
JET3 UP



SERVICE MANUAL

LEIBINGER

1 Introduction

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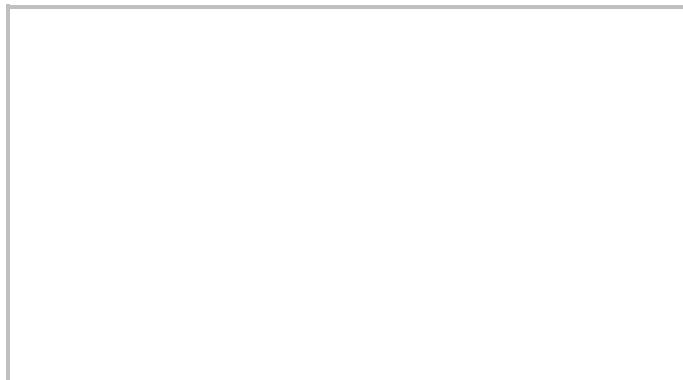
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1.2 Publisher

For questions regarding the operation and running of the as well as in service case please contact the listed dealer address.

Dealer address



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We reserve the right to make alterations to the scope of delivery at any time in the form of technology, hardware, software as well as the corresponding materials (and manual extracts) as a result of innovative further development of our devices.

Texts, illustrations and technical drawings have been compiled with the greatest of care. Nevertheless errors cannot be excluded. Consequently no guarantee can be assumed for the correctness of the content of this manual and no claims can be asserted against Paul Leibinger GmbH & Co. KG.

We shall be grateful for information regarding possible printing errors as well as for suggestions for the further optimisation of the device manual.

Authoritative for the scope of delivery is not the manual but rather the written order confirmation.

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1.3 Introduction

We are pleased that you have decided in favour of a device and welcome you as one of our customers.

You now own a device that has been developed and constructed on the basis of many years of experience and using the latest Leibinger technology. This results in a high degree of quality and the renowned Leibinger reliability.

This manual shows you the fundamental advantages of the Leibinger Jet system manufactured by us, such as for example the fully automatic working, low maintenance etc..



The manual must be read thoroughly prior to first start up in order to ensure that no damage to the device and/or endangering of the operating personnel results from a defective electrical connection and/or from incorrect operation.

Please pay particular attention to the safety instructions of the groups **Safety instructions** and **accident prevention** when handling consumables (ink and solvent).

Our devices are subjected to a quality control in our plant prior to delivery. If despite this the device or parts of it should be damaged or their function disturbed please advise us of this as fast as possible.

It is only through the use of inks and solvents from Paul Leibinger GmbH & Co. KG that optimum operating characteristics can be achieved. **Should other inks and solvents be used all guarantee claims will expire.**



Product liability!

**No alterations whatsoever must be carried out on the entire device.
No liability will be accepted for damage or dangers resulting from inadmissible alterations.**



Attention – Danger of explosion!

**The device should be only operated outside of explosive areas!
The installation has to be carried out according to the installation instructions of the manufacturer!**

1.4 Guarantee

The guarantee conditions for the Service Manual JET3up can be seen from the order confirmation. The warranty presuppose that the device or the installation is operated correctly in accordance with the available guarantee manual and any possible additional manuals and descriptions prepared by us.

At this point we wish to make explicit reference to the fact that it is only when using solvent and ink from Paul Leibinger GmbH & Co. KG that the optimum operating characteristics can be achieved.**In the event of use of other inks and solvents all guarantee entitlements shall cease to apply.**

2 Safety

2.1 Scope of risks

The high performance printer has been built in accordance with state-of-the-art standards and recognized safety requirements and has been equipped with protective devices.

Operational and safety checks of the installation were carried out before it left the factory. In case of improper handling or misuse, however, there are dangers for

- the health of the operating staff
- the high performance printer and other real assets of the plant operator
- the efficient operation of the high performance printer

All persons entrusted with the putting into service, the operation, the maintenance and the overhauling of the high performance printer must

- have the necessary qualification and
- strictly comply with this operating manual.

YOUR safety matters!

2.2 Safety instructions and recommendations

This operating manual use the following SYMBOLS with DANGER WARNINGS:



Indicates impending electrical danger!

Failure to observe this instruction can lead to **serious injuries or to death!**



Indicates a dangerous situation through pressurised media!

Failure to observe this instruction can cause injuries!



Indicates a dangerous situation!

Failure to observe this instruction can lead to material damage or to injuries!

Indicates a dangerous situation!

Failure to observe this instruction can cause **serious** hand injuries!

**Indicates a dangerous situation through flammable materials!**

Failure to observe this instruction can lead to material damage, to **serious** burns or to **death**!

**Describes a dangerous situation by an explosive atmosphere and/or by an electrostatic discharge!**

The non-observance of this advice can cause explosions and therefore damages to property, **serious** burnings or **serious** damages to person!

**Indicates a dangerous situation through irritating materials!**

Failure to observe this instruction can lead to poisoning and to irritation of the eyes, the skin as well as of the respiratory organs!

**Indicates the necessity of personal protective clothing!**

Sufficient protective equipment must be worn. Failure to observe this instruction can lead to injury!

**Indicates the necessity of observing the device manual and other instructions!**

Failure to observe this instruction can lead to material damage, the loss of guarantee and to injury!

**Indicates service activities!**

This work must only be carried out by trained personnel or by Leibinger service technicians!



Indicates important user information
for safe and effective working.



Indicates recommendations for use
and other useful pieces of information.

2.3 Intended use

The high performance printer serves exclusively the contact-free marking, inscribing and coding of surfaces using the continuous ink jet process.

The high performance printer can be used on the most varying materials (e.g. metal, synthetic material, Glassss, paper, wood, pressed materials, rubber etc.) with both, smooth as well as uneven, rough and stepped surfaces.



The intended use of this device also includes the observance of all instructions in this manual.

Using the installation for other purposes is considered contrary to its intended use!



For safety reasons conversions and alterations are only admissible following consultation with the manufacturer. Repairs to the device must only be carried out with original replacement parts.

The manufacturer shall not be liable for damage resulting from use for other than the intended purpose or misuse.



Attention – Danger of explosion!

The device should be only operated outside of explosive areas! The installation has to be carried out according to the installation instructions of the manufacturer!

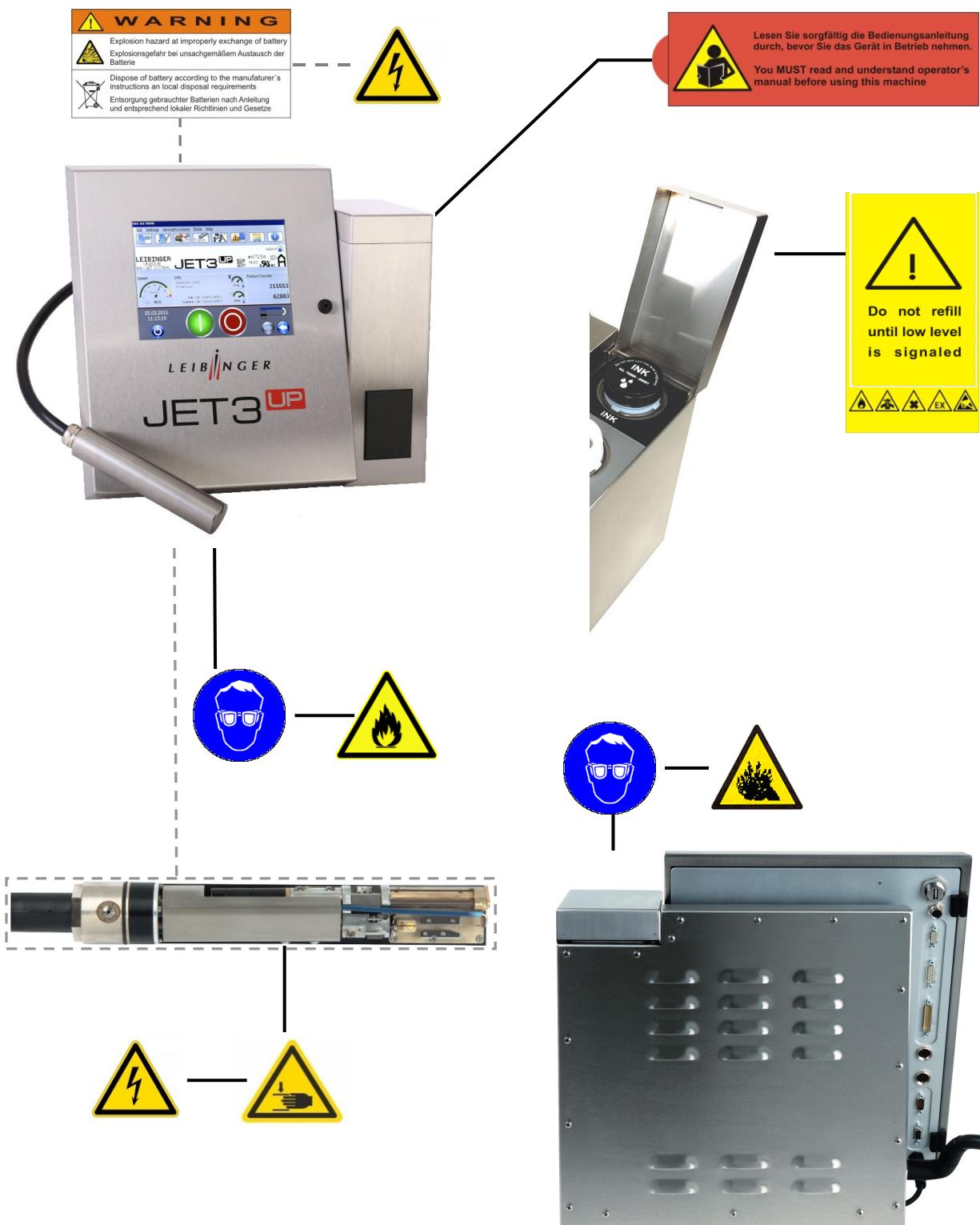


Attention – Danger of explosion!

Precautions regarding electrostatics have to be carried out!

2.4 Safety sticker

Figure 1



2.5 Operating staff

Only trained personnel must operate the device. The personnel must have appropriate training to enable them to be able to operate the Service Manual JET3up high performance printer professionally.

Within the working area of the up device the operator is responsible with regard to third parties.

The operator must

- put this operating manual at the operating staff's disposal and
- make sure that they have read and understood them.

2.6 Dangers due to electric energy



The electrical and electronic components of the high performance printer are under voltage. The device must only be opened by trained personnel or by Leibinger service technicians.

Prior to the opening of the device the device must be switched off and the mains plug removed.

2.7 Personal protective equipment

Materials are processed in this device that cause irritations and which are under pressure. In order to avoid injury and damage the personnel must wear the following personal protective equipment during certain work procedures:

- suitable work clothing
- suitable eye protection
- suitable hand protection

More detailed information can be found in the corresponding chapters of this manual as well as possibly in information and data leaflets of consumables.

2.8 Protective devices and safety concept

In **an emergency** the device is placed idle by removal of the mains plug.

The device is equipped with the following safety concept to provide explosion protection:

- Bottom tub as collecting tray
- Jet monitoring in the gutter circuit

- Ventilation in the hydraulic cabinet
- Plastic containers are arranged in the field of metal surfaces (PE-potential)
- HV-cutoff at creepage current
- HV- and ink cutoff as well as nozzle sealing at HV-flashovers

2.9 Safety measures at the place of installation



Mains connection!

The device has no mains switch and must only be connected to a easy accessible plug socket in the direct vicinity of the place of setting up!



Attention – Danger of explosion!

The device should be only operated outside of explosive areas! The installation has to be carried out according to the installation instructions of the manufacturer!



Attention – Danger of explosion!

The device has to be integrated in the lightning protection concept of the operator!



Attention – Danger of explosion!

Precautions regarding electrostatics have to be carried out!



Installation of the device

The device must be installed in a well ventilated room only and must be kept away from any source of heat, flame or sparks, e.g. radiant heater, etc.



A place of setting up must be selected with sufficient load bearing capacity and stability. When setting up it must be observed that sufficient movement space is available for the operating and service personnel. Solvents are processed in the device, sufficient room ventilation must be ensured!

2.10 Prior to assembly the place of setting up must be cleaned of dirt and contamination (residue of lubricants etc.).

The working place surroundings should be kept clean at all times in order to ensure unrestricted access to the JET3up device.

2.11 Dangers through consumables

Inks are coloured liquids on a solvent basis. The safety instructions on the containers of the consumables as well as the instructions in the group **Accident prevention** must be especially adhered to in order to exclude dangers for persons and the surroundings. Further instructions can be found in the Safety Data Sheets.



When handling consumables (inks/solvents) the danger instructions and safety advice on the containers (transport, storage, distribution and correct disposal) must be observed!



In addition we recommend **observance of the safety information leaflets** of the inks and solvents used.

In the following you will find examples for the marking of inks and solvents.

Figure 2

Examples: Labels for the marking of inks and solvents.



2.12 Conformity



EC-Declaration of CE-Conformity



The manufacturer: Fa. Paul Leibinger GmbH & Co. KG
 Daimlerstraße 14
 D –78532 Tuttlingen (Germany)

herewith declares that the systems of the following listed printer series:

Product designation: industrial high-speed Ink-Jet printer
 Type designation: Leibinger-JET3up, JET3up PRO, JET3up PI, JET3up MI, JET3up RAPID,
 JET3upEP

complies with the provisions of the following mentioned directives –including the valid changes at the time of the declaration.

Low-voltage directive (2014/35/EU)	
Proven with the harmonized standard:	<ul style="list-style-type: none"> • EN 60950-1: 2006/A11:2009/A1:2010/A12:2011/A2:2013

EMV- directive (2014/30/EU)	
Proven with the harmonized standard:	<ul style="list-style-type: none"> • EN55022: 2010 • EN 61000-6-2: 2005/AC:2005 • EN 61000-6-3: 2007/A1:2011/AC:2012

RoHS- directive (2011/65/EU)	
Proven with the harmonized standard:	<ul style="list-style-type: none"> • EN 50581: 2012

Year of affixing CE marking: 2016

Name and address of the person authorized to collect the technical documents:

Ralf Stich
 Authorized Documentation Officer
 Paul Leibinger GmbH & Co. KG
 D-78532 Tuttlingen

Tuttlingen, April 20st 2016

Klaus Specker
 Manager R&D

Axel Stehle
 Technical CEO

3 Accident prevention

The following presentation shows the measures in the event of an accident with **ink** and **solvent** with the **danger marking**,

- slightly ignitable
- irritates the eyes and the respiratory organs.

3.1 Storage and handling (normal use)

GENERAL	<p>These products must only used at points that are free from open flames and other ignition sources. Do not use pressure for emptying – the container is not a pressure vessel. Good household practice and regular, safe removal of the waste materials restrict the danger of self-ignition and other risks of fire to a minimum. The product can charge statically. When pouring from one container to another use a mass lead. The workers must wear anti-static shoes and clothing and the floors must be conductive.</p>
STORAGE	<p>Observe the marking information. Store at 5 to 25°C in a warm, well ventilated location at a safe distance from heat and ignition sources and direct sunlight.</p> <p>Do not smoke! Do not grant access to unauthorised persons. Open containers must be properly closed and stored upright in order to avoid leakage.</p> <p>Smoking, eating and drinking must be forbidden in the storage and working areas. Always keep in containers from the same material as the delivery containers.</p>
HANDLING	<p>The development of combustible or explosive vapour concentrations must be prevented and vapour concentrations avoided that are above the threshold values of the employers liability insurance association. Keep containers closed tightly.</p> <p>Keep sources of heat and sparks as well as open flames well away.</p> <p>Use only spark-free tools. Electrical devices must be protected in accordance with the corresponding standard.</p> <p>Avoid contact with the skin and eyes. Do not inhale vapours and spray mist.</p>

3.2 First aid measures

EYES	Contact lenses must be removed. Rinse thoroughly with pure, fresh water for at least 10 minutes, keep eyelids spread and call a doctor.
SKIN	Remove contaminated clothes. Wash skin thoroughly with soap and water or with a branded skin cleansing agent. DO NOT use solvents or thinners.
INHALING	Take patient into the fresh air and keep warm and calm. In the event of irregular breathing or of breath being missed resuscitate artificially. Do not give anything orally, place unconscious patients on their side and call a doctor.
MISCELLANEOUS	In case of doubt or with persistent symptoms call a doctor. Never give anything orally to unconscious patients.

3.3 Fire fighting measures

EXTINGUISHING AGENTS	<u>Recommended:</u> Alcohol-resistant foam, spray water/mist, CO ₂ or powder DO NOT use water jets. Cool closed containers exposed to the fire with spray water.
RISK OF FIRE AND EXPLOSION	As the product contains combustible organic constituents, a thick, black smoke develops in the event of fire that contains dangerous combustion products. Decomposition products can constitute a danger to health. Extinguishing waste water must not enter the waste water channels or waters.
PROTECTIVE MEASURES	If necessary suitable, independent breathing apparatus is required.

3.4 Measures in the event of accidental release (spillage)

PRECAUTIONARY MEASURES	Switch off sources of ignition and ventilate room. Keep personnel that is not absolutely necessary away. Do not inhale any vapour. Observe the protective measures listed.
ENVIRONMENTAL PROTECTION MEASURES	DO NOT allow to enter waste water channels or waters. Should the product enter waste water channels or the drainage system the local water supply authority must be informed immediately. In the event of contamination of streams, rivers or lakes inform the national water authorities. Vapour is heavier than air and can spread out on the ground. In combination with air it can form an explosive mixture.
RESTORATION	Restrict and suck up spilled substances with a non-combustible absorbent material (e.g. sand, earth, vermiculite, infusorial earth) and collect in a suitable container for removal. Preferably clean areas with spilled substances with a detergent. Avoid solvents.

4 Technical data

4.1 Dimensions, weights, connections

Cabinet : Stainless steel

Width 486 mm, depth 286 mm, height 446 mm

Weight: 20,5 kg

Print head: Stainless steel cabinet

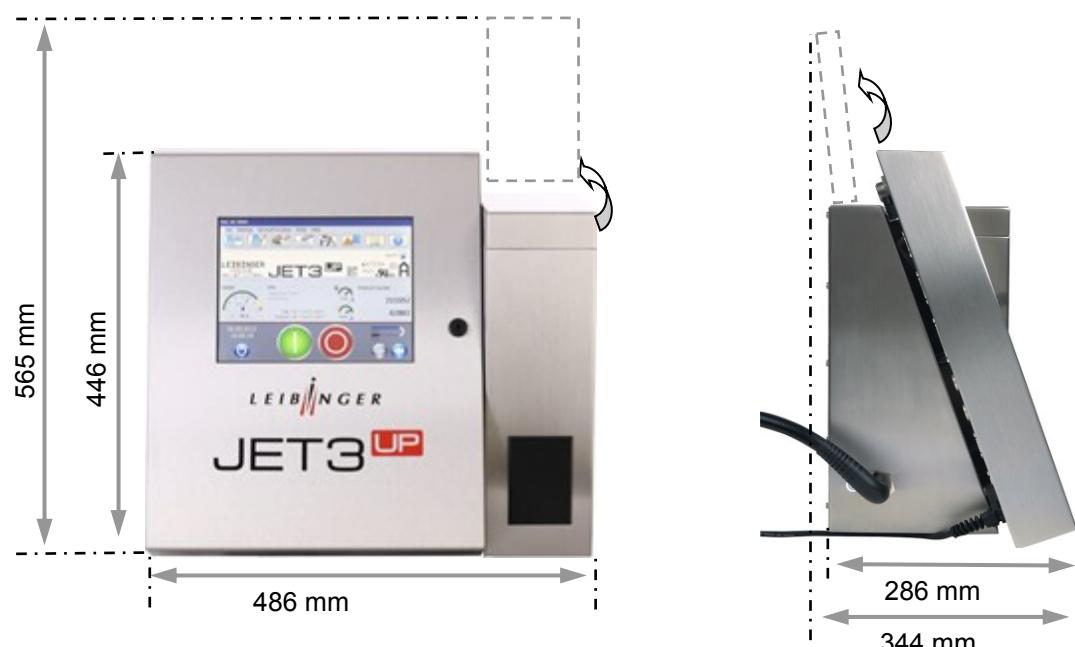
Length (total) 265 mm, diameter 43 mm,

Length of the print head lead 3 m, as option 6 and 10 m available

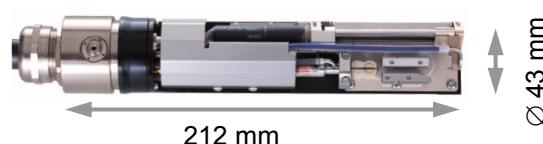
Weight: 1,5 kg

Any fitting position, also for overhead conveyor applications

Figure 3



Print head SK6



Print head SK4 - Option



4.2 Electrical connection values

Input voltage (voltage range): 100 - 240 V AC ,50-60 Hz

Current consumption: max. 0,56 A at 100 V AC
max. 0,25 A at 240 V AC

Power consumption: typ. 20 W at 100 V AC
typ. 20 W at 240 V AC

4.3 Ambient conditions

Temperature range: + 5° C to + 45° C (no rapid change of temperature)

Relative humidity: max. 90 % relative humidity (non-condensating)

5 Transport/Start up (Putting into service)

5.1 Transport, storage, shipping

In order to avoid damage during transport the following instructions must be observed.

The JET3up must only be transported in a standing position. It is packed in a cardboard box with special polystyrene inserts for safe dispatch during delivery. Transport of the device must only be made in this packing in order to avoid damage.



The printer should be only transported in an empty condition!

A special draining routine ("ServiceFunctions ► Hydraulic ► Special Functions/ Tools ► Drain Routine") is available for the draining of the device.

You will find further information in the group **Data input/Programming** in the **chapter Draining routine!**

Note! Storage temperatures below +5°C and above +50°C as well as storage at outside are not admissible and can lead to damage!

5.2 Mounting



Attention – Danger of explosion!

The device should be only operated outside of explosive areas! The installation has to be carried out according to the installation instructions of the manufacturer!



Attention – Danger of explosion!

Precautions regarding electrostatics have to be carried out!

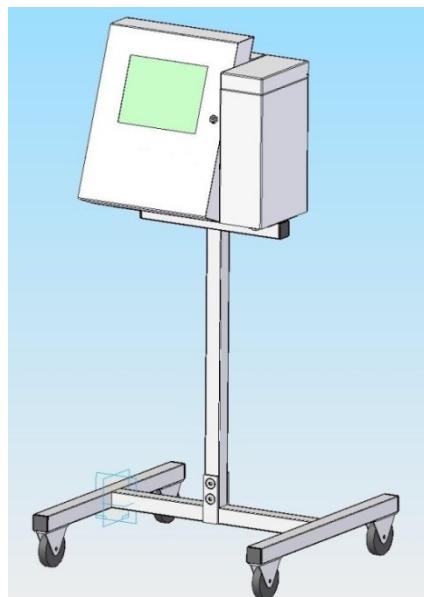


Installation of the device

The device must be installed in a well ventilated room only and must be kept away from any source of heat, flame or sparks, e.g. radiant heater, etc..

Check device for damage! When determining a suitable place of setting up, the necessary additional space requirement for the movement room of the operating and service personnel must be taken into consideration. Solvents are processed in the device, adequate room ventilation must be ensured!

Figure 4

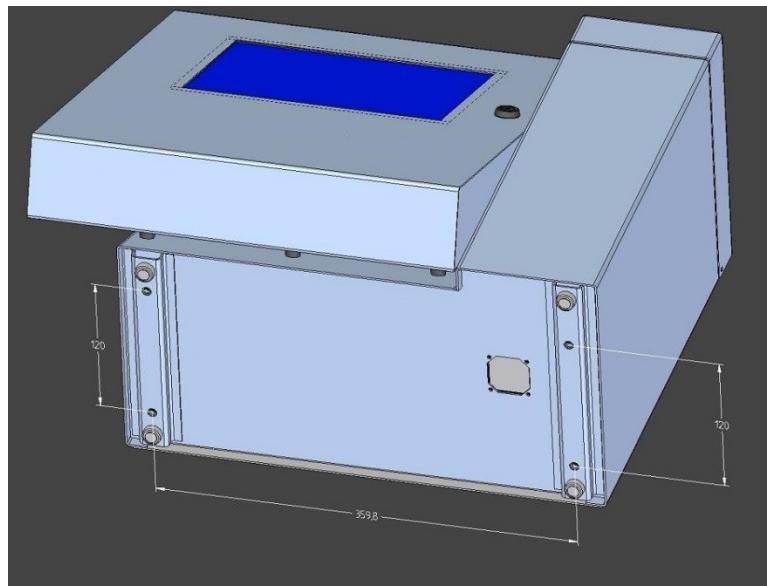


*Movable underframe
for Service Manual
JET3up:*

For this it is expedient to place the device on a device support.

The device has four fastening possibilities for secure setting up and should be screw connected at the place of setting up.

Figure 5



Fastening options

A place of setting up with sufficient load bearing capacity and stability must be chosen. Prior to assembly the place of setting up must be cleaned of dirt and contamination (residue of lubricants etc.).



5.3 Installation

For adaption to the production line several works have to be carried out and operating parameters have to be set before start of operation.

5.3.1 Mains supply



Mains supply!

The device does not have a mains switch and should be only connected to an easy accessible socket close to the installation location!

The up should be connected to AC voltage 100 - 240 V AC, 50 – 60 Hz with an appropriate plug. **The socket should be provided with a clear designation (e.g.: JET3up).**

After connecting to the mains power supply the initialization of the device will be carried out automatically. After this process the JET3up is ready for operation.



You will find further information regarding the initialization in the **chapter Initialization of device!**

5.3.2 Grounding (Potential equalization)



Grounding (Potential equalization)!

In case of a non existing grounding or that the grounding of the printer is not carried out properly, this could cause serious injury or death and it can also cause malfunctions or damages at the printer!

These dangers or demolitions can happen for example because of electrostatic discharge (ESD) or potential difference.

Specially for countries without existing protected earth connection, there is a special grounding point located at the side of the printer.

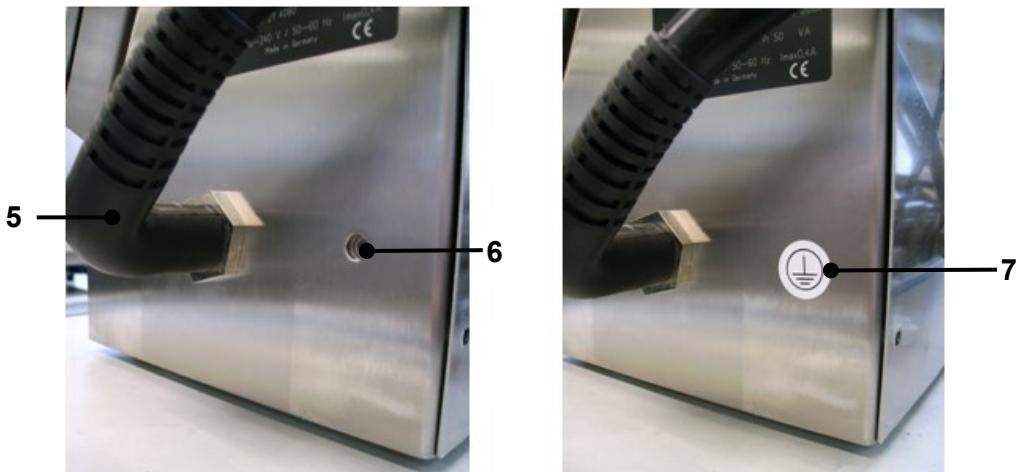
This threaded socket must be connected to ground if there is no ground pin in the mains socket/plug.

The threaded case is sealed inwards and thus IP 65 conform. With a screw and a ring terminal (cable lug) the grounding can be fixed easily.

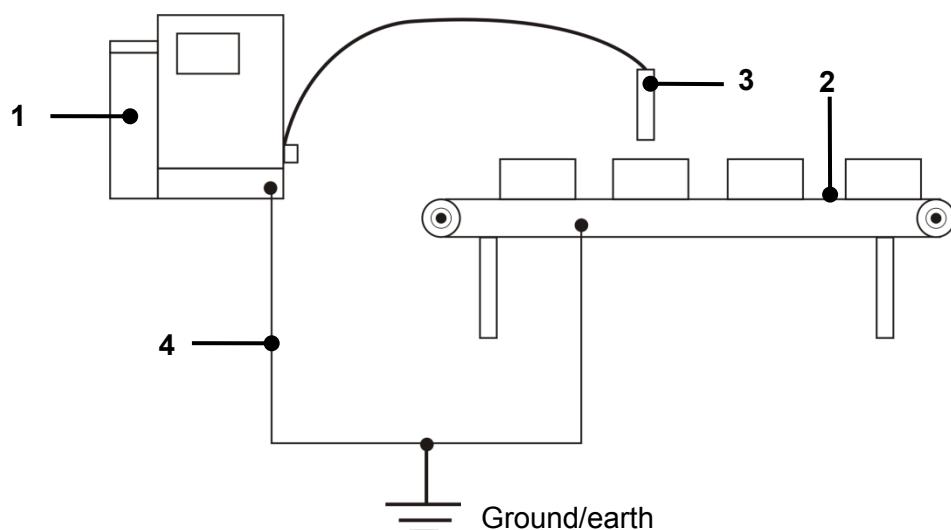


Please note, that the grounding point (6) is hidden behind the round grounding-symbol-label (7) on the lower left hand side of the cabinet of the printer.

Figure 6



Grounding scematic



Grounding scematic and gounding point

- | | | |
|----------------------------|--------------------------|----------------------------|
| 1 – Printer cabinet | 4 – Grounding line | 7 – Grounding symbol-label |
| 2 – Installation (machine) | 5 – Umbilical | |
| 3 – Print head | 6 – Grounding point (M6) | |

Grounding instructions

A separate grounding line (min. cable cross-section 2,00 mm²) to the printer cabinet must be installed **before** the print head is mounted in the installation and **before** the printer is plugged to the power supply.

- A separate grounding line (min. cable cross-section 2,00 mm²) to the printer cabinet must be installed **before** the print head is mounted in the installation and **before** the printer is plugged to the power supply.
 - The connection must be carried with a solid bonding that corresponds with existing guidelines.
- Annotation:** *A suitable grounding cable is available optionally (accessories).*
- The installation (machine) and the printer must have the same potential/ground.

The printer must be always switched off and the mains plug must be always unplugged if you plug and/or unplug any connectors!



5.3.3 Explosion protection

The device has to be integrated in the lightning protection concept of the operator!

Further more protection measures regarding electrostatics have to be made!

5.3.4 Print head



Inflammable (Risk of fire)!

Combustible gases and liquids cause serious burns. Sources of ignition must be kept away from the print head!



Risk of injury!

Ink escapes from the head aperture. Spraying of ink into the eyes can cause blindness. Eye protection is necessary!

The print head should be mounted to the printed product that the notch in the head cover is placed vertical to the moving direction of the product. It can be installed horizontal, vertical, from the top or from the bottom.

For installation from the bottom it has to be prevented that dirt can enter in the print head. For this a head ventilation is required which can be purchased optionally.

The print head mounting should be carried out that a fast separation of the print head from the device for cleaning purposes is possible.



The print head should be attached vibration-free. The hose connection of the print head should not be smaller as a radius of R60 statistically and dynamically not below R100!

The distance of the print head to the product depends on the required character height. As smaller the required character height, as smaller the distance of the print head to the product (smaller distances produce better type quality)

Note: In general a distance of round about 8-10mm is recommended.
For applications with extreme small or large character heights a micro- and macro print head are available optionally.



Installation of print head

During an installation of a device in a production line, the operating staff should be not endangered. Due to moving products under the print head danger of bruising and shearing can be caused. The regulations of the machinery directives should be observed!

6 Trouble shooting

6.1 Trouble shooting

Problem	Reason	Solution	Remarks
Ink build-up on the gutter	Print height is too small Wrong position of the ink stream in the gutter Viscosity is too thin HV module on controller board is defective	Increase print height in job parameter. Adjust print head. Leave printer on with open nozzle and check until viscosity matches with nominal visco setting Exchange power supply.	See service document "print head adjustment".
Ink stream is jumping	Dirt inside the nozzle The position of the ink stream inside the charging electrode or gutter is not correct. Incorrect hydraulic pressure setting Viscosity does not match with default value Oscillator defect	Clean nozzle Clean print head Exchange oscillator	See service document "cleaning of nozzle". See service document "head adjustment". Check viscosity with nominal setting. Exchange oscillator => see service document "exchange oscillator".
Ink build-up on the deflection plates	Head filter clogged The position of the ink stream in the gutter tube is not correct Service is due Hydraulic pressure too low"	Exchange head filter Adjust print head Check nominal hydraulic settings for nozzle type.	

Problem	Reason	Solution	Remarks
Ink is dropping from print head	Suction does not work Reducer in the ECOSOLVE is blocked Ecosolv blocked The position of the ink stream in the gutter Wrong ink stream position inside the charging electrode Dirt inside the nozzle	Adjust print head Clean nozzle Check and clean reducer in ECOSOLV.	See service document "cleaning of nozzle". See service document "head adjustment".
When opening the nozzle, the gutter is glued with ink.	Nozzle O-ring damaged Gutter not aligned Gutter or O-ring dirty	Exchange nozzle O-ring Check and adjust print head. Clean print head with solvent.	See the service document "cleaning nozzle". See the service document "head adjustment". See service document "cleaning of print head".
Printer is not printing	Incorrect job parameters Encoder does not work Product sensor does not work No high voltage Character height is adjusted too small		
Could not switch on printer	Mains plug not plugged in No voltage to mains socket Touch screen broken Connection cable of touch screen loose Defective power supply Defective controller		
No function of touch display	Touch screen broken Flat cable of touch screen controller loose	Check cable connection and if necessary change the touch display	See the service documentation "exchange touch display"
Head cover is not detected	Head cover contact has loosen cable connection inside the head flange Broken cable inside the umbilical	Open head cover contact and check cable connections	

Problem	Reason	Solution	Remarks
Ink build-up on the head cover.	Print head distance to close to the product Stroke distance too low Electrostatic charge on the product Too high setting of "contrast-function"		
Product counter is incrementing, but no print out	Wrong print go delay No high voltage onto deflection plates Character height too low or set to 0% Slot of head cover blocked by dirt		
Low contrast on the print out	Wrong viscosity (too thin) (pigmented inks) the stirring device (agitator) does not work Pigmented ink not shaken long enough Font width is too large		
Bad print quality	Oscillator defective Dirt inside the nozzle Production speed is too high or wrong "speed mode" is selected Wrong viscosity		
Lower part of print out is missing.	Too little character height Ink stream position is adjusted too far to the left side of the gutter Hydraulic pressure too high		
Upper part of print out is missing	Wrong viscosity Print head is dirty Incorrect hydraulic pressure Drops hang on the deflection plate Deflection plate is defective		
Print out is squeezed together (in the height)	Wrong viscosity Oscillator is defective Dirt inside the nozzle Defective HV module Deflection plate is defective		

Error and Warning List

Code - Nr	Error text	Reason	Solution	Remarks
2	2= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown. Possibly, firmware, and software versions are not compatible.	Carry out a software update	If software update is without success, please contact LEIBINGER
3	3= Internal communication error. Too much data.	Internal communication problem. Internal message at the receiver was too large (currently 1MB)	Carry out a software update Check files on maximum size of 1 MB. fonts, graphics, or job	If no success, please contact LEIBINGER
4	4= Internal communication error	Internal communication problem. Single data packet doesn't fit in the length (= transmission errors)	Read the script and interface protocol documentation!	If no success, please contact LEIBINGER
5	5= Internal communication error	Internal communication problem. Block transfer error (= transmission errors)	Reboot again the system.	If no success, please contact LEIBINGER
6	6= Internal communication error. Too much data.	Get to large amount of data.	Reboot again the system.	If no success, please contact LEIBINGER
7	7= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER

Code - Nr	Error text	Reason	Solution	Remarks
20-24	20= Internal interface error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER
100-104	100= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER
105	105= Internal communication error. Too much data.	Internal communication problem. Internal message at the receiver was too large (currently 1MB)	Check files on maximum size of 1 MB. fonts, graphics, or job	
109/110	109= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER

Code - Nr	Error text	Reason	Solution	Remarks
111	111= Internal communication error	Internal communication problem. A CPU has sent a message, but get no response from the recipient or the message. Typical error when a CPU crashes, hangs, or has been reset. If there no principled software error and this error occurs more often might this an indication of a hardware failure. Cyclone Board defective (unlikely), 5V power supply is unstable or very brief network drop outs (more likely). Currently the printer GUI is resetting the system if such an error appears, to try to get the system working again.		
112	112= Internal communication error	Internal communication problem. A CPU has sent a message, but get no response from the recipient or the message. Typical error when a CPU crashes, hangs, or has been reset. If there no principled software error and this error occurs more often might this an indication of a hardware failure. Cyclone Board defective (unlikely), 5V power supply is unstable or very brief network drop outs (more likely). Currently the printer GUI is resetting the system if such an error appears, to try to get the system working again.		
113	113= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller-board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER

Code - Nr	Error text	Reason	Solution	Remarks
114	114= Internal communication error	Internal communication problem: The lenght of a single packet doesn't fit in the length.	Read the script and interface protocol documentation!	If no success, please contact LEIBINGER
115-124	115= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller-board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER
1000	1000= Joblist could not be loaded	The RIP was unable to load the job list (faulty job list!) Possible caused by manually-created job list.	Check the job-list and job parameter again.	
1001	1001= Script begin job syntax error	Syntax error in beginning of job script	Read the script and interface protocol documentation!	
1002	1002= Jobparameter syntax error	Syntax error in job parameters.	Read the script and interface protocol documentation!	
1003	1003= Counter variable syntax error	Syntax error in counter variable.	Read the script and interface protocol documentation!	
1004	1004= Barcodeobject syntax error	Syntax error in the bar code object.	Read the script and interface protocol documentation!	
1005	1005= Textobject syntax error	Syntax error in the text object.	Read the script and interface protocol documentation!	
1006	1006= Replacement syntax error	Syntax error in substitution variable.	Read the script and interface protocol documentation!	
1007	1007= Timevariable syntax error	Syntax error in date time variable.	Read the script and interface protocol documentation!	
1008	1008= Shiftvariable syntax error	Syntax error in shift code variable.	Read the script and interface protocol documentation!	

Code - Nr	Error text	Reason	Solution	Remarks
1009	1009= Extern text object syntax error	Syntax error in the external text object.	Read the script and interface protocol documentation!	
1010	1010= Too much objects	More than 32 objects in a job.	Read the script and interface protocol documentation!	
1011	1011= Font missing	The font could not be loaded in the job. Mostly caused by copying a job without copying the required fonts.	Copy the required font into internal memory and push function reload all fonts.	
1012	1012= Illegal character in barcodeobject	Not allowed characters in the bar code object.	Read the script and interface protocol documentation!	
1013	1013= Uncorrect length of barcodeobject	Too many characters in the bar code object.	Read the script and interface protocol documentation!	
1014	1014= Mailing data too long	Mailing data too large. A mailing object is in the job. The mail data is however too long or there are too many wildcards in the job.	Read the script and interface protocol documentation!	
1015	1015= Mailing buffer full	Mailing buffer is full. Too many data have been sent.	Read the script and interface protocol documentation!	
1017	1017= Counter syntax error	Syntax error in the counter object.	Read the script and interface protocol documentation!	
1018	1018= Database index number invalid or missing	Database index number is not allowed or is missing.	Read the script and interface protocol documentation!	
1019	1019= Database index number isn't consecutively numbered	Database index numbers are not sequential	Read the script and interface protocol documentation!	

Code - Nr	Error text	Reason	Solution	Remarks
1021	1021= Extern Text: Double print happened	External text: double print has occurred. There were no new data sent.	Check the data handling of the communication computer. Check data cable and connections.	
1200	1200= Memory error in SRAM	SRAM memory on the Cyclone Board seems defective.	Change the controller board.	See the service document "Exchange the Controller board JET3up"
1201	1201= Check sum error. Please check battery voltage.	Checksum error when testing the battery buffered SRAM memory. Cause 1. After initial operation or after battery replacement when mains has been unplugged. 2. Battery is empty 3. Memory content is incorrect	Exchange the battery on the controller board!	
1202	1202= Memory access error in SRAM	Software error!	Carry out a software update.	If software update is without success, please contact LEIBINGER
1203	1203= Low battery voltage. Please remove battery	Battery voltage is under the limit. So as not lose memory contents you should exchange the battery when mains plugged, but switched off (note! only trained staff)	Exchange the battery onto the controller board!	

Code - Nr	Error text	Reason	Solution	Remarks
1210	1210=PrintGo error	"PrintGo error." Another print go signal was detected while the system is printing. - Several print go from same product - distance between sensor and print head is too big	1. Adjust the print go sensor that one product is sending only one signal. 2. Reduce the distance from sensor to print head. 3. Use print go hold function	See Operating manual JET3up Figure 8.5.1.4 / Page 196ReleaseR1.06
1211	1211=Internal communication error	Softwareupdate!	Carry out a software update.	
1212	1212= Internal communication error	Internal communication problem: A CPU (RIP) has sent a message (identifier) to a different CPU which is unknown.	Reboot again the system. Carry out a software update. Change the controller board.	See the service document "Exchange the Controller board JET3up" If no success, please contact LEIBINGER
1213	1213=Job data too large	A job is bigger than 1 MByte.	Check the size of the print job and reduce if necessary.	Read the script and interface protocol documentation!
1214	1214=Too much strokes in one job	more as 20000 strokes are used within the job	Read the script and interface protocol documentation!	
1215	1215=Empty joblist	Empty job list.	Read the script and interface protocol documentation!	
1216	1216=Faulty RIP memory reservation	Error in RIP memory reservation.	Read the script and interface protocol documentation!	

Code - Nr	Error text	Reason	Solution	Remarks
1217	1217= Extern text too large	External text is too long for the external text object or false. (Unauthorized characters?)	Read the script and interface protocol documentation!	
1218	1218=X3 Outputdriver overloaded. Outputs disabled	The output drivers for the X 3 outputs logs too hot (overload, short-circuit) Note: in order to protect IC, all outputs are switched off automatically. Power in X 3 output driver too high. The outputs were locked for safety.	Rebooting the system will activate the outputs again. Check if there is a short circuit onto X3 input.	
1219	1219= Power input overloaded. Please check your power supply net immediately	The input voltage is too high.	Check the power supply net for over voltage.	
1220	1220= Object counter reached end value. Print has stopped.	An object counter has reached its defined end.	See Operating manual JET3up Figure 8.7.3 Counter / Page218 ReleaseR1.06	
1221	1221= Job list reached end. Print has stopped.	A job list (batch or job organisator) has reached the end and will not be repeated.	See operating manual JET3up Figure / Page ReleaseR1.06	
1222	1222= Job not loaded or faulty	Job was not loaded or is corrupt.	Check the job settings in job editor and save it again. If jobs has been imported by USB device, check if files are not corrupt.	
1223	1223= Last Database record printed. Print has stopped.	Last database entry printed. Printing has been stopped.	The database has reached the end and printer stopped to print.	

Code - Nr	Error text	Reason	Solution	Remarks
1224	1224= Stop count value reached. Print has stopped.	End of counter reached. Printing has been stopped.		
1300	1300= Faulty visco-measurement. Please check visco pump and viscometer.	The ball has not reached the upper sensor in the viscometer = Sensor broken, ball hangs down, any air in the viscometer.	Start constant bleed function for about 10 minutes to get the air out of the system. Take out the viscometer and flush it several times with solvent. If no success exchange the viscometer.	
1301	1301= Faulty visco-measurement. Please check visco pump and viscometer.	The ball does not fall (top stuck) Dirt in the Glass tube.	Take out the viscometer and flush it several times with solvent. If no success exchange the viscometer.	
1302	1302= Faulty visco-measurement. Please check visco pump and viscometer.	The ball has not left the upper sensor Dirt in the Glass tube	Take out the viscometer and flush it several times with solvent. If no success exchange the viscometer.	

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Code - Nr	Error text	Reason	Solution	Remarks
1303	1303= Faulty visco-measurement. Please check visco pump and viscometer.	The maximum fall time of 16.4 seconds was exceeded i.e. the ball has passed the upper sensor, but it has not arrived at the lower sensor. 1 Ink is extremely thick 2. Lower sensor defective (no signal delivers) 3. Ball is stuck on the way down	Take out the viscometer and flush it several times with solvent. If no success exchange the viscometer.	
1304	1304= Faulty visco-measurement. Please check visco pump and viscometer.	The minimum event time of 500ms has been exceeded. 1 Lower sensor defective (provides continuous signal) 2. Air in the tube?		
1305	1305= Attention, ink too thick!	Fall time of the ink is 2 seconds higher than the nominal fall time (= ink too thick) Note! This error message is issued only once after switching on. After confirmation of the error this is not repeated.		

Code - Nr	Error text	Reason	Solution	Remarks
1306	1306= Attention, ink too thin!	Fall time of the ink is less than 2 seconds lower than the nominal fall time (= ink too thin)		
1307	1307= The ink flow pressure is faulty. Hydraulic control has stopped. Please check the pump and all connections.	<p>The main pump could not push up the membrane in the middle position in normal operation within 2.5 seconds.</p> <p>Possible causes:</p> <ol style="list-style-type: none"> 1. Air in the system (probably the most common cause) 2. Leakage 3. Bleed valve does not work correctly (possibly damaged) 4. Main pump do not run (pump is defective) 5. Sensor wiring to the pressure tank failed (continuous) 6. Hall sensor for membrane location defect 7. Diaphragm faulty (leaky) or hangs <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Attention</p> <p>"Note: when this error occurs, the entire hydraulic system for security reasons is switched off (emergency stop)"</p> </div> </div>		

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Code - Nr	Error text	Reason	Solution	Remarks
1308	1308= Pressure fault. Hydraulic control has stopped. Please check air pump and all connections.	The compressor could not build up the pressure within 120 seconds (!) 1 Pneumatic part leaking 2. Defective compressor (possibly even wiring!) 3. Air filter clogged"		
1309	1309= Ink Flow sensor error. Hydraulic control has stopped.	Ink flow sensor reports out of ink Possible causes: 1 Inkjet does not apply in the gutter tube 2. Even no ink-jet available (Nozzle blocked, ink valve is not working) 3. Cable break or ink flow sensor contact problem 4. Return flow sensor or wiring "flooded" with ink.	Adjust ink stream Clean nozzle	
1310	1310= Ink tank reached low level position. Please refill ink.	Please refill ink.		
1311	1311= Solvent tank reached low level position. Please refill solvent.	Please refill solvent.		

Code - Nr	Error text	Reason	Solution	Remarks
1312	1312= Leakage found in the hydraulic area. Hydraulic control has stopped. Please check hydraulic immediately.	Leakage sensor is giving alarm! 1. Hydraulic leakage 2. Any water on the bottom"	Check the hydraulic part if there is any ink or solvent leak. If no leak could be detected, clean leak sensor with solvent and activate hydraulic control again. If humidity is found onto the leak sensor, dry it and activate the hydraulic control again.	
1313	1313= Invalid Hydraulic Settings	Invalid hydraulic setting (Pressure much too high, visco correction factor much to low or much too big.)		
1315	1315= Inktyp not supported	Ink type is not supported in the printer.	Carry out a software update	If software update is without success, please contact LEIBINGER
5000	5000= Charge Electrode dirty. Please check if charge electrode is dirty and clean if necessary.	"Causes:" 1. Electrode block dirty with ink 2. Head Electronics "filled with ink or solvent ", system leak 3. HV discharge onto head electronics 4. Error when reassembling deflection unit head chassis (HV Cable crushed, seal damaged).	Clean print head	

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Code - Nr	Error text	Reason	Solution	Remarks
5001	5001= Phasing error. Please check if charge electrode is dirty and clean if necessary.	"Causes:" 1. Electrode block dirty with ink 2. Head Electronics "filled with ink or solvent ", system leak 3. HV discharge onto head electronics 4. Error when reassembling deflection unit head chassis (HV Cable crushed, seal damaged).	Clean print head Adjust ink stream Exchange Electrode block Exchange umbilical	
5002	5002= No charge electrode response. Please check if charge electrode is dirty and clean if necessary.	No detector responses when attempting the drop break point. Causes: 1 Wrong frequency setting 2. See 5000 3. Oscillating or wiring to the oscillator defective. Flooded oscillator (due to improper installation) 4. Oscillator voltage circuit overload (no compensation set with 10 m cable, etc.) 5. Electrode block defective.	Exchange oscillator Exchange electrode block	
5003	5003= Drop-break-off point couldn't be adjusted correctly.	Drop break point setting bad or not possible i.e. drops could be detected, but a drop break point could not be adjusted. Causes see „error 5002“	Exchange oscillator Exchange electrode block	

Code - Nr	Error text	Reason	Solution	Remarks
5004	5004= Phasing error. The time interval between two PrintGo's is too small.	Phasing error. The time interval between two PrintGo's is too small. Increase delay or reduce production speed.		
5010-5014	5010= An error occurred while the function Nozzle Open / Nozzle Close was in process. Check the mechanics for gutter-movement.	No Encoder signals when attempting to drive the motor. Causes: 1. Motor is jammed 2. Encoder or encoder wiring defective 3. Motor or a faulty motor driver (motor does not run) 4. Plug of the motor lose or filled with ink.	Clean the print head with solvent. Change the nozzle motor. Change controller board.	See the service document cleaning print head of JET3up. See the service document Exchange controller board.
5015	5015= Motor direction incorrect	Motor direction is wrong, i.e. the counting direction of the encoder does not match the desired direction of movement.	Change the nozzle motor. Check if the connector of nozzle motor is loose.	
5016	5016= Nozzle was open already during Power On process.	Nozzle was open during the power-on process.	It is only an info message to remind you that the printer has been switched off with an open nozzle. Possible that mains went off or mains plug has been removed while the nozzle has been open.	

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Code - Nr	Error text	Reason	Solution	Remarks
5020	5020= HV-Current too high. Check deflection plate for dirt or humidity.	Causes: 1. Dirty deflection plates 2. Head with ink or solvent filled 3. Error of the assembly (usually squeezed HV cable)	Clean the print head	
5030	5030= Error. A StrokeGo occured while a stroke was in progress. So strokes will be lost.	Error. A StrokeGo occured while a stroke was in progress. So strokes will be lost because of too high production speed.	Reduce the production speed if possible. Increase the stroke distance if possible. Use a different speed mode to get a higher possible production speed. Use a smaller font in the print job to reduce the maximum size of drops in the height.	

Code - Nr	Error text	Reason	Solution	Remarks
5031	5031= The printing speed much too highly. Drops will be lost.	Occurs when the print is (permanently) too fast, the StrokeGo monitoring is disabled and as a result, the DAC FIFO run over. Printing is too fast.	Reduce the production speed if possible. Increase the stroke distance if possible. Use a different speed mode to get a higher possible production speed. Use a smaller font in the print job to reduce the maximum size of drops in the height.	
5042	5042= Drop calculation too slow	Occurs when the print speed is permanently too fast.	Reduce the production speed if possible. Increase the stroke distance if possible. Use a different speed mode to get a higher possible production speed. Use a smaller font in the print job to reduce the maximum size of drops in the height. Increase the distance between the different prints.	
5043	5043=Mailing buffer empty	Mailing buffer empty. During a print another print go appears and causes that the buffer is getting empty.	Check the print go sensor for double trigger and if possible adjust the sensitivity. Use „hold of distance“ to ignore double trigger.	See Operating manual JET3up Figure 8.5.1.4 / Page 196ReleaseR1.06

Code - Nr	Error text	Reason	Solution	Remarks
5050	5050= PrintGo distance is shorter than Print length	The print distance specified in the JobEditor between two print is shorter than the print itself (i.e. the next print drops into first one). Workaround: increase the PrintGo distance	Increase the PrintGo distance or reduce stroke distance of the print job.	
5051	5051= Error. A PrintGo occured while a print was in progress. So prints will be lost.	During an ongoing print, the next PrintGo signal has been already received i.e. the print out is longer than the distance between two Print Go.	1. Adjust the print go sensor that one product is sending only one signal. 2. Reduce the distance from sensor to print head. 3. Use print go hold function	See Operating manual JET3up Figure 8.5.1.4 / Page 196ReleaseR1.06
5060	5060= Charge voltage overload.	"An overload situation of the charging voltage amplifier (current) Possible causes: 1. Short circuit on charge voltage line (possibly head) 2. Coaxial cable or chassis under deflection unit "flooded" (check coaxial cable impedance, ohmic resistances typical error <1MOhm)	Clean print head Exchange umbilical Adjust ink stream Exchange Electrode block Check coaxial cable impedance, ohmic resistances typical error <1MOhm	See service document "cleaning of print head" See service document "adjust print head". See service document „change the electrode block“.
5061	5061= Piezo voltage overload.	Power in the oscillating power amplifier too high. 1. Short-circuit in oscillator voltage power line 2. Defective oscillator	Clean print head Adjust ink stream Exchange oscillator. Exchange umbilical	See service document "cleaning of print head". See service document "adjust print head". See service document „exchange oscillator“.

Code - Nr	Error text	Reason	Solution	Remarks
10006	10006= Font Error. One or more Fonts are incorrect.	A font in the FONT directory is empty, corrupted or cannot be read from the disk.	Carry out a software update	If software update is without success, please contact LEIBINGER
10007	10007= Jobfile Error	The desired job in the JOB directory is empty, corrupted or cannot be read from the disk.	Create a new job and load to print.	
10009	10009= Too many Fonts. Please remove one or more Fonts.	Too many Fonts. Please remove one or more Fonts.	Please remove one or more Fonts.	
10201	10201= Service required (working hours)	Service required (working hours)	A service for the printer is due.	
10202	10202= Service required (time interval)	Service required (time interval)	A service for the printer is due.	
11000	11000= Warning! You have opened the head cover.	The head cover has been opened during the production.	Before removing the head cover, push button print stop if printer is busy.	
11015	11015= RIP- or SDC-Software not found	Start again the software update.	Carry out a software update	If software update is without success, please contact LEIBINGER

Code - Nr	Error text	Reason	Solution	Remarks
11020	11020= Nozzle has not been closed	1. Print head mechanism stuck with ink. 2. Motor defective 3. Motor connector loose	Clean the print head with solvent.. Check if the connector of nozzle motor is loose. Change the nozzle motor	See the service document "cleaning print head of JET3up".
11025	11025= Nozzle could not be opened	1. Print head mechanism stuck with ink. 2. Motor defective 3. Motor connector loose	Clean the print head with solvent. Check if the connector of nozzle motor is loose. Change the nozzle motor.	See the service document "cleaning print head of JET3up".
11030	11030= No phasing	The time distance between the individual print outs is too short	Increase the print go delay to get more time between two prints. Reduce the production speed if possible.	
11035	11035= Job could not be loaded	Job could not be loaded.	The print job is physically damaged or does not exist.	
11040	11040= Printstart not possible	Start print not possible. 1. Printer is not ready for printing. 2. Head cover is open 3. Nozzle is closed	Check if head-cover is on. Check if nozzle is closed or open. If closed, push button "nozzle open"	
11045	11045= Nozzle was open already during Power On process.	Nozzle was open during the power-on process.	It is only an info message to remind you that the printer has been switched off with an open nozzle. Possible that mains went off or mains plug has been removed while the nozzle has been open.	

Code - Nr	Error text	Reason	Solution	Remarks
11050	11050= Error in Database source. Print was stopped !	Errors in the database source. Printing has been stopped.	Read the script and interface protocol documentation!	
12000	12000= Invalid packet received	Sent wrong parameters per interface.	Read the script and interface protocol documentation!	
12020	12020= Current job not found	Requested file not found.	Read the script and interface protocol documentation!	
12025	12025= Requested file not found	Requested file not found.	Read the script and interface protocol documentation!	
12045	12045= Receiving current job from script failed	Failure in script for the currently received job.	Read the script and interface protocol documentation!	
12050	12050= Receiving current job error	Failure in script for the currently received job.	Read the script and interface protocol documentation!	
12100	12100= Nozzle could not be opened! Please check Nozzle in Printhead ServiceFunctions.	1. Print head mechanism stuck with ink. 2. Motor defective 3. Motor connector loose	Clean the print head with solvent. Check if the connector of nozzle motor is loose. Change the nozzle motor.	See the service document "cleaning printhead of JET3up".

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Code - Nr	Error text	Reason	Solution	Remarks
12105	12105= Nozzle could not be closed! Please check Nozzle in Printhead ServiceFunctions.	1. Print head mechanism stuck with ink. 2. Motor defective 3. Motor connector loose	Clean the print head with solvent. Check if the connector of nozzle motor is loose. Change the nozzle motor.	See the service document "cleaning printhead of JET3up".
12107	12107= Please activate new Ink! According to consumption measurement more Ink was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.	Please activate new Ink! According to consumption measurement more Ink was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.		
12108	12108= Please activate new Ink! According to consumption measurement more Ink was used than activated. Please activate with new bottle(TAG) and fill tank if necessary. Otherwise, machine will locked automatically !	Please activate new Ink! According to consumption measurement more Ink was used than activated. Please activate with new bottle (TAG) and fill tank if necessary. Otherwise, machine will locked automatically!		

Code - Nr	Error text	Reason	Solution	Remarks
12109	12109 =Please activate new Solvent! According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary. Otherwise, machine will locked automatically!	Please activate new Solvent! According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary. Otherwise, machine will locked automatically!		
12110	12110 =Please activate new Solvent! According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.	Please activate new Solvent! According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.		
12111	12111 =Ink Jet is locked! Please activate new Ink. According to consumption measurement more Ink was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.	Ink Jet is locked! Please activate new Ink. According to consumption measurement more Ink was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.		

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Code - Nr	Error text	Reason	Solution	Remarks
12112	12112= Ink Jet is locked! Please activate new Solvent. According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.	Ink Jet is locked! Please activate new Solvent. According to consumption measurement more Solvent was used than activated. Please activate with new bottle (TAG) and fill tank if necessary.		
12113	12113= Ink refilled without activation. Please activate now by holding the bottle to the TAG-Reader.	Ink refilled without activation. Please activate now by holding the bottle to the TAG-Reader.		
12114	12114= Solvent refilled without activation. Please activate now by holding the bottle to the TAG-Reader.	Solvent refilled without activation. Please activate now by holding the bottle to the TAG-Reader.		
12116	12116= Less than 1MB of free disk space available. Please remove unnecessary files to get more free disk space.	Less than 1MB of free disk space available. Please remove unnecessary files to get more free disk space.	Please remove unnecessary files (jobs, fonts or graphics) to get more available disk space.	
21310	21310= Ink tank reached low level position. Please hold new bottle to the TAG Reader and activate it. After this fill in the complete bottle immediately into the ink tank.	Ink tank reached low level position. Please hold new bottle to the TAG Reader and activate it. After this fill in the complete bottle immediately into the ink tank.		
21311	21311= Solvent tank reached low level position. Please hold new bottle to the TAG Reader and activate it. After this fill in the complete bottle immediately into the solvent tank.	Solvent tank reached low level position. Please hold new bottle to the TAG Reader and activate it. After this fill in the complete bottle immediately into the solvent tank.		

7 Service works

7.1 Execution of a complete maintenance



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Introduction:

The following service documentation describes step by step the execution of a complete maintenance.

For the JET3up printer there are 2 different service kits for intermediate and main service available.

Those kits are available for printers with pigmented and non- pigmented ink.
So in summary there are 4 service kits:

Main Service Kit



Description	Part-number
Main Service Kit (non- pigmented printer)	55-005041S
Main Service Kit (pigmented printer)	55-005042S

Intermediate Service Kit



Description	Part-number
Intermediate Service Kit (non- pigmented printer)	55-004678S
Intermediate Service Kit (pigmented printer)	55-004999S



Information

Some steps only concern either the main- or the intermediate maintenance.
So those points are marked with a notice, which gives you the information,
if you need the main- or the intermediate service kit for execution.

1. Preparation of the printer

- 1.) Switch on the JET3up and wait until the „bleeding cycle“ is finished.
- 2.) Load the **Testprint** and make some printouts on a piece of paper.
This is for a print reference, in case that something would work worse after the maintenance than before.



2. Reset service interval

In order to reset the service interval, a “service-access-Tag” is part of all the “service-kits” for the JET3up printer series.



Caution

It is necessary to activate the TAG **before** you change the main filter. After the installation, you cannot access the TAG anymore.

Important Notice:

It is absolutely necessary that you use a **new** and **valid** Tag.

You can use a Tag only **one time**.

With an invalid Tag you can indeed call up the menu for <TAG Reader Results> but you can not reset the service counters.



The “service-access-TAG” is located **invisible** **below** the label of the main filter.

Important Notice:

The TAG is glued together with the label to the main filter.

Do not try to remove the TAG from the main filter! This may destroy the TAG!

Procedure to reset the service interval:

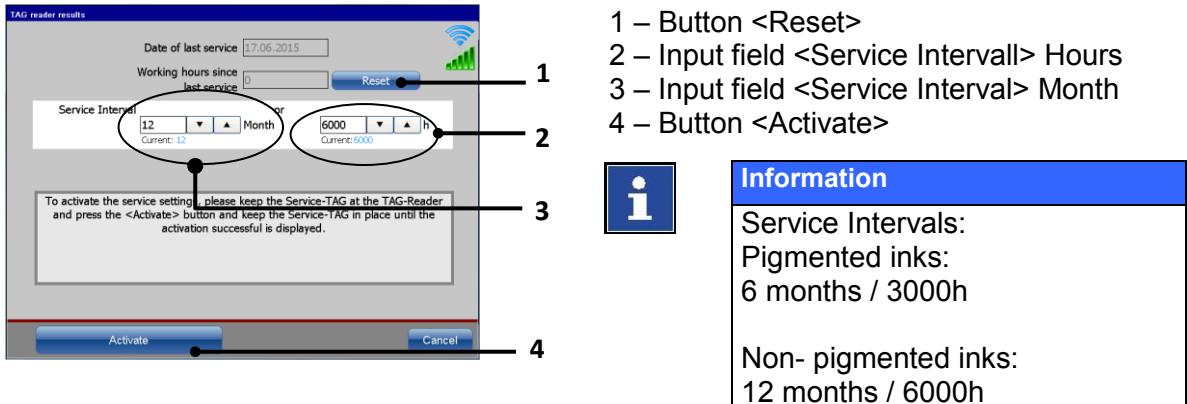
- 1.) Hold the main filter with the label in front of the TAG reader.



Open the service interval dialog box with the “service-access-TAG”

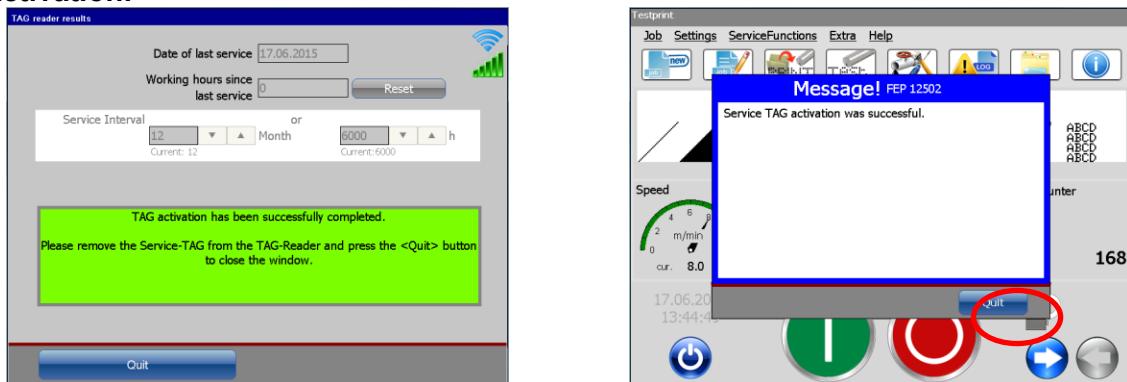
- 2.) The dialog box <TAG Reader Results> pops up.
- 3.) Enter the data for the next service interval.
The interval is set in months (3) and operating hours (2).
The service will be due after the period, or the operating hours set, whichever occurs first.
- 4.) Reset the <working hours since last service> with the button <Reset> (1).

TAG activation:



- 5.) After setting the desired values confirm with the button <Activate> (4).
- 6.) For a successful activation, it is necessary that you hold the main filter on the TAG reader during the whole activation process.
Otherwise you will get the error message: "TAG activation failed".
After a successful activation the new service intervals are saved and the following message is displayed:

TAG activation:

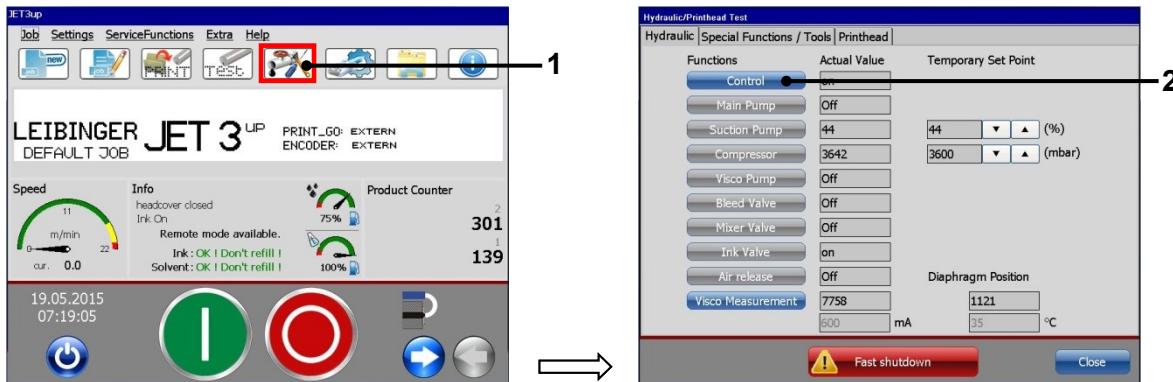


Close the dialog box with the button <Quit>.

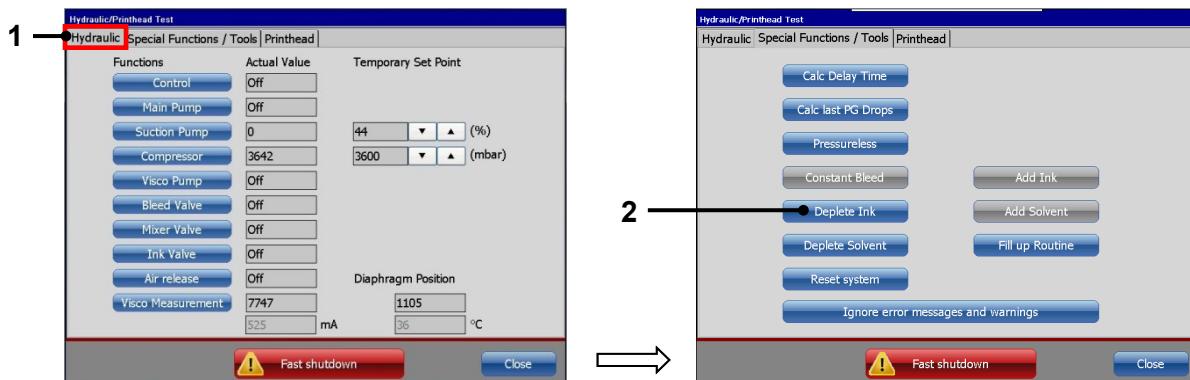
Close the confirmation prompt with the button <Quit>.

3. Deplete the ink and solvent

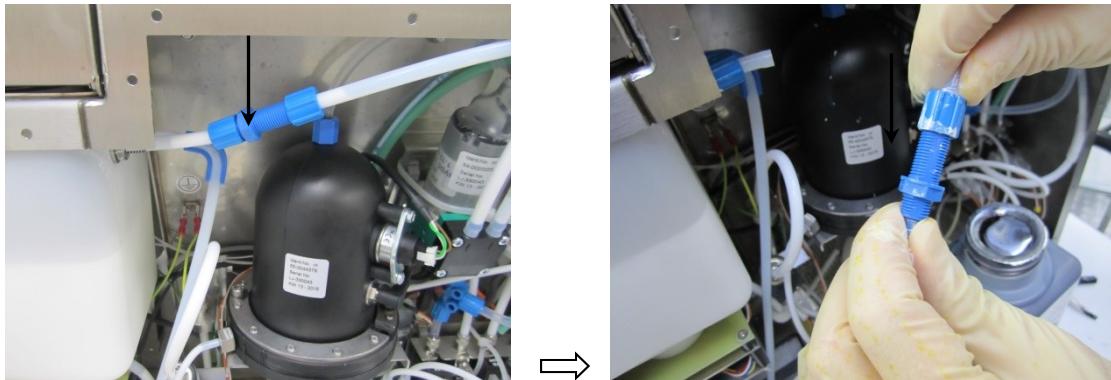
- 1.) Ensure that the nozzle is completely closed.
- 2.) Touch the softkey <Hydraulic settings> (1) and switch off the <Control>-button (2).



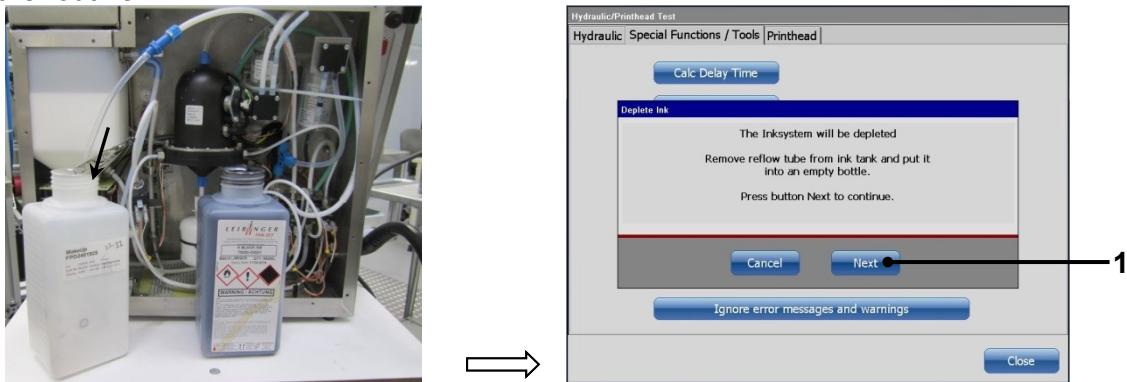
- 3.) Touch <Special Functions/Tools> (1) and activate the function <Deplete Ink> (2).



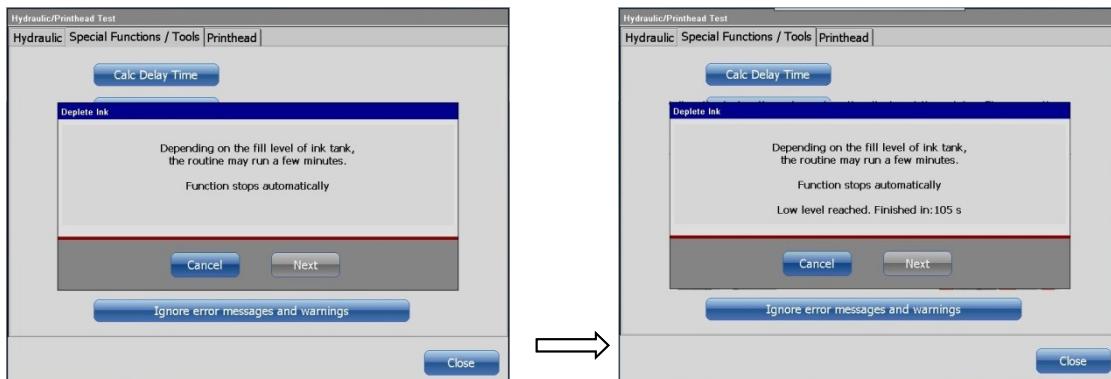
- 4.) Remove the return flow tube on the blue tube connector and connect a piece of tube on the connector (please see the following pictures).

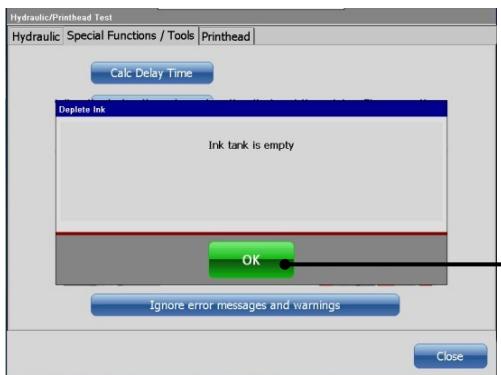


- 5.) Put the end of this tube into an empty ink or solvent bottle and press <Next> (1) to start the routine.



- 6.) Dependent of the filling level of the ink tank, the routine may run a few minutes.
If the level sensor of the ink tank signals "low level", the routine runs another 120 sec.
until the message „ink tank is empty“ appears automatically and switches off this routine.





Please confirm with the button <OK>. The menu will change back to <Special Functions/Tools>.

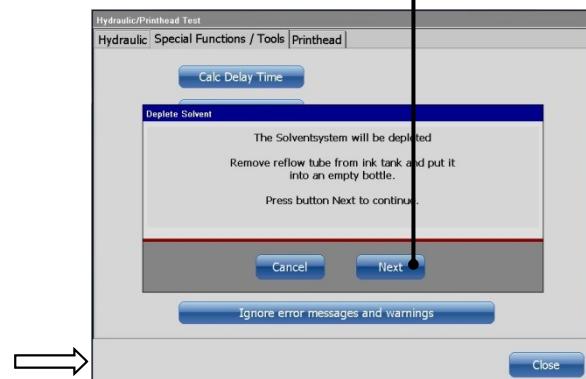
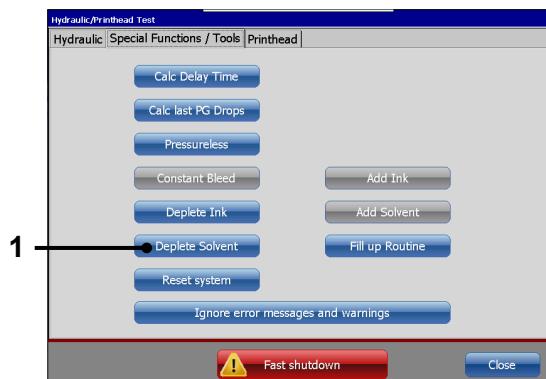
- 7.) Fill up ink reservoir with **Solvent** and start the deplete routine for ink again. Repeat once.



Information

This is necessary to flush and clean the ink tank

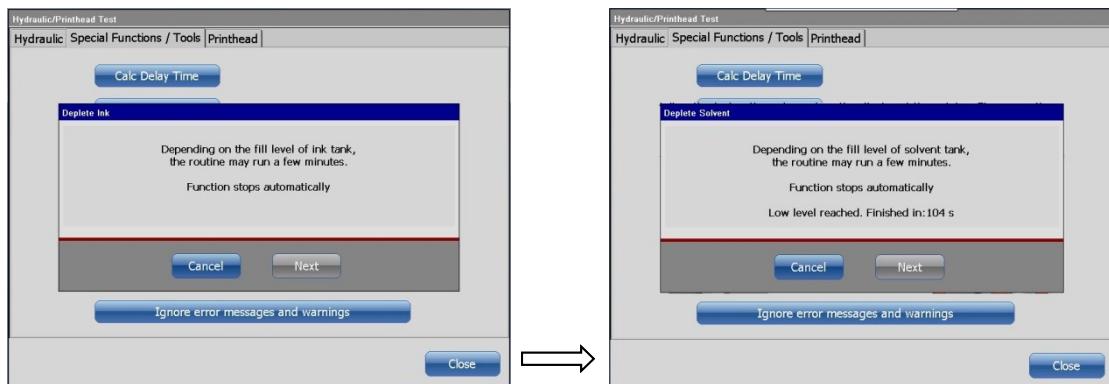
- 8.) To drain the solvent-tank please activate the button <deplete solvent> (1). Put the drain tube (see point 4) once more in an empty ink or solvent bottle and start the deplete routine with the button <Next> (2).



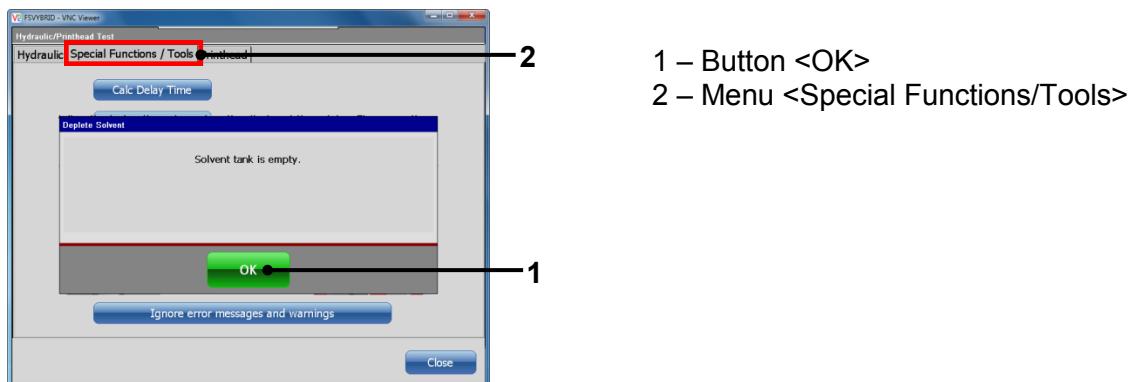
1 – Button <deplete solvent>

2 – Button <Next>

In dependence of the filling state at the solvent-tank the routine runs some minutes. If the sensor recognises the "low level" inside the tank, the routine runs another 120 seconds until the message „ink tank is empty“ appears automatically and switches off this routine.

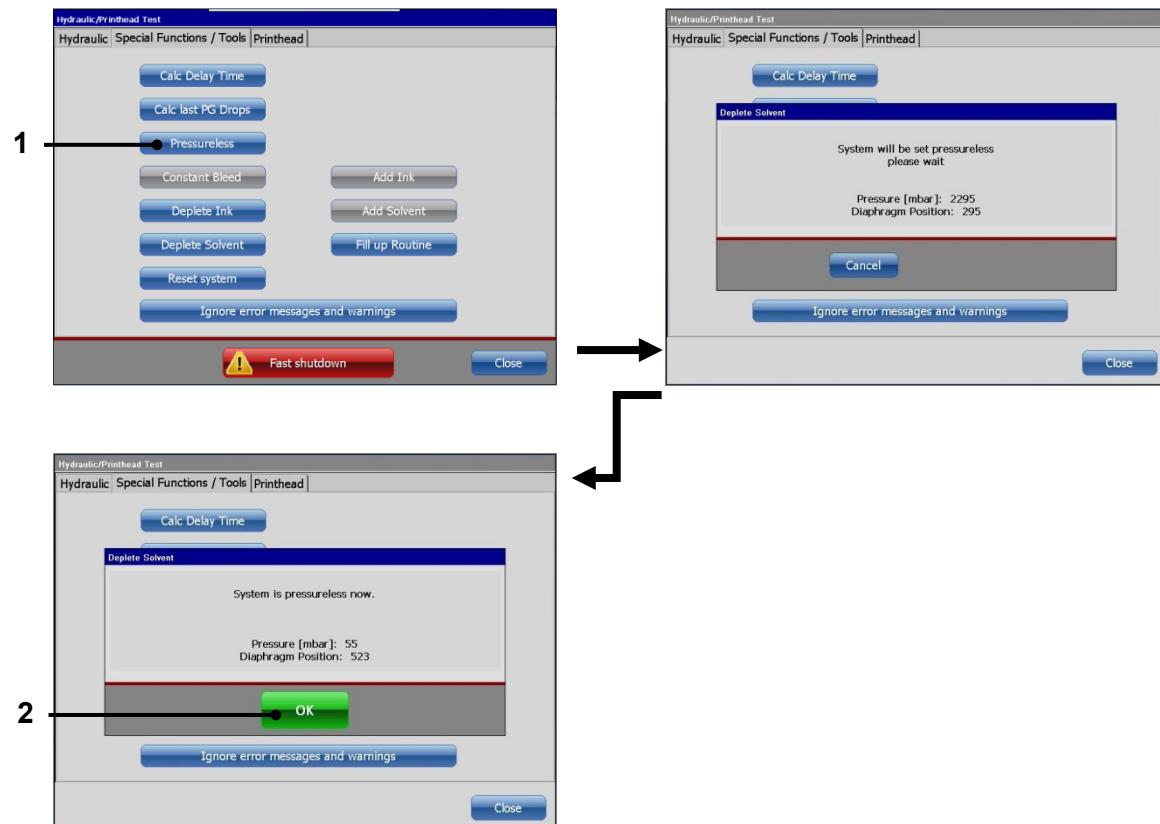


Confirm with the button <OK> (1) and the menu changes back to the menu <Special Functions / Tools> (2).
The drained solvent should not be used furthermore, because it is strongly mixed with ink.



9.) Activate the function <Pressureless> (1).

Now the routine starts automatically and announces, if the hydraulic system has no pressure anymore. Quit this message with the button <OK> (2).



1 – Button <Pressureless>

2 – Button <OK>



Caution

After you have depleted the complete system it is absolutely necessary to connect the return flow tube on the blue tube- connector again!!!



4. Exchange the main filter



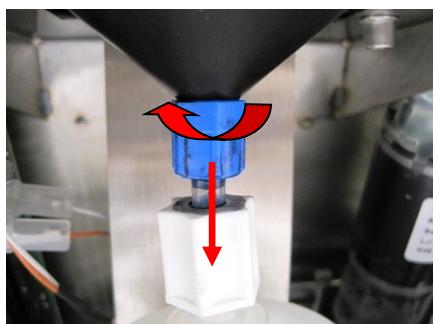
Attention!

It is absolutely necessary to make the system pressure-less at first!!!
(See step 8 on page 10)

- 1.) Cut the black cable tie of the main filter.



- 2.) Open the swivel nut of the main filter completely



- 2.) Pull off the filter downwards.



Attention!

The plastic fitting could be damaged if you bend the filter sideways too strong!



4.) Remove both tubes on the metal T-connector of the old main filter with the special tube remover. It is recommended to place a paper towel under the T-connector. Possibly ink could run out of the filter if you pull it off.

1.)



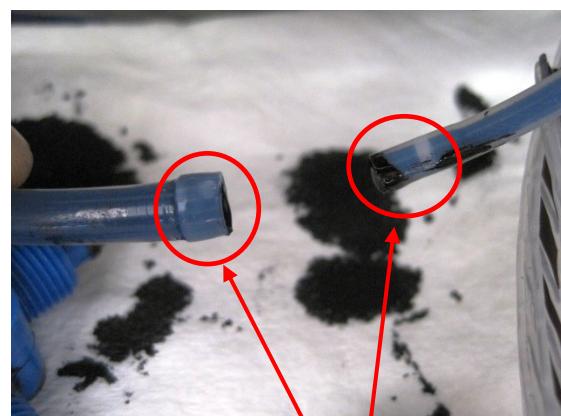
2.)



3.)



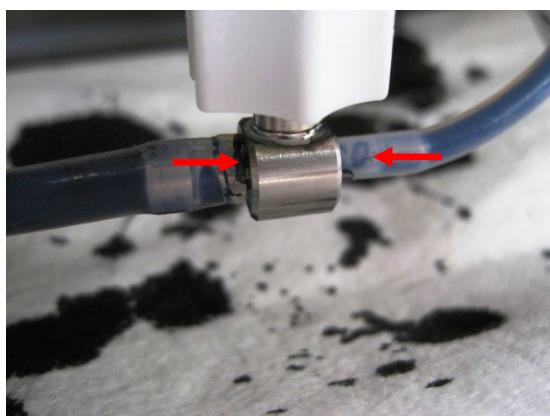
4.)



