

Appendix B Print Head Maintenance

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Subject:	Print Head Cleaning, Nozzle Protection and Recovery
Description:	Instructions for properly cleaning and/or flushing ink buildup from the capping station, carriage face plate and the print head nozzle plates on the Arizona 600 printer
Materials:	Isopropyl Alcohol (91% Isopropyl or higher) Polyethylene Plastic Wrap Shallow 9-Inch x 14-Inch Pan 50-ml Syringe (OIN #3012001103) Swabs (OIN #3011620278, part #0505-0278) Safety Glasses (OIN #3011620274, part #0505-0274) Lint-Free Cloth (OIN #3011620283, part #0505-0283) Butyl Gloves (OIN #3011620273, part #0505-0273) Cleaning Fluid (part # is ink dependant) CGS-50 for use with 3M inks, 1 gallon (OIN #3012000798)

Cleaning Fluid Usage

The cleaning fluid is used for cleaning and flushing print heads and the carriage face plate. Cleaning fluid is also used to remove ink from surfaces. Ink stains on painted sheet metal should only be exposed to the cleaning fluid for a few seconds at a time when wiping with a lint-free cloth to prevent the paint finish from smearing.

The cleaning fluid is also used to supply and preserve the capping station foam pads during operation of the printer. The operator should replace or refill the cleaning fluid container located on the bottom right side of the printer (next to the waste bottle) when the printer indicates the container is nearing empty.

Material Usage

A specified quantity of cleaning fluid, butyl gloves and a lint-free cloth are used to clean the capping station and the carriage face plate. A specified quantity of cleaning fluid is used with supplied swabs to clean the print head nozzles. A respirator should be used during each cleaning procedure.

Precautionary Messages

IMPORTANT: If your printer does not have the battery back-up option, powering off the printer is NOT recommended.

WARNING! Without the battery back-up option, all ink will leak out of the ink reservoirs within an hour or two if the printer is powered off, unless you drain out all the ink.

If the printer must be powered off for more than one hour and up to one day, you must drain out all the ink from the ink reservoirs (juice boxes), clean the print head nozzle plates, and cover the capping station with polyethylene plastic film. If the printer must be powered off for more than one day a trained service technician must flush out the printer ink system with maintenance fluid, clean the print head nozzle plates, and cover the capping station with polyethylene plastic film.

General Recommendations for the Operator

- Always perform the low or high purge using the Operator/Maintenance menu as a first step to bring nozzles back for printing.
- Prepare materials for each cleaning procedure before accessing the carriage over the maintenance (blotting cloth) station.
- Swab each print head nozzle plate at the end of each work day.
- Manually flush print heads as a last resort to clear blocked nozzles. Contact your field service representative for assistance with this procedure.
- Read guidelines as outlined in the Material Safety Data Sheet (MSDS) before handling or discarding ink contaminated items.

Cleaning the Capping Station

1. Move the carriage assembly by using the Operator/Maintenance/Access Carriage menu on the control panel. Swing open the two doors on the right and locate the capping station.
2. Put on the protective butyl gloves before handling any ink residue with a lint-free cloth.
3. Apply cleaning fluid on a lint-free cloth and begin cleaning the capping station as shown in **Photo 1**. Wipe away the ink build-up on the face of the capping station and inside the ink purge drains.

IMPORTANT: Do not reuse the ink soaked lint-free cloth on any other surfaces of the printer.

Cleaning the Carriage Face Plate

1. If you have just cleaned the capping station, then go to the left side of the printer and swing open the two left-end doors. Otherwise, access the carriage assembly via the control panel using the Operator/Maintenance/Access Carriage menu before opening the two left-end doors.

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2. Retract/lower the maintenance station to expose the print head nozzle plates and carriage face plate as shown in **Photo 2**.
 3. Continue using the protective butyl gloves when handling the ink residue.
 4. Apply cleaning fluid on a lint-free cloth and gently wipe away any ink buildup on the carriage face plate shown in **Photo 3**. Be careful not to touch any of the print head nozzle plates.

Cleaning Print Head Nozzle Plates

This procedure should be performed at the end of each work day. Always use a new swab for each color when performing this procedure.

Note: Adhering to this procedure will provide maximum head life.

1. Use an individual, small container of cleaning fluid and a new swab for each color. Only use this cleaning fluid for several cleanings until it becomes slightly discolored.

