other parts. Nevertheless if you must do so for repair reasons for example please get in touch with us.

Adjustment

Upper Blade

The upper blade is connected with screws to the blade beam. The only possible adjustment is the angle from left to right. This angles influences the power of the cut. The cutting goes easier when the angle is as aslope as possible. We pre-adjust the angle this way and you should avoid to change this since it influences the maximum thickness and width of the board to be cut as well as the shear forces attacking the boards (distortion).

Change the angle by first loosening the counter nut and then turn the hexagon bolt between eccentric axis and blade holder (Picture 7).

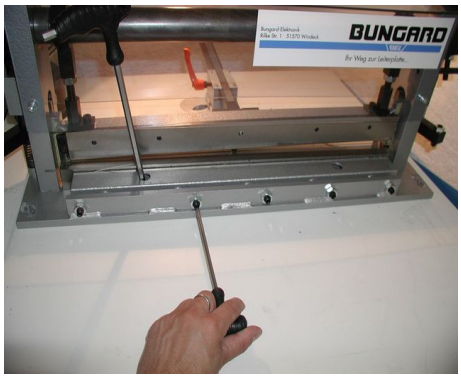
Picture 7

Lower Blade

To disassemble the table and lower blade read chapter **Disassembly**. The lower blade is closely connected to its holder. To change the gap between upper and lower blade you can move the holder of the lower blade along the ground plate.

To do so use the 5 headless screws which you find between the steel bracket welded to the ground plate and the holder (Picture 8). First mount the upper blade and lower it down as far as possible.

For the now coming adjustment you need a distance template. You can take foil with a defined thickness of 0.1 mm or take two sheets of normal paper. You calculate for metals a gap of 1/10 of the materials thickness. For pcb sheets you can reduce the gap.



Picture 8

Tighten the attachment screws of the holder just slightly and move the holder with the lower blade evenly against the template that lies before the upper blade. Tighten the attachment screws hand firm. Now loosen the counter nuts of the headless screws and turn these screws till they touch the holder.

Take the template out of the cutting gap.

Now cut small stripes of the thinnest material you want to cut (film material e.g.) all along the blade from the left to the right. At places where the material was not cut but only bend, turn in the nearest headless screw for some degrees and repeat the cut.

Repeat this action until your sheet was nicely cut all along the blade.

Do not turn the headless screws too far, thus you may damage the blades. If the screws happen to be too far in, you have to loosen all screws and start the procedure once again. When you are done do not forget to tighten the attachment screws!

Front Scale

This adjustment is always necessary when the table was disassembled (change of blades). To assure a perpendicular cut walk through the following steps:

Check if the screws between table and ground plate are tightened. Pull the machine over the edge of the table until you can reach the front most attachment screw of the ruler. Loosen this screw carefully (see picture 9). Take a perpendicular test board, push it against the upper blade and knock with a small plastic hammer against the ruler till the hole side of the ruler touches the board.

Tighten the attachment screw and make a test cut. Check the angle again. If you notice that the scale of the ruler does not fit anymore you will have to move the table itself. Or you can loose the other attachment screw of the ruler as well and move the ruler.

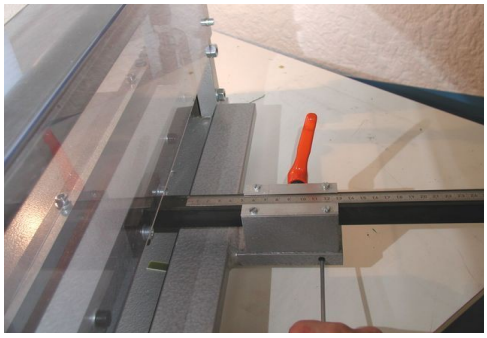
Picture 9

Rear Back Stop

After assembling the slide beam of the counter bare, take a preferable broad piece of board, push it against the rear counter bare and cut it. Prove the parallelity of this cut with a precise caliper gauge on the left and on the right. If the cut is not parallel, do the following:

Take a jaw wrench and loosen the backmost of the two nuts underneath the counter bare.

To adjust the angle of the counter bare take an Allen key and turn the headless Allen key screws on the left and on the right of the counter bare (see picture 3).



Picture 10

On the side where you turn ***out*** the headless screw, the size of the cut will become ***smaller***. On the side where you turn ***in*** the screw the gap accordingly will become ***bigger***. Normally you will have to do a couple of test cuts till both sides are exactly equal.

At last tighten the nut from underneath the counter bare again and measure the size of the cut. Check if the zero position mark fits to the size of the cut. If not, loosen the screws of the metal plate and shift the zero position to its proper place.

Cleaning and Maintenance

After use clean the machine from dust and chips by vacuuming especially the blades and behind the blades. Do not use compressed air to clean the machine from FR4 dust because then the fibre glass fibres are dispensed all over the room.

You can clean the hood with a smooth cloth and some non abrasive cleaner.

Clean and grease regularly all moveable parts, especially slides of the upper blade run and the rings around the eccentric axis. Depending on the amount of cuts and the material to be cut, the blades need to be exchanged or resharpened. We offer blades as spare part so you can keep a blade-set in reserve.

Disposal

The board cutter Ne-Cut is made from recyclable materials and is to be supplied at a later decomissioning in a proper and environmentally friendly manner.

Spare part list

ArtikelNr.	Name	English
630004	Exzenterwelle	eccentric roller
630008	Sechskant mit Kugelkopf	Hexagon with Ball Head
630001	Satz Messer	set of blades
630006	Bolzen mit Schlitz	Bolts with slot
630007	Scheibe	disc
630005	Exzenterscheibe	eccentric disc
630002	Haube	Hood

Guarantee

All machines are submitted before distribution to examination on function and continuous operation firmness. On the machine we grant a work warranty of 12 months to our customers starting from purchase date on accuracy in material and processing. We warrant at our choice by exchange of incorrect parts or by repair of the machine in our house. Old parts change into our possession.

Disclaimer of Warranty

All parts subjected to wear (blades and movable parts) are excluded from this warranty. Non-observance of this manual shall void all warranty claims.

We cannot accept subsequent claims from damage or destruction of workpieces worked on in the machine, because we have no knowledge or control over the operating conditions at your site. This is valid in a general manner also for requirements from damage to articles, buildings and persons as well as the environment.

We do not warrant that the function of the machine will meet the customer's requirements or that the operation of the machine will to this regard be error free.

In no event will we be liable to the customer for any incidental, consequential, or indirect damages of any kind, including loss of profit and prosecution for environmental pollution, even if we could have been aware of the possibility of such damages.

All information was arranged with great care. We reserve ourselves however mistake and technical changes without previous announcement.

We explicitly exclude any warranty for damages resulting from running the machine in in corroding, humid, dusty, extremely hot or explosive atmosphere.

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