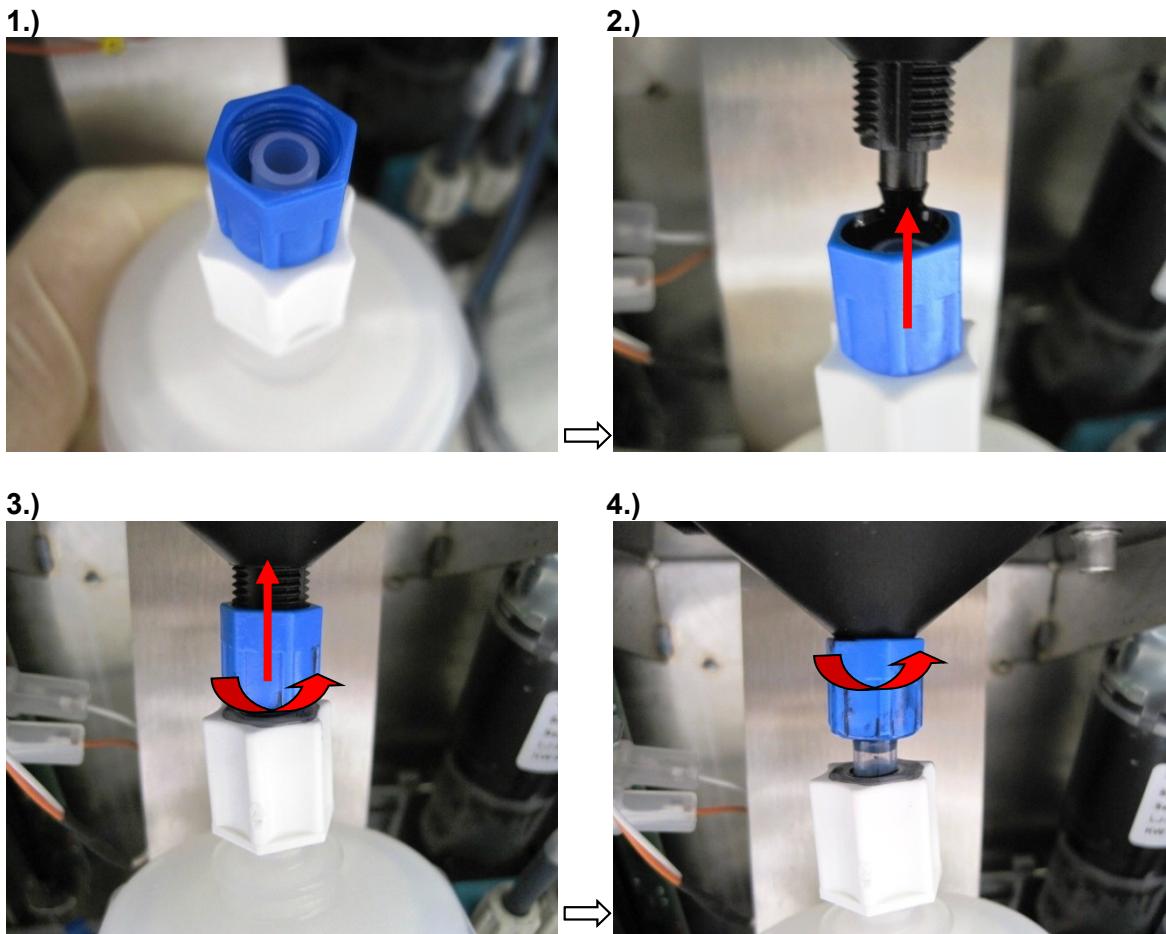
Attention

It is important to cut the widened end on both tubes

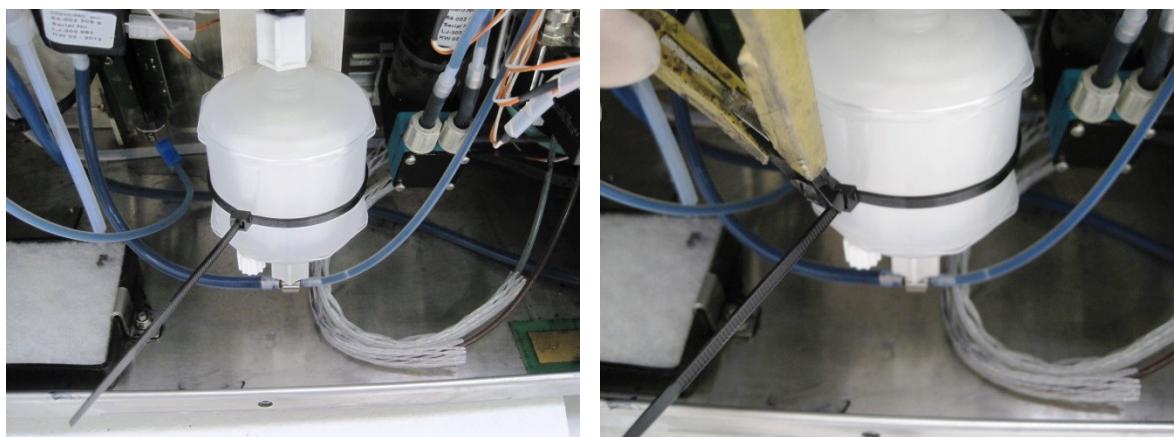
5.) Take the new main filter and connect it with both tubes again



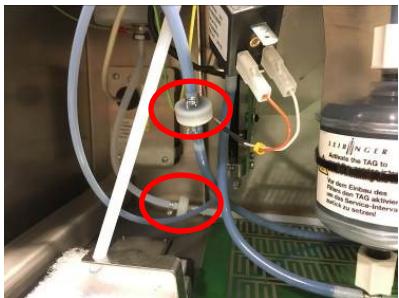
- 6.) Put the union nut on the upper tube and connect it with the pressure tank fitting.
After first plugging of the tube, the nut must be turned a little bit, than the filter can be placed finally. Tighten the union nut.



- 7.) Tighten the filter with the cable tie and cut off the rest.



5. Exchange the pre-filter for solvent tank and ink tank



Filter (2x) with
clamps (4x)
Art. Nr.: Filter:
55-006180 K

Art. Nr.: Clamps:
55-006181 K

6. Exchange the refurbish kit for suction pump

Introduction:

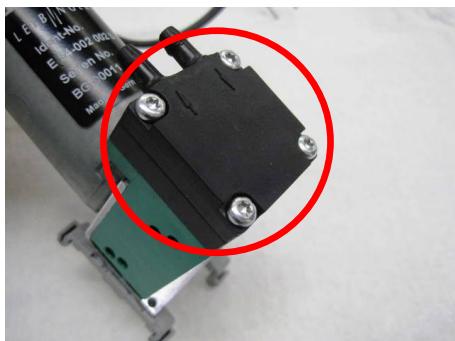


Information

Because of the danger to damage the plastic threads of the pump during the exchange of the pump- diaphragm by incorrect handling, we want to give you the following important advices.

Please consider these advices to ensure, that the pump don't take any damages during the exchange tasks.

- 1.) Pull off the suction pump from the mounting rail.
(The suction pump remains connected to the hydraulic and electric side.)
- 2.) Unscrew the four screws of the suction pump.



3.) Control the number of parts in your refurbish kit:



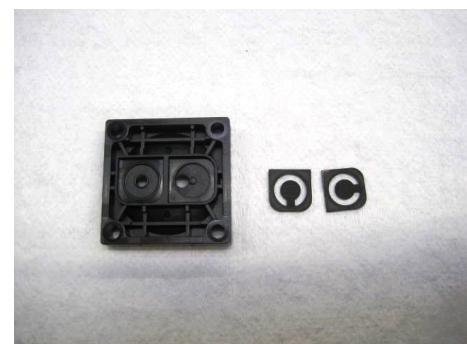
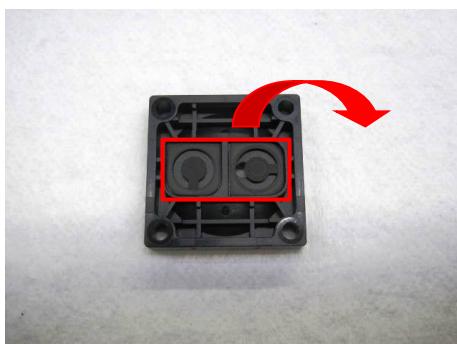
1x suction pump diaphragm

2x valve inlet

4.) Dismount the diaphragm housing from the pump and clean the parts a little bit.



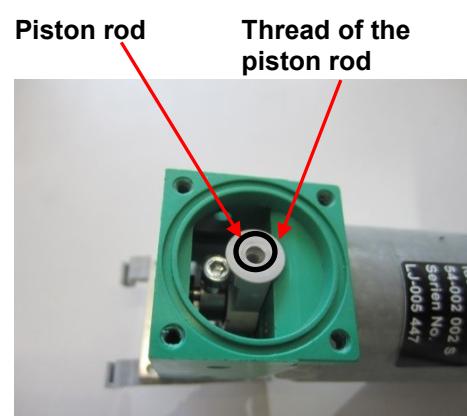
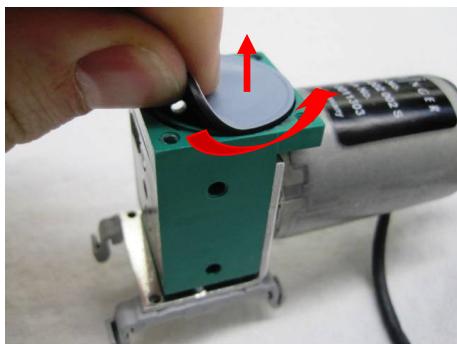
5.) Remove the valve inlets from the lower part.



6.) Unscrew the old diaphragm from the piston rod.

Do not use any tools for this!

Grab the diaphragm and bend it upwards then screw it out in the depicted direction of rotation.



7.) Now mount the new diaphragm.

Information

Before you mount the new diaphragm again, please take care, to find the already available turn of the thread.

If you don't take care about the already existing turn of the thread, the anew screwing would cut a new turn of the thread and would destroy the thread at all.

So the mechanical stability of the thread-connection is not available anymore and the pump is destroyed.

At the input of your force, please consider that it is a matter of plastic thread.

Don't overwind the thread.

Please consider the following notices:

Attention

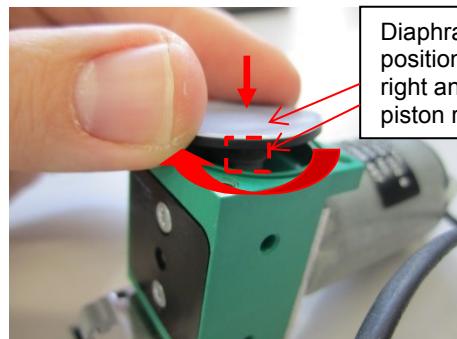
Don't spray any solvent inside the thread

The diaphragm must turn in, with the right angle

At first turn the diaphragm one rotation **counter-clockwise** to find the right turn of the thread.

After that, turn in the diaphragm **clockwise** inside the thread of the piston rod.

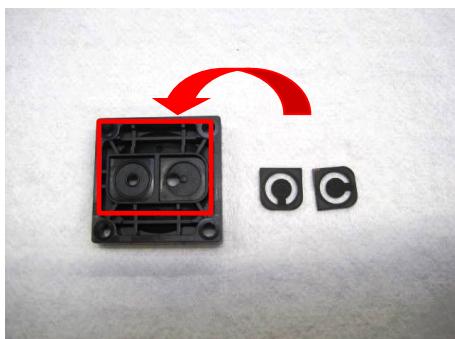
Fix the diaphragm hand tight (not too weak but also not with too much strength) **Use no tools as well!**



Diaphragm is positioned into a right angle to the piston rod.

8.) Place the two valve inlets in the lower part of the diaphragm housing.

Both inlets can be mounted just in one correct direction!





Attention

Humidify the inlets with solvent.

If the inlets are dry the suction pump cannot draw ink!



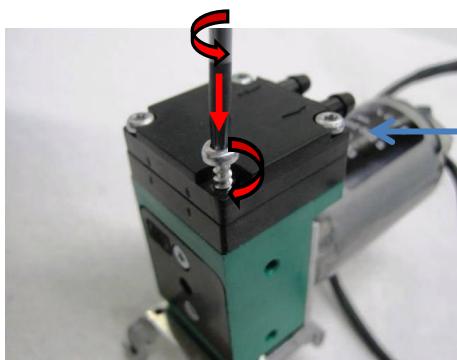
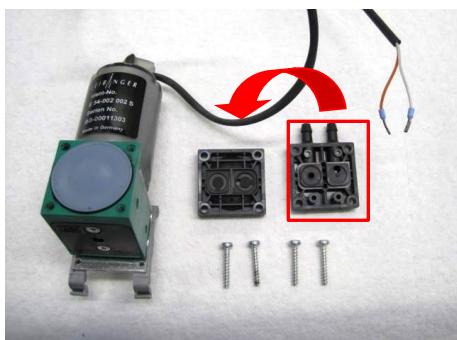
9.) Mount the diaphragm housing and screw it back on the pump.



Attention

Do not damage the diaphragm by mounting the housing!

At first, turn in the screws one rotation **counter-clockwise** to find the right turn of the thread. Afterwards turn in the screws **clockwise**.



After mounting:

Pull on the suction pump to the mounting rail again.

It is absolutely necessary to check if the pump is tight and works correctly.

7. Exchange the refurbish kit for main pump



Attention

This step is only a part for the main service!
So therefore you need the "main service kit"

Introduction:



Information

Because of the danger to damage the plastic threads of the pump during the exchange of the pump- diaphragm by incorrect handling, we want to give you the following important advices.
Please consider these advices to ensure, that the pump don't take any damages during the exchange tasks.

- 1.) Pull off the main pump from the mounting rail.
(The main pump remains connected to the hydraulic and electric side).
- 2.) Unscrew the four screws of the diaphragm housing. Do not lose the washers!



4x screws with washers

- 3.) Control the number of parts in your refurbish kit:

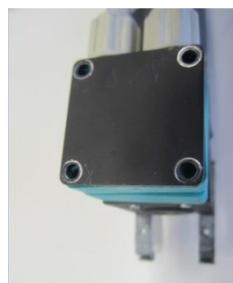


A 1x main pump diaphragm

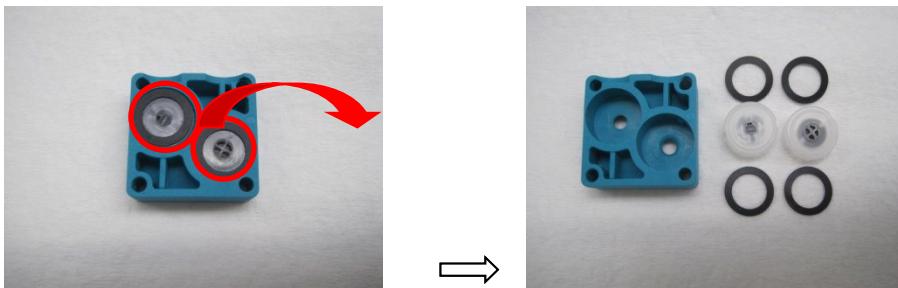
B 4x sealing rings

C 2x filter and valve inlets

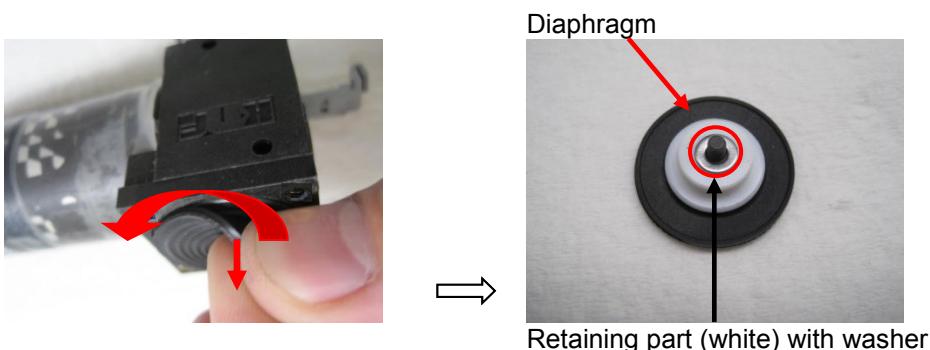
- 4.) Remove the diaphragm housing from the pump and clean the parts with solvent.



- 5.) Remove the valve inlets from the underpart.



- 6.) Turn the pump so the diaphragm shows down and screw out the old diaphragm from the piston rod. Do not use any tools for this!
 Grab the diaphragm and bend it upwards.
 Then screw it out in the depicted rotation direction.



- 7.) Get the white retaining part from the old diaphragm and put it on the new one.



Attention!

If there was an additional washer on the white retaining part (see picture above), put that washer also on the new diaphragm!
 If there was **no** washer you should **not** mount one!

- 8.) Now mount the new diaphragm:

Turn the pump again so you can mount the diaphragm from below. So it is easier to hit the piston rod and the additional washer is not getting lost.

Information

Before you mount the new diaphragm again, please take care, to find the already available turn of the thread.

If you don't take care about the already existing turn of the thread, the anew screwing would cut a new turn of the thread and would destroy the thread at all. So the mechanical stability of the thread-connection is not available anymore and the pump is destroyed.

At the input of your force, please consider that it is a matter of plastic thread.

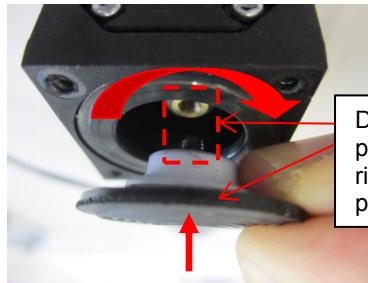
Don't overwind the thread.

Please consider the following notices:

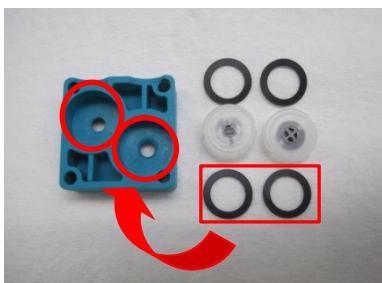
**Attention**

Don't spray any solvent inside the thread
 The diaphragm must turn in with the right angle
 At first turn the diaphragm one rotation **counter-clockwise**
 to find the right turn of the thread.
 After that, turn in the diaphragm **clockwise** inside the thread of the piston rod.
 Fix the diaphragm hand tight (not too weak but also not with too much strength).
Use no tools as well!

Piston rod Thread of the piston rod



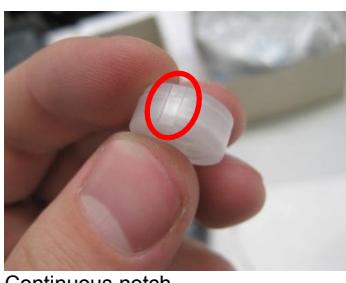
9.) Now place two of the sealing rings in the underpart of the diaphragm housing.



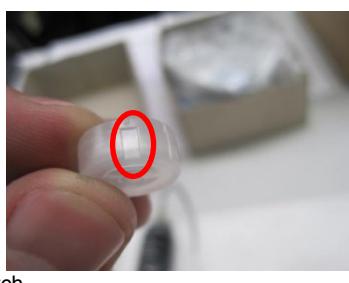
10.) Insert the valve inlets

**Attention:**

Both inlets are completely the same and have the same markings.
 (Notches as you can see on the following photos)



Continuous notch



Longer notch



Shorter notch

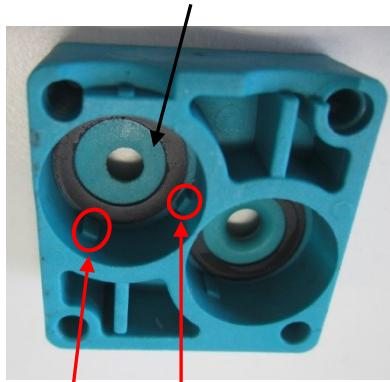


Attention:

Please note, that the counterparts of both valve inlets (left / right) of the diagram housing- underpart are differently arranged. And in addition they have a different length

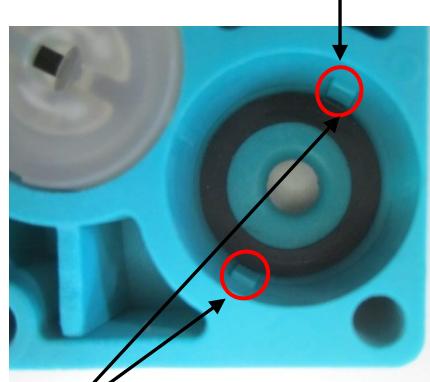
- 11.) Place the diagram housing- underpart like in the pictures below:

Left valve inlet



Longer and shorter counterpart (90° staggered)

Right valve inlet

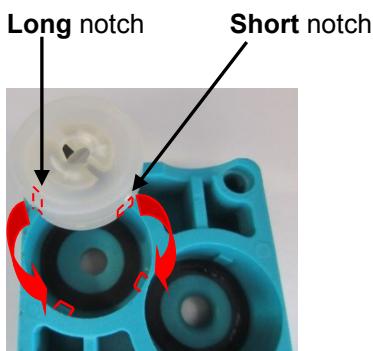


2 x Long counterparts (180° staggered)

12. Now place the **valve inlets** exactly how represented and push them inside

The inlets should not stick out of the housing and should lay just in the opposite way (one normal and one upside down).

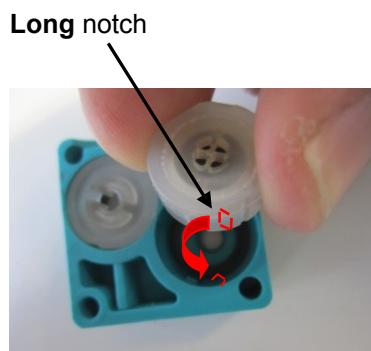
Left valve inlet



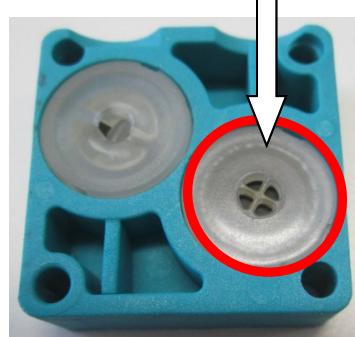
Push



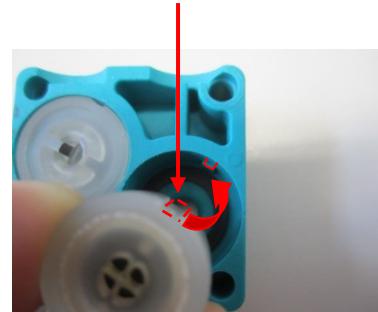
Right valve inlet



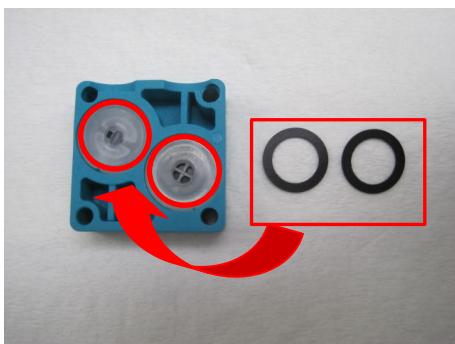
Push



Long notch

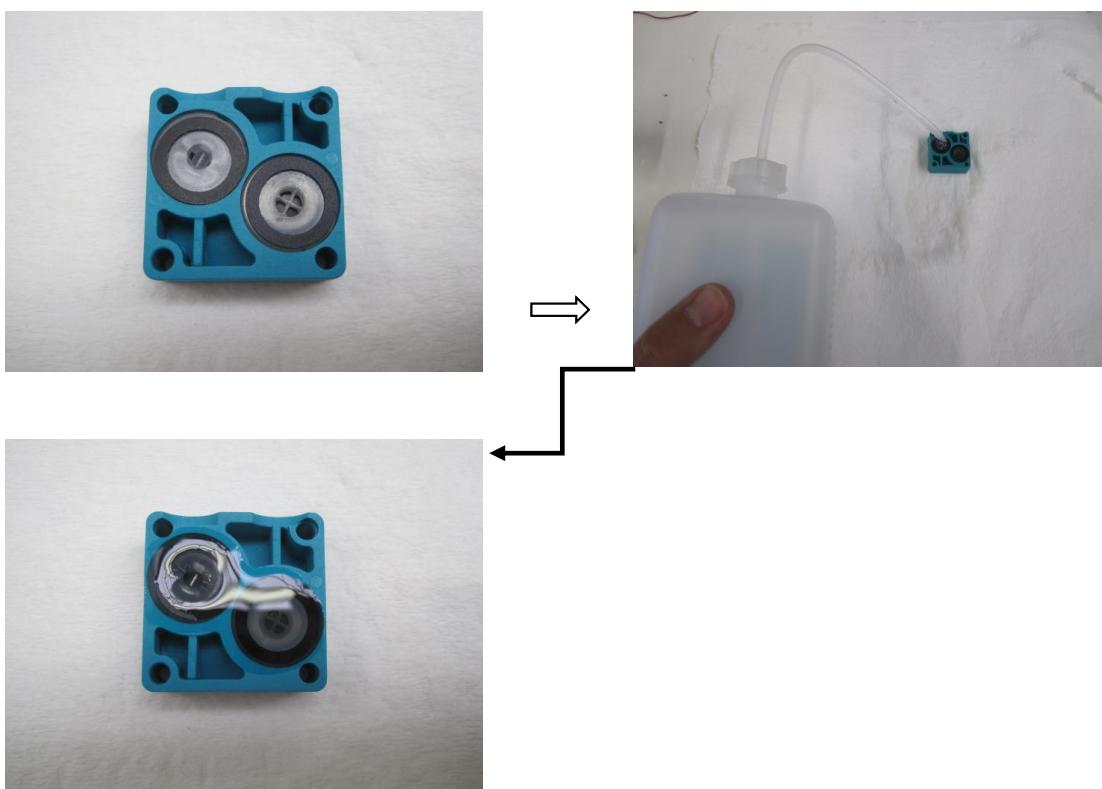


- 13.) Place the two remaining sealing rings on top of the inlets.



Attention!

Humidify the inlets and sealing rings with solvent.
If the inlets are dry the main pump cannot draw ink!

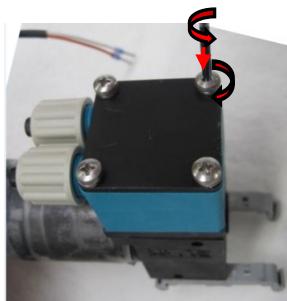


14. Mount the diaphragm housing and screw it on the pump with the four screws.



Attention

Do not damage the diaphragm by mounting the housing!
At first turn in the screws one rotation **counter-clockwise** to find the right turn of the thread. Afterwards turn in the screws **clockwise**.



After mounting:

Pull on the main pump to the mounting rail again.
Fill the ink reservoir again
It is absolutely necessary to check if the pump is tight and works correctly.

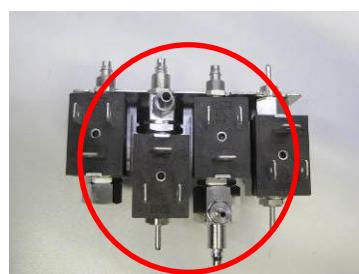
8. Check the piston of mix-, bleed- and ink valve



Attention

This step is only a part of the main service!

- 1.) First take the valve block from the socket. Don't remove the pipes from the valve.
Open the screw with an open end wrench (SW10) and take the ink valve out of the mounting bracket.



- 2.) Open the ink valve with 2 open end wrenches (SW14, one of them abraded), see picture.



- 3.) Check the rubber of the piston. If the rubber is bowed up (macerated), the piston has to be exchanged.
The piston can be installed only in one way.
Reassemble the valve.



- 4.) Open the screw with an open end wrench (SW10) and take the mix valve out of the mounting bracket. Open the mix valve with 2 open end wrenches (SW14 abraded and SW17), see picture.



- 5.) Check the rubber of the piston on both sides. If the rubber is bowed up (macerated), the piston has to be exchanged.



6.) Reassemble the valve. The piston can be installed only in one way.



7.) The dismounting and opening of the bleed valve is similar to dismounting and opening of the mix valve. However the piston is the same as in the ink valve.

8.) Place the valve block back onto the mounting rail.

9. Dismounting and cleaning the filter of the compressor

Open the clamp of the filter and remove it.

Now you can clean the filter with dry compressed air.

After cleaning connect the filter on the compressor again and fix it with the clamp.



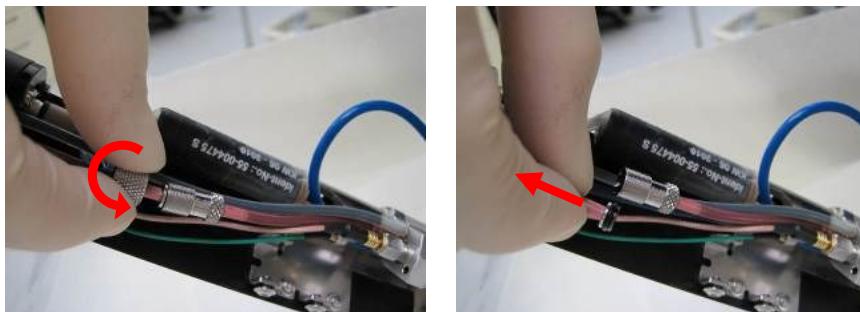
10. If existing, dismounting and cleaning the filter of internal head ventilation

Remove the tube from the pump. Now you can clean the filter with dry compressed air.



11. Changing the head filter (SK4 and SK6 Printhead)

- 1.) Remove the head cover.
- 2.) Open the swivel nut to open the case of the head filter.

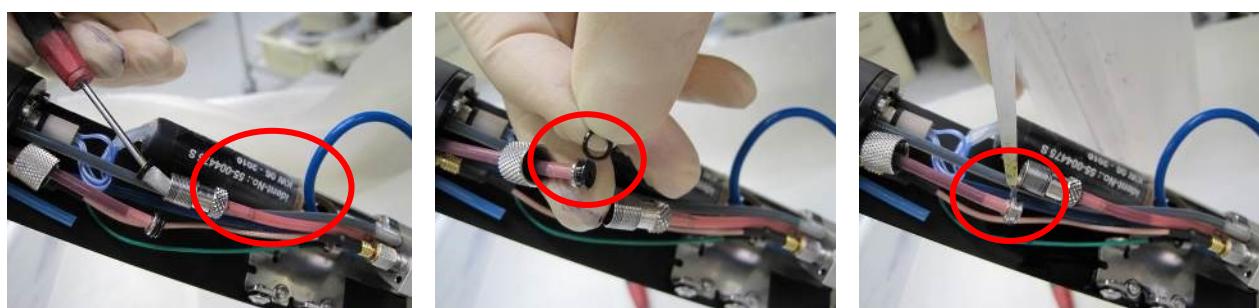


- 3.) Drag out the head filter and O-Ring from the case. Pull down the 2nd O-Ring from the O-Ring plate. Clean the head filter case and the O-Ring plate with solvent.

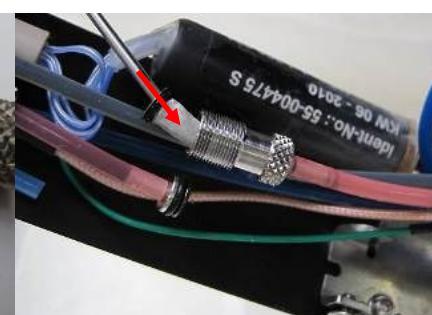


Attention

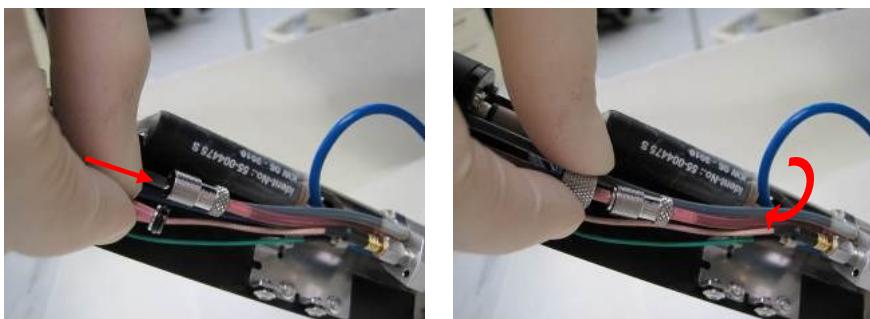
Do not clean the oscillator and head motor with solvent!



- 4.) Filter element for head filter incl. (Leibinger Nr.: E54-003088S)
Pull the small O-Ring over the filter and the big O-Ring over the O-Ring plate.
Slide the filter element with the closed side into the head filter case.



- 5.) Damp the O-Ring from the O-Ring plate with solvent and put it into the head filter case. Close the case with the swivel nut.

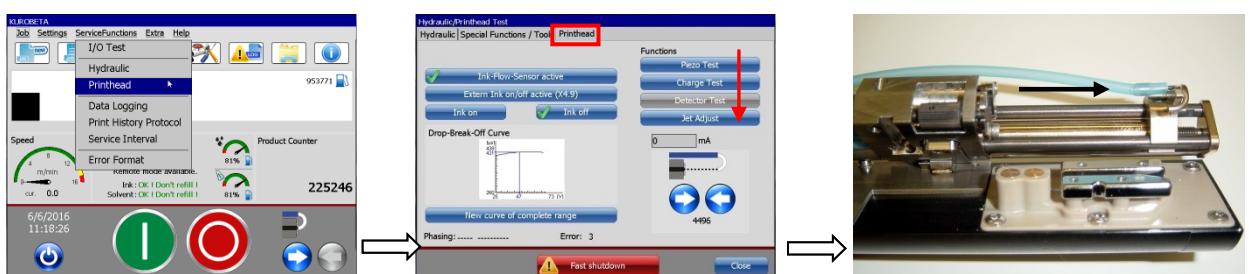


12. Changing the nozzle O-ring (SK4)

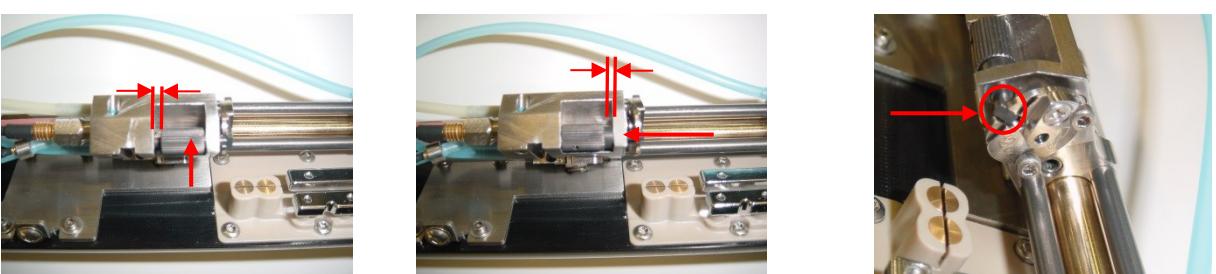
- 1.) Release retaining screw for swivel-unit with an allen key 1.5 mm (metrical) until you can swing the swivel -unit upwards. Arrest retaining screw in final position.



- 2.) All up the “**Printhead**” -menu and press the button <**Jet Adjust**>. The nozzle seal moves automatically in service position.



- 3.) Turn back the knurled-head-screw to stop until the cross bolt moves to 90 ° position and nozzle will be released.



- 4.) Take out the nozzle and clean properly from both sides with appropriate solvent.
First from nozzle outlet, then from nozzle entry.



- 5.) Screw the nozzle apart by using a Torx T6 and take out the old sealing ring.

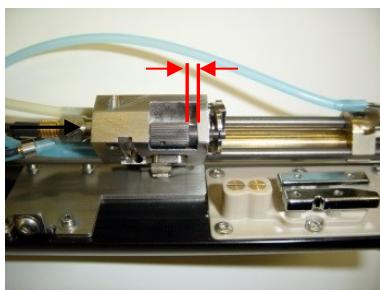


- 6.) Place the new sealing ring in the retaining plate for the sealing ring and mount the nozzle again.



- 7.) Replace the nozzle and turn over the knurled-head-screw to stop position.
Thereby the cross bolt moves back 90°and arrests the nozzle.
Afterwards turn back the knurled-head-screw about **one** rotation.

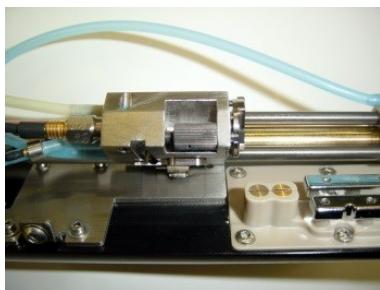
1.)



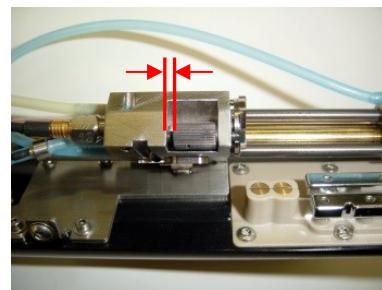
2.)



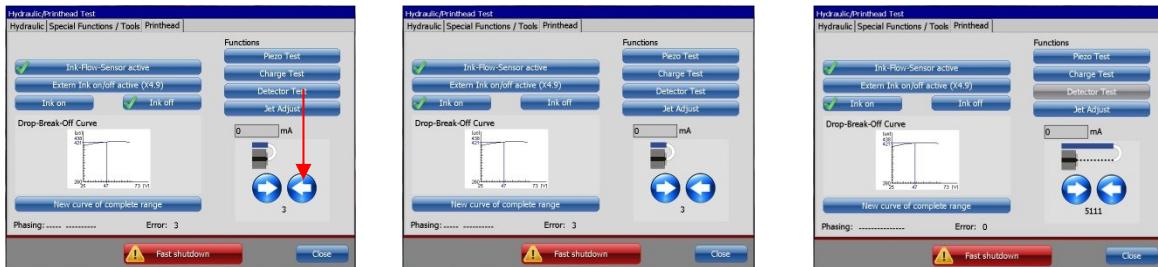
3.)



4.)



- 8.) Close nozzle seal completely by pressing the <arrow> button.
 Press the button <Jet Adjustment> and wait until nozzle seal is open.
 Check jet position in gutter tube.



- 9.) Close nozzle seal again and fix the swivel-unit in starting position.
 Put on and fasten the internal cover.
Caution: By putting on the internal cover do not damage any cable or tubes!!!

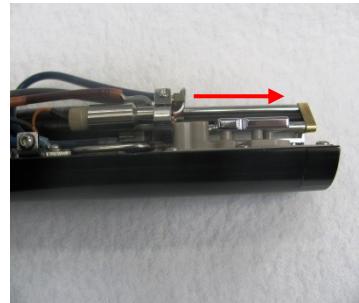
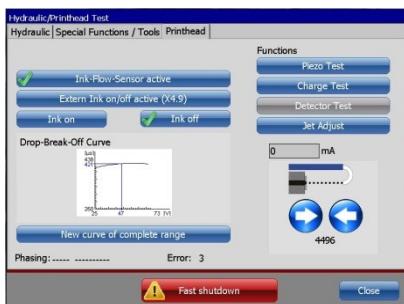


10. Final check of correct jet position and functionality.

(SK6 Printhead)

- 1.) Press the button <Jet Adjustment>.

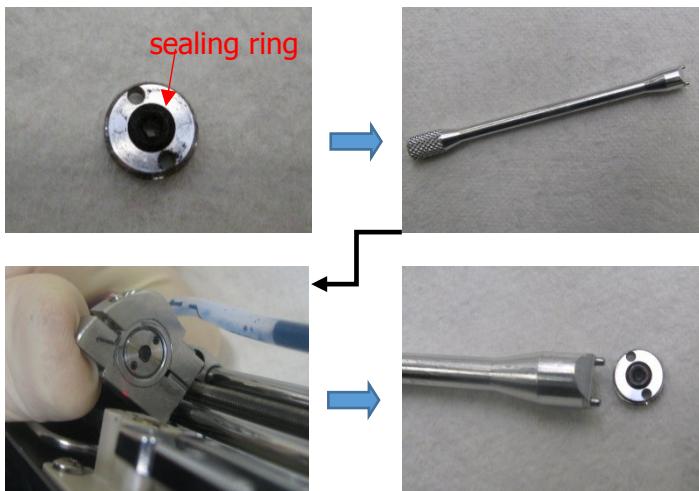
The nozzle seal drives automatically into the service position.



- 2.) Swing the swivel-unit upwards with one hand. Turn out the nozzle retaining plate with a special tool and clean the retaining plate with special solvent.
(Caution: Use the special tool only!)

IMPORTANT:

Don't lose the sealing ring on the nozzle retaining plate!
Control the right position of the sealing ring!



- 3.) Turn out the nozzle with the same tool as the retaining plate and clean the nozzle just like the retaining plate with the special solvent.

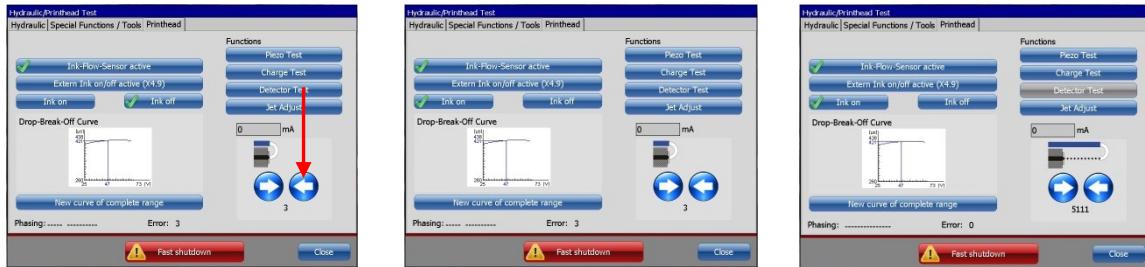
(Caution: Use the special tool only!)

IMPORTANT:

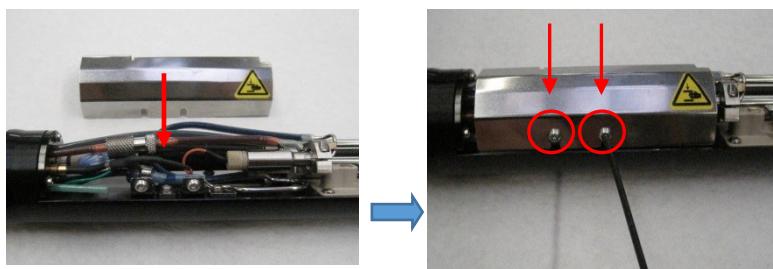
Don't lose the sealing ring in the drop production unit!
Control the right position of the sealing ring!



- 4.) Exhaust the nozzle with compressed air. Put on the compressed air pistol in the middle of the nozzle and blow out a few seconds.
This procedure can be repeated as much as you like.
- 5.) Fix the nozzle again in the swivel-unit by using the special tool. Now fix the retaining plate in front of the nozzle. (**Caution: Watch out for the mounting direction!**)
- 6.) Close nozzle seal completely by pressing the <arrow> button.
Press the button <**Jet Adjustment**> and wait until nozzle seal is open.
Check jet position in gutter tube.



- 7.) Close the nozzle seal again and fix the inside cover.
(Caution: Watch out for damaging any tubes or cables!)



- 8.) Final check on the correct head adjustment and functionality

13. Check the battery voltage with a digital multimeter



Caution

Dangerous electrical voltage!

Contact causes serious damage through an electric shock! Disconnect the device from the voltage supply prior to open.
Remove mains plug!



Information

The voltage of the battery should be between **2,6V and 3,2VDC**.

If the voltage is **below 2,6 V DC** you have to change the battery. Otherwise it could be, that the printer don't start up anymore.



14. Fill up ink and solvent again



Inflammable (Risk of fire)!

Combustible gases and liquids cause serious burns.

Sources of ignition must be kept away from the device!



Attention

Before the filling process a static discharge has to be carried out **necessarily!**
For this you have to touch the cabinet of the printer directly or you have to stand with ESD-shoes on an grounded surface before the filling or during the process!
The sealing of the refill bottle **must not be opened!**

Example: Re-filling of solvent



Attention

Do not pull off the seal of the re-filling bottle!



Siegel nicht aufreisen!
Do not pull off the seal!



- Put the re-filling bottle upside down on the solvent tank and screw it in. The seal of the bottle will be breached and the closing valve of the tank will open automatically to fill up the reservoir tank.
- Wait until the re-filling bottle is completely empty.
- Take out the empty re-filling bottle. The closing valve of the reservoir tank will be closed automatically.
- Finally twist the screw cap of the tank again carefully.
- Repeat this procedure with the ink

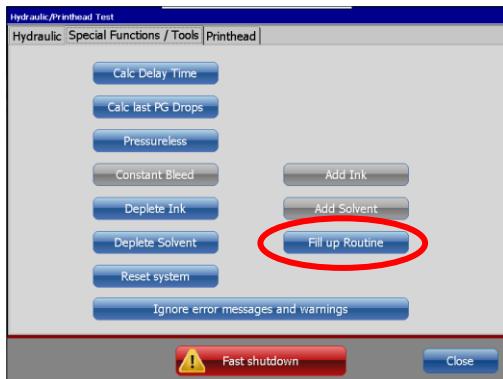


Attention

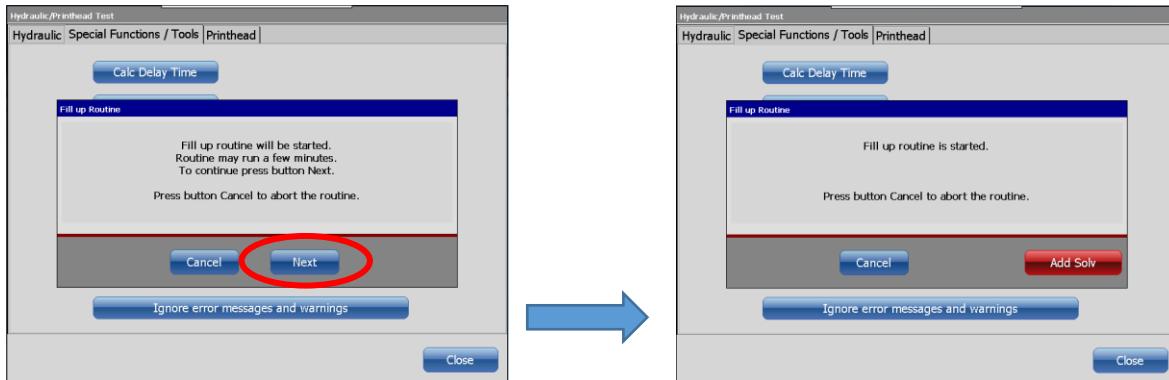
After the initial filling of the printer, the reservoir tanks must not be re-filled until the printer displays an according message!

Fill up routine

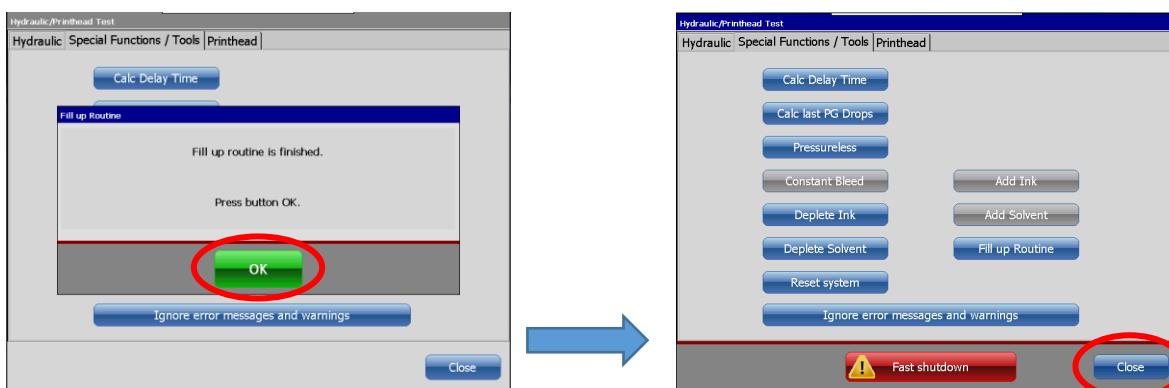
- 1.) Push the button <**Fill up routine**> on the <**Special Functions**> tab.



- 2.) To start the "Fill up Routine" push the button <**Next**>. The "Fill up Routine" starts. The procedure works automatically and a message will pop up after it is finished. This procedure takes approximately 10 minutes.



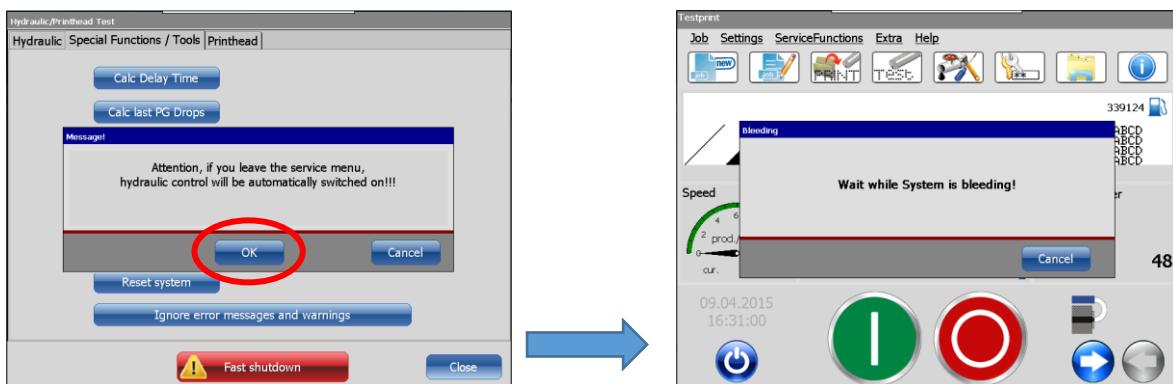
- 3.) Push the button <**OK**> after the routine is finished.
To leave the menu "Special Functions" push the button <**Close**>.



4.) Now the following warning message will pop up:

"the hydraulic control will be automatically switched on". Push the button <OK>.

Wait until the bleeding process is finished.



If you are using a pigmented ink, please check if the printer is really a „pigmented printer“ with a stirring device!!!



After refilling the printer, you have to activate the TAG of your ink and solvent bottle on the printers TAG-reader!!!



Fill up routine is finished:

15. Check the hydraulic settings

Check all hydraulic parameters

Left Screenshot (Summary Page):

- System Frequency [Hz]: 96 / 60
- Ink Type: 79000-00104
- Solvent: 77001-00030
- Pressure Act/Set [mbar]: 3586 / 3600
- Visco Act/Set [msec]: 6513 / 7500
- Act. Suction [%]: 44
- Visco Correction: 0.965
- Diaphragm current: 0.00
- Break Off current: 47 / -2
- Break Off last current: 47 / 421
- Total Drop Counter: 205947400
- Total print counter: 64570
- Total working hours: 1216
- Date of last service: 29.04.2016
- Working hours since last service: 11

Right Screenshot (Hydraulic System Settings):

Set Point	Actual Value
Pressure [mbar]	3600
Suction Pump (%)	44
Visco Correction	0.965
Fall Time [msec]	7500
Nozzle [µm]	60
Oscillator Voltage [V]	87
Ink number:	79000-00104
Solvent number:	77001-00030
Frequency [Hz]	96
Printer Model	JET3up

16. Check printhead adjustments

(Printhead SK4 and SK6)

Please use the service documentation "JET3up printhead adjustment"

17. Printouts

Make some printouts on a piece of paper and judge the quality.

Compare it with the reference printout you made in advance of the maintenance (step 1 point 2).

The printout must have at least the same quality.



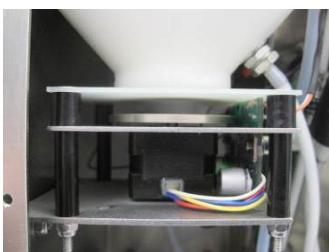
18. Make the system pressureless and start the fill up routine again

19. Check stirring device if existing (only pigmented inks)



Information

The stirring device changes its turning direction by itself.
If you stop the stirring device, it starts after about 40 seconds by itself.



20. Open the printhead again

- Check the printhead adjustment
- If necessary clean the nozzle again

21. Check leakage sensor

To check the leakage sensor you have to make an electrical contact between the sensor conducting paths (for example with an open end wrench).



After about 20 seconds the error message “Leakage found in the hydraulic area. Hydraulic control has stopped. Please check hydraulic immediately” appears.

22. Exchange sponge of the ventilation tube



Ready: The maintenance is finished now

7.2 Check and voltage measuring of the hydraulic valves

Needed tools: Multimeter



Information

The following instruction describes step by step the correct procedure to check the correct function and voltage-measure of the hydraulic valves.

Dangers due to electric energy and high voltage



Danger

The electrical and electronic components of the high performance printers are under voltage. The device must only be opened by trained personnel or by Leibinger service technicians.



Caution

You must absolutely avoid to provoke a short circuit during the voltage measuring.

A short circuit can destroy:

- The controller
- The valves

5. Connect both measuring tips with the valve-connector pins:
 - (Red on plus +)
 - (Black on minus -)

6. Trigger the separate valves:
 - Call up the hydraulic menu of the respective printer and switch the button <Control> OFF to switch the separate valves.
 - Now you can tip the button for the respective valve for measuring the voltage.

Menu surface

Hydraulic/Printhead Test

Hydraulic | Special Functions / Tools | Printhead

Functions	Actual Value	Temporary Set Point
Control	on	
Main Pump	Off	
Suction Pump	44	44 ▾ ▲ (%)
Compressor	3574	3600 ▾ ▲ (mbar)
Visco Pump	Off	
Bleed Valve	Off	
Mixer Valve	Off	
Ink Valve	on	
Air release	Off	
Visco Measurement	7061	999 ▾ ▲ °C

Diaphragm Position

Fast shutdown Close

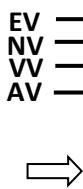
Hydraulic/Printhead Test

Hydraulic | Special Functions / Tools | Printhead

Functions	Actual Value	Temporary Set Point
Control	Off	
Main Pump	Off	
Suction Pump	0	44 ▾ ▲ (%)
Compressor	3566	3600 ▾ ▲ (mbar)
Visco Pump	Off	
Bleed Valve	Off	
Mixer Valve	Off	
Ink Valve	Off	
Air release	Off	
Visco Measurement	7061	893 ▾ ▲ °C

Diaphragm Position

Fast shutdown Close





Information

Please note:

All valves as well as the single valves and the valve block are NPN- switched!!!

Voltage-measuring results:

When the respective valve has switched you should get the following voltage-measuring results:

Valve	Voltage (Pull in) / <u>not switched</u>	Voltage / switched
AV	0V	24V
EV	0V	24V
NV	0V	24V
VV	0V	24V → After 1 sec 12V



Caution

If you exchange a valve and you disconnect the cables, please ensure that the cables didn't come in contact with the cabinet or any other conductive part. Besides ensure that any case of a short circuit will be avoided.
Otherwise you will damage the valve itself or even the controller!

7.3 “Clogged nozzle” and “jet deviation” after maintenance works

In consequence of the maintenance works at the inkjet printers it may occur that after a relative short time after the maintenance suddenly the nozzle can be clogged, respectively a “jet deviation” occurs.

The reason for that is, that due to the maintenance works some adherent sediments from the ink are dissolved out of the system. In normal operation these sediments were neither be dissolved nor carried away due to the laminar flow of the medium and causes during the normal operation no troubles respectively they would be absorbed effectively by the filters.

In consequence of the maintenance works and the flushing of the hydraulic with solvent these sediments could deposit accidentally in certain edges and “dead spaces”. Just later, in the normal operation, these areas will be flown through again whereby these sediments could be flushed out of the “dead spaces” and could reach the ink production unit and the nozzle.

To ensure that those sediments are removed permanently out of these critical areas of the ink production unit and the nozzle, we recommend the following procedure as a final task after the service work:

1. “**Open**” and “**Close**” the nozzle initially
2. Switch the ink “**On**” and “**Off**” for several times
3. Check the correct and reproducible jet position during the nozzle is open
4. “**Close**” the nozzle again
5. Switch off the “**Control**” to make the system pressure-less
6. Switch on the “**Control**” again to put the system under pressure again
7. Repeat the steps 1-3
8. Switch the printer completely “**Off**” and after that switch it “**On**”again
9. Repeat the steps 1-3
10. Finalizing check the correct and unchanged jet position again.

Due to this procedure an essential higher reliability of the printer can reached after the maintenance is carried out and prevents that after a relative short time after the maintenance it may lead to jet deviations or a clogged nozzle.

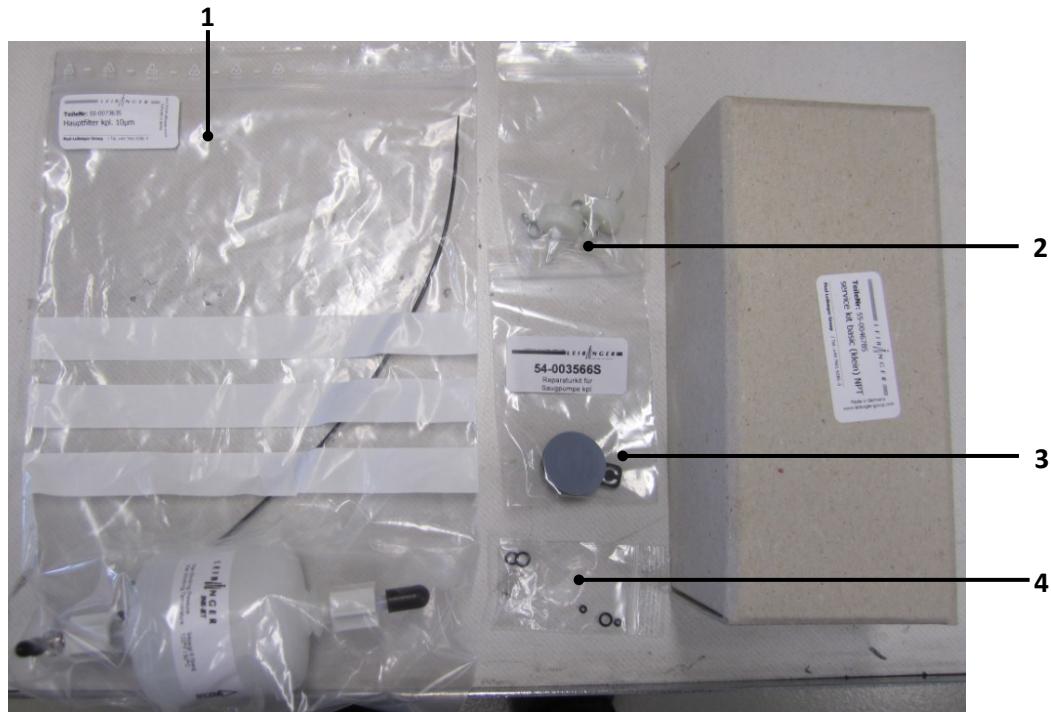
7.4 Service kits



INFORMATION

In the following chapter you see all available service kits with their parts and article numbers.

7.4.1 Basic service kit for non pigmented printers (original delivery package) Art. Nr. 55-004678 S



Pos. Part (Description)

- 1 Main filter with cable tie
- 2 Filter (2x) with clamps (4x)
- 3 Refurbish kit for suction pump
- 4 Filter element for head filter
incl. O-rings for filter and nozzle

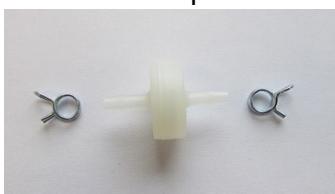
Part description**Basic service kit non pigmented printers.** Art. Nr.: 55-004678 S**Pos.1:** Main filter 10 µm

Art. Nr.: E54-003958 S

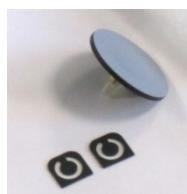
**Pos.2:** Filter (2x) with clamps (4x)

Art. Nr.: Filter: 55-006180 K

Art. Nr.: Clamps: 55-006181 K

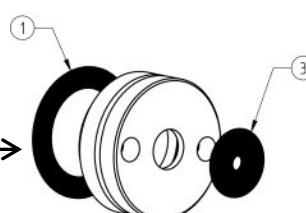
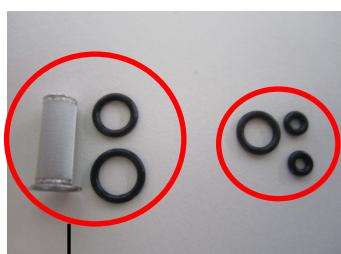
**Pos.3:** Refurbish kit for suction pump

Art. Nr.: E54-003566 S



- Pos.4:**
- Filter element for head filter incl. O-rings for filter
 - O-rings for nozzle

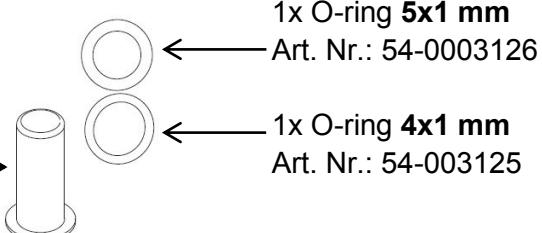
O-ring set for the Nozzle



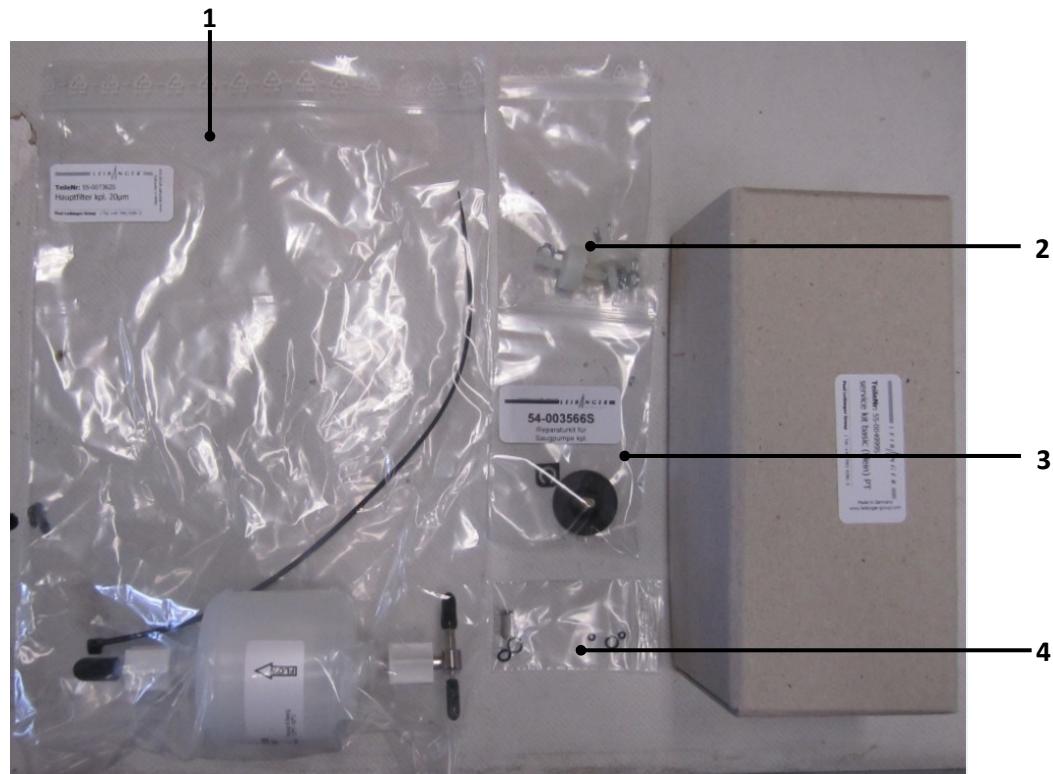
Pos.1:
1x O-ring **4x1 mm**
Art. Nr.: 54-003125

Pos.3:
(1x reserve)
2x O-ring **1,5x1 mm**
Art. Nr.: 54-000771 K

Head filter set incl. O-rings (Nr. E54-003088 S)



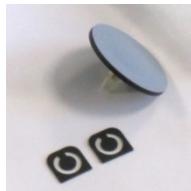
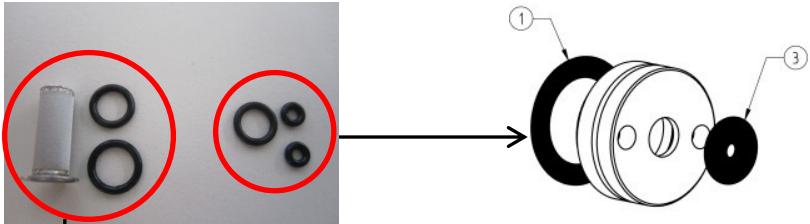
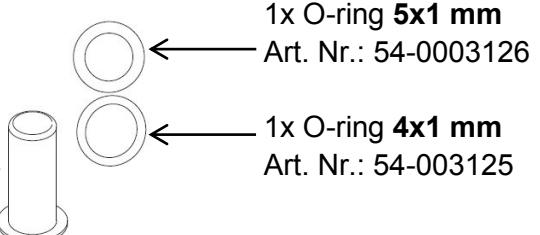
7.4.2 Basic service kit for pigmented printers (original delivery package)
Art. Nr. 55-004999 S



Pos. Part (Description)

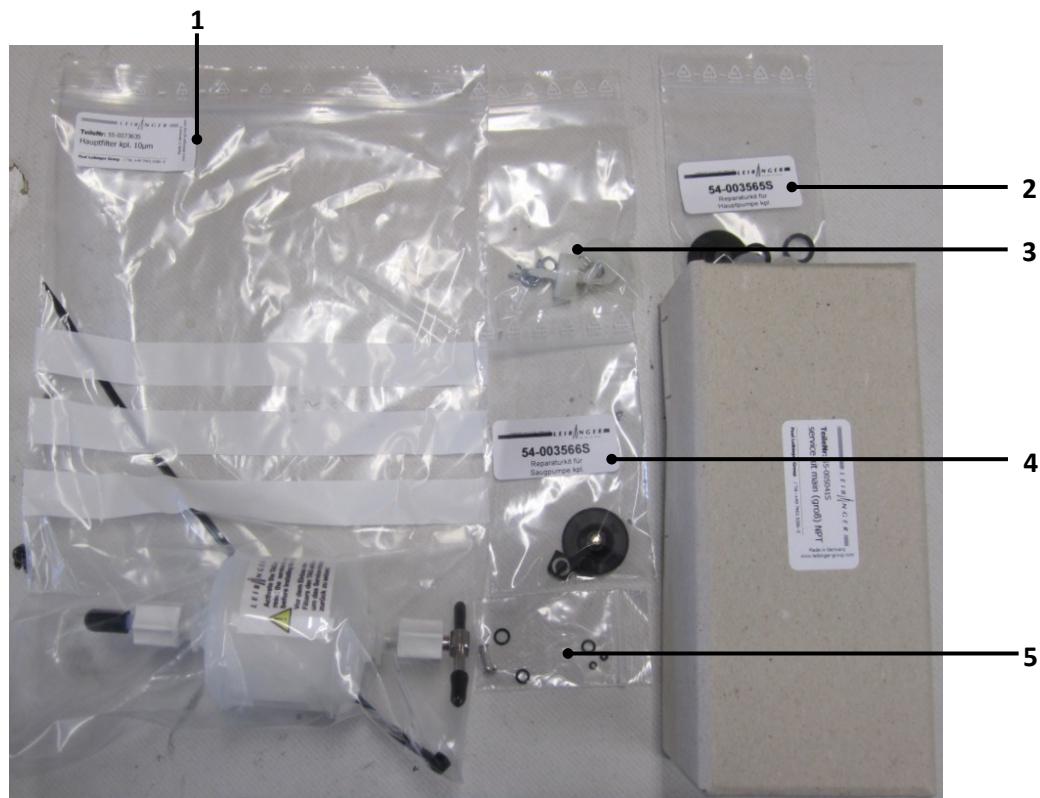
- 1 Main filter with cable tie
- 2 Filter (2x) with clamps (4x)
- 3 Refurbish kit for suction pump
- 4 Filter element for head filter
incl. O-rings for filter and nozzle

Part description**Basic service kit pigmented printers.** Art. Nr.: 55-004999 S

Pos.1: Main filter 20µm Art. Nr.: E55-004845 S	
Pos.2: Filter (2x) with clamps (4x) Art. Nr.: Filter: 55-006180 K Art. Nr.: Clamps: 55-006181 K	
Pos.3: Refurbish kit for suction pump Art. Nr.: E54-003566 S	
Pos.4:	
<ul style="list-style-type: none"> - Filter element for head filter incl. O-rings for filter - O-rings for nozzle <p>O-ring set for the Nozzle</p>  <p>Pos.1: 1x O-ring 4x1 mm Art. Nr.: 54-003125</p> <p>Pos.3: (1x reserve) 2x O-ring 1,5x1 mm Art. Nr.: 54-000771 K</p> <p>Head filter set incl. O-rings (Nr. E54-003088 S)</p>  <p>1x O-ring 5x1 mm Art. Nr.: 54-0003126</p> <p>1x O-ring 4x1 mm Art. Nr.: 54-003125</p>	

7.4.3 Main service kit for non pigmented printers (original delivery package)

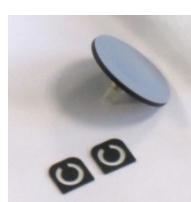
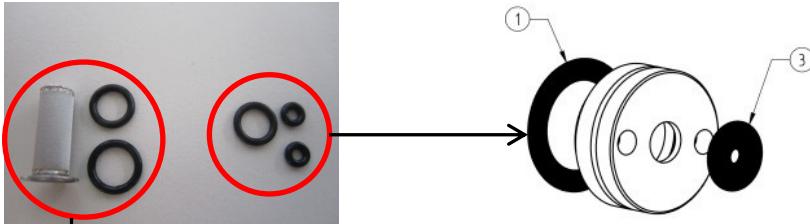
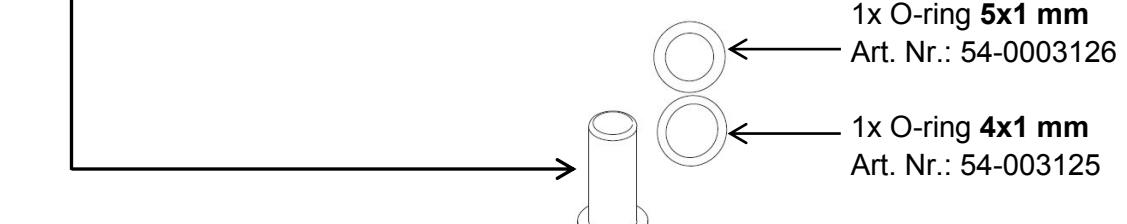
Art. Nr. 55-005041 S



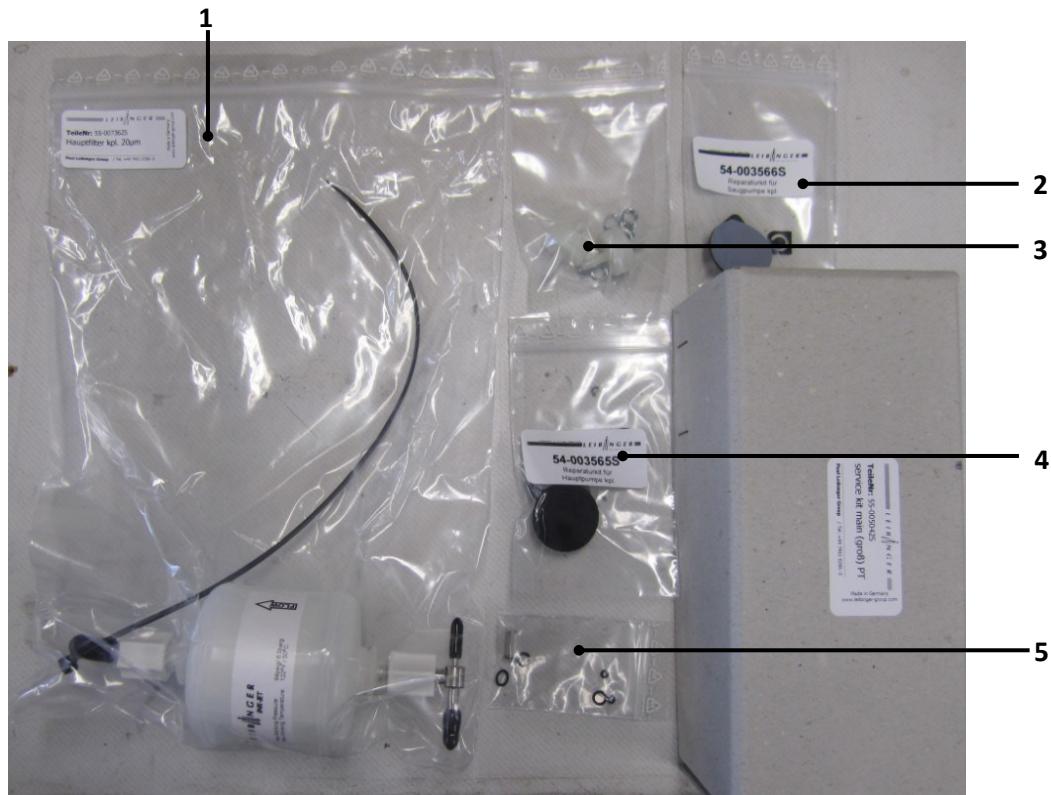
Pos. Part (Description)

- 1 Main filter with cable tie
- 2 Refurbish kit for main pump
- 3 Filter (2x) with clamps (4x)
- 4 Refurbish kit for suction pump
- 5 Filter element for head filter
incl. O-rings for filter and nozzle

Part description**Main service kit non pigmented printers.** Art. Nr.: 55-005041 S

Pos.1: Main filter 10µm Art. Nr.: E54-003958 S	Pos.2: Refurbish kit for main pump Art. Nr.: E54-003565 S
	
Pos.3: Filter (2x) with clamps (4x) Art. Nr.: Filter: 55-006180 K Art. Nr.: Clamps: 55-006181 K	Pos.4: Refurbish kit for suction pump Art. Nr.: E54-003566 S
	
Pos.5:	
<ul style="list-style-type: none"> - Filter element for head filter incl. O-rings for filter - O-rings for nozzle 	
<p style="text-align: center;">O-ring set for the Nozzle</p>  <p>The diagram shows two sets of O-rings. On the left, a cylindrical component is shown with three O-rings (one large and two smaller ones) circled in red. An arrow points from this to a larger diagram on the right. The right diagram shows a cross-section of a nozzle assembly with three O-rings labeled ①, ②, and ③. O-ring ① is the large one at the top, ② is the middle one, and ③ is the small one at the bottom.</p>	
<p style="text-align: center;">Head filter set incl. O-rings (Nr. E54-003088 S)</p>  <p>The diagram shows a cylindrical head filter component with two O-rings attached to its side. Arrows point from these O-rings to their respective descriptions on the right. The top O-ring is labeled "1x O-ring 5x1 mm" with "Art. Nr.: 54-0003126". The bottom O-ring is labeled "1x O-ring 4x1 mm" with "Art. Nr.: 54-003125".</p>	

7.4.4 Main service kit for pigmented printers (original delivery package) Art. Nr. 55-005042 S



Pos. Part (Description)

- 1 Main filter with cable tie
- 2 Refurbish kit for main pump
- 3 Filter (2x) with clamps (4x)
- 4 Refurbish kit for suction pump
- 5 Filter element for head filter
incl. O-rings for filter and nozzle

Part description**Main service kit pigmented printers.** Art. Nr.: 55-005042 S**Pos.1:** Main filter 20µm

Art. Nr.: E55-004845 S

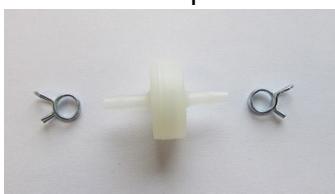
**Pos.2:** Refurbish kit for main pump

Art. Nr.: E54-003565 S

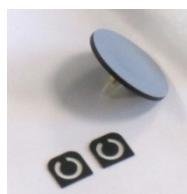
**Pos.3:** Filter (2x) with clamps (4x)

Art. Nr.: Filter: 55-006180 K

Art. Nr.: Clamps: 55-006181 K

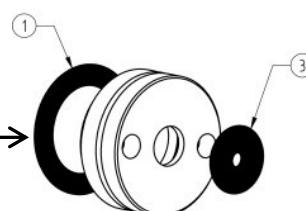
**Pos.4:** Refurbish kit for suction pump

Art. Nr.: E54-003566 S

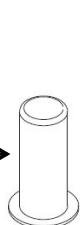


- Pos.5:**
- Filter element for head filter incl. O-rings for filter
 - O-rings for nozzle

O-ring set for the Nozzle

**Pos.1:**1x O-ring **4x1 mm**
Art. Nr.: 54-003125**Pos.3:**(1x for reserve)
2x O-ring **1,5x1 mm**
Art. Nr.: 54-000771 K

Head filter set incl. O-rings (Nr. E54-003088 S)

1x O-ring **5x1 mm**
Art. Nr.: 54-00031261x O-ring **4x1 mm**
Art. Nr.: 54-003125

7.5 Service TAG

In order to reset the counter for the service interval you must activate a service TAG.



Main filter with label

The Tag is located **invisible below** the label of the main filter.

Important Notice:

The TAG is glued together with the label to the main filter.

Do not try to remove the TAG from the main filter!

This may destroy the TAG!

It is necessary to activate the TAG before you change the main filter. After the installation, you cannot access the TAG anymore.

Procedure:

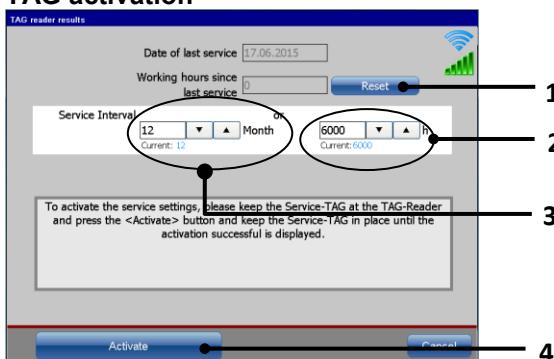
1. Hold the main filter with the label in front of the TAG reader.
The dialog box <TAG Reader Results> pops up.

Open the service interval dialog box with the TAG



2. Enter the data for the next service interval. The interval is set in months (3) and operating hours (2). Service will be due after the period or operating hours set, whichever occurs first.
3. Reset the <Working hours since last service> with the button <Reset> (1).

TAG activation



1 – Button <Reset>

2 – Input field <Service Intervall> Hours

3 – Input field <Service Interval> Month

4 – Button <Activate>

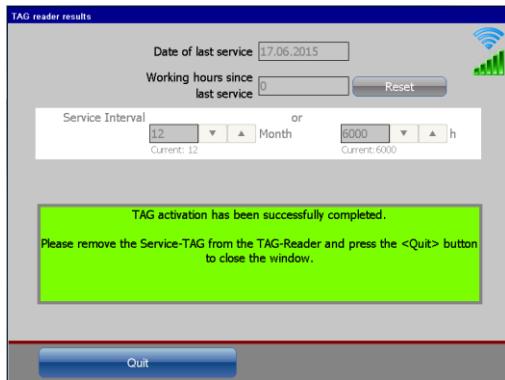
4. After setting the desired values confirm with the button <Activate> (4).

5. For a successful activation, it is necessary that you hold the main filter on the TAG reader during the whole activation process.

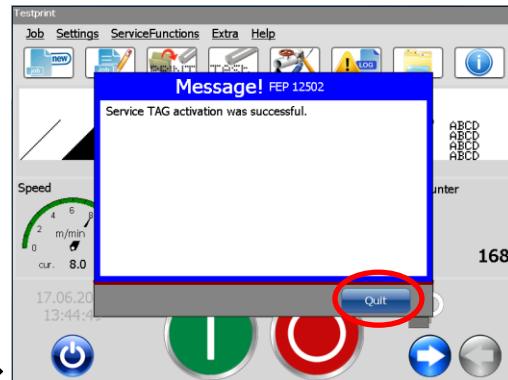
Otherwise you will get the error message: "TAG activation failed".

After a successful activation the new service intervals are saved and the following message is displayed:

TAG activation



Close the dialog box with the button <Quit>.



Close the confirmation prompt with the button <Quit>.



INFORMATION

- For a successful activation you must use a **valid** TAG.
- You can use a Tag for a successful activation only **one** time.
- Don't remove the TAG during the activation process.
Otherwise the TAG could be damaged.
- With an invalid TAG you can open the service interval dialog box but you can't save any values.

7.6 Manual adjustment of the drop break off correction for optimum printout quality



Information

The following instruction concerns:

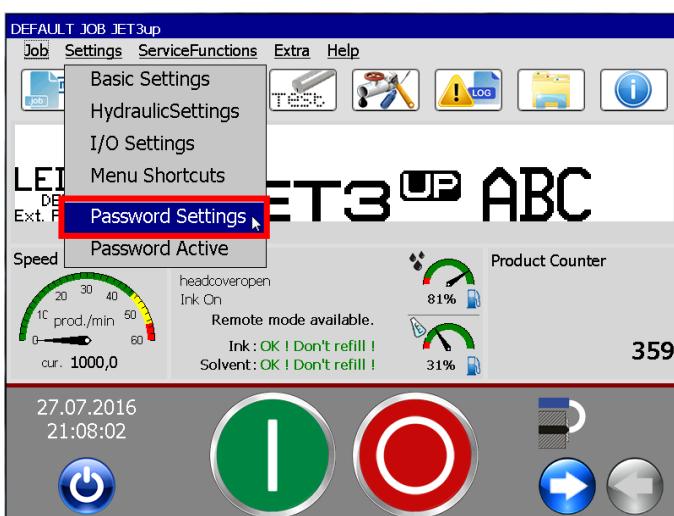
JET3up printers with a 50µ nozzle or less !!!

- The default settings of the drop break off correction is not always the optimum value for printers with nozzles of **50µ or less**.
- It could be, that by adjust the default settings, the drop production unit generate so called "satellite-drops". That means that the drops decompose in several smaller drops.
- Furthermore the drops could collide with the deflecting electrode.
- As a result you get a suboptimal printout quality.

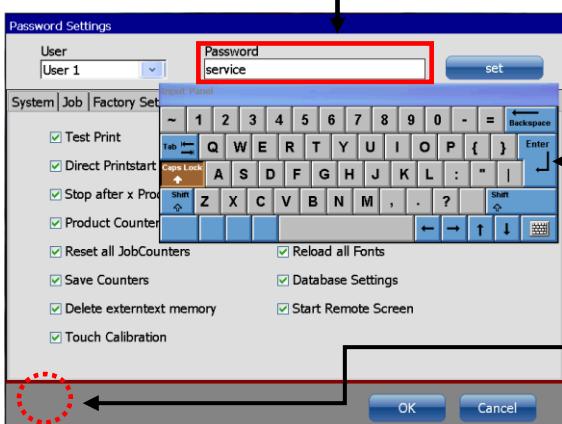
To prevent this and improve the printout, since the software version **V62.0.7.0** the JET3up provides an additional software function to adjust the **Break OFF correction** manually.

