General Service

Housing

Important notes

The housing may only be opened by authorised trained personnel!

CAUTION

Neutral fusing!

Electric shock hazard.

➜ Before opening the housing, switch off the device and pull out the mains plug.

Front hood

Disassembling/assembly

➔ The front hood (3) can be removed by unscrewing the hinge screws (5) (2x 2 Phillips screws).

The front plastic hood (2) (top right) remains fixed to the metal hood.

Tool

– Phillips size 1

Rear hood

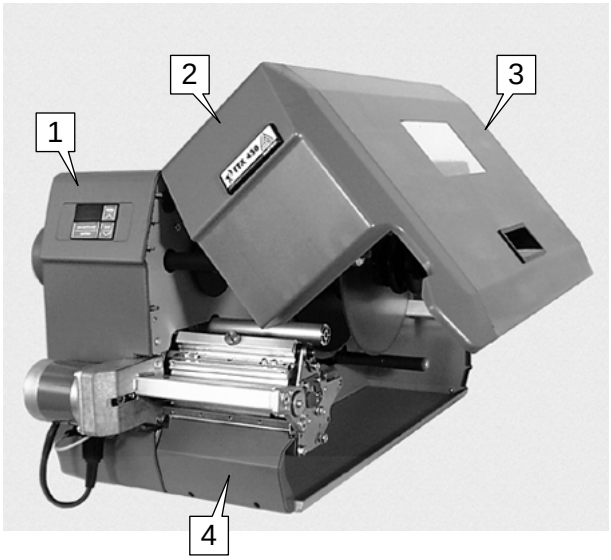
Disassembling/assembly

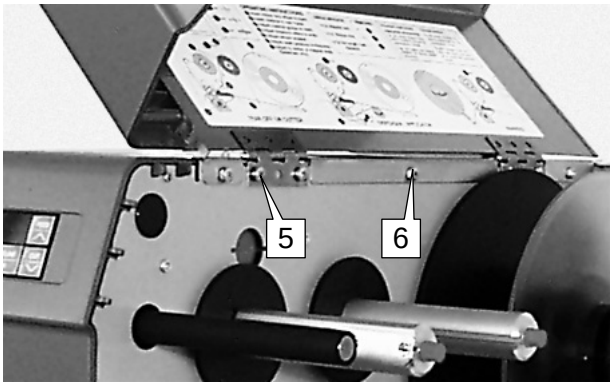
➔ The rear hood (7) can be removed by unscrewing the 6 Phillips screws (6).

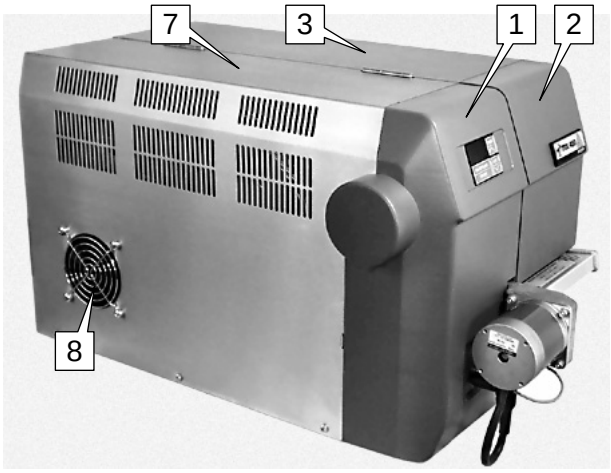
The fan (8) remains fixed to the hood! The connection is disconnected by unplugging it from the I/O board.

Tool

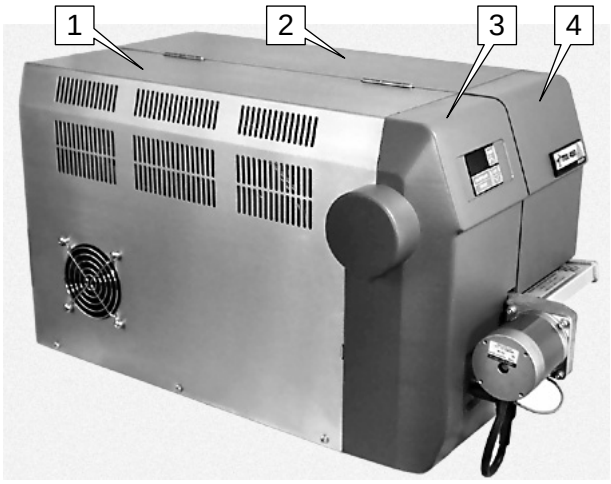
– Phillips size 1







Front hoods

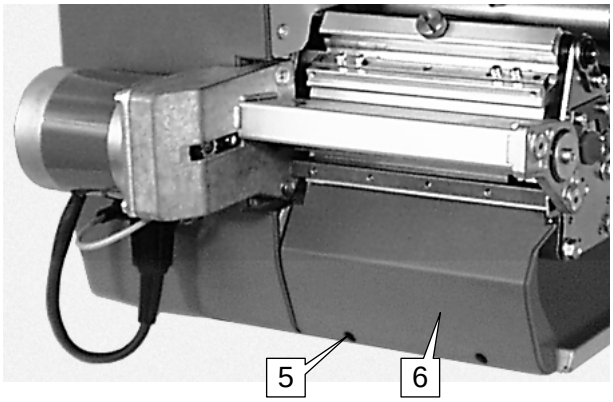


➔ The **top right** front hood (4) (plastic) is fixed to the front hood (2) (metal) and can be removed by unscrewing the 6 Phillips screws.

➔ The **bottom right** front hood (6) (plastic) is fixed to the base pan by 2 Allen key screws (5) and can be removed.

➔ The **left** front hood (3) (plastic) is fixed to the partition by 3 Phillips screws and can be removed.

One of the screws can only be accessed from below (pull the printer forwards to the edge of the table).



Tool

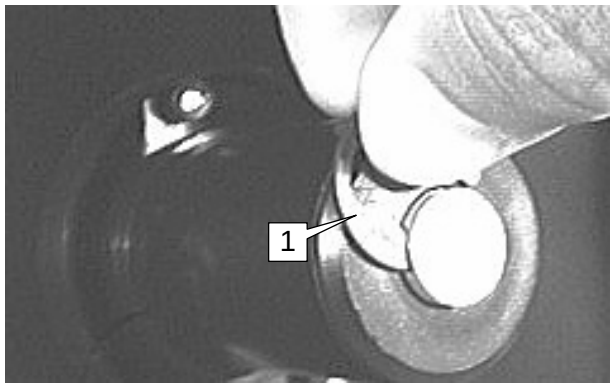
– Phillips size 1

Material unwinder

General

The material unwinder comprises the unwinder and the bouncer arm. The bouncer arm is for counteracting jolting material movements, which can be caused by sudden acceleration or braking.

The unwinder itself is braked and is fitted with varying core diameters.

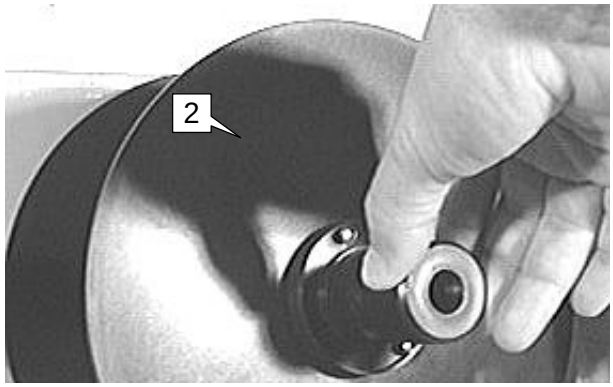


Unwinding

Disassembling/assembly

1. Remove the retaining ring (1).
2. Pull off the entire unwinding core (2).

➔ During assembly:
Check for easy movement and inspect the braking system (if necessary grease the unwinding axle).



