

# 3 Ink Change-Over

## 3M™ Piezo Ink Jet Ink Series 4000

### Used in VUTEk UltraVu™ 3000/3300 and 5000/5300 Printers

#### Description

This bulletin describes how to change to 3M™ Piezo Ink Jet Ink Series 4000 only for the VUTEK UltraVu™ 3000/3300 and 5000/5300 Printers.

#### Health and Safety

##### Caution

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at [www.3M.com/MSDS](http://www.3M.com/MSDS)
- By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

#### Tools and Supplies

- [Ink](#)
- [In-line ink filters](#)
- Assorted hex key wrenches
- Clean, lint-free, absorbent toweling
- Small crosshead and flat blade screwdrivers
- Four ink bottles for drained ink
- Gloves and safety glasses with side shields (refer to the MSDS sheet)
- VUTEk Printer Operation and Maintenance Manual
- Shorting plugs or wires for secondary ink sensors
- VUTEk X300 Head Cleaning Fluid, 2 gallons (8 liter)
- Large scrap of vinyl film, to protect floor from ink spills
- Waste container

#### Solvent Flushing Procedure

##### Notes

- This procedure is done simultaneously for all four ink tanks.
- This procedure can be done for only one or two tanks if you are changing just the magenta inks.

##### Procedure

1. Empty and flush the secondary ink tanks and jetpacks with head cleaning fluid. Refer to the appropriate VUTEk manual (see below) for details on the Printer Function Selector Switch operation. Perform the **EMPTY PACK** function until the packs are empty and jetpacks bubble.
    - 16-head manual: section 1, page 9.
    - 32-head manual: section 1, page 12.
  2. Select the **SOLVENT FLUSH** function and depress the button for approximately 10 seconds or until the ink output line from the carriage back plate starts to flush with clear head cleaning fluid.
- Note: The head cleaning fluid is never totally clear coming out of the jetpacks or through the ink lines.
3. Select the **SOLVENT PURGE** function and purge the jetpacks until the head cleaning fluid coming out of the jetpacks is relatively clear. At this point, the jetpacks and lines after the secondary ink tanks should all be flushed with head cleaning fluid.

#### Ink Removal Procedure

1. **Prepare the work area.** Place a piece of scrap vinyl film under and in front of the printer to contain any ink spills that may occur.

*Ink Removal Procedure continued on the next page.*

*Ink Removal Procedure, continued.*

2. For all four colors:
  - a. Remove the cover from the primary tank and locate the return line (smaller diameter tubing).

Note: The next step can be done while the pumps are running. If preferred, press **RESET**, and while the printer CPU is re-booting, move the hose and direct it into the empty ink bottle.
  - b. Using a clean, empty ink bottle or other suitable container, carefully lift the ink return line out of the ink tank and place it into the container. This pumps the contents of the primary ink tank into the bottle.
  - c. When the printer detects an error due to low ink levels, press the **TEST** button to silence the alarm. The printer may time out and shut down the ink pumps after a few minutes. If this happens, press the **ERROR** button, which will restart the pumps.
3. When all tanks are empty, place the return tubing back into the primary ink tanks.
4. Power down. Perform NT software Shut Down operation at NT printer workstation, then turn off printer power.
5. Wipe the residual ink out of all four primary ink tanks using clean, lint-free towels.
6. Fill all four primary ink tanks with enough clean VUTEK head cleaning fluid (approximately 1 quart) to eliminate the low ink error.
7. Power up. Turn on printer power. The NT printer workstation will automatically boot-up.
8. Allow the head cleaning fluid to circulate for several minutes to flush the ink lines and pumps.
9. Pump the head cleaning fluid from the four primary tanks using Step 2, above. Pump the head cleaning fluid into a waste container.
10. Once again, fill all four primary ink tanks with enough clean VUTEK head cleaning fluid (approximately 1 quart) to eliminate the low ink error.
11. Allow the head cleaning fluid to circulate for several minutes to flush the ink lines and pumps. Do not pump out the fluid at this time.
12. Use the **INK PRIME** function on the jetpacks until you can see the head cleaning fluid feeding through the ink lines into the secondary ink tanks (approximately 10 seconds). Refer to the appropriate VUTEK manual for details:
  - 16-head manual: section 1, page 9
  - 32-head manual: section 1, page 12

13. Select the **EMPTY PACK** function and perform this task until the packs are empty and the jetpacks bubble. This removes the head cleaning fluid from the secondary ink tank.
14. Remove the secondary ink tank covers and clean thoroughly with lint-free toweling. Clean the level sensors and replace the covers.
15. Pump the head cleaning fluid from the system as you did in Step 2, above.
16. Shut down the NT printer workstation to power down the printer.
17. Wipe dry the primary ink tanks with lint-free toweling.