Procedure:

1. Switch ON the printer
2. Click on the menu <Settings> and click on the softkey <Password Settings>.

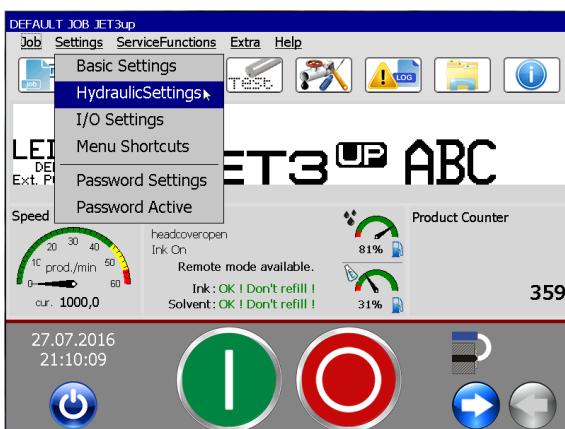


3. Insert the password “**service**” and confirm with the button <Enter>.

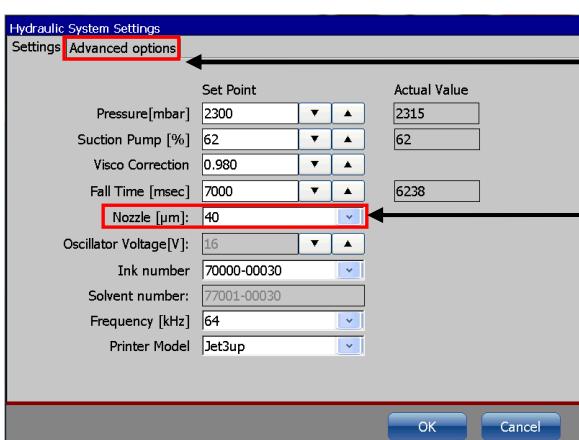


After input the password
click on the “**invisible button**” in the upper
left area of the screen to close the password
menu.

4. Click on the softkey <HydraulicSettings> in the “Settings menu”.

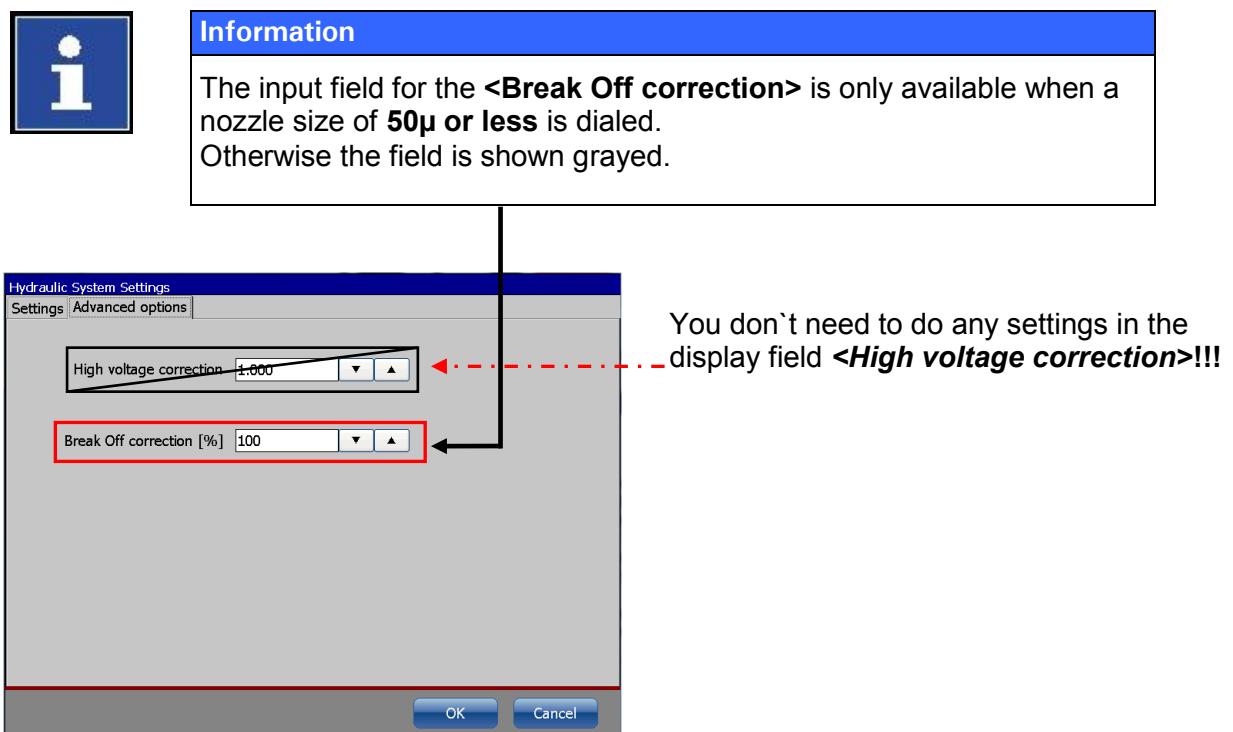


5. In the menu “**Hydraulic settings**” the additional tab <Advanced options> is available now.

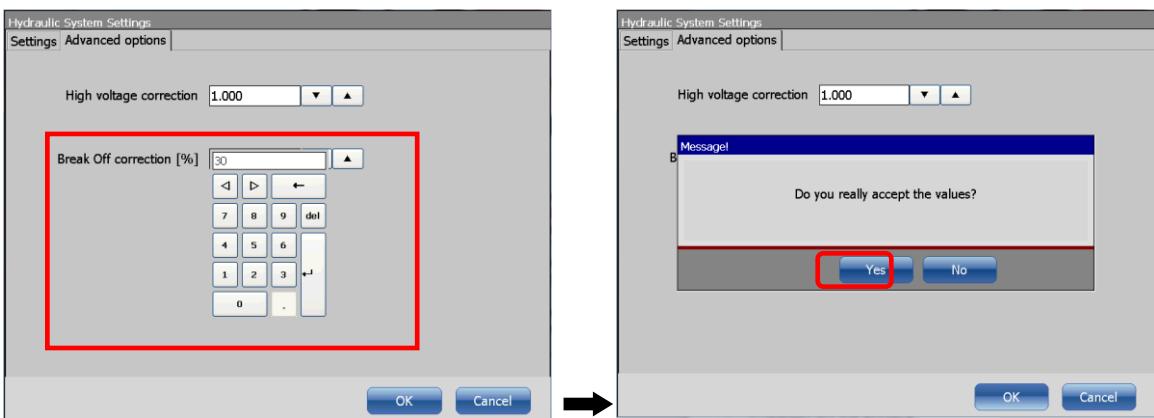


Ensure that the nozzle size is
50µ or less!!!

6. Adjust the value for the <Break Off correction> in the respective menu.



7. Adjust a value between **25** and **35 %**. In this example it's **30%**.



8. Check the correct quality of the printout:

Therefore make some printouts. (For example load the default job).

The printout must not have any lutings or pale places.

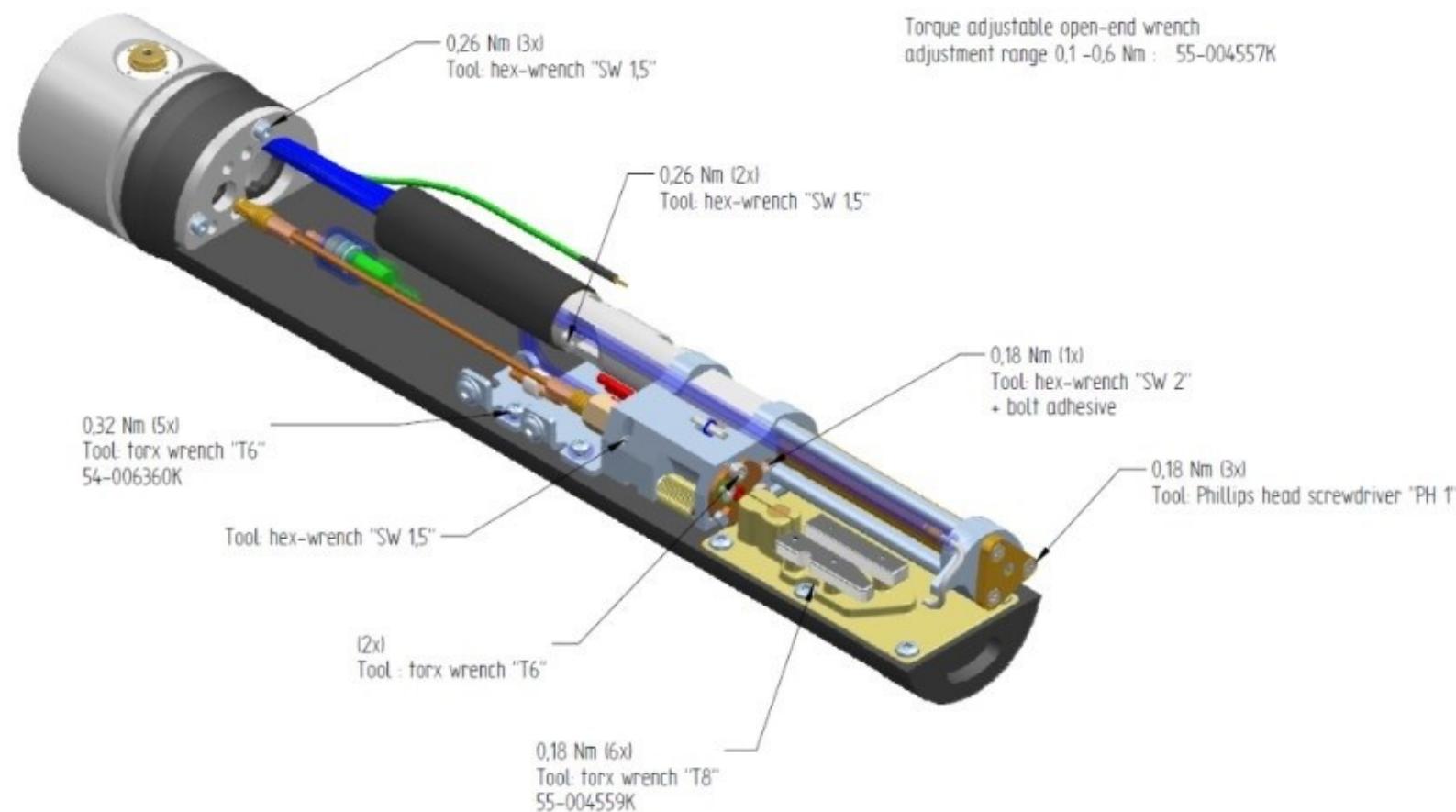
Maybe you must try-out several values for the <Break OFF correction> until you have set the desired printout quality.

7.7

Documentations for

SK4

Torsional moments for SK4

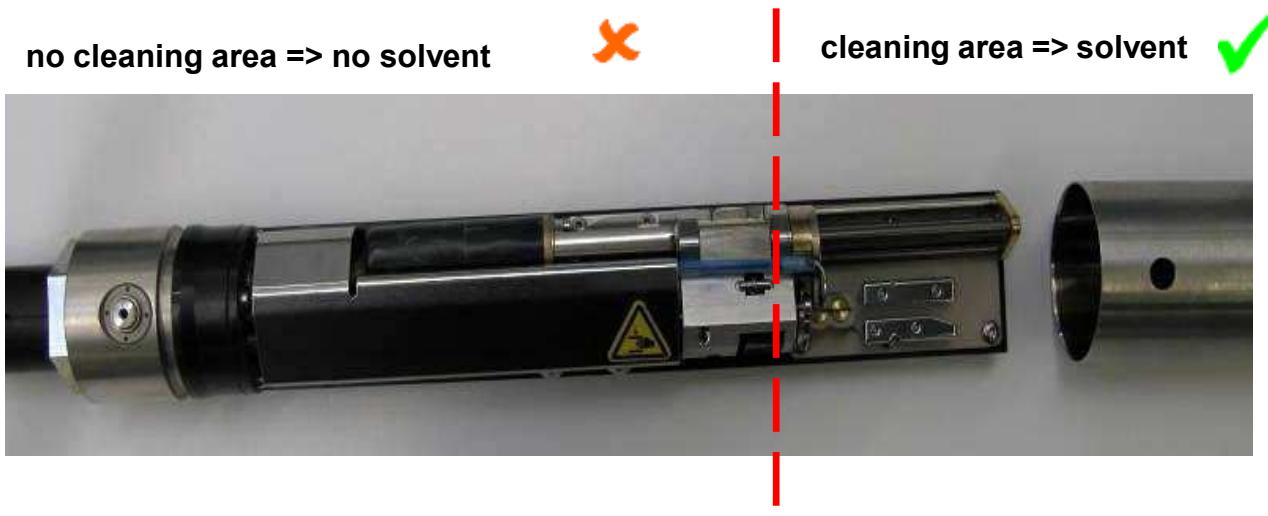


1

Cleaning of print head

We want to ask for your attention regarding the print head cleaning process:

Please be aware, that the print head has to be cleaned with solvent only in the front area.
Behind the red line you must not clean with solvent.

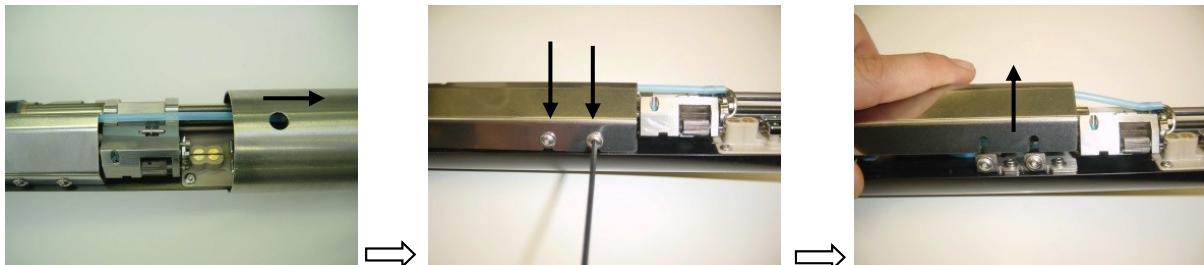


Especially the area around the oscillator connection must not be flushed with solvent. Otherwise solvent could penetrate inside the oscillator or the connector and could cause damages or mal functions.



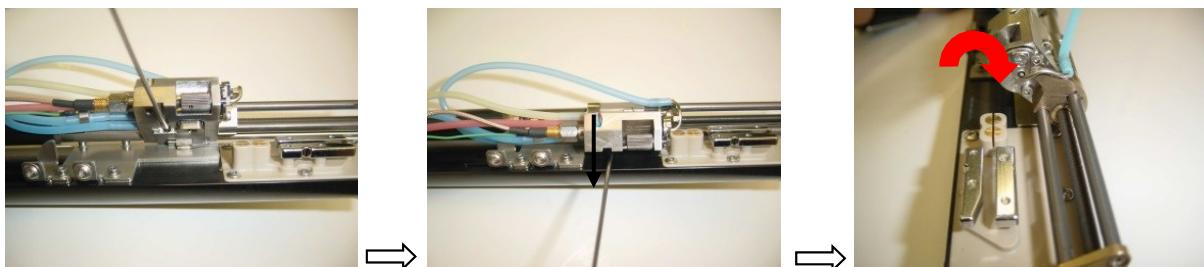
2**Cleaning of print head/electrode block with special cleaner 77001-00020**

1. Remove the print head cover. Loosen the two allen set screws at the side with an allen key 2,5 mm (metric) with one turn and remove the inner cover.

**Attention**

Don't use any kind of allen hydraulic settings with a ball head function. This will damage the screws!

2. At the lower side of the bearing block you have to loose the allen screw with an allen key 1,5mm (metric) until you can turn the bearing block into the upper service position. To lock this position, tighten the set screw back again.



For some types of ink, a persistent ink deposition at the guiding shaft assembly and electrode block would occur. In this case, our company offers a special cleaner for cleaning this area.

It is strongly recommended to turn off the printer when you cleaning the print head with this kind of cleaner. No cleaner should be enter to the ink loop/hydraulic system.

Special Cleaner P/N: 77001-00020

Clean the Print Head only at the correct area, right of red dotted line.

Attention:

It is forbidden to clean on the left side of the dotted line. Don't use any kind of solvent to clean the left side of the dotted line.

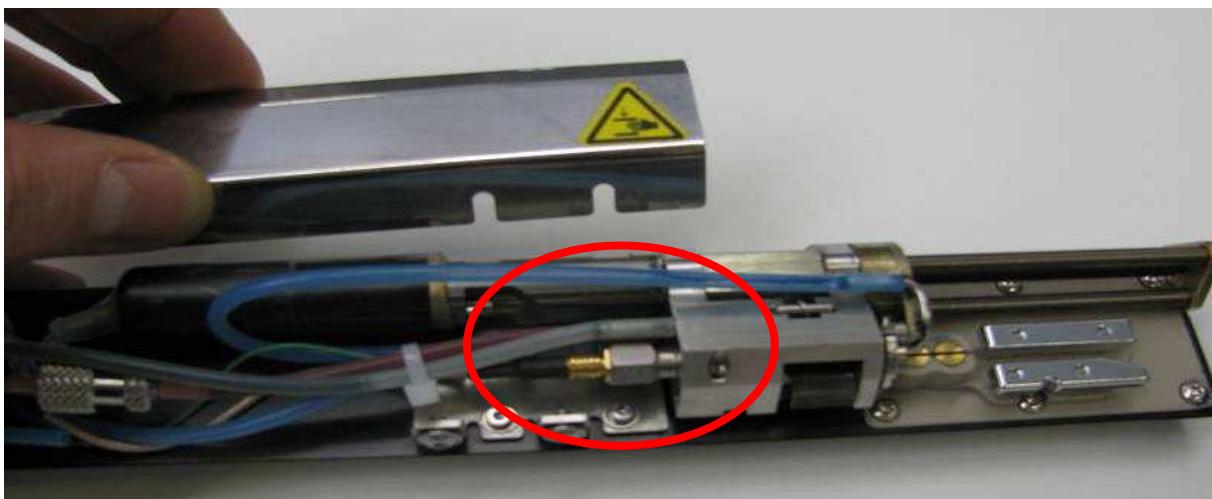
No cleaning necessary!
=> No Solvent usage!!



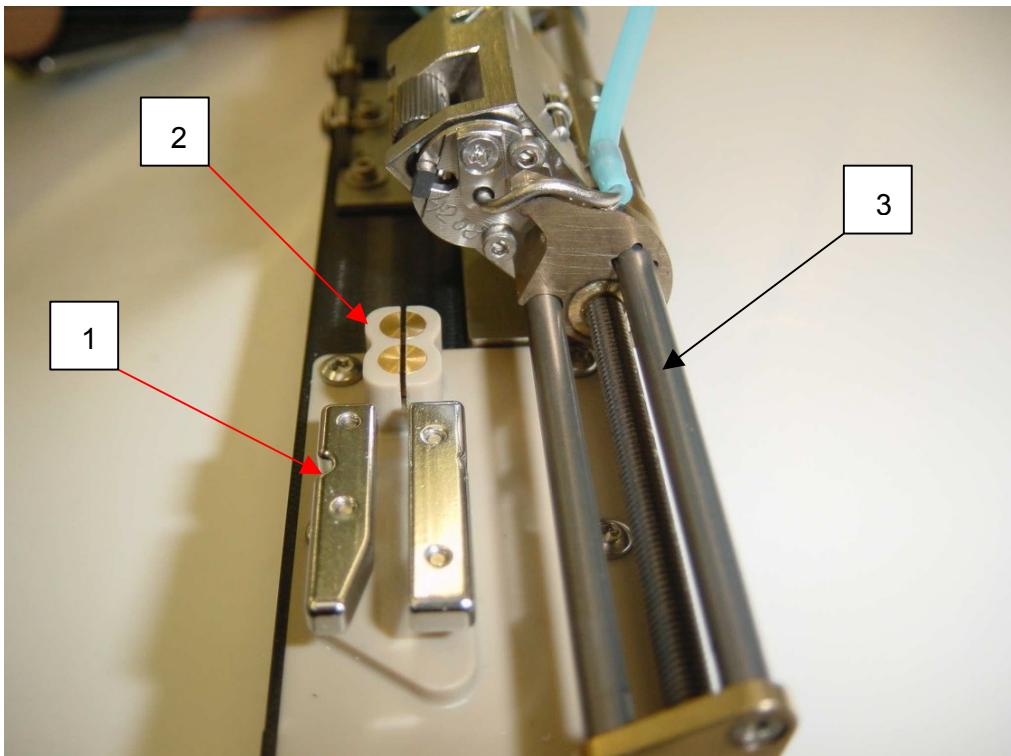
Cleaning Area
=> Solvent can be used!!



Especially in the area of the oscillator and plug connector it is not allowed to wash with solvent. When solvent enter the oscillator, it could destroy this part or some malfunctions could occur.



3. Decline the print head into upfront position. Fill up Special Cleaner 77001-00020 into a spray bottle and spray it to the affected parts for cleaning. Together with a small brush you can easily remove the pollution in the cleaning area.
Important assemblies which will be affected in their functionality during persist ink deposition:
- 1. Deflection Plates
 - 2. Charge Electrode
 - 3. Guiding shaft for the Gutter Tube



4. Due to some special ingredients of the cleaner, it is strongly recommended to flush all the cleaned parts with tap water at the end of the cleaning process.
5. Rinse off the cleaned parts with original solvent again, to avoid remaining of special cleaner at the assemblies.

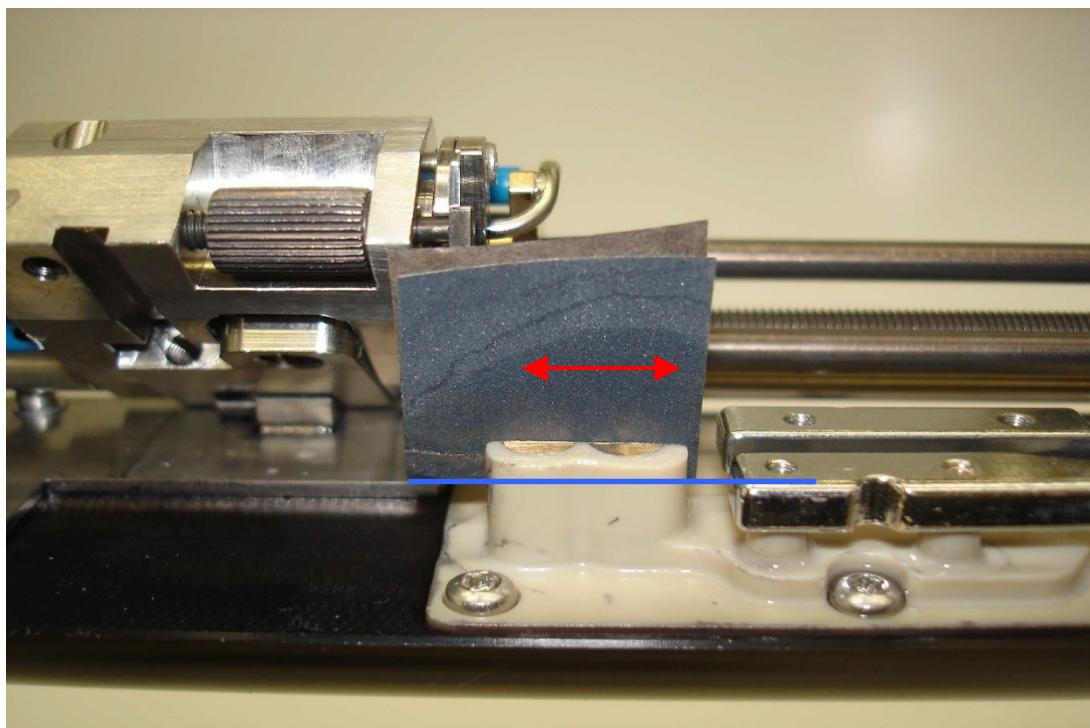
6. In some cases, there will still remain some rest of ink into the slot from the charge electrode. This could create some error messages, e.g. phasing error or error of drop control.

To remove this rest of ink you can use a fine sand paper. With assistance of this fine sand paper it is possible to clean the slot of the charge electrode.

Attention:

Use only sand paper with a corn diameter of 400 and higher!

7. Bend this thin sand paper with the rough side outside. Spray some special cleaner on the sand paper and move it inside the slot of the charge electrode. Carry out the movement parallel to the bottom side of the charge electrode. Rinse off the charge electrode with tap water and solvent to avoid remaining of special cleaner at the charge electrode. Dry up all the print head parts with an airgun.

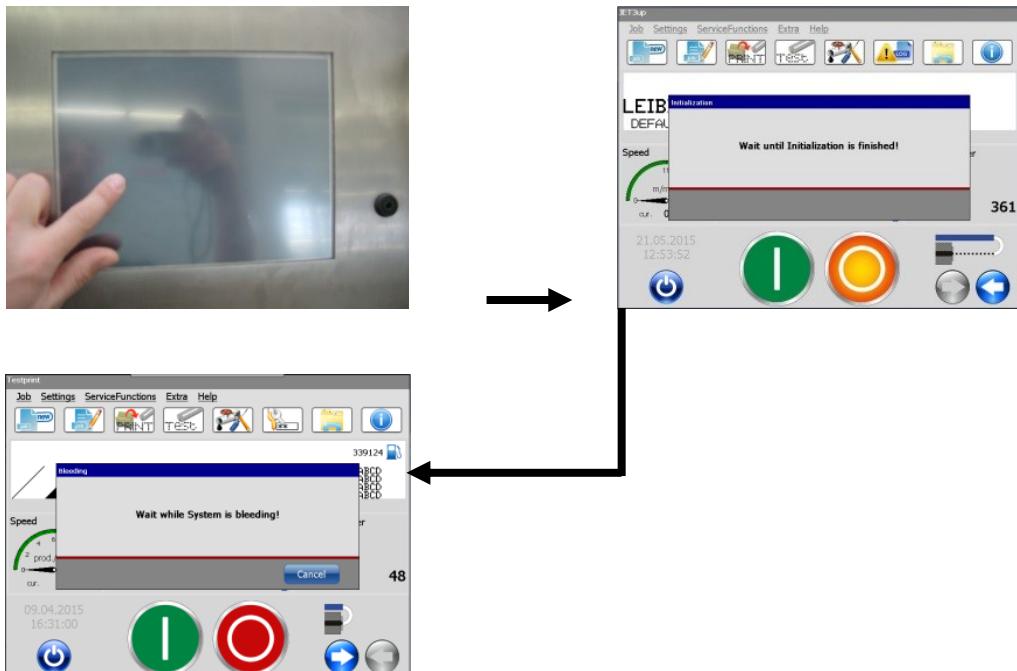


8. Rotate back the bearing block from the service position and lock them with the set screw.
9. Install the inner cover and tighten it. Don't smash or brake any cables and pipes during this action.

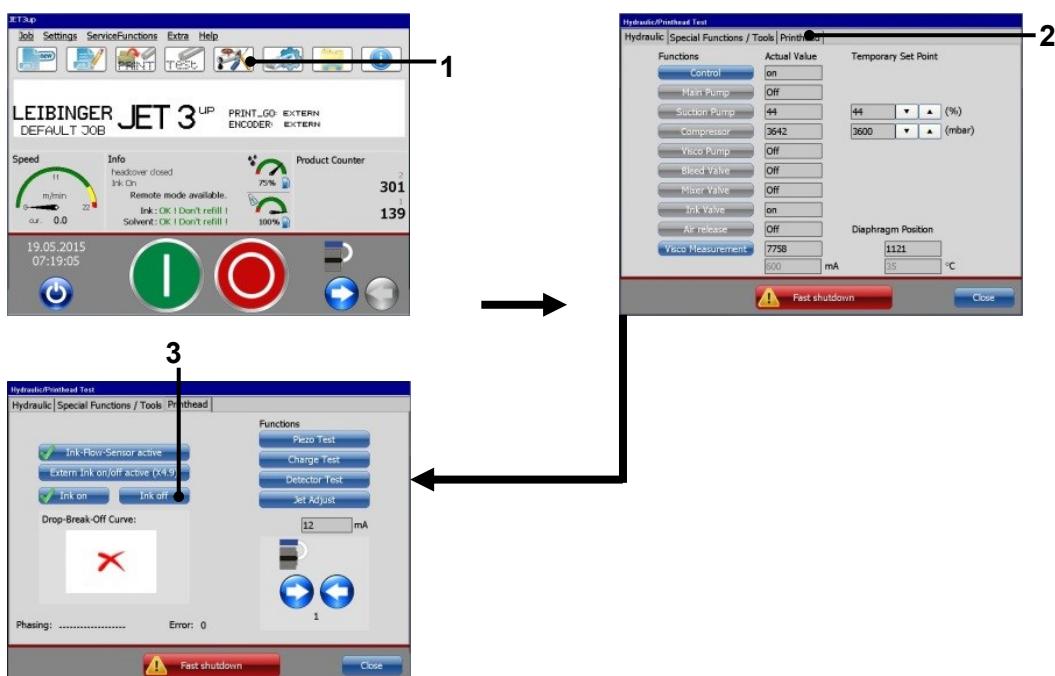


3**Cleaning of nozzle with special cleaner 77001-00020**

1. Switch on the JET3up and wait till the “bleeding cycle” of the system is finished.



2. Click on the softkey <Hydraulic settings> (1) to change to the menu <Printhead> (2). Press the button <Ink off> (3).

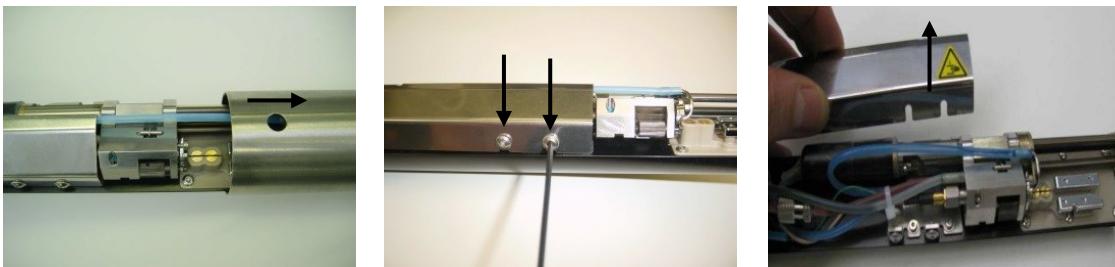


1 – Softkey <Hydraulic settings>

3 – Button <Ink-off>

2 – Menu <Printhead>

3. Remove the print head cover. Release the retaining screws with an allen key 2.5 mm (metrical) by turning about one rotation and remove the interior cover.



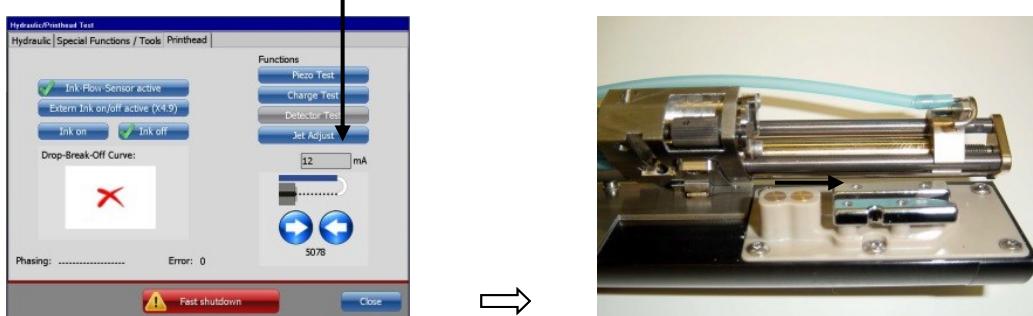
Attention

It is not allowed to use ball head allen keys, otherwise screw heads could be damaged.

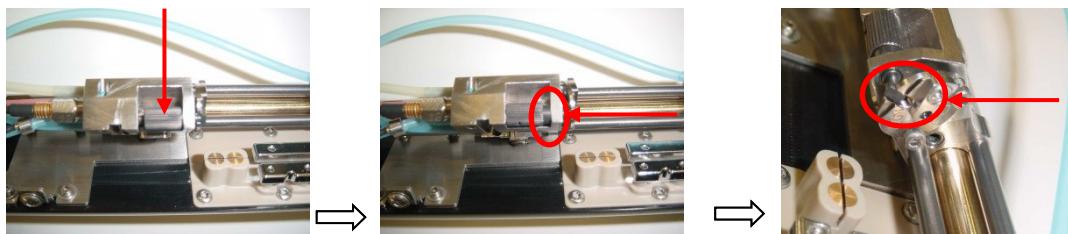
4. Release the retaining screw for the swivel-unit with an allen key SW 1.5 mm (metrical) until you can swing the swivel -unit upwards. Arrest the retaining screw on the final position.



5. Press the button <Jet Adjust>. The nozzle seal moves automatically onto the "service position".



6. Turn back the knurled-head-screw to stop until the cross bolt rotates 90 °and the nozzle adjustment is released.

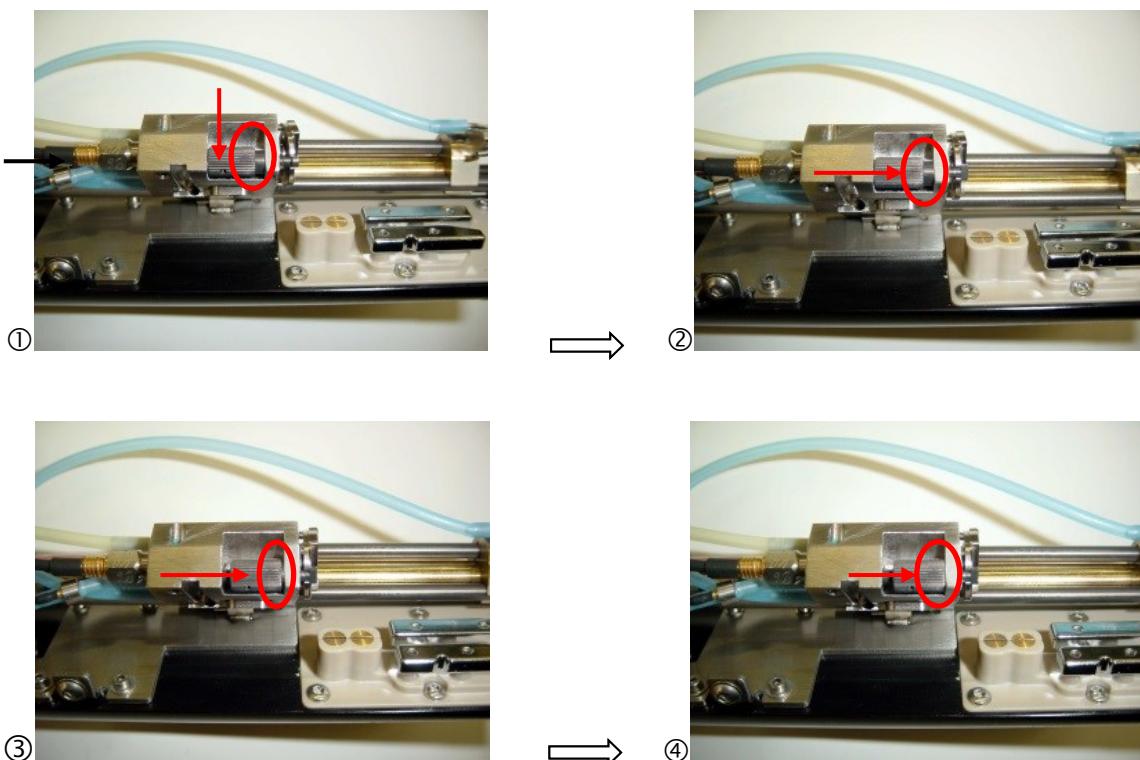


7. Take out the nozzle and clean it properly from both sides with the appropriate solvent. Wash up first the nozzle outlet, then the nozzle entry.

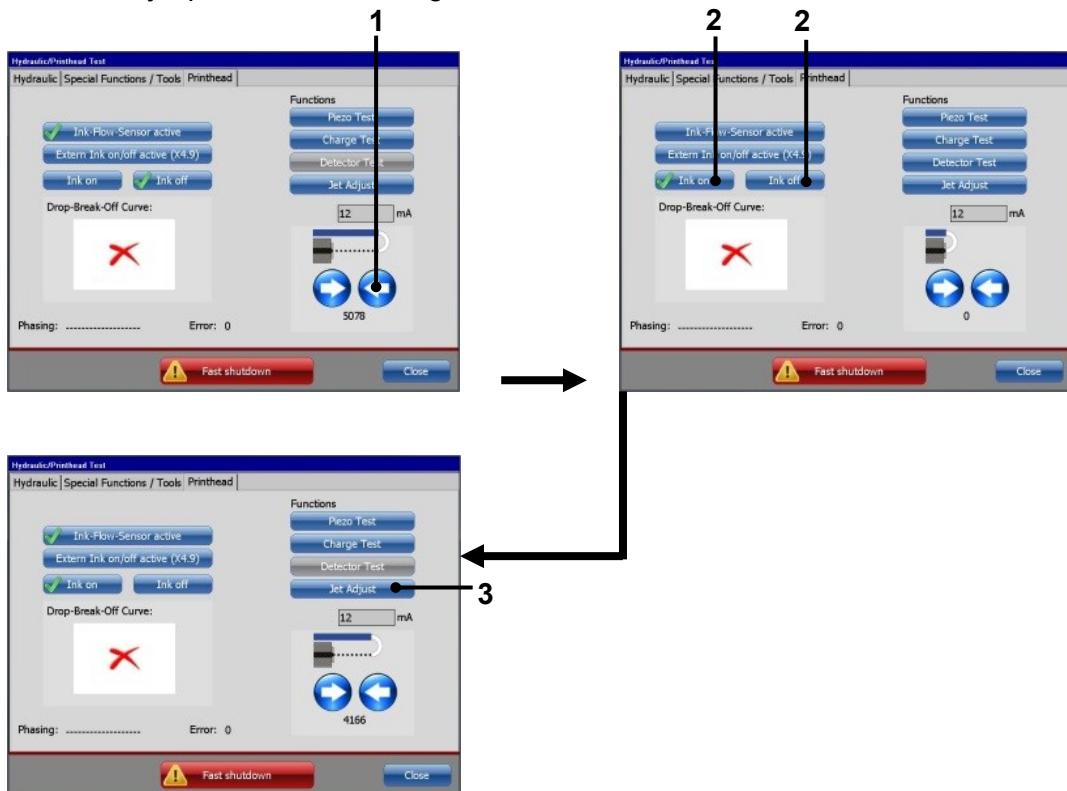


8. Generally it is allowed to clean the nozzle with an appropriate "ultra sonic bath". Especially for tenacious deposits of ink Leibinger offers a special cleaner (77001- 00020) to clean the nozzle.
9. Clean the nozzle at first inside the ultra sonic bath with the appropriate solvent which is used on the printer (depending of the used ink!)
10. Blow out the nozzle with clean air pressure (2 - 6 bar). Center the air-gun exactly in the middle of the nozzle and blow out for several seconds. First against the nozzle outlet and then against the nozzle entry. This process can be repeated for an unlimited number of times.
11. Clean the nozzle the second time inside the ultra sonic bath, but now with the special cleaner 77001-00020 (for round about 10min)

12. Due to some special ingredients of the cleaner, the nozzle must be washed up with tap water at the end of the cleaning process.
Blow out the nozzle with clean air pressure (2 - 6 bar). Center the air-gun exactly in the middle of the nozzle and blow out for several seconds. First against the nozzle outlet and then against the nozzle entry. This process can be repeated for an unlimited number of times.
13. To avoid that any remains of the special cleaner or water are still remaining on the nozzle, wash up the nozzle once more with solvent and dry it with air pressure.
14. Insert the nozzle and turn forward the knurled-head-screw to the end position. Thereby the cross bolt rotates 90 ° and arrests the nozzle. Afterwards turn back the knurled-head screw about one rotation.



15. Close the nozzle seal completely by pressing the button <arrow> (1).
 Actuate several times in quick succession the buttons <Ink on>/<Ink off> (2).
 Press the button <Jet Adjust> (3) and wait until the nozzle seal is open.
 Check the jet position inside the gutter.



1 – Button <arrow close nozzle>
 2 – Buttons <Ink on>/<Ink off>

3 – Button <Jet adjust>

16. Close the nozzle seal again and fix the swivel-unit at the starting position. Put on and fasten the interior cover. By putting on the interior cover do not damage any cable or tubes.

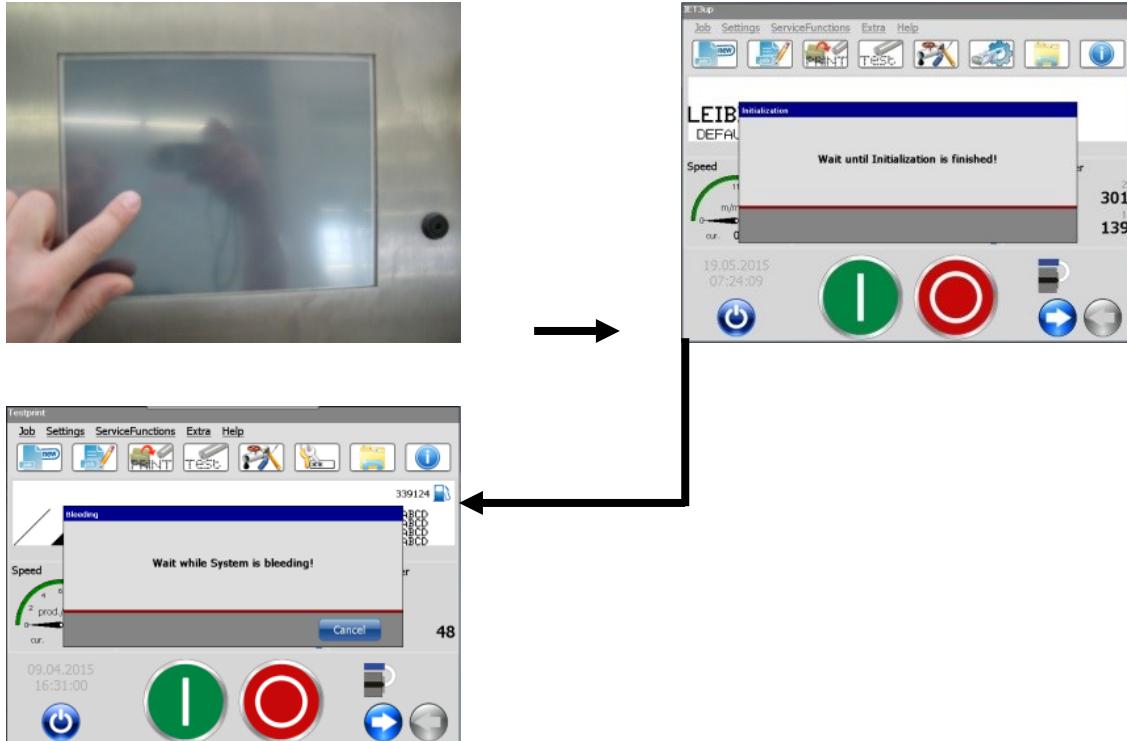


17. Carry out a final check about the correct jet position and functionality.

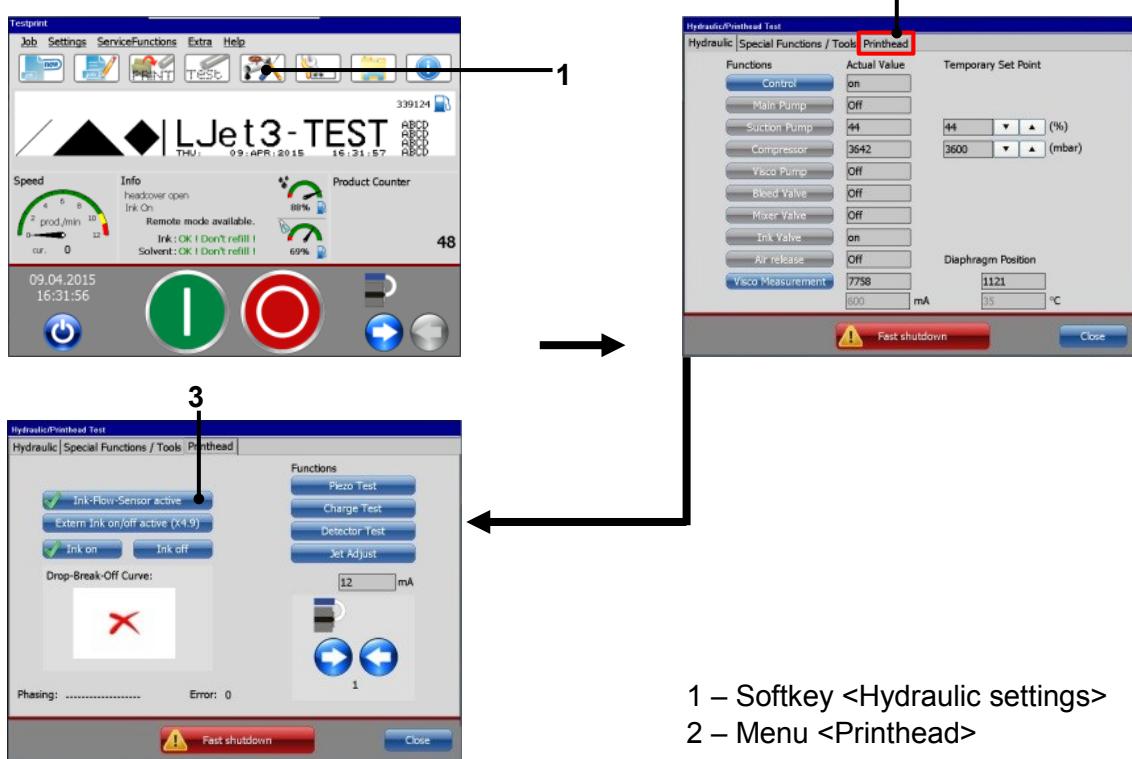
4

Print head adjustment

1. Switch on the JET3up and wait while the system is bleeding.

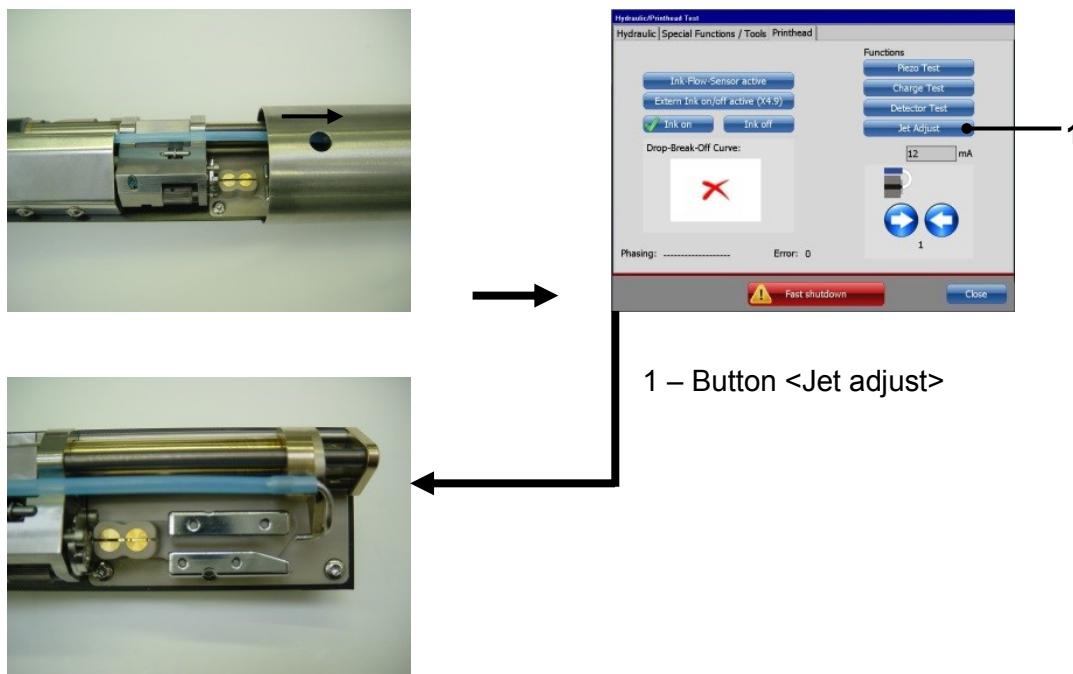


2. Touch the softkey <Hydraulic settings> (1) and change to the menu <Printhead> (2). Turn off the function <Ink-Flow-Sensor> (3).



1 – Softkey <Hydraulic settings>
 2 – Menu <Printhead>
 3 – Function <Ink-Flow-Sensor>

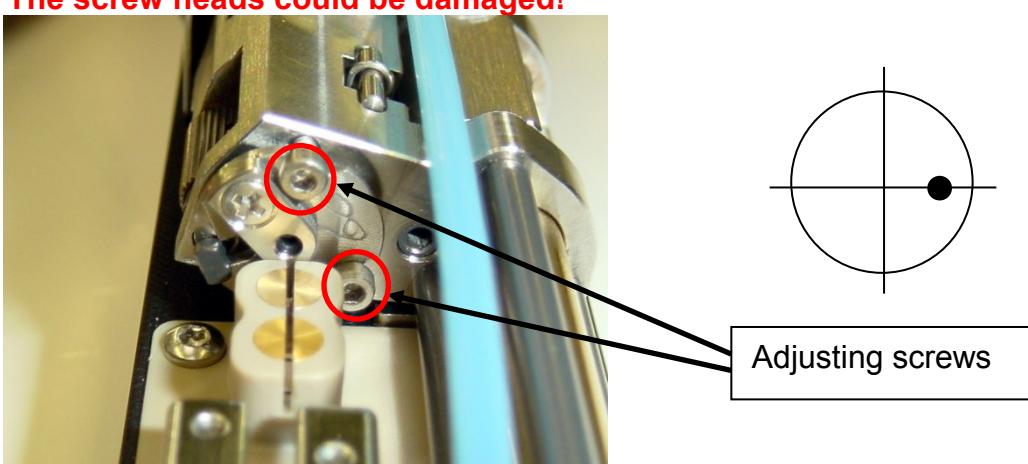
3. Remove the head cover and press the button <Jet Adjust> (1).
The nozzle seal opens automatically to the <Jet Adjust position> (4200)



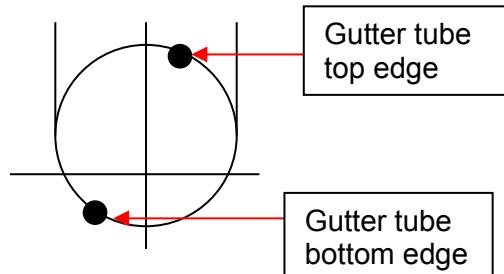
4. Align the ink stream with the two adjusting screws according to the sketch into the gutter tube.

Required tools:
6-fold magnifying Glass
Allen key (SW 1,5 mm)

Attention:
**It is not allowed to use a golf ball head allen key.
The screw heads could be damaged!**

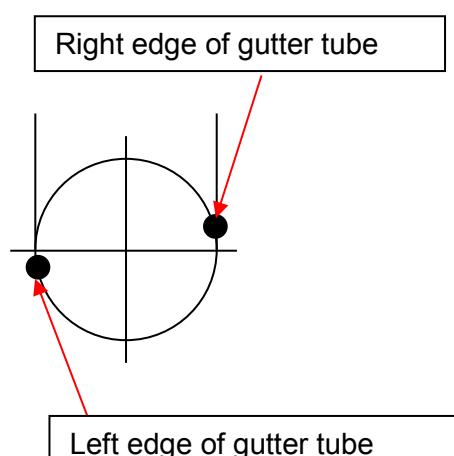


Rotating the upper adjusting screw CW, the ink stream is moving a little bit angular in direction of the gutter tube top edge. Rotating the screw CCW, the ink stream is moving a little bit angular in the direction bottom edge of the gutter tube.
(Viewing direction from nozzle to gutter)



Rotating the edgeways adjusting screw CW, the ink stream is moving a little bit angular upwards in direction of left edge of gutter tube. Rotating the screw CCW, the ink stream is moving a little bit angular downwards in direction of left edge of gutter tube.

(Viewing direction from nozzle to gutter)



Hint: Due to the constructional positioning of the adjustment screws, there will be always a movement like a skew during the adjustment on any screw. Due to this existing skew, usually both adjusting screws must be adjusted for the correct attitude.

5. After adjustment of the entire drop production unit into the charging tunnel and deflecting plates, it has to be adjusted in such a way, that the ink stream knew parallel and concisely with the internal left of the charging tunnel.
(Viewing direction: From nozzle toward gutter tube).
The ink stream should run absolutely parallel to the deflecting plate.

Required tools:

6-fold magnifying Glasss

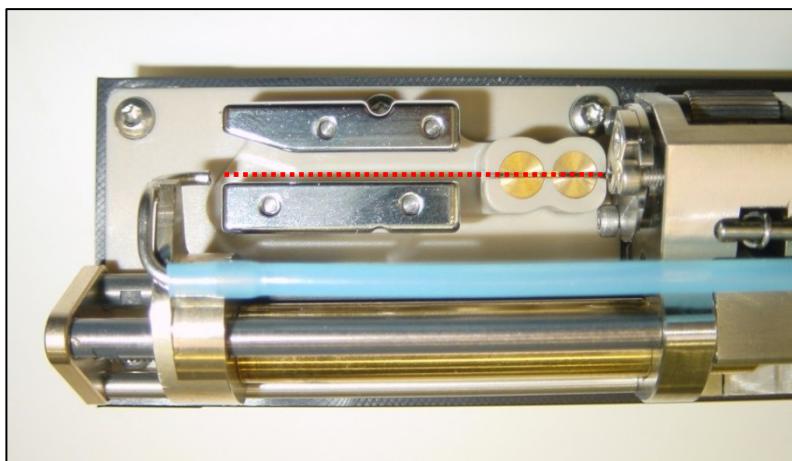
Allen key (SW 1,5 mm) or Torx (T6)

During the optical evaluation of the radiation situation it is important that the point of view is directed exactly perpendicularly from above via the charging tunnel and ink stream, in order to exclude a parallax error to a large extent.

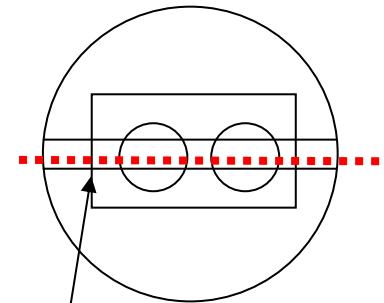


Attention:

**It is not allowed to use a ball head allen key.
The screw heads could be damaged!**



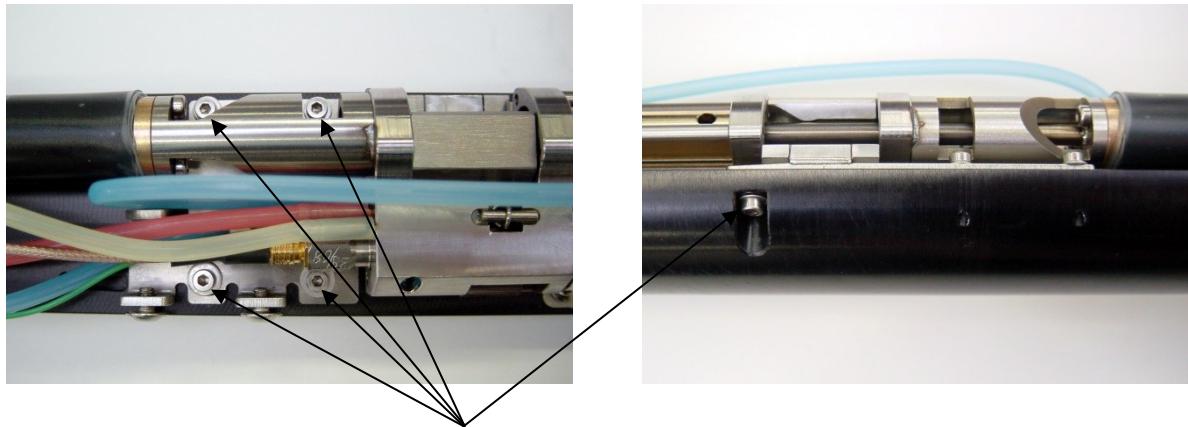
Adjusting position



Left edge of
charging tunnel

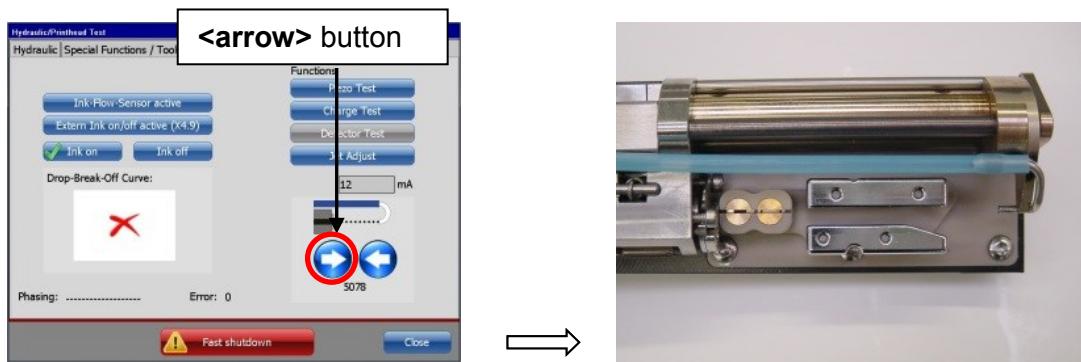
Sequence of adjustment:

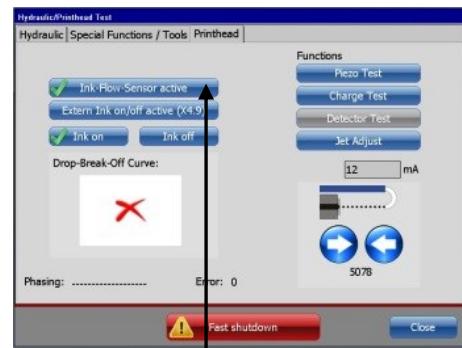
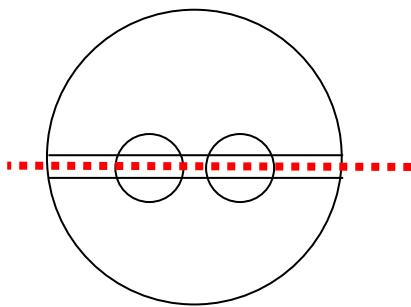
- Open the 5 retaining screws of the mounting plate until the plate can be moved lightly by hand.
- Relocate the mounting plate until the ink stream reaches the final adjustment position.
- Tighten the retaining screws and check the jet position again.



Retaining screws (fix with Allen key (SW 1,5 mm) or Torx (T6)).

6. Open the nozzle seal completely with the <arrow> button unless the ink stream goes inside the charging tunnel and the nozzle seal reaches the final position. The ink stream should be concentric inside the charging tunnel and parallel to the deflection plates. If not, readjust the position again.



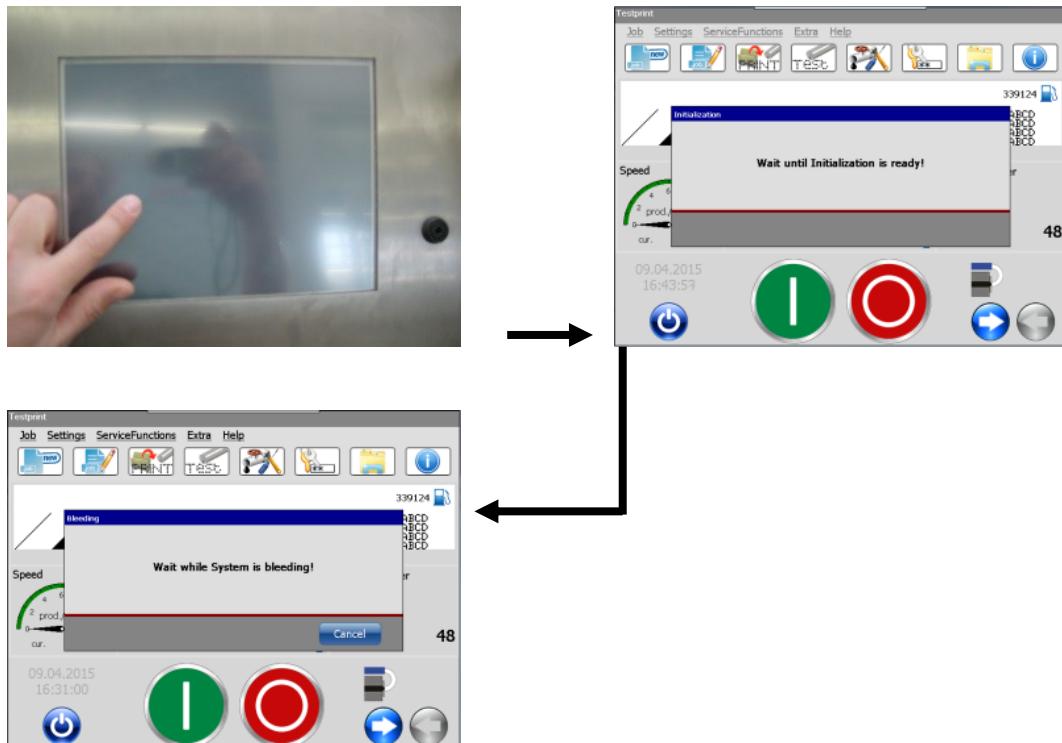


Switch on the button <Ink-Flow-Sensor>

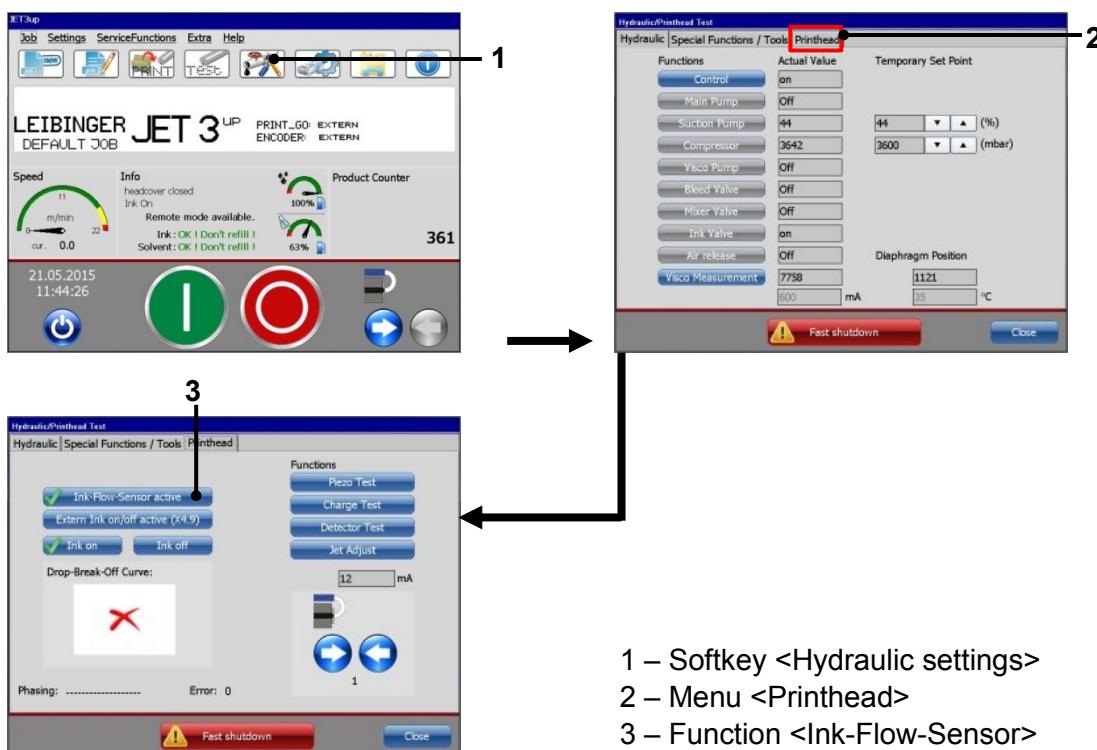
7. Close and open again the nozzle seal. Do a final check up for the correct position of the ink stream.

5 Exchange the oscillator

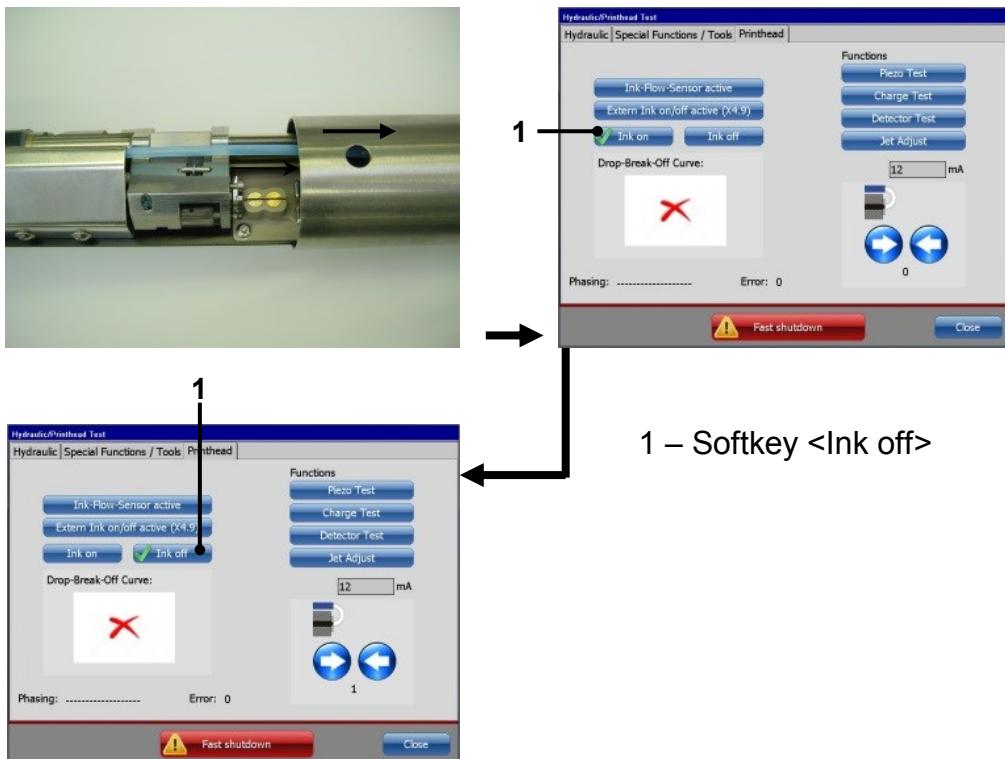
- Start up the JET3up via the touch-display and wait until the initialization and the bleeding is finished.



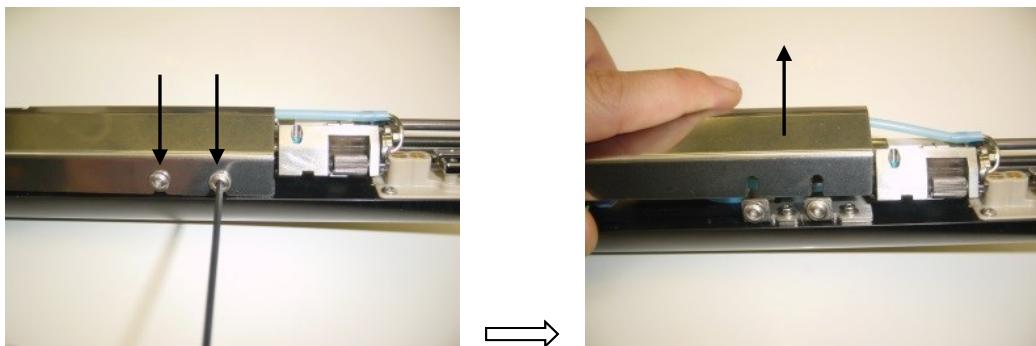
- Touch the softkey <Hydraulic settings> (1), open the <Printhead> (2) menu and deactivate the <Ink-flow-sensor> (3)



3. Open the headcover and switch the button <Ink off> (1)



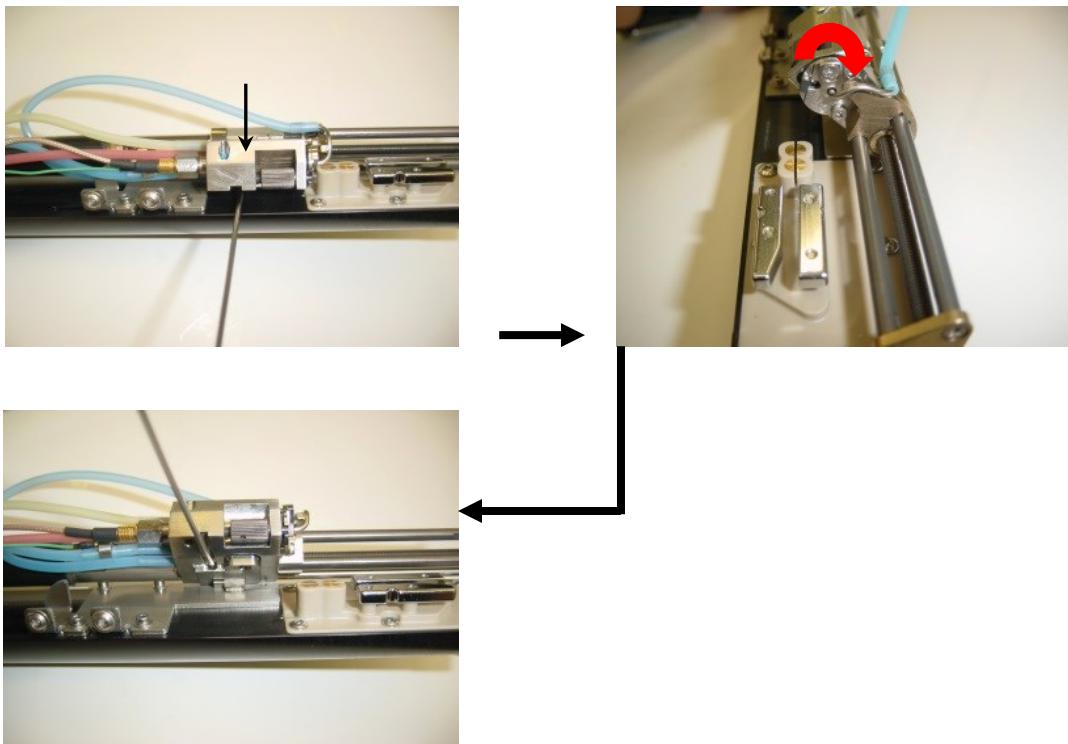
4. Remove the inner-cover, but open the allen-screws (2,5 metric) only one turn.



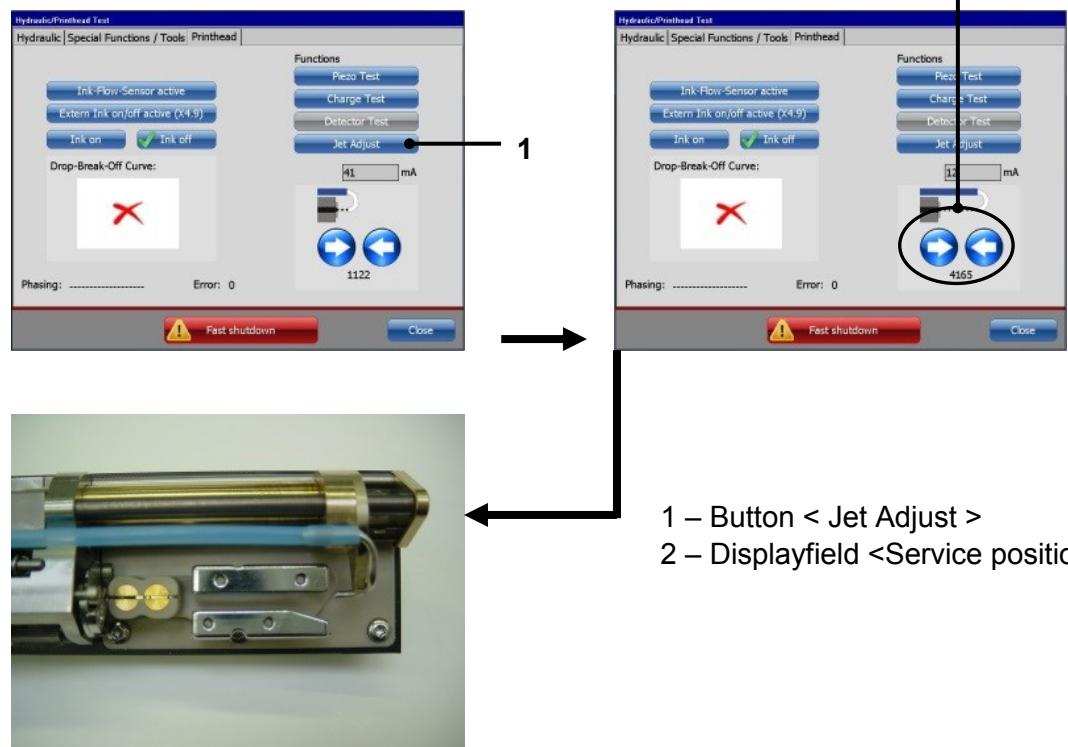
Attention:

Never use a balled head allen key, otherwise you are damaging the screws!!!

5. Open the allen screw (1,5 metric) from the drop production unit, until it is possible to bring it into the service-position. Then close the screw until the unit is locked.



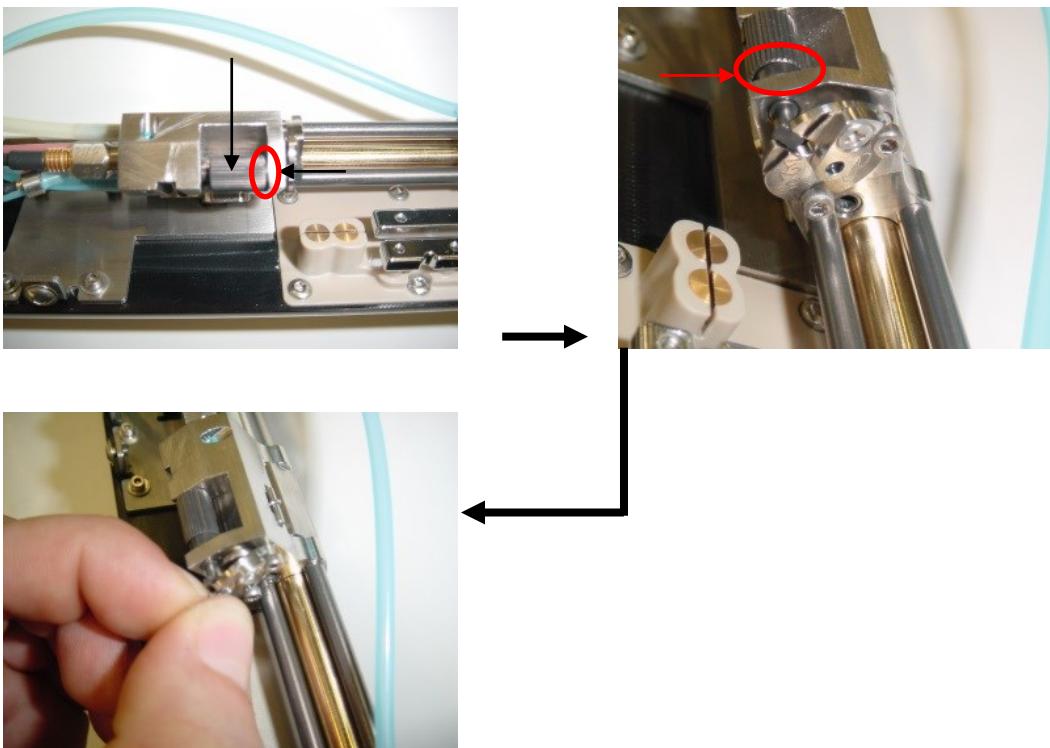
6. Touch the <Jet Adjust> button (1). Now the gutter tube is moving automatically to a pre defined service-position (4200) (2).



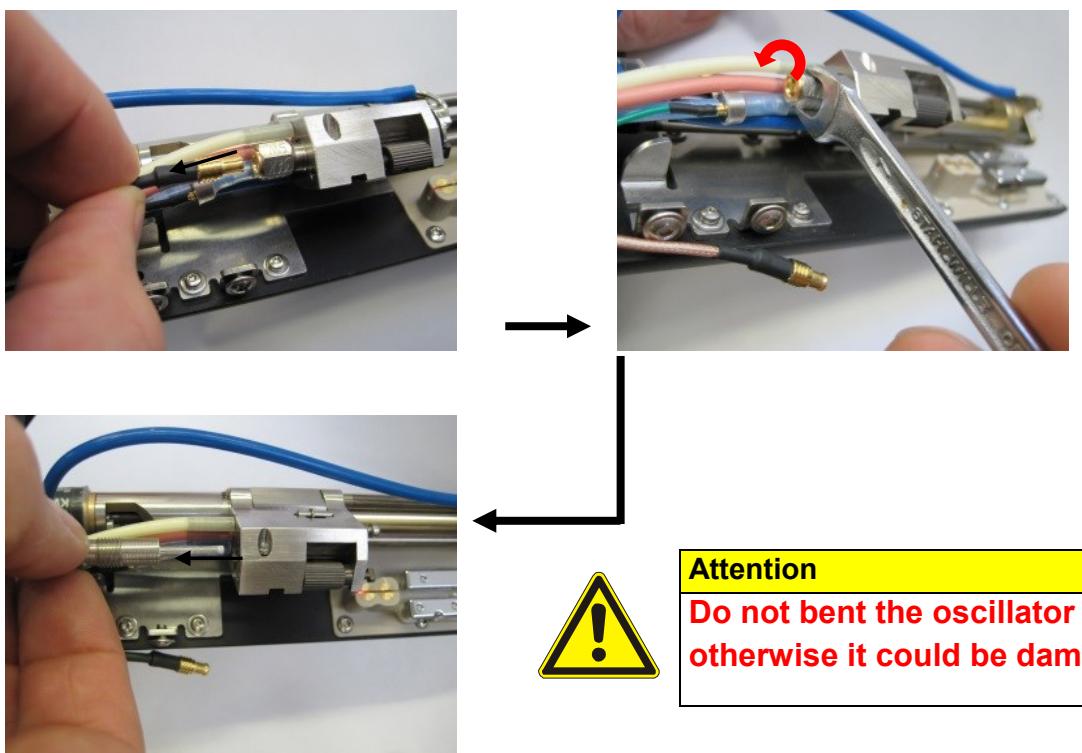
1 – Button < Jet Adjust >
2 – Displayfield <Service position>

For the next steps you have to incline the head a little bit down, that the ink or solvent can leak out of the print head!

- Wind back the knurled-head screw to stop until the cross bolt centre turns on 90°. Is the nozzle adjustment released you can take out the nozzle.

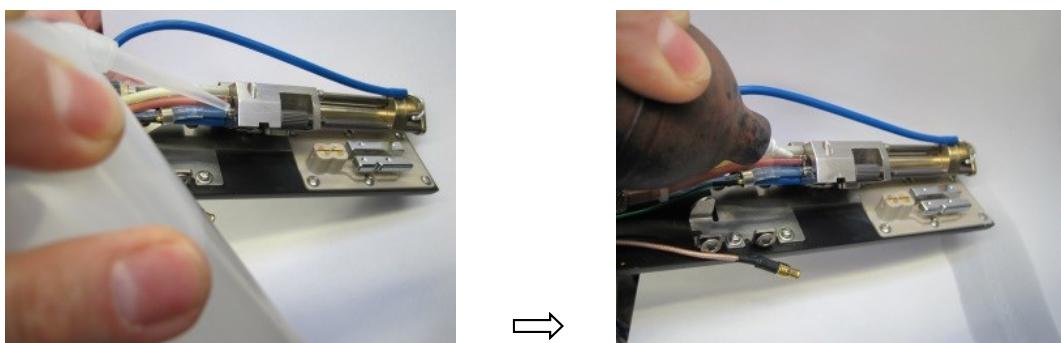


- Unplug the oscillator and release it with a 7mm open-end wrench key. Unscrew the oscillator by hand and take it out of the drop production unit.

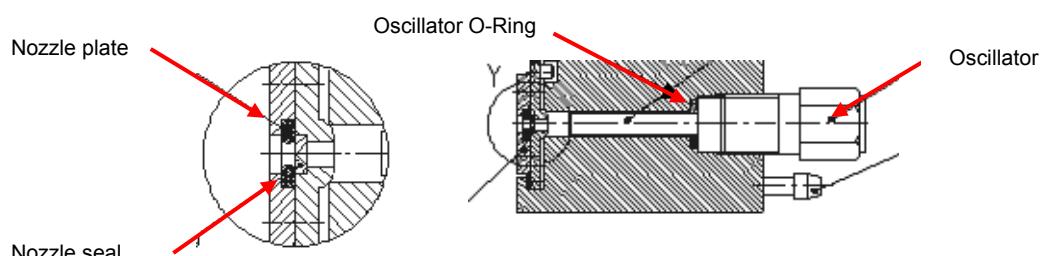


9. Flush the hole (in the drop production unit) for the oscillator with solvent and dry it with clean compressed air.

Attention : Don't lose the oscillator o-ring during drying with compressed air.
Be sure that no dirt is coming into the open system.



10. Pay attention to the right installation position from the oscillator o-ring.
(drawing for a 96KHz unit)



!!! Don't forget the adapter ring and the second o-ring in a 64 KHz unit !!!



Attention

Do not bent the oscillator otherwise it could be damaged!!!

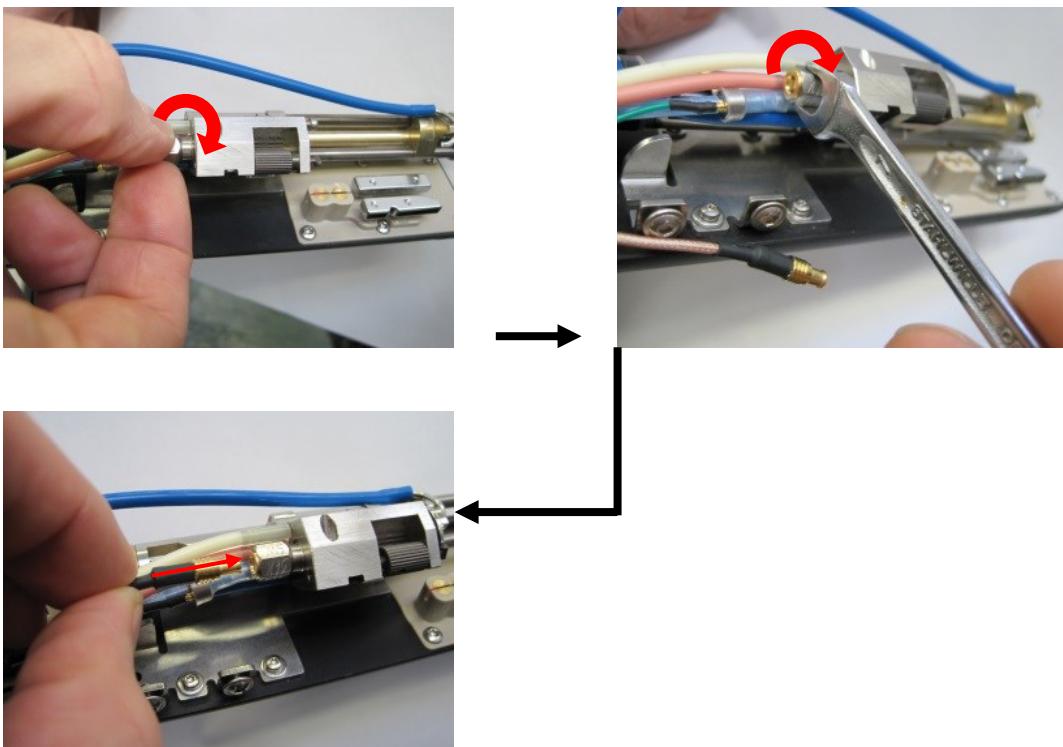
11. Clean the new oscillator. Install the oscillator and tighten it well only by hand.



