

# Cutter PCU4 / CU4 / CU6 / CU8

for Thermal/ Thermal Transfer Printers of the A- and M-Series

**Operator's Manual** 

Edition 4/04



### **Product Description**

The **Cutters PCU4, CU4, CU6** and **CU8** are optional peripheral devices for the **A-and M-series** printers. With the cutter unit installed, labels or continuous material may be cut when desired.

Cutter options include a choice of: cut after each label, cut after a specific quantity of labels, or cut at the end of a print job.

The cutters are powered and controlled directly by the peripheral port of the printer. For cutter operation, the printer firmware will extend the label for cutting based on specified displacements, then automatically backfeed the label, so that after making a cut, the label roll will be repositioned and ready for printing the next label.

An optional Cutter Tray is available for the Cutter CU4.





#### Fig. 1 Cutter, Cutter Tray 4

The designation **PCU** signifies Perforation Cutters. The functionality of the Cutter PCU4 is similar to the Cutter CU4. The **Cutter PCU4** is, in comparison to the Cutter CU4, equipped with another linear blade and anoterh electronics. After Perforation the material is guided over an additional rod

Main function of the cutter is perforating textile materials, for other or thick materials tests are recommended.

The perforation distance and the border width of the PCU linear blade are customdesigned.

With the CU4 linear blade installed the Cutter PCU4 can be used similar to the Cutter CU4.

#### NOTICE!

Because of the different electronics, the Cutter CU4 can not be used as Perforation Cutter.

## **Technical Specification**

Cutter	PCU4	CU4	CU6	CU8
Partno. :	5948386	5948000	5948001	5948002
For printer type :	A3, A4, M4	A3, A4, M4	A6	A8
Media width up to				
(in / mm) :	4.7 / 120	4.7 / 120	7.1 / 180	9.3 / 235
Min. cut length :	08 in / 2 mm			
Material thickness :	up to 500 g/sqm			
Power supply :	peripheral connector of the printer			

Table 1	0	verview	Cutter
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#### NOTICE!

The minimum cut length is depending on the media, in particular its adhesive characteristics. Before use tests of the media are recommended. You should test the media too, if the media is very hard or very thin.

The cutters have a durability of more than one million cuts. The blades are selfsharpening. Depending on the type of the cutted material the blades could wear earlier and have to be replaced. Used blades are not designed to be grinded again.

Cutter Tray	4
Partno.:	5946995
For printer type :	A3, A4, M4
For cutter :	CU4
Material width (in / mm) :	up to 4.7 / 120
Length of the cut pieces (in / mm) :	up to 3.9 / 100
Stack height (in / mm) :	up to 1.4 / 36

#### Table 2 Overview Cutter Tray

## Notice to R-Version Printers (with Internal Rewinder)

For operation of the cutters the tear-off plate ( or alternatively the dispense plate) must be mounted on the printer. This plate is guiding the material from the printer through the blades of the cutter.

The tear-off plate is optional equipment for printers with internal rewinder, that means the tear-off plate is not part of the standard delivery content of R-version printers.

For ordering you can select out of the following table the art. no. of the tear-off plate besides your printer.

Printer Type	Description	Art. No.	
A3, A4, M4	Tear-off Plate TP 4	5946244	
A6	Tear-off Plate TP 6	5946414	

Table 3 Tear-off Plates for A- and M-Series

## **Safety Instructions**



#### CAUTION!

- The printer must be switched off before attaching the cutter!
- Risk of injury, particularly during maintenance, the cutter blades are sharp!
- The cutter may only be used when it is mounted on the printer!
- Do not try to cut any materials which exceed the maximum width or thickness specifications.
- Do NOT touch the area of the moving blades!



Fig. 2 Do NOT touch the Blades

## Mounting the Cutter and the Cutter Tray



#### CAUTION!

#### The printer must be switched off before attaching the cutter !

In order to install the cutter, the front cover is to be removed. There has to be mounted a tear-off plate or a dispense plate on the printer, to lead the material through the blades of the cutter. The rewind guide plate of the Rprinter-version has to be replaced by a tear-off plate or a dispense plate.



#### Fig. 3 Removal of the Front Cover

- 1. Turn the printer off. Open the media cover.
- 2. Loosen the screw (2).
- 3. Remove the front cover (1).



#### Fig. 4 Exchange of the Rewind Guide Plate by the Tear-off Plate

- 4. To demount the rewind guide plate loosen the screws (4).
- 5. Slide the rewind guide plate (3) to the right and remove it.
- 6. Place the tear-off plate (5) on the screws (4) and tighten these screws.



Fig. 5 Mounting the Cutter and the Cutter Tray 4

If you want to operate the cutter without the cutter tray you can skip to step #11. For using the optional cutter tray, the tray must be mounted before the cutter:

- 7. Loosen the screws (4).
- 8. Place the cutter tray (12) on the screws (4) in front of the tear-off plate or the dispense plate and slide it to the left until it stops.
- 9. Tighten the screws (4).