## **Ink Fill Procedure**

1. Add 3.5 fluid ounces (0.1 liters) of the new ink to the primary ink tanks.
2. Turn on the printer and allow the ink to circulate for *at least* 5 minutes. You may need to short out the low ink level sensors on the primary ink tanks as there will not be enough ink to register the float. To do this, short the sensor connector pins with a piece of wire.
3. Perform the **INK PRIME** and **INK PURGE** functions to fill the jets with the new ink.
4. Use the **EMPTY PACK** function to empty the secondary ink tanks.
5. Pump the remaining new ink out of the tanks as in Step 2 of the **Solvent Flushing Procedure**.

Note: This ink will be contaminated with head cleaning fluid and old ink. Do not reuse it; dispose of it properly.
6. Power down. Perform NT software Shut Down operation at NT printer workstation, then turn off printer power.
7. Replace the primary ink tank filters and tubes. Do this for each color according to VUTEK's recommended maintenance schedule.
8. Wipe out the residual ink from the primary ink tanks using lint-free toweling.
9. Replace the in-line ink filters for each color on the carriage.
10. Refill the primary ink tanks with new 3M Piezo Ink Jet Ink Series 4000.
11. Power up the printer. Select the **INK PRIME** function and prime until the output line returning from the carriage is free of air bubbles--approximately 10 seconds.
12. Perform the **INK PURGE** function until the ink comes out of all jets--approximately 10 seconds.

*Ink Fill Procedure continued on the next page.*

*Ink Fill Procedure, continued.*

13. Load some material and print a test image. You may need to print one or two images before all air and residual head cleaning fluid is completely purged.

Note: If a large number of jets are not firing, it is probably due to air bubbles. Refer to the appropriate VUTEk manual for details:

- 16-head manual: section 2, page 4.
- 32-head manual: section 3, page 14.

## Waste Disposal

Waste from the printer includes ink waste, solvent, printer blotting cloth, toweling and plastic bottles. We encourage you to handle all waste in a responsible manner. Some general guidelines are provided below.

### Inks and Solvents

The inks and solvents are considered non-hazardous waste according to U.S. EPA requirements. Even though the inks and solvents are classified as non-hazardous, non-regulated waste, the EPA requires that any ink or solvent waste must be incinerated in an industrial or commercial facility. Do not pour the inks or solvents down the drain, or put in the general trash or in a landfill. Since regulations vary, consult applicable regulations or authorities before disposal.

### Printer Blotting Cloth or Toweling

The printer blotting cloth or toweling (wipes) can be disposed of in the general trash or in a landfill if free liquid can not be squeezed out. If inks can be squeezed out, the blotting cloth should be incinerated in an industrial or commercial facility.

### Plastic Ink Bottles

Once bottles are empty of free liquid, dispose of them in the general trash or in a landfill. The ink bottles are made of High-Density Polyethylene (HDPE) plastic as indicated by the recycling number "2". Check with your local recycler regarding recycling the bottles in your area.

Note: Additional environmental, health and safety information is available in EHS Bulletin 2300, which is available on our web site at [www.scotchprint.com](http://www.scotchprint.com). See the information in the next column for how to access the site.



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There's no charge and you can sign up today. Just ask your Commercial Graphics Division sales representative, or contact Lisa Burns ([ljburns3@mmm.com](mailto:ljburns3@mmm.com) or 651-736-9719).

## 3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our website at [www.scotchprint.com](http://www.scotchprint.com), or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768  
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
<b>Product Bulletins</b>		
3M™ Piezo Ink Jet Ink Series 4000	4000	4515
<b>Instruction Bulletins</b>		
Printing with piezo ink jet ink series 4000	4.27	6527
<b>Warranties</b>		
<b>Worldwide 3M™ MCS™ Warranty Packet</b> (includes all Commercial Graphics MCS Warranties)		9503
Worldwide 3M™ MCS™ Warranty Overview -Folder		9504

## **For the United Kingdom and Republic of Ireland**

### **Health & Safety**

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

### **Important Notice to Purchaser**

The 3M products described in this publication are covered by a 3M warranty and limitation of liability.

3M's warranty provides that if 3M finds that goods are defective in material or workmanship they will be replaced or the price refunded at 3M's option but note that 3M does not accept liability for other direct losses (except for personal injury or death) or consequential losses relating to defective products or from information supplied by 3M.

Purchasers and users of 3M products, and not 3M supplying companies, are always solely responsible for deciding on the suitability of the 3M product for their required or intended use.

### **Technical Assistance**

For help on specific questions relating to 3M Commercial Graphics Division Products, contact your local Technical Service Representative.

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