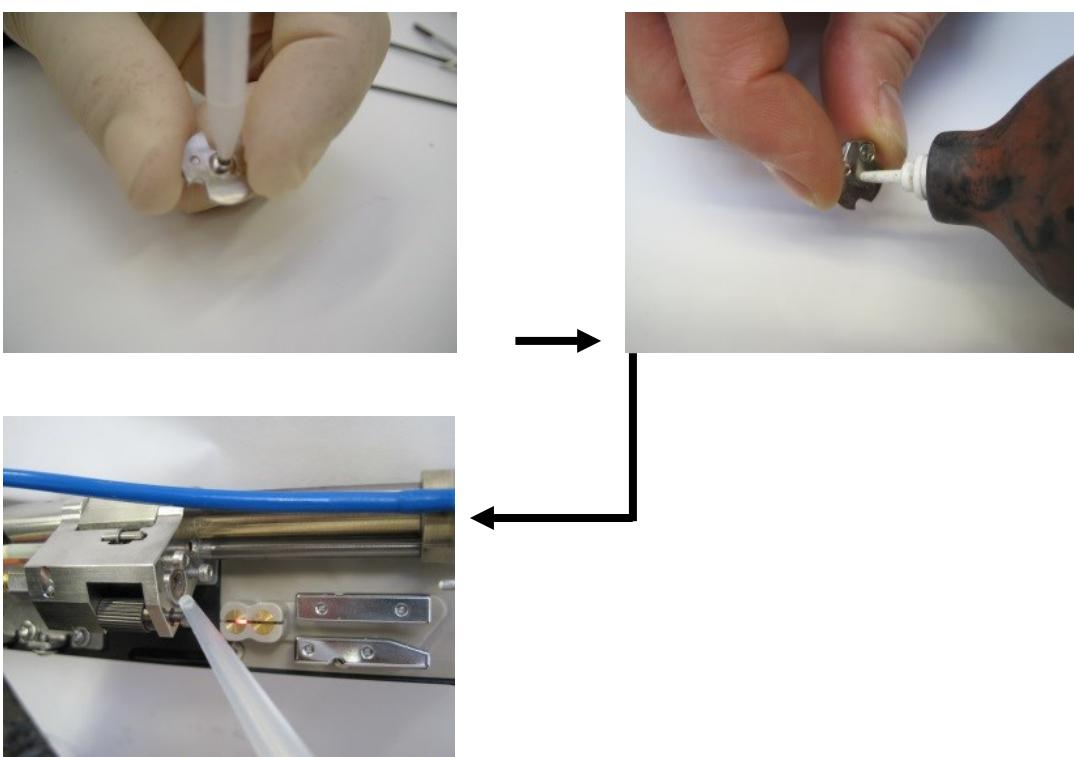
Attention

**It is prohibited to flush the oscillator with solvent!!
Solvent could enter inside and damage the piezo!!**

Fasten slightly the oscillator with a 7mm open-end hydraulic settings.
Plug in the oscillator cable.

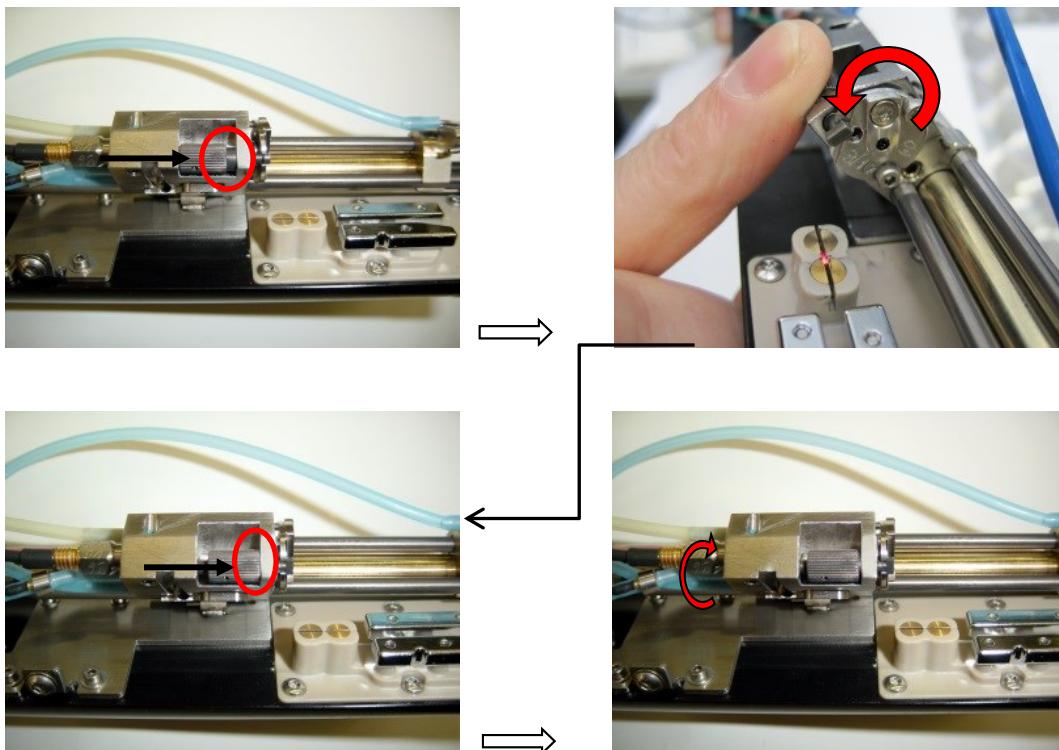


12. If necessary clean the nozzle from both sides with appropriate solvent. Blow down the nozzle with clean air (pressure 2-6 bar). Focus the air gun exactly in the middle of the nozzle and blow down for several seconds. First against the nozzle outlet and then against the nozzle entry. This can be repeated for an unlimited number of times.

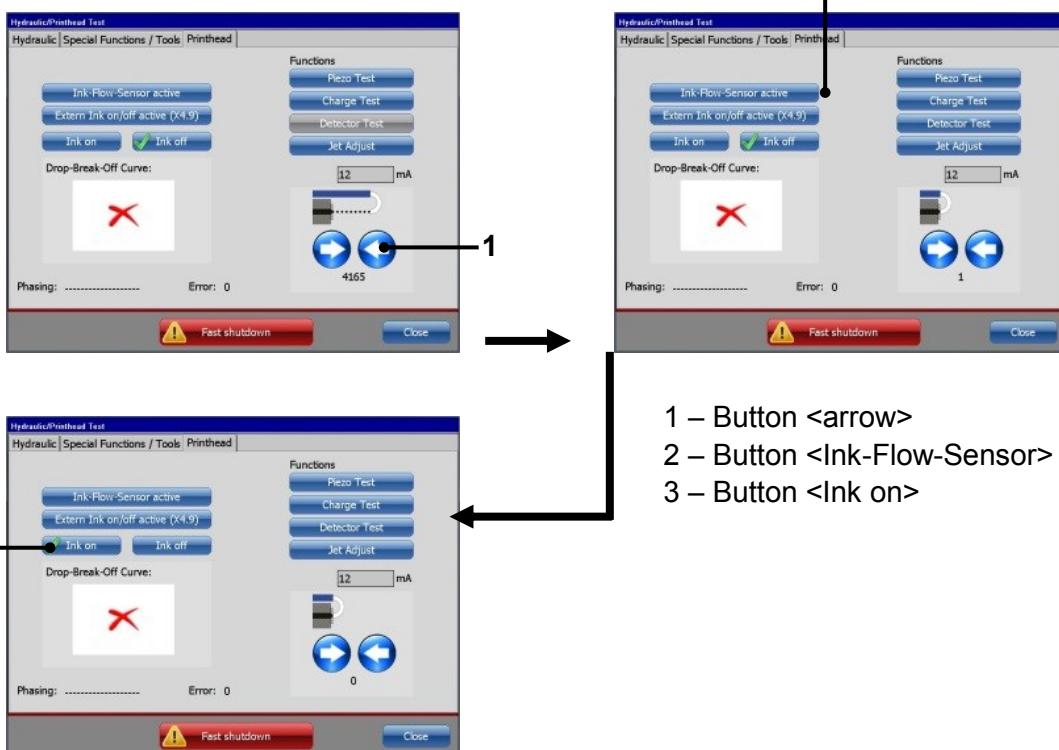


13. Replace the nozzle and turn the knurled-head-screw to stop position. Thereby the cross bolt centre turns on 90° and arrests the nozzle.

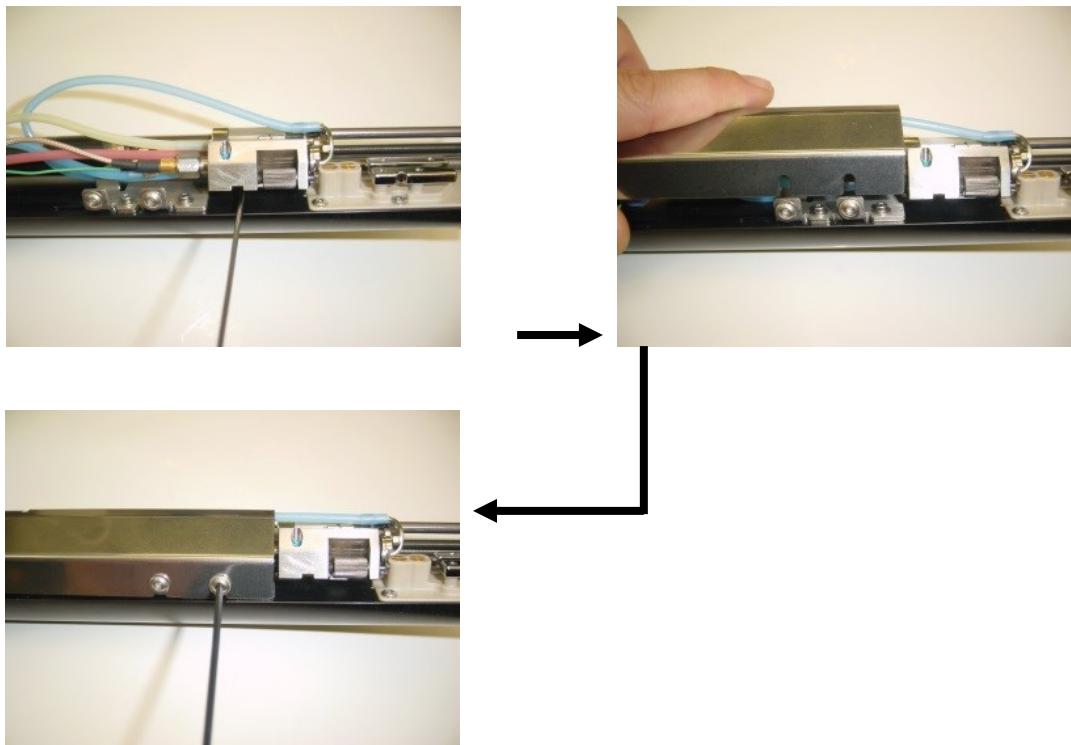
Afterwards turn back the knurled-head-screw about **one** rotation.



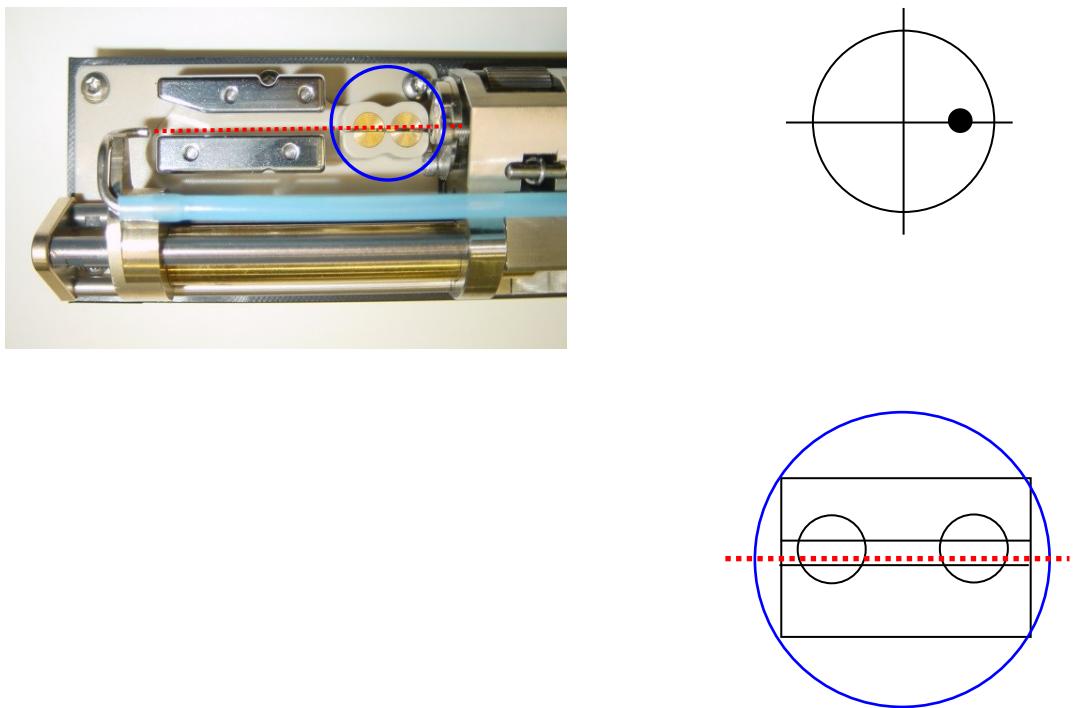
14. Close the gutter tube by pushing the button <arrow> (1) and activate the <Ink-flow-sensor> (2) and switch the button <Ink on> (3).



15. Bring the drop production unit into the print position and put on and fasten the inner-cover.



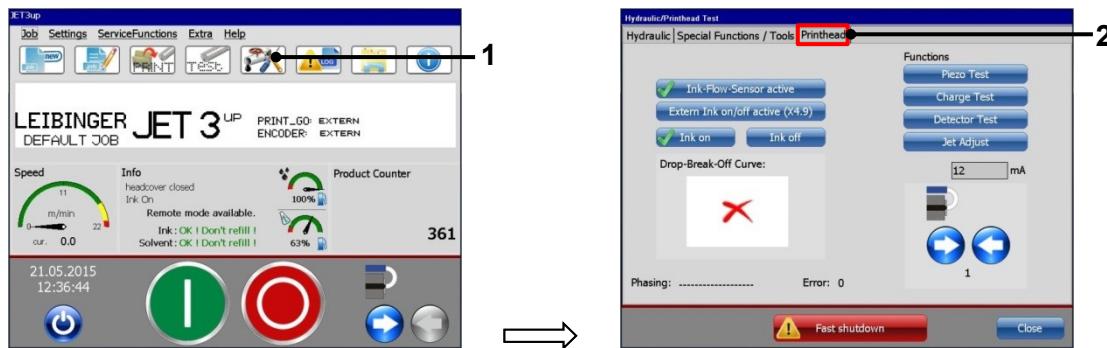
16. Finally check the correct position from the jet and the functionality.



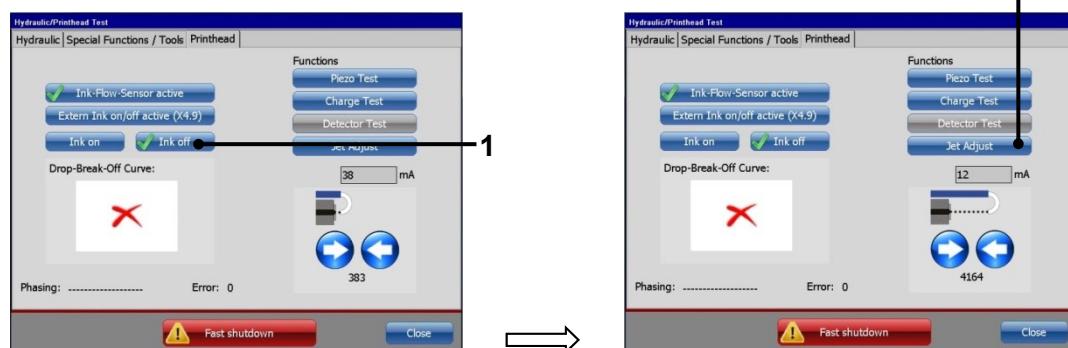
6

Exchange gutter tube

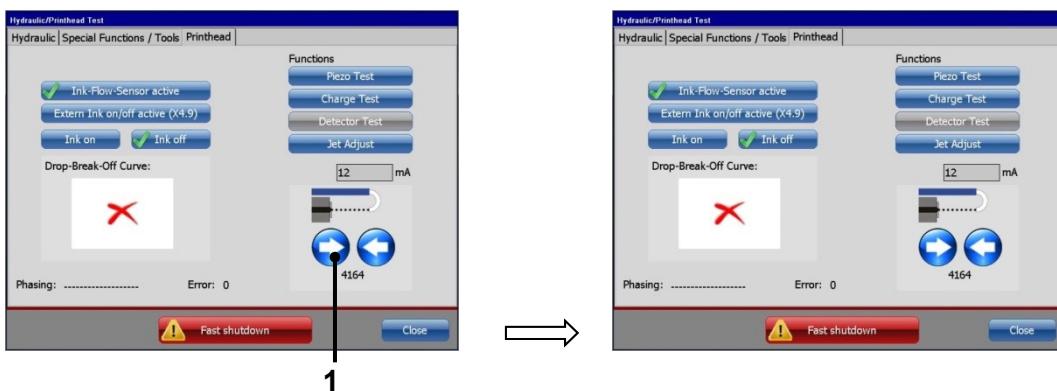
1. Switch on the JET3up and wait until initializing is finished.
2. Select the softkey <Hydraulic settings> (1) and switch to tab <Printhead> (2).



3. Push the button <Ink off> (1) and afterwards open the nozzle by pushing the button <Jet Adjust> (2).



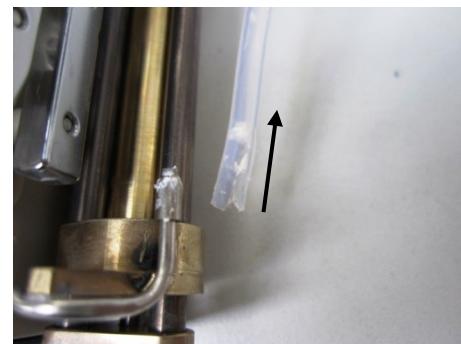
4. Open the nozzle completely with the <arrow> (1) button.



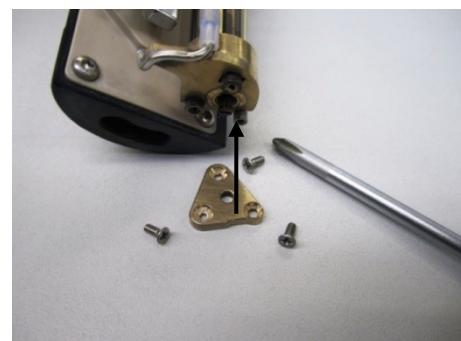
5. Put off the headcover and slice of the flexible tube from the gutter tube.

**ATTENTION**

The gutter tube should not be damaged!



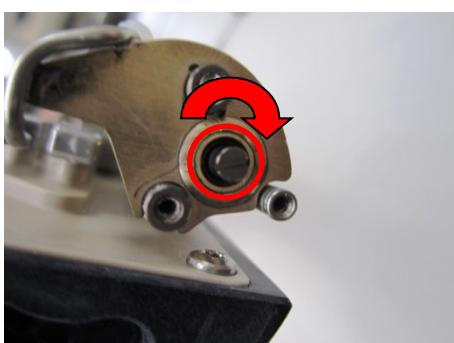
6. Screw out the three cross head screws with a phillips-type screwdriver and put off the retaining plate.



7. Rotate the motor spindle clockwise with a slotted head screwdriver to screw out the gutter tube.

**ATTENTION**

The thread should not be damaged!



- Put in the new gutter tube and rotate the motor spindle counter clockwise to screw in the gutter tube.



ATTENTION

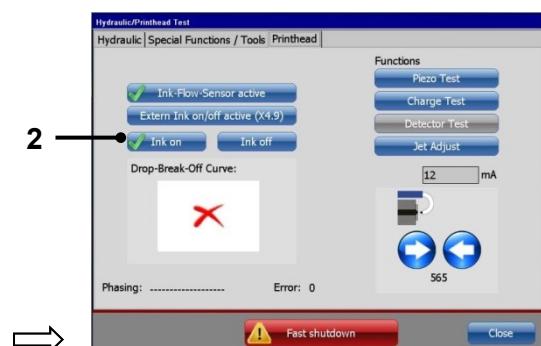
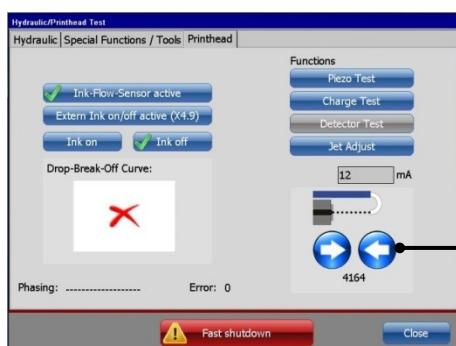
The thread should not be damaged!



- Put on the retaining plate and screw in the three cross head screws by using a phillips-tip screwdriver. Use Loctite as threadlocker. (The retaining plate can not be twisted.)



- Cut off the inside end of the flexible tube and put it on the gutter tube.
- Close the nozzle completely with the button <arrow> (1).
Checkup that the nozzle is really closed. (Do not get dizzy because of the wrong value of the encoder. This value cannot be the right because the spindle and position of the gutter tube have been changed.) Afterwards push button <Ink on> (2).



1 – Button <arrow> 2 – Button <Ink-on>

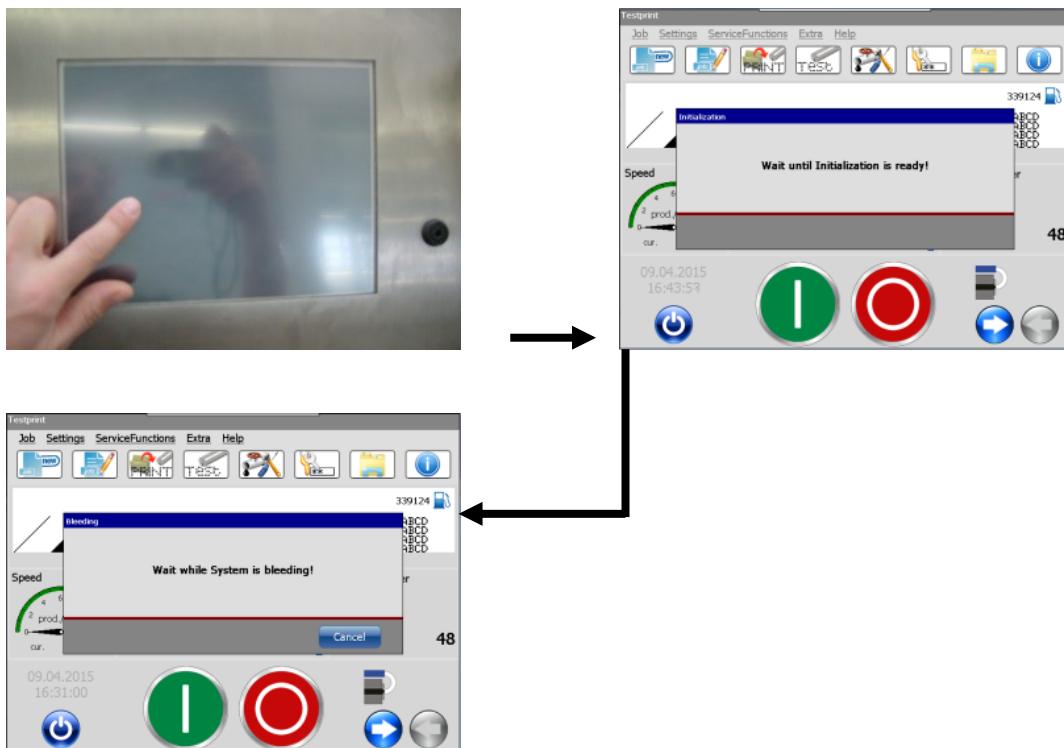
12. Close the <Hydraulic> menu and switch off the JET3up. Plug off the power supply and plug in again after a few seconds. During the booting process the values of the nozzle encoder were set to zero and the shown value is the right again.

13. Open the nozzle and checkup the ink stream position.

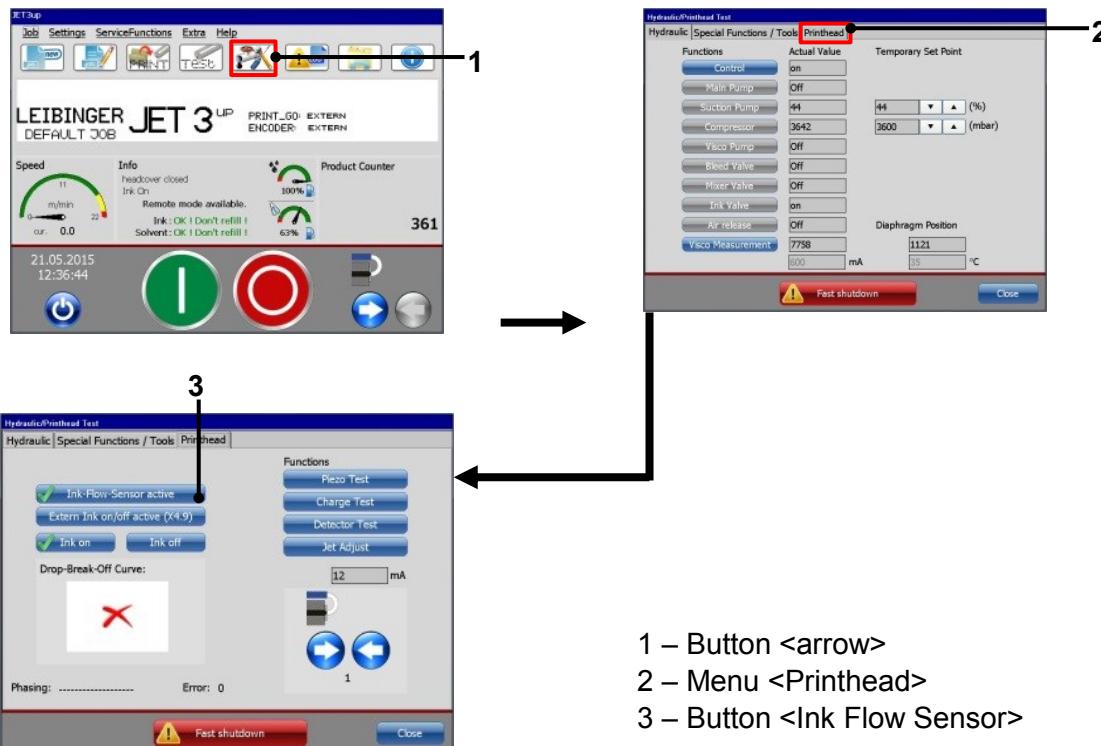
7

Exchange suction tube on print head

- Start up the JET3up via the touch-display and wait until the initialization and the bleeding is finished.

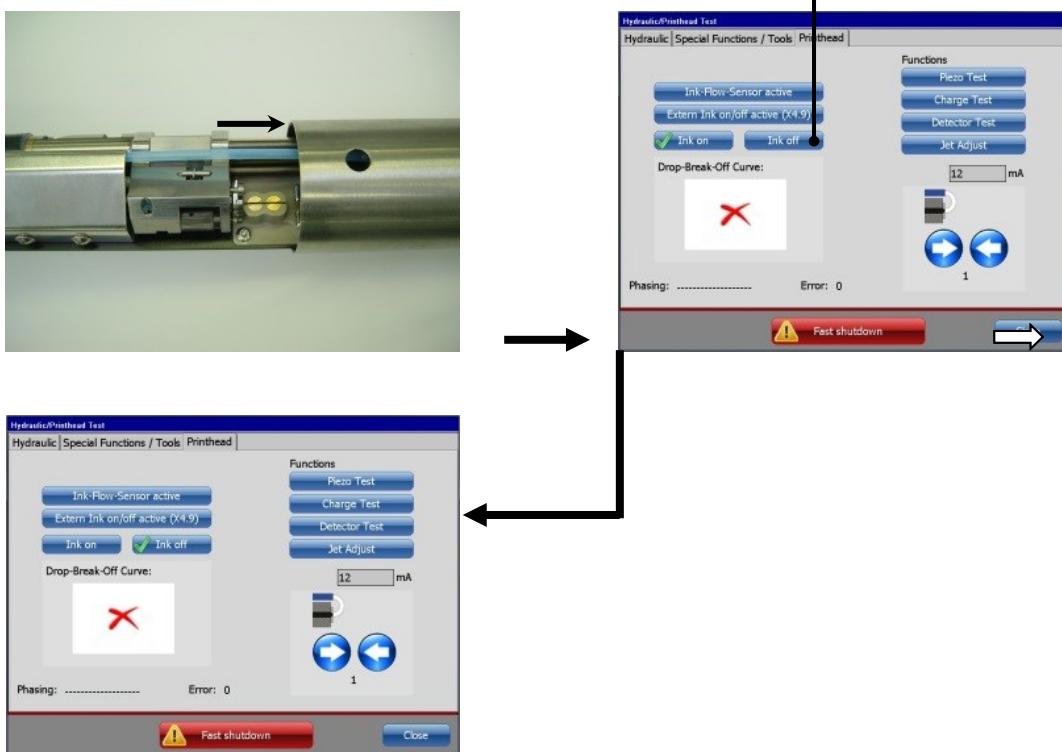


- Touch the softkey <Hydraulik settings> (1), open the menu <Printhead>-(2) and deactivate the <Ink-flow-sensor> (3).

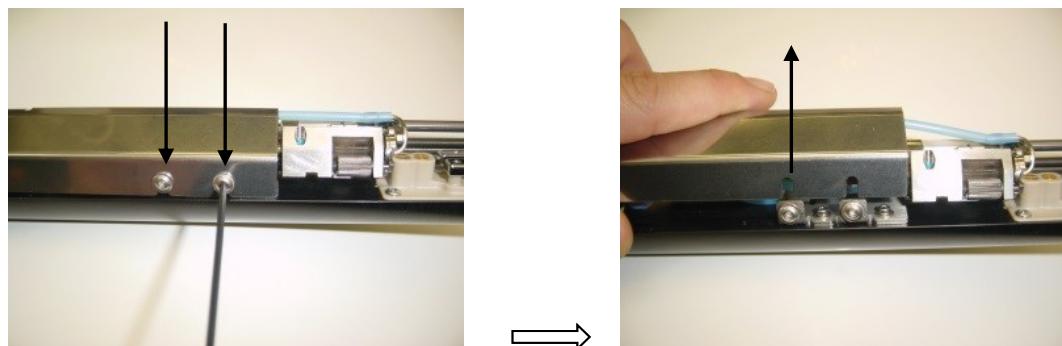


1 – Button <arrow>
 2 – Menu <Printhead>
 3 – Button <Ink Flow Sensor>

3. Open the headcover and switch the button <Ink off> (1).



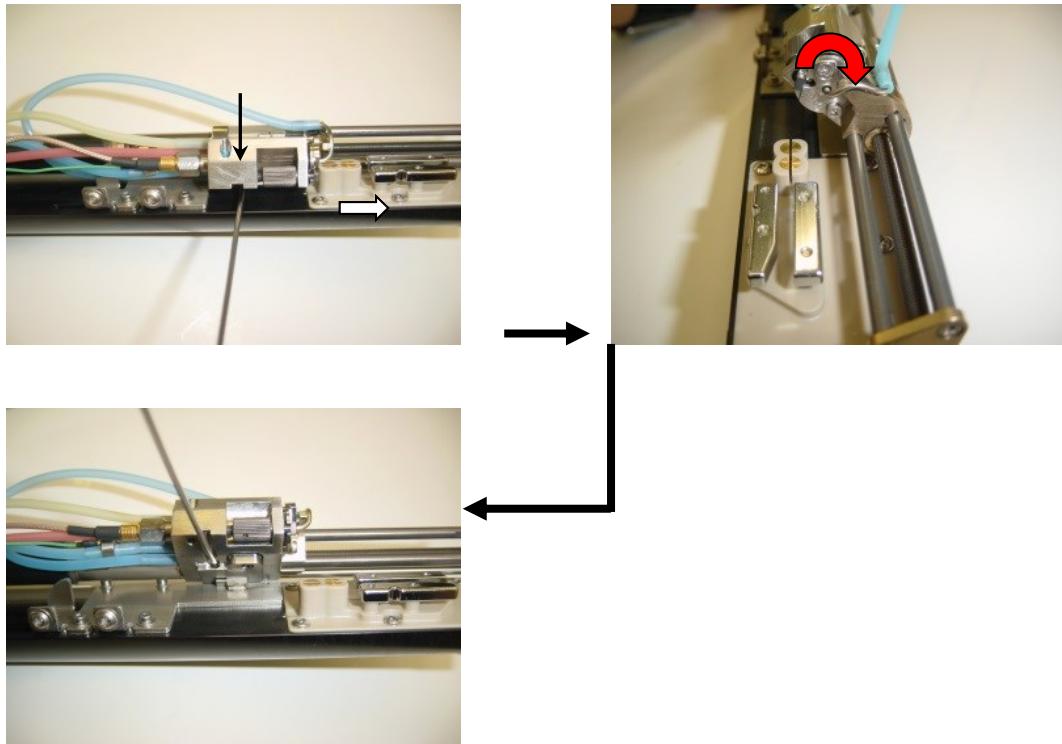
4. Remove the inner-cover, but open the Allen-screws (2,5 metric) only **one** turn.



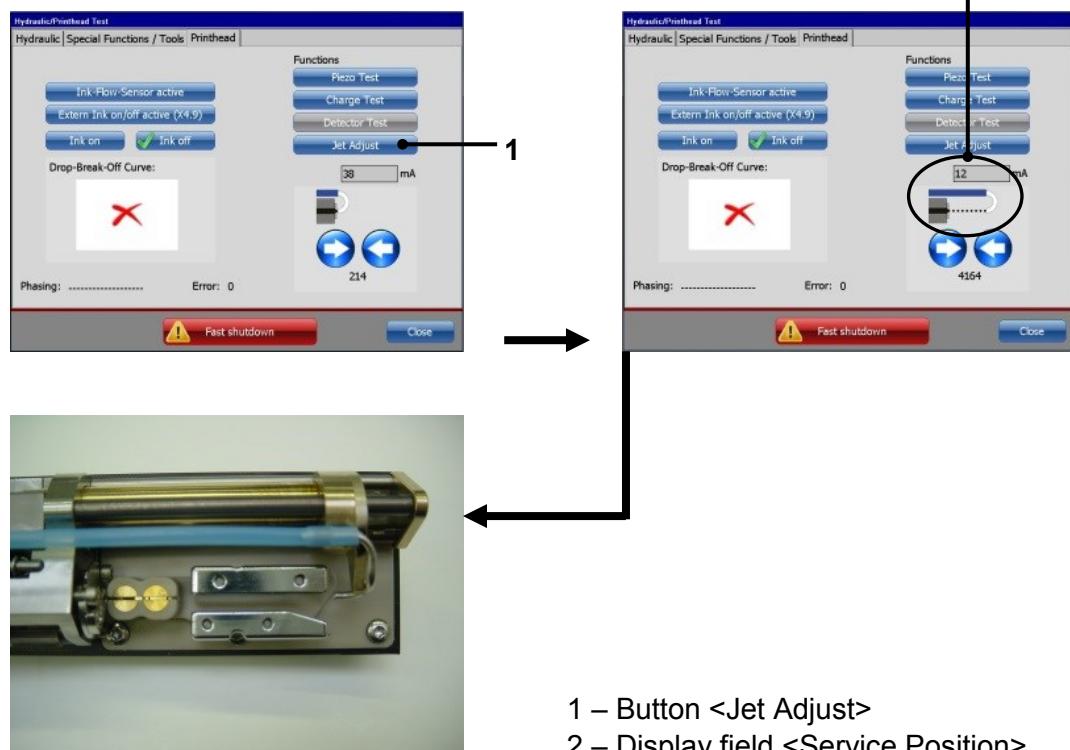
Attention

Never use a balled head allen key, otherwise the screws could be damaged!!!

5. Open the allen screw (1,5 metric) from the drop production unit, until it is possible to bring it into the service-position. Then close the screw until the unit is locked.



6. Touch the <Jet adjust> button (1). Now the gutter tube is moving automatically to an pre defined service-position (4200) (2).

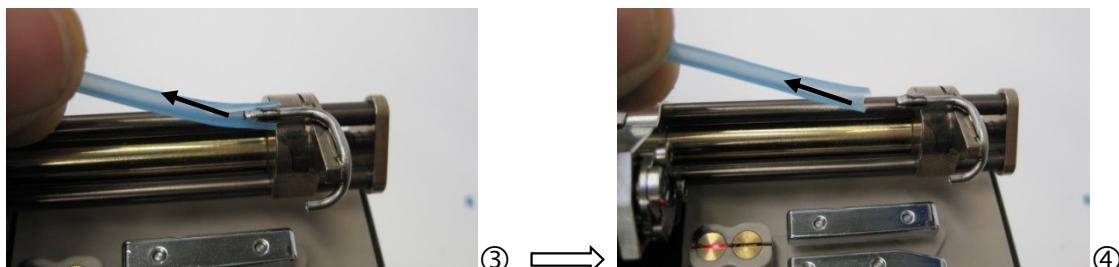
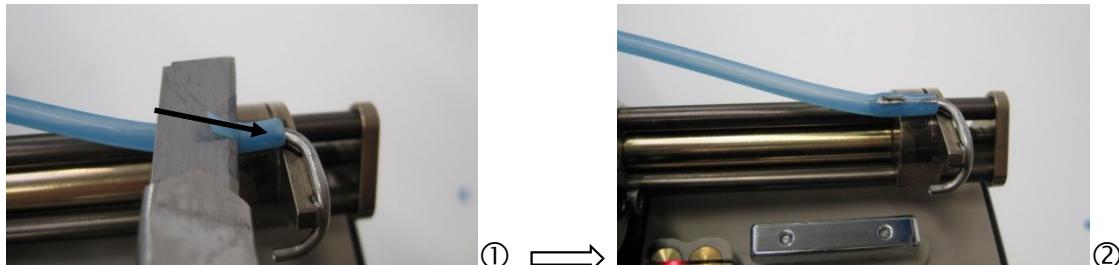


1 – Button <Jet Adjust>
2 – Display field <Service Position>

7. Cut the old suction tube horizontal very carefully (stripping off with a knife) on the gutter tube.

**Attention**

Do not scuff or damage the gutter !!!

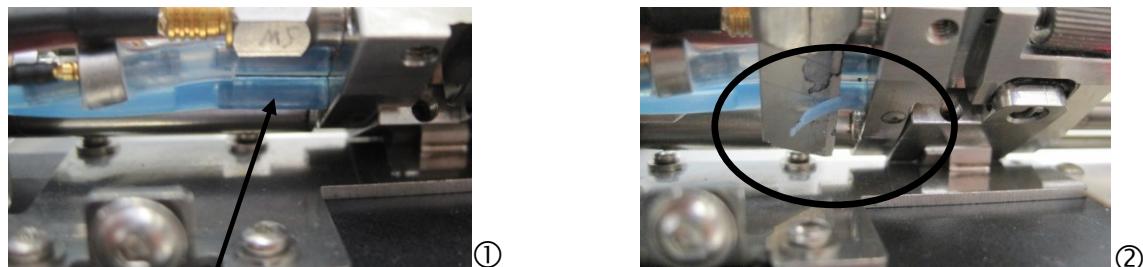


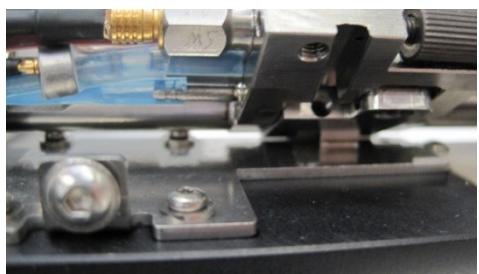
Remove the tube carefully by hand!!!

8. Cut also the old suction tube horizontal (stripping off with a knife) on the drop production unit.

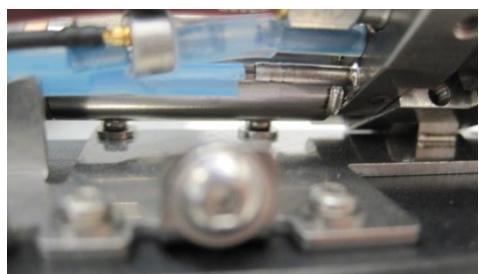
**Attention**

Do not scuff or damage the fitting!!!



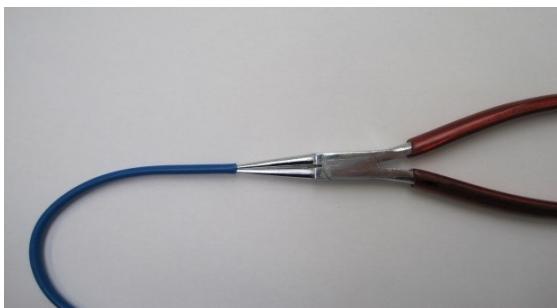


③

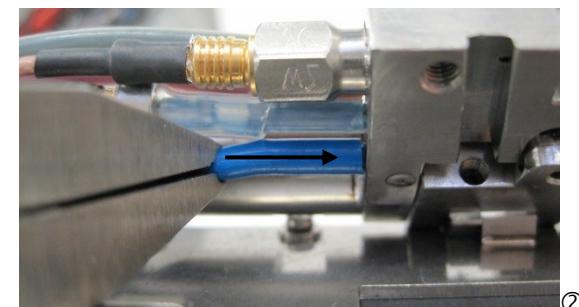
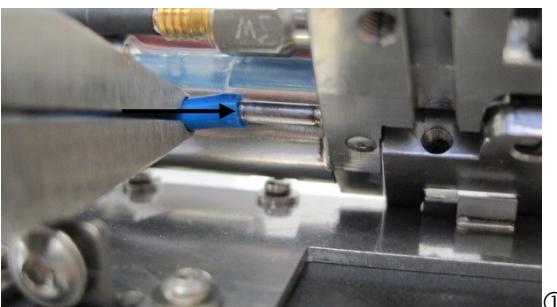


④

9. Widen the tube on **both sides** with a long-nosed pliers



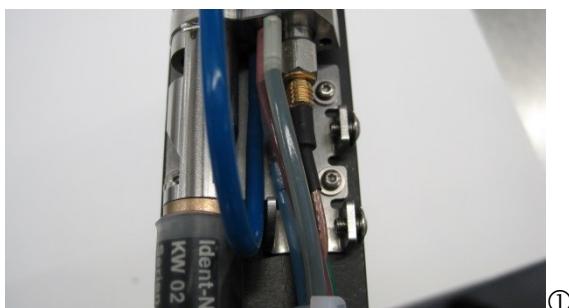
10. First connect the short side of the suction tube with the drop production unit!
It is much easier to do this with the tool (tongs), which you can order from Leibinger.



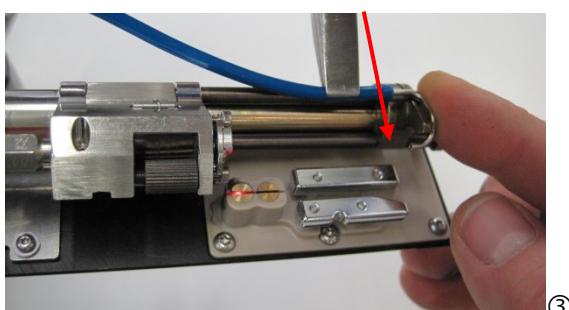
11. Connect the other side from the suction tube with the gutter.
The suction tube must have a pre-bending like you can see on the picture.

Attention:

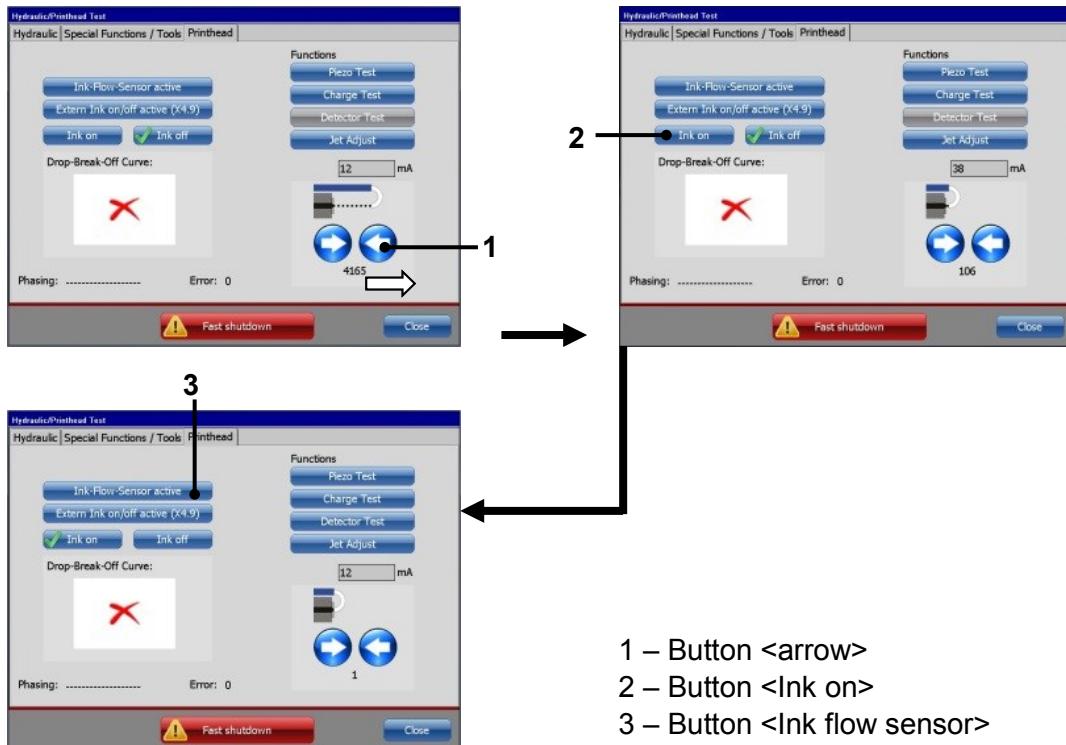
The gutter tube is only fixed by laser-welding, don't break it!!!



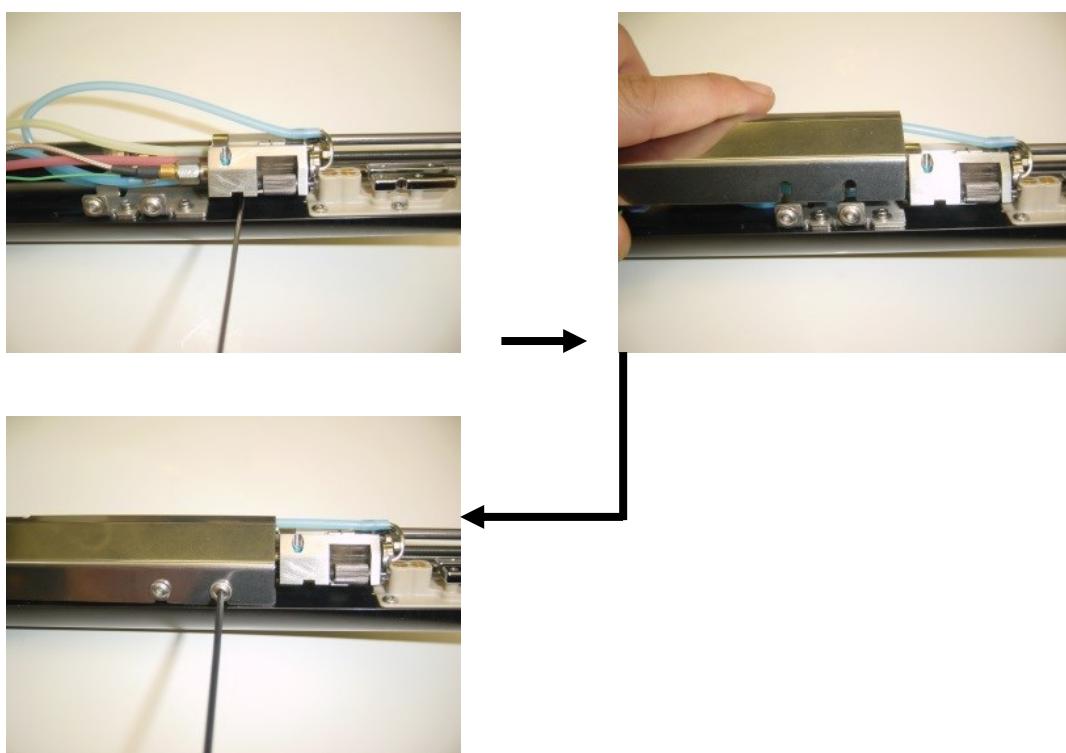
Up hold the gutter with the finger, while you connect the suction tube onto the gutter!



12. Close the gutter tube with the <arrow> button (1) and switch the button <Ink on> (2) and activate the <Ink-flow-sensor> (3).



13. Bring the drop production unit into the print position.



14. Check the JET3up for the right position in the gutter and the electrodes.

8**Exchange the electrode block**

1. Switch off the JET3up.



2. Remove the mains plug.

***Dangerous electrical voltage!***

Contact causes serious damage through an electric shock! Disconnect the device from the voltage supply prior to open. Remove mains plug!

Tools you need:

- **6-fold magnifying Glasss,**
- **Allen keys (SW 1,5 + 2,0 mm) and**
- **Torque Allen key with Blade for Torx (T6 + T8).**

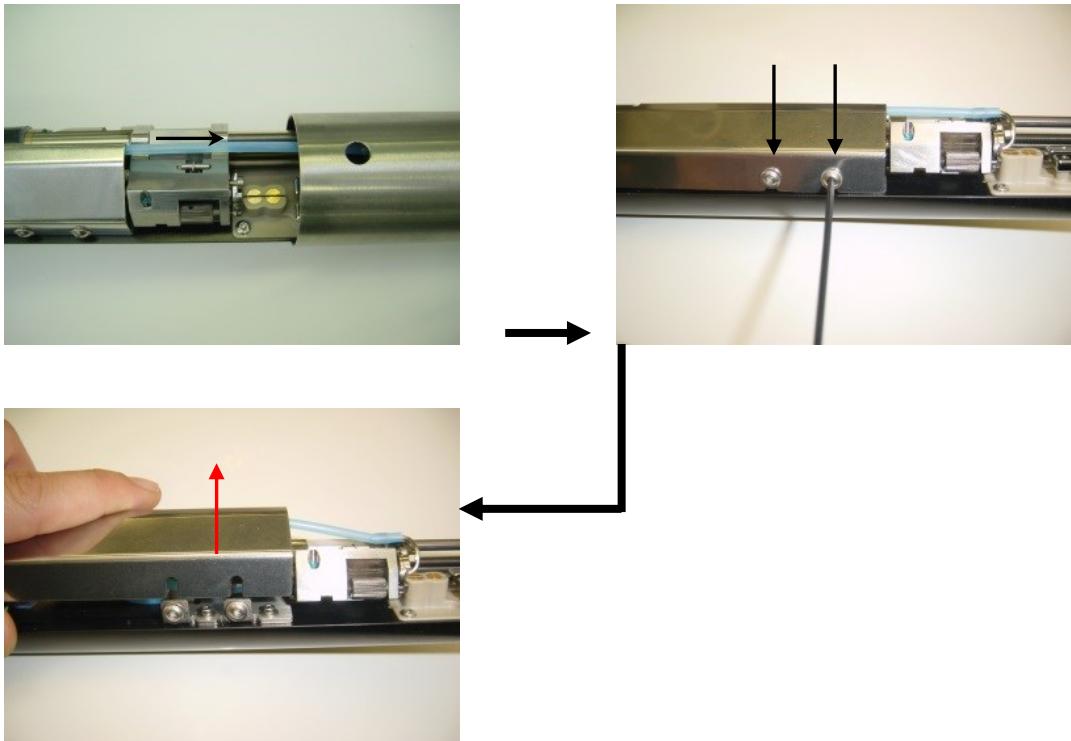
You will find these keys in our Spare Part and Accessories Catalog!

3. Remove print head cover. Release fixing bolts with allen key (SW 2,0 mm) by turning about one rotation and remove the interior cover.

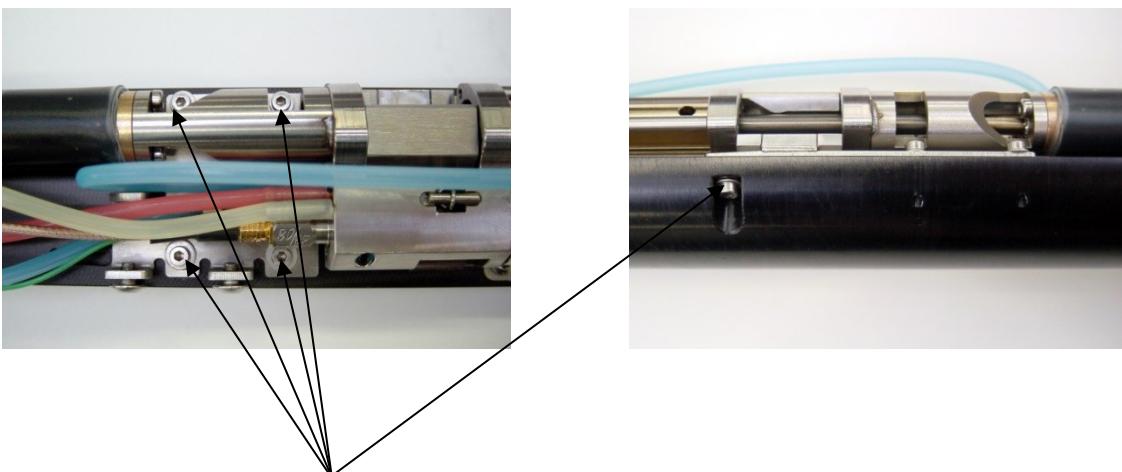


Attention

It is not allowed to use a golf ball head allen keys, otherwise screw heads could be damaged.

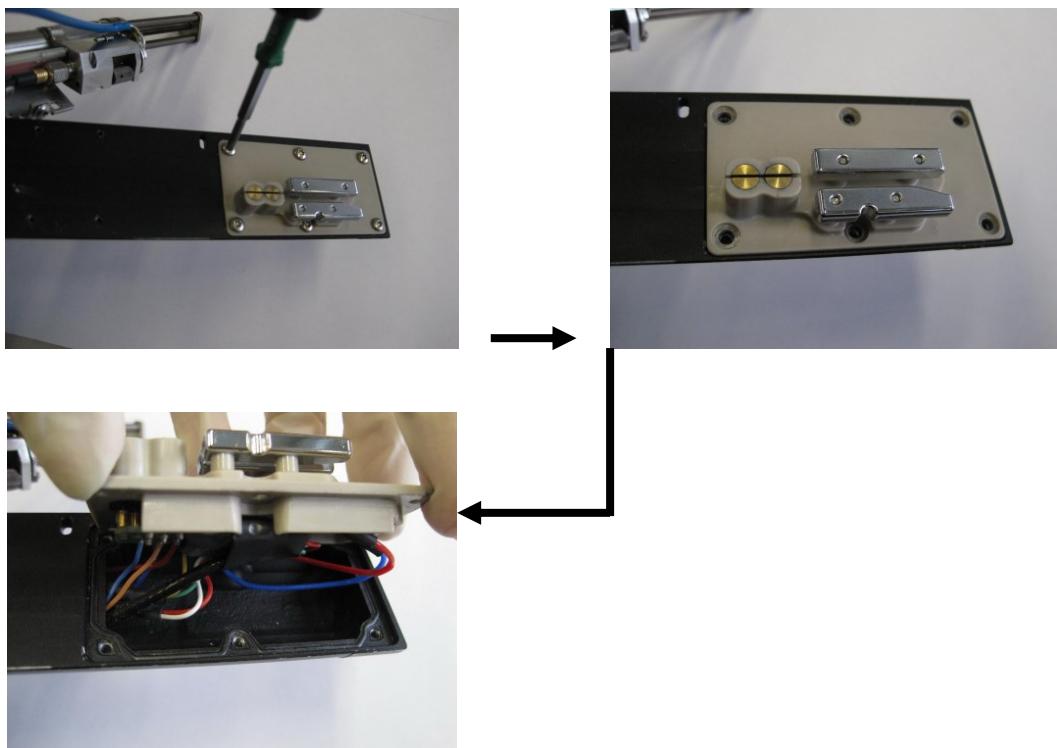


4. Remove the mounting plate (with drop production unit).



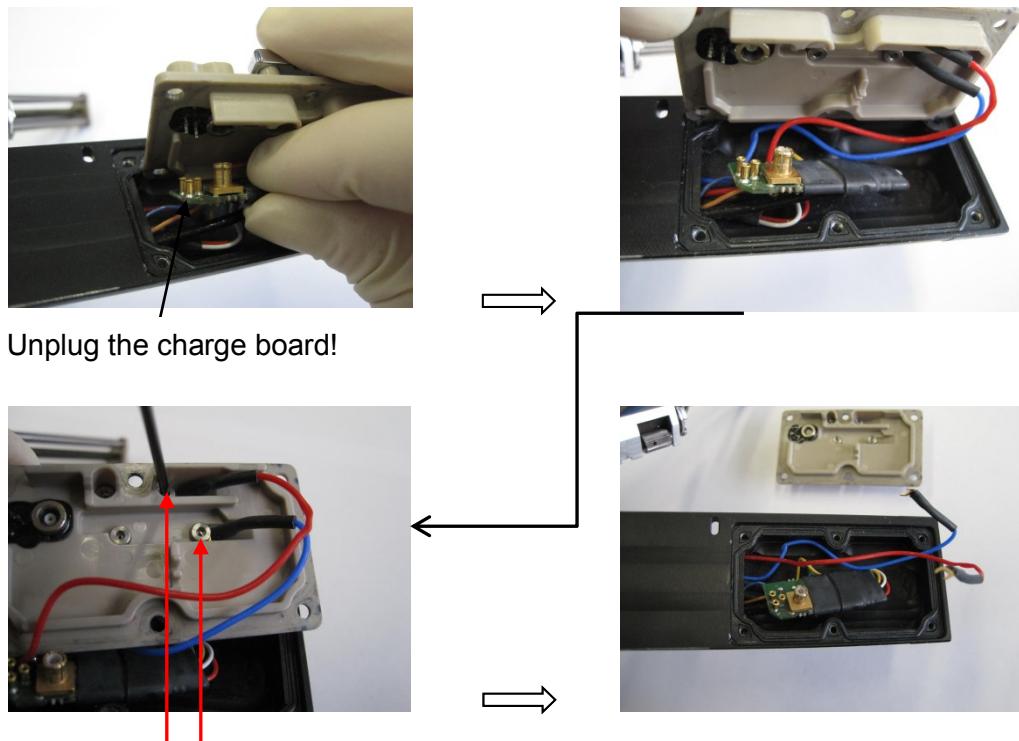
Remove the 5 retaining screws + the washers with an allen key (SW 2,0 mm)

5. Remove the electrode block

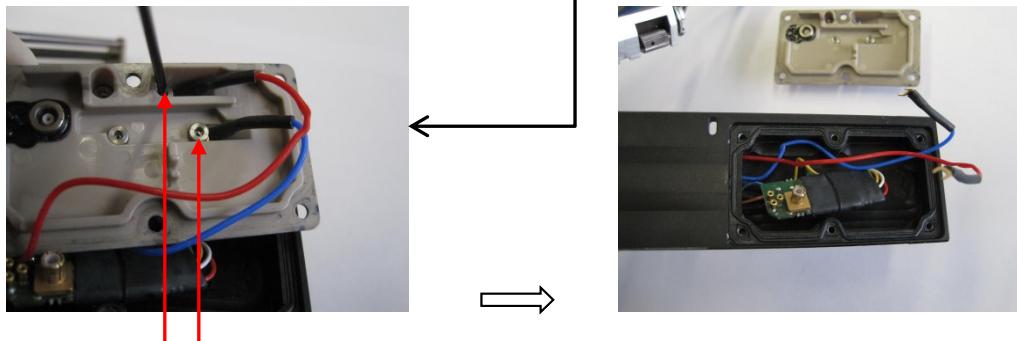


Remove the 6 Torx screws with a Torx screwdriver (T8) and unplug the electrode block from the print head!

6. Disconnect the electrode block from the print head electronic parts.

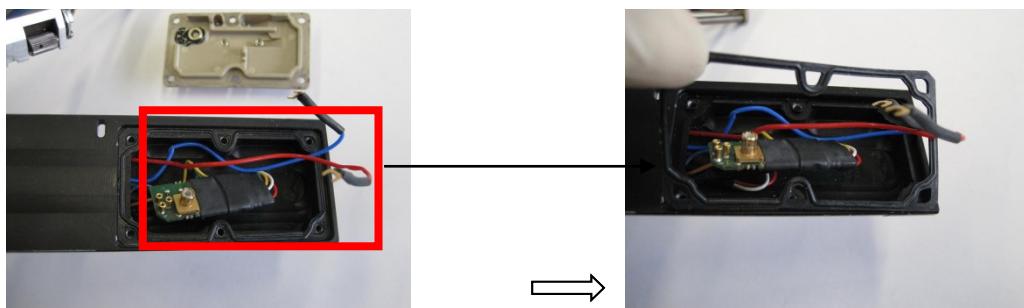


Unplug the charge board!

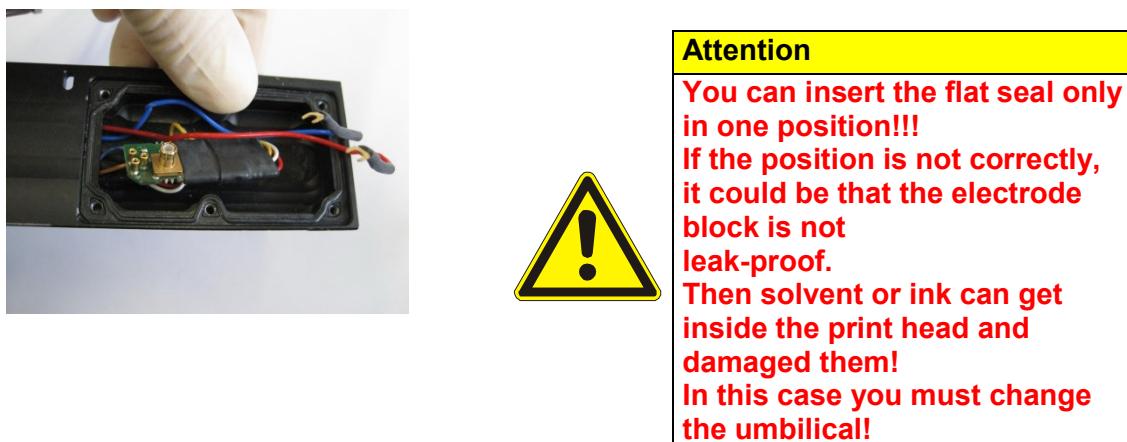


Remove the fixing screws from the HV-Cable with a Allen key (SW 1,5 mm)!

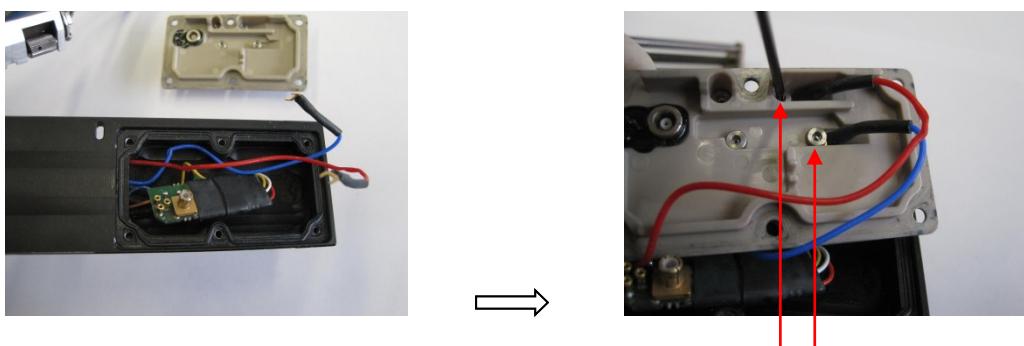
7. Remove the flat seal.



8. Insert the new flat seal and push it correctly down.



9. Fix the HV-Cable on the electrode block.

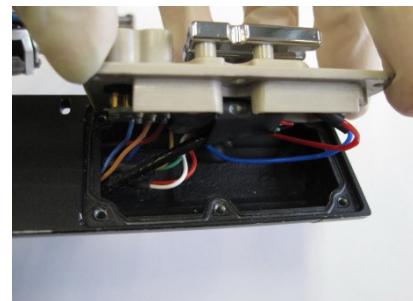
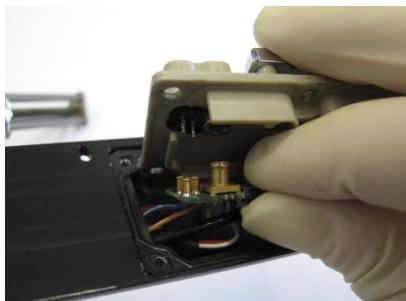


Fix the HV-Cable with the screws. For this you need an Allen key (SW 1,5 mm)!

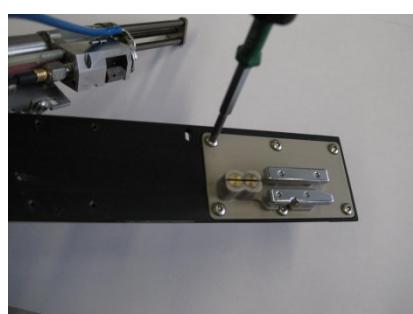
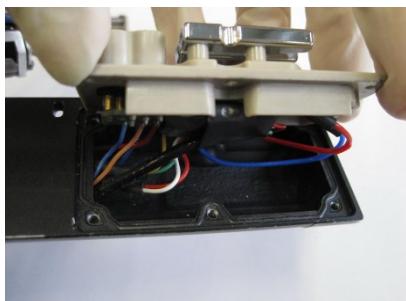
10. Connect the Charge-Board on the electrode block

**Attention**

Take care that PINS not dismantle, when you connect the Charge-Board on electrode block!



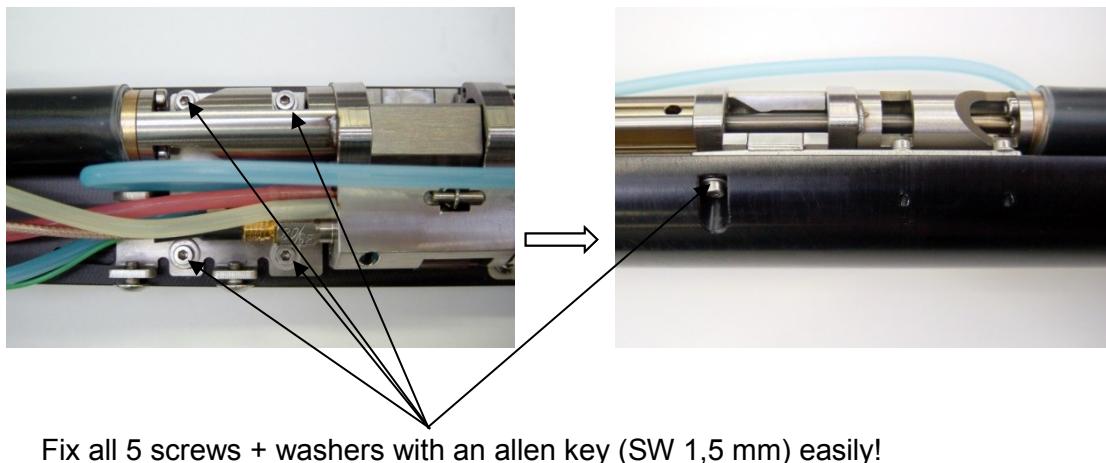
11. Put the electrode block in to the print head und fix it with screws.

**Attention**

**Take care, when you put in the electrode block in the print head, that no cable jammed!
Also take care, that all 6 torx screws fixed with a torque allen key (inside a blade for torx T8 and 0,18Nm)!**

(You will find torque allen key 55-004557K + blade for torx T8 55-004559K in our Spare Parts and Accessories Catalog).

12. Fix the mounting plate (with drop production unit).



13. Plug in the main plug.



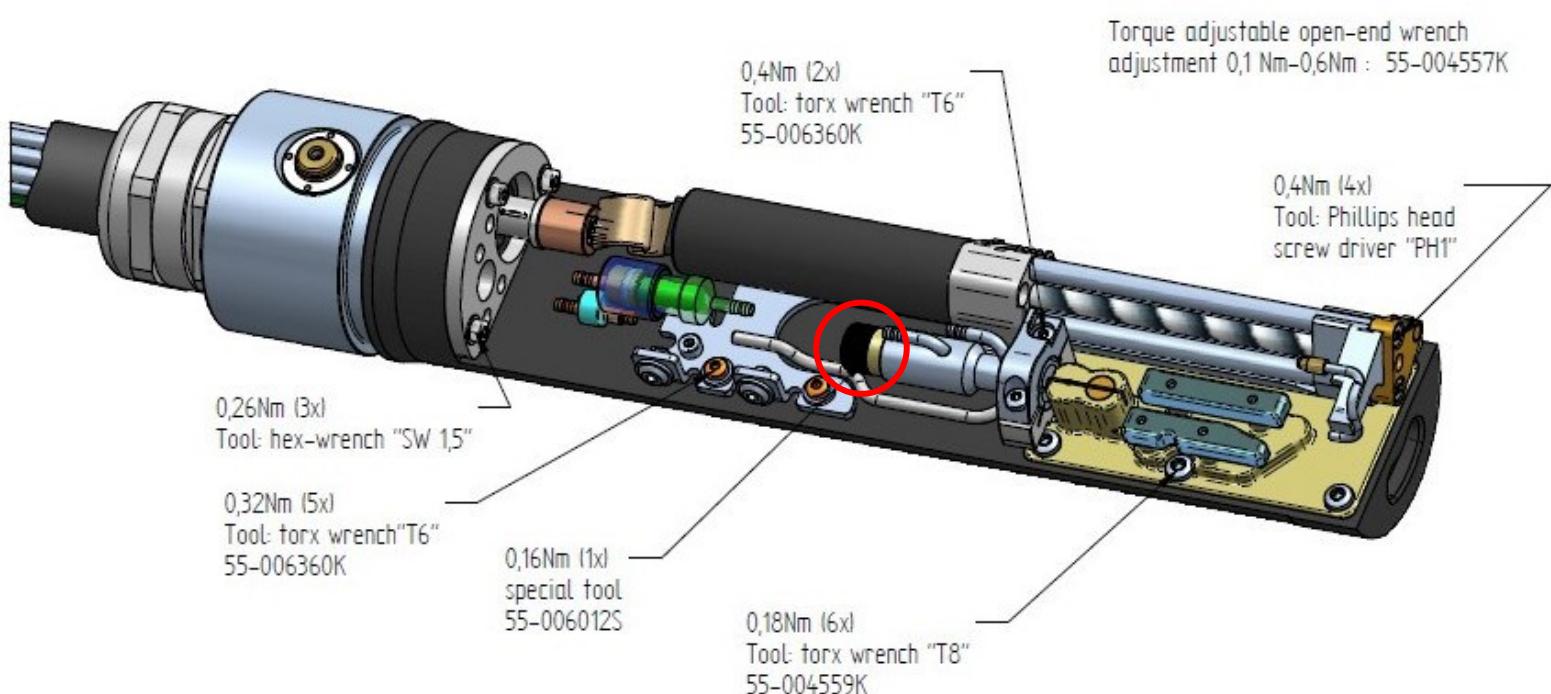
Attention
Waiting for the booting process. After this you can switch on the printer!

7.8

Documentations for

SK6

Torsional moments for SK6



1

Cleaning of print head

We want to ask for your attention regarding the print head cleaning process:

Please be aware, that the print head has to be cleaned with solvent only in the front area.

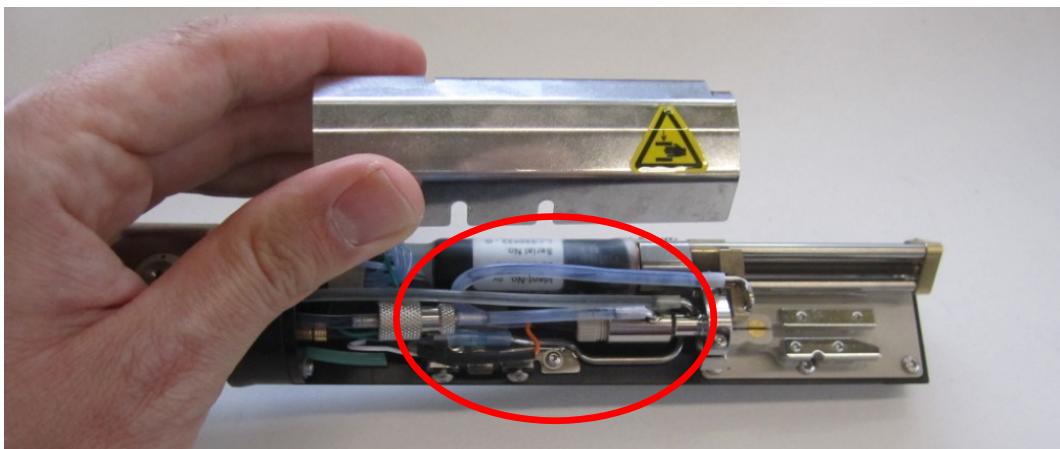
Behind the red line you must not clean with solvent.

No cleaning necessary
=> No Solvent usage!!

Cleaning Area
=> Solvent can be used!!



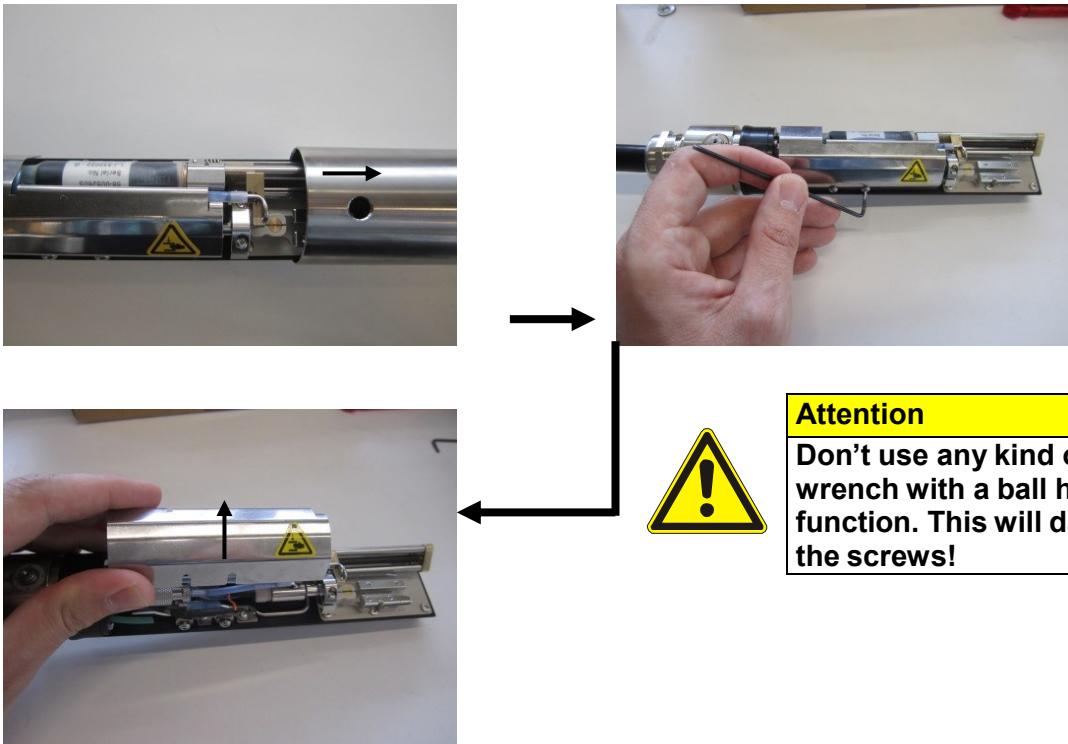
Especially the area around the oscillator connection must not be flushed with solvent. Otherwise solvent could penetrate inside the oscillator or the connector and could cause damages or mal functions.



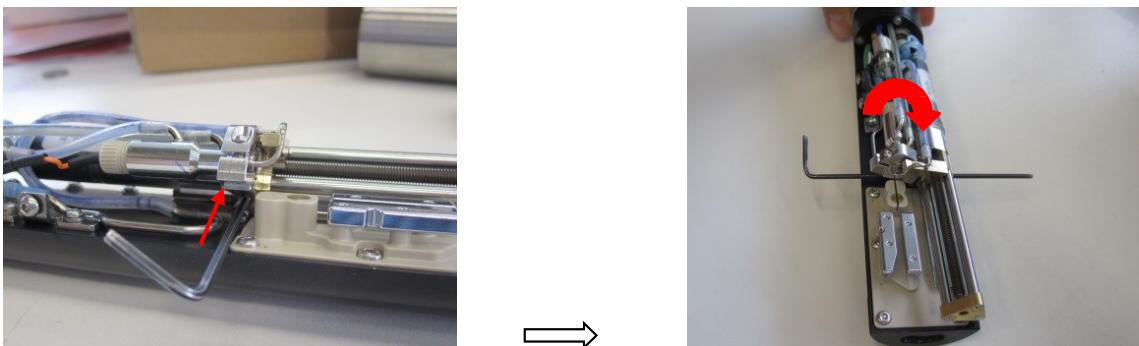
2

Cleaning of print head/electrode block with special cleaner 77001-00020

1. Remove the print head cover. Loose the two allen set screws at the side with an allen wrench 2,5 mm (metric) with one turn and remove the inner cover.



2. Push carefully a tool like an allen key between the bearing block and the mounting plate.



For some types of ink, a persistent ink deposition at the guiding shaft assembly and electrode block would occur. In this case, our company offers a special cleaner for cleaning this area.

It is strongly recommended to turn off the printer when you cleaning the print head with this kind of cleaner. No cleaner should be enter to the ink loop/hydraulic system.

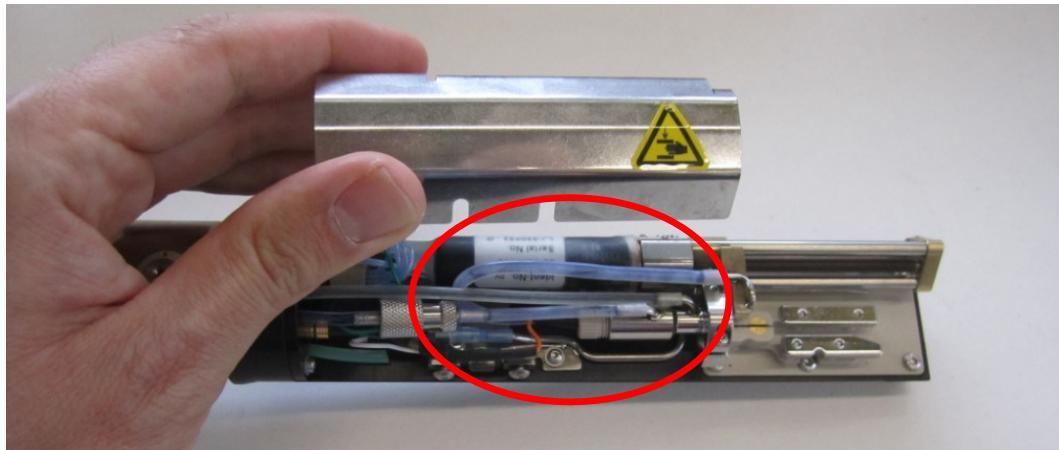
Special Cleaner P/N: 77001-00020

Clean the Print Head only at the correct area, right of red dotted line.

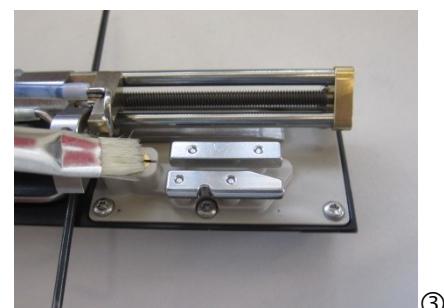
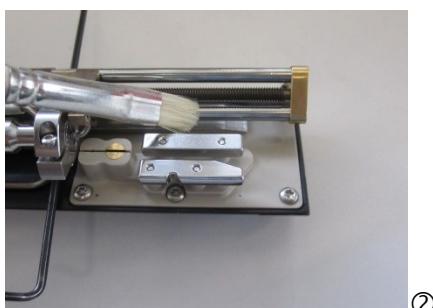
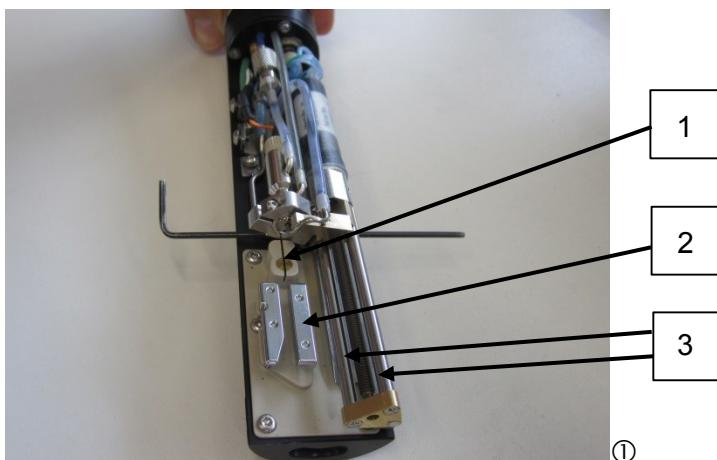
Attention: It is forbidden to clean on the left side of the dotted line. Don't use any kind of solvent to clean the left side of the dotted line.



Especially in the area of the oscillator and plug connector it is not allowed to wash with solvent. When solvent enter the oscillator, it could destroy this part or some malfunctions could occur.



3. Decline the print head into upfront position. Fill up Special Cleaner 77001-00020 into a spray bottle and spray it to the affected parts for cleaning. Together with a small brush you can easily remove the pollution in the cleaning area.
Important assemblies which will be affected in their functionality during persist ink deposition:
1. Charge Electrode
 2. Deflection Plates
 3. Guiding shafts for the Gutter Tube



4. Due to some special ingredients of the cleaner, it is strongly recommended to flush all the cleaned parts with tap water at the end of the cleaning process.
5. Rinse off the cleaned parts with original solvent again, to avoid remaining of special cleaner at the assemblies.

6. In some cases, there will still remain some rest of ink into the slot from the charge electrode. This could create some error messages, e.g. phasing error or error of drop control.

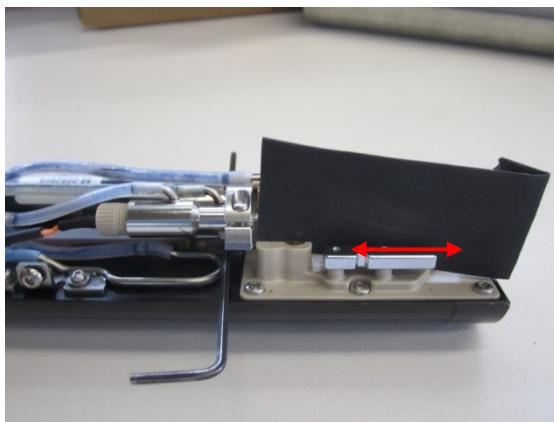
To remove this rest of ink you can use a fine sand paper. With assistance of this fine sand paper it is possible to clean the slot of the charge electrode.