Tool

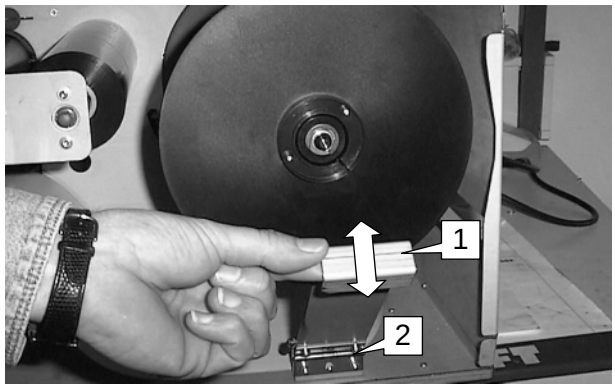
– Screwdriver

⇛ On the TTX1050/S105/XXL the material unwinder is fitted with a brace element.

Material unwinder bracing

(only TTX1050/S105/XXL)

The bracing is for keeping the weight of the material roll in the top range under control, thereby ensuring rotation.



Disassembling/assembly

1. Press down the bracing (1) to relieve the strain on the screw joint (2).
2. Open the screws (2).
3. Remove the bracing (1).

Adjusting the unwinders brake torque

Tools

- Spring balance 5 N (1)
- Reel with wound-up textile ribbon (Ø 76 mm or 3") (2)

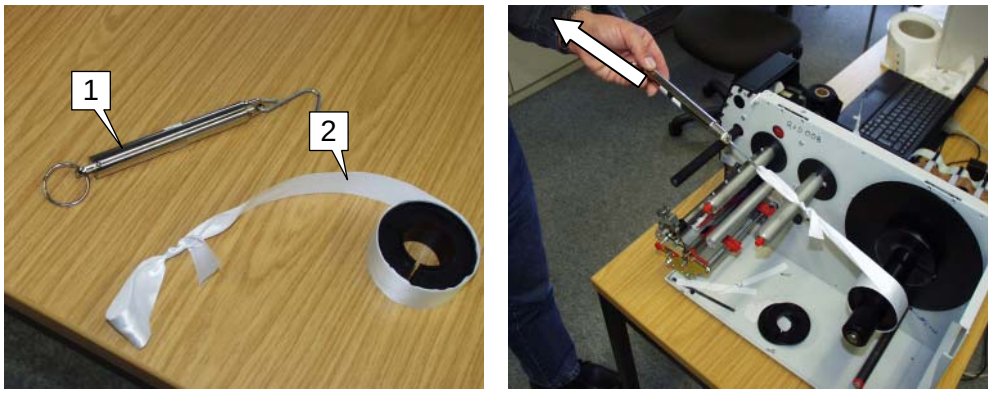


Fig. 1 Left side: Aid for adjusting the brake torque: Reel with textile ribbon (2) and spring balance (1). Right side: Measuring the pulling force.

Adjusting

1. Attach the reel to the unwind mandrel.
2. Hang the spring balance to to the sleeve of the textile ribbon.
3. Slowly unwind the textile ribbon by pulling it. Read the pulling force at the spring balance, while you are pulling (see Fig. 1 right side).
4. Compare the measured pulling force to the required values:

⇛ Admissible pulling force: 0.6 – 1.5 N

5. If the measured value exceeds the admissible range, the unwinder has to be disassembled and the included brake sponge to be exchanged.

⇛ It may be necessary to insert additional brake sponges to reach the required pulling force.

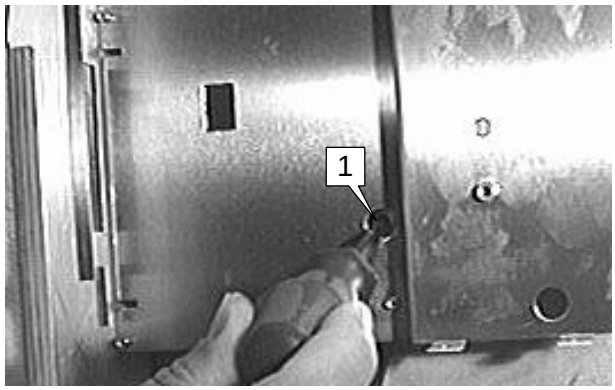
❍ See chapter **Fehler! Verweisquelle konnte nicht gefunden werden.** on page **Fehler! Textmarke nicht definiert.**.

Tension arm TTX x50

Disassembling/assembly

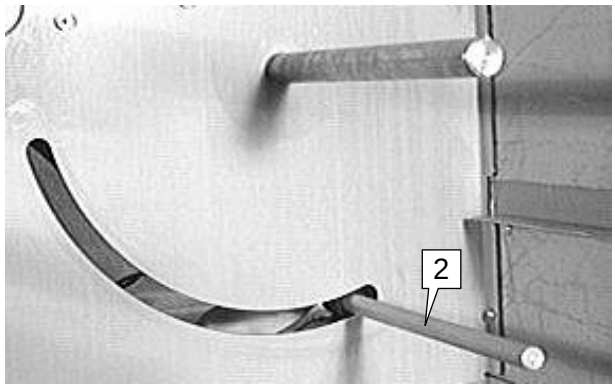
1. Unhitch the tension arm spring
2. Unscrew the central mounting (1) (Allen key screws), accessible through the board base.
3. Remove the unwinding axle by pulling it towards you.
4. Remove the inner part of the bouncer arm (2).

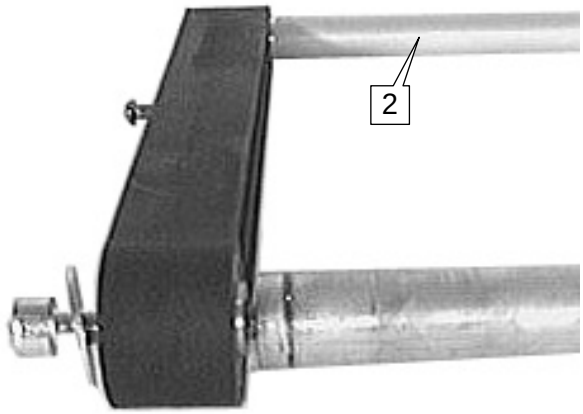
➔ During assembly:
Check the free movement of the bouncer arm.



Tool

– Allen key 6 mm
– Pliers

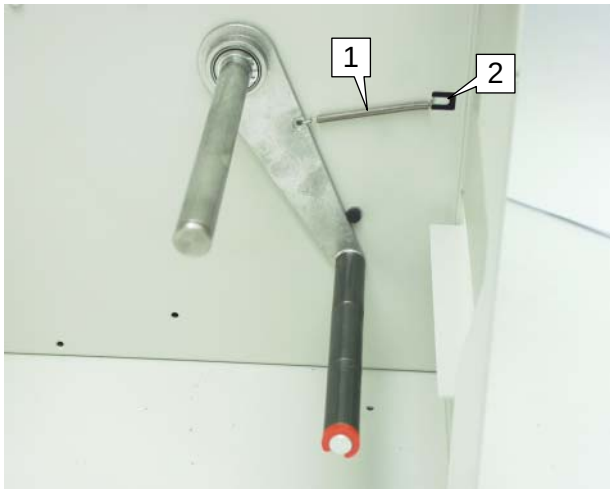




Tension arm TTX 67x

Design changes

Serial no. Date	Changed item
0663910 06/2006	Simple tension arm spring (type 1) was replaced by spring with rope drive and pulley (type 2). Rectangular self-adhesive stoppers were replaced by cylindrical screw-in stoppers.



