Instructions



Perforation Cutter
# PSQ 403

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## 1.1 Instructions

Important information and instructions in this documentation are designated as follows:

**Danger!**
**Draws attention to an exceptionally great, imminent danger to your health or life due to hazardous voltages.**

**Danger!**
**Draws attention to a danger with high risk which, if not avoided, may result in death or serious injury.**

**Warning!**
**Draws attention to a danger with medium risk which, if not avoided, may result in death or serious injury.**

**Caution!**
**Draws attention to a danger with low risk which, if not avoided, may result in minor or moderate injury.**

**Attention!**
**Draws attention to possible dangers, material damage or loss of quality.**

**Note!**
**Gives you tips. They make a working sequence easier or draw attention to important working processes.**

Environment!
Gives you tips on protecting the environment.

▶     Handling instruction

▷     Reference to section, position, illustration number or document.

∗     Option (accessories, peripheral equipment, special fittings).

*Time*     Information in the display.

## 1.2 Intended Use

- The device is intended exclusively as an option for the printers of the SQUIX and XD Q series for cutting and perforating suitable materials. Any other use or use going beyond this shall be regarded as improper use. The manufacturer/supplier shall not be liable for damage resulting from unauthorized use; the user shall bear the risk alone.

- Usage for the intended purpose also includes complying with that manual.

- The device is manufactured in accordance with the current technological status and the recognized safety rules. However, danger to the life and limb of the user or third parties and/or damage to the device and other tangible assets can arise during use.

- The device may only be used for its intended purpose and if it is in perfect working order, and it must be used with regard to safety and dangers as stated in that manual.

**! Attention!**
**For using the cutter the printer firmware version 5.38 or higher is needed.**

**ℹ Note!**
**All documentations can also currently be found in the Internet.**

**⚠ Warning!**
**This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

## 1.3    Safety Instructions

- Disconnect the printer from the electrical outlet before mounting or removing the cutter.
- The cutter may only be operated when it is mounted on the printer.
- Risk of injury, particularly during maintenance, the cutter blades are sharp.
- Work going beyond this may only be performed by trained personnel or service technicians.
- Unauthorized interference with electronic modules or their software can cause malfunctions. Other unauthorized work on or modifications to the device can also endanger operational safety.
- Always have service work done in a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.
- Warning stickers must not be removed, as then you and other people cannot be aware of dangers and may be injured.

## 1.4    Environment

Obsolete devices contain valuable recyclable materials that should be sent for recycling.

▶ Send to suitable collection points, separately from residual waste.

The modular construction of the device enables it to be easily disassembled into its component parts.

▶ Send the parts for recycling.

▶ Take the electronic circuit boards to public waste disposal centers or to the distributor.

## 1.5 Technical Data

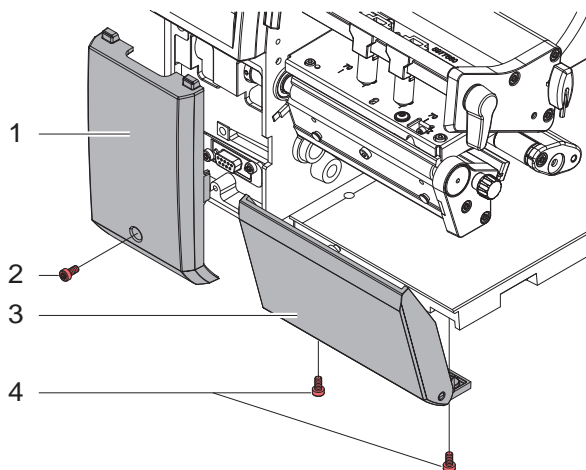|  |  |  | Perforation Cutter |
|---|---|---|---|
| **Technical Data** |  |  | **PSQ 403** |
| **for printer type** |  |  | SQUIX 4M, SQUIX 4.3M XD Q4, XD Q4.2 |
| **Perforating** | **Perforation distance** | mm | 2,5 |
|  | **Perforation width** | mm | 0,4 |
| **Material** | **Width** | up to mm | 116 |
|  | **Weight cardboard** | up to g/m² | 300 |
|  | **Thickness** | up to mm | 1,5 |
| **Cutting length** |  | from mm | 10 |
| **Gap height** |  | up to mm | 2,0 |
| **Cut frequency** cuts/min. with material height 1 mm, without backfeed |  |  | 200 |
| **Monitoring** |  |  | End position of the blade not reached Blade cover removed |

> **!** **Attention!**
> **The minimum cut length is depending on the media, in particular its adhesive characteristics.**
>
> ► **Perform preliminary tests. Test the media too, if the media is very hard, very flexible or very thin.**

