Durst Rho 1000

Service Manual

4 Print Head Exchange

4.1   Old head removal

- – Check the ink level of the printheads in the **"Head Configuration"** tab
- – Choose the desired printhead and send the head command **"QH"**
- – The printheads must be filled up and the ink heater system switched on and the printheads heated up:

    QH_abcdxy   abcd... Temperature slot 1–4 (0 means heated up)
    x... Ink level tank1 (F fuel, L low)
    y... Ink level tank2 (F fuel, L low)

- – Switch off the **ink level control** with the serial command in the software below the **"Others"** tab:
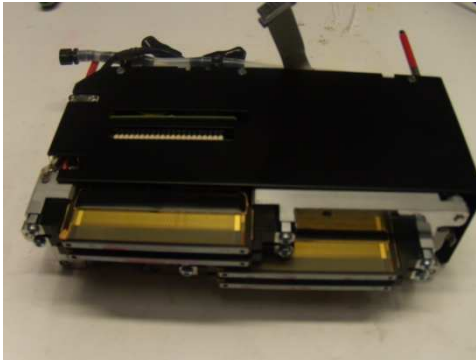
    HTILx   x=1... OFF
    x=0...ON

- – Switch off the ink heating
- – Disconnect all the cables from the printhead which needs to be changed
- – Disconnect the ink tubes and the meniscus tube
- – Close the meniscus tube on printhead side and printer side
- – Close the ink tubes with the fittings

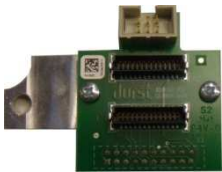   Ink fitting part numbers: E1390240 (plug)
    E1390183 (cap)

- – Remove the old printhead

- – Mount the capping plate which is delivered with the new printhead
- – On refurbished printheads the capping plate is mounted on the new PH
- – Take care that the EPDM is straight and clean
- – When the capping plate is mounted remove the little screw on this capping plate (bottom side)
- – Open the meniscus tube and wait till ink is coming out (you can use a syringe to force this process)
- – When the capping is filled with ink (ink is coming out from the little hole) remount the screw to seal
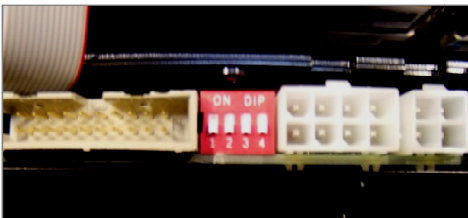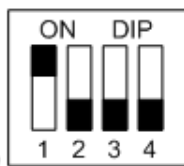
4.2   New head installation

- Take the new printhead and remove the blue tape from the slots (refurbished printheads = capping plate)
- Cut the ink tube to the right length
- Label the ink lines and the head itself (if no labels available – take the one from the old head)

If the new printhead is delivered without the Adapter PCB (LE2085A) remove the PCB from the old printhead and mount it to the new printhead

- Fill out the printhead change form
- Set the dip-switches (refer to 4.3.1
- Even print head position → dip-switch **1 = ON** others **OFF**
- Odd print head position → all dip-switches **OFF**

e.g. for CK2

e.g. for CK1

- Assemble the new printhead back to the machine and reconnect all the cables
- Switch on the Ink heater system
- In case of an refurbished purge out the model fluid from the printhead
- When the printhead is heated up connect a syringe to the meniscus line of the printhead
- Set the head media distance with the serial command **HMDS100**
    HMDSx   x=distance (1/10mm)
- Set the purge up/down distance with serial command **PUDS100**
    PUDSx   x=distance (1/10mm)
- Move the print sledge over the purge unit and purge empty the printhead with the syringe
- Wait two minutes that the rest of the ink can sag and repeat it
- Move back the print sledge to the right parking position
- Initialize the purge unit with the serial command **YPUI**
- Reconnect the ink tubes

4.3   Start up the new Print Head

4.3.1   Set the print head address

RHO1000 print heads are delivered with a default address setting.
Before configuring the new print head all cables must be reconnected. Set the corresponding dip-switches (print head) regarding the printhead position.
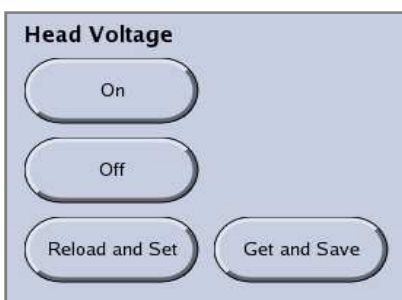
Attention: Check and recheck the printhead dipswitches and make sure that all cables are plugged in correctly. In case of a swapped data cable, the printhead will receive a wrong address.

- Power OFF and ON the RHO1000.
- Send the serial command "**YSPHAA**" in the "**Communication**" tab (All print heads get their addresses over the image data line from the fusion)
- Send the serial command "**YHB.x0x_SUADDR**" in the "**Communication**" tab (the addresses will be stored in the head internal memory)
- Now the new (and all other) print heads can be talked to on the bus
- Verify the bus connection of all heads with the head command **V** ("Head Configuration" tab)
- You receive the printhead version, " * " indicates a problem with the bus connection

4.3.2   Enable print head filling

- Activating "**Ink Level**" control in the "**Pumps and Valves**" tab or with the serial command "**HTIL0**"
- All print heads are delivered with the simulation mode for the ink level turned on (so a new print head would not fill automatically after installation).
- To deactivate this feature type the following string in the Send command prompt window "**YHB.x0x_RLSIM**" (or a direct addressed "**RLSIM**" in the "**Head Configuration**" tab)

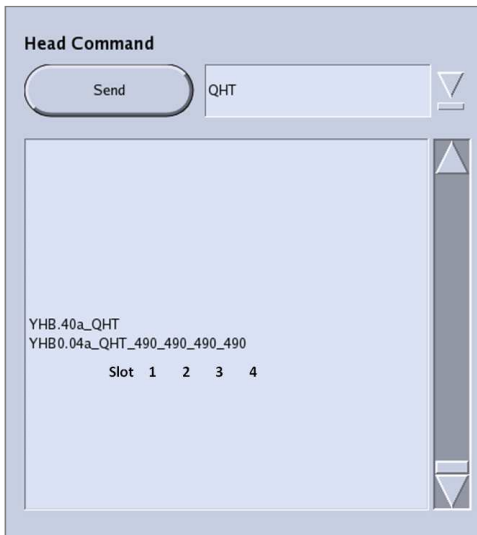### 4.3.3   Set the head voltage

- Reset the voltage offset for the specific head in the Setup file to 0
- Push the button "**Get and Save**" (the head voltages will be read out)
- Push the button "**Reload and Set**" (the voltage will be calculated with the multiplier and sent to the head driver)

4.4   Lois offset

4.4.1   Programming

⚠️ This is an additional information and **may not be executed after a regular print head exchange** but after an exchange of the head internal Heater Control PCB (LE2094A) or LOIS sensor replacement or doubt on the current LOIS offset

Head Command

Send [QHT]

YHB.40a_QHT
YHB0.04a_QHT_490_490_490_490

        Slot 1   2   3   4

- The print head must be empty and the ink level control deactivated
- Activate the right printhead and set the printhead temperature to 45°C with the Head Command "**STHT450**" in the "Head configuration" tab
- Switch the Meniscus Valve for the specific head, or disconnect its meniscus line to stop the airflow through the empty head
- Wait till the print head temperature is reached and then wait for 2 extra minutes to get the temperature stabilized
- Check the temperature of the single slots with the Head Command "**QHT**" (the temperature must match ±0,1°C)
- Activate the right head and set the "Empty Tank Lois Value" with the Head Commands "**SETLV0**" and "**SETLV1**"
- To calculate and save the Lois offset send the Head Command "**SCLO**"
- Reset the Meniscus valves
- Turn Ink Heating System OFF and then ON again (reset the temp. to 51°C)
- Reset the Lois simulation mode with the Head Command "**RLSIM**"
- Activate the ink level control