Disassembling/assembly

Type 1:

1. Unhitch the spring (1) from the nose(2).

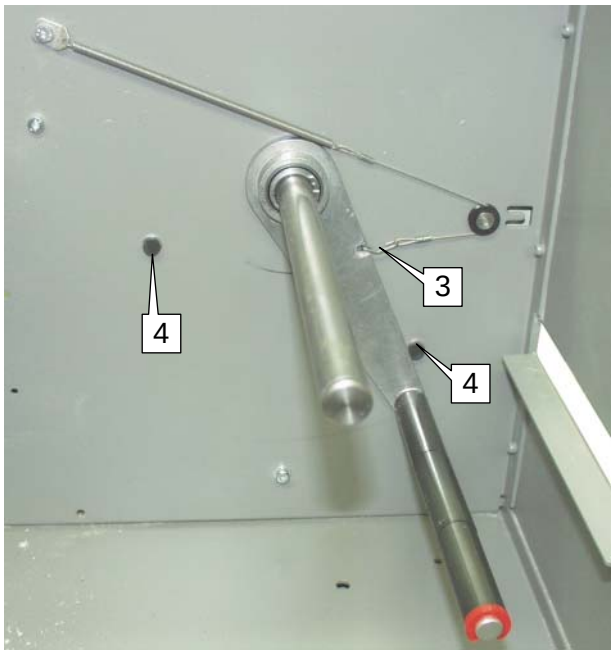
Type 2:

1. Unmount the wire hook (3).
2. Draw the tension arm (5) off the axle (6).

⇛ Lightly grease the axle to allow the firmly sitting tension arm to be moved more easily.

During assembly:

➔ Check the free movement of the tension arm.
The tension arm must move between the two strokes (4).



After removing the pulley:

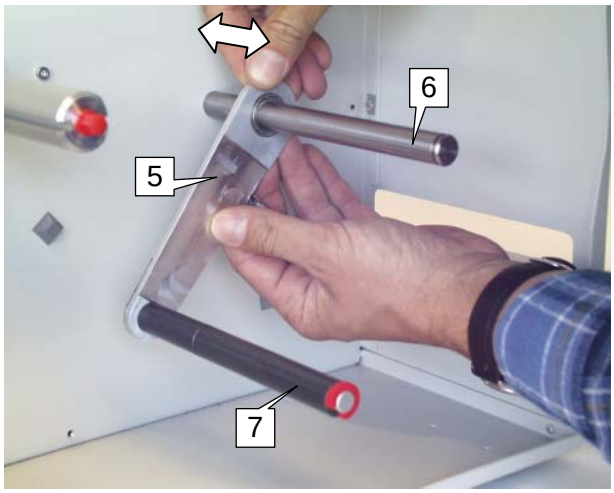
⇛ Tightening torque for fixing screw: 150 Ncm.

➔ Lock screw with locking varnish.

Bearing bushes

Disassembling/assembly

➔ First remove the clamping ring and then the three bearing bushes (7).



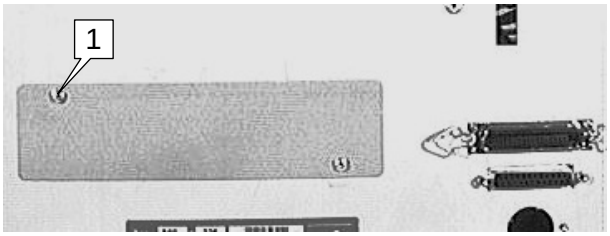
Fanfold inlet

The fanfold inlet is for feeding the printer with folded material (i.e. not paper rolls), which is guaranteed to be fed in correctly and adjusted from both sides.

Disassembling/assembly

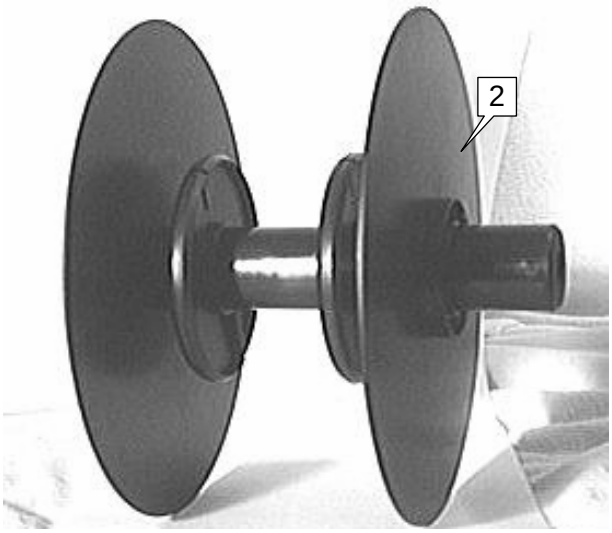
➔ The cover plate can be removed and the inlet exposed by unscrewing the two Phillips screws (1).

➔ When inserting fanfold material use the two discs of the material unwinder (2) to guide the material on the left and right.



Tool

– Phillips size 1



Connections and electrics

Important notes

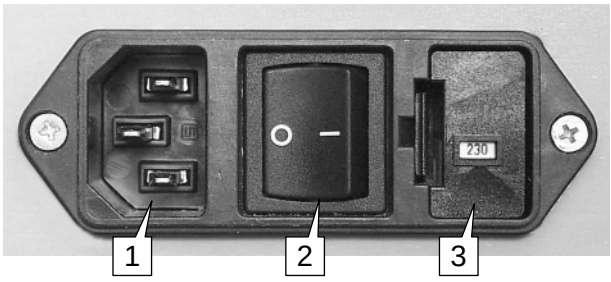
➠ The housing may only be opened by authorised trained personnel!

➠ Before opening the housing, switch off the device and pull out the mains plug! If this is not done, there is a danger of accidents due to dangerous contact voltage.

Mains cable connection

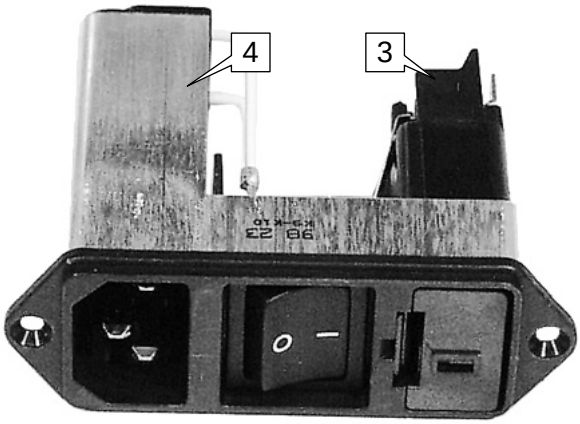
The device is connected to the mains power supply using a combination assembly consisting of

- a mains power socket (1),
- a voltage selector switch (3),
- a safety slot (3),
- a network filter (4), and
- a mains switch (2).