## 2.1 Removing Covers



▶ Loosen screw (2) and remove cover (1).
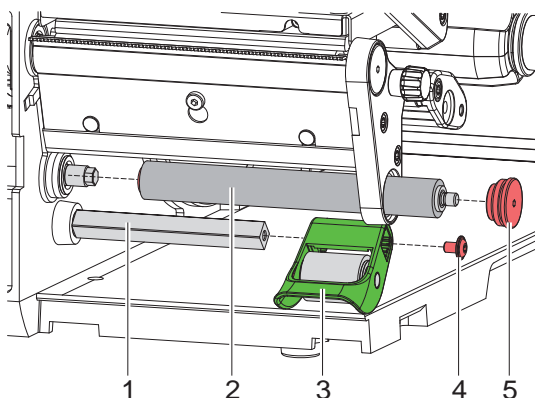▶ Loosen screws (4) and remove cover (3).

> **!** **Attention!**
> **For cutter operation 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.**

## 2.2    Preparing a P Version Printer

> **!  Attention!**
> **In order to operate a PSQ cutter with a P version SQUIX printer,**
> **the locking system (3) and the roller (2) must be removed from the**
> **printer.**



1      2      3           4   5

- ▶ Swing down the locking system (3)
- ▶ Loosen screw (4).
- ▶ Remove the locking system (3) from the axle (1) .

> **⚠  Warning!**
> **Do not reach between the roller (2) and the axle (1).**
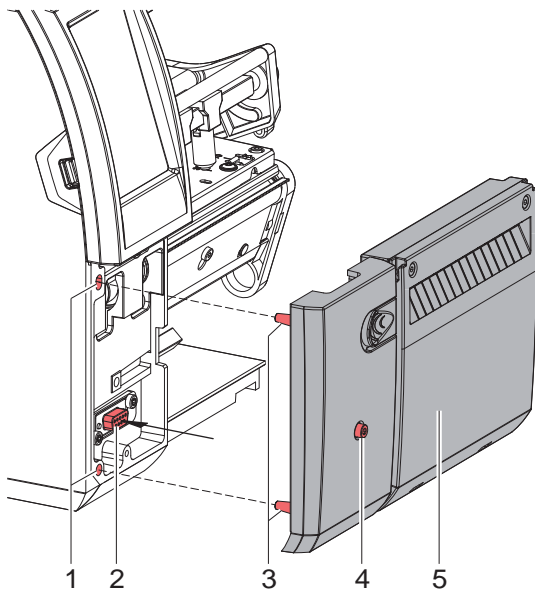> **The axle (1) is tensioned by spring force and can turn.**

- ▶ Unscrew the roller bearing (5)..
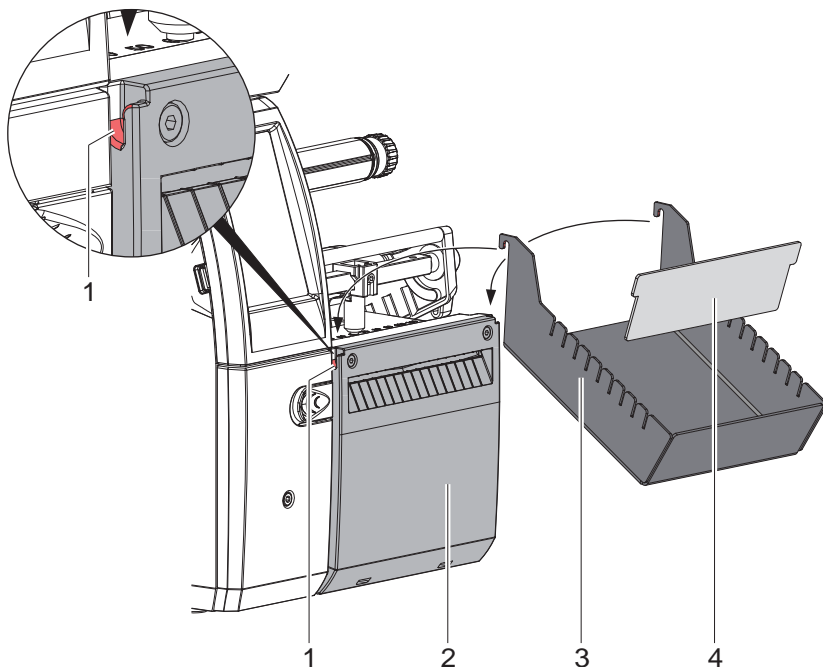- ▶ Pull out the roller (2).