WARNING! Never use Isopropyl alcohol on the print head nozzle plates.

2. Access the carriage assembly via the control panel using the Operator/Maintenance/Access Carriage menu.
3. Lower the maintenance station to access the carriage faceplate.
4. Dip the clean swab into the small container of cleaning fluid.

WARNING! Each swab has a seam that may scratch the print head nozzle plate. Use the long semi-curved smooth side of the swab.

5. Starting with the light cyan print heads, use a saturated swab to gently apply the cleaning fluid onto the nozzle plates. Gently move the swab across each head nozzle plate one time to moisten the ink on each head surface, as shown in **Photo 4**.

IMPORTANT: Applying too much force with the swab against the nozzle plate may scratch the surface.

6. Repeat steps 4 and 5 for each color beginning next with light magenta, working your way through cyan.

IMPORTANT: Use one clean swab and container of cleaning fluid per color. Never mix an ink stained swab outside the color you are working with.

7. Allow the heads to soak a couple of minutes.
8. Starting with the light cyan print heads again, dip the light cyan swab into its cleaning fluid and gently move the saturated swab across each head nozzle plate several times to remove the softened ink from each head surface.

IMPORTANT: Applying too much force with the swab against the nozzle plate may scratch the surface.

9. Repeat step 8 for each color beginning next with light magenta, working your way through cyan.
10. Empty or store the cleaning fluid containers and unused cleaning items (swabs and/or lint-free cloth) for the next scheduled cleaning. Do not store new swabs in the cleaning fluid.
11. Park the carriage assembly via the control panel using the Operator/Maintenance/Park Carriage menu.
12. Close all doors, the printer automatically raises and locks the maintenance station back into place.
13. Do a low purge of all colors from the Operator Maintenance menu. Check the Nozzle Print for nozzles out. If you still have nozzles missing do one or two high purges for the problem colors.

Flushing a Print Head

This procedure is not performed daily. It is performed as a last resort to clear blocked nozzles. It should only be performed by a trained operator. Contact your field service representative for assistance with this procedure.

1. Access the carriage assembly via the control panel using the Operator/Maintenance/Access Carriage menu.
2. Swing open the two doors on the left side of the printer, then lower the maintenance station to expose the print head nozzle plate, as shown in **Photo 2**. Place a shallow 9-in. x 14-in. pan on top of the maintenance station.
3. Locate the print head to be flushed. Disconnect and cap the ink line coming from the ink reservoir to the selected print head to prevent ink spillage.
4. Fill the syringe with cleaning fluid, then attach it to the ink line going into the selected print head.
5. Flush the print head into the pan below (situated on top of the maintenance station). Looking from the carriage face plate level, visually check to see the fluid exiting the print head nozzles evenly (straight down versus multidirectional streams of clear fluid) into the pan from the print head.

WARNING! Do not allow any air to enter the print head.

6. Disconnect the syringe from the head ink line, then reconnect the head and reservoir ink lines back together.

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7. Return the catch pan, return the carriage to the home position and close the left-end doors. Run a long purge of all colors to prime the print heads. Run a low or high purge for all colors to generate a nozzle test print to verify all nozzles are firing. Contact your field service representative if this procedure fails to correct your problem.

Nozzle Protection Requirements

The plastic film installation procedure is required to prevent the ink from drying out on the print head nozzle plates when the printer remains idle for a period of time longer than overnight, such as weekends and holidays.

If the printer is not going to be used for more than one week, plastic film installation is not sufficient. The ink lines and reservoirs (juice boxes) must be flushed out with maintenance fluid by a trained service technician.

Installing the Polyethylene Plastic Film

The only recommended material for use is polyethylene plastic film.

IMPORTANT: Before using an unknown type of plastic wrap you should always test its compatibility with the Arizona 600 printer cleaning fluid for one week to ensure the plastic wrap does not dissolve. We have found that plastic wrap containing polyethylene is most suitable in this application. Any polyethylene plastic wrap that you have tested and are currently using on the Arizona 90/180 printer capping plate can also be used on the Arizona 600 printer.

1. Access the carriage using the Operator/Maintenance/Access Carriage menu.
2. Clean all print heads per the “Cleaning Print Head Nozzle Plates” procedure on page B-3, stopping after step 10.
3. Cut a 1-foot square sheet of polyethylene plastic film and lay it smoothly over the capping station making sure it covers all corners of the plate, as shown in **Photo 5**.
4. Apply a couple of drops of cleaning fluid onto the plastic film, directly above *each foam pad*, to keep each head wet when the carriage is parked.