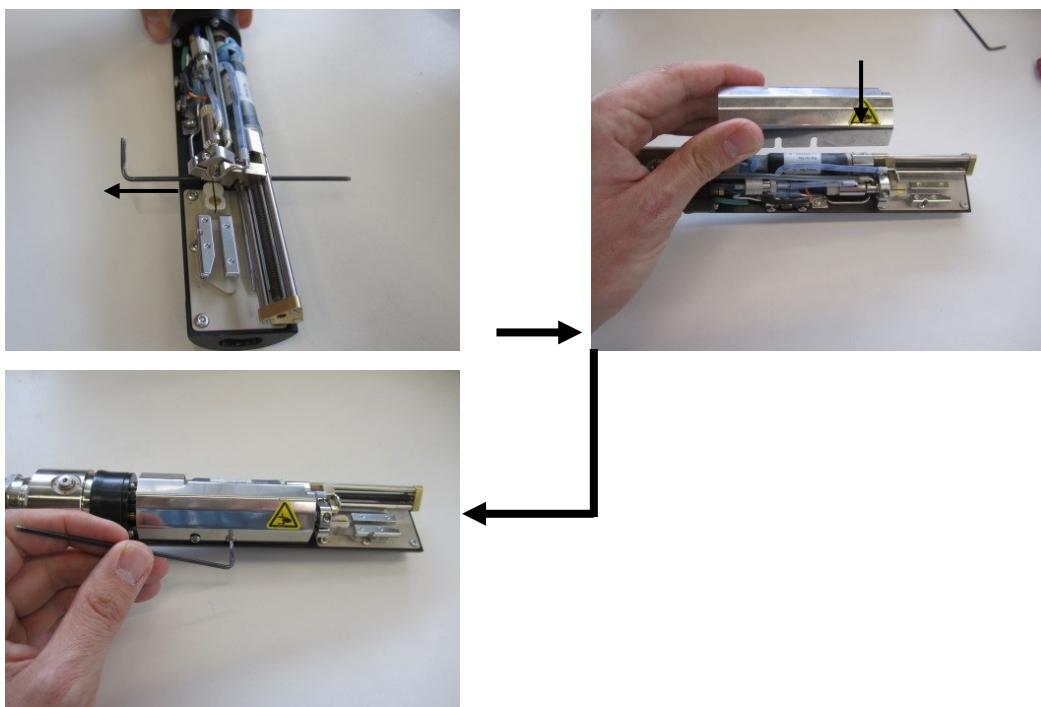
Attention

Use only sand paper with a corn diameter of 400 and higher

7. Bend this thin sand paper with the rough side outside. Spray some special cleaner on the sand paper and move it inside the slot of the charge electrode. Carry out the movement parallel to the bottom side of the charge electrode. Rinse off the charge electrode with tap water and solvent to avoid remaining of special cleaner at the charge electrode. Dry up all the print head parts with an airgun.



8. Pull the allen key carefully out of the bearing block again. The bearing block is located in the home position again
9. Install the inner cover and tighten it. Don't smash or brake any cables and pipes during this action.

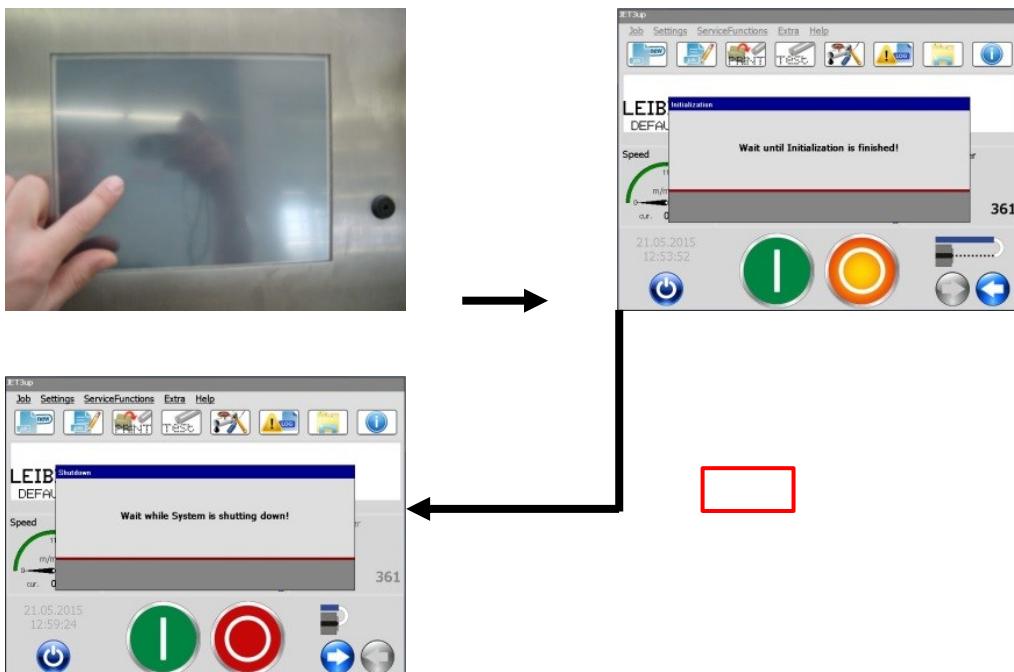


3

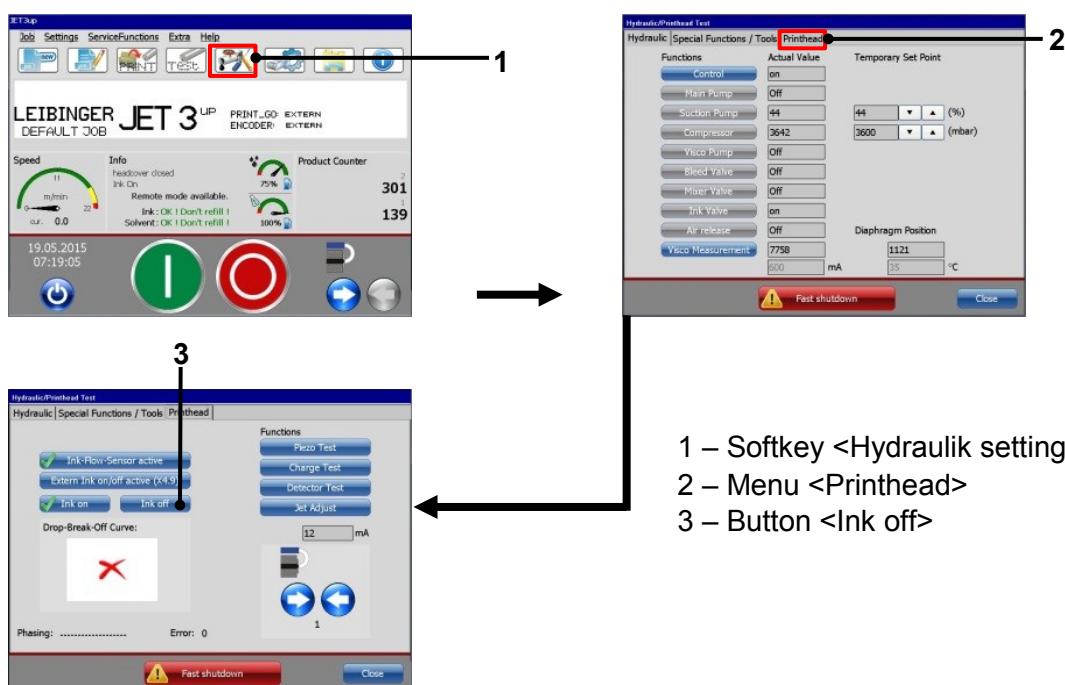
Removing and cleaning the nozzle

Necessary tools: sixfold magnifier, 2mm hex key.

1. Switch on the JET3up and wait till the “**bleeding cycle**” of the system is finished.

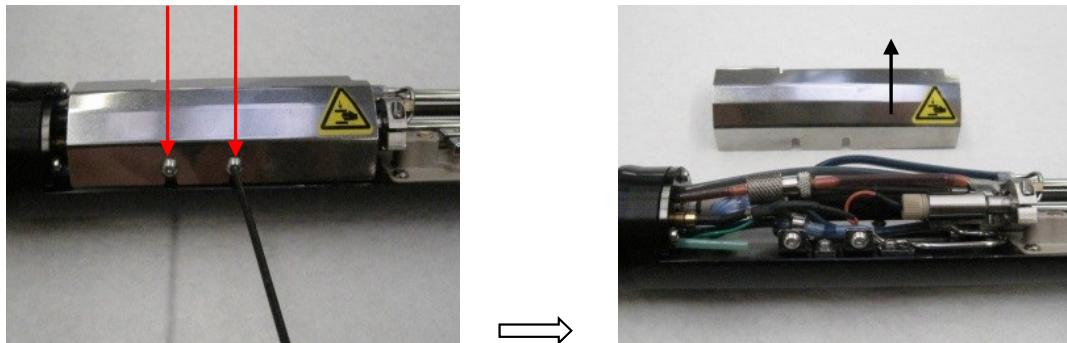


2. Click on the softkey <Hydraulic settings> (1) to change to the menu <Printhead> (2). Press the button <Ink off> (3).

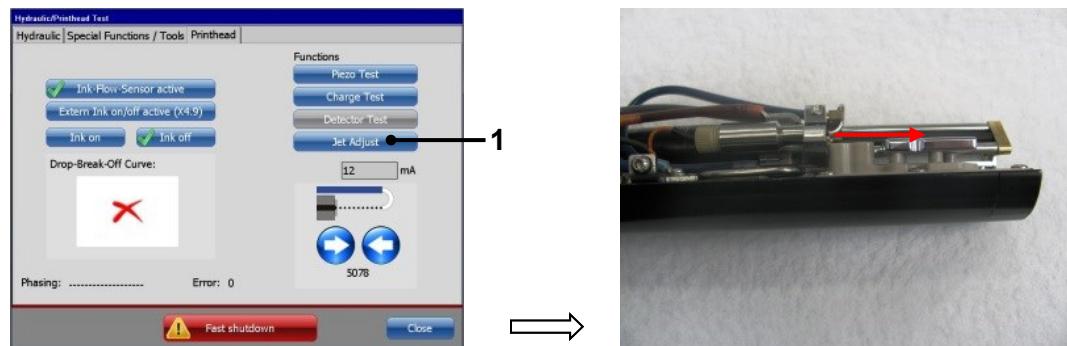


- 1 – Softkey <Hydraulik settings>
2 – Menu <Printhead>
3 – Button <Ink off>

3. Remove the head cover. Unfix attachment screws around one rotation with hex key and take off the inside cover.



4. Press the button <Jet Adjust> (1) The nozzle seal moves automatically onto the "service position".



5. Swing the swivel-unit upwards with one hand. Turn out the nozzle retaining plate with a special tool and clean the retaining plate with special solvent.
(Caution: Use the special tool only!)

IMPORTANT: Don't loose the sealing ring on the nozzle retaining plate!
Control the right position of the sealing ring!

You will find the article number for the O-rings in the chapter Service kits on page 96.

Note: As a service from Leibinger the sealing ring 1,5x1mm is 2x included in the delivery. The additional is for reserve!!!



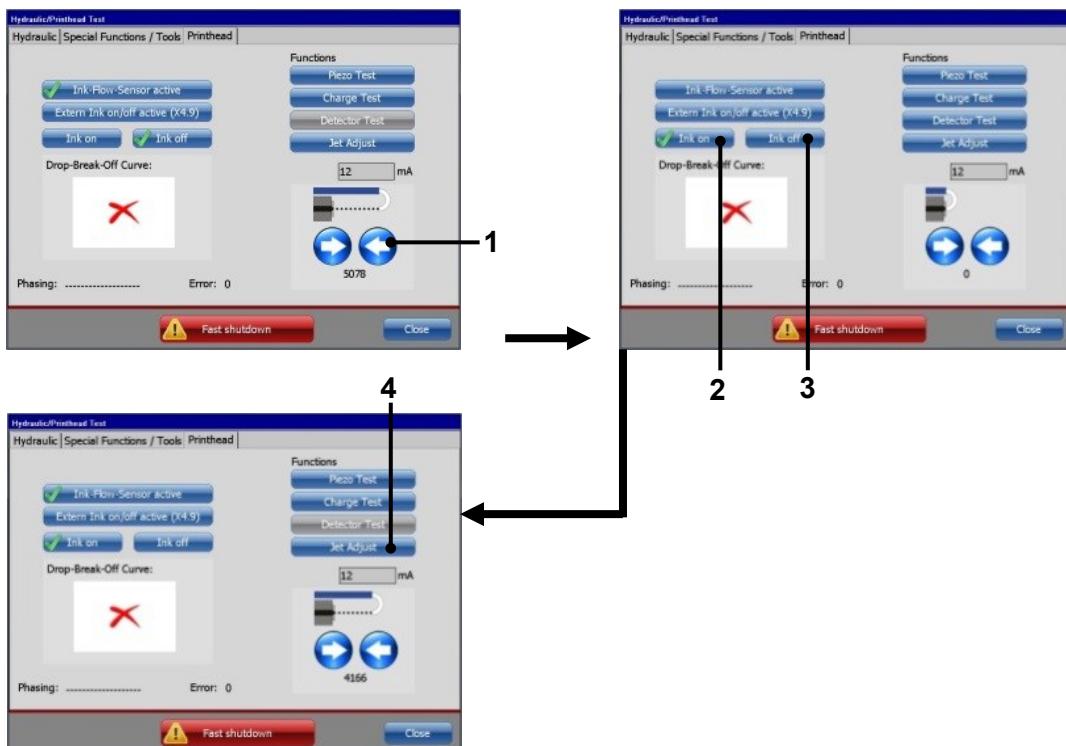
6. Turn out the nozzle with the same tool as the retaining plate and clean the nozzle just like the retaining plate with the special solvent. (**Caution: Use the special tool only!**)

IMPORTANT: Don't lose the sealing ring in the Tubus!
Control the right position of the sealing ring!



7. Exhaust the nozzle with compressed air. Put on the compressed air pistol in the middle of the nozzle and blow out a few seconds. This procedure can be repeated as much as you like.
8. Fix the nozzle again in the swivel-unit by using the special tool.
Now fix the retaining plate in front of the nozzle.
(**Caution: Watch out for the mounting direction!**)

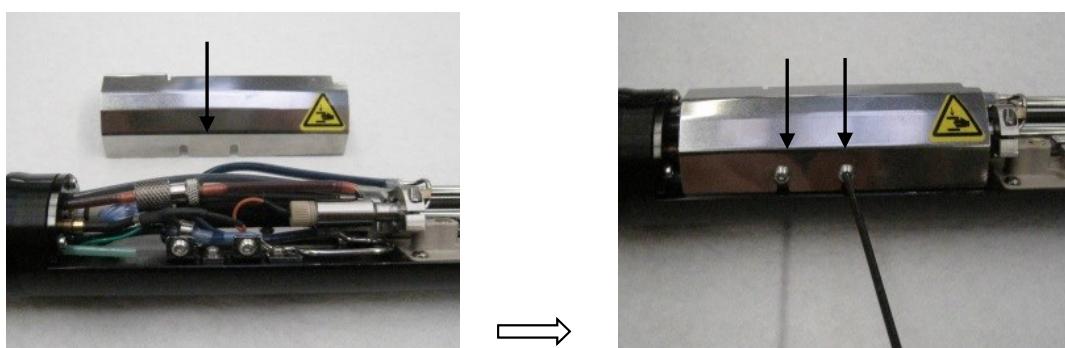
9. Close the nozzle seal completely by pressing the button <arrow> (1). Actuate several times in quick succession the buttons <Ink on> (2) / <Ink off> (3). Press <Jet Adjust> (4) and wait until the nozzle seal is open. Check the jet position inside the gutter.



1 – Button <Close Nozzle>
3 – Button <Ink off>

2 – Button <Ink on>
4 – Button <Jet adjust>

10. Close the nozzle seal again and fix the inside cover.
(Caution: Watch out for damaging any tubes or cables!)

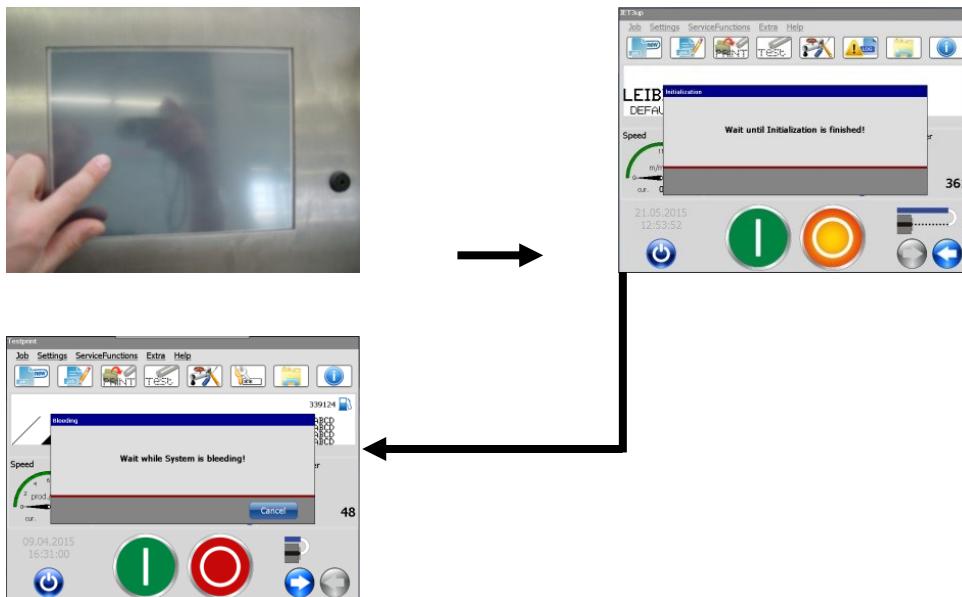


11. Final checkup on the correct head adjustment and function check-out.

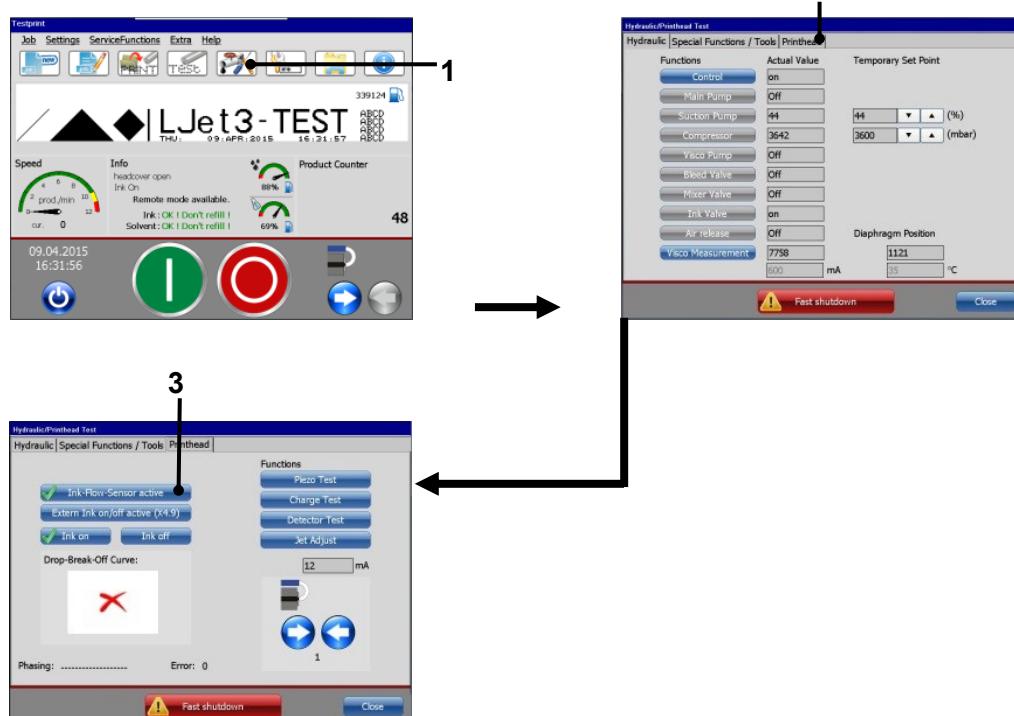
4**Print head adjustment**

Necessary tools: sixfold magnifier, 2mm hex key, T6x50 torx.

1. Switch on the JET3up and wait while the system is bleeding.



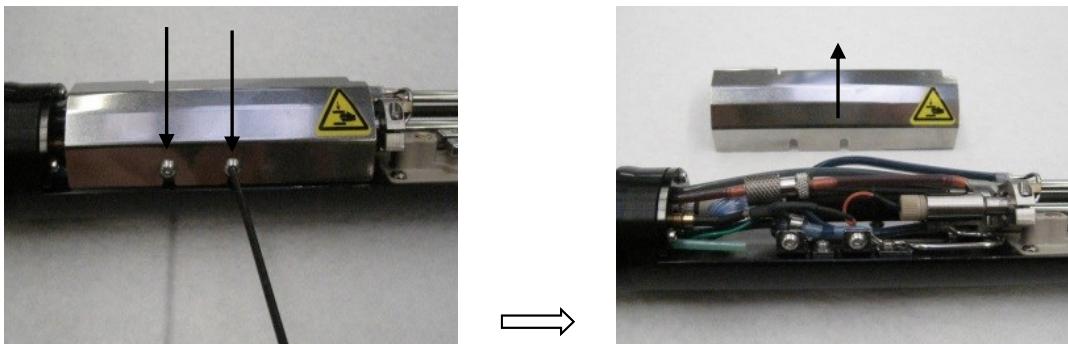
2. Touch the softkey <Hydraulic settings> (1) and change to the menu <Printhead> (2). Turn off the function <Ink-Flow-Sensor> (3).



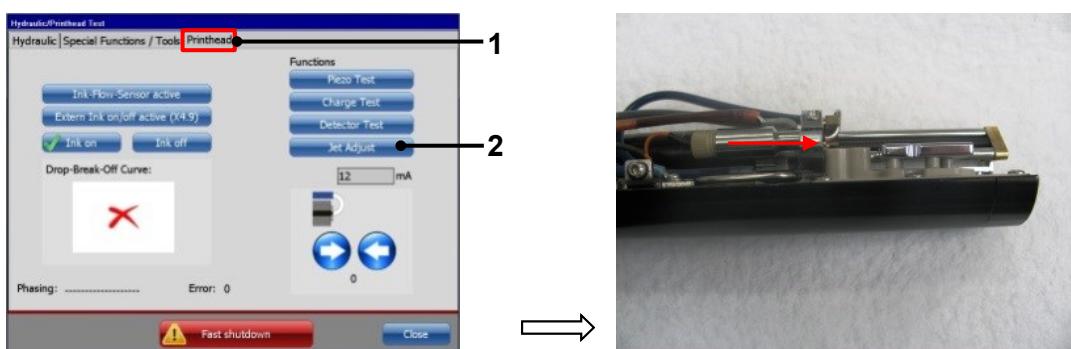
1 – Softkey <Hydraulik settings>
3 – Button <Ink Flow Sensor>

2 – Menu <Printhead>

3. Remove the head cover and press the button <Jet Adjust>. The nozzle seal opens automatically to the <Jet adjust position> (4200) Unfix attachment screws around one rotation with hex key and take off the inside cover.



4. Switch to the tab <Printhead> (1) and press button <Jet Adjust> (2). The nozzle seal opens automatically to the <head adjustment position>.

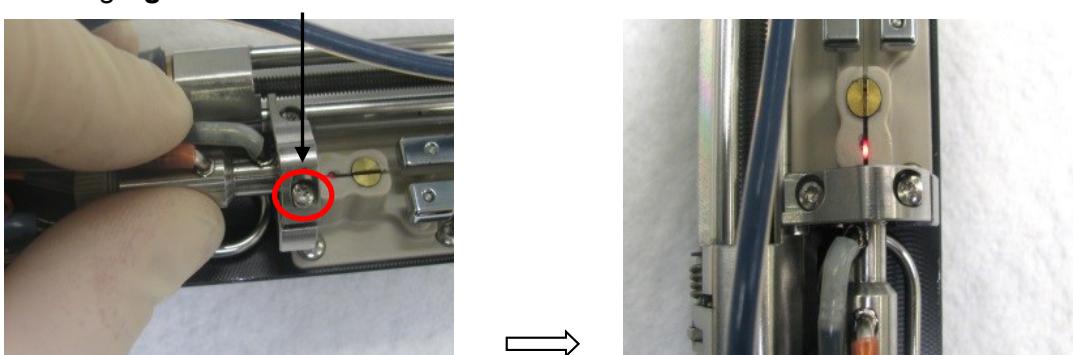


1 – Menu <Printhead>
2 – Button <Jet Adjust>

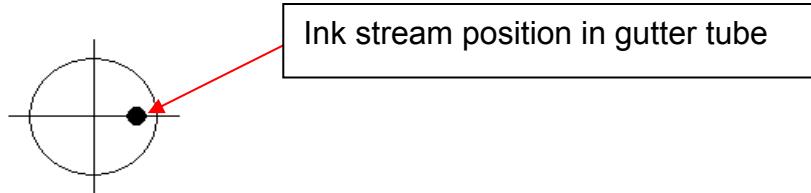
5. Unfix the right attachment screw of the nozzle retainer just so far that you can adjust the retainer manhandling. Maybe you need to unfix the second screw as well.

Caution: Use the right torx only!

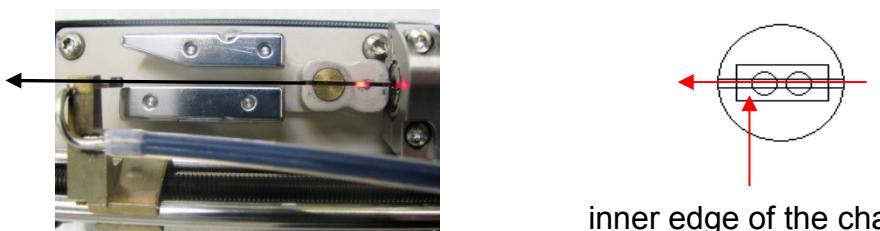
Unfixing **right** attachment screw.



6. Adjust the Ink stream just like in the sketch below (view from nozzle to gutter tube) by adjusting the nozzle retainer and fix the screws again.



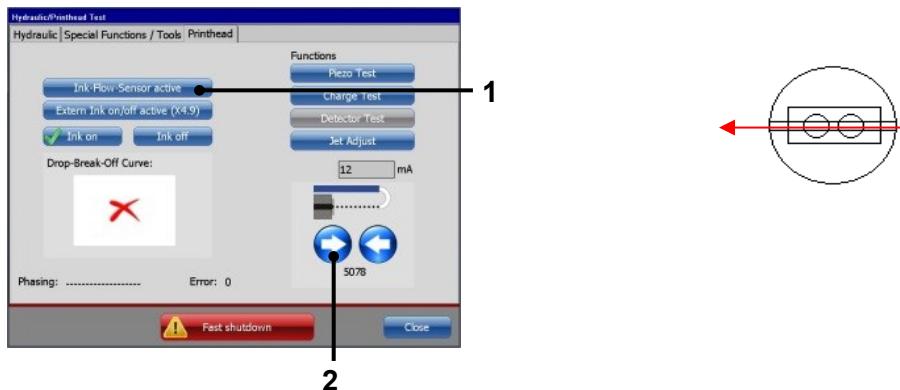
7. After the Ink stream adjustment you need to adjust the entire drop production unit in the charging tunnel and deflecting plates. So that the Ink stream passes parallel and with level of the inner edge of the charging tunnel (watch sketch below, arrow from nozzle to gutter tube). To avoid parallax faults you need to point your perspective exactly vertical to the charging tunnel.



8. To adjust the drop production unit you need to unfix the five attachment screws of the fixing plate. Just so far that you can adjust the unit manhandling. After adjusting the unit fix the attachment screws again and control the position of the Ink stream.



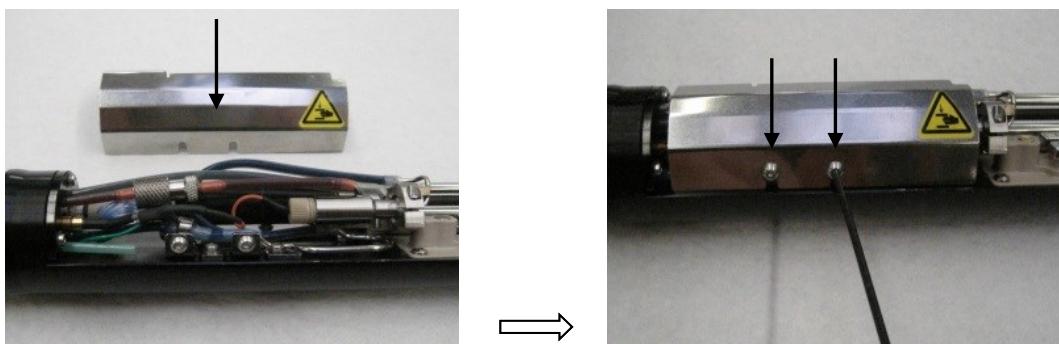
9. Turn on the Ink flow sensor by pushing the button <Ink flow sensor> (1) again. Now open the nozzle seal complete by using the <arrow key> (2). Now the Ink stream must be in the middle of the charging tunnel and parallel to the deflecting plates. Maybe you need to adjust the drop production unit again to get the exact position of the Ink stream.



1 – Button <Ink Flow Sensor>

2 – Button <arrow>

10. Close the nozzle seal and fix the inside cover.
(Caution: Watch out for damaging any tubes or cables!)



11. Open the nozzle seal again and control the Ink stream position to finish the adjustment.

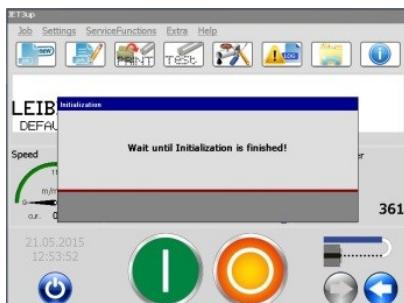
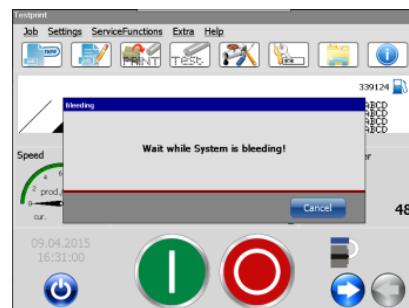
5**Exchange oscillator**

Necessary tools:

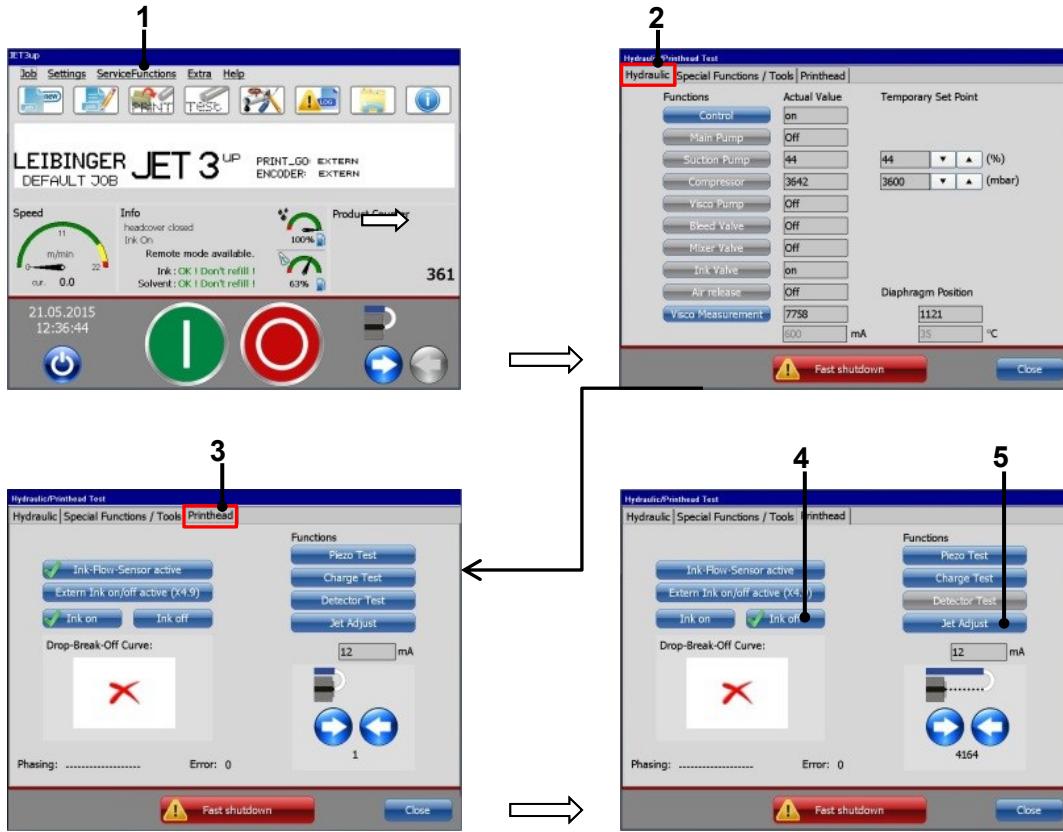
- Vario torque tool Art. Nr.: 55-004557 K
- Torx T6 Art. Nr.: 55-006360 K
- Special inlet for oscillator SK6 Art.-Nr.: 55-006012 S
- tweezers
- allen key 1,5mm
- allen key 2mm
- special tool for nozzle SK6 Art.-Nr.: E55-005548 S



1. Switch on JET3up and wait until bleeding is finished.



2. Select softkey <ServiceFunctions> (1) and go in the menu <Hydraulic> (2). Select tab <Printhead> (3) and push the buttons <Ink off> (4) and <Jet adjust> (5).



1 – Softkey <Hydraulik settings>

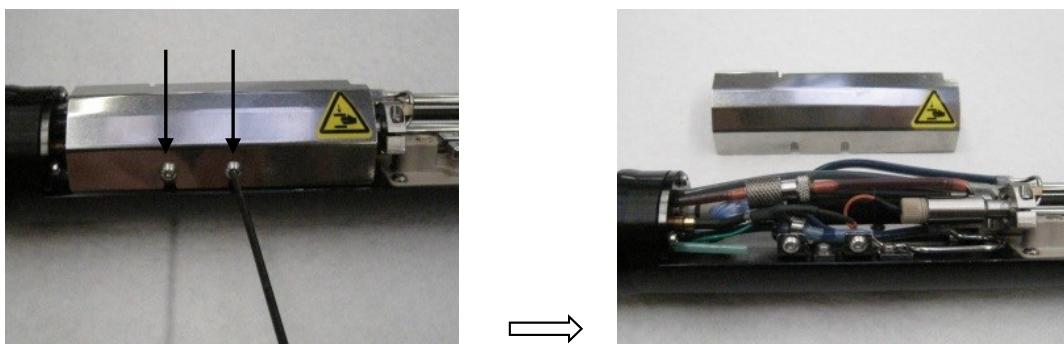
3 – Menu <Printhead>

5 – Button <Jet Adjust>

2 – Menu <Hydraulik>

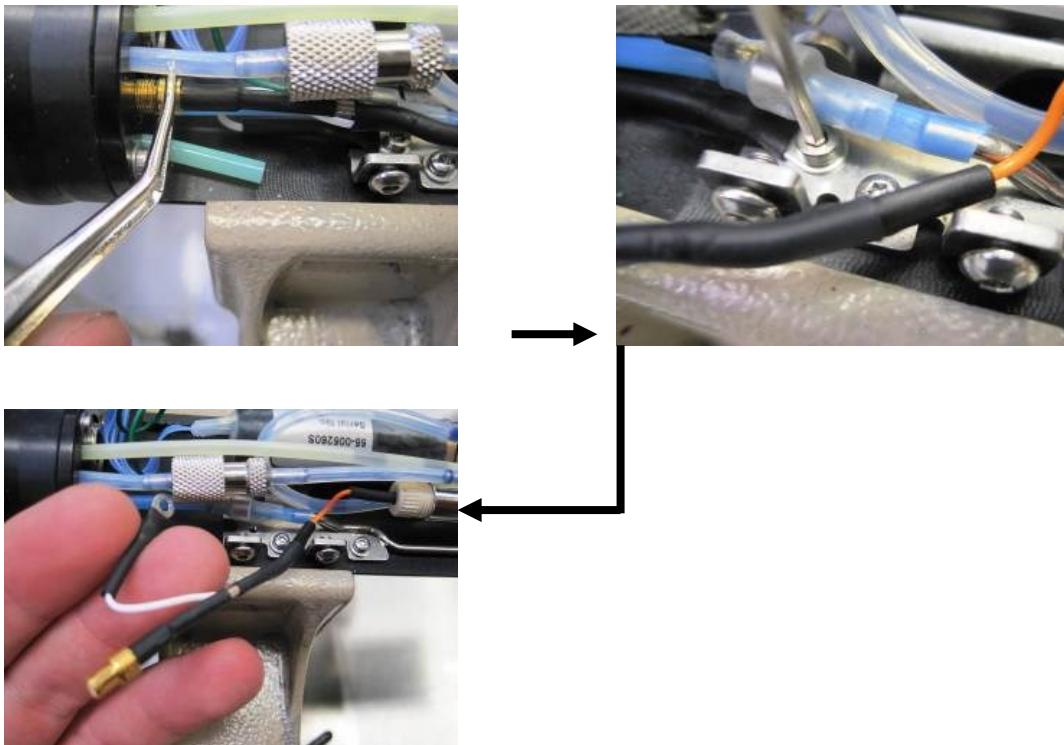
4 – Button <Ink off>

3. Remove head cover. Loose the retaining screws with a 2mm allen key around **one** turn and remove the inner head cover.

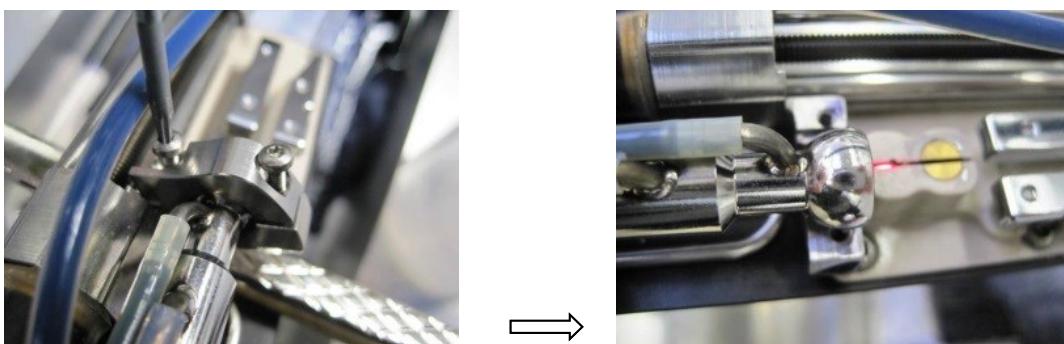


4. Dismantle the nozzle therefore take a look at the chapter <**removing and cleaning the nozzle**>.

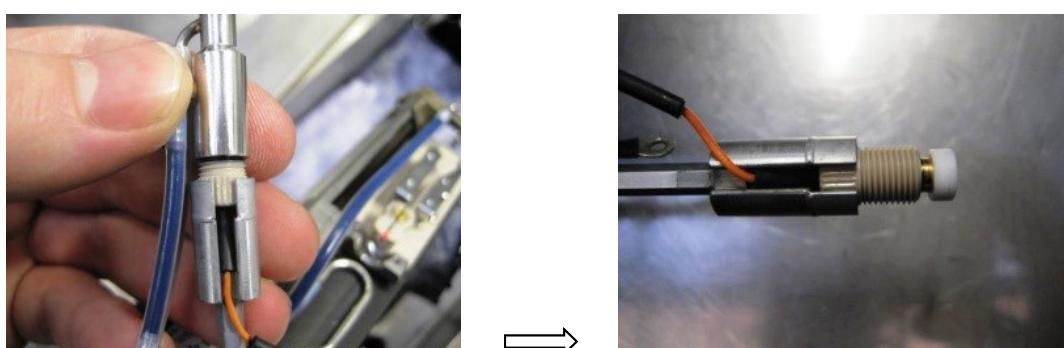
5. Pull out the coax connector of the oscillator by using the tweezers. Screw out the retaining screw of the grounding cable.



6. Remove the retainer of the tubus by screwing out the two torx screws.



7. Push the drop production body to the side slightly and screw out the oscillator with the special tool. Clean the drop production body afterwards with solvent.



8. Plug in the new oscillator into the special tool and screw it into the drop production body. The torque to tighten the oscillator is 0,16 Nm.



9. Mount the drop production body back on the adapter of the ground plate. Torque to tighten the retaining screws is 0,4 Nm. The drop production body now must be positioned correctly. Therefore take care of the markings (a slot in the drop production body and also in the adapter). Both slots must result a long slot when the drop production body is in the right position.



10. Tighten the grounding cable back on the ground plate. Plug in the coax cable.



11. Mount the nozzle back in the drop production body therefore take a look at the chapter <**Removing and cleaning the nozzle**>.

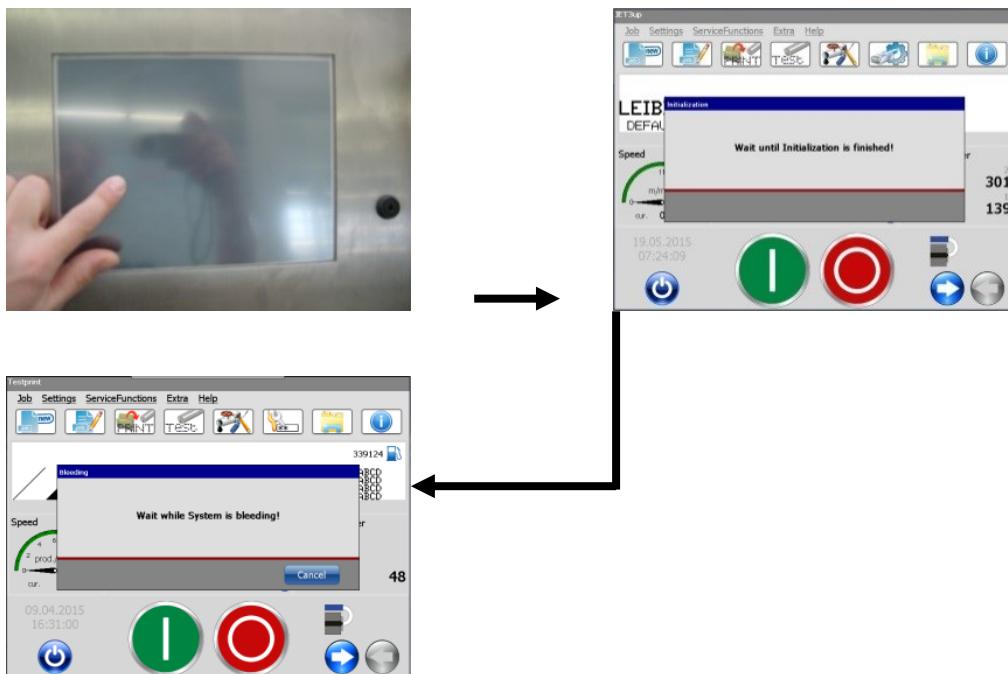
12. Now the ink stream must be adjusted therefor take a look at the chapter <**head adjustment**>.

6 Exchange head motor

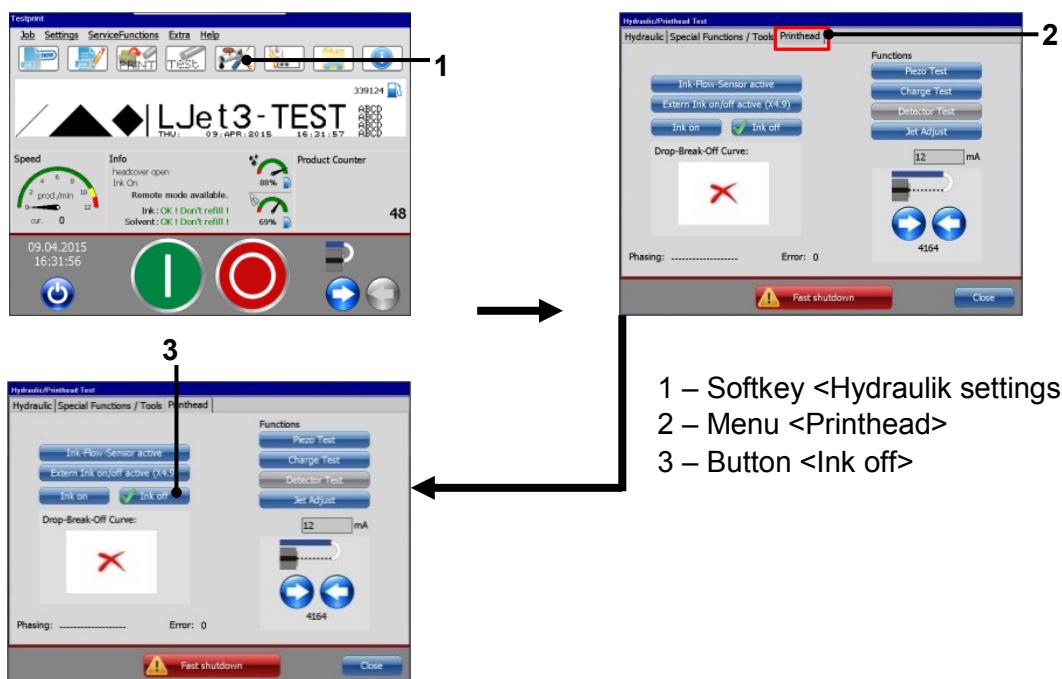
Necessary Tools:

1,5mm hex key, 2,0mm hex key, tweezers, flat screwdriver 2,5mm

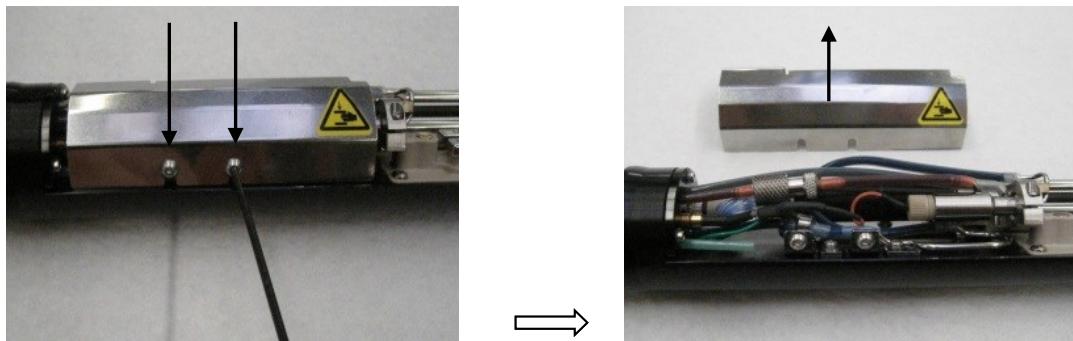
1. Switch on the JET3up and wait until initialization is finished.



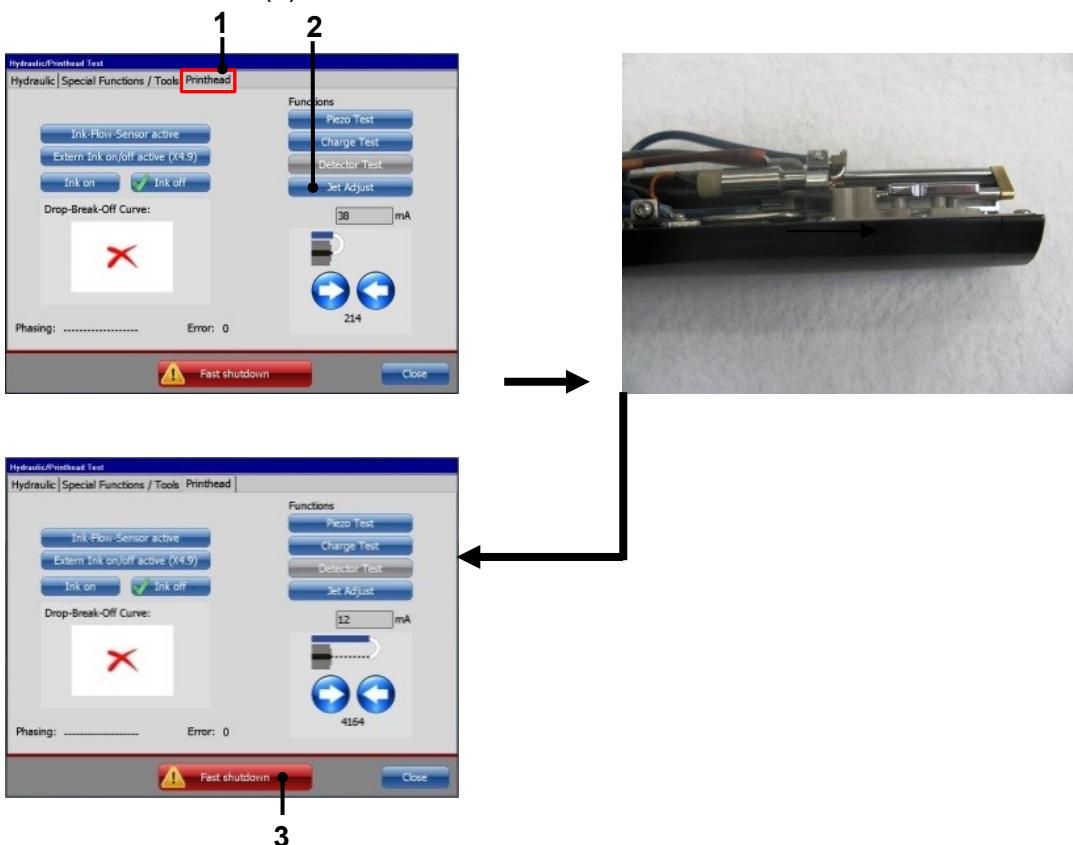
2. Touch the softkey <Hydraulic settings> (1), go in the menu <Hydraulic/Printhead> and switch to tab <Printhead> (2). Press the button <Ink off> (3).



3. Remove the inner head cover. Loose the tightening screws with the 2mm hex key around **one** turn and remove the inner head cover.

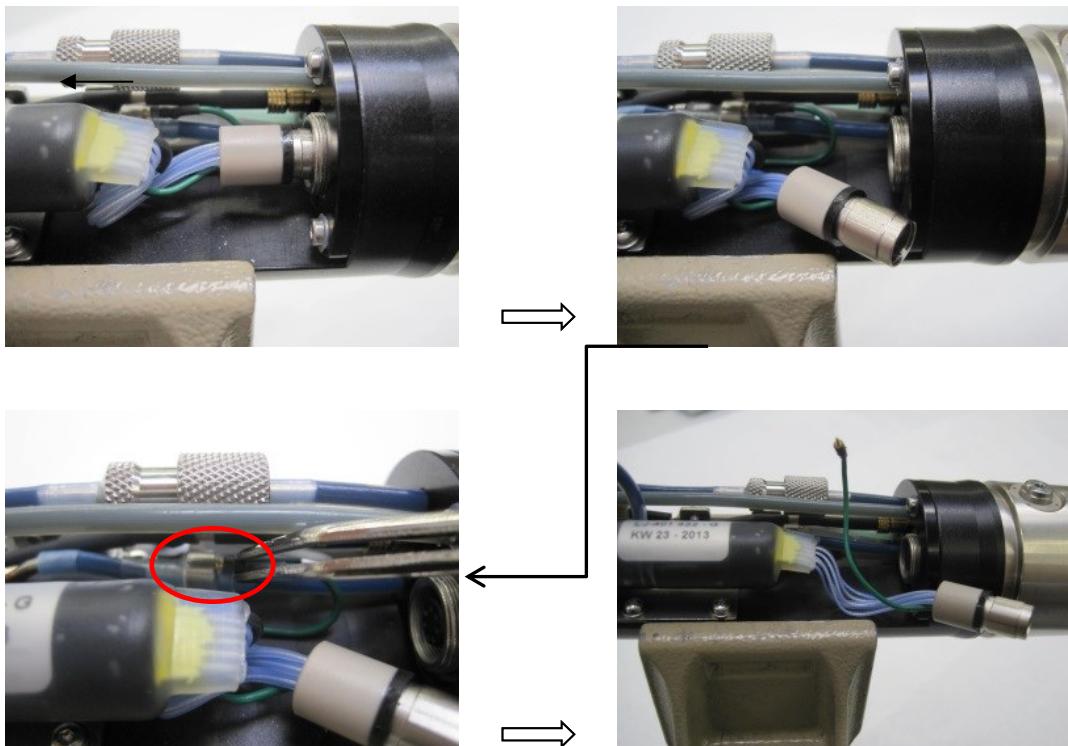


4. Switch to tab <Printhead> (1) and push the button <Jet Adjust> (2). The nozzle seal will open automatically to the adjustment position. Afterwards open nozzle complete by pressing the corresponding button. Switch off the printer by pressing the button <Fast shutdown> (3).

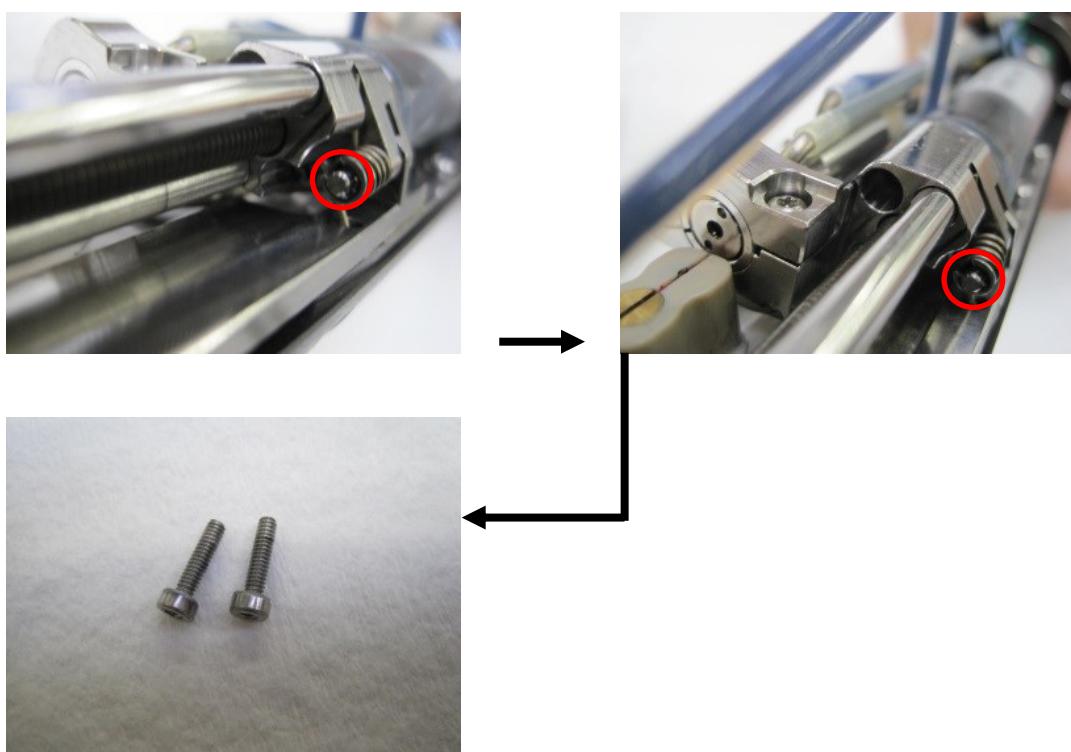


- 1 – Menu <Printhead>
- 2 – Button <Jet Adjust>
- 3 – Button <Fast shutdown>

5. Disconnect the motor from the print head. Disconnect the ink flow sensor.
Use the tweezers to widen the heat shrink tube.
Do not remove or damage the heat shrink tube!



6. Loose the two tightening screws of the head motor (screw positions see red markings) by using the 1,5mm hex key. Remove the screws completely.

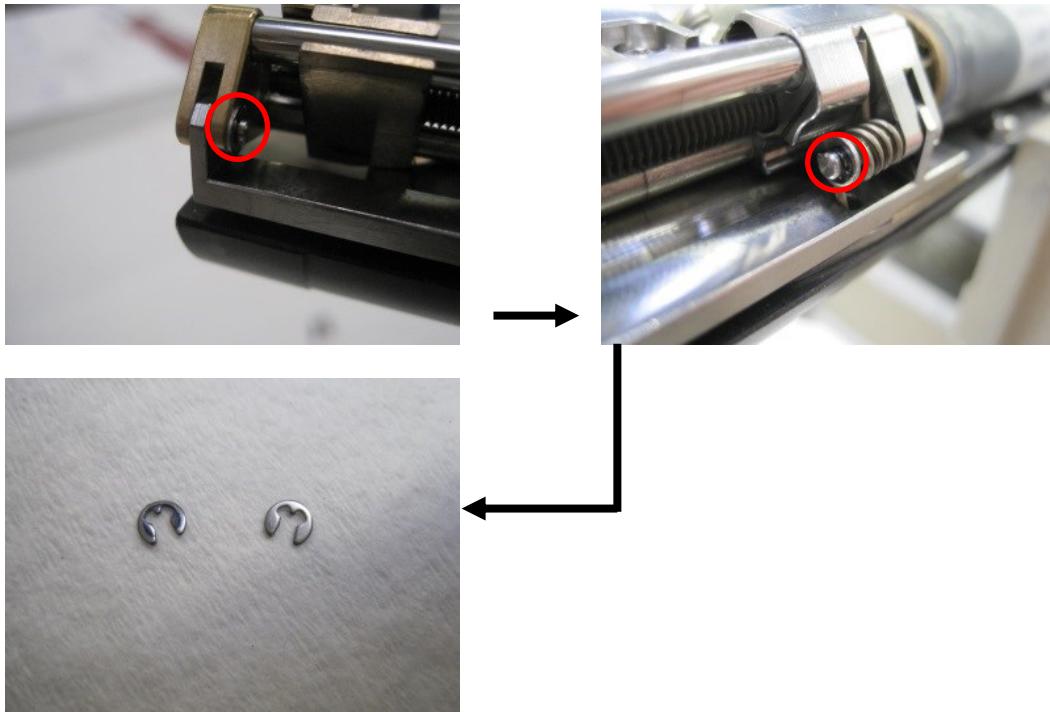


7. Remove the retaining rings (see **red markings**) of the motor rail.
Use the flat screwdriver to push the rings aside.

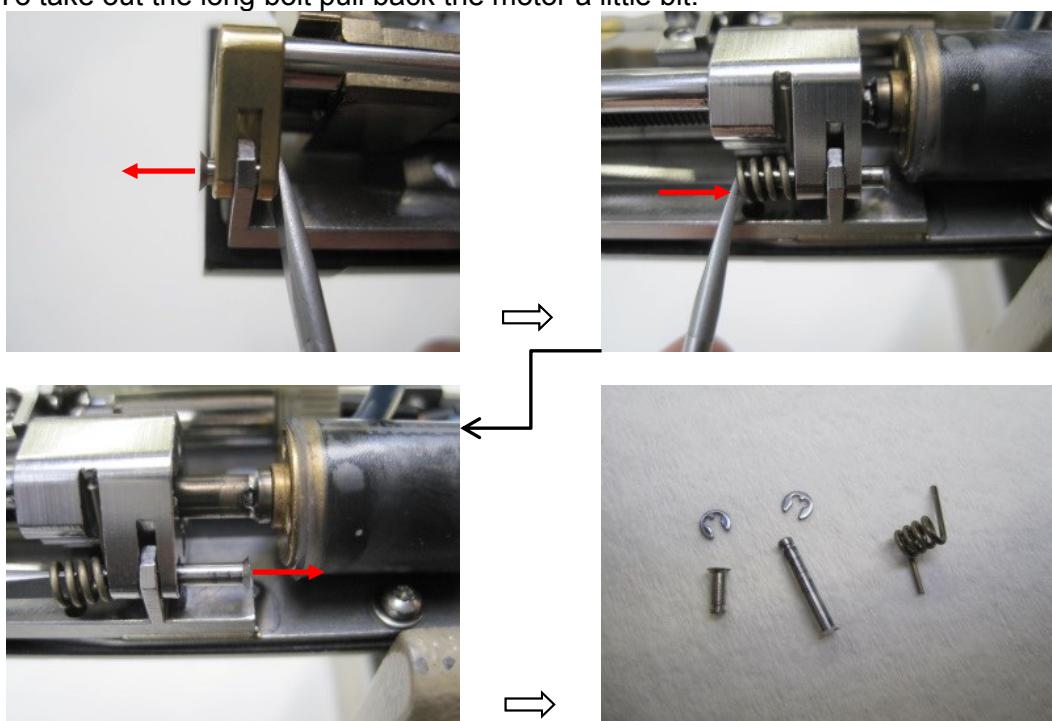


ATTENTION

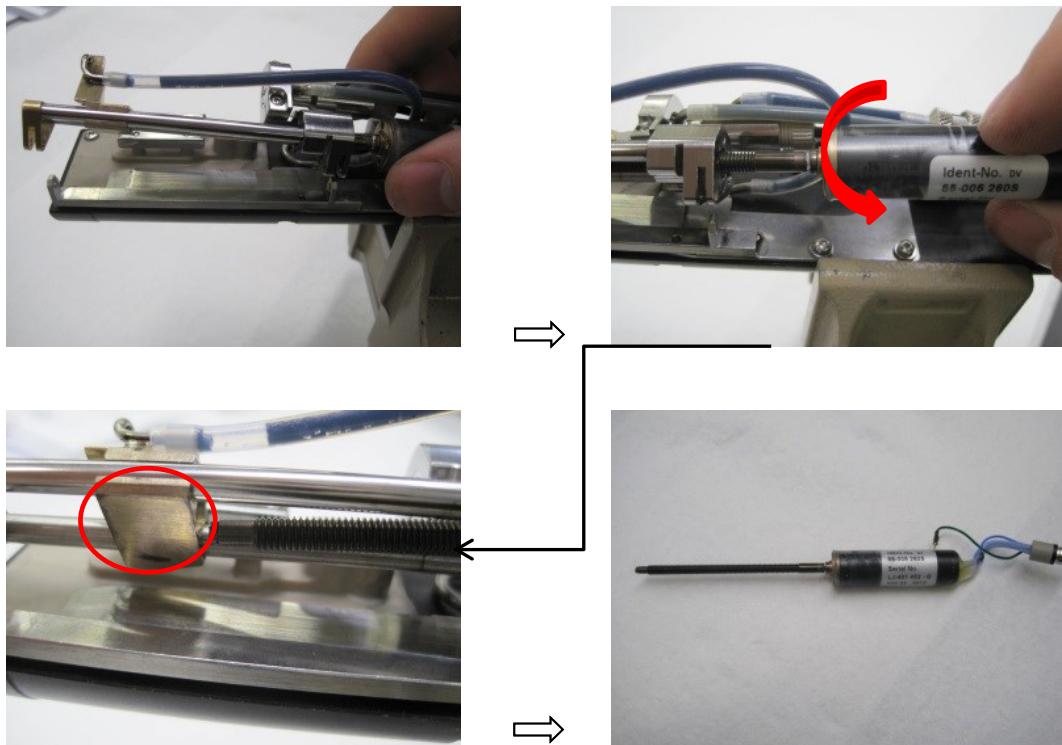
Do not loose the retaining rings, there are no new rings attached to the new motor!



8. Push out the axis bolts. Also use the flat screwdriver here.
Take out the bolts and the spring.
To take out the long bolt pull back the motor a little bit.



9. Free the complete unit from the print head. Now turn the motor in counter clockwise till the motor shaft is outside the gutter unit. Take out the old motor.



10. Insert the new motor in the unit and turn it clockwise to screw the motor shaft inside the gutter unit. The motor shaft should be screwed until the thread is seeable on the other side of the gutter unit.



11. Mount the whole unit on the print head again and fix it with the axis bolts. The spring for the long bolt has two different long endings. The short ending has to be in the drill-hole of the ground plate. Retain the bolts with the retaining rings.



12. The motor should be positioned that the lable is on the top of the motor.
Fix the motor in this position with the attached cylinder head screw.



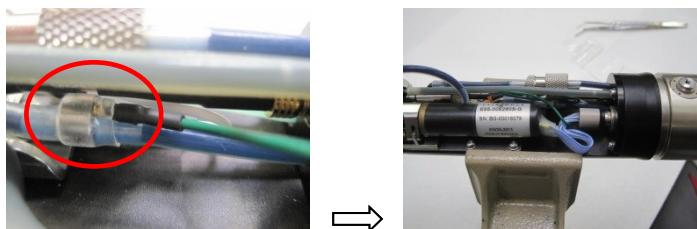
13. Plug in the connector of the ink flow sensor by using the tweezers. Maybe the heat shrink tube must be widen more. When the connector is in position the heat shrink tube must be shrunk again. Therefore use a hot air gun.



Caution

**Because of the heat the tubes and other parts can be damaged.
Pay attention!**

Plug in the motor connector.

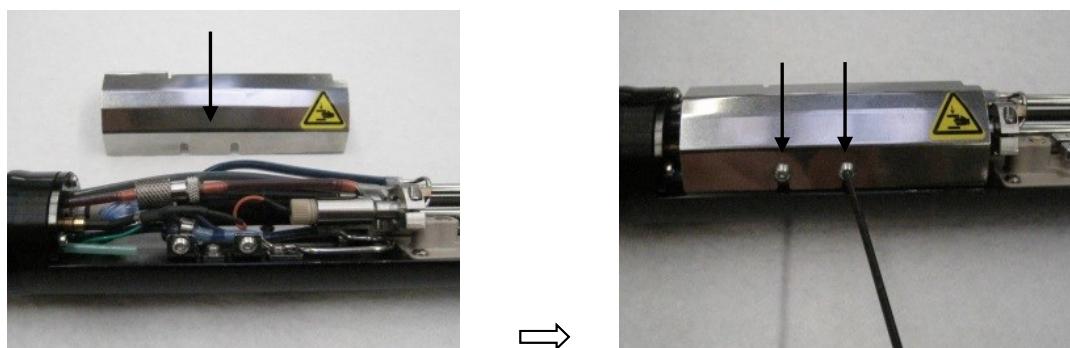


14. Mount the inner head cover



Caution

Watch out that no tubes or cables are damaged by the inner head cover!

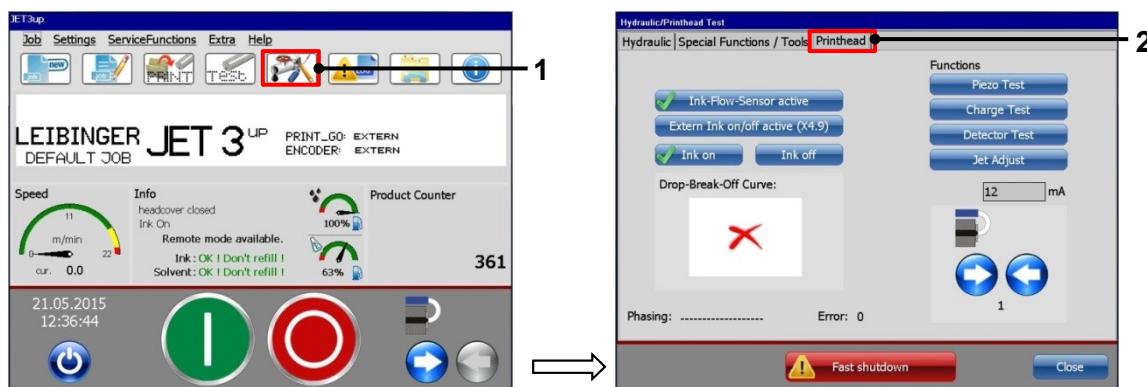


15. Switch on the printer again. During the initialization the printer will close the nozzle and set's the zero point for the head motor. Check the ink stream adjustment.
16. Exchange of the head motor is finished now.

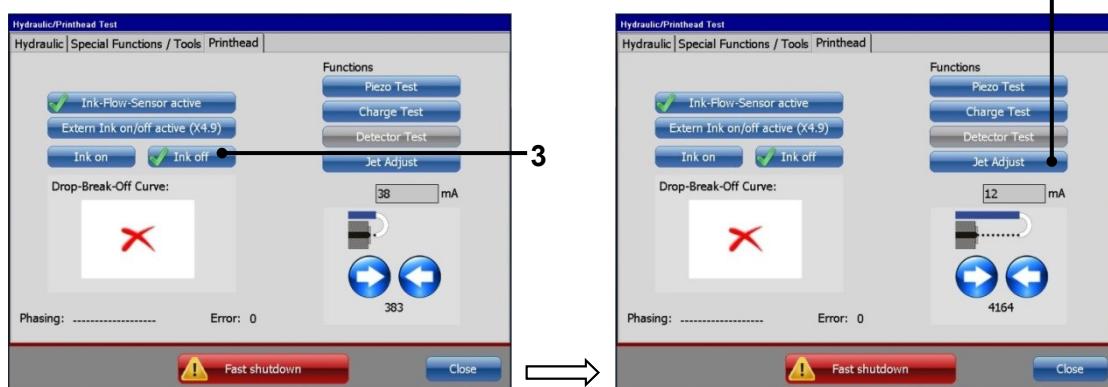
7

Exchange gutter tube

1. Switch on the JET3up and wait until initializing is finished.
2. Select the softkey <Hydraulik settings> (1) and switch to tab <Printhead> (2).



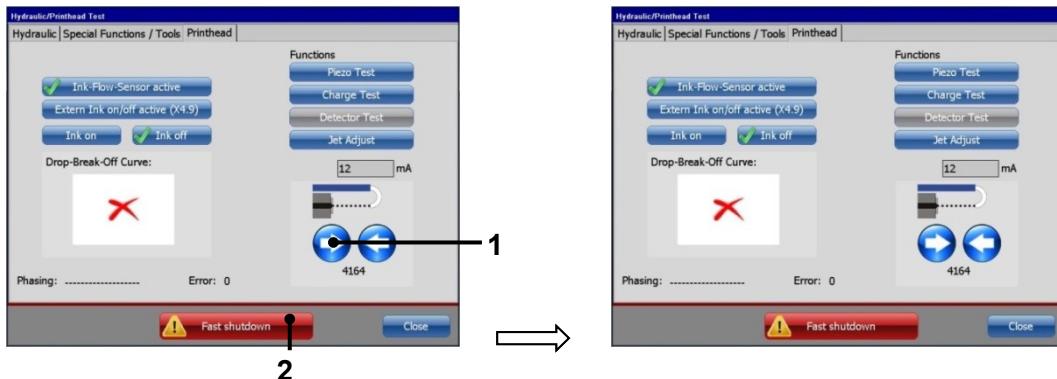
3. Push the button <Ink off> (3) and afterwards open the nozzle by pushing the button <Jet Adjust> (4).



1 – Softkey <Hydraulik settings>
3 – Button <Ink off>

2 – Menu <Printhead>
4 – Button <Jet Adjust>

4. Open the nozzle completely with the button <Open Nozzle> (1). Then switch off the printer with the button <Fast shutdown> (2) and remove the main plug.



1 – Button <Open Nozzle>

2 – Button <Fast shutdown>

5. Put off the headcover and slice of the flexible tube from the gutter tube.



ATTENTION

The gutter tube should not be damaged!!!



6. Unscrew the two cross head screws with a phillips-tip screwdriver, unplug the safety pin and put off the retaining plate.
Necessary tools:

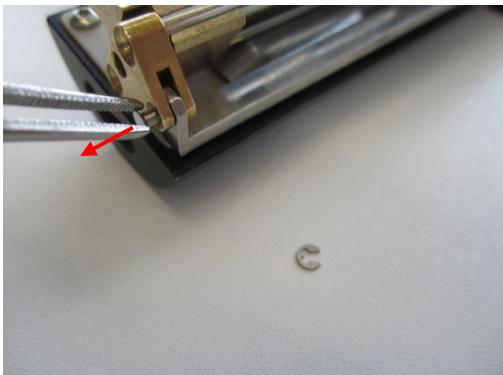
- phillips-tip screwdriver
- tweezer



Remove the retaining screws (2x)



Remove the locking ring carefully with a tweezer.



Pull out the safety pin with a tweezer

7. Remove the mounting bolt



Remove the mounting bolt for the motor-spindle mounting.

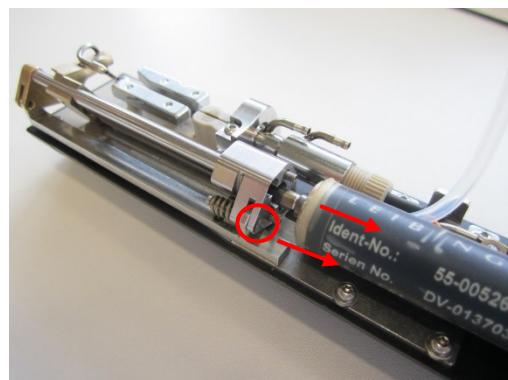


Remove the locking ring carefully with a tweezer.

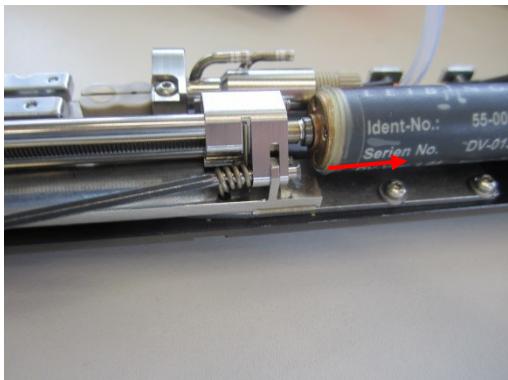
8. Before you can remove the mounting bolt out of the swivel you must unscrew the 2 mounting screws for the motor mounting with an allen key (SW 1,5 mm):



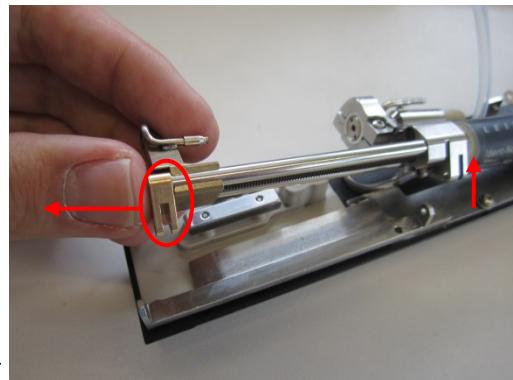
Unscrew the 2 mounting screws completely.



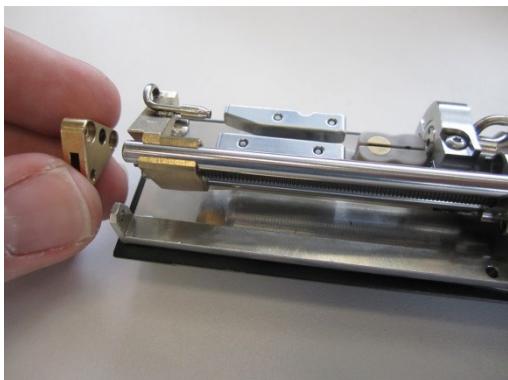
Now you can pull the motor-unit behind, so that you can remove the mounting bolt out of the swivel.



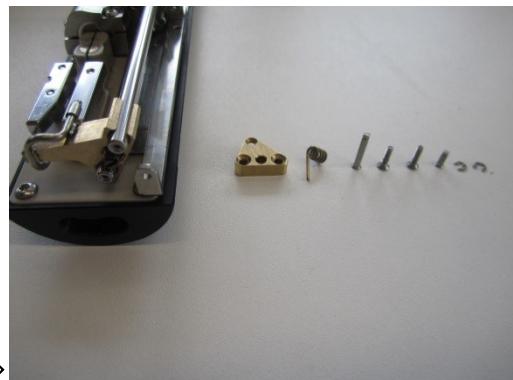
Push the mounting bolt with a stick out of the swivel.
Don't damage the suspension.



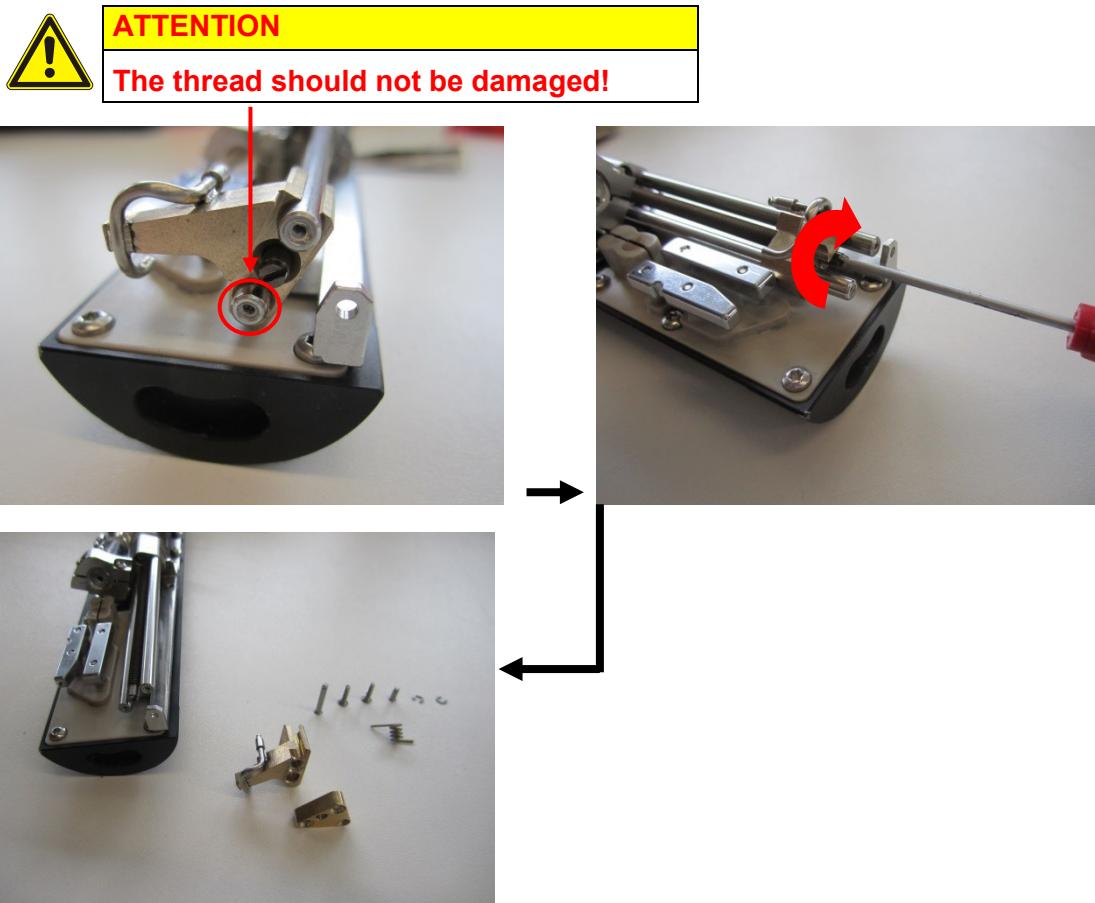
Now remove the hole motor-spindel-unit to remove the retaining plate.



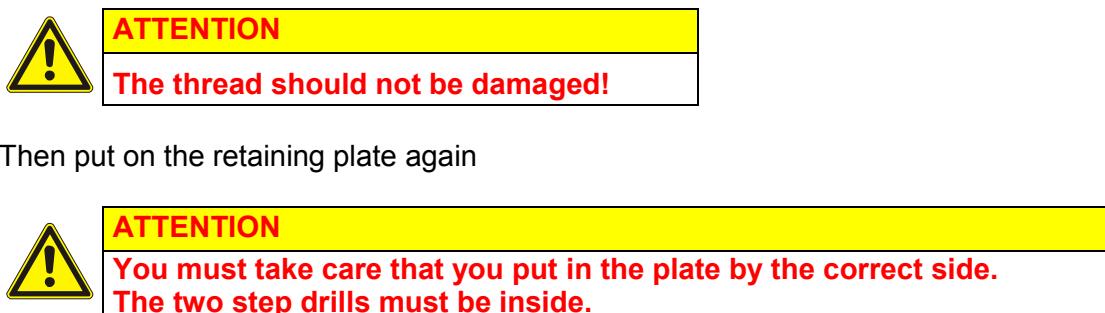
Remove the retaining plate



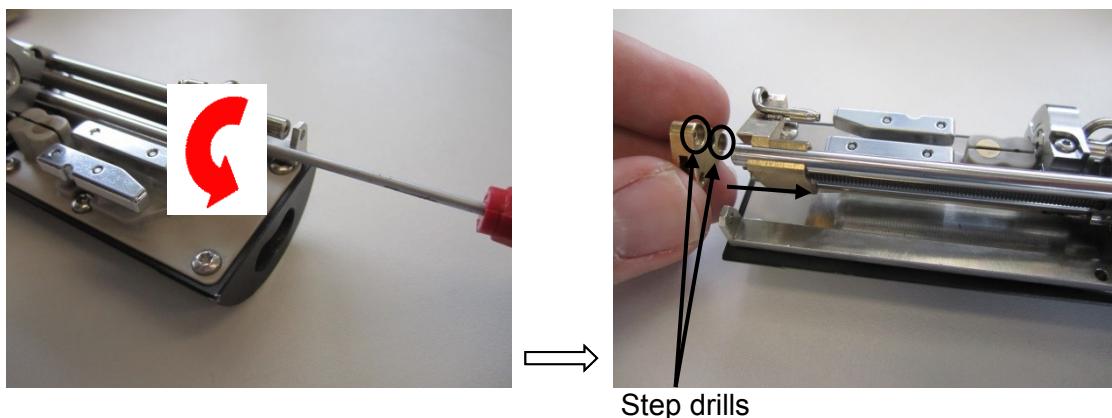
9. Rotate the motor spindle **clockwise** with a slotted head screwdriver to screw out the gutter tube.



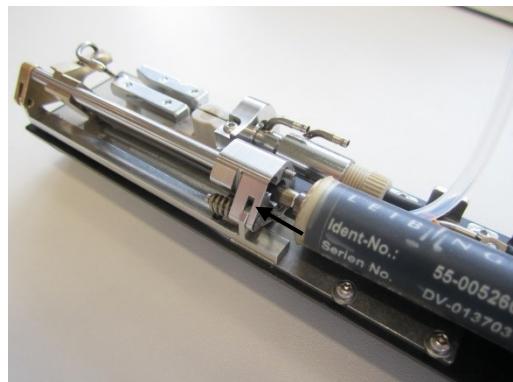
10. Put in the new gutter tube and rotate the motor spindle **counter clockwise** to screw in the gutter tube.



Then put on the retaining plate again



11. Put in the motor spindle unit again.

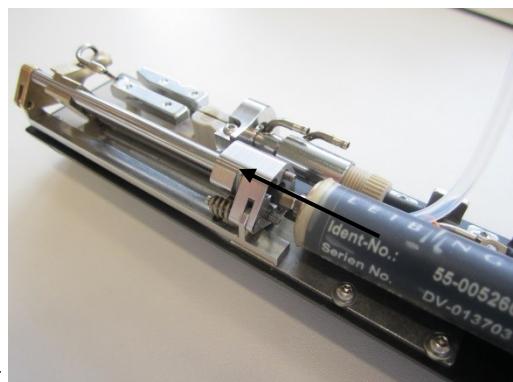


Put in the motor spindle unit inside the two swivels again.

Put in the mounting bolt together with the suspension again.

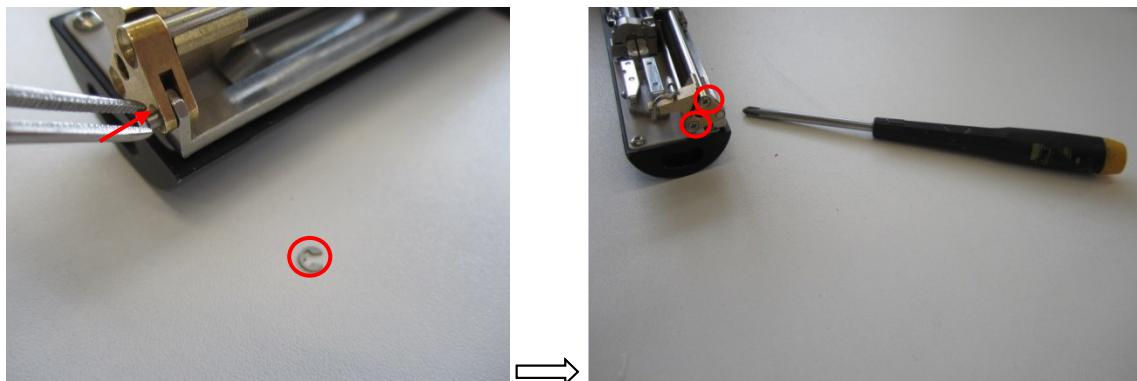


Put in the locking ring again to fixing the mounting bolt.