## 2.3    Mounting Cutter

!    **Attention!**
►    **Disconnect the printer from the electrical outlet before mounting or removing the cutter.**



1    2            3         4         5

► Insert the pins (3) of the cutter (5) into the holes (1) of the printer.
► Press the cutter against the printer. That way the plug of the cutter will be connected to the peripheral port (2) of the printer.
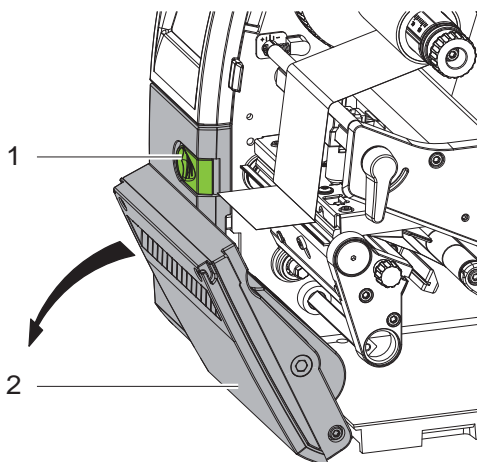► Secure the cutter (5) with the screw (4).

## 2.4    Mounting Cutter Tray



- ▶ Hook the cutter tray box (3) with the fixing brackets into the recesses (1) on the mounted cutter (2).
- ▶ Slide the divider (4) according to the label height into the corresponding groove in the cutter tray box. This ensures a correct stacking of the cut labels.

## 3.1    Preparation

▶ Slide lever (1) to the left and fold down the cutter unit (2).



▶ Insert labels for tear-off mode ▷ Instructions of the printer.
Place the media strip between the printhead and the drive roller, so that the front edge of the strip reaches through the cutter.

▶ Insert ribbon ▷ Instructions of the printer.

▶ Fold up and lock the cutter unit (2).

▶ Activate the commands for perforation or cut-off in the software.
For direct programming use the following commands:

**C p**    Perforation command
**C**      Cut-off command
Both commands may be combined, but C p has a lower priority.
▷ Programming Manual

Using the sequence :
C 3
C p
the material will be perforated two times and afterwards cut off.

▶ Configure the cut parameters  ▷ 4. Printer Configuration

ℹ **Note!**
**The cut parameters are only accessible with cutter installed.**

!    **Attention!**
     **In several label software solutions the perforation command C p**
     **is not implemented. Perforating material via such a software is not**
     **possible.**

▶ Adapt the perforation level to the media.
  For direct programming use the following command :

  **O Cn**   n...Value between 0.0 and 10.0

ℹ    **Note!**
     **If the label software has no setting for the perforation level,**
     **i.e. O Cn is not implemented, the adjustment also may be done**
     **using the printer setup ▷ 4. Printer Configuration.**

## 3.2 Standard Operation

▶ Switch on the printer.
The cutter performs a synchronization.

ⓘ **Note!**

▶ **To operate the cutter with continuous material in the printer menu**
*Setup* **->** *Labels* **->** *Label sensor* **select the setting** *Continuous media.*

**Otherwise no synchronization cut can be carried out.**

▶ Press [↓] . For synchronization the media will be moved forward and
cut off.
That synchronization is not necessary when the printhead was not opened
between print jobs, even if the printer was powered off between print jobs.

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

ⓘ **Note!**
**Between the print jobs a direct cut can be released by pressing**
**[✂] on the control panel.**

ⓘ **Note!**
**In case the material do adhere in follow of electrostatic charge it's**
**possible to mount an antistatic brush (Part No. 5977339) on the**
**printer.**

ℹ **Note!**
**The values of the setup are basic settings for the current printer/cutter combination.**
**After changing the cutter or printer a re-adjustment may be necessary.**

**Changes required for processing different print jobs should be implemented by additional offsets available in the software.**

**The offset values from setup and software are added together for execution.**

**For detailed instructions for configuration**
▷ **Configuration Manual of the printer.**

**Cut Parameters**

▶ Start menu.

▶ Select 🔧 *Setup >* ✂ *Cutting.*

| | Parameter | Meaning | Default |
|---|---|---|---|
| ℹ | *Device info* | Information to the device: Software version, counts of cuts and errors | |
| ⊕ | *Calibrate device* | Calibration of the lower blade end position. ▷ „5.4 Calibrating the cutter"" | |
| ✂ | *Cut position* | Offset of the cut position relative to the rear label edge. The setting can also be adjusted by the software. The settings of configuration and software are added together. | *0,0 mm* |
| ⊞ | *Perforation depth* | Setting of the perforation depth. The setting can also be adjusted by the software. The settings of configuration and software are added together. | *0* |

**Label Sensor**

> ▶ Start menu.

