

Maintenance – Daily Start Up

A. Inspect your ink levels each day

1) Keep color ink at least $\frac{1}{3}$ full

- 1) Check EACH bottle
- 2) The pick up tubes, do not go all the way to the bottom of the ink bottles
- 3) Do not fill up past the top of the label, If there is one, or the bottom of the round part of the bottle

2) Keep the white ink at least $\frac{1}{2}$ full

- 1) The pick up tube is not near the bottom of the bottle and we do NOT want to draw air into the ink lines
- 2) When filling the white ink, disconnect the power connection at the bottom of the white ink pod (lit connection)
- 3) Always shake the white ink
- 4) Fill to about $\frac{1}{4}$ " below the lid
- 5) Reconnect the power

B. Check the waste ink level – the waste bottle is located inside the door, on the right hand side of the machine (if you are facing the front of the machine).

Maintenance – Daily Start Up (Cont.)

- 1) The waste bottle does not have any type of sensor, nor float switch
- 2) The bottle **WILL** overflow if overfilled
- 3) Empty the bottle when 2/3 full or lower
 - a) Be sure to tilt the bottle to remove or replace it
 - b) When replacing, make sure the drain is IN the mouth of the bottle

C. Head Cleaning

- 1) Start each day by initiating 1 to 2 manual head cleanings
 - a) Many machines require only 1 head cleaning most mornings. You need to get to know your printer and your print head, as to how many cleanings your machine requires each (most) days.
- 2) This gets fresh ink into the Piezo crystals and nozzles, and primes the print head

Maintenance – Daily Start Up (Cont.)

- 3) First, “load” the platens
 - a) Press the “load” button
 - b) Once loaded, the light will turn green
 - c) If you fail to do this, the WIMS system will not turn on, and will cause white ink problems
- 4) Hold the “enter” button for 3 seconds
 - a) This initiates a head cleaning
- 5) Repeat step 4, for a total of 1 to 2 head cleanings
 - a) A head cleaning makes the crystals fire, thus pushing ink out of each nozzle, while the capping station is sucking the ink, pulling fresh ink into the crystals. Last, the wiper wipes the ink off the print head, leaving us with a primed print head
 - b) The one to two cleanings ensure there is fresh ink in the print head.

Maintenance – Daily Start Up (Cont.)

X - SERIES

- 6) Now perform a nozzle check
 - a) Place the platens on the machine (at least the right one)
 - b) Place a transparency sheet on the front right hand corner of the right paten (if you are facing the front of the machine)
 - 1) Make sure the transparency hangs over the front by $\frac{3}{4}$ in to 1in, and right edge by .25 inch, and is oriented in the landscape position.
 - c) Push the tray bed into the machine by hand, until the edge of the transparency is just under the cover of the machine
 - 1) This allows the height sensor light to hit the edge of the transparency
 - d) Hold the RED bed “Up” button, until the machine stops, then release the button.
 - 1) The light will turn green
 - e) Press the bed “Load” button
 - 1) Once loaded, the light will turn green
 - f) Press the “menu” button once
 - 1) The display will read “*Menu* Test Print>”
 - g) Press the “Enter” button
 - 1) The display will read “Test Print: Setup”
 - 2) We do NOT want this

Maintenance – Daily Start Up (Cont.)

X - SERIES

- h) Press the “reverse” button until the display reads “Nozzle Check” (should be once)
- i) Press the “Enter” button
 - 1) The machine will print the nozzle check pattern on the transparency
- 7) Now we want to VISUALLY inspect the test print, making sure there are no breaks in the lines
 - a) Placing the transparency on something black makes the white easier to see
 - b) Placing the transparency on something white makes the colors easier to see

Maintenance – Daily Start Up (Cont.)

- 8) When comparing multiple tests, and the breaks are moving around (and there are only a few of them), this implies that the print head did not have a complete prime
 - a) **If the breaks in the lines remain in the same places, this IS of concern, implying potential clogs. This MUST be addressed IMMEDIATELY**
- 9) If your nozzle check is BAD:
 - a) Do 1 to 2 more head cleanings
 - i. If you are not sure what number nozzle check you are on, power off the control panel before doing the head cleaning
 - ii. Start the head cleaning by holding the “enter” button for 3 seconds
 - b) Let the machine just sit there and rest for between 5 to 30 minutes, depending on what your machine normally requires
 - c) Next do another nozzle check and inspect for breaks
 - d) Repeat the head cleanings, resting, and nozzle checks until the nozzle check is good
 - e) Don’t forget, that after every two head cleanings, you need to turn the control panel off, so the machine will not do a 3 minute cleaning (a small power cleaning)

Maintenance – Daily Start Up (Cont.)

- f) If you do more than 10 – 15 head cleanings (two at a time, with 5 to 30 minutes of resting time between the head cleanings and nozzle checks), and the nozzle checks are not improving, let the machine rest (remain undisturbed) for 20 to 60 minutes.
- g) Upon coming back to the machine, immediately do a nozzle check
- h) If it did not improve over the last one, or it is getting worse, call technical support to help troubleshoot the problem

i) Nozzle checks are to be done DAILY

[Click here for Daily Start Up Procedures video](#)

Pre treating & Drying Garments

- 1) Heat press should be at 340 degrees
- 2