Put in the locking ring again to fixing the mounting bolt.

Screw in the 2 screws for the mounting of the motor with the allen key (SW 1,5 mm) completely again.



Pull in the safety pin and fixed them with the locking ring again.

Screw in the screws (2x) in the retaining plate again.

12. Cut off the inside end of the flexible tube and put it on the gutter tube again.

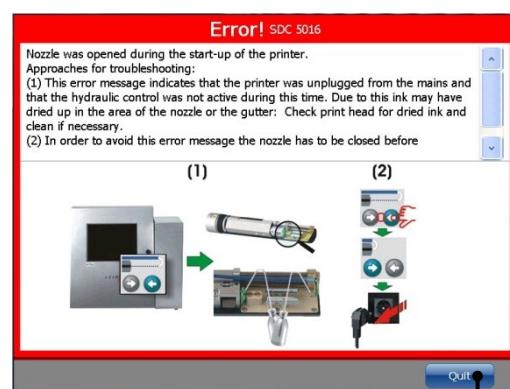


13. Plug in the main plug again and switch on the printer.

Confirm the message "printer switched off with emergency shutdown" with the button <OK> (1). In the second step confirm also the error message 5016 "nozzle was opened during start up of the printer" with the button <Quit> (2).



1 – Button <OK>



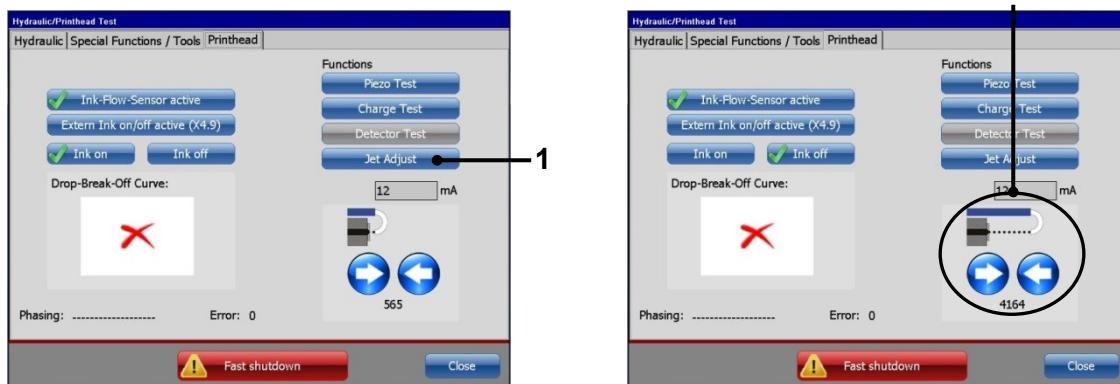
2 – Button <Quit>



Information

The printer will now check if he can drive the travel range and will drive automatically into the position zero to close the nozzle.
During the booting process the values of the nozzle encoder were set to zero and the shown value is the right again.

14. After that you must check the ink stream position. Push the button <Jet Adjust> (1).
The printer will drive to pre defined service position (2).



- 1 – Button <Jet Adjust>
2 – Display field <Service Position>

15. Check the ink stream position.



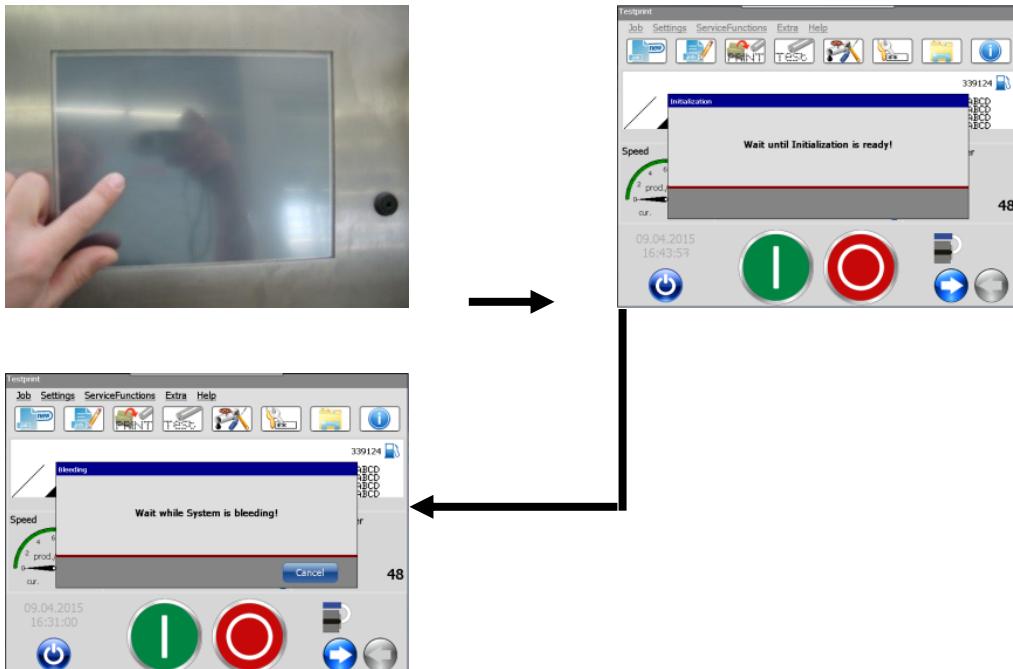
Information

Look at chapter: Print head adjustment on page 161.

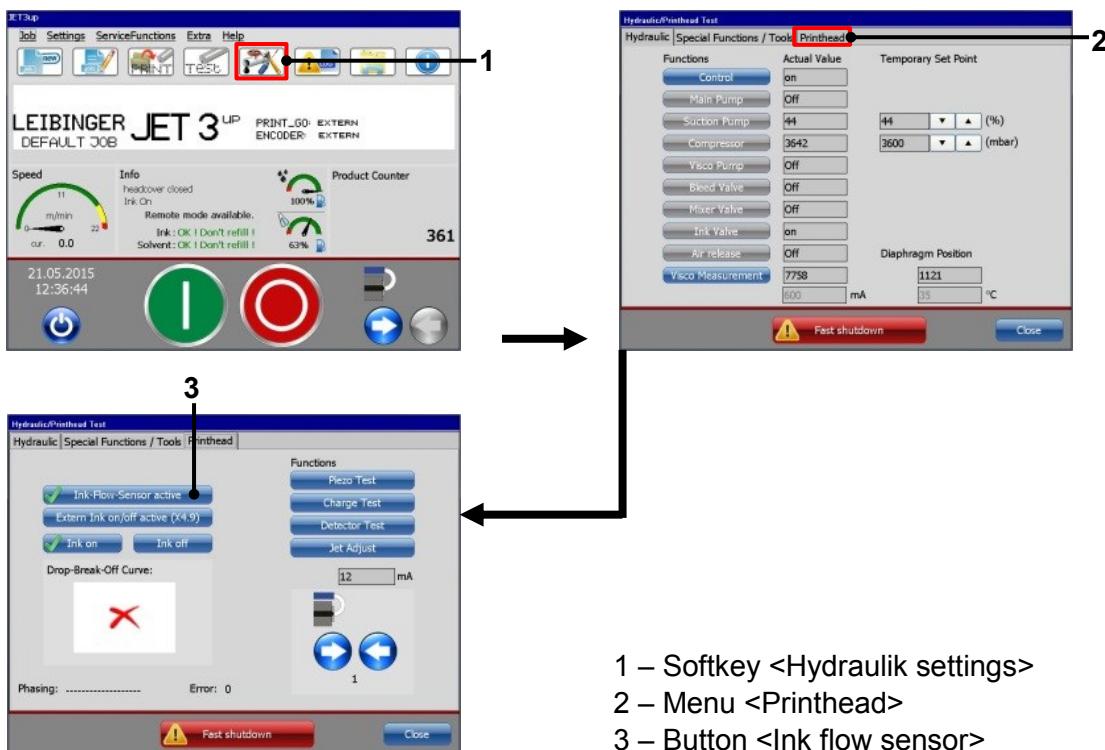
8

Exchange suction tube on print head

- Start up the JET3up via the touch-display and wait until the initialization and the bleeding is finished.



- Switch the softkey <Hydraulik settings> (1), open the menu <Printhead> (2) and deactivate the <Ink-Flow-Sensor> (3)

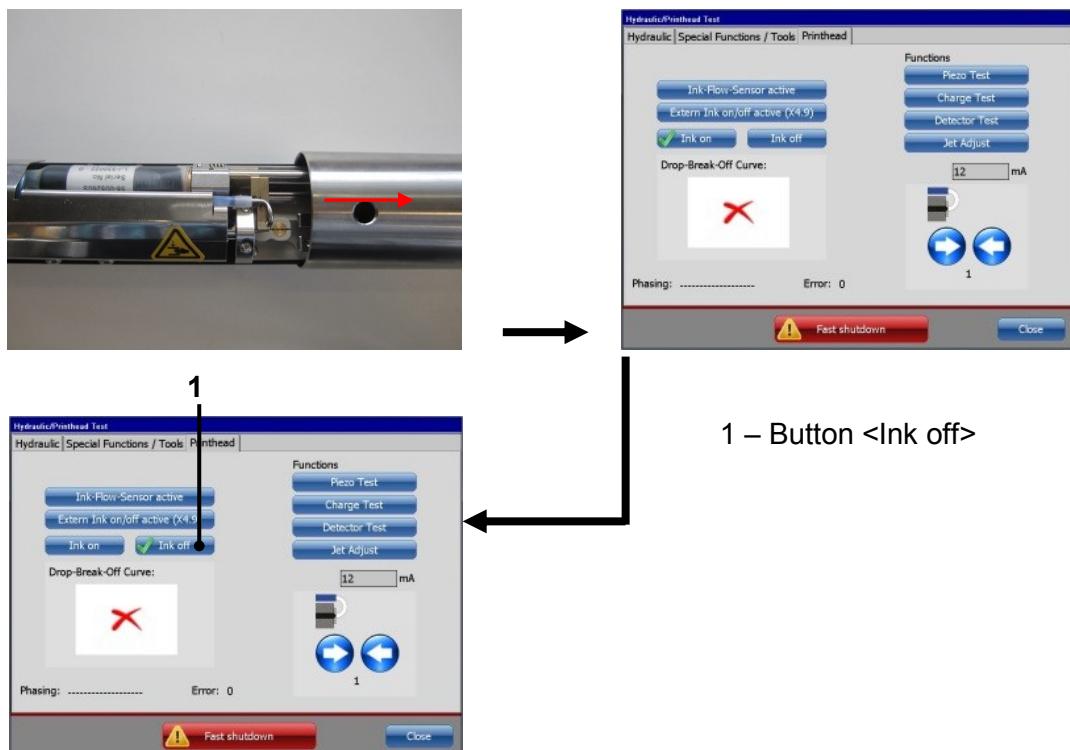


1 – Softkey <Hydraulik settings>

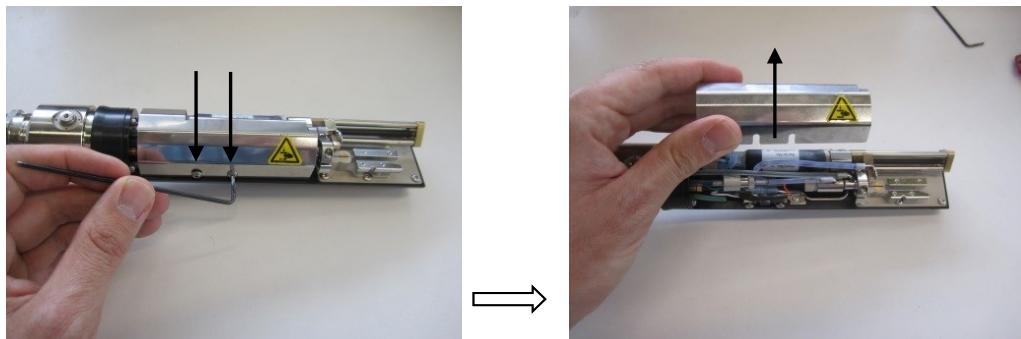
2 – Menu <Printhead>

3 – Button <Ink flow sensor>

3. Open the headcover and switch the button <Ink off> (1).



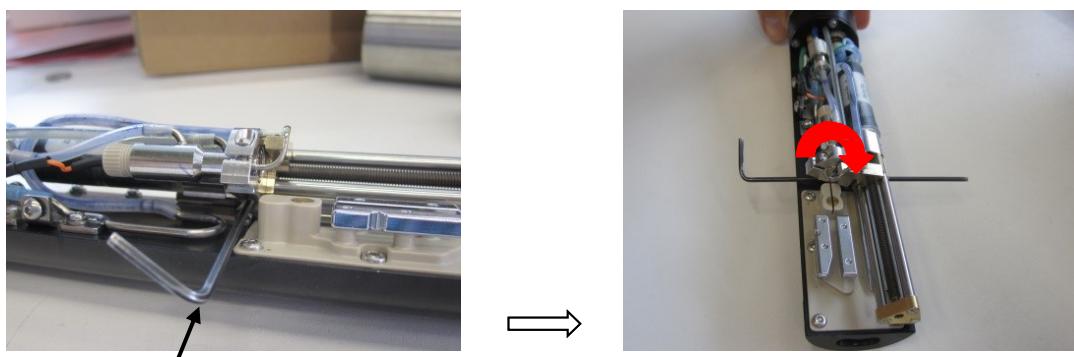
4. Remove the inner-cover, but open the allen-screws (2,5 metric) only **one turn**.



Attention

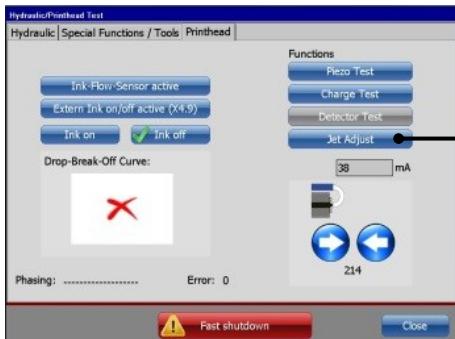
Never use a balled head Allen wrench, otherwise the Screws could be damaged!!!

5. Push carefully a tool like an allen key between the bearing block and the mounting plate.



6. Touch the button <Jet Adjust> (1).

Now the gutter tube is moving automatically to a pre-defined service-position (4200) (2)



1 – Button <Jet Adjust>

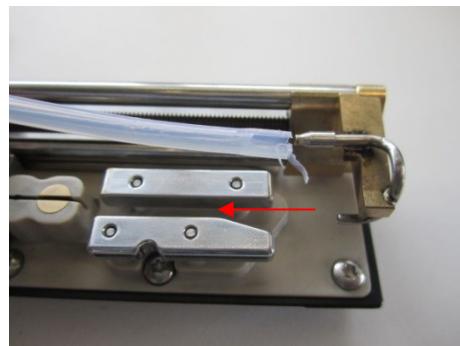


2 – Service position (4200)

7. Cut off the tube.

**Attention****Do not scuff or damage the gutter!!!**

Cut off the old suction tube horizontal very carefully (stripping off with a knife) on the gutter tube.



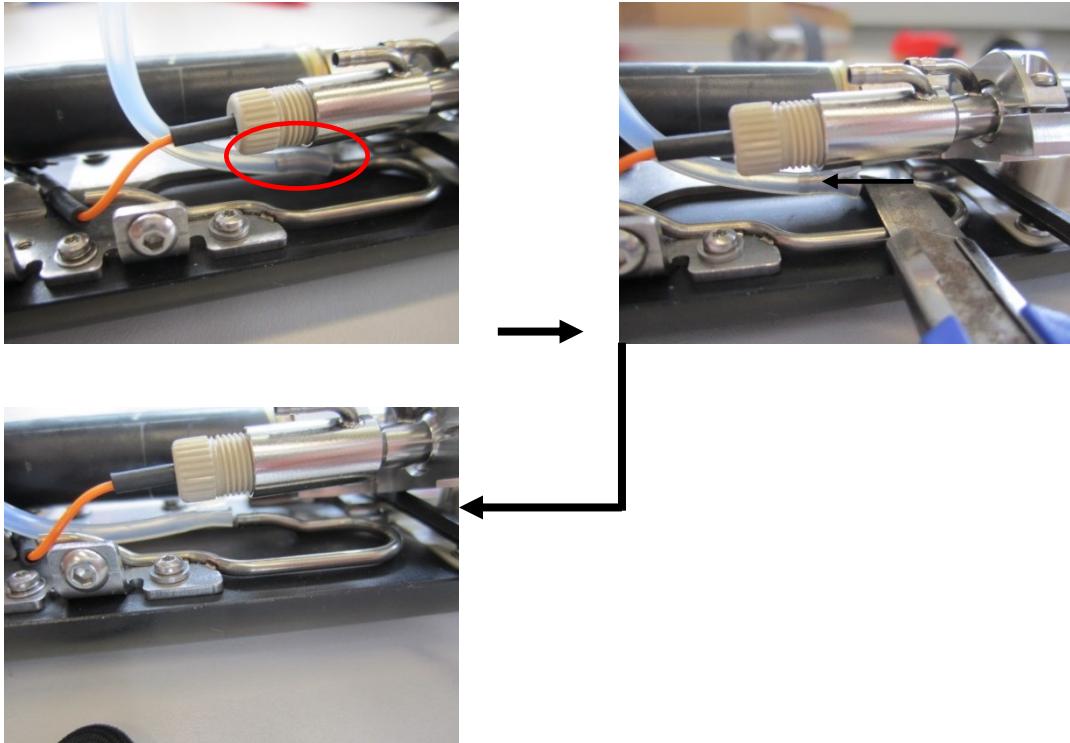
Remove the tube carefully by hand!!!

8. Cut also the old suction tube horizontal (stripping off with a knife) on the drop production unit.

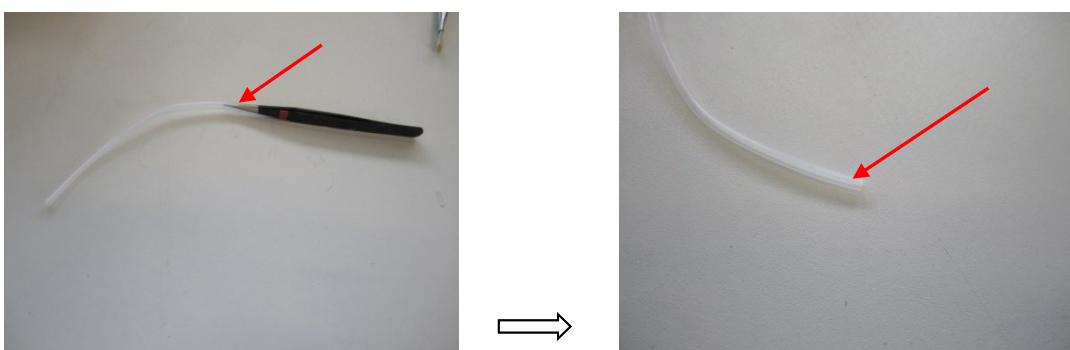


Attention

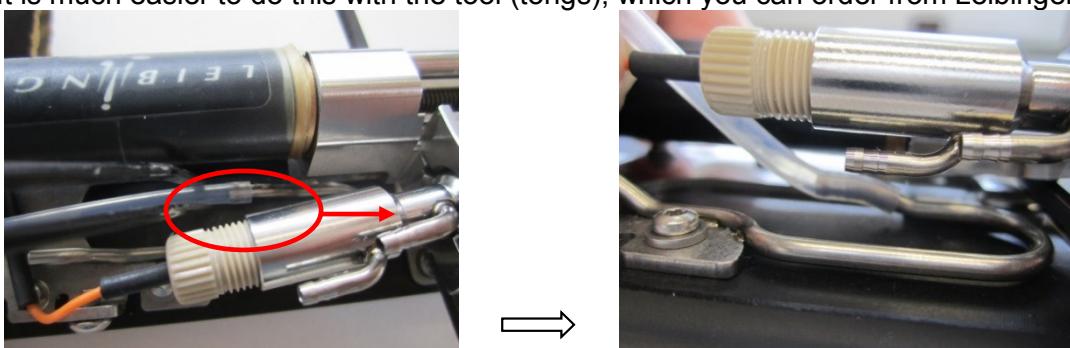
Do not scuff or damage the gutter!!!



9. Widen the tube on both sides with a long-nosed pliers.
Art. Nr.: 55-005000 K / Tube length: 120 mm



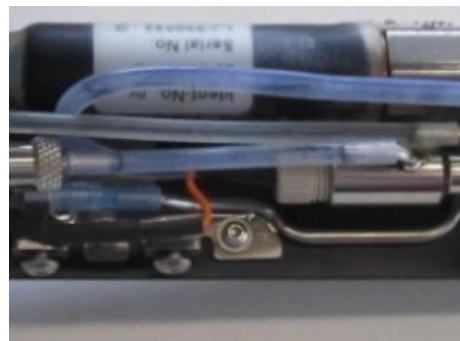
10. First connect the short side of the suction tube with the drop production unit!
It is much easier to do this with the tool (tongs), which you can order from Leibinger.



11. Connect the other side from the suction tube with the gutter.
The suction tube must have a pre-bending like you can see on the pictures.

**Attention**

The gutter tube is only fixed by laser-welding, don't break it!!



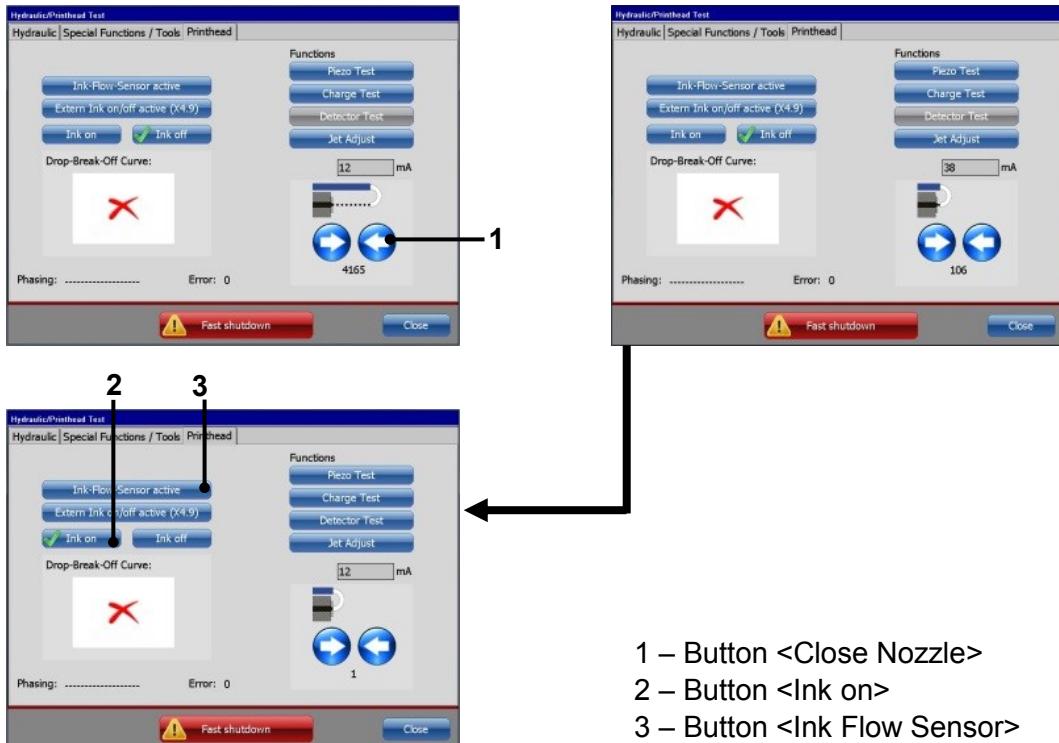
12. Connect the suction tube again



Connect the suction tube onto the gutter again.

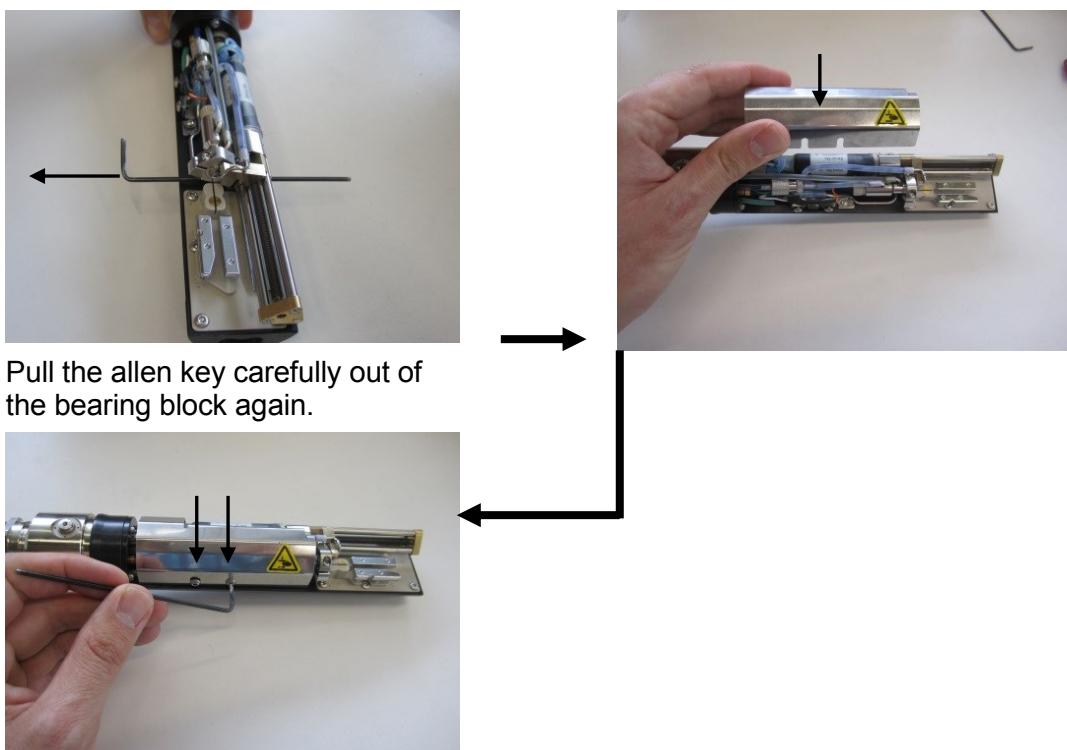
To simplify the pull over on the gutter use a wispy sandpaper.

13. Close the gutter tube with the button <Close Nozzle> (1), switch the <Ink on> (2) and activate the <Ink-Flow-Sensor> (3).



1 – Button <Close Nozzle>
2 – Button <Ink on>
3 – Button <Ink Flow Sensor>

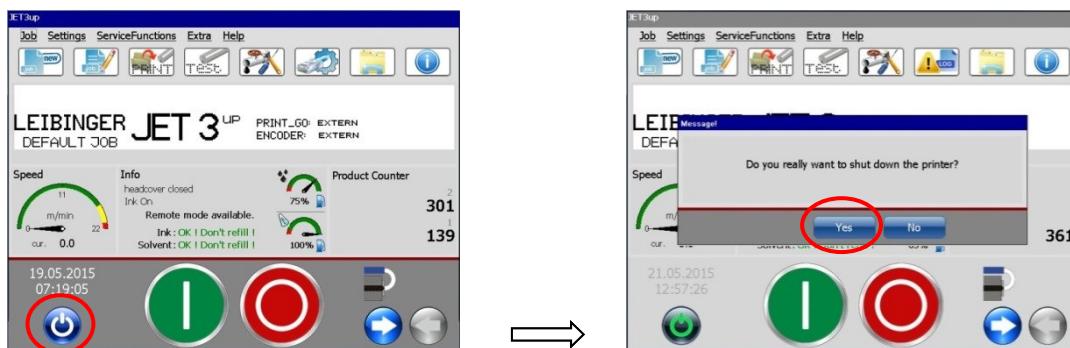
14. Bring the drop production unit into the print position. Then install the inner cover and tighten it. Don't smash or brake any cables and pipes during this action.



15. Check the jet for the right position in the gutter and the electrodes.

9**Exchange the electrode block**

1. Switch off the JET3up.



2. Remove the mains plug.

***Dangerous electrical voltage!***

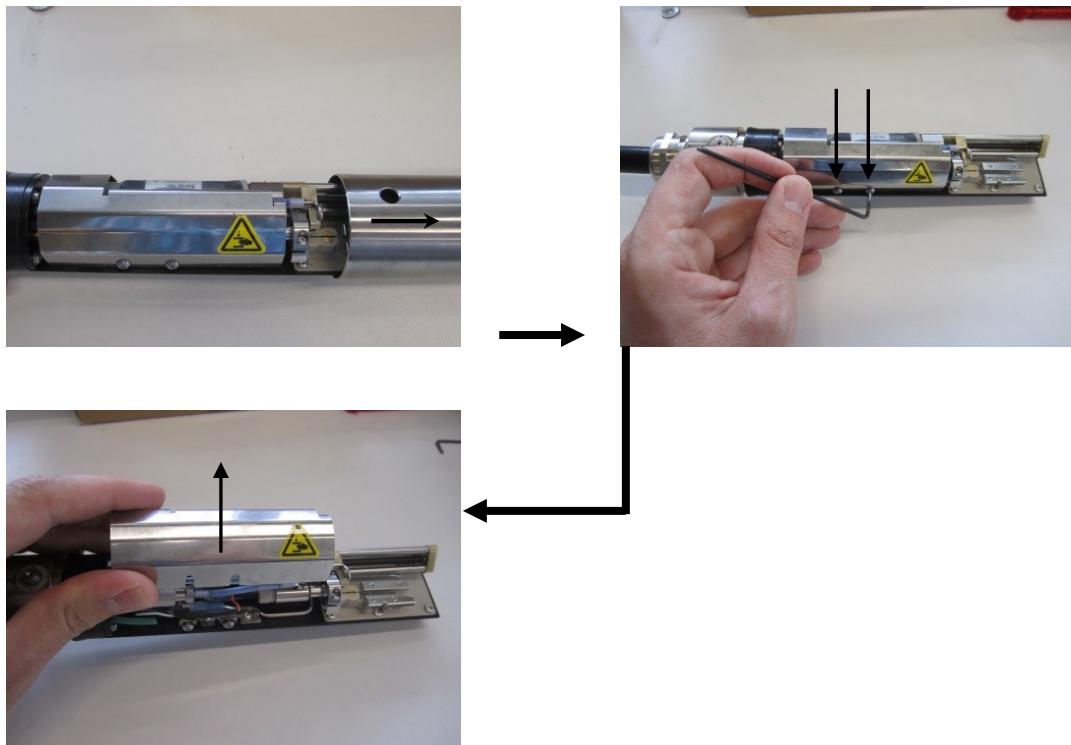
Contact causes serious damage through an electric shock! Disconnect the device from the voltage supply prior to open. Remove the main plug!

Necessary tools:

- **6-fold magnifying Glasss,**
- **Allen keys (SW 1,5 + 2,0 mm) and**
- **Torque Allen key with blade for torx (T6 + T8)**

You will find these keys in our Spare Part and Accessories Catalog!

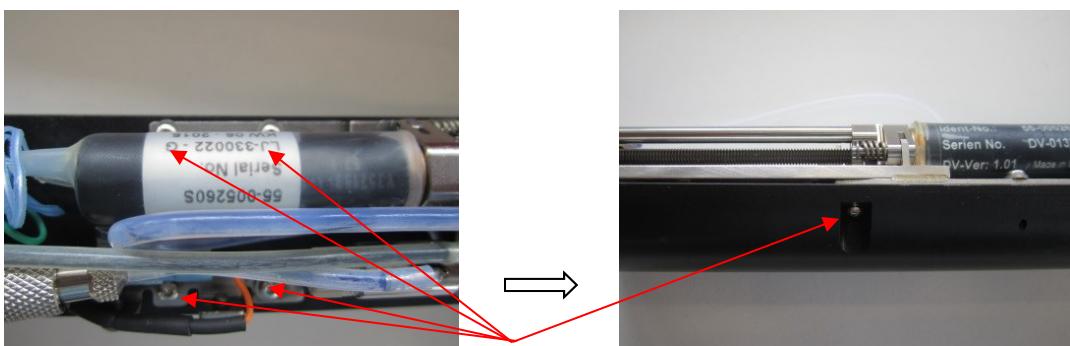
3. Remove the print head cover. Release fixing bolts with an allen key (SW 2,0) by turning about **one** rotation and remove the interior cover.



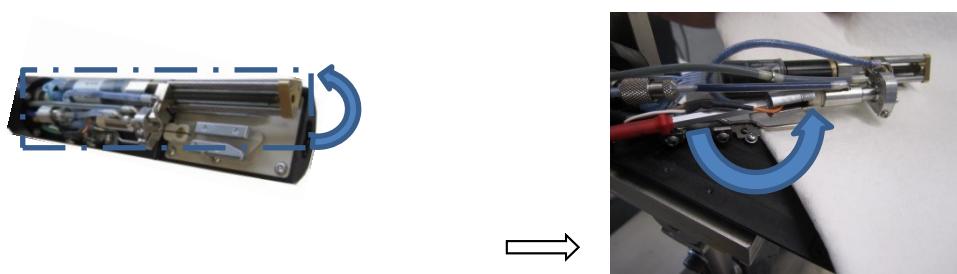
Attention

It is not allowed to use a golf ball head allen keys, otherwise screw heads could be damaged.

4. Unscrew the attachment of the mounting plate

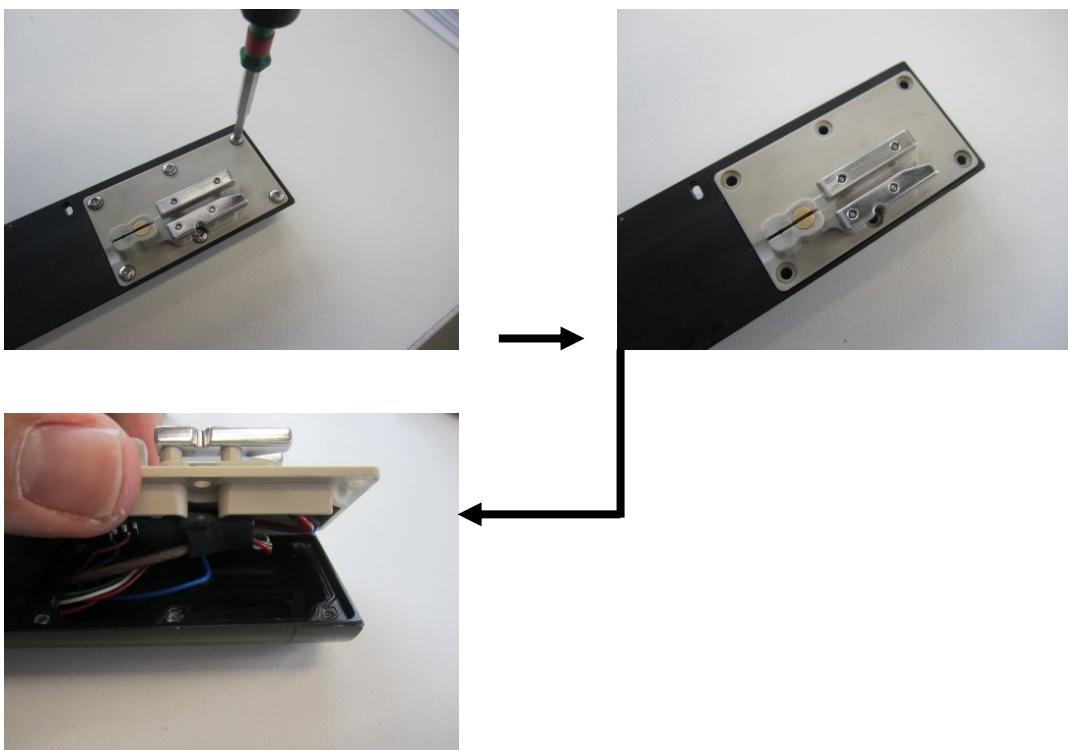


Remove the 5 retaining torx screws and the washers with a torx screwdriver T6.



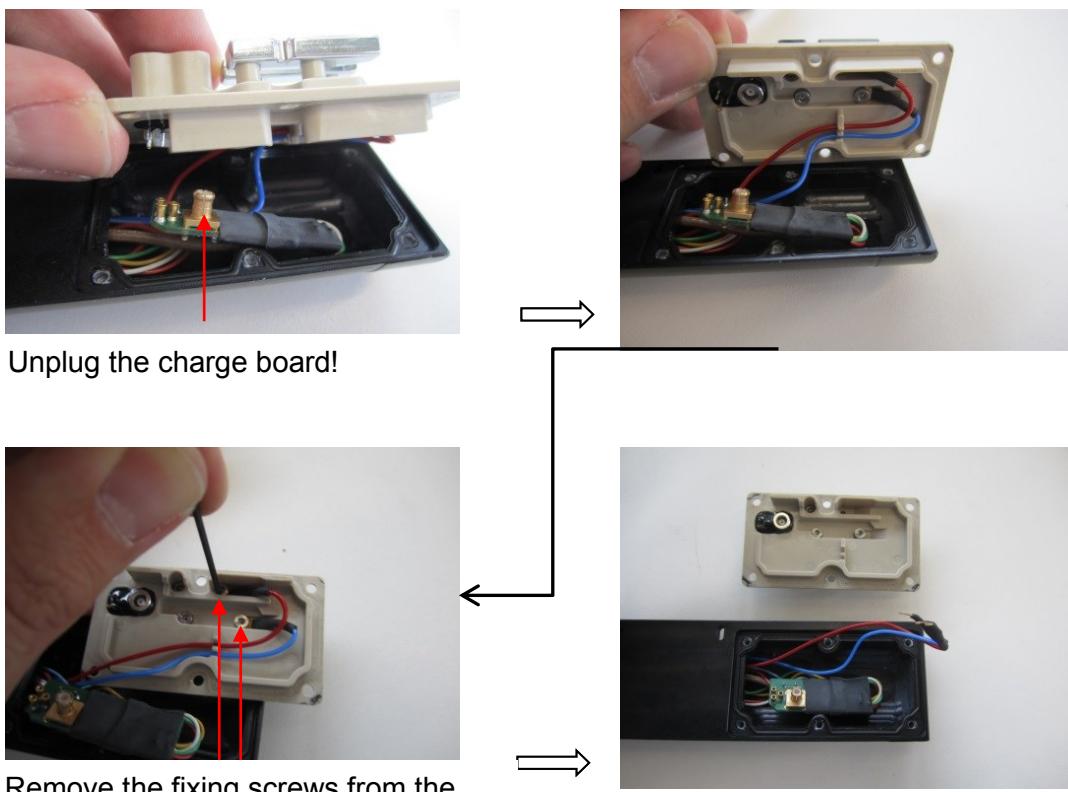
Swing the mounting plate (with drop production unit) out of the way.

5. Remove the electrode block



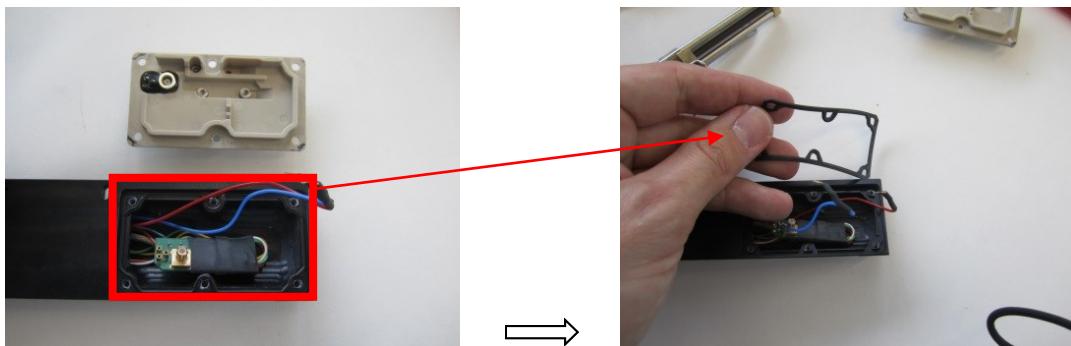
Remove the 6 torx screws with a torx screwdriver (T8) and unplug the electrode block from the print head.

6. Disconnect the electrode block from the print head electronic parts.



Remove the fixing screws from the HV-Cable with an Allen key (SW 1,5)!

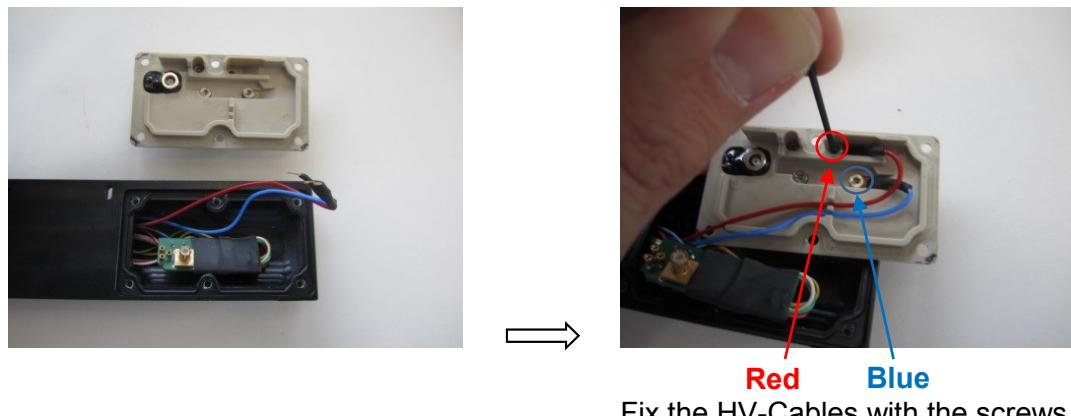
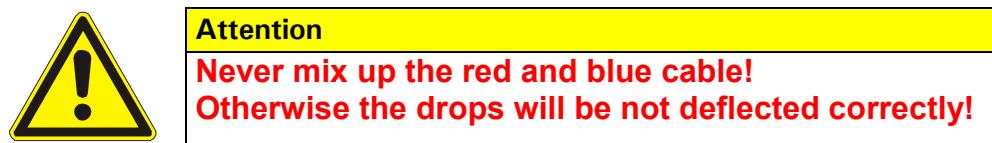
7. Remove the flat seal.



8. Insert the new flat seal and push it correctly down.



9. Fix the HV-Cable on the electrode block.

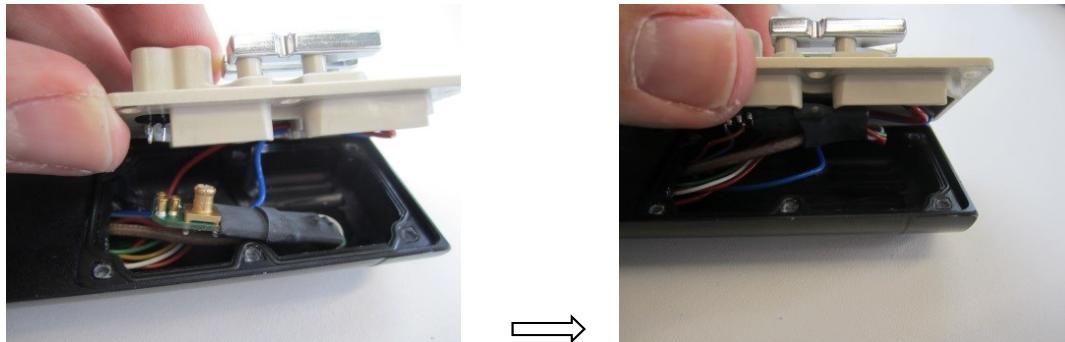


Fix the HV-Cables with the screws.
For this you need an
Allen key (SW 1,5 mm)!

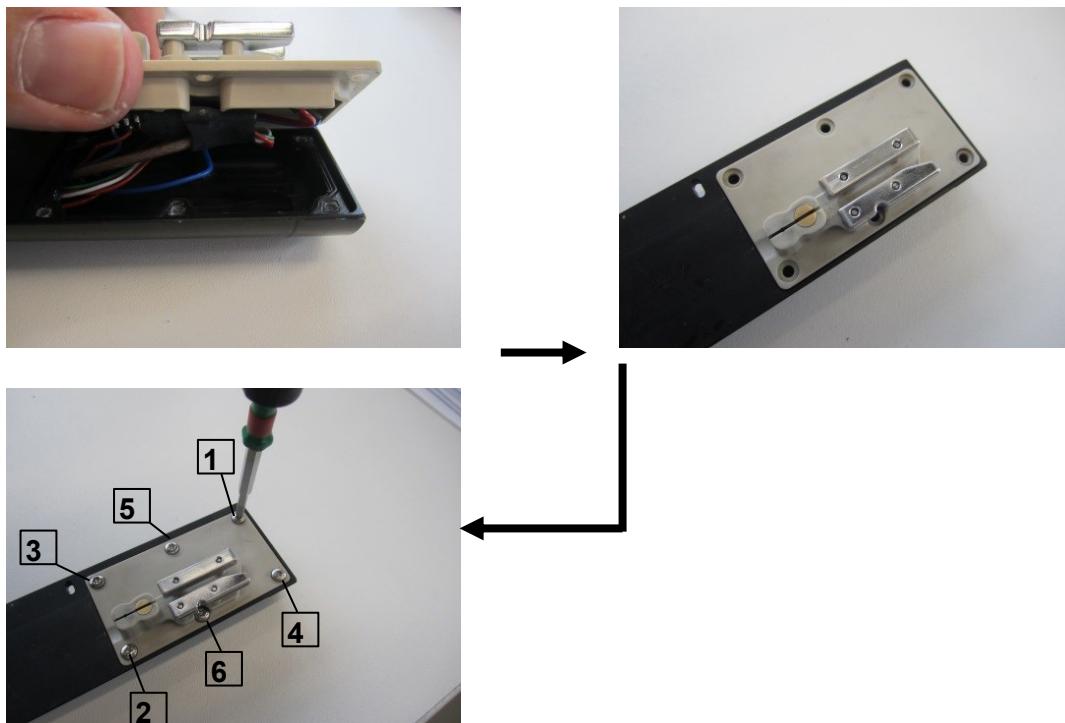
10. Connect the charge-board on the electrode block

**Attention**

Take care that PINS not dismantle, when you connect the charge-board on electrode block!



11. Put the electrode block into the print head und fix it with screws



Fix the screws in the displayed torque sequence

**Attention**

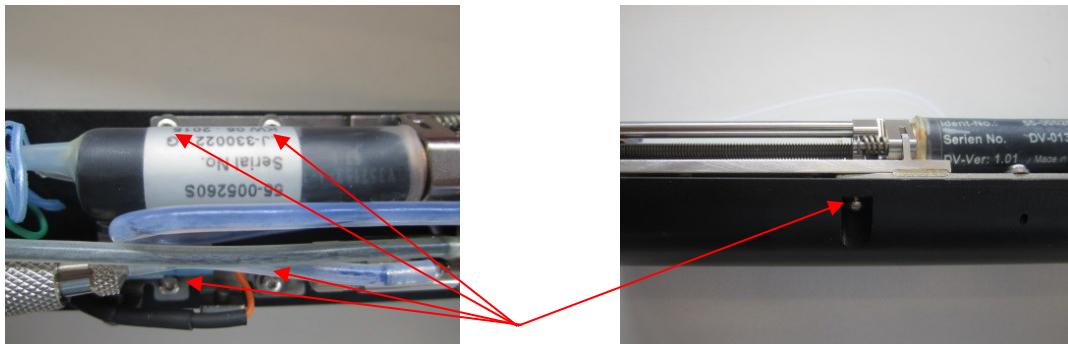
Take care, when you put the electrode block in the print head, that no cable jammed!

Also take care, that all 6 torx screws fixed with a torque allen key (inside a blade for torx T8 and 0,18Nm)!

Please note the torsional moments in chapter Torsional moments for SK6 on page 151

(You will find Torque Allen key 55-004557K + Blade for Torx T8 55-004559K in our Spare Parts and Accessories Catalog)

12. Fix the mounting plate (with drop production unit).



Fix the 5 retaining torx screws + the washers with a torx screwdriver 5,5 easily!

13. Plug in the mains plug.



Attention

**Waiting for the booting process.
After this you can power on the printer!**



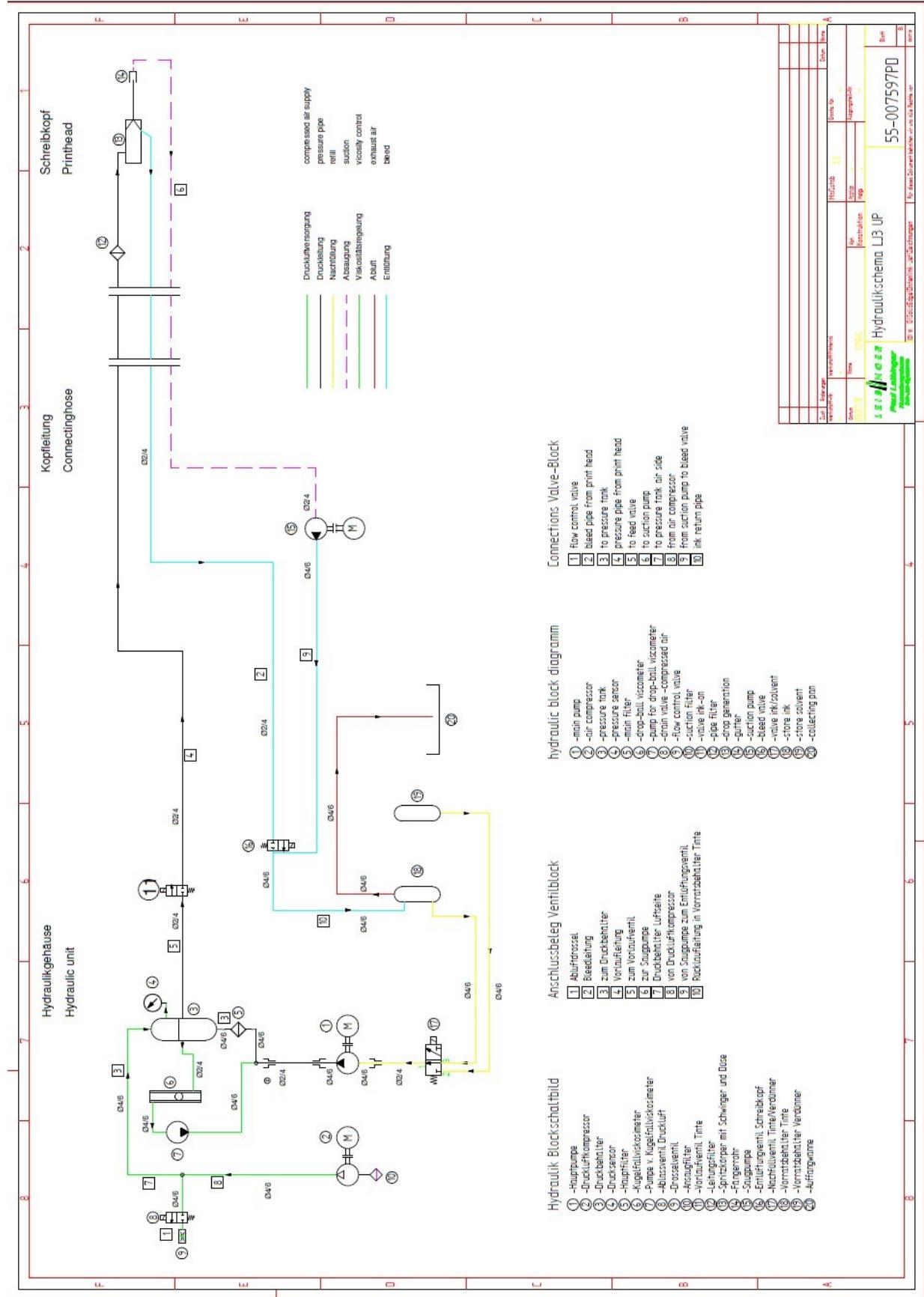
Information

After that procedure it is important to check the ink stream position.
Please note the chapter Print head adjustment on page 161!!!

7.9 Hydraulic

1

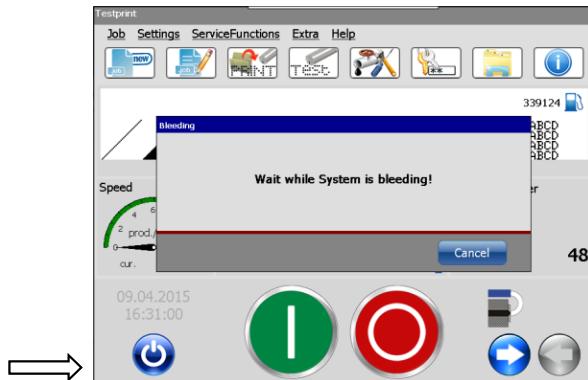
Hydraulic schematic



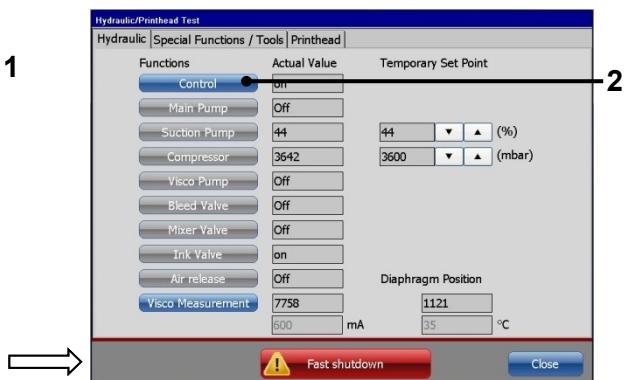
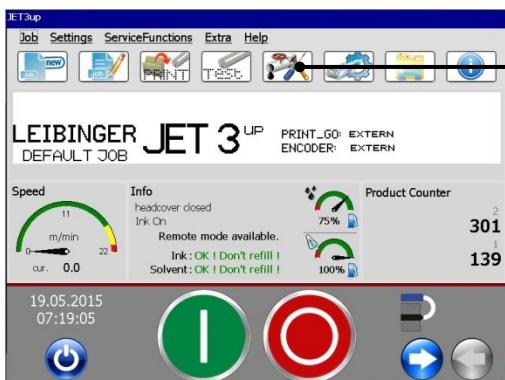
2

Deplete routine

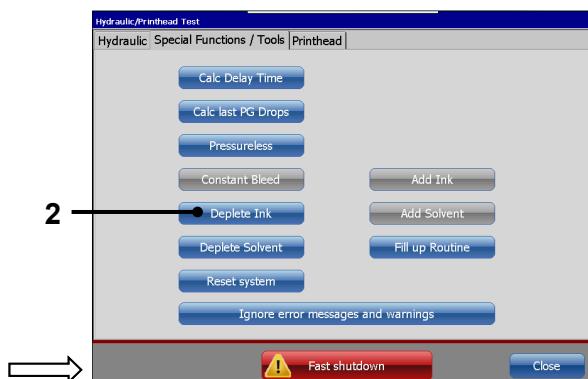
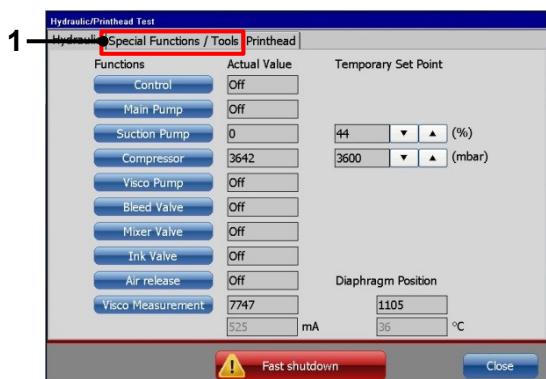
1. Switch on the JET3up and wait while the system is bleeding.



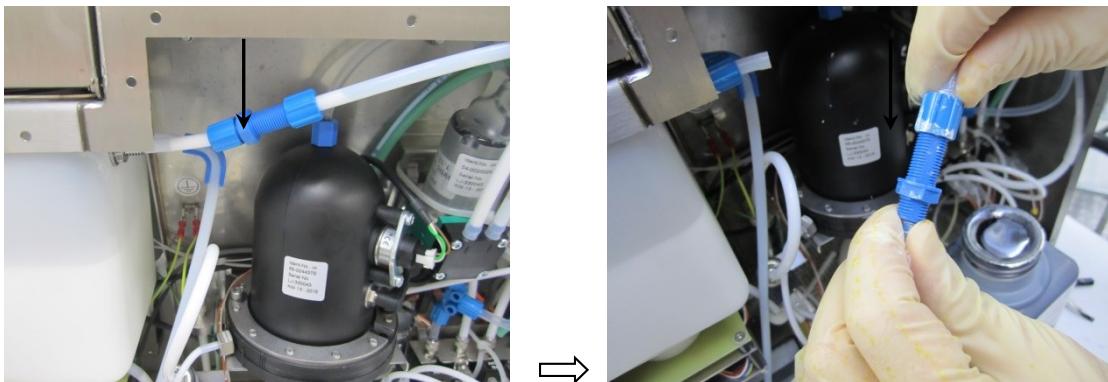
2. Touch the softkey <Hydraulic settings> (1) and switch off the <Control>-button (2).



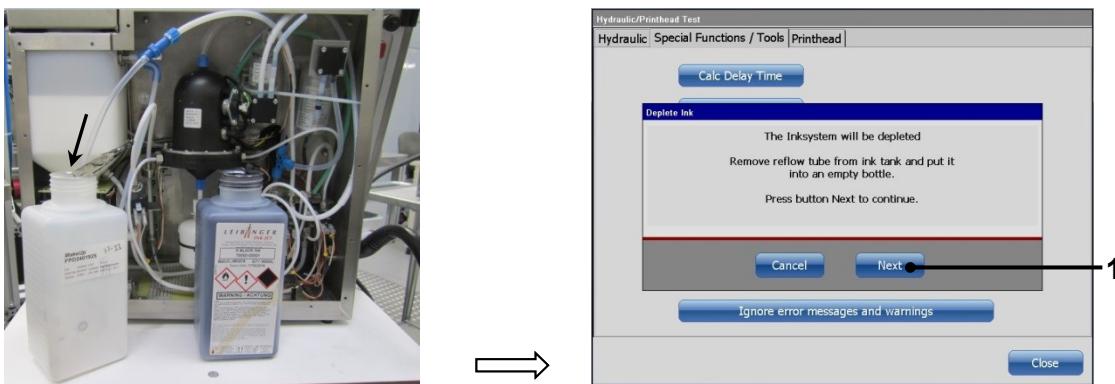
3. Touch <Special Functions/Tools> (1) and activate the function <Deplete Ink> (2).



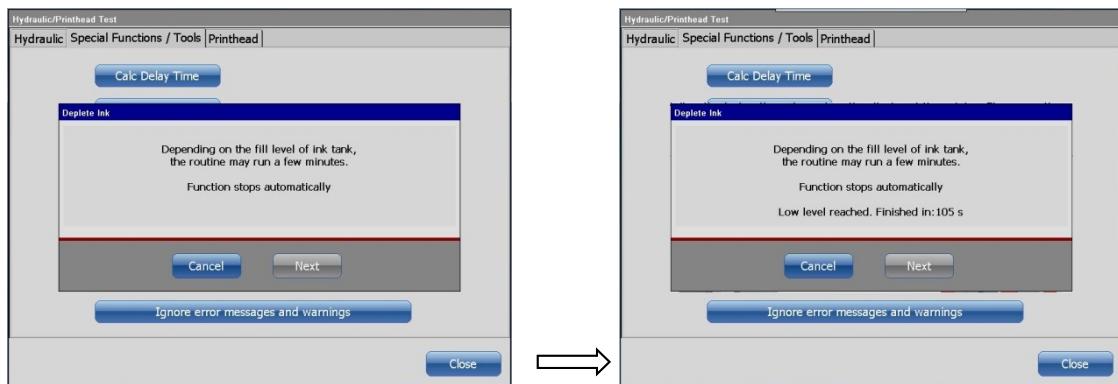
4. Remove the return flow tube on the blue tube connector and connect a piece of tube on these connector (please see the following pictures).



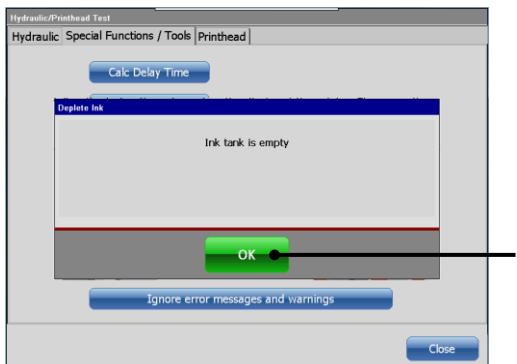
5. Put the end of this tube into an empty ink or solvent bottle and press the button <Next> (1) to start the routine.



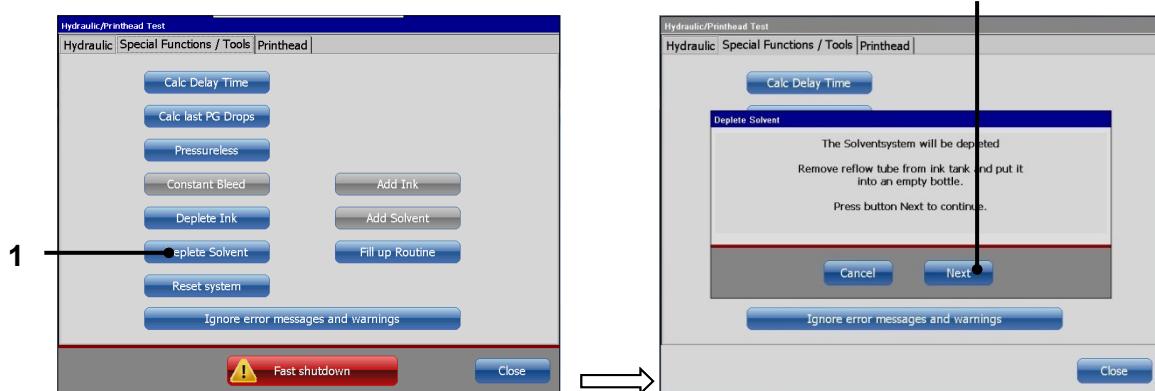
6. Dependent on the filling level of the ink tank, the routine may run a few minutes. If the level sensor of the ink tank signals "low level", the routine runs another 120 sec. till the message „ink tank is empty“ appears automatically and switches off this routine.



Please confirm with the button <OK>. The menu will change back to <Special Functions/Tools>. The drained ink from the system can be used again if required.



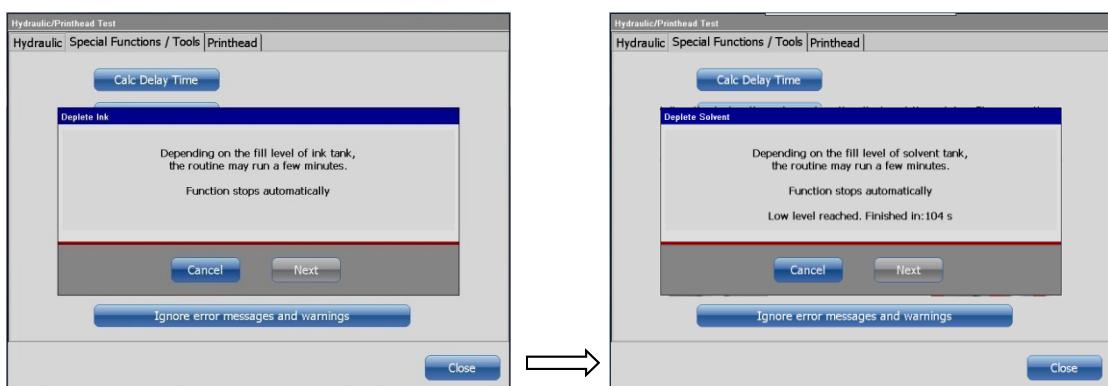
7. To drain the solvent-tank please activate the button <deplete solvent> (1). Put the drain tube (see point 4) once more in an empty ink or solvent bottle and start the deplete routine with the button <Next> (2).



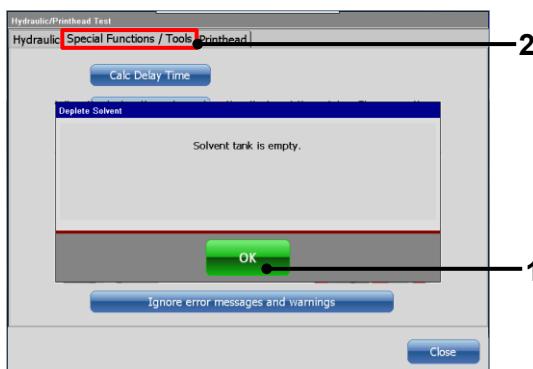
1 – Button <deplete solvent>

2 – Button <Next>

In dependence of the filling state at the solvent-tank the routine runs some minutes. If the sensor recognises the "low level" inside the tank, the routine runs another **120 seconds** till the message „ink tank is empty“ appears automatically and switches off this routine.



Confirm with the button <OK> (1) and the menu changes back to <Special Functions / Tools> (2). The drained solvent should not be used furthermore, because it is strongly mixed with ink.

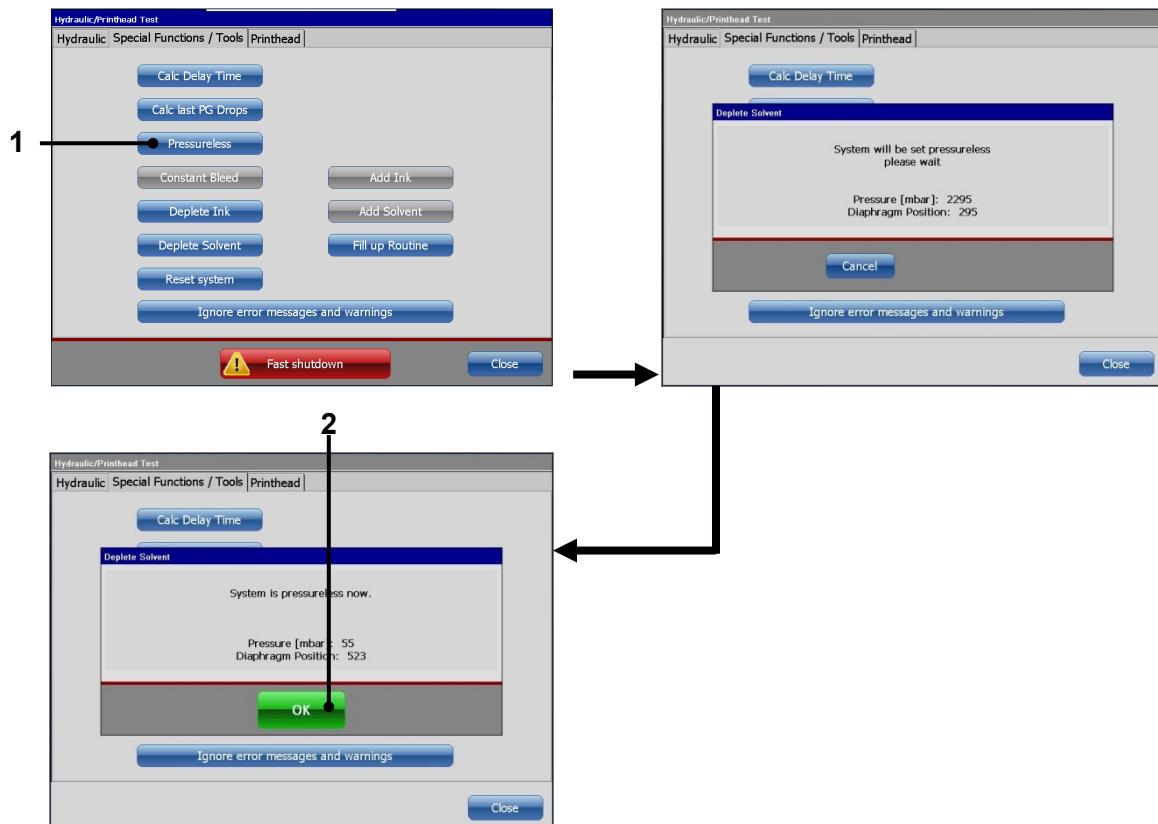


1 – Button <OK>

2 – Menu <Special Functions/Tools>

8. Activate the function <Pressureless> (1).

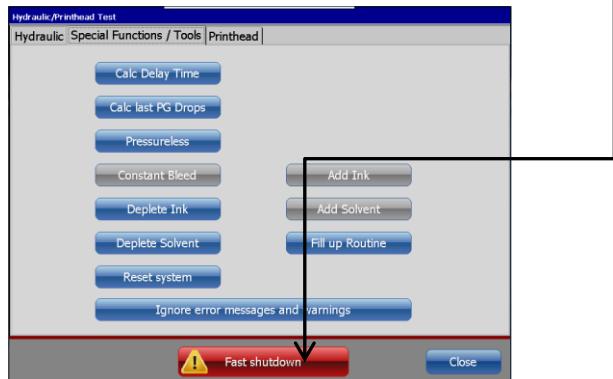
Now the routine starts automatically and announces, if the hydraulic system is absolutely pressure free. Quit this message with the button <OK> (2).



1 – Button <Pressureless>

2 – Button <OK>

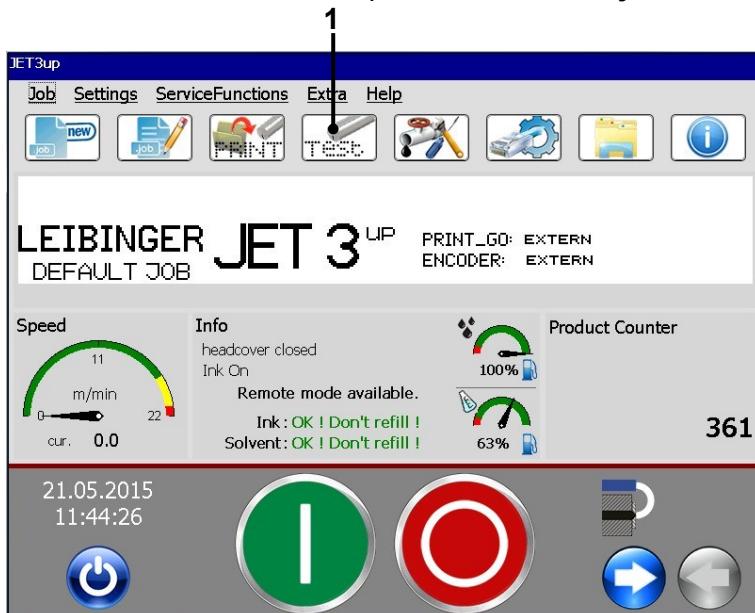
9. Switch off the JET3up with the function <Fast shutdown> and plug out the printer from the mains supply.



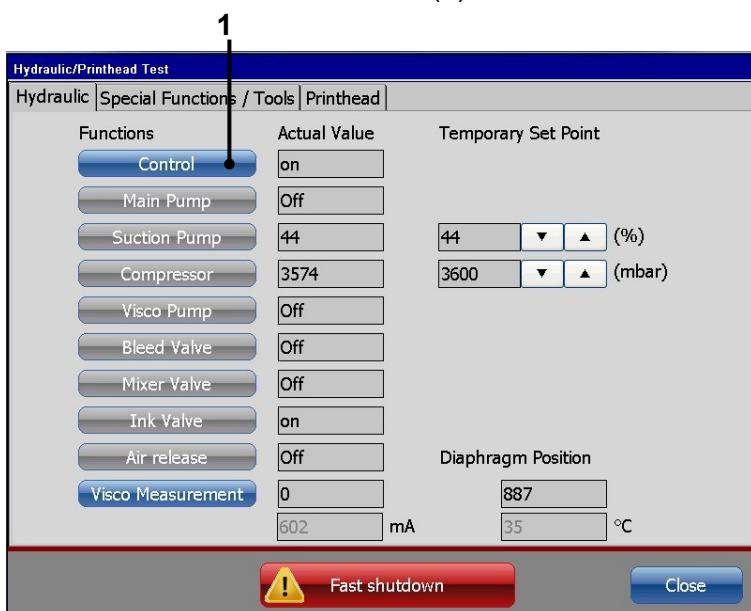
10. For the transportation of the printer by a forwarding agency or air cargo, especially the print head has to be stowed on the suitable head packaging for protection. Also the hydraulic components like the main pump, suction pump and the valve block should be fixed with cable ties to avoid that they loose from the mounting rail.

3**Exchange valve block**

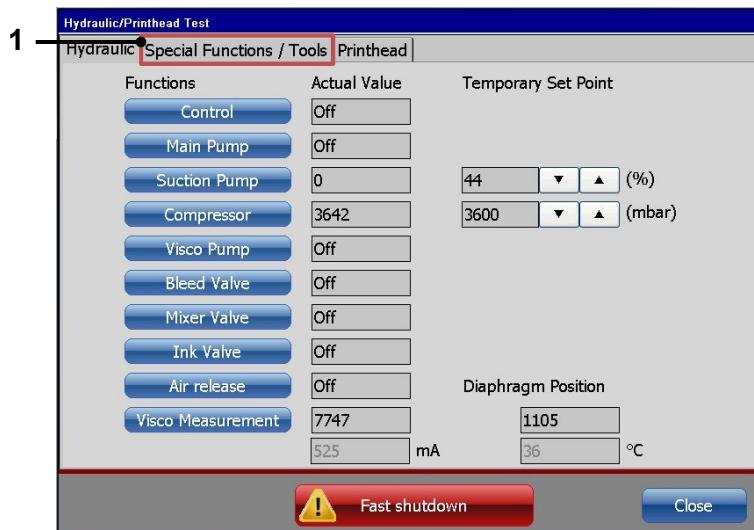
1. Switch on the JET3up and wait for the bleed cycle.
2. At the indicated main menu push the button <Hydraulic-/Printhead Test> (1).



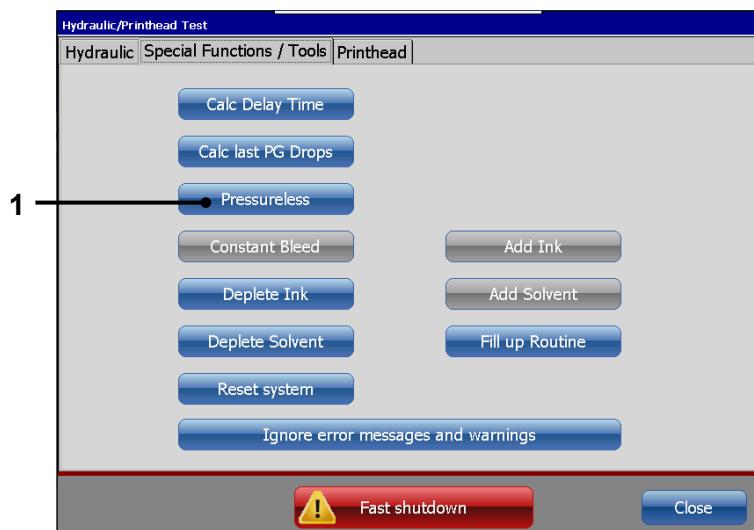
3. Switch off the button <Control> (1).



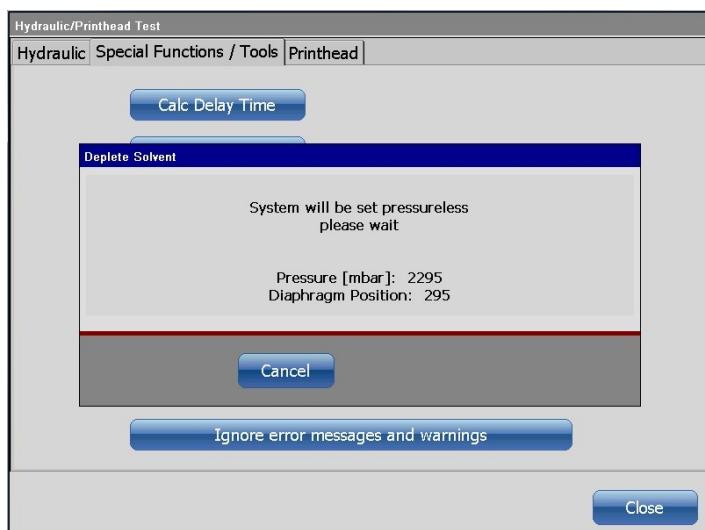
4. Go to menu <Special Functions/Tools> (1)



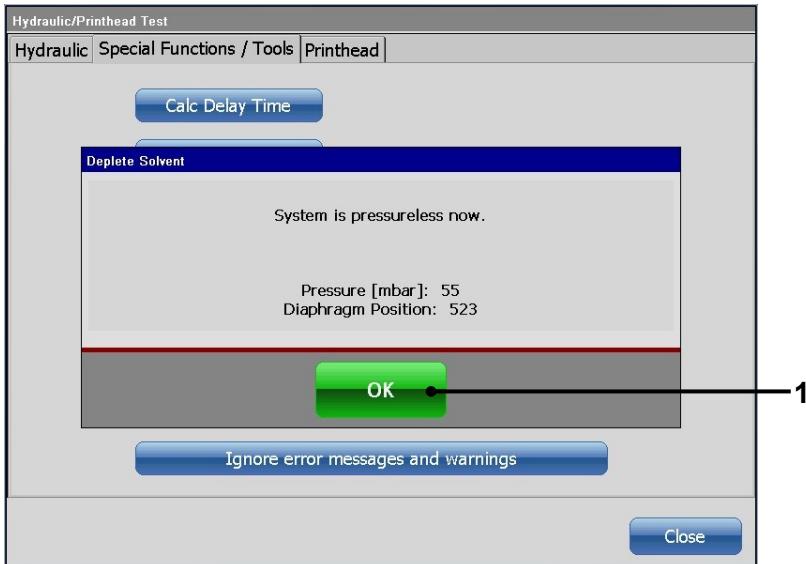
5. Push the button <Pressureless>(1) to remove the pressure of the hydraulic system.



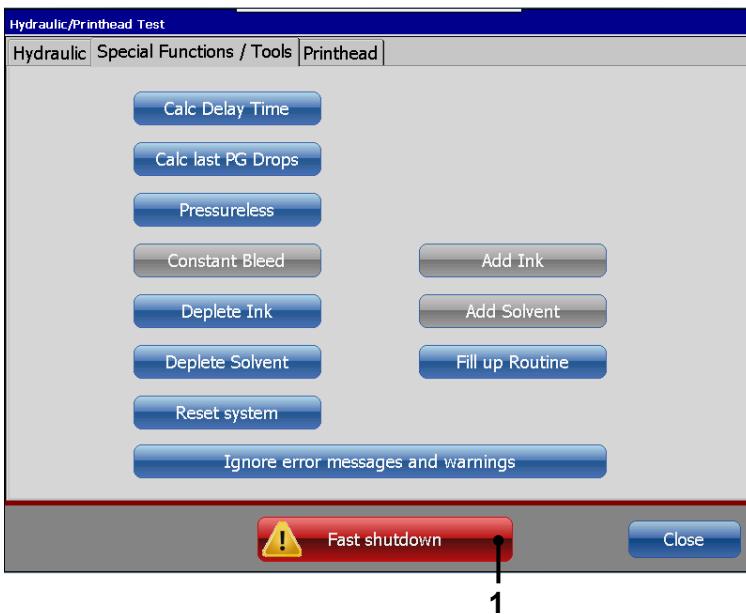
6. The following display appears



7. Wait until the message „System is pressureless now“ and then push the button <OK> (1).



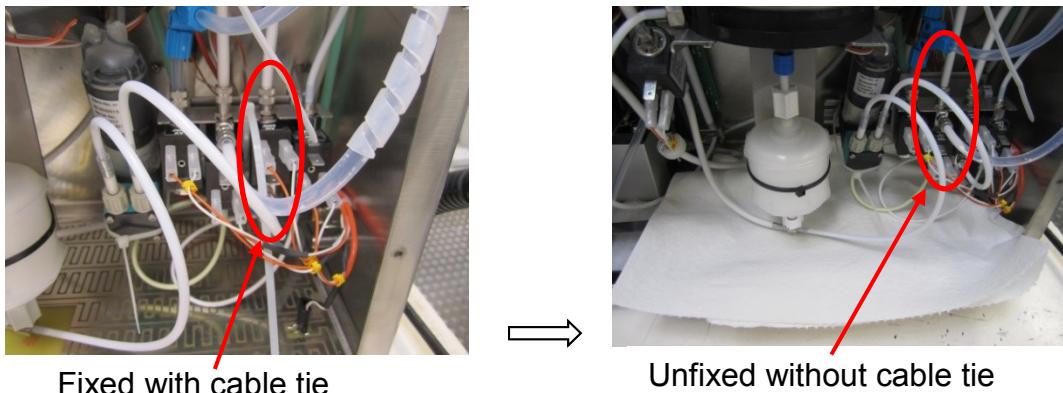
8. Shut down the JET3up with the button <Fast shutdown> (1).



9. Disconnect the device from the mains supply

10. Please dress yourself with necessary safety equipment, before you start the modification (protective glasses, gloves, ect...)

11. Unfix the frame with the valves from the top-hat rail and put an underlay above the ink sensor to prevent soilings by ink.



Exchange the value:

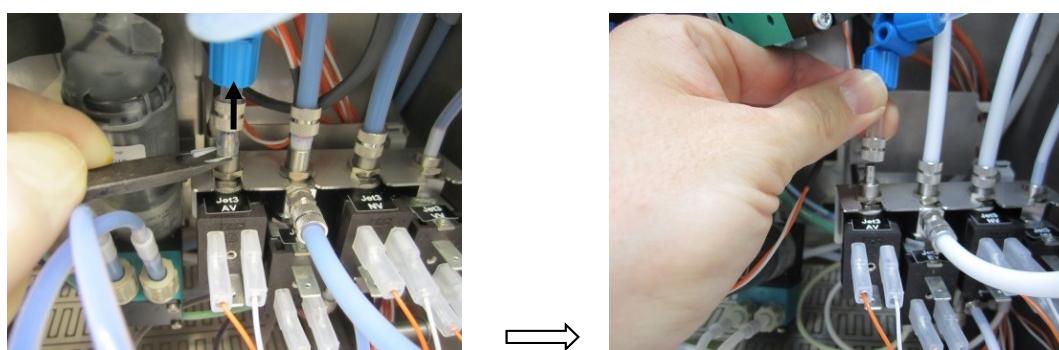
Now you can easily pull the holdfast with the valves out of the printer casing and you can change either value for value (if you want to change all values) or only one definite value.

In this manual it is described how to change the value AV.

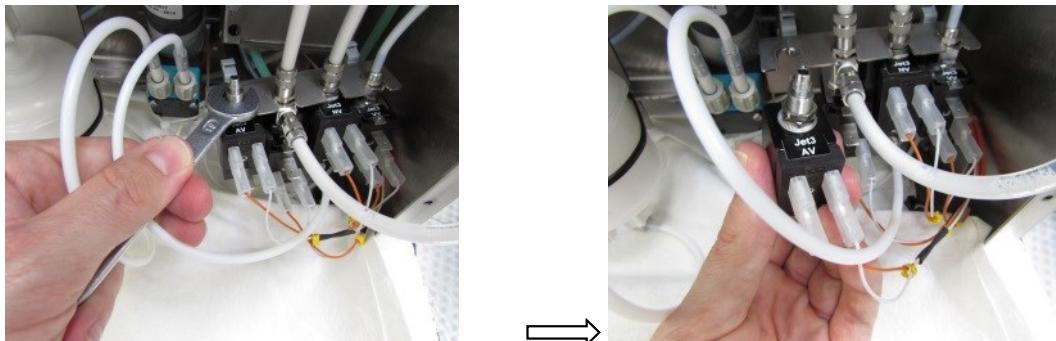
The procedures for the other values are exactly the same.