10. The length of the cutter tray (12) may be modified by moving the slide (13).

Installing the cutter assembly:

11. Insert the pins (7) of the cutter (11) into the holes (8) of the printer. Press the cutter against the printer. That way the plug of the cutter will be connected to the peripheral port (9) of the printer.

12. Secure the cutter (11) with the screw (10).

## **Printer Configuration**

Once the cutter is connected to the printer, the printer will automatically recognize it on turn on. Once the cutter is recognized, the printer can be operated in cut mode. The printer can be configured to suit the individual requirements of cut mode in the "Setup" menu. When the cutter is installed, the "Cutter" menu will appear.

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#### NOTICE!

Pay attention to the detailed instructions for configuration in the Printer's Operator Manual.

1. For setting the cutter parameters select "Setup" -> "Machine param." -> "Cutter".

[	Setup			
Machine param.   Parameter Meaning   X Cutter				
		Meaning	Selection	
	Cut position	Offset of the cut position relative to the rear label edge Default : <b>0,0 mm</b>	+9,9  -9,9	

#### Table 4 Cutter Parameters

2. Under "Setup" -> "Print parameters" the method for recognizing the start of label and the method of backfeed when using cut mode can be selected.

	t Setup			
Print parameters				
Parameter		Meaning	Selection	
Label sensor		Method of label sensing Default : <b>Gap sensor</b>	Gap sensor Bottom reflect Endless media	
	Backfeed	Method of backfeed when using the dispense mode or the cut mode Default : <b>smart</b>	smart always	

#### Table 5 Parameters "Label sensor" and "Backfeed"

#### **Cut Position**

The "Cut position" parameter allows to adjust the distance between the cut position and the rear edge of the label. Cut position with the initial offset value of "0" causes to cut in the middle of the gap between two labels. If the real cut position deviates from the middle of the gap, the amount of the cut offset can be altered in the range from -9.9mm to +9.9mm. If the cut position value is positive, the media will be advanced before it is cut, that means the distance between the cut edge and the rear edge of the label increases.

The setting should be made when first operating the printer and cutter, or when changes that will effect all print jobs sent to the printer.

#### NOTICE!

Changes to individual print jobs can be accomplished by changing the software settings.

The offset values from "Cut position" and from software are added together for execution. The software value does not replace the "Cut position" value, but temporariliy adjusts it for the current print job.

#### Label Sensor

For recognizing the start of label the printer offers besides the two standard methods (Gap sensor / Bottom reflect) the setting "Endless media". This setting should be used when operating with continuous material in cut mode. That way it is possible to realize the movement forward and the cut after loading the media and then pressing the [FEED] key (see section "Modes of Operation").

#### Backfeed

In cut mode, the media will be stopped in a position where the leading edge of the following label has already been moved beyond the printhead. The printer can backfeed the label material from its cut position to the printhead. Therefore, the next label can be printed completely.

A backfeed will always be performed if the parameter is set to "always". If the setting is set to "smart", the backfeed will only be performed if the front label is in its cut position and the printer has not yet received all of the data for printing the following label. Otherwise, the print of the second label will be started, but it will only be completed after the first label has been cut.

#### Media Loading

Load the transfer ribbon as described in the Printer's Operators Manual. Load the label media for cut mode similar to the way it would be loaded for tear-off mode.

Place the media strip between the printhead and the drive roller, so that the beginning of the strip reaches into the cutter.

### **Modes of Operation**

The printer is ready for operation when all connections have been made and all materials are loaded correctly.

After loading the media it is necessary to locate top of form by pressing the FEED key. The media will be moved forward and then cut.



#### NOTICE!

To operate the cutter with continuous material configure the printer under "Setup" -> "Print parameters" -> "Label sensor", the setting "Endless media" has to be selected. Otherwise no cut is carried out.

For A-series printers locating the top of form is not necessary when the printhead was not opened between print jobs. Even if the printer was powered off between print jobs.



#### NOTICE!

To operate the cutter the cut mode must be activated in the software! For direct programming use the C-command ( see Programming Manual)!

Once the cutter is mounted on the printer and is ready for operation, the printer can be used in cut mode.

All labels in a print job will be printed without stopping and be cut as chosen in the software: after each label, after a specific quantity of labels, or at the end of a print job.

## Cleaning



#### WARNING!

Before starting any maintenance, turn the printer OFF and disconnect the printer from the electrical outlet!

During the normal operation of the cutter, particles of dust and paper can accumulate inside the cutter. Remove these particles with a soft brush or a vacuum.

When cutting through the label material instead of the label gap remains of adhesive may accumulate on the blades.

If operating in backfeed mode, such remains of adhesive may be deposited on the drive roller as well.