The voltage selector switch and safety slot form the drawer for safeguarding the device and switching over the operating voltage.

➠ The mains voltage and the voltage set at the voltage selector switch must be the same.

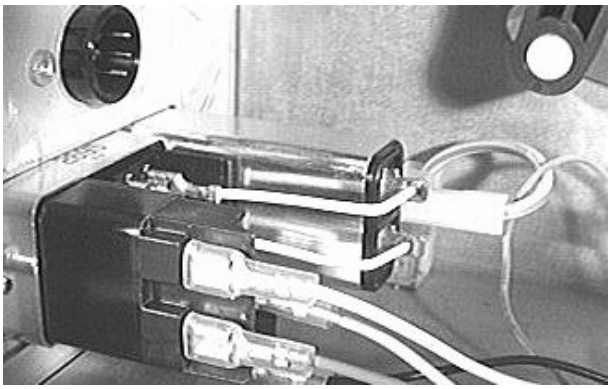


The network filter prevents glitches from penetrating the device or being fed into the mains power supply via the device (EMC).

Disassembling/assembly

1. Remove the mains cable
2. Unscrew the 2 Phillips screws on the back of the device.
3. Detach the connections to the transformer and the plug connector to the housing (safety earth conductor).

➔ The power supply unit can be extracted and replaced.



➠ Do not forget to replace the safety earth conductor and protective cap on to the power supply unit!

Fuses

Commercially available fuses are used to safeguard the device.

When changing the fuse, only use specified fuses. Incorrectly rated fuses can cause damage to the device.

- Mains fuse 115 V T8AH 250V
- Mains fuse 230 V T6.3AH 250V
- I/O board fuse F1 T10A
- I/O board fuse F2 T1A

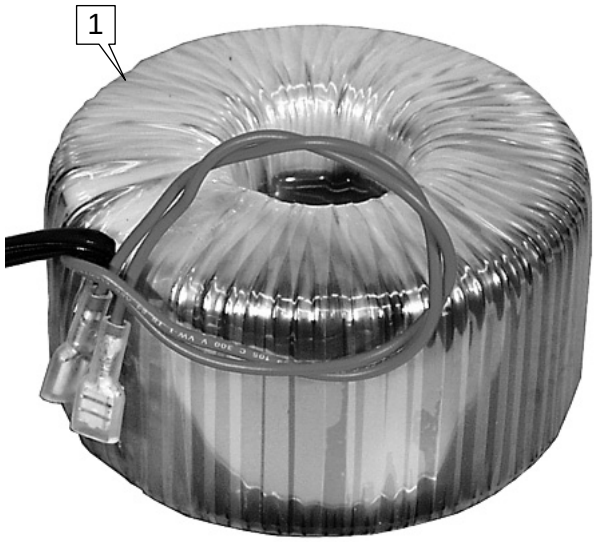
Transformer

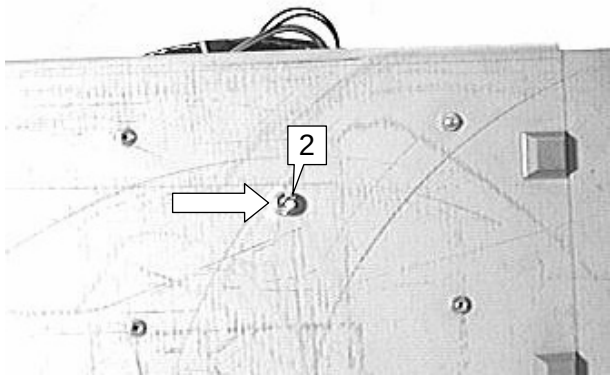
Disassembling/assembly

1. Open the rear hood.
2. Unplug the connector cables. These include the mains filter and board connections (see circuit diagrams for the terminal allocations).
3. Unscrew the fastening screw (2) in the base plate (1 Allen key screw).
4. If necessary, remove the transformer (1) and replace it with a new one.

Tool

- Allan key 5 mm





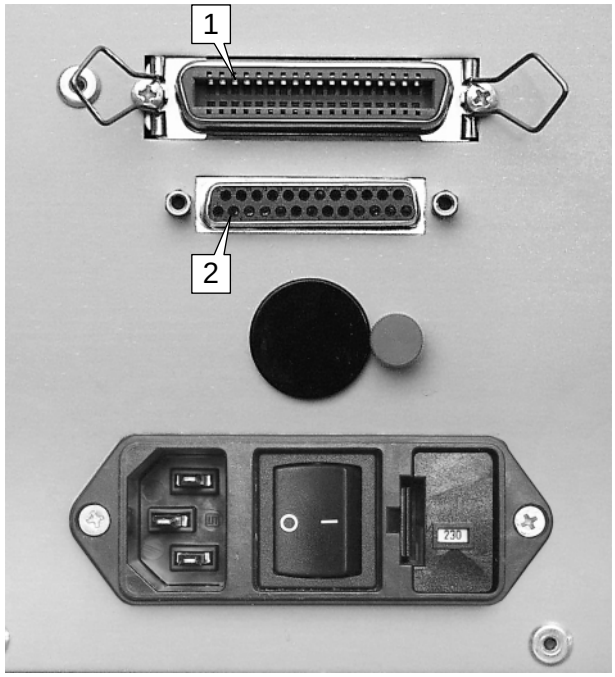
Interfaces

A parallel interface (Centronics) and a serial interface (RS232) are fitted as standard.

Disassembling/assembly

1. Detach the plug connector CN11 (3) and/or CN12 (4) on the CPU mainboard.
2. Unscrew the 2 hexagonal screws for the serial and/or parallel plugs.
3. If necessary, replace the parallel (1) and/or the serial cable (2) including the connections.

❍ For pin assignments refer to topic section "Interfaces".



Hood switch

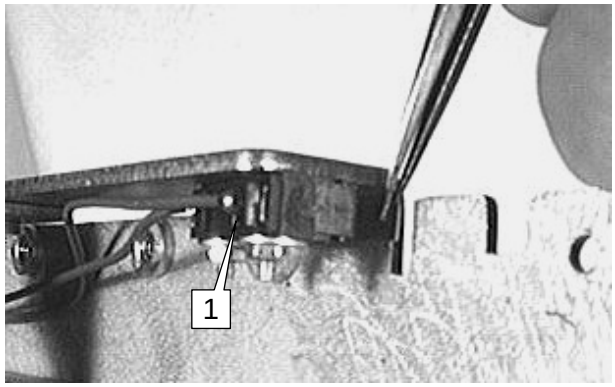
(not with TTX 67x/Wildcats plus)

Ensure the functional capability of the hood switch at all times!

The hood switch is a protective device and is for ensuring the safety of the operators. The valid safety regulations require that the device may only function when the hood is closed.

Disassembling/assembly

1. Unscrew the hood switch (1) on the base plate of the device with the two screws.
2. If necessary, replace the switch (1).



The layout of the hood switch varies according to the model.