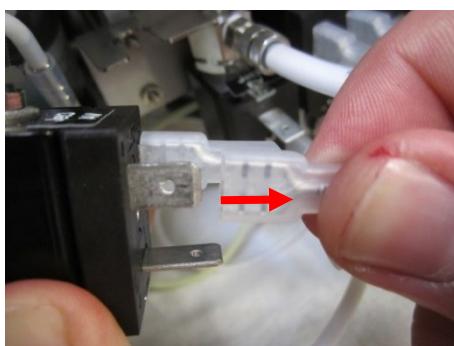
12. Unscrew the screwcap of the tube and push it back as far as possible.
13. Strip the tube with an abductor.
(It is absolutely necessary to strip always all tubes which are connected with the respective valve).



14. Unscrew the screw connection with a jaw spanner (SW 10 mm) and take the AV valve out of the frame.



15. Disconnect the 2 connecting wires **+ plus** and **- minus** from the AV valve.



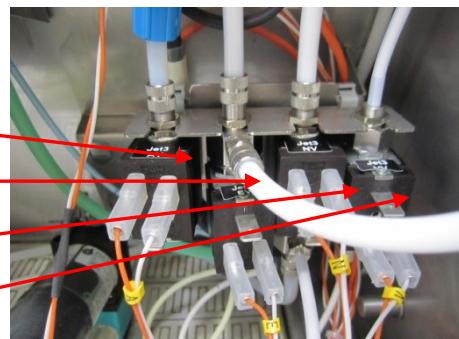
Connecting wire are labelled!

a. AV = A

b. EV = E

c. NV = N

d. VV = V



white = - (minus)

orange = + (plus)

Caution: Watch for right polarity when you connect the wires again!!!

If there is no label on the wire, please labelling correctly by yourself!!!

For installation of a new valve you must go to the inverse order.

16. Connect the 2 connecting wires on the AV Valve

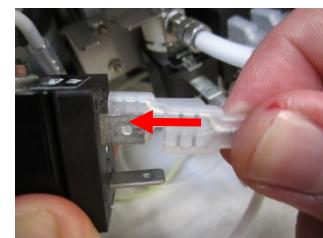
white = - (minus)

orange = + (plus)

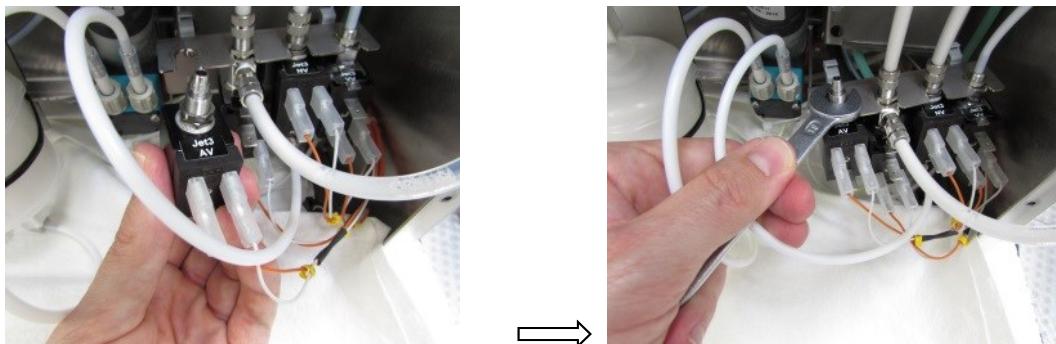
Caution:

**Watch for right polarity when you connect
the wires again!!!**

**If there is no label on the wire, please
labelling correctly by yourself!!!**



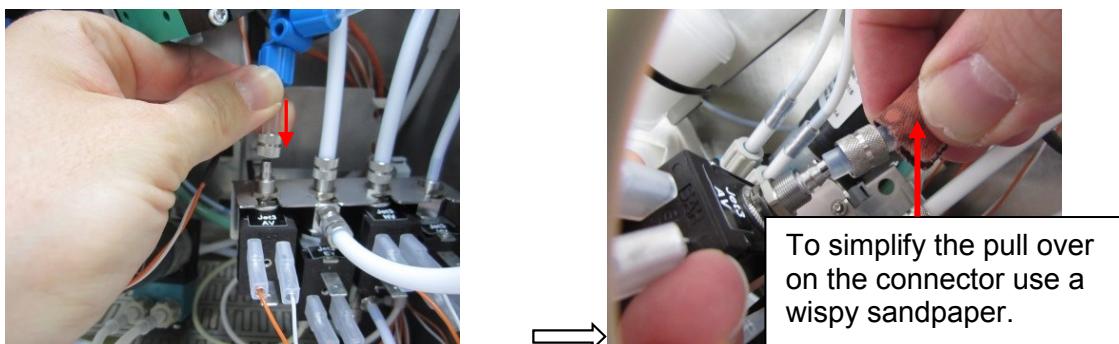
17. Put the new AV Valve in the frame again and tighten the screw connection with a jaw spanner (SW 10mm).



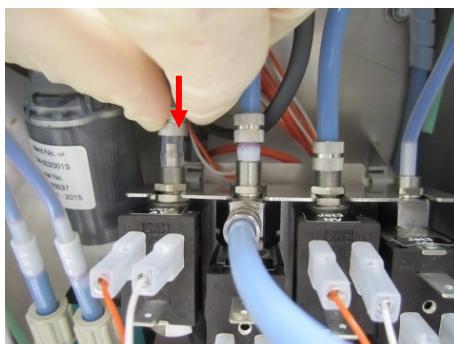
Caution

**To guarantee density of the hydraulic system it is absolutely necessary to cut off the last piece of the tube which was damaged by strip the tube.
In case that the tube is too short you must change the hole tube!!!**

18. Pull over the Tube on the connector.

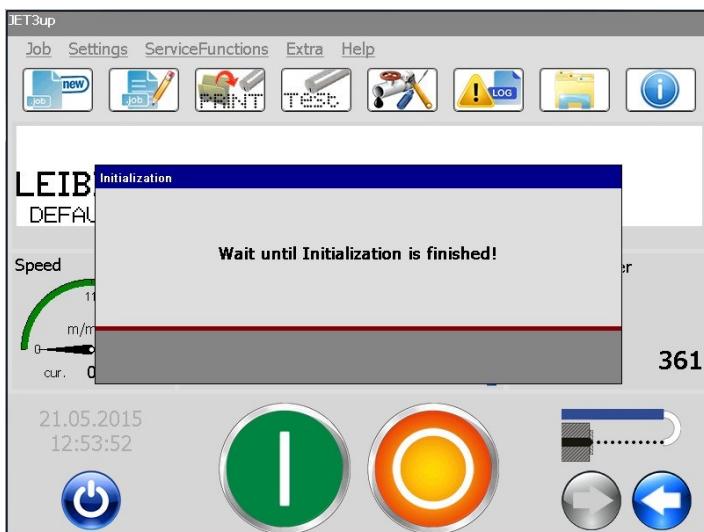


19. Tighten the screwcap again.



20. Carry out a visual leak test, afterwards fix main pump, suction pump and the frame with the valves on the top-hat rail, again.

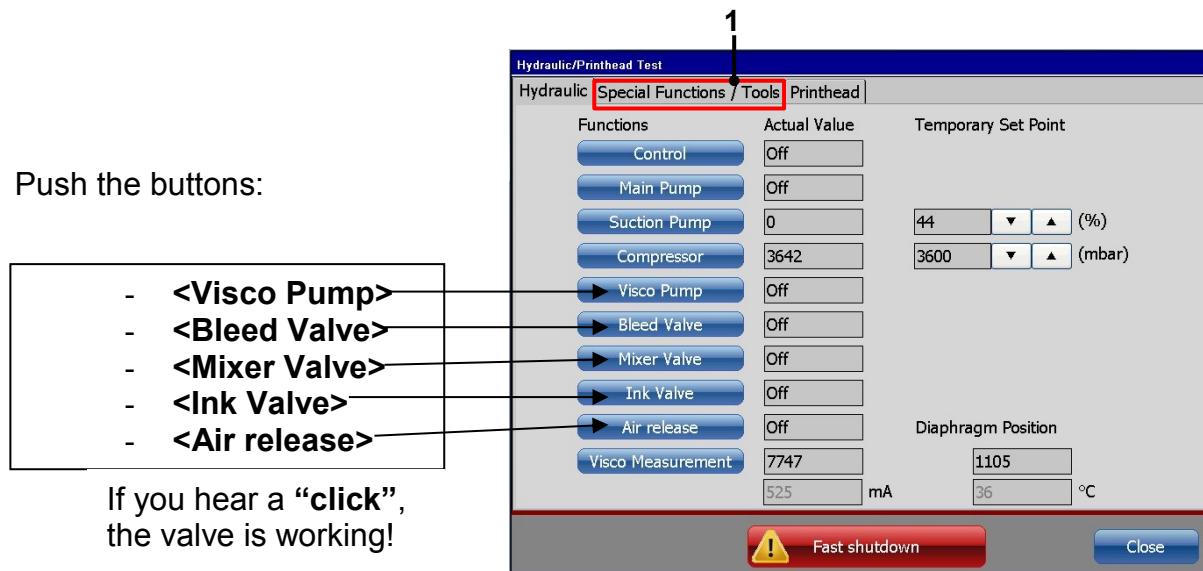
21. Plug in the mains plug.
22. Switch on the JET3up and wait for the boot-process.
23. Switch on the JET3up again. The following message appears:



24. Confirm this message with <OK> (1)



25. Test the reliability performance of the valves in menü <Special Functions/Tools> (1).



26. Switch on the button <Control> (1).



27. Test the reliability performance of the valves, again.

28. Switch off the JET3up and switch on again (wait for the bleed cycle).

29. Check, if the JET3up is working well.

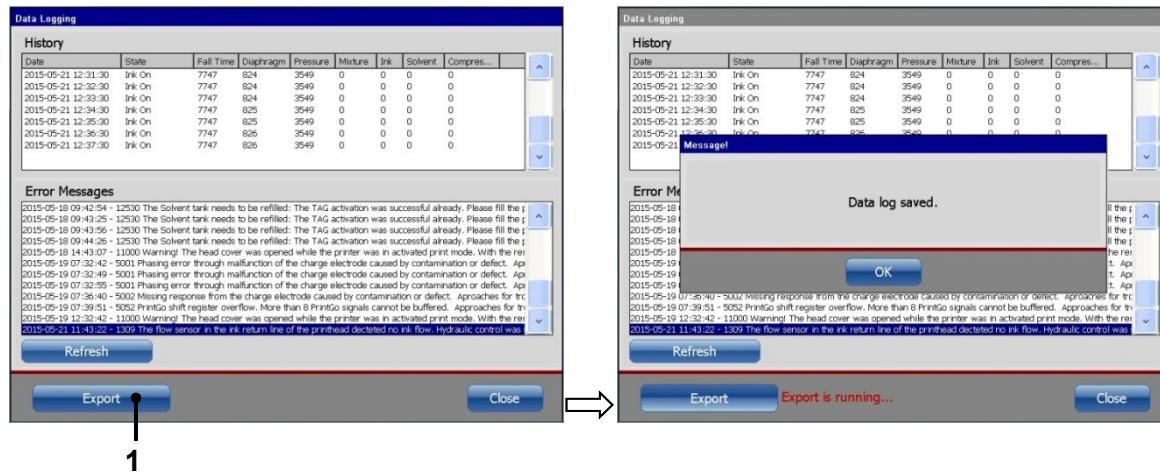
7.10 Electronics

1 Save data log-file

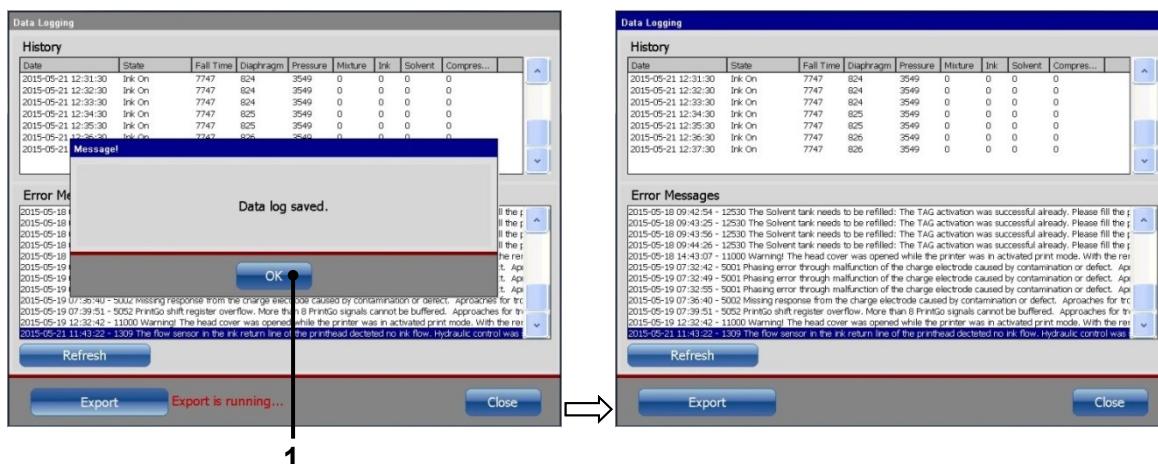
1. Switch on the JET3up.
2. Plug in an USB - Stick on the backside.
3. Push the button <Data Logging> (1).



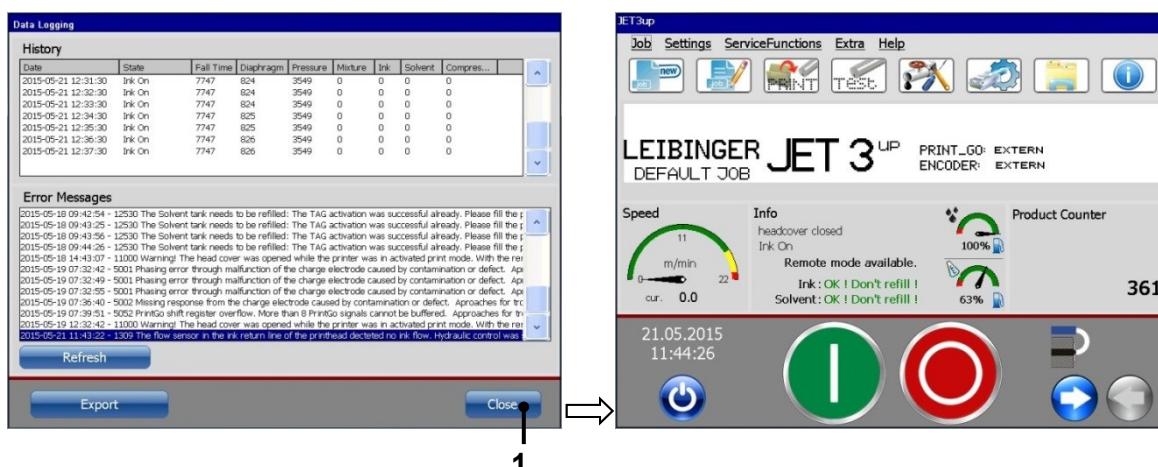
4. Push the button <Export> (1) in the menu <Data Logging>.



5. Confirm with the button <OK> (1).



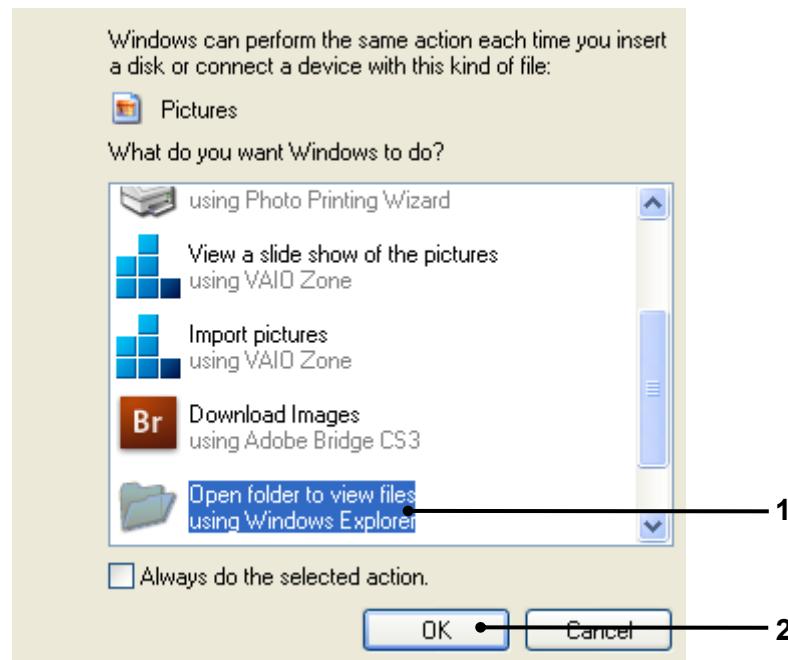
6. Push the <Close> (1) button to close the <Data Logging> menu.



7. Unplug the USB – Stick from the printer.

8. Plug in the USB – Stick to your computer.

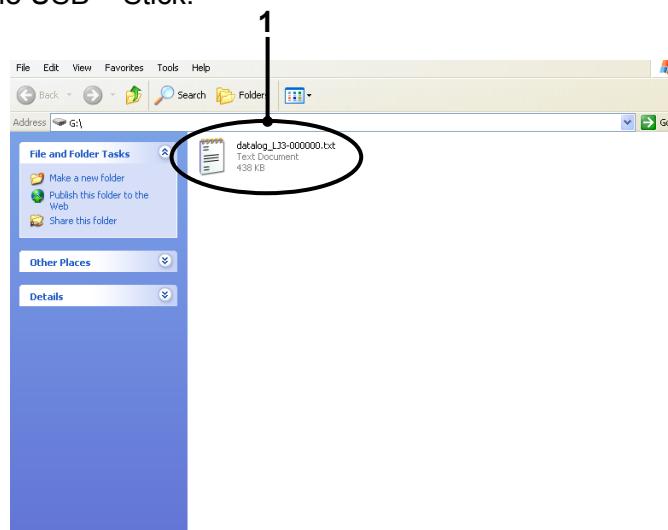
9. Select the direct button <Open folder to view files> (1) and confirm with <OK> (2)



1 – Direct button <Open folder to view files>

2 – Button <OK>

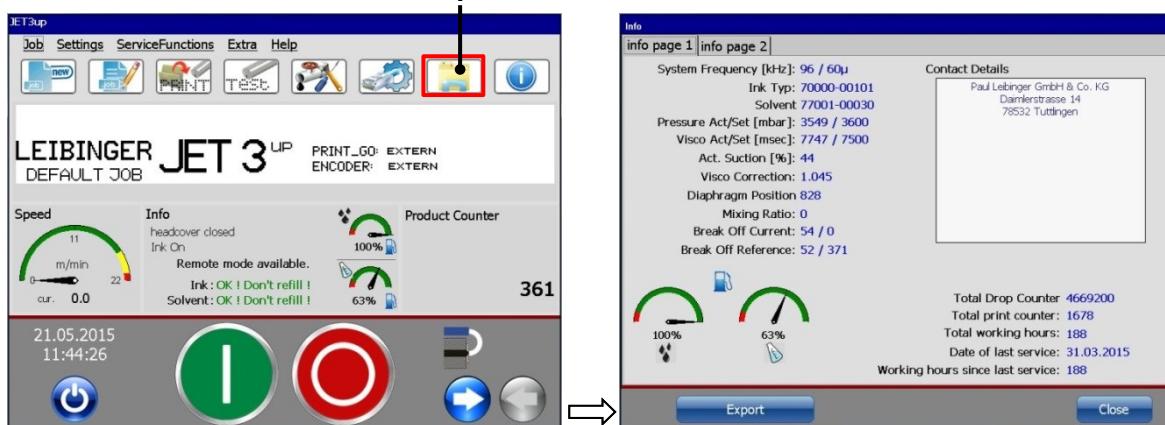
10. The directory <datalog_LJ3> (1) with serial number of the printer is now saved and available on the USB – Stick.



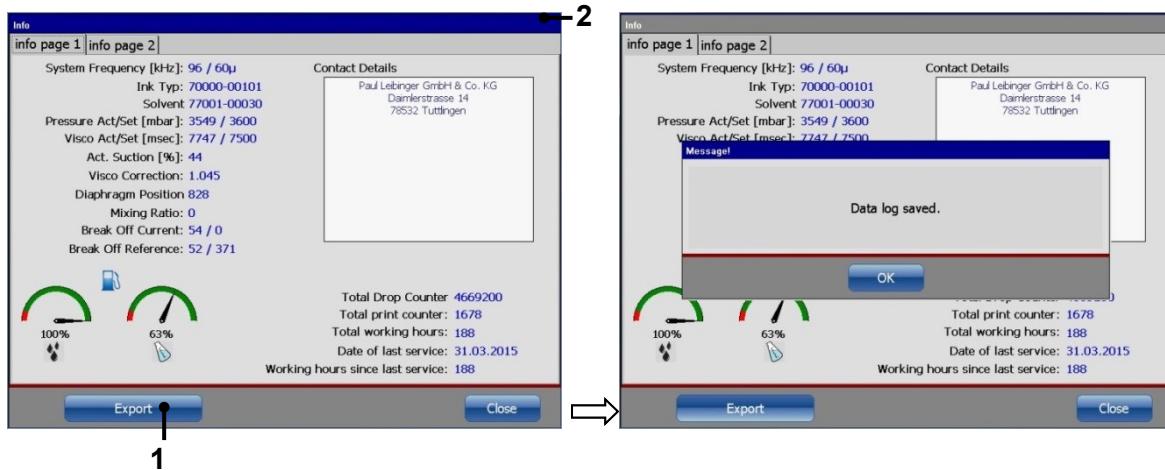
2

Save info

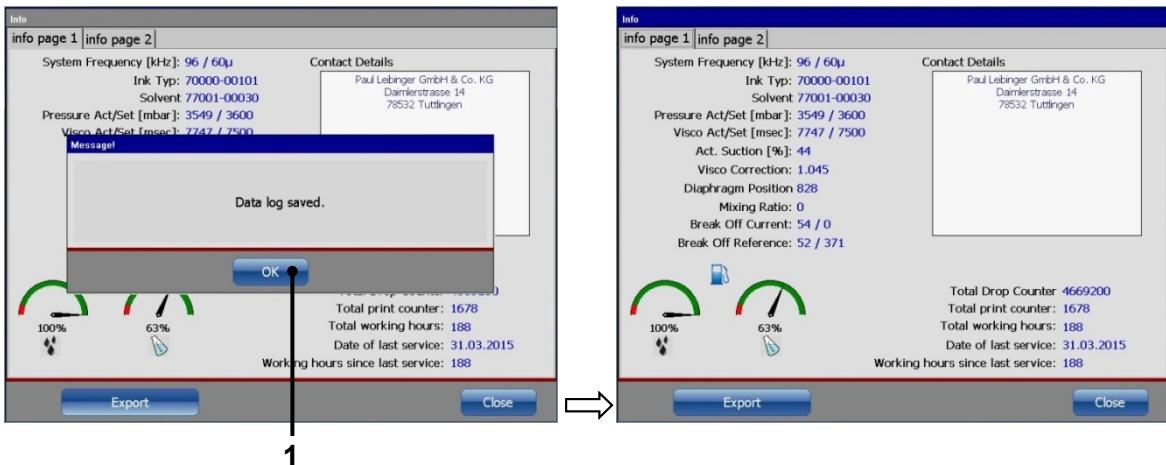
1. Switch on the JET3up.
2. Plug in an USB - Stick on the backside.
3. Push the softkey <Info> (1).



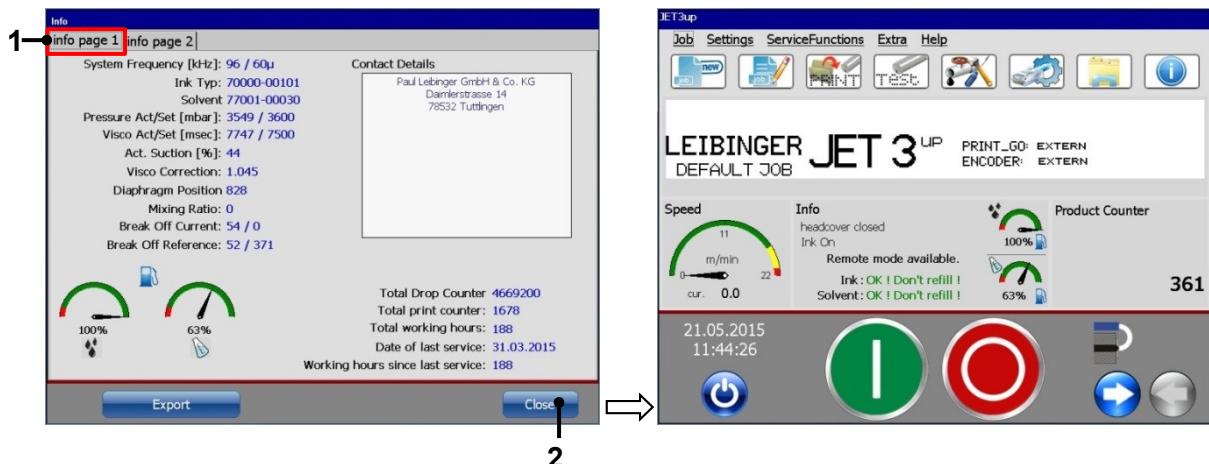
4. Push the button <Export> (1) in the <Info> menu (2).



5. Confirm with the button <OK> (1).



6. Close the <Info> menu (1) with the <Close> button (2).



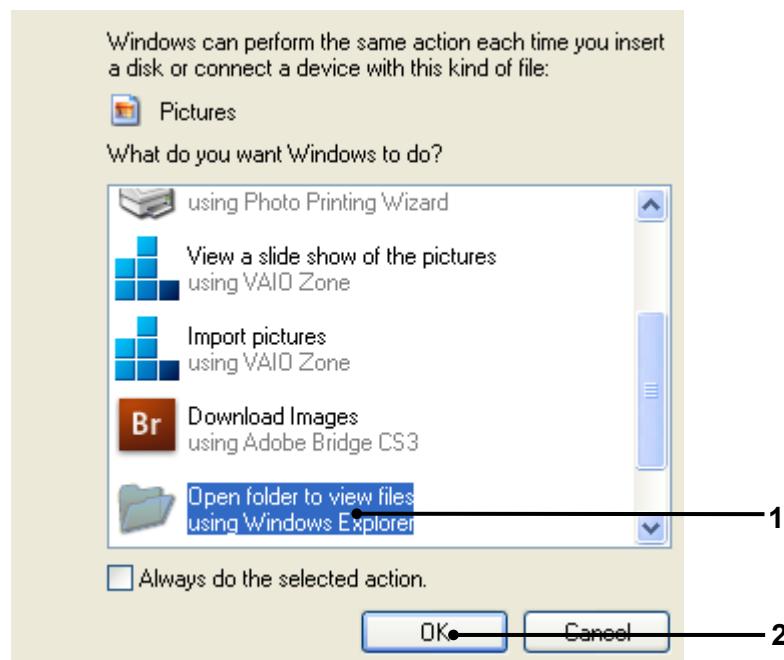
1 – Menu <Info>

2 – Button <Close>

7. Unplug the USB – Stick from the printer.

8. Plug in the USB – Stick in your computer.

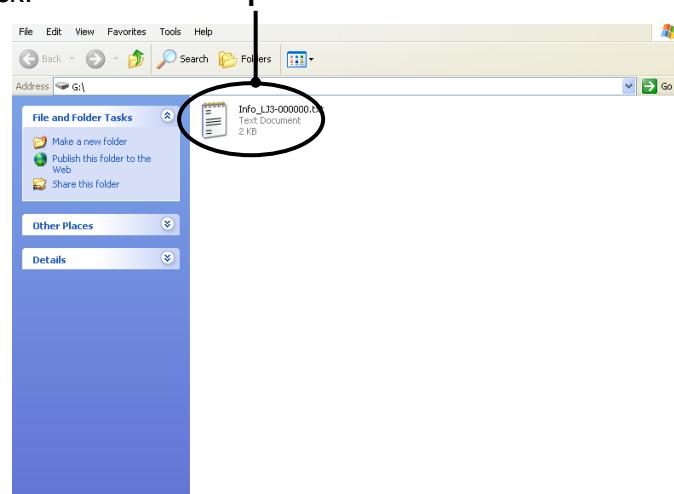
9. Select <Open folder to view files> (1) and confirm with <OK> (2).



1 – Direct button <Open folder to view files>

2 – Button <OK>

10. The directory <Info-LJ3> (1) with serial number of the printer is now saved and available on the USB – Stick.

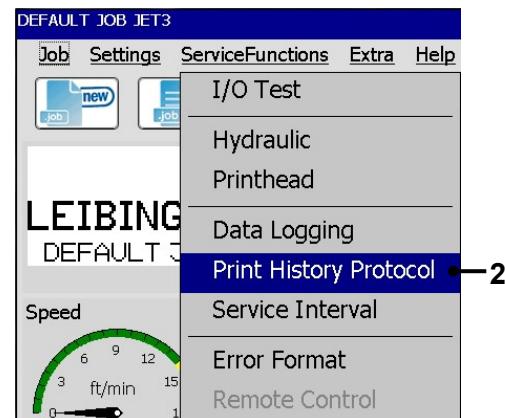


3**Save prod. history file**

1. Switch on the JET3up.
2. Plug in an USB - Stick on the backside.
3. Open the drop-down menu <ServiceFunctions> (1) and select <Print History Protocol> (2).

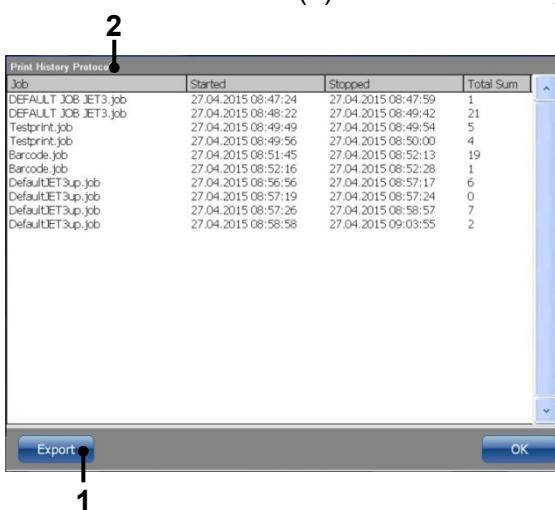


1 – Menu <ServiceFunctions>



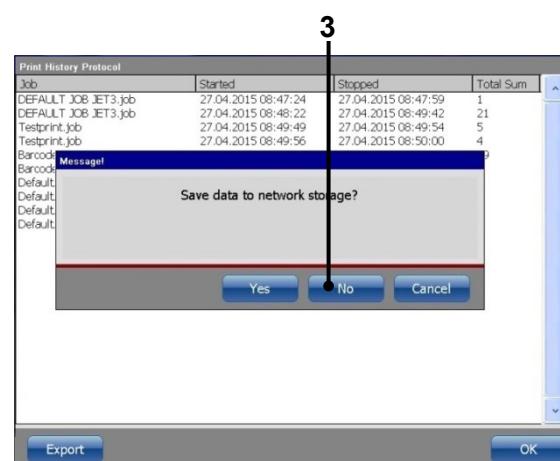
2 – Option <Print History Protocol>

4. Push the button <Export> (1) in the menu <Print History Protocol> (2).
5. Push the button <No> (3). The Print History Protocol will be safe on the USB Stick.



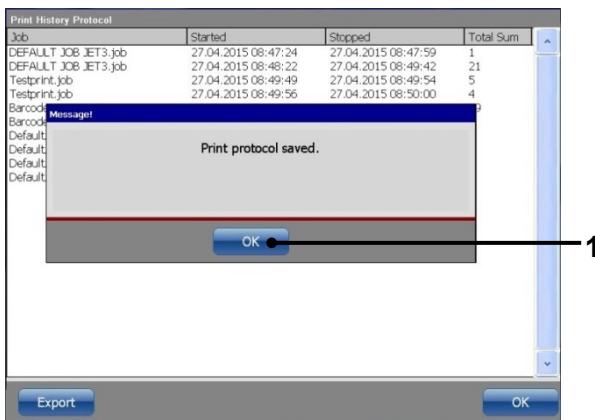
1 – Button <Export>

2 – Menu <Print History Protocol>



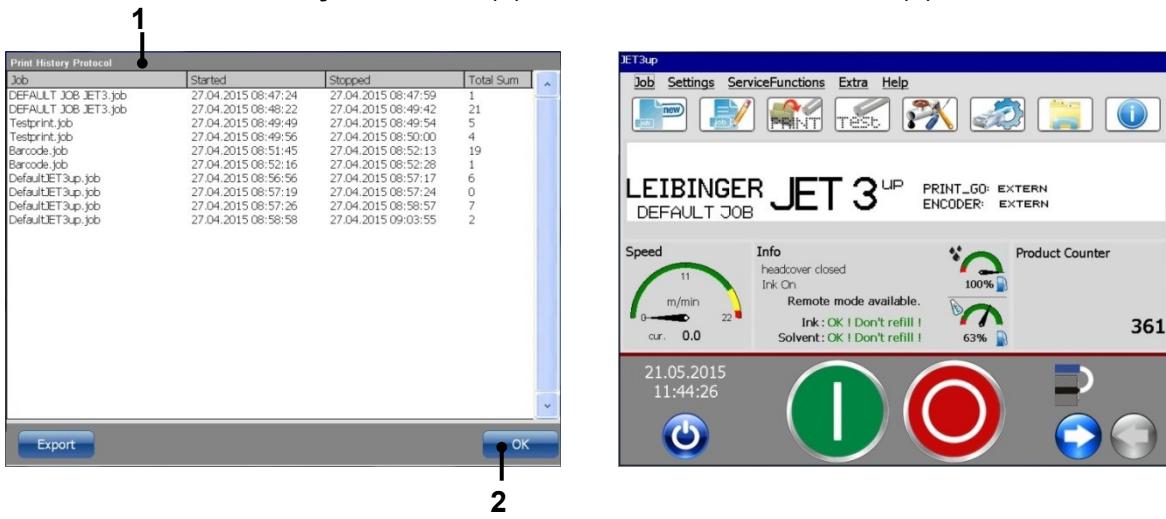
3 – Button <No>

6. Confirm with the <OK> button (1)



1

7. Close the <Print History Protocol> (1) menu with the <OK> button (2).



1

2

1 – Menu <Print History Protocol>
2 – Button <OK>

8. Unplug the USB – Stick.

9. Plug in the USB – Stick in your computer.

4**Exchange power supply****!Attention!**

These activities, may be carried out only by authorised specialist staff or by a Leibinger service engineer.

By non observance, danger of deadly injuries!

**Caution**

**Also with unplug the net line, rest voltage on the electronics, can exist.
Attention: Deadly danger!**

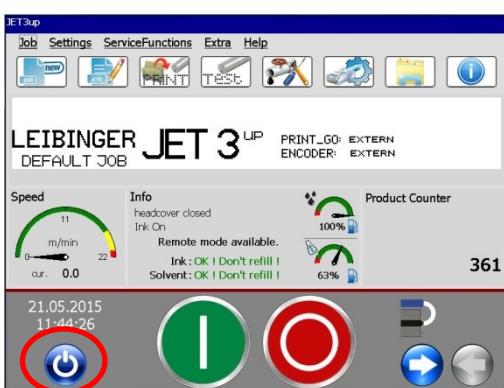
Procedure:

Net plugs from the net distinguish and wait approx. for 60 sec. before every activity, in the electronics.

Info:

The JET3up printer does not have a main switch or changeable fuses.

1. Switch off the JET3up System



Switch off the JET3up

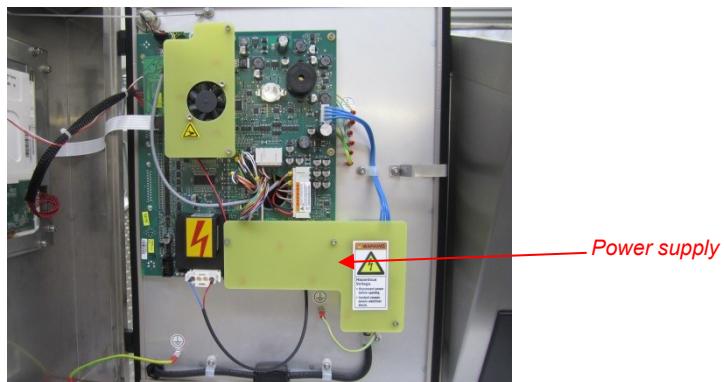
2. Remove the mains plug.



3. Open the front door with a 4mm allen wrench.



4. You will find the power supply in the right down corner inside of the electronic cabinet.

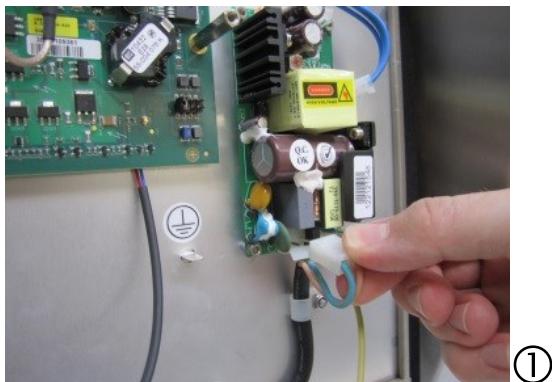


5. Remove the cover of the power supply. Unscrew the 3 screws with the 2,5 mm allen wrench.



6. Disconnect the following wire connections:

Power supply input



The main connection plug is
marked with brown (L) and blue (N)

Power supply output

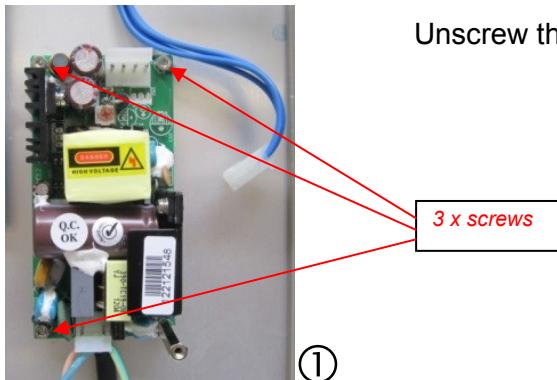


Ground

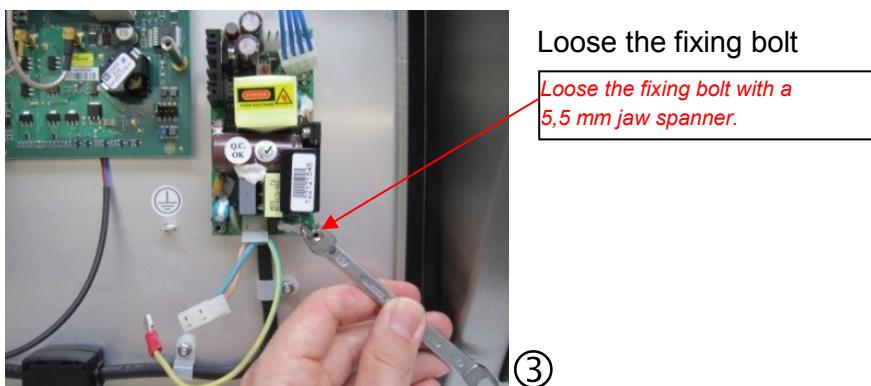
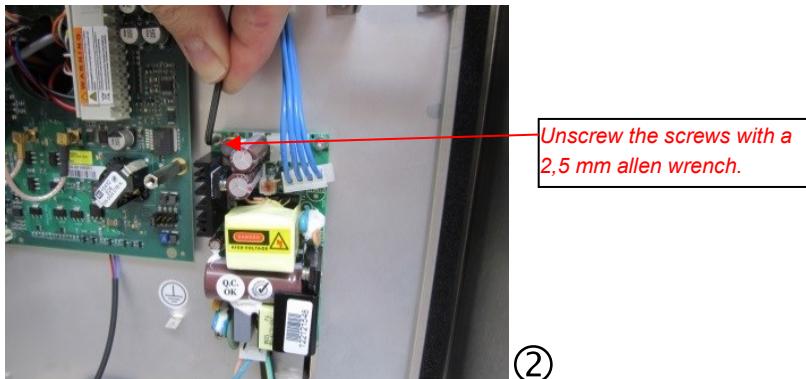


The ground cable is marked (green / yellow)
With the following symbol:

7. Remove the socket of the voltage supply



Unscrew the 3 screws for the attachment.



8. The main power supply type for correctness examine:
JET3up Mainpower Supply
Part No: 55-006927 S



9. The installation for the new power supply takes place in the reverse order.
10. A functional test carry out:
The net plug in the outlet put. The JET3up systems begins the boot process and then goes automatically in the Standby mode.
Now the LEDs V2-189 and V3-681 must shine green on the main platinum.



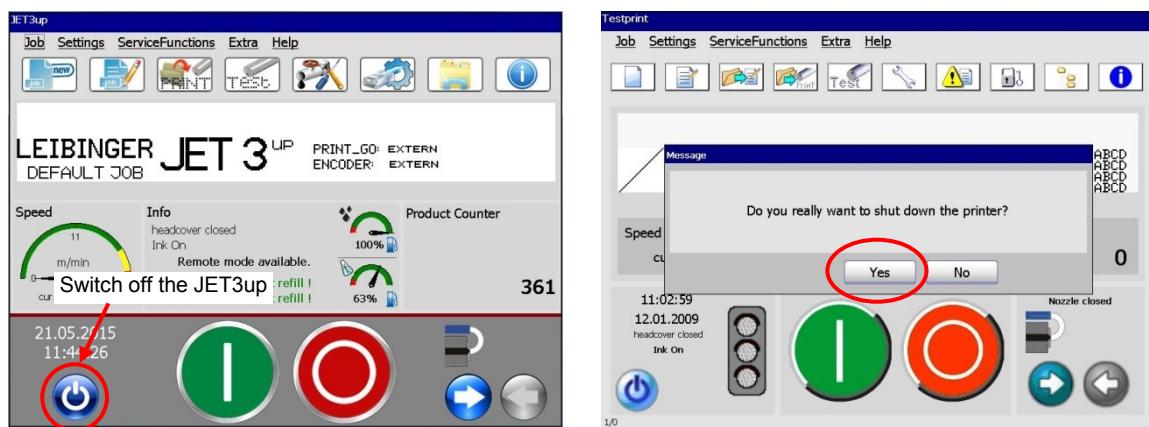
Attention

After the installation of a new power supply you must conduct an isolation measurement!!!

5

Exchange touch display

1. Switch off the JET3up.



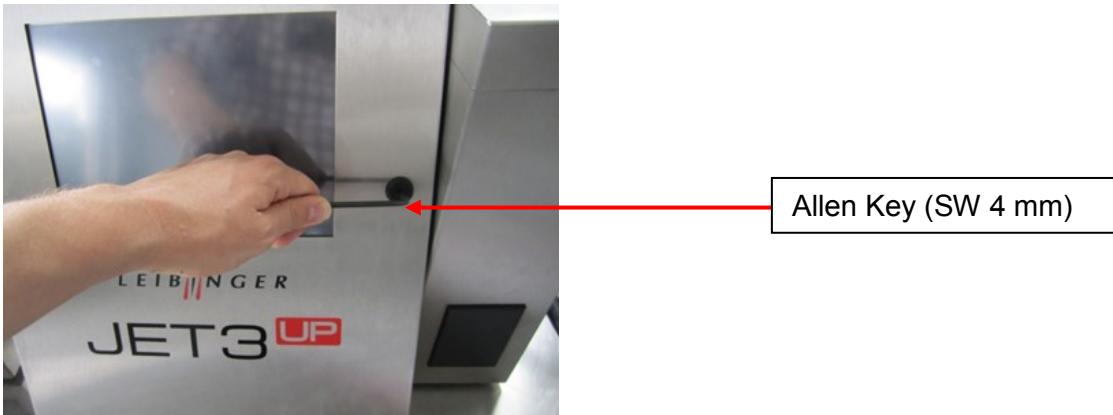
2. Remove the main plug.



Dangerous electrical voltage!

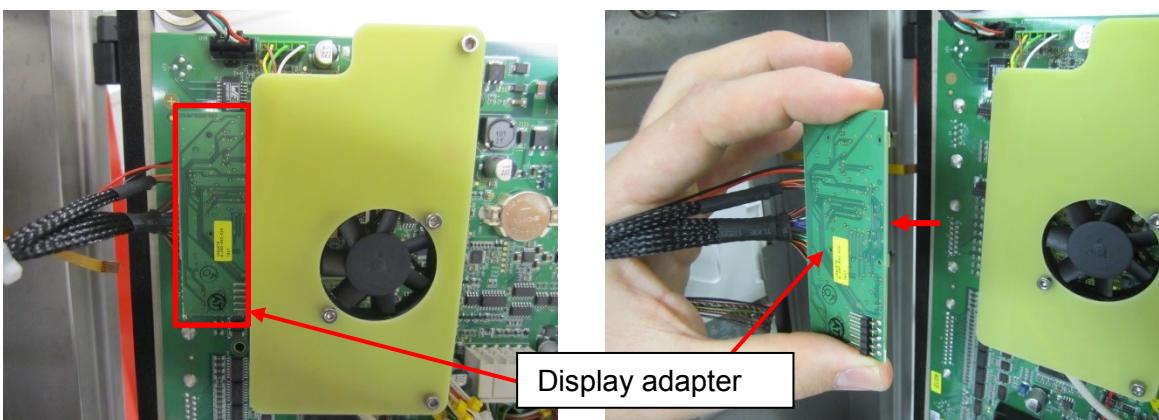
Contact causes serious injuries through an electric shock! Disconnect the device from the voltage supply by remove the main plug before you open the electronic cabinet!

3. Open the front door of the electronic cabinet

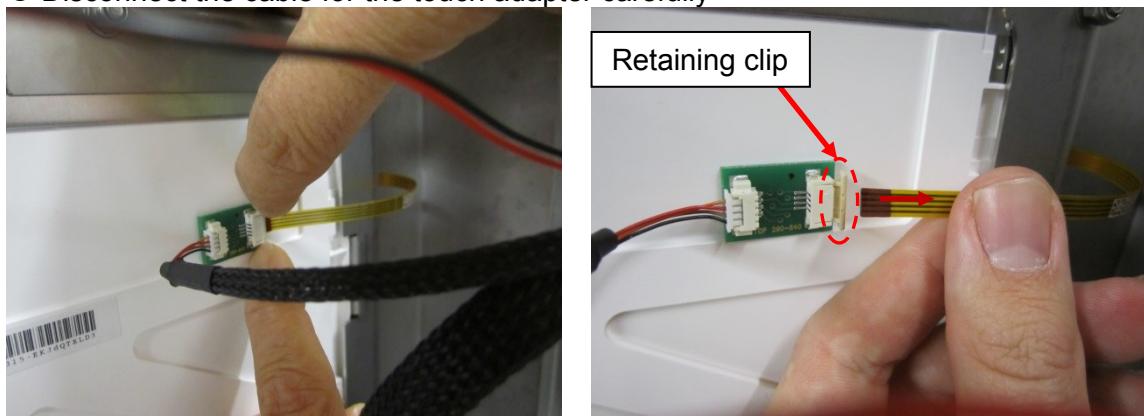


4. Disconnect the display adapter between the display and the controller board

① Disconnect the display adapter from the controller board



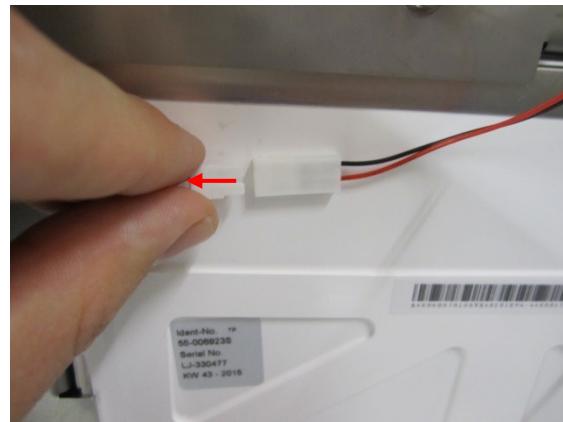
② Disconnect the cable for the touch adapter carefully



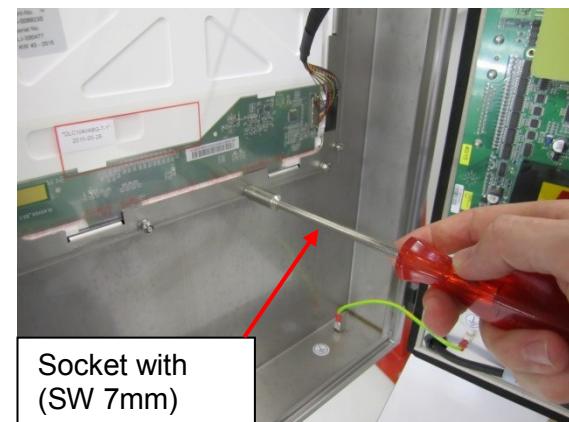
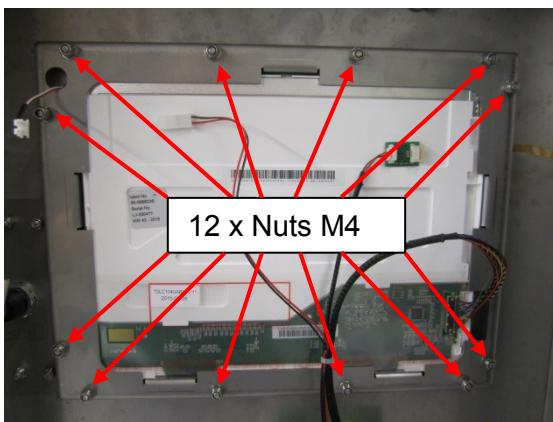
Push carefully the retaining clip out of the connector.

Pull the ribbon cable carefully out of the connector.

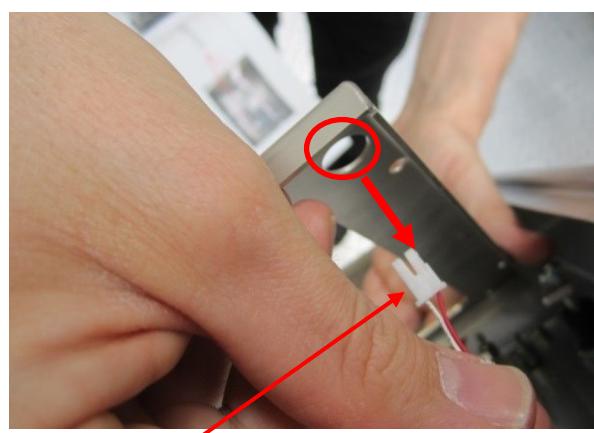
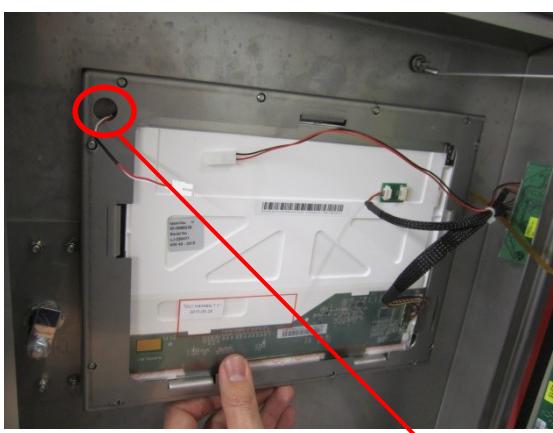
③ Disconnect the cable for the display illumination



5. Unscrew the 12 nuts of the display mounting frame



6. Remove the frame carefully



Pull the cable for the display illumination carefully throughout the hole of the frame.

7. Extract the display out of the notch:

You don't have to remove the spacers and the washers!
So take care that they don't fall down from the thread bolts!



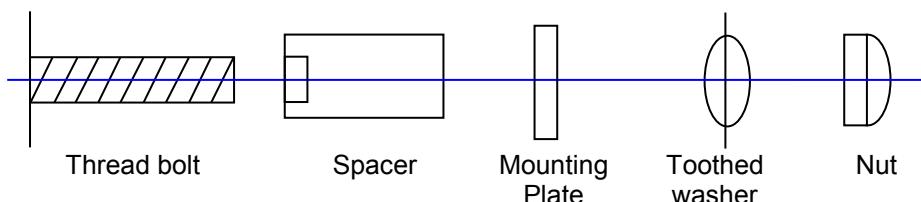
Attention

After removing the frame the display is not fixed anymore. So you must take care, that the display can not fall out of the notch!!!

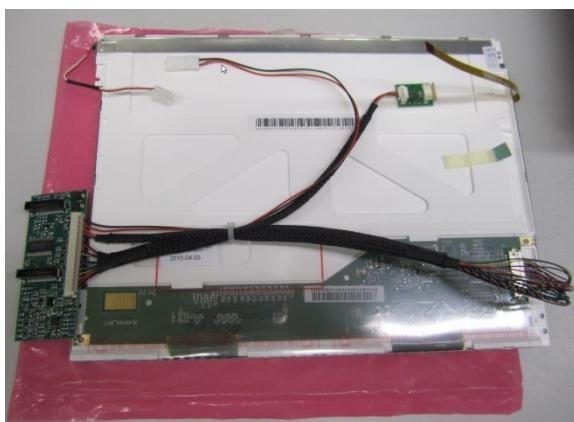


Installation of the new display

Disposition of the thread bolts :

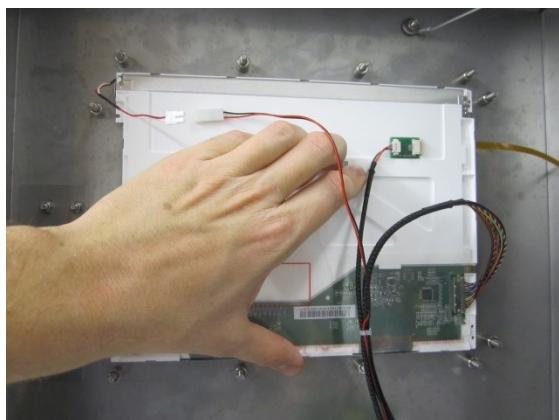


Unpack the new display

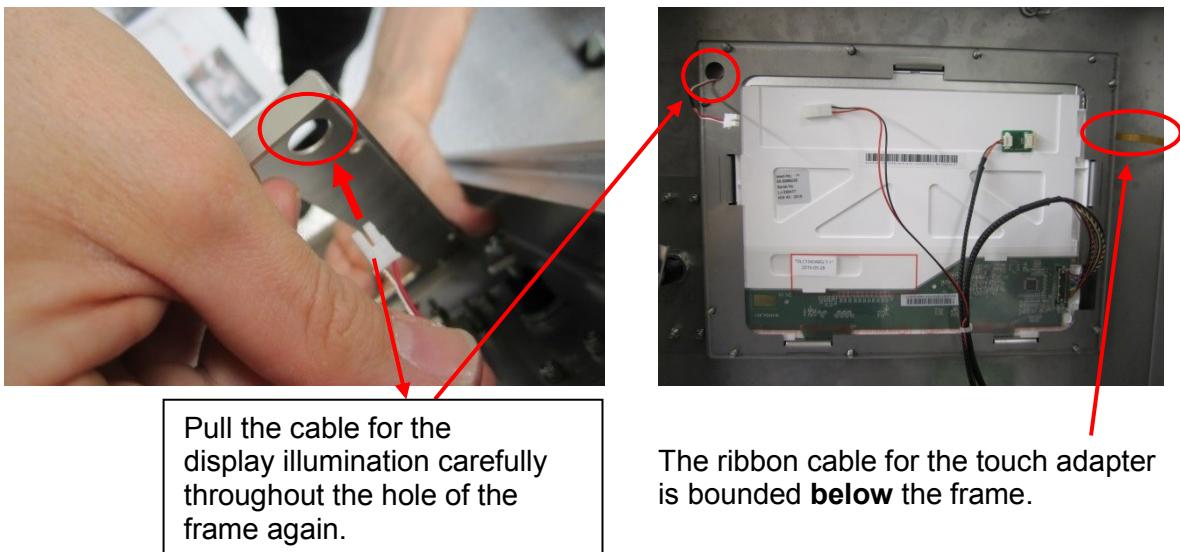


Delivery status

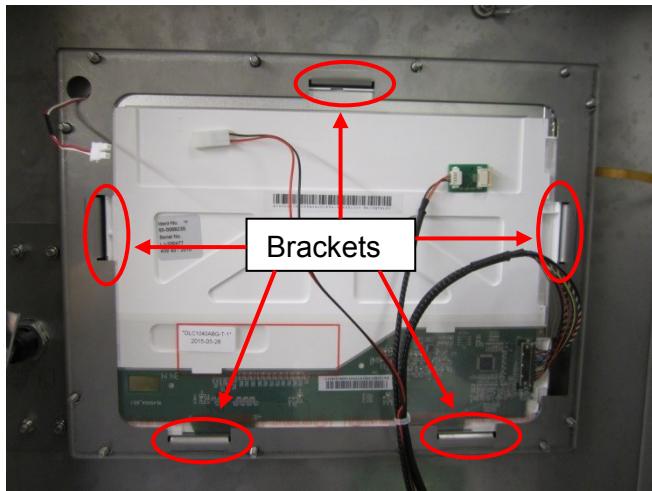
1. Put in the new display carefully inside the notch.



2. Put the frame on the display again



Arrangement of the display



Place the display inside of the 5 brackets.

The brackets make sure that the display is automatically placed in the center position of the notch.

3. Fix the Display again



Important notice

**For fixing the display it is absolutely necessary that you use the new M4 nuts which are unused!!!
(They are part of the spare part kit!)**

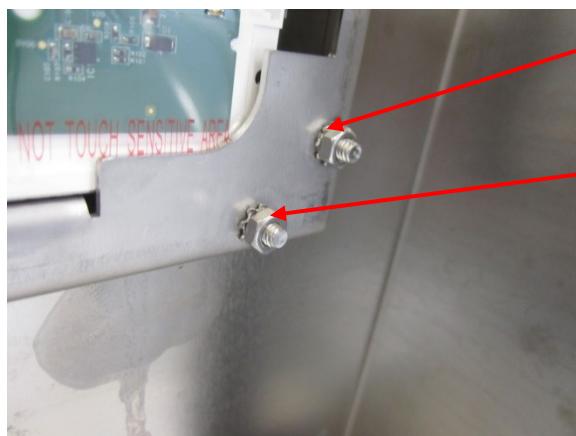
Necessary tools:

Torque spanner with socket nut (SW 7mm)



Important Information

Adjust a torque of 0,33 Nm at the torque spanner!!!



After the frame is put on the display again, put at first the 12 toothed washers and then the 12x M4 nuts on the thread bolts.

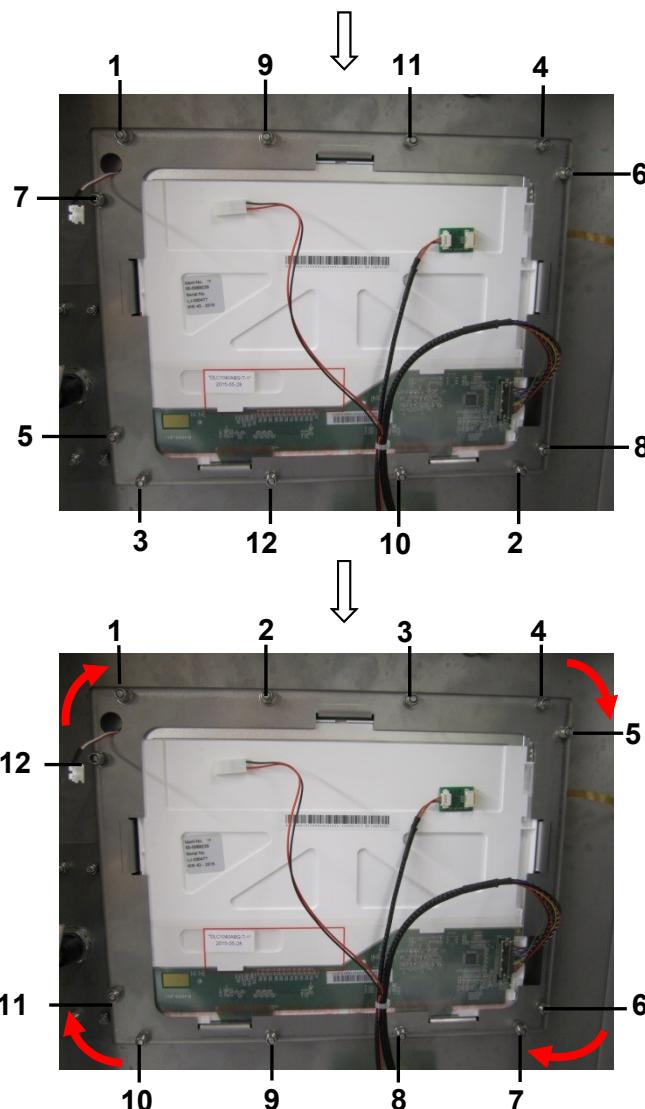
Fix the nuts for the display frame again. **Important:**

First step:

To guarantee that the frame can not become unfastened the nuts must tighten in crossed way.

Second step:

In addition the nuts must tighten in clockwise direction

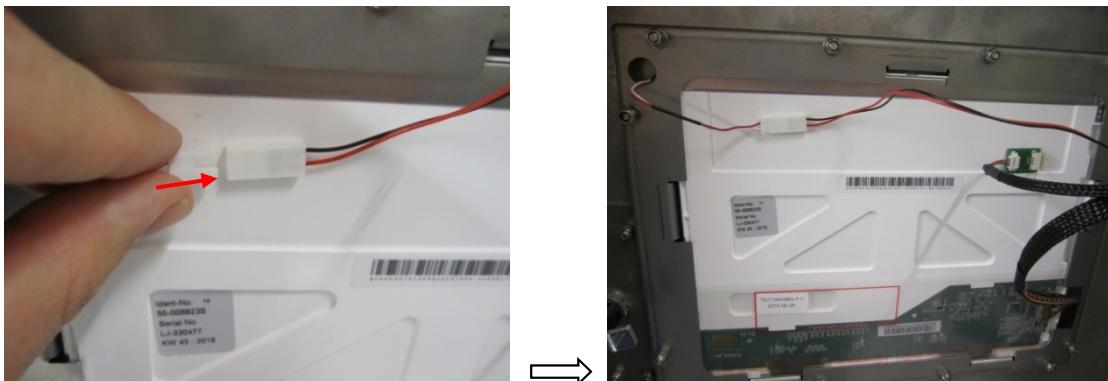


1. Step:
tighten nuts in the
following
torque sequence

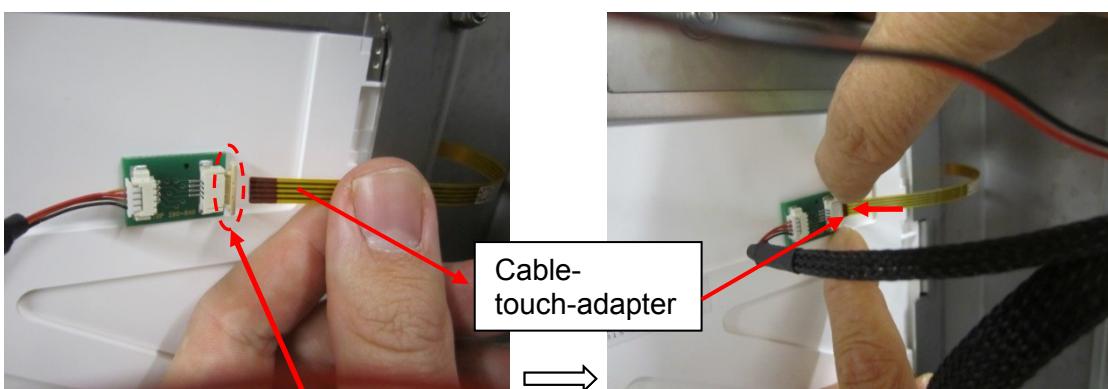
2. Step:
tighten the nuts
clockwise

4. Connect the connector cables between the display and the controller board again.

Connect the cable for the display illumination. **Connect carefully!!!**



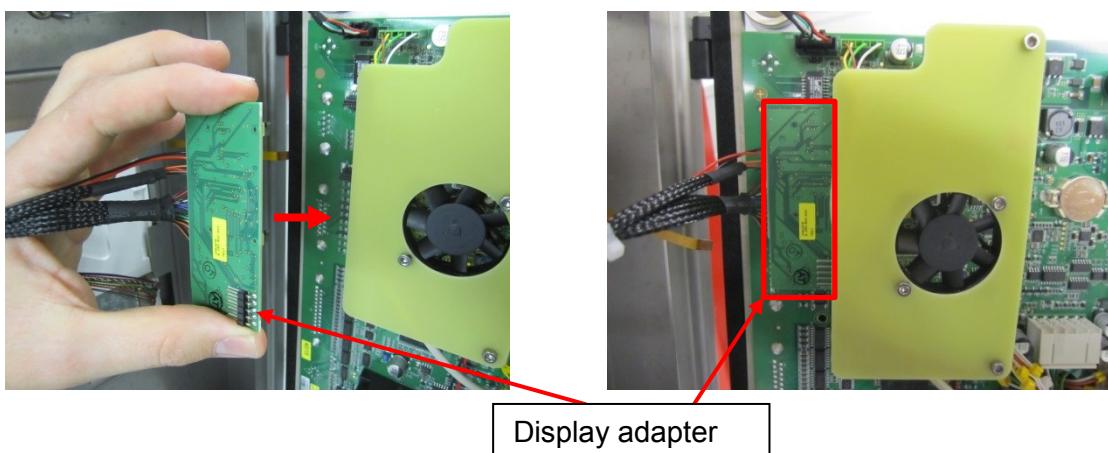
Connect the cable for the touch-adapter



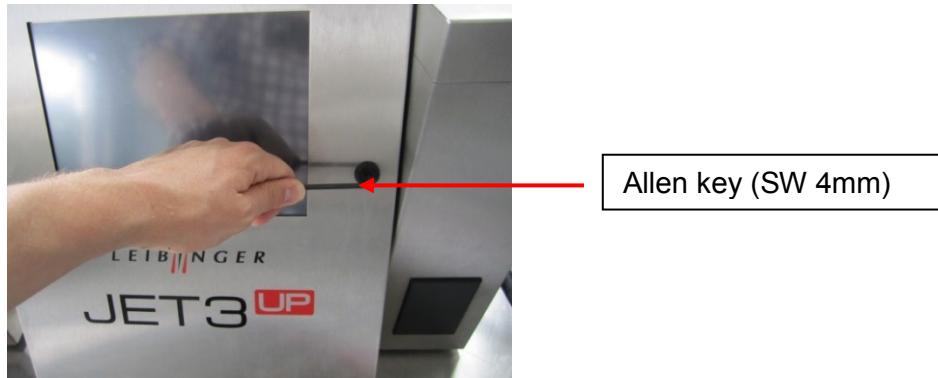
Push carefully the retaining clip out of the connector.

Insert the ribbon cable carefully inside the connector. Push back the retaining clip inside the connector again to fix the cable.

Connect the display adapter to the controller board



5. Check all connector cables again.
If the LCD-display-cable is not connected correctly, the illustration of the display could be defective.
6. Close the front door.



7. Plug in the main plug



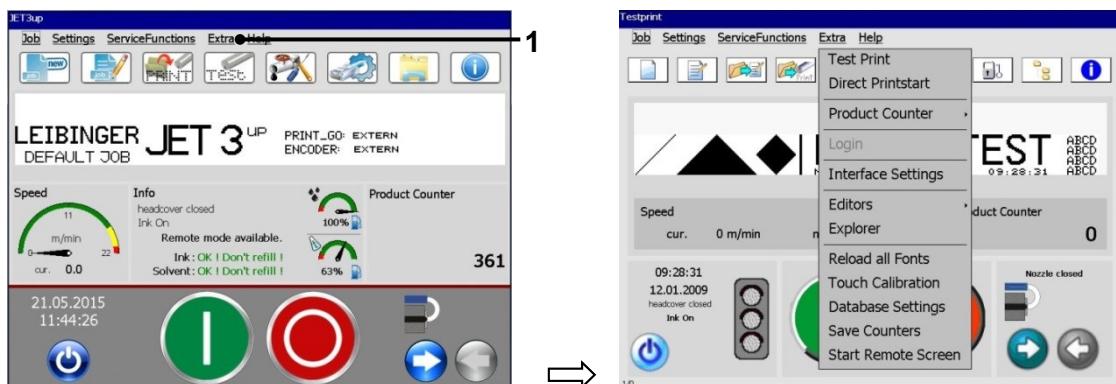
8. Switch on the JET3up and calibrate the touch display.

Needed Tool:

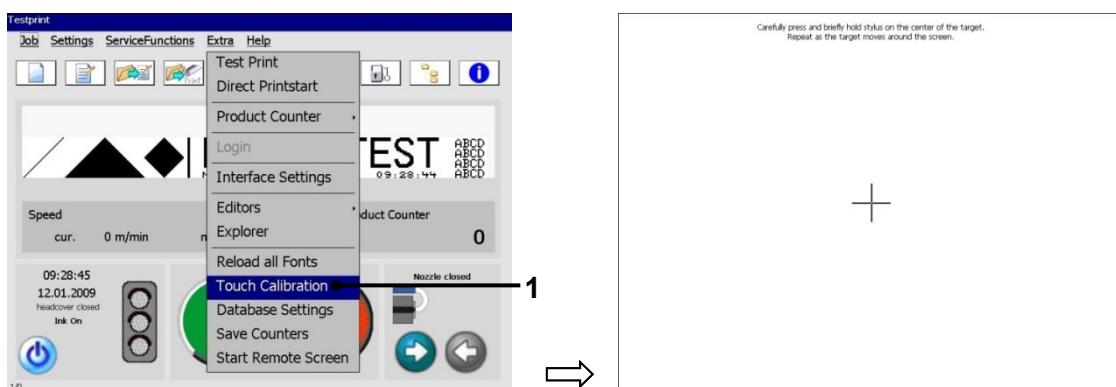


Touch Display Pen
Art. Nr. 54-002763 S

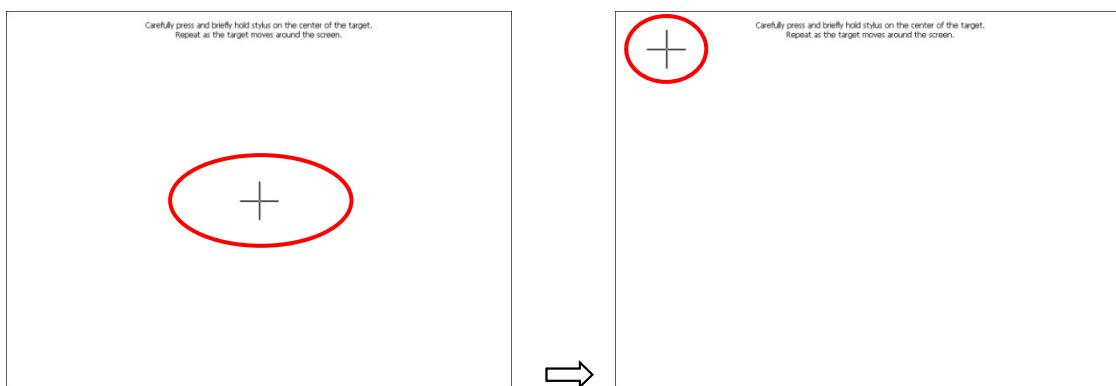
9. Select the menu <Extra> (1).

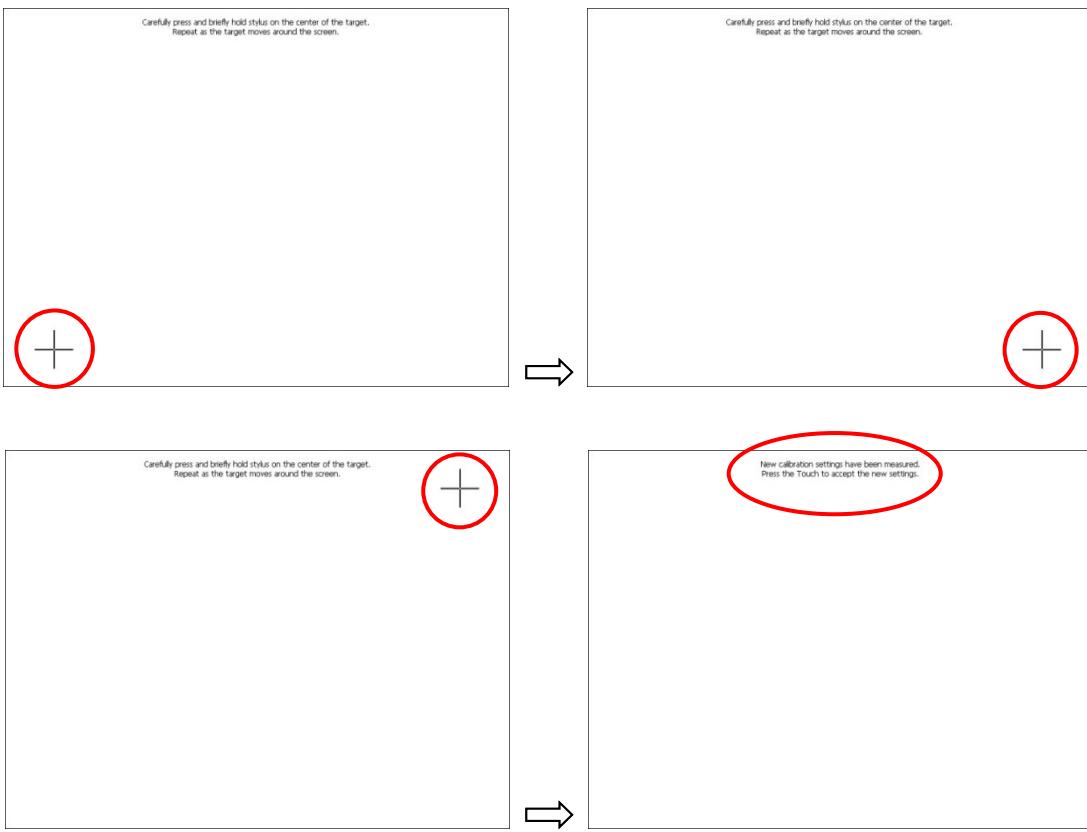


10. Select the option <Touch Calibration> (1).

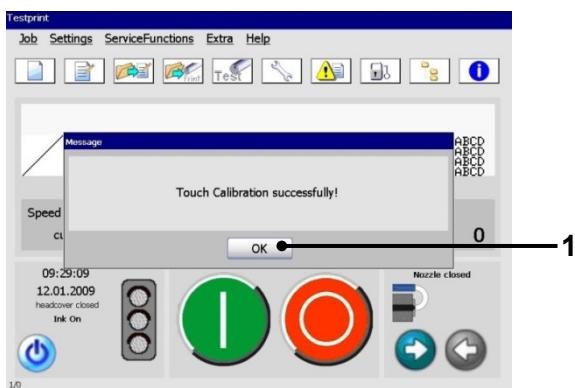


11. Touch in the middle of the crosses with the touch-display pen.





If this message appears, confirm with the button <OK> (1).



12. The touch calibration is successfully carried out now.

6

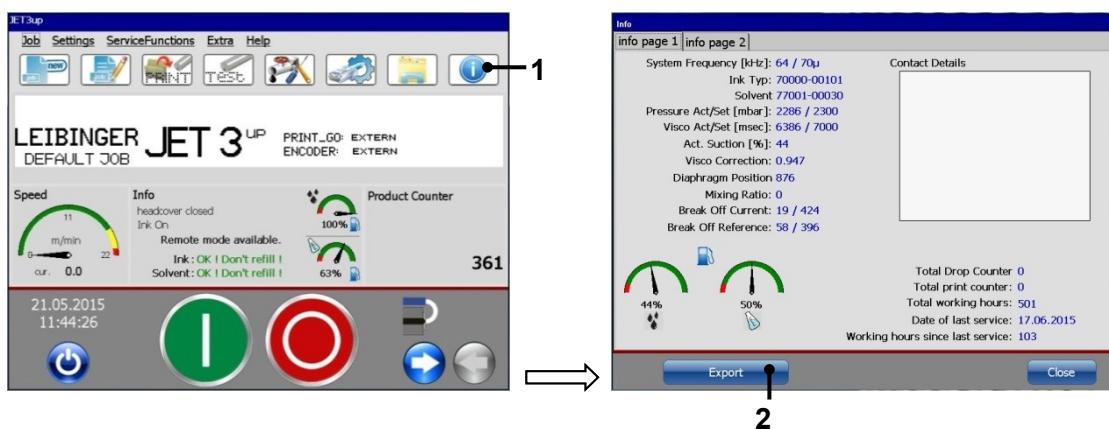
Exchange the controller board

Backup:

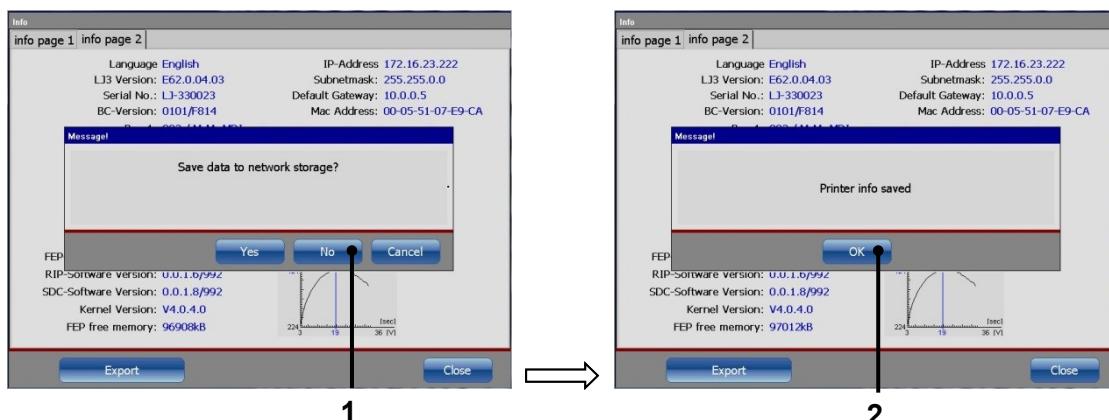
Before changing the controller board, make a backup copy of all the relevant settings from the machine. The new controller board is programmed with default settings from Leibinger. These settings could be different from your original JET3up printer.

- Info window
- Jobs
- Grafics
- Fonts

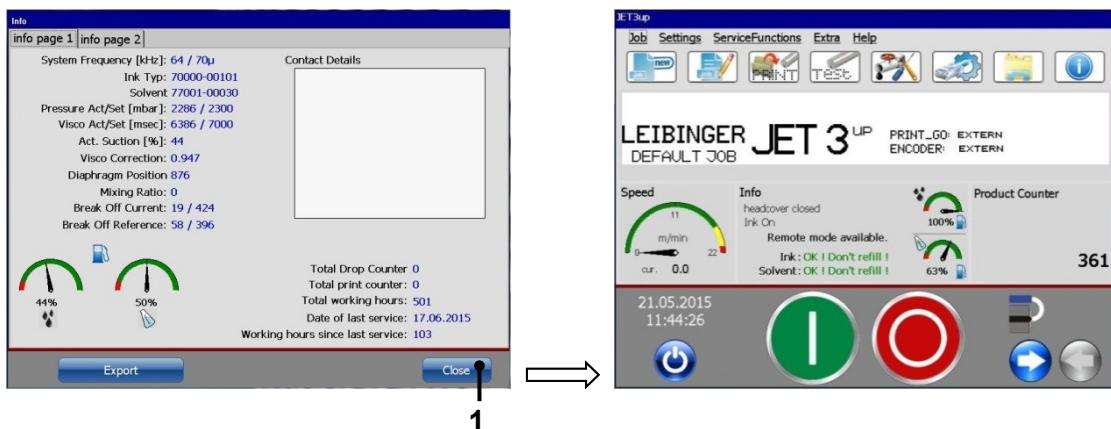
1. Switch on JET3up
2. Plug in the USB - Stick
3. Press the <Info> button (1) to open the info window and press the <Export> button (2).



4. Push the button <No> (1) to save the data on the USB stick. Quit the next message with the button <Ok> (2).

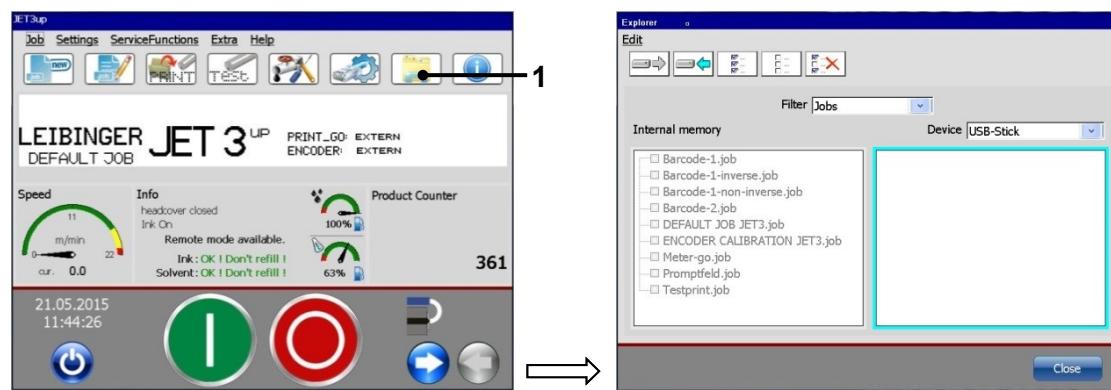


5. The „Info“ window will be close after pressing the <Close> button

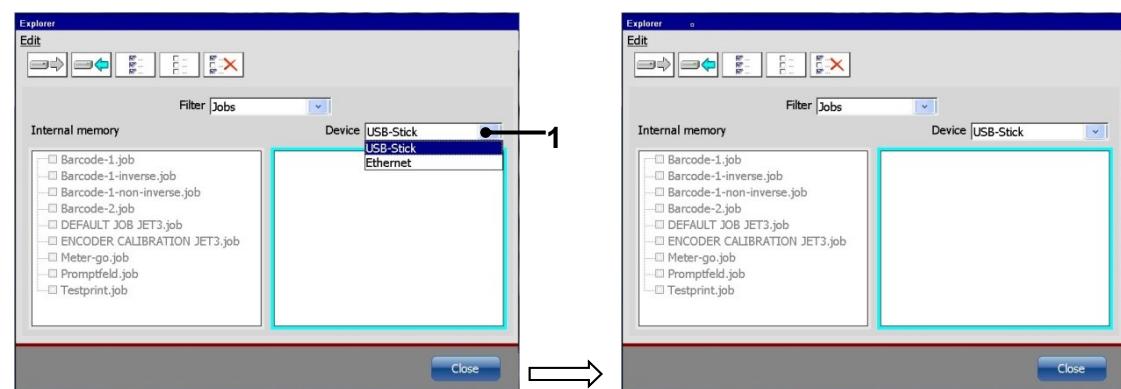


Jobs / Grafics / Fonts backup

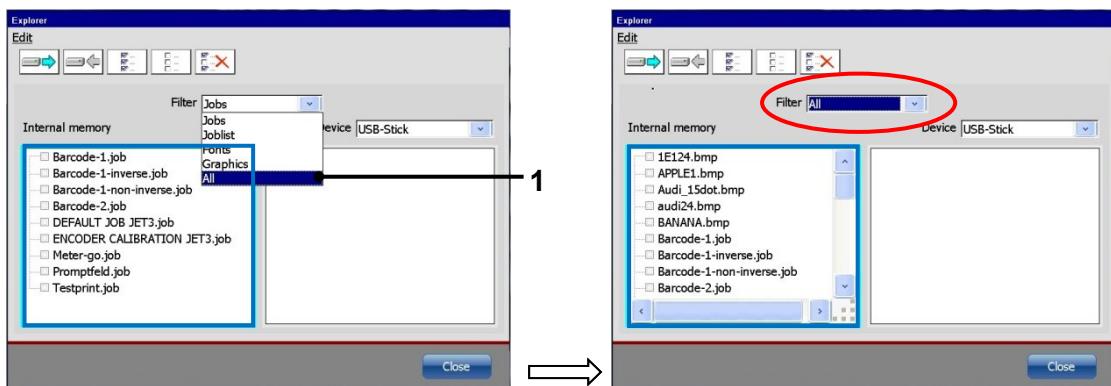
1. Press the <Explorer> button (1) to open the explorer



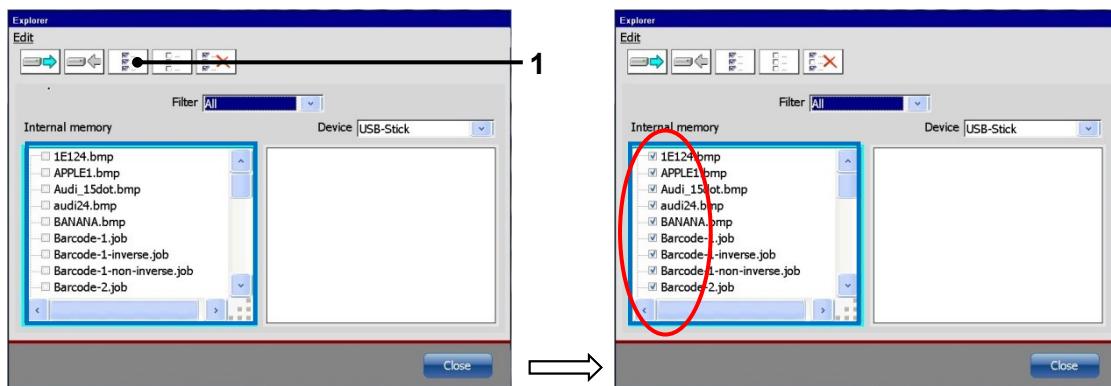
2. Select the <USB – Stick> in the drop down list <Device> (1).