Therefore both, the drive roller and the cutter blades, must be cleaned often.



#### CAUTION! Risk of injury! The cutter blades are sharp!



Bild 6 Cleaning the Cutter

- 1. Loosen the screw (1) and remove the cutter from the printer.
- 2. For cleaning the drive roller open the print head and remove the media from the printer.
- 3. For cleaning the circular blade you can turn the axle (3) with a screwdriver for slotted head screws ( slot width 7mm).



#### NOTICE!

With the screw (2) the rotation angle of the circular blade is limited to  $120^{\circ}$ . If you could not remove all pollutions from the circular blade you can loosen the screw (2) about 5 mm from the profile to turn the axle (3) 360°.

4. Remove all deposits both at the drive roller and the cutter blades with isopropyl alcohol and a soft cloth.



#### CAUTION!

When you have loosen the screw (2) the circular blade has to be repositioned after cleaning as described in chapter "Justify the Circular Blade and the Clock Wheel".

## **Changing the Blades**

- 1. Turn the printer off and demount the cutter from the printer.
- 2. Turn the axle (3) of the circular blade (2) with a screwdriver for slotted head screws ( slot width 7mm) so that the inscription (1) of the blade points downward.

In this position the set screw (4) on the "gear-wheel circular blade" can be achieved from the rear of the cutter.

Loosen this set screw (4) a few turns.



#### Fig. 9 Loosen the Screw Set

3. Hang out the spring (13) on the bearing plate (15) and the linear blade (11).

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#### NOTICE!

Attend on the washers (A, B, C) for the circular blade (2) and the linear blade (11) when you demount the bearing plate. The washers could get lost because of theire smallness.



#### CAUTION!

Always keep the linear knife with one hand (11) in its position and push its axle slightly to the mounting plate (9) of the cutter, because the spring (6) is tense.

- 4. Unscrew the screws (8) and remove the bearing plate (15) sideways.
- Take the circular blade (2) out of its bearing (5). Now you can slacken the spring (6) of the linear blade.

If you don't want to change the linear blade you can skip to #9.

- 6. Take the spring (6) and the linear blade (11) from the mounting plate (9).
- Insert the axle of the (new) linear blade withe the washer (B) in the bearing (10) of the mounting plate. (The inscription of the linear blade has to point onwards.)
- 8. Hang the spring (6) without tense on the pins of the mounting plate (9) and the linear blade (11).



## Justify the Circular Blade and the Clock Wheel

To operate the cutter correctly after cleaning or after changing the blades you have to justify the circular blade (1) and the clock wheel (2) to another.

In other words you have to justify the axle of the circular knife (A) to the axle of the clock wheel (B).

On both axles you can find a planar area (**A**, **B**). These areas have to be parallel and have to point in the same direction.



#### Fig. 7 Position of the Axles of the Circular Blade and the Clock Wheel

- 1. Turn the printer off and demount the cutter.
- 2. Unscrew the cover (4) by loosening the screws (3), (5) and (9) ( rear).
- 3. Loosen the screw (8) about 5 mm from the profile of the cutter.
- 4. Turn the axle (7) of the circular blade with a screwdriver for slotted head screws (slot width 7mm) so that the inscription (4) of the blade points downward. Now or after one or two more full turns of the circular blade the axles (1, 2) are justified and the areas (A, B) both are pointing to the rear of the cutter.
- 6. Tighten the screw (8) for arresting the circular blade.

#### CAUTION!

If you tight screw (8) too strong, you could damage the screw thread.







## **EU - Conformity Declaration**

We declare herewith that as a result of the manner in which the machine designated below was designed, the type of construction and the machines which, as a result have been brought on to the general market comply with the relevant fundamental regulations of the EU Rules for Safety and Health. In the event of any alteration which has not been approved by us being made to any machine as designated below, this statement shall thereby be made invalid.

Description:	Type:
Cutter	CU 4
	CU 6
	CU 8

Applied EU Regulations and Norms:

-	EC Machinery Regulations	98/37/EU
-	Machine Safety	EN 292-2:1991+A1:1995

-	EC	Low	Voltage	Regulations
-	EU	LOW	voitage	Regulations

- Data and Office Machine Safety

- EC Electromagnetic Compatibility Regulations 89/336/EEC

- Threshold values for the Interference of Data Machines

EN 60950-1:2001 **89/336/EEC** EN 55022:1998

73/23/EEC

This declaration is valid only when the cutter is used together with printers of the A- or M-series. Manufacturer: cab - Karlsruhe.

Signed for, and on behalf of, the Manufacturer :

cab Produkttechnik Sömmerda Gesellschaft für Computerund Automationsbausteine mbH 99610 Sömmerda

Sömmerda, 26.01.04

Carlie on the Sor-

Erwin Fascher Managing Director



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All specifications about delivery, design, performance and weight are given to the best of our current knowledge and are subject to change without prior notice.