> ▶ Select 🔧 *Setup >* 📇 *Labels.*

| Parameter | Meaning | Default |
|---|---|---|
| 🔲 *Label sensor* | Method for detecting the starting end of the label. | *Gap sensor* |
| | *Gap Sensor*: Detection using changes in the transparency between the label and label gap. | |
| | *Bottom-Reflect*: Detection using reflex marks on the bottom of the medium. | |
| | *Continuous media*: Checking the existence of media only. | |

**Backfeed**

> ▶ Start menu.

> ▶ Select 🔧 *Setup >* 🖨 *Printing.*

| Parameter | Meaning | Default |
|---|---|---|
| 🔲 *Backfeed* | Method for backfeeding the label medium. | *smart* |
| | Backfeeding is necessary in the cutting and peel-off modes since a label is pushed out passed the front edge of the next label above the print line when peeling off/cutting. | |
| | *always*: Backfeeding occurs independently of label contents. | |
| | *smart*: Backfeeding only occurs when the next label is not yet completely prepared when peeling off/cutting the current label. Otherwise, the second label is pushed on and completed after removal of the first label without backfeeding. | |

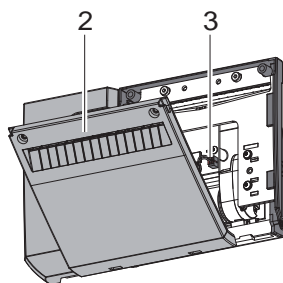## 5.1 Removing the Blades for Cleaning and Replacement
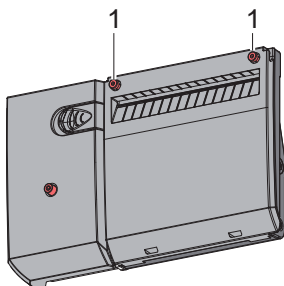
⚠️ **Warning!**
▶ **Disconnect the printer from the electrical outlet.**
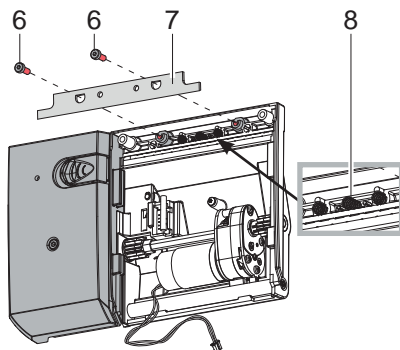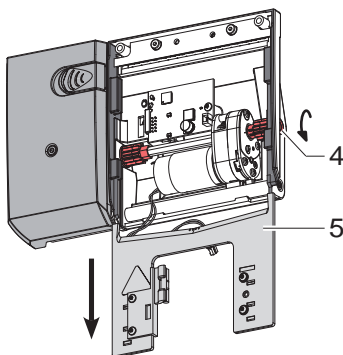
⚠️ **Caution!**
**Risk of injury.  The cutter blades are sharp.**

To clean the blades, they must be removed.

1. Disassemble the cutter from the printer.



2. Loosen screws (1) and remove cover (2) towards the front.
3. Pull the plug (3) of the motor cable out of the socket.



4. Turn the axle (4) counterclockwise using a 2.5mm hex wrench. The lower blade (5) is moved down until it can be pulled out.
5. Loosen screws (6). Hold tight the upper blade (7) because the springs (8) press against the upper blade (7).
6. Remove the upper blade (7) and make sure that the springs (8) do not fall out.

## 5.2 Lubricating the Blades

ℹ **Note!**
**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.**

▶ **Clean often the drive roller (▷ Printer Instructions) and the cutter blades.**