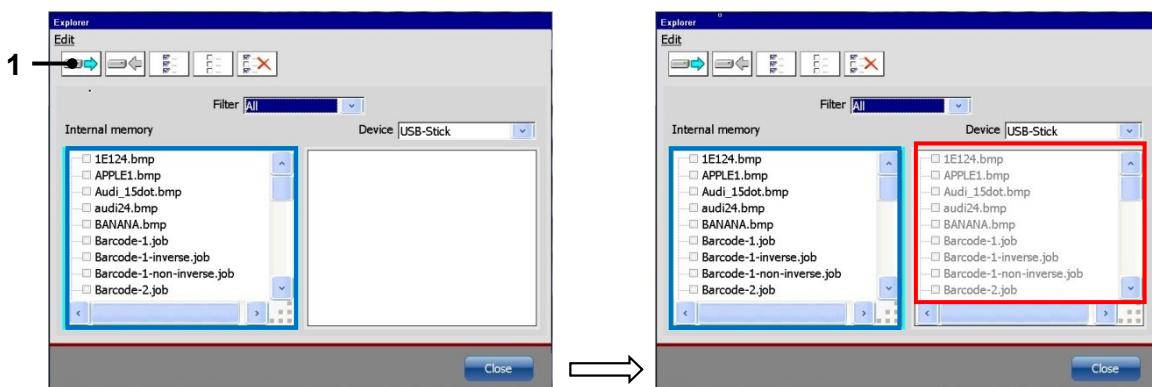
3. Select the option <All> (1) in the “Filter” drop down list



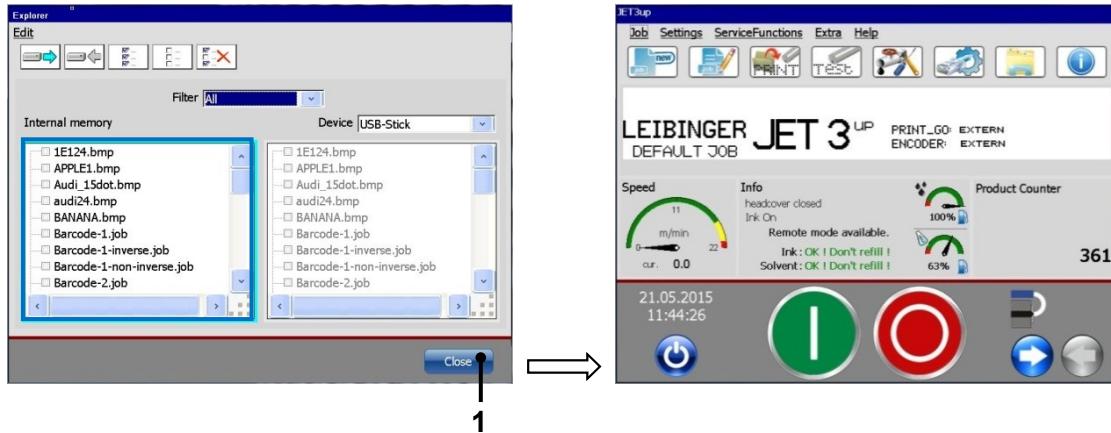
4. Press the button <Select All> (1)



5. Press the button <copy to (external) device> (1)

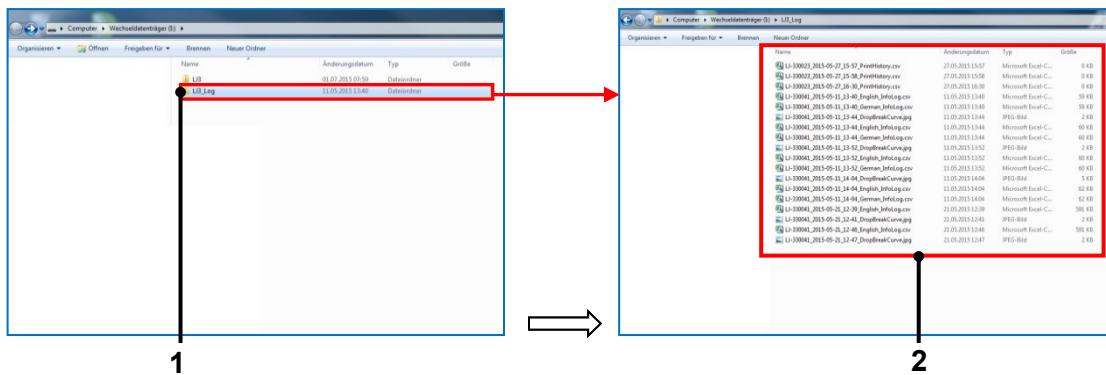


6. After pressing the button <Close> (1), the window will be closed:



- ## 7. Disconnect the “USB – Stick“ from the JET3up

8. Use a PC to check if the backup file has been saved on the “USB – Stick”. Open the directory <**LJ3_Log**> (1) to get the list of all log-files (2).



Change the controller board with the following steps:

Necessary tools:

- Special assembly tool: Art. Nr.: 55-006824 K
- Face pin wrench Art. Nr.: 54-003526 K

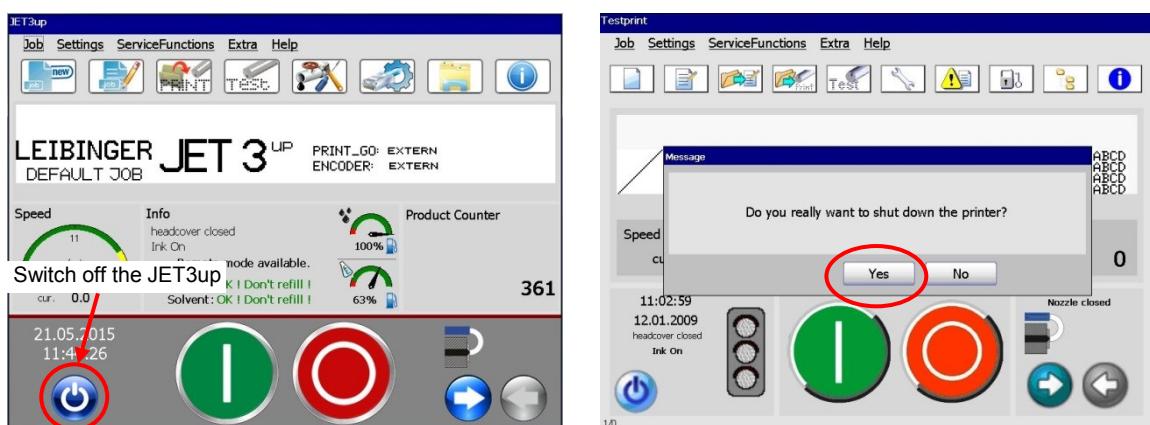


Special assembly tool



Face pin wrench

1. Switch off the JET3up.



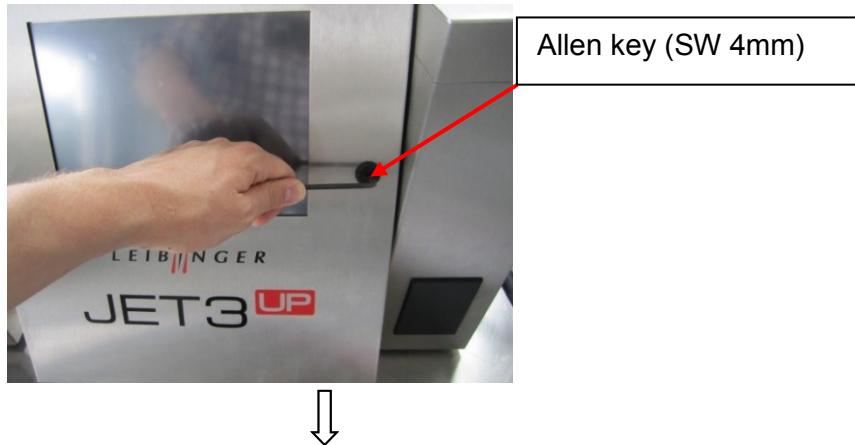
2. Remove the main plug.



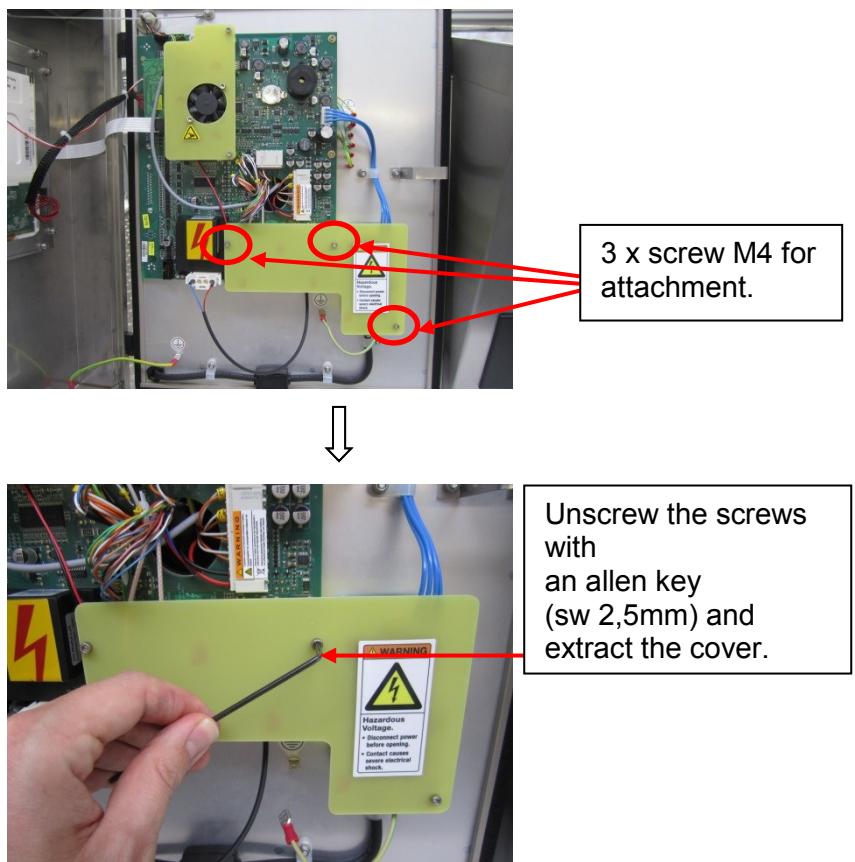
Dangerous electrical voltage!

Contact causes serious injuries through an electric shock! Disconnect the device from the voltage supply by remove the main plug before you open the electronic cabinet!

3. Open the front door of the electronics cabinet



4. Remove the cover of the power supply

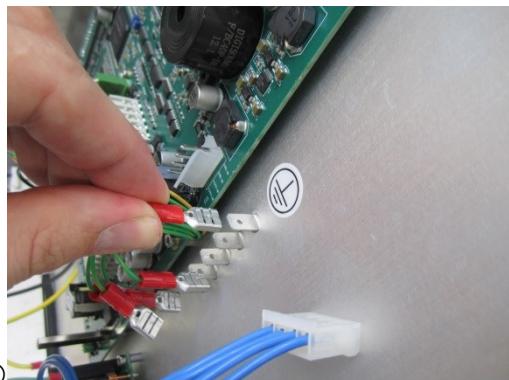


5. Disconnect the wires for the cable connection



①

Disconnect the power connector XS3 of the board



Disconnect the ground wire right of the board



③

Disconnect the ground wire below the board

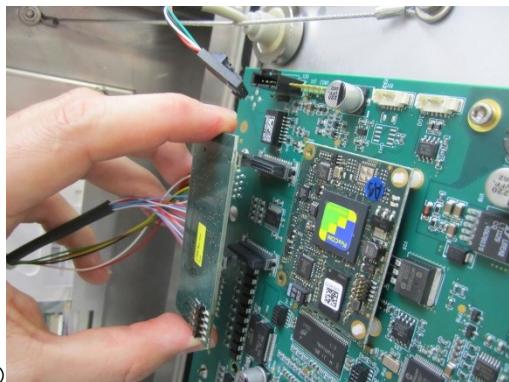


Disconnect the USB-connection X20



⑤

Disconnect the cable for the Tag Reader interface X17

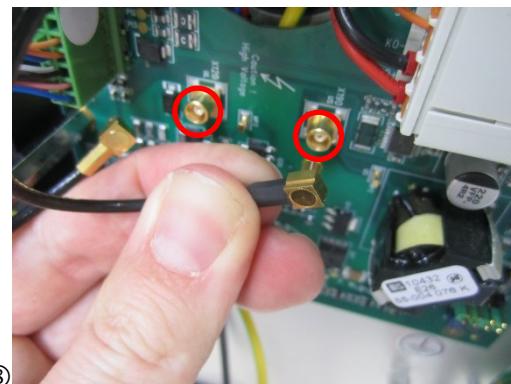


⑥

Disconnect the display controller

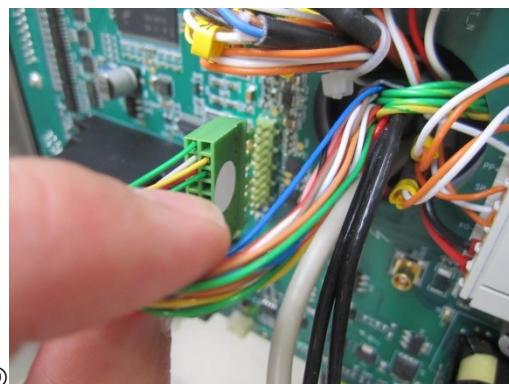


Disconnect the HV Modul / converter

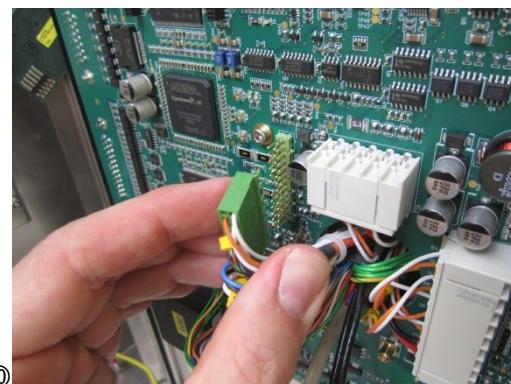


Disconnect the data wires for:

- X120: Charge voltage
- X190: Oscillator voltage



Disconnect the head connection X11



Disconnect the hydraulic connection X8

6. Disconnect hydraulic connection KL1 and optional hydraulic connection KL 2



Information

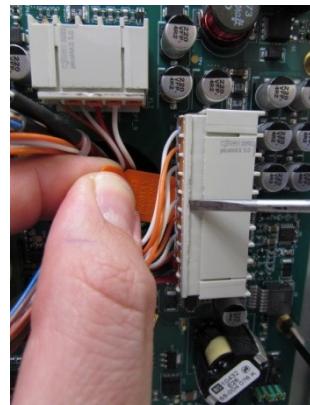
To disconnect the interfaces KL1 and KL 2 you must take the special assembly tool.

This tool is not an item of the delivery. You must order it extra!



Special assembly tool
Art. Nr.: 55-006824 K

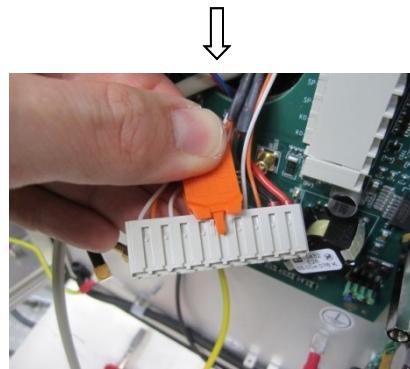
Disconnect the socket KL 1 for the hydraulic connection



Place the assembly tool exactly in the **middle** of the connector.



Push them carefully inside between the socket and the plug.



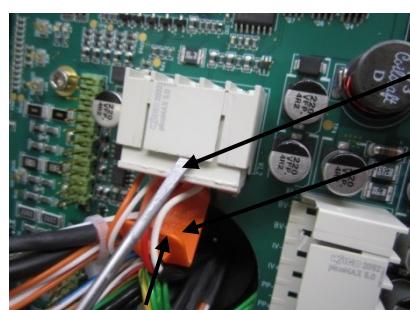
Pull the plug out of the socket by a slotted screwdriver.

Disconnect the socket KL 2 for the optional hydraulic connection



Information

The procedure for disconnect KL 2 is just the same like for KL 1

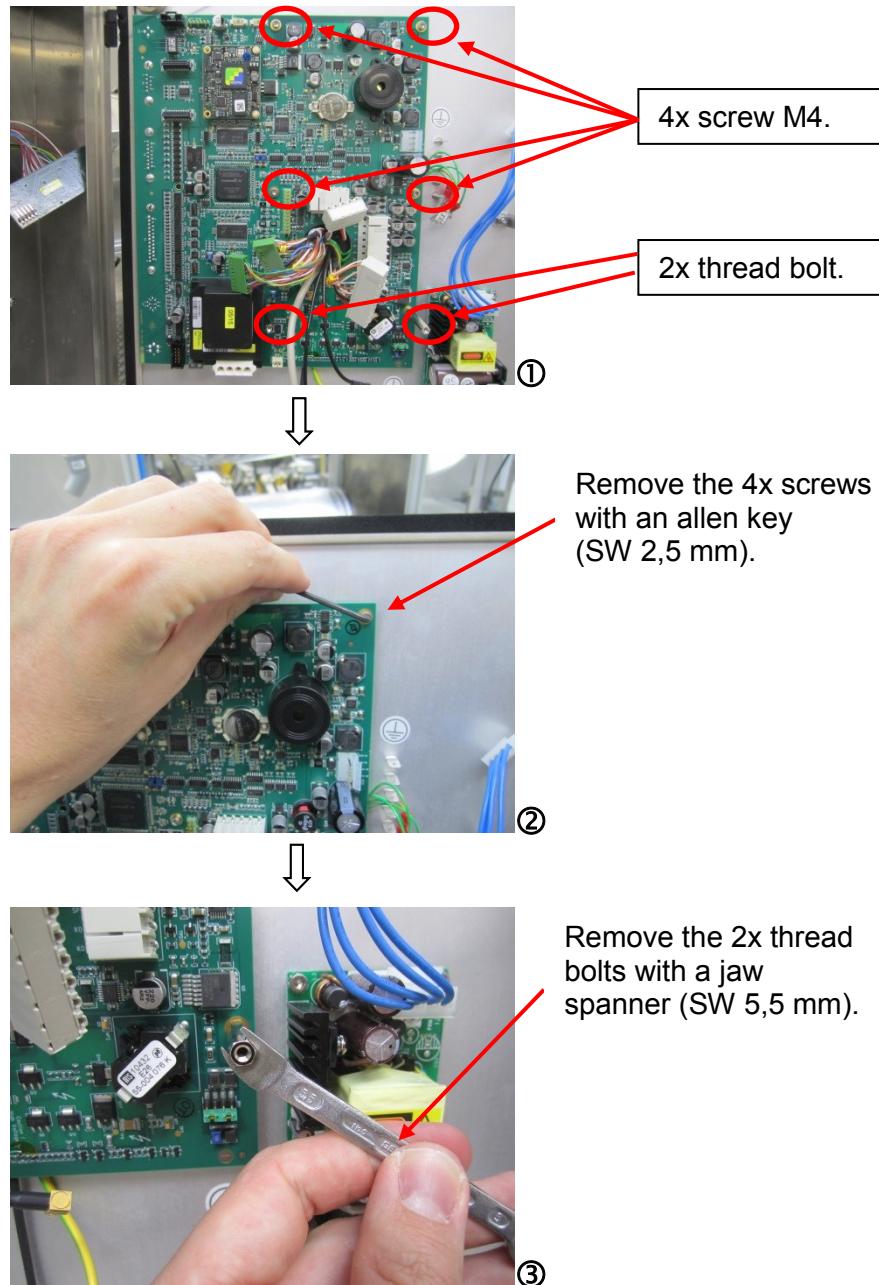


Slotted screwdriver.

Assembly tool.

7. Remove the screw connections in front of the board.

After all wire connections are disconnected you can unscrew the screws and the thread bolts of the board from the front side.



8. Remove the screw connections of the interfaces on the backside of the printer.
Use the special tool. The tool is not an item of the delivery. You must order it extra!



Backside of the printer with the interfaces



Special assembly tool. Art. Nr.: 54-003526 K



① Loose the screw connection for Interface X1



② Loose the screw connection for Interface X5



③ Loose the locknut of the Ethernet interface
with a jaw spanner (SW 18 mm)



④ Unscrew the hex bolts for the interfaces with
a socket spanner (SW 5 mm).

Interface X2: RS 232 Connector

Interface X3: IO - Connector

Interface X4: IO - Connector

9. In the last step remove the controller board.



Information

The installation of a new mainboard takes place just in the reverse order!

Important hints of Jumper-Setup

Jumper Setup (depending of umbilical length and type of print head)



Information

After the installation of a new main board you must adjust the correct jumper position. The jumper-position depends on: type of print head frequency of piezo and umbilical length.



Attention!

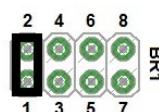
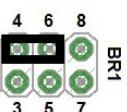
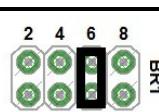
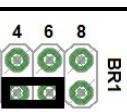
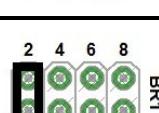
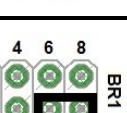
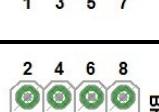
Open the cabinet and change the jumper position only while power is unplugged.

Position of the jumper-field BR1



Table of settings:

Choose the correct jumper-position from the following table:

Frequency	Cable length	Compensation value		Jumper-position	
		SK4	SK6	SK4 Print head	SK6 Print head
64 kHz	3 m	None	68 µH	 BR1	 BR1
	6 m				
	10 m	100 µH	43 µH	 BR1	 BR1
96 kHz	3 m	None	33 µH	 BR1	 BR1
	6 m				
	10 m	43 µH	22 µH	 BR1	 BR1

Adjust the machine settings again:

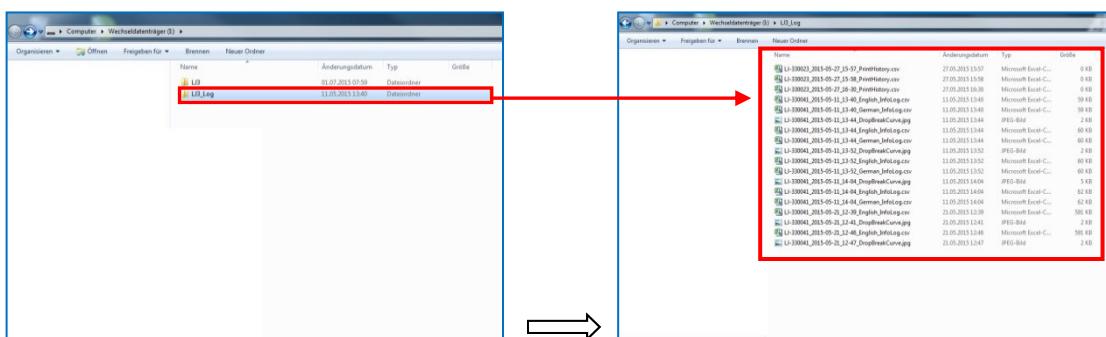


Important information about ink and solvent

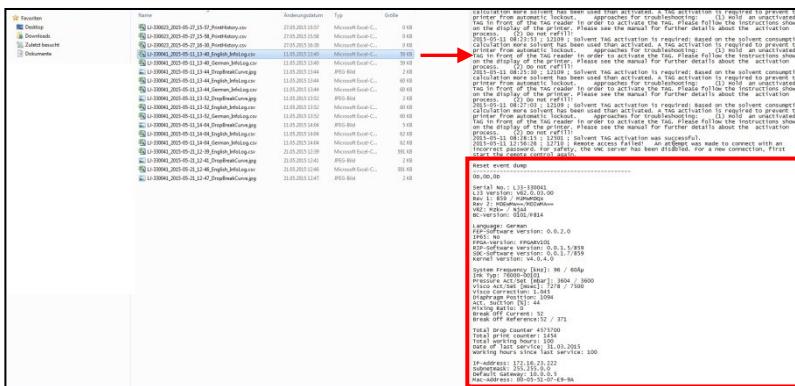
The default setting for the ink- and solvent parameters are specially adjusted by Leibinger so that it is not necessary to TAG a new bottle for solvent and ink after exchanging the main board.

The only thing what you have to do in regards of the ink- and solvent parameter is to enter the correct ink- and solvent number in the parameter settings how it is described in following chapter.

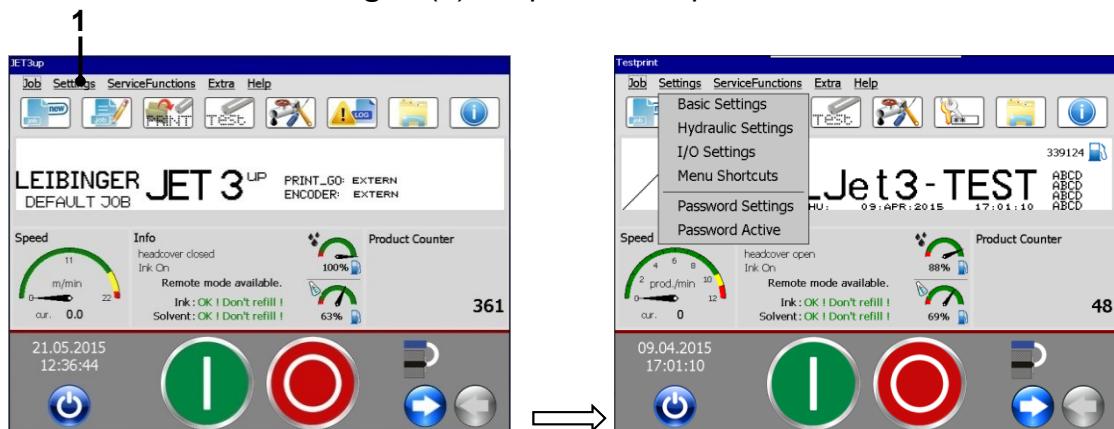
1. Connect the “USB – Stick” to the PC and open the directory „LJ3_Log“



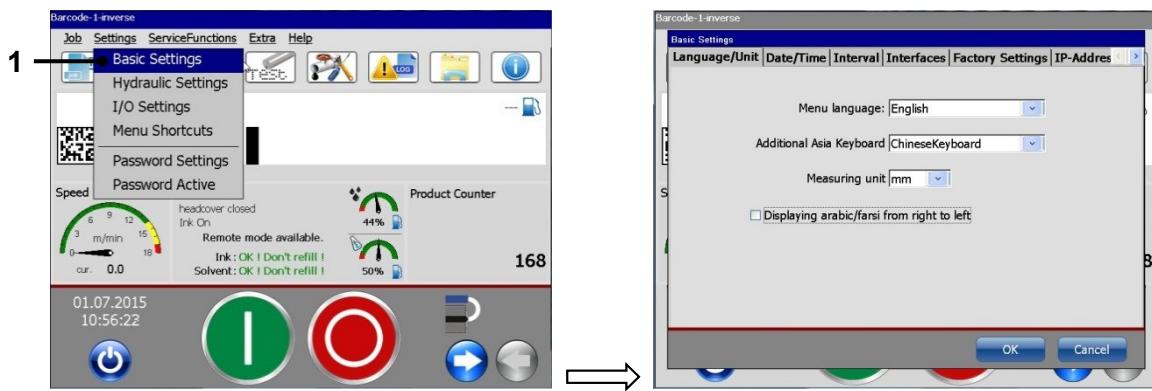
2. Open the specified file in a new window, print out this file and set the machine settings.



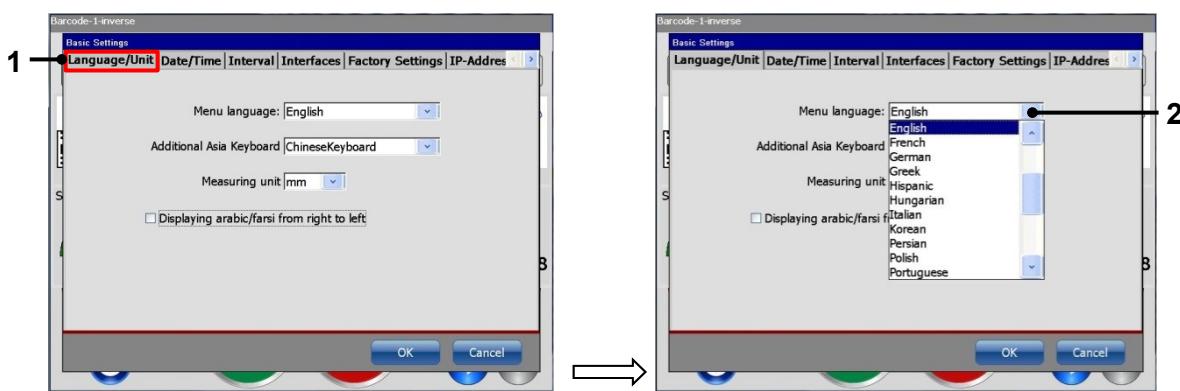
3. Press the button <Settings> (1) to open the drop down menu.



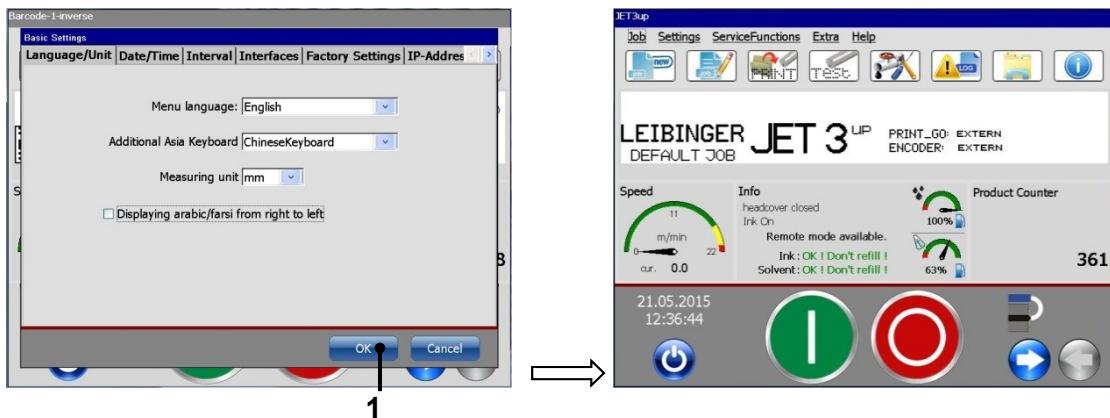
4. Select the option <Basic Settings> (1)



5. Select the window <Language/Unit> (1) and open the Drop-down list <Menu language> (2) to select your language.



6. Close the window with the <OK> button (1).

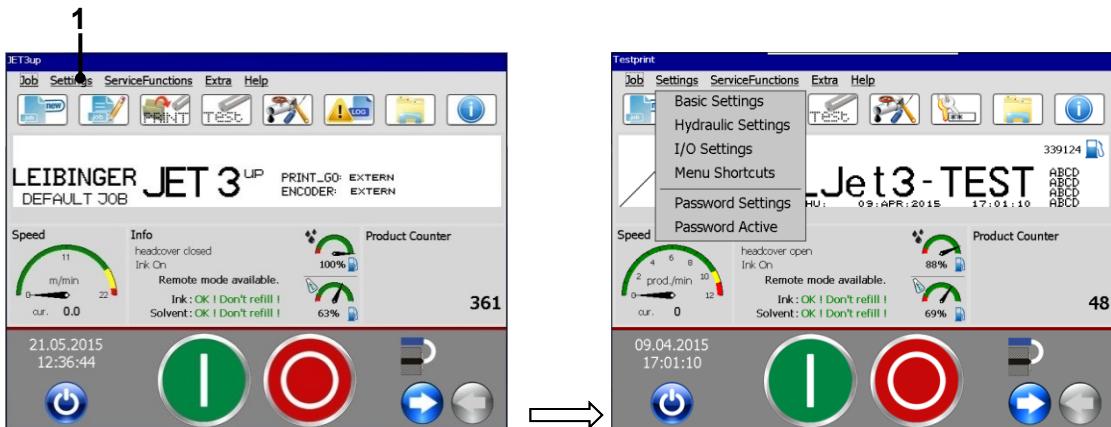


Information

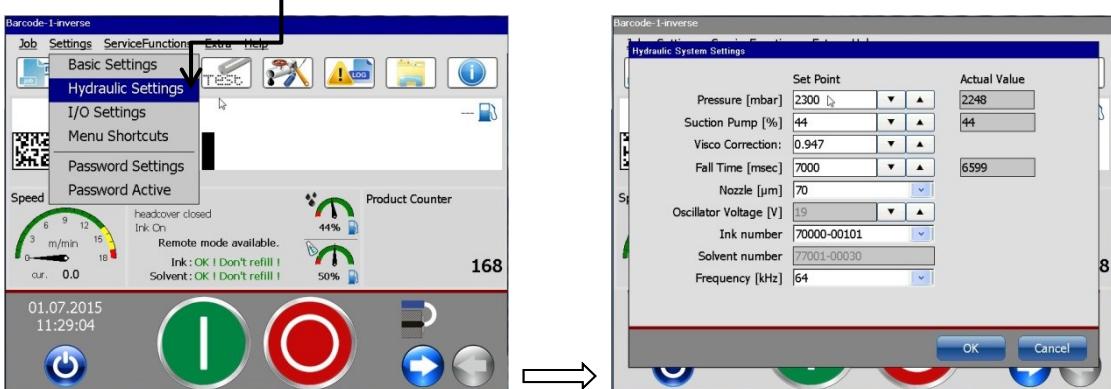
Further settings details you will find in the operating manual

Enter the hydraulic settings

1. Press the button <Settings> (1) to open the drop down menu.



2. Select the option <Hydraulic Settings>



3. Take your printed „info“ file as your template

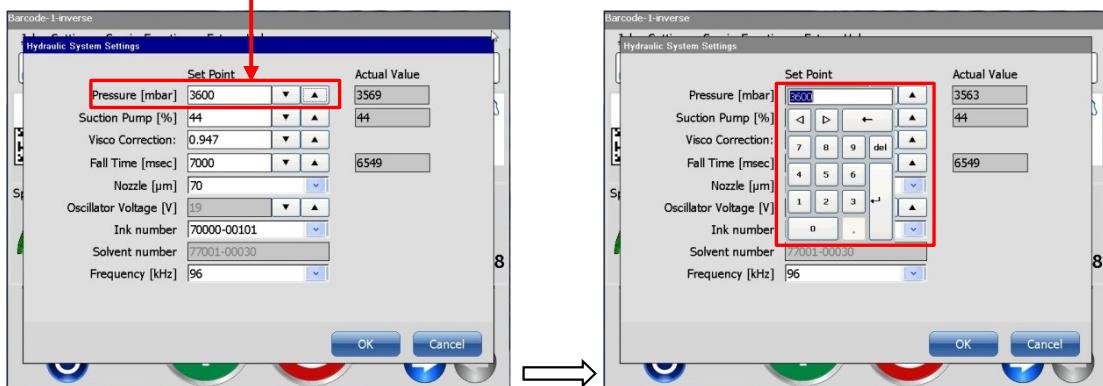
```

Date: Bearbeitet Format: Ansicht 1
2015-05-11 08:15:37 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:15:47 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:18:53 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:20:34 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:23:53 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:25:30 ; 12109 ; Solvent TAG activation is required: Based on the solvent consumption calculation more
2015-05-11 08:28:15 ; 12501 ; Solvent TAG activation was successful! An attempt was made to connect with an incorrect password.
2015-05-11 12:36:26 ; 12710 ; Remote access failed!
Reset event dump
00,00,00
Serial No.: LJ3-330041
LJ3 Version: 0.03.00
RMS Version: 0.03.00
Rev 2: MDEWmhw/MDINmA
VRZ: MzK= / NJ4
BC-Version: 0101/F814
Language: German
FEP-software Version: 0.0.2.0
IP65: NO
FPGA-Version: Picavion101
PICAVION Version: 0.0.1.5/859
SDC-Software Version: 0.0.1.7/859
Kernel Version: V4.0.4.0
System Frequency [kHz]: 96 / 600
Ink Typ: 76000-0010
Pressure Setpoint [mbar]: 3604 / 3600
Visco Act/Sens: 7278 / 7500
Visco Correction: 1.045
Diaphragm Pos: 1094
Correlation Thres: 44
Mixing Ratio: 0.1
Break off current: 32
Break off Reference: 52 / 571
Total Drop Counter: 457000
Total Working Counter: 1450
Total working hours: 100
Date of last service: 31.03.2015
Working hours since last service: 100
IP-Address: 172.16.23.222
Subnet-Mask: 255.255.255.0
Default gateway: 10.0.0.5
Mac-Address: 00-05-31-07-43-9A

```

Information
These informations will be relevant for the hydraulic settings!!!

4. Enter the <Pressure> in the display field.

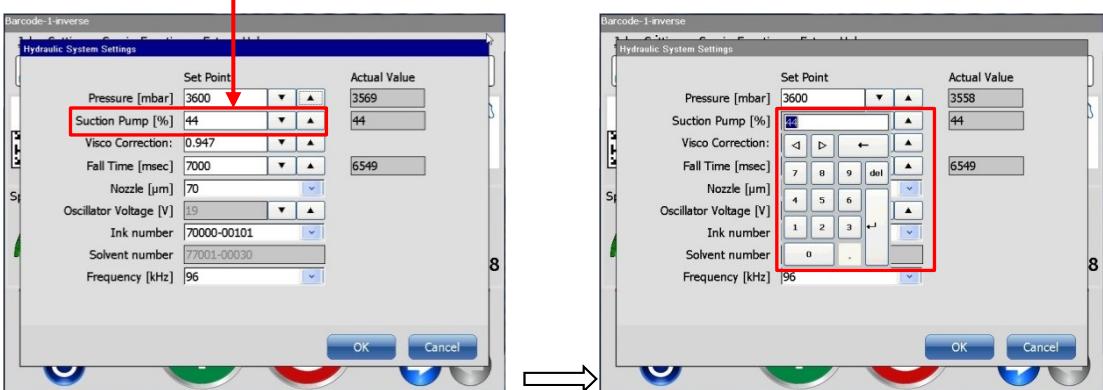


There are two possibilities to set the values for:

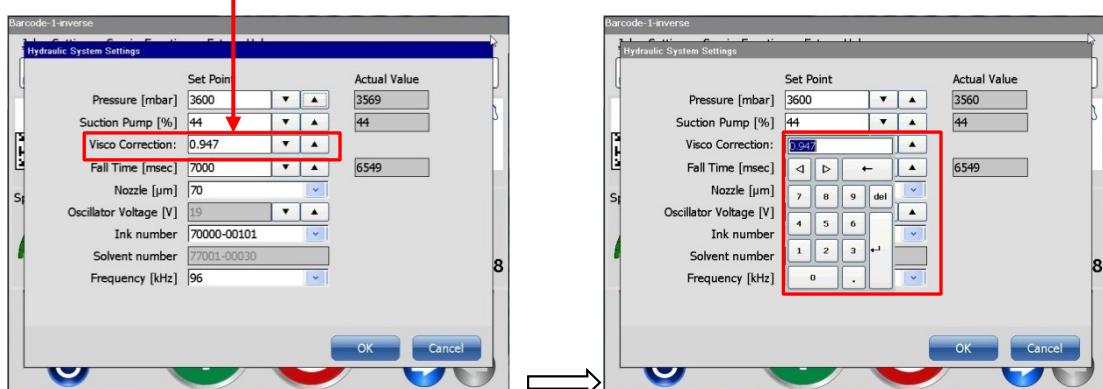
- Pressure
- Suction Pump
- Visco Correction
- Fall time
- Nozzle:

1. Change the values via arrow keys (high-low)
2. Direct input via numberblock

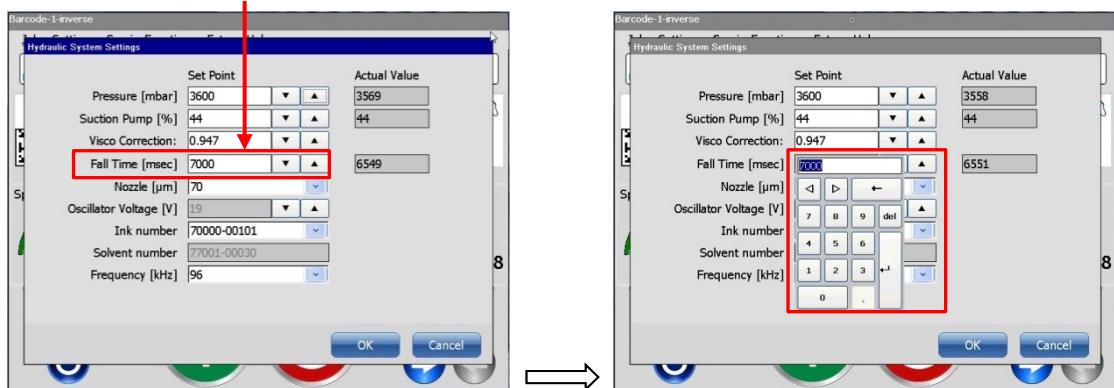
5. Enter the <Suction Pump> value in the display field.



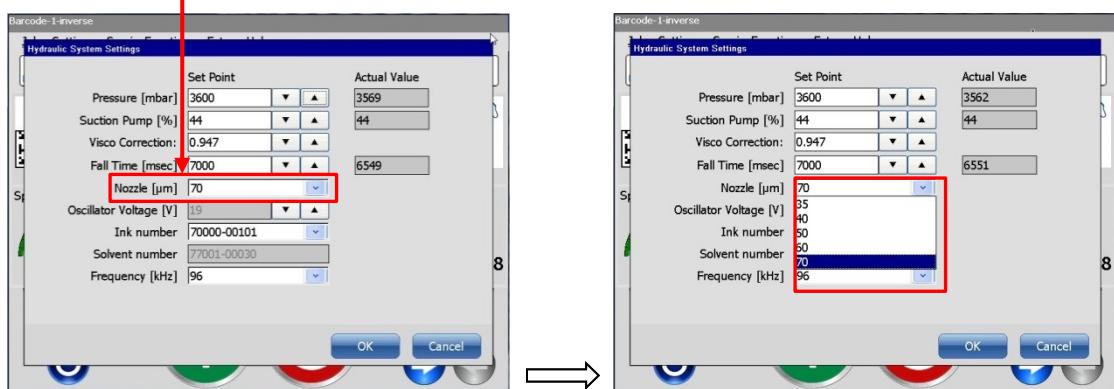
6. Enter the <Visco Correction> value in the display field.



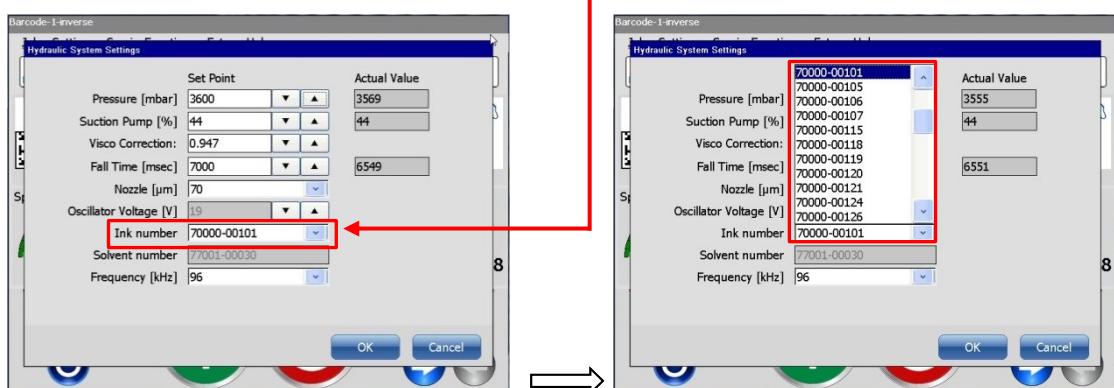
7. Enter the <Fall time> in the display field.



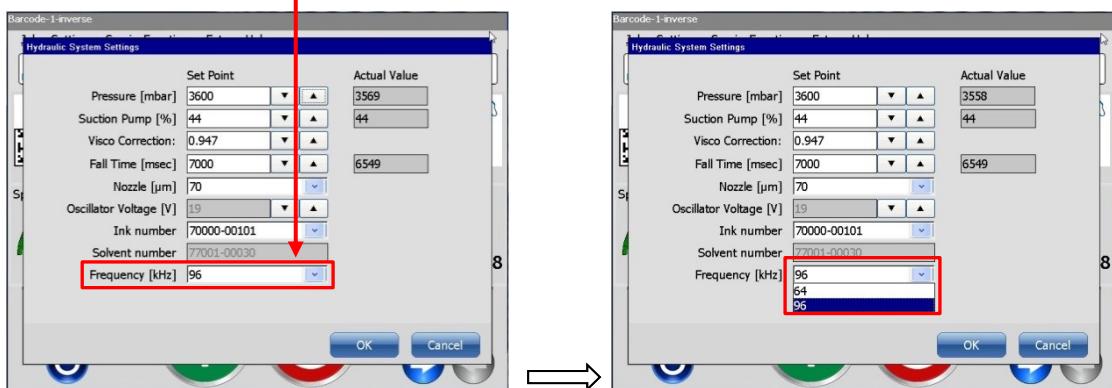
8. Enter the <Nozzle> size in the display field.



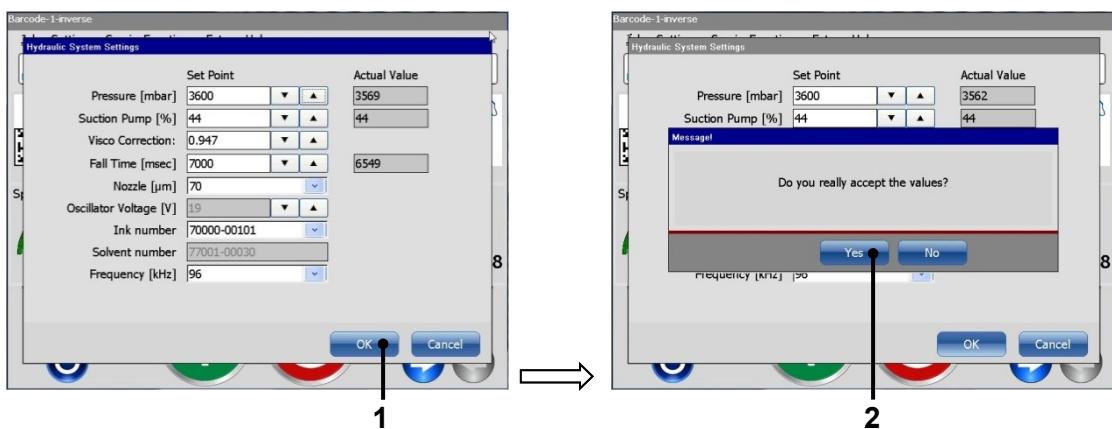
9. Open the Pop up window to select the <Ink number>.



10. Select the <Frequency> in the display field.

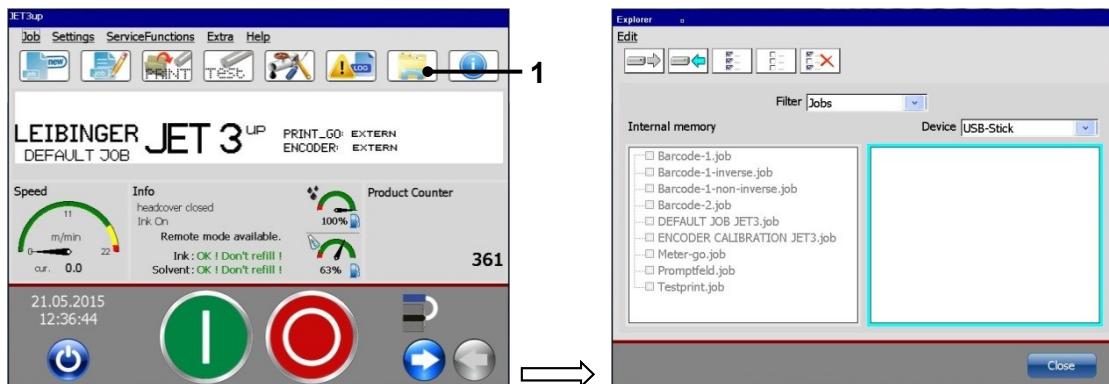


11. Close the window with the button <OK> (1) and save the settings by pressing the button <Yes> (2).

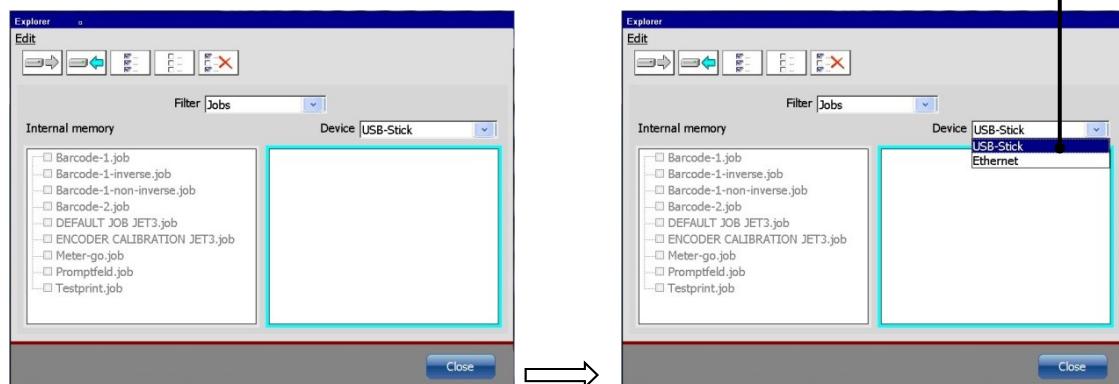


Load the saved files

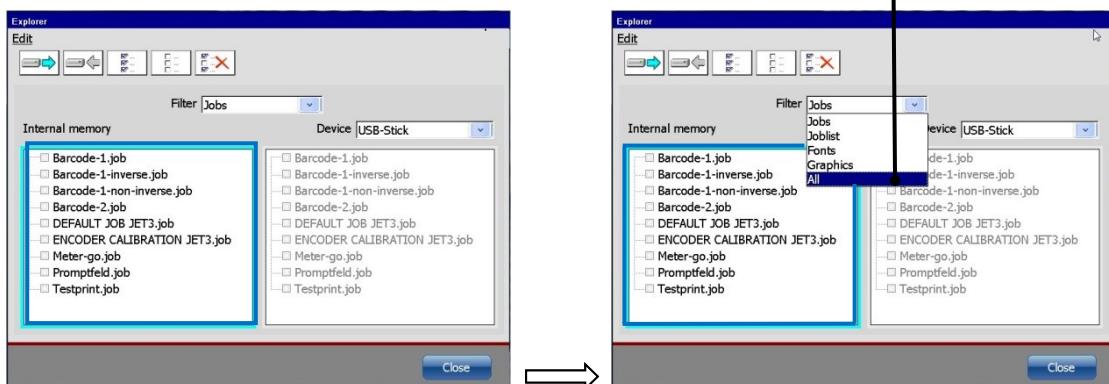
1. Connect the “USB – Stick” to the JET3up
2. Press the direct button <Explorer> (1) to open the explorer.



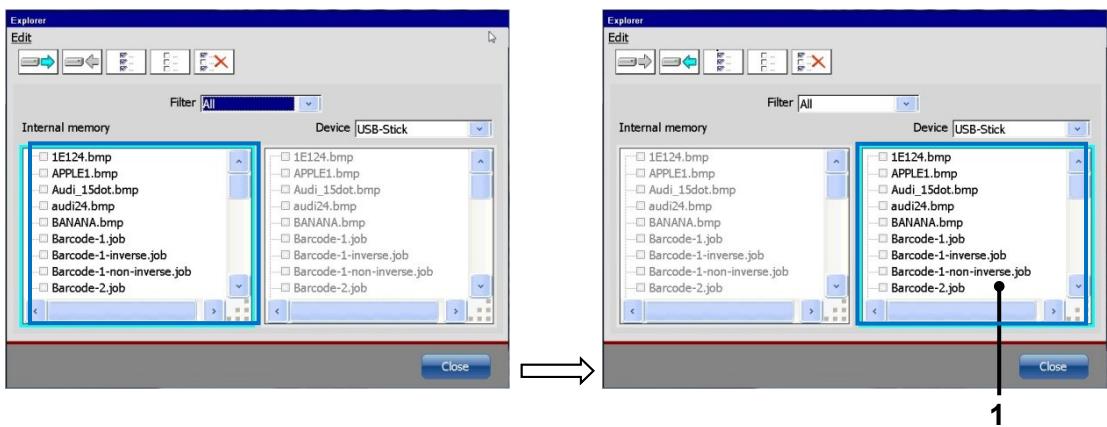
3. Select <USB – Stick> (1) in the drop down list.



4. Select “Filter” <All> (1) in the drop down list.



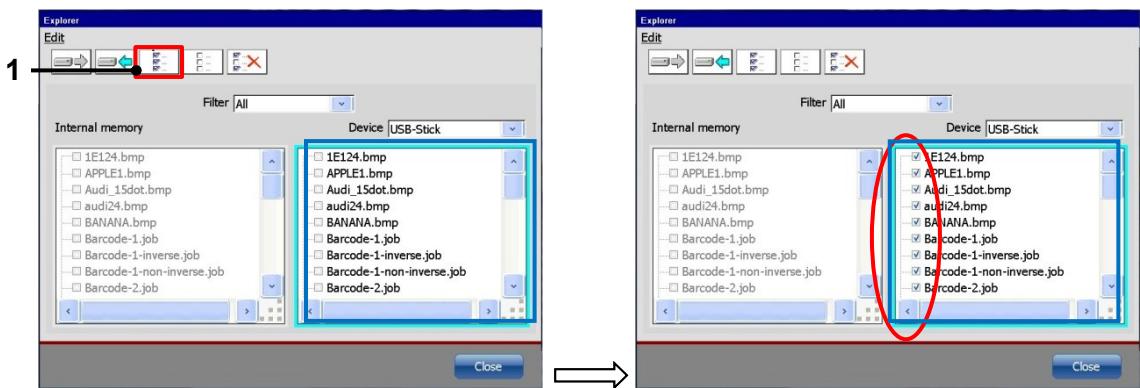
5. Select <extern memory> (1) in the selection window.



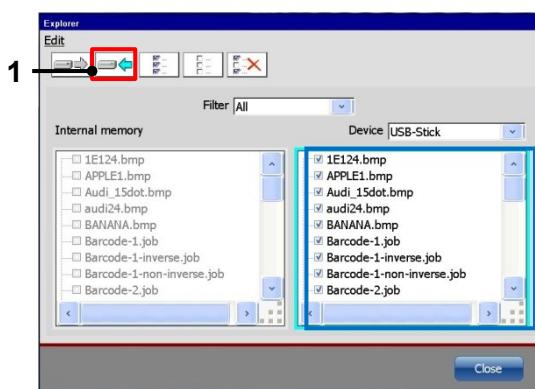
1 – Selection window <extern memory>

After pressing in the selection window “extern memory”, the window will be active (blue).

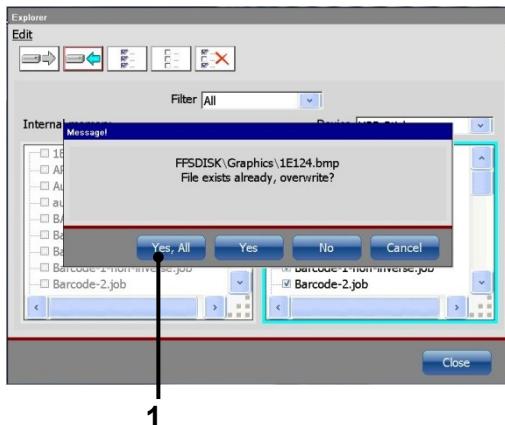
6. Press the button <select all files> (1).



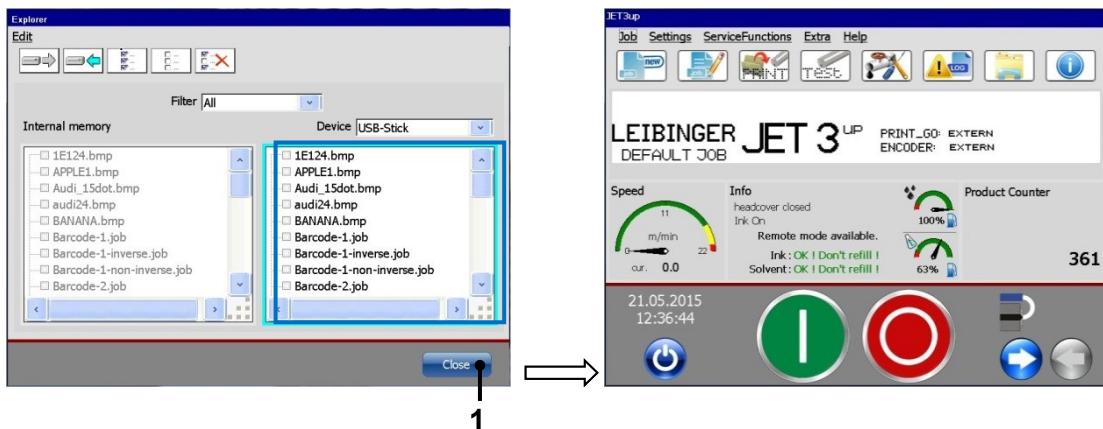
7. Press the button <copy to harddisc (internal memory)> (1)



8. The machine maybe will show you „File exists already, overwrite?“
 Press the button <Yes, All> (1).

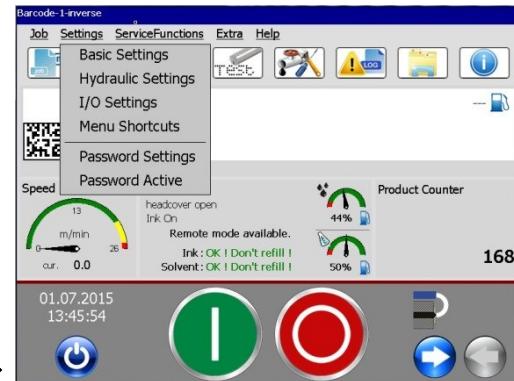
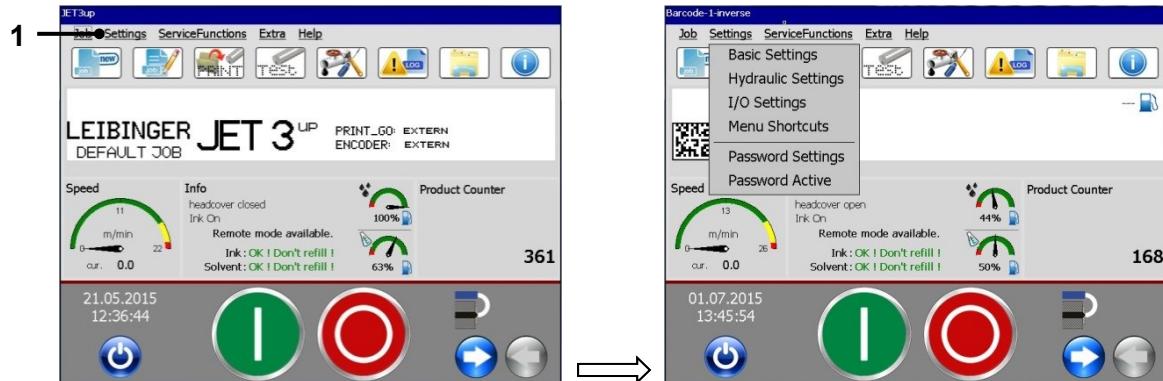


9. Press the <Close> button (1) to close the Explorer

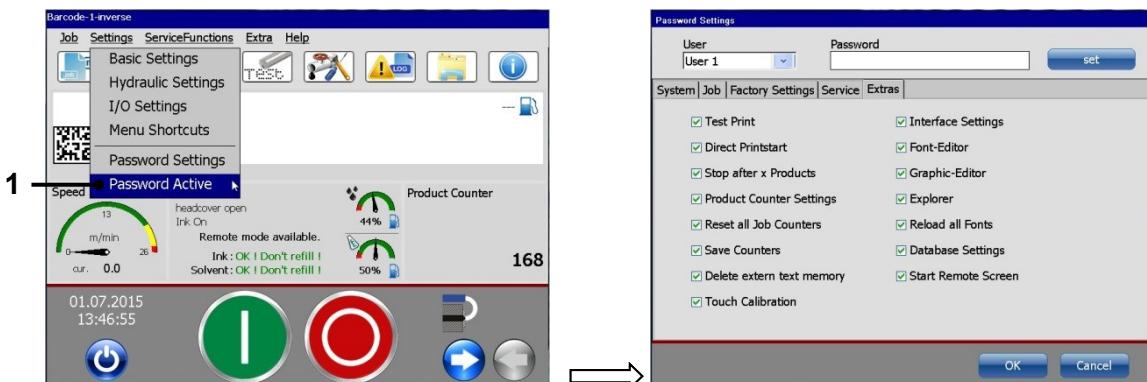


Set the new controller board back to the “factory value”

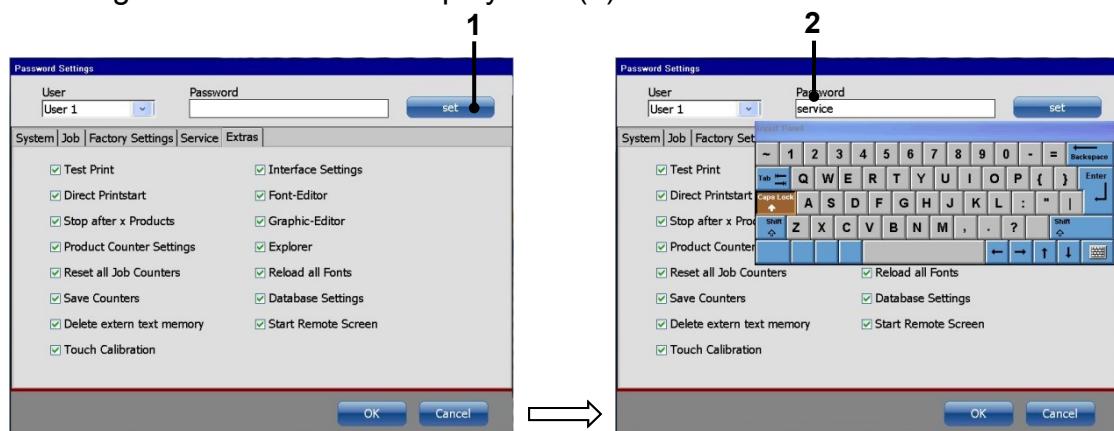
1. The nozzle must be close and the print head cover must be open
2. Press the button <Settings> (1).



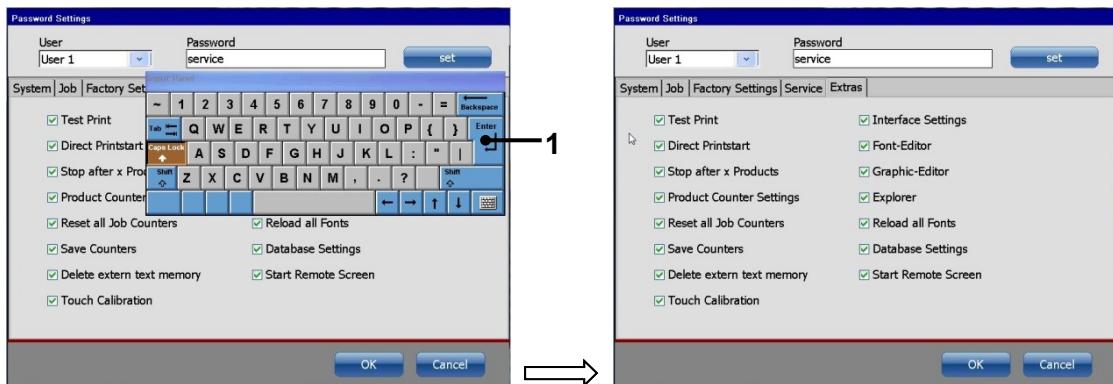
3. Select the option <Password Active> (1) in the drop down menu.



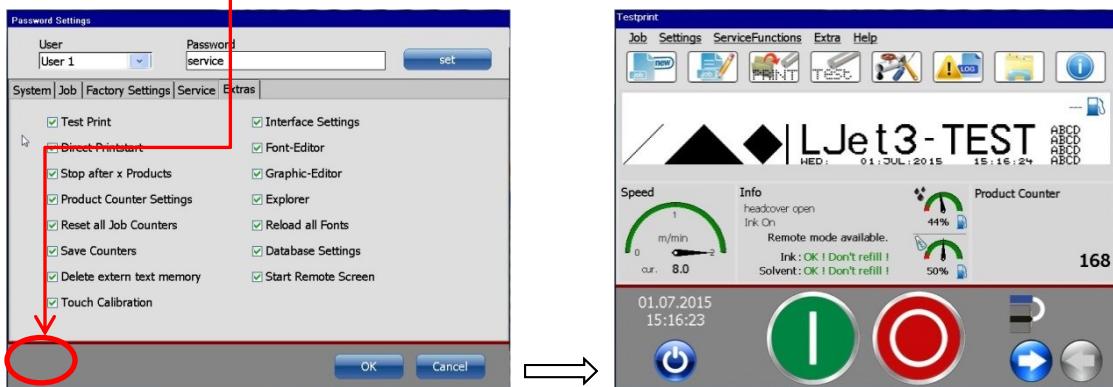
4. Press the button <set> (1) to open the keyboard and insert the password message <service> in the display field (2)



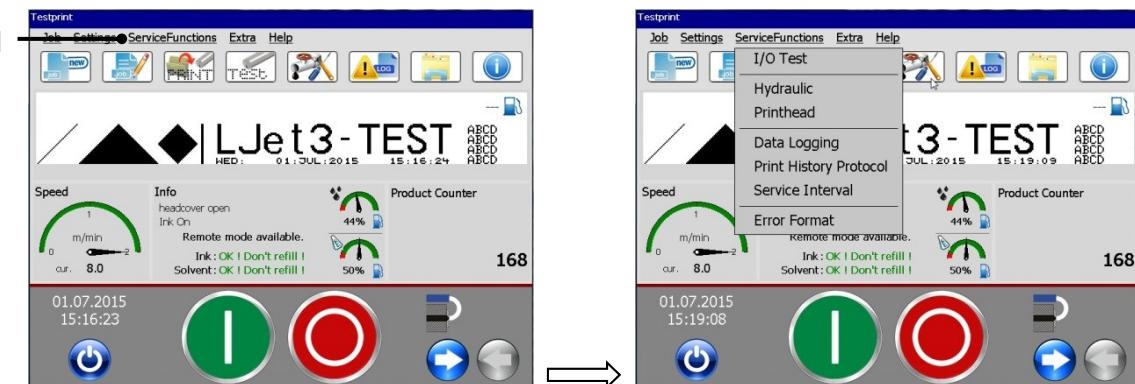
5. Press the button <Enter> (1) to certify the input of the password.



6. Press the <hidden> button in the left down corner of the window to go back to the basic menu.



7. Press the button <Service Function> (1).



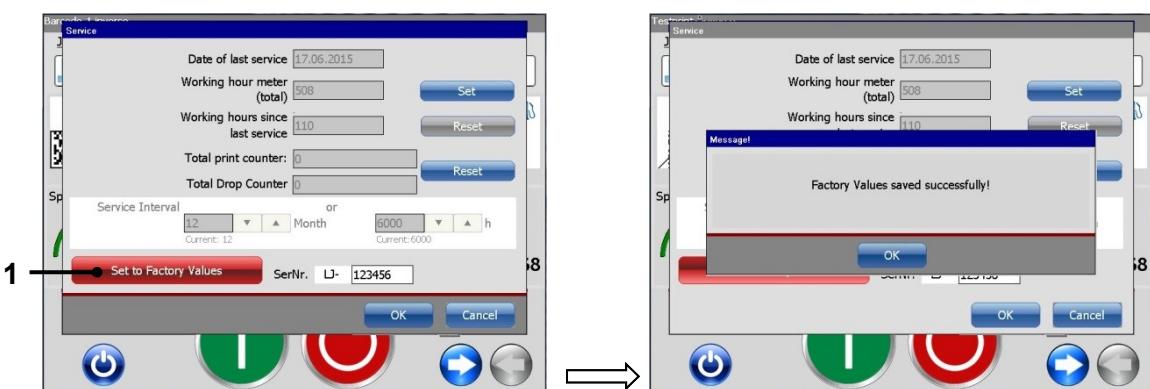
8. Select the option <Service Interval> (1) in the drop down menu.



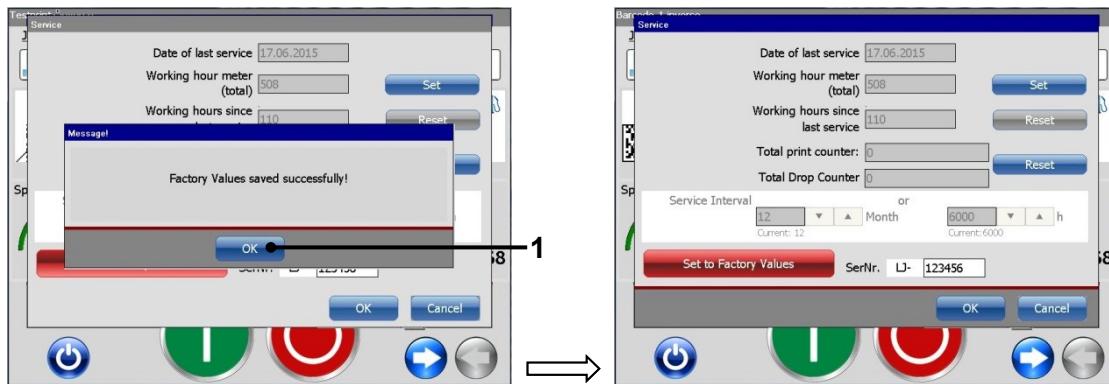
9. Insert the <SerNr.> of the machine in the display field:



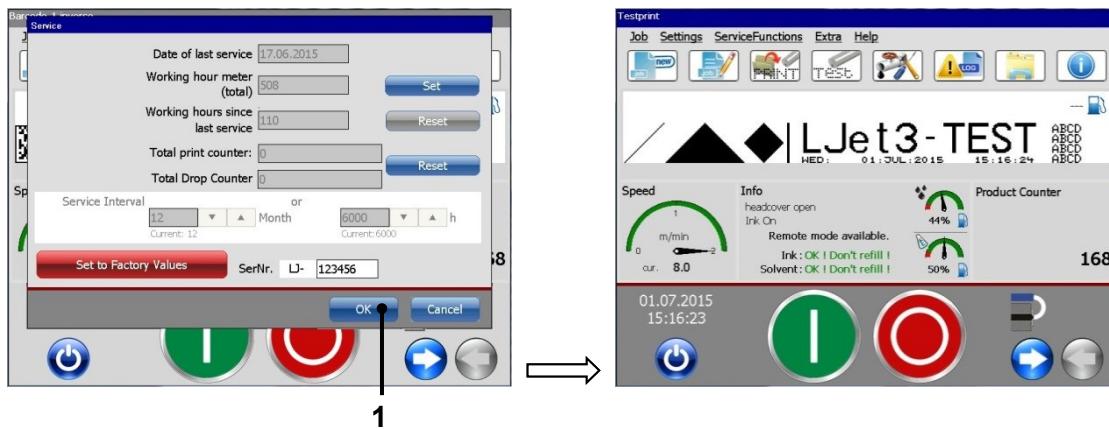
10. Press the button <Set to Factory Values> (1).



11. With pressing the <OK> button, (1) the factory settings will be saved.



12. Close the window with the <OK> button (1).



The „Factory Values“ are done, the printer is now ready for the first test

7

Adjust the service interval**Information**

After the main board is exchanged it is necessary to enter the deleted values for the “Service Interval”!

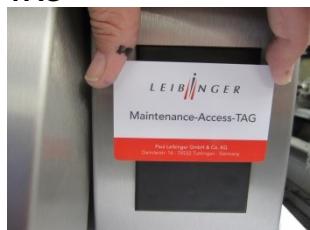
In order to reset the counter for the service interval you must activate a “Service TAG”.



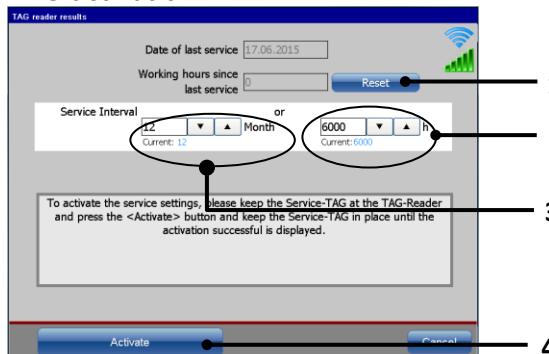
Each new controller is delivered together with a “Service TAG”.

Procedure:

1. Hold the “Service TAG” in front of the TAG reader.
The dialog box <TAG Reader Results> pops up.

Open the service interval dialog box with the TAG

2. Enter the data for the next service interval. The interval is set in months (3) and operating hours (2). Service will be due after the period or operating hours set, whichever occurs first.
3. Reset the <Working hours since last service> with the button <Reset> (1).

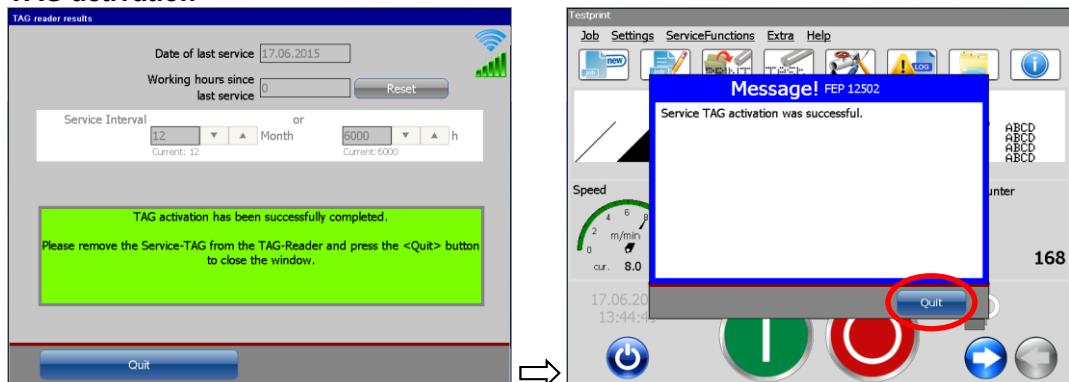
TAG activation

4. After setting the desired values confirm with the button <Activate> (4).

5. For a successful activation, it is necessary that you hold the “Service TAG” on the TAG reader during the whole activation process. Otherwise you will get the error message: “TAG activation failed”.

After a successful activation the new service intervals are saved and the following message is displayed:

TAG activation



Close the dialog box with the button <Quit>.

Close the confirmation prompt with the button <Quit>.

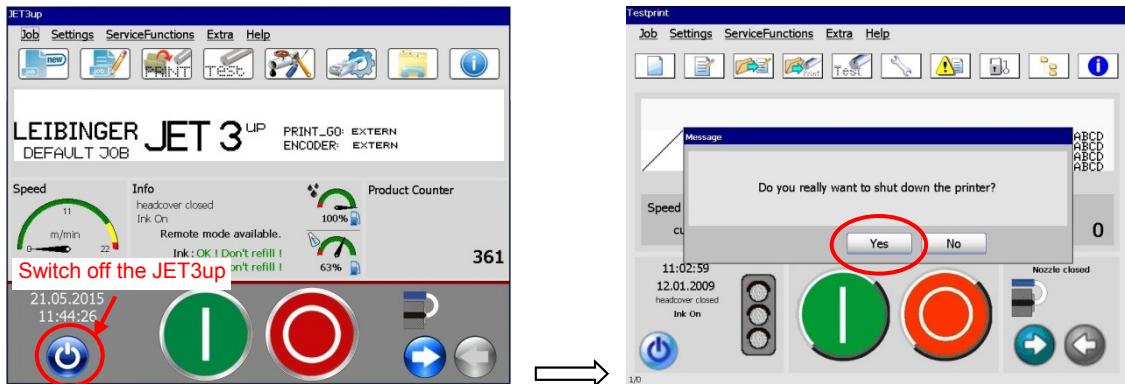


INFORMATION

- For a successful activation you must use a **valid** TAG.
- You can use a Tag for a successful activation only **one** time.
- Don't remove the TAG during the activation process. Otherwise the TAG could be damaged.
- With an invalid TAG you can open the service interval dialog box but you can't save any values.

8**Exchange the fan for the electronic cabinet**

1. Switch off the JET3up.

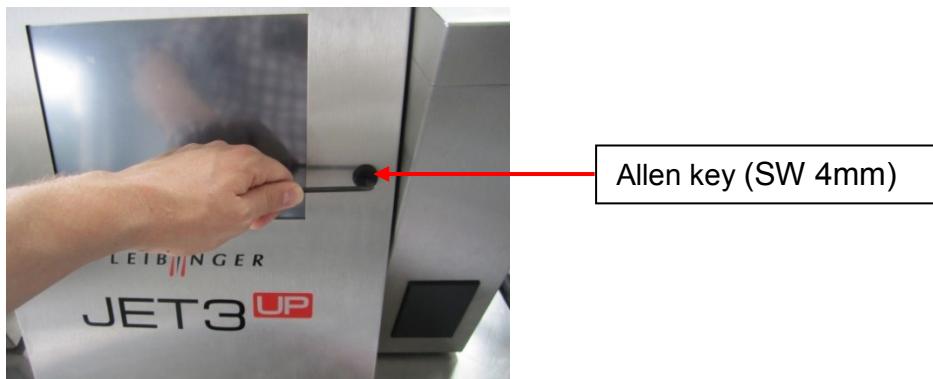


2. Remove the main plug.

***Dangerous electrical voltage!***

Contact causes serious injuries through an electric shock! Disconnect the device from the voltage supply by remove the main plug before you open the electronic cabinet!

3. Open the front door of the electronic cabinet.

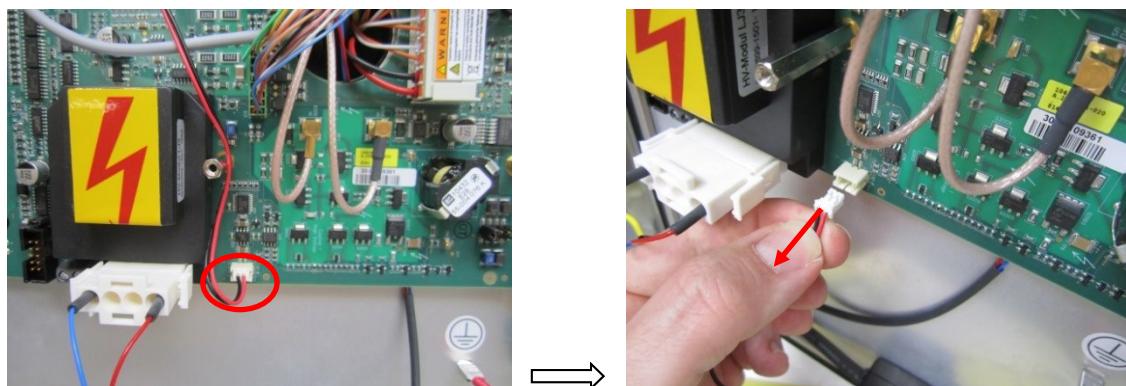


4. Remove the cover of the power supply.

For disconnect the power supply it is advantageous to remove the cover of the power supply at first.

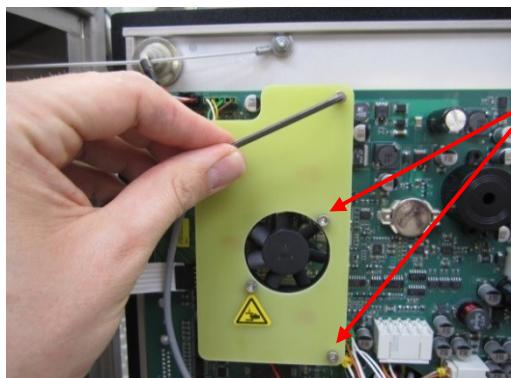


5. Disconnect the wire for the power supply of the fan from the board



6. Remove the fan

Now remove the fan by solving the 2 attachment screws:



Unscrew the 2 screws with an allen key (SW 2,5 mm) and extract the fan.



Remove the fan with the mounting plate!



Unscrew the 2 mounting screws with an allen key (SW 2,5 mm) to remove the mounting plate!

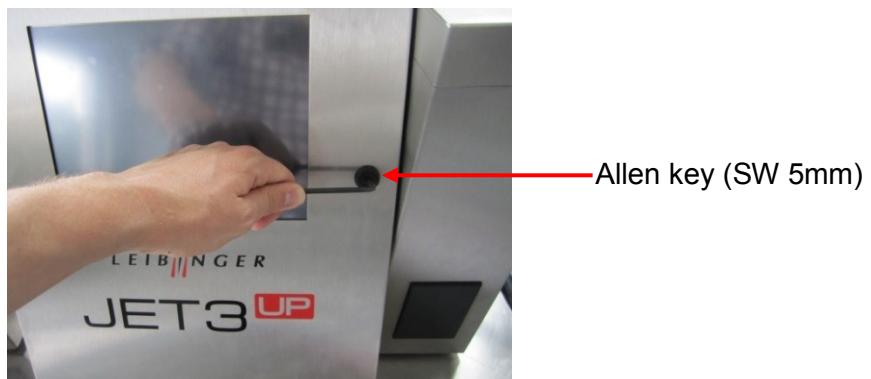


Information

The installation of a new fan takes place in the **reverse order**!

Service Manual JET3^{UP}

7. After installation close the front door of the electronics cabinet



8. Plug in the mains plug



9. Switch ON the printer