Setting

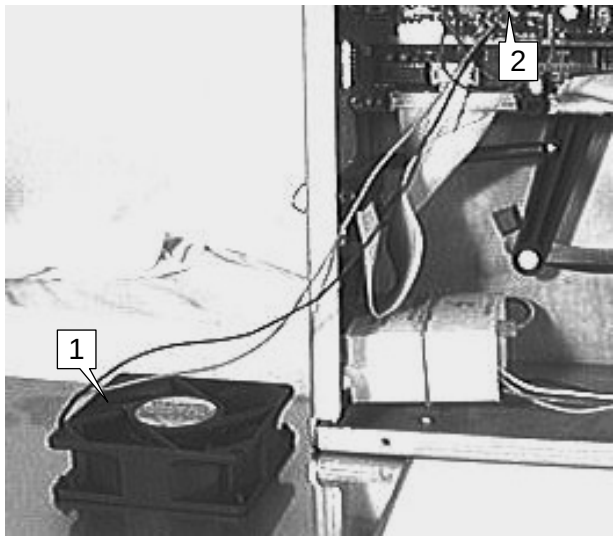
1. Check the function using the sensor check OTHR/SCHK parameter:
   hood closed display C0
   hood open display C15
2. If necessary, adjust the switch flag on the hood (if available).

Fan

A constantly running fan installed in the device allows it to be operated at high ambient temperatures.

Disassembling/assembly

1. Unscrew the Phillips screws which secure the fan (1) and the fan grid to the rear hood.
2. Detach the plug connector CN35 (2) on the I/O board.
3. The grid and fan can be replaced.



Sensors

Sensors record the status and readings of the device. The following sensors are – unless otherwise indicated as being optional - installed in TTX x50/Wildcat printers as standard.

Sensor	Function	Install location	Comment
Material end PS OTHR/SCHK/Mxx	material monitoring, stop at material end, protection of the thermo head	print module, interior material guide	replacement only complete with material guide
Gap PS OTHR/SCHK/Pxxx (transparent sensor)	label monitoring, detects gap or label end	print module, feed unit; in one housing with photoelectric reflex switch	adjustable from outside of housing
Gap PS, optional OTHR/SCHK/Rxxx (reflecting sensor)	label monitoring, detects label according to reflex principle	print module, feed unit; in one housing with transparency PS	adjustable from outside of housing
Head position PS OTHR/SCHK/Hxx	print head monitoring (raised/lowered) for ribbon automatic economy function	print module, oscillator disc raising mechanics	
Ribbon end PS OTHR/SCHK/Fxx	monitoring of ribbon movement, stop at movement fault	print module, oscillator disc of unwinding mandrel	
Cutter PS, optional OTHR/SCHK/Kxx	position monitoring of circular cutter, display if fault	cutter unit, plug-in signal cable to device	error also with cable fault
Hood switch* OTHR/SCHK/Cxx	monitoring of device hood, stop if hood open	switch on base plate of device, switch flag (adjustable) on hood	microswitch

Tab. 1 Overview of sensors contained in the TTX x50/67x.
**) Not with TTX 67x/Wildcats plus.*

All sensors can be checked to ensure that they are functioning correctly. In some cases they can be set to a certain value.

Further info

- A parameter overview of the sensors can be found in the chapter "Info Printouts and Parameters" (parameter OTHR/SCHK).
- An overview of the settings can be found in the chapter "Service Boards" (I/O Mainboard).
- Where the sensors are installed is dependent on the mechanics of the device. More detailed information about disassembling/assembly the device can be found in the Service description of the corresponding module.
- Sensors installed in optional modules are described in the manual of the corresponding option.

Boards

General information about the boards

➠ The housing may only be opened by authorised trained personnel!

➠ When dealing with electronic modules and components it must be ensured that static charging cannot endanger the electronics.

❍ Setting regulations and board layouts can be found in the separate section "Service Boards".

The following describes the disassembling and assembly of the boards.

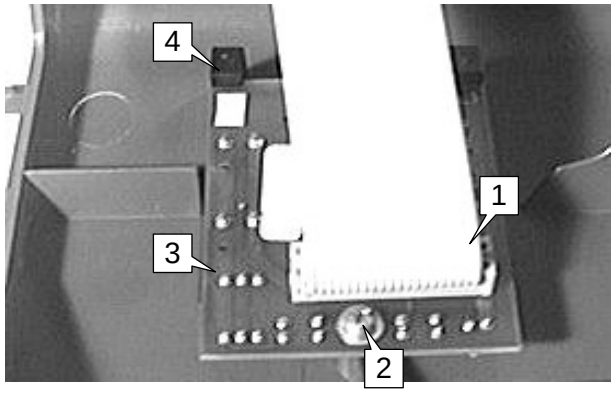
Display board

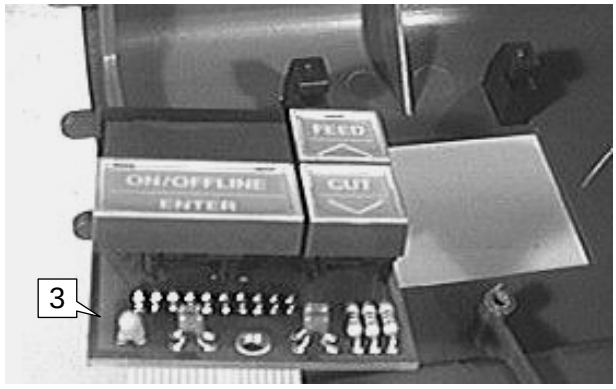
Disassembling/assembly

1. Open the rear hood.
2. Detach the display board (3) connector cable (1).
3. Detach the plug to the CPU mainboard.
4. Unscrew the Phillips screw (2) on the front plastic hood.
5. Pull the display board off the mainboard mountings (4). When reinstalling the display board ensure that it sits firmly.

Tool

– Phillips size 1





I/O board

The I/O board controls the sensors, stepper motors and various options. Most adjustments are made on this board. The board is also fitted with all the required plug connectors.

Tools

- Phillips screwdriver
- Allen key 3 mm

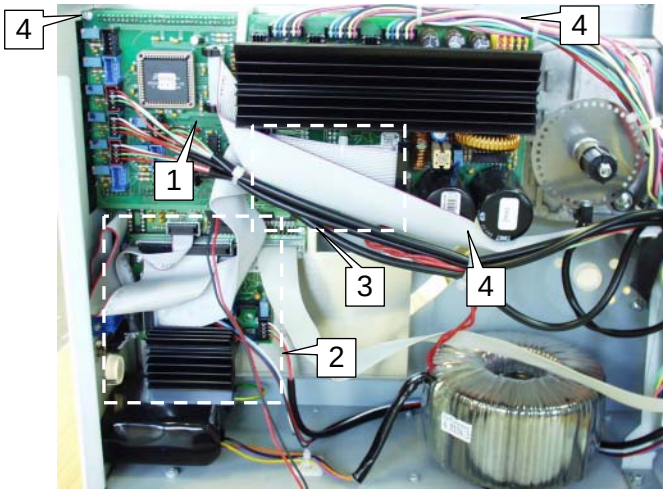


Fig. 2 I/O board (1) assembled. Below, you find the Peripherals board (2), which is connected to the Adapter board (3) by means of a flat wire cable.

Disassembling/assembly

1. Loosen the plug connectors on the I/O board (1).
2. Unscrew the fastening screws of the I/O board (1) (3 Phillips screws without the options board, 1 Allen key screw (3) for the options board (2)).
3. Carefully pull the I/O board off the CPU mainboard. Ensure that the plug connectors are not damaged when they are removed or replaced.

Option boards

Option boards control the additional functions of the printer, like the dispenser option or the cutter.

The Option boards are contacted and affixed by some connectors directly on the I/O board. The following Option boards are (or were) available:

- *Cutter board* (from 07/98 on replaced by the Peripherals board)
- *Adapter board* (connects the Peripherals board to the I/O board)
- *Dispenser board* (only for the dispenser version of the TTX x50, see Fig. 3)
- *TDI board* (Controls the lift table mechanics of the TDI).