IMPORTANT: Do not allow any wrinkles in the film to form before moving the carriage back over the capping station.

5. Return the carriage to the capping station. As the front of the carriage first comes in contact with the capping station, watch and hold the plastic film, if necessary, so that it does not slip off. Check for complete coverage.
6. Close the doors on both ends and press the ONLINE button on the control panel allowing the printer to go to Idle Mode.

Removing the Polyethylene Plastic Film

Océ recommends delaying the removal of the polyethylene plastic film until print jobs are ready to be sent to the printer at the beginning of each work day. Removing the plastic film several hours before printing could adversely affect print quality.

1. Swing open the doors on the right end.
2. Manually move the carriage off the capping station by slowly pulling on the carriage cable.
3. Remove and discard the used plastic film.
4. Access the carriage using the Operator/Maintenance/Access Carriage menu.
5. Clean all print heads per the “Cleaning Print Head Nozzle Plates” procedure on page B-3, stopping after step 10.
6. Fill a syringe with cleaning fluid and apply a small amount onto each capping station pad.
7. Park the carriage using the Operator/Maintenance/Park Carriage menu.
8. Install media if it was removed the night before.
9. Access the Operator/Maintenance/High purge nozzles menu and run a high purge. View the nozzle print for good quality (few or no nozzles missing). Otherwise, repeat the high purge.

The printer is now ready to receive the first print of the day.



Photo 1

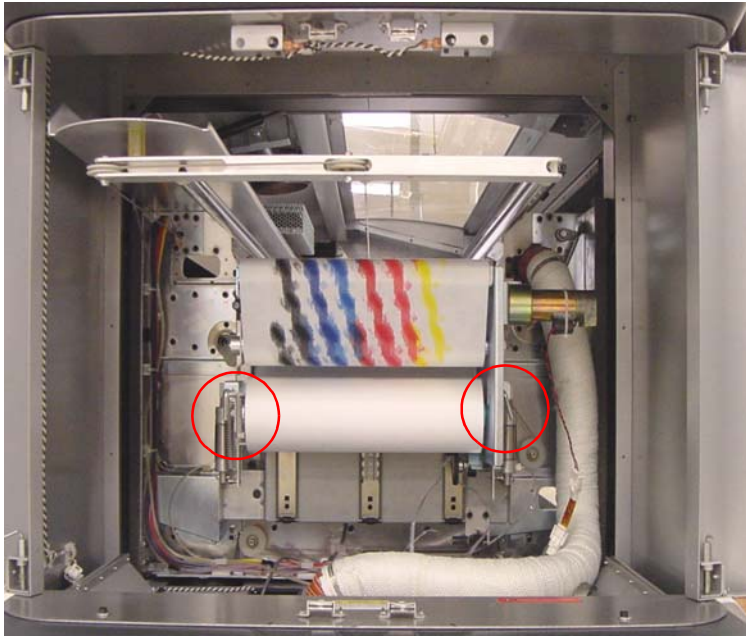


Photo 2



Photo 3

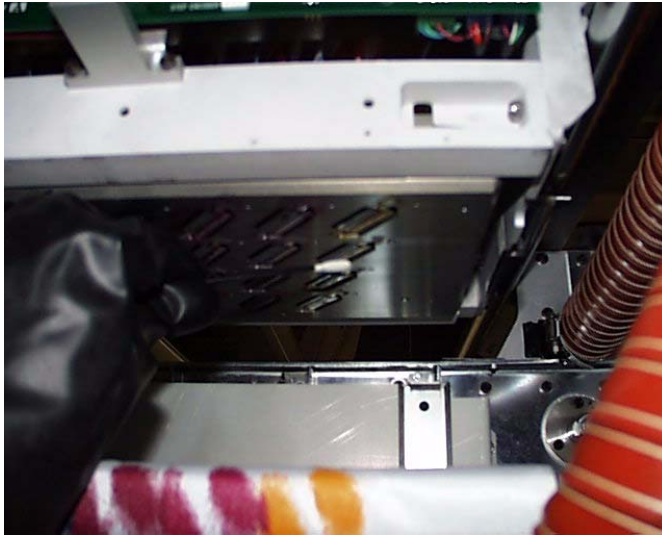


Photo 4



Photo 5