For a perfect function of the cutter, it is necessary to grease the blades and guides at selected areas after each cleaning and before installing new blades.
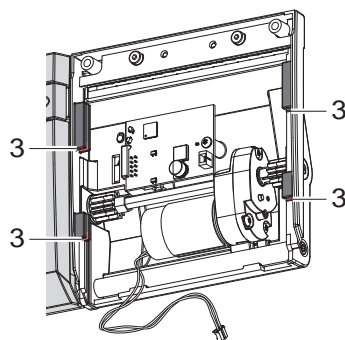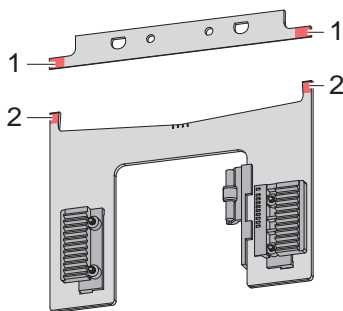
▶ Lubricate the marked areas at the front side (1) of the upper blade and the rear side (2) of the lower blade as well as the guides (3).
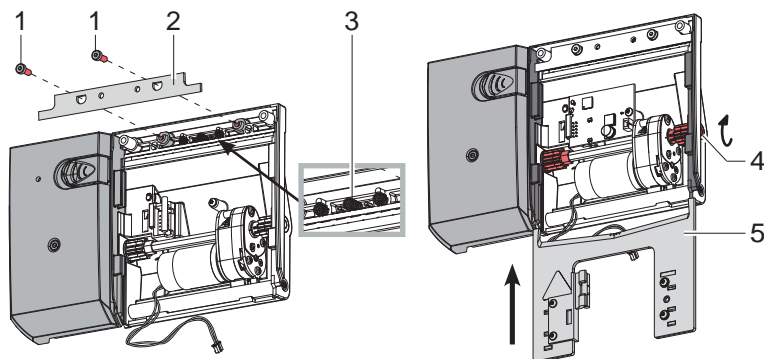
⚠ **Attention!**
**Use only such a grease to lubricate the blades and the guiding surfaces which is suitable for metal and plastics.**
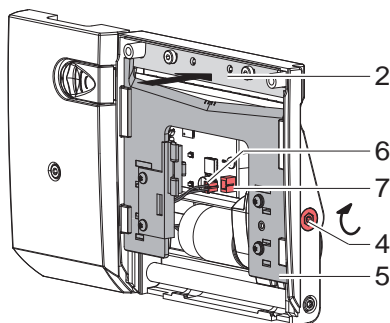**cab Part No.: 5984552.001**

## 5.3    Reassembling the blades

The assembly of the cleaned or new blades and the assembly of the cutter is carried out in the reverse order of disassembly.



1.  Put the upper blade(2) on to the holders and make sure that the springs (3) are not be bent and remain in the guides.
2.  Fix the upper blade (2) with the screws (1).
3.  Push the lower blade (5) in the guides upward until the toothed rail on the upper blade (5) pushes against the gear wheels on the axle (4).
    Then turn the axle (4) clockwise with a 2.5 mm hex wrench and move the lower blade (5) near to the upper blade (2).



4.  Press the upper blade (2) inwards and slide the lower blade (5) over the upper blade (2) by turning the axle (4) clockwise to the top.
5.  Insert the plug (6) of the motor cable into the socket (7).
6.  Mount the cover and attach the cutter to the printer.

After turning on the printer, the lower blade position will be synchronized.

## 5.4 Calibrating the Cutter

> **!** **Attention!**
> **After every blade cleaning or replacement, the cutter must be calibrated!**

▶ Remove label material.

▶ Start menu.

▶ Select 🔘 *Setup >* ✂️ *Cutting >* ⊕ *Calibrate device.*

▶ Press *Continue* to start the calibration process.
After a cutter movement the display shows *Device successfully calibrated*.
If the calibration failed an error message will appear.

▶ Select *Continue*.

| Error message | Cause | Remedy |
|---|---|---|
| *Cutter blocked* | The media cannot be cut and the blades cannot return in the home position. | ▶ Switch off the printer.<br>▶ Remove trapped material.<br>▶ Switch on the printer.<br>▶ New start of the print job. Change material. |
| | Cutter is without function. | ▶ Switch off and on the printer.<br>▶ If it does occur again, contact service. |
| *Cutter cover open* | Cover of cutter is not mounted. | ▶ Mount the cover |
| *Device too hot* | Temperature of the cutter is not in the allowed range. | ▶ Let cool down the cutter. |
| *Media too thick* | The media cannot be cut but the blades can return in the home position. | ▶ Press *Cancel* .<br>▶ Change material. |

| Warning message | Cause | Remedy |
|---|---|---|
| *Blades dirty or worn out* | Cleaning or blade-re-placing necessary. | ▶ Clean the blades.<br>▶ Change the blades. |

Warning messages can be acknowledged with *Continue* and the printing and cutting process will be continued.

## 7.1    Reference to the EU Declaration of Conformity

The cutters of the PSQ series comply with the relevant fundamental regulations of the EU Rules for Safety and Health:

• Directive 2014/30/EU relating to electromagnetic compatibility
• Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

**EU Declaration of Conformity**

▷ https://www.cab.de/media/pushfile.cfm?file=3954

## 7.2    FCC

**NOTE : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user may be required to correct the interference at his own expense.**