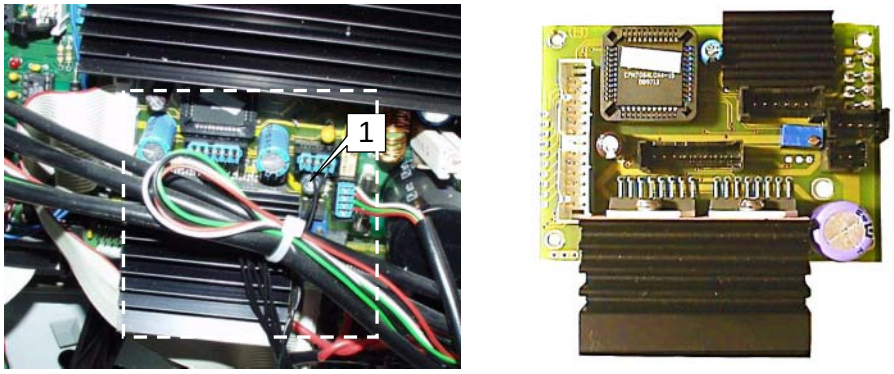


Fig. 3 Left hand side: Dispenser board assembled (dashed frame); Right hand side: Dispenser board. .

Disassembling/assembly

1. Unplug all connectors on the Options board.
2. Remove the fixing screw (1) of the Options board (3 mm allen key).
3. Remove the Options board from the I/O board.

CPU mainboard

The CPU mainboard (1) is the controlling module of the device. Among other components, it comprises

- the processor,
- the memory,
- the interface electronics,
- the display connection and
- slots for plug-in cards (2).

Tool Phillips size 1

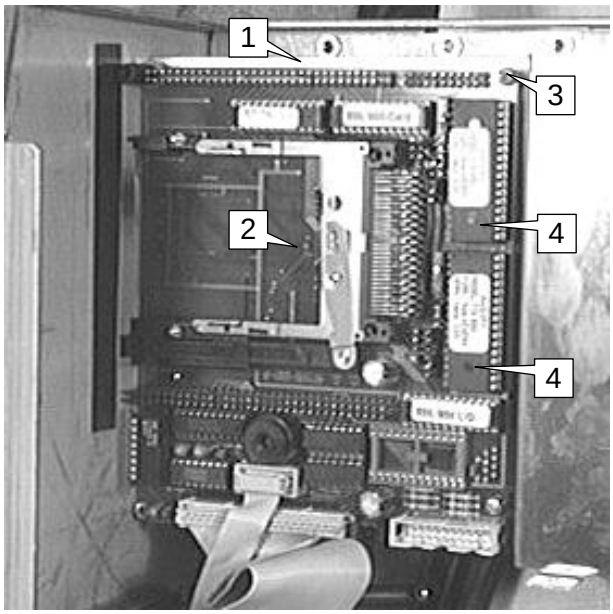


Fig. 4 CPU board assembled and I/O board removed.

Disassembling/assembly

1. If fitted, remove the options board.
2. Remove the I/O board.
3. Detach the plug connectors of the CPU mainboard.
4. Unscrew the fastening screws (3) (4 Allen key screws) of the CPU mainboard.
5. The CPU mainboard (1) can be removed and replaced.

During assembly lay the connecting cables tidily and contact them correctly.

When attaching the I/O board ensure that the contacts are made accurately.

New CPU board: The Flash-ROMs (3) only contain the loader, firmware must be loaded befor running the printer.

➠ Alternatively exchange the Flash-ROMs on the new board for the old ones. If the same error still occurs, faulty Flash-ROMs are probably the reason. Use then the new Flash-ROMs on the old board!

➠ CPU board "in exchange": The Flash-ROMs already contain firmware, however probably not the correct one. Exchange the Flash-ROMs for the old ones! Or load the firmware matching your printer, befor running the printer!

❍ For detailed information on loading firmware, refer to topic section "Firmware".

Assembling accessories

Converting the serial interface to RS485/422

The RS232 interface can be exchanged for an RS485/RS422 interface as an option. This is achieved by fitting an interface IC (order no. 98438) and by resetting a jumper on the CPU mainboard (1). The I/O board must be removed first in order to access the appropriate IC socket and the jumper.

Disassembling/assembly

1. Remove the rear hood.

❍ For details see the section “Housing”.

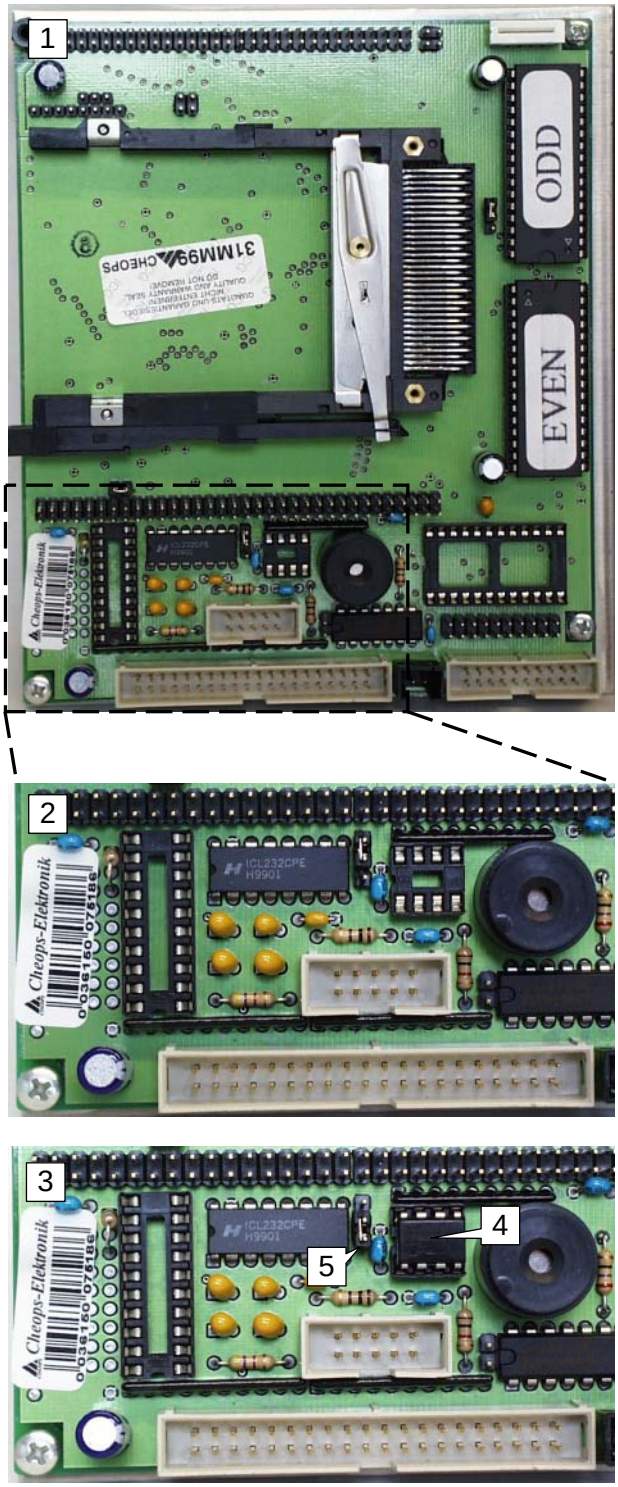
2. Removing the I/O board.

❍ For details see the section “I/O Board”

3. Insert the interface IC (4). The marking on the IC housing must point to the left (see illustration for viewpoint).
4. Reset the jumper (5). The two bottom pins must make contact (see illustration for viewpoint).

- Fig. (2): RS232 mode set.
- Fig. (3): RS485 mode set.

❍ Pin assignment at the interfaces, see MANUAL EASY PLUG, chapter “General Information about Easy Plug”.



Real-time clock installation

A real-time clock (1) (order no. 97951) is available for the printer as an option. Special Easy Plug commands are available for reading the clock (e.g. #YC real time as text, #YS real time as bar code).

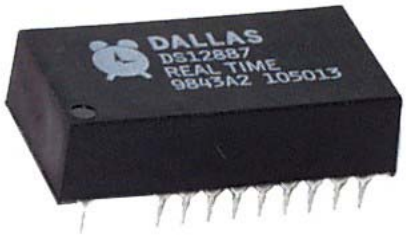
- ❍ All the Easy Plug commands can be found in the MANUAL EASY PLUG in the chapter “Description of Commands”

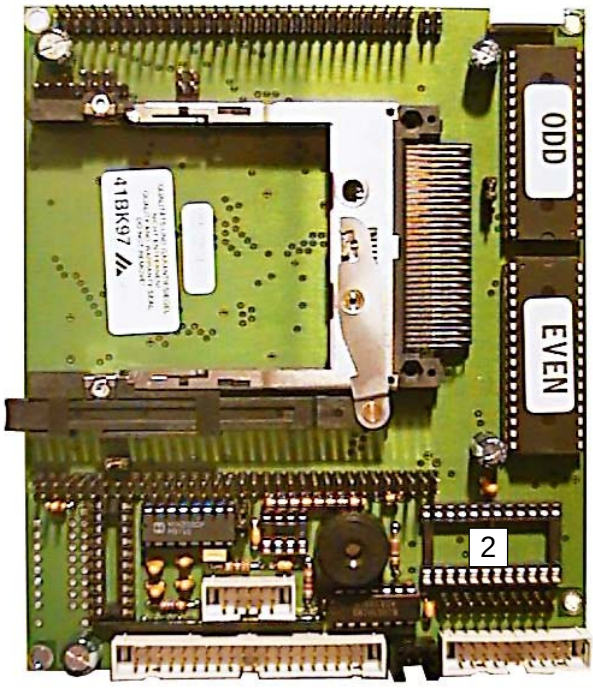
➠ Test: if a real-time clock has already been installed, the date is shown on the status printout STA1 with a two-digit year.

Installing the real-time clock:

1. Remove the rear hood.
- ❍ For details see the section “Housing”.
2. Removing the I/O board.
- ❍ For details see the section “I/O Board”
3. Attach the real-time clock (1) to the socket on (2) the CPU mainboard. The clock is fitted as shown in the illustration (3).
4. Start a factory reset by calling OTHR/FACT (otherwise, the realtime clock will not be recognized).
5. Set the clock using the parameter SYSP/CLCK.
- ❍ For more detailed information, see chapter “Info Printouts and Parameters”

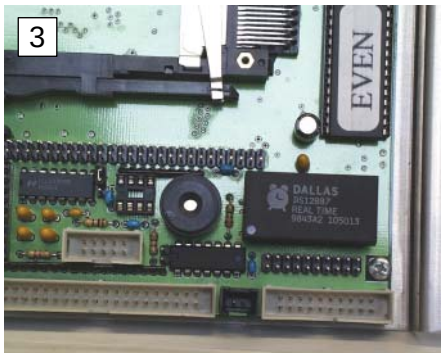
1





2

3



Antistatic kit

The antistatic kit reduces statical charge of the printer, which can especially occur when plastic label material is used. Statical charge can damage or destroy electronic circuits inside of the printer.

Fig. 5 The antistatic kit consists of brushes, which create a leading contact between label material or ribbon and the printer.

Allround solution

The antistatic kit is an allround solution, which can be used successfully against typical charging effects.

In cases of continued problems with static charge although an antistatic kit is mounted, the development of a case-specific solution is recommended.

❍ Assembling instructions see next page.

Tools

- Socket wrench size 10
- Allen key sizes 2,5 and 3
- Tongs

Assembly

➠ All figures in this paragraph show a printer with installed Full Size sensor.

1. Remove the print head screws (2).

➠ Don´t loosen the outer screws (blue locking varnish)!

2. Screw the antistatic brush (1) to the print head, using the print head screws (2).

➠ The heads of the outer screws fit through the holes in the brush-holder.

3. Remove the front and rear hood as well as the left front housing.

❍ See topic section "General service", paragraph "Housing".

4. Disassemble the print head motor.

❍ See topic section "Service Print Module", paragraph "Print Head Motor".

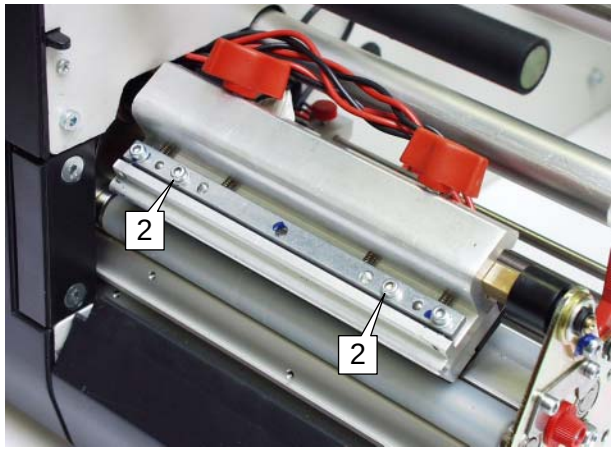
Steps 5 and 6 ease the assembly of the brush tubes:

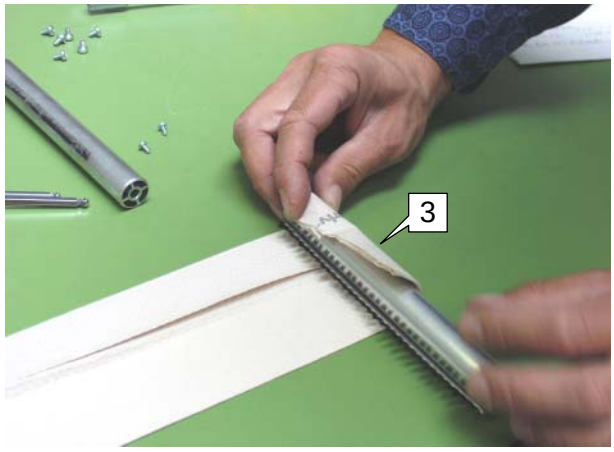
5. Wrap some cloth or paper around the tube, in a way that the brush bristles do not become kinked (3).

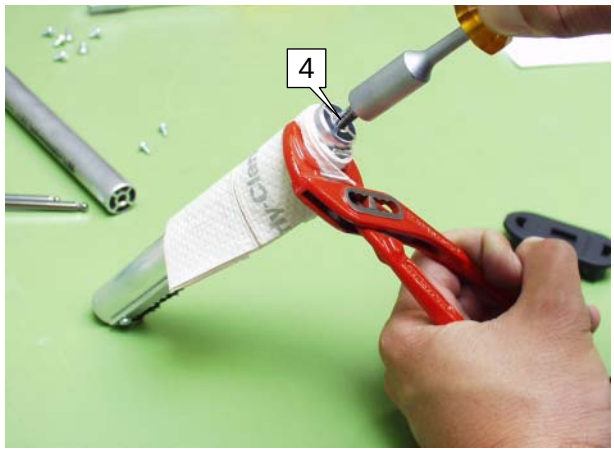
6. Grasp the tube using tongs and screw one of the shipped self-cutting screws (4) into the tube and out again.

➠ Keep in mind, that the screws have to be screwed into different ends of the tube (see figure next page)!

❍ Continue overleaf.







7. Use the shipped screws to fix two of the brush tubes (5) using the holes (6) in the printer wall.

➠ Arrangement of the tubes/brushes according to the pictures!

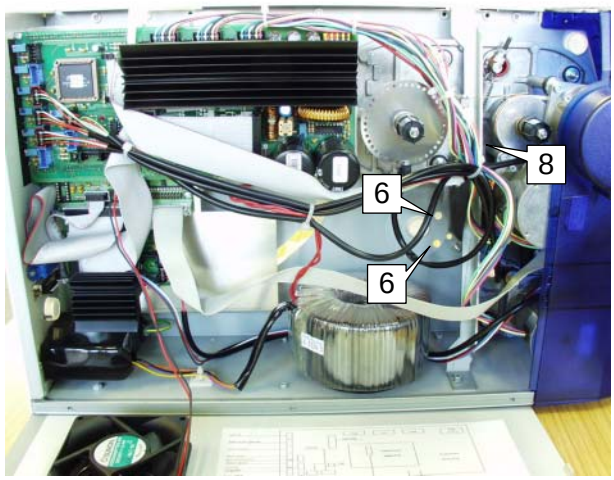
8. Unscrew the ribbon deflection tube by removing the screw (8, hidden). Replace it by a brush tube.

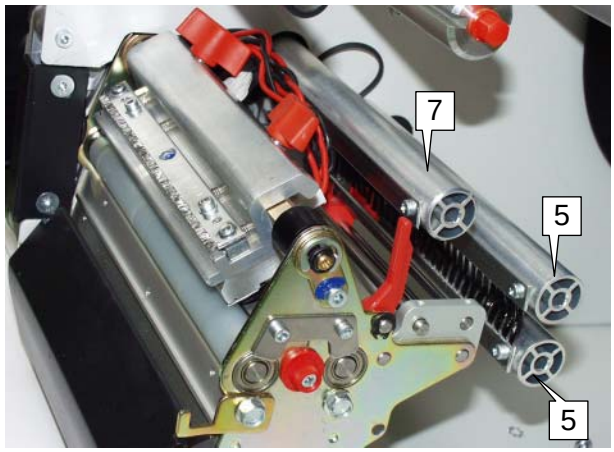
➠ Arrangement of the tubes/brushes according to the pictures!

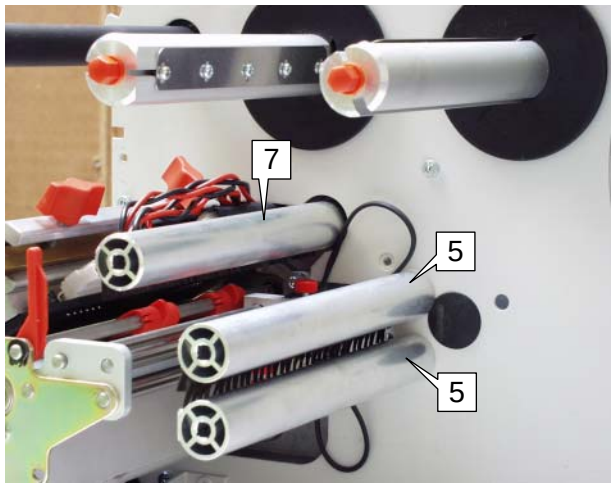
9. Assemble the print head motor.
10. Adjust the print head aperture.

❍ See topic section "Service Print Module", paragraph "Print head adjustment".

11. Mount the housing parts.







Service data

Factory settings

All parameters are preset ex works to values specific to each device type. This factory setting can be reproduced at any time using the parameter OTHR/FACT.

❍ More detailed information about factory settings can be found in the chapter "Info Printouts and Parameters".

Cancelling the operating data

In order to initialise the printer in the final stage of the production as a new device, all consecutively saved operating data is set to zero. The status of the service reports (STA3) therefore also corresponds to the delivery status as a new device.

Cancel the operating data as follows:

Cancellation

1. Reset the printer with the buttons FEED+CUT(NEXT)+ON/OFF.
   Display: version number, INIT then flashes.
2. While INIT is flashing, press the ON/OFF button.
   Display: CODE
3. Press the following buttons one after the other:
   FEED
   CUT(NEXT)
   ON/OFF
   ON/OFF
   FEED
   CUT(NEXT)
   Display: OFF
4. Select the parameter OTHR/NULL and confirm by pressing the ON/OFF button.
   Display: YES?
5. Confirm the query YES? by pressing the ON/OFF button.
   The printer is reset, the operating data is set to zero.

Service data input

In order to obtain statistics about wear-and-tear parts, it is necessary to store the relevant information about when these parts are changed every time the device is used.

Enter the service data as follows:

Service entry

1. Reset the printer by pressing the buttons FEED+CUT(NEXT)+ON/OFF.
   Display: version number, INIT then flashes.
2. While INIT is flashing, press the ON/OFF button.
   Display: CODE
3. Press the following buttons one after the other:
   ON/OFF
   ON/OFF
   FEED
   CUT(NEXT)
   ON/OFF
   ON/OFF
   Display: OFF
4. Select the parameter OTHR/SERV and confirm by pressing the ON/OFF button.
   Display: YES?
5. Confirm the query YES? by pressing the ON/OFF button.

   Selecting SERV increases the number shown on the service use counter by 1. This is also the case if SERV is exited without making any alterations.

   The following service data can be altered:
   – HEAD
   – ROLL
   – KNIF
6. Select the exchanged part (e. g. HEAD).
   Display: current valid value for HEAD.
7. Press the ON/OFF button to increase the displayed value by 1.
   Display: the new value flashes.
8. Press the ON/OFF button to confirm the new value (or exit the menu option without making any changes by pressing the FEED or CUT(NEXT) button).
   Display: HEAD
9. Select the next exchanged part (e.g. ROLL or KNIF) and increase the displayed service values
   or
   exit the SERV menu option by pressing the FEED or CUT(NEXT) button.

   The access code is automatically deleted after the service data has been entered (exit from SERV).

   To return to the SERV menu option, it is necessary to reset the data again and to reenter the code.

Converting TTX 674 / TTX 675

A TTX 674 / Puma plus can easily be converted into a TTX 675 / Lion plus; all you need is a wider print head and the appropriate firmware.

Assuming the same conditions, it is also possible to apply the slim TTX 674 print head with a TTX 675 / Lion plus.

Print head

Printer	Part number print head
TTX 674 / Puma plus	A0978
TTX 675 / Lion plus	A0979

Tab. 2 Part numbers of the print heads for TTX 674 and TTX 675.

❍ For detailed information on how to exchange the print head, refer to the user manual, topic section "Maintenance", chapter "Print head".

Firmware

➠ Don´t forget to load the appropriate firmware if you apply a more or less wide print head!

❍ See the service manual, topic section "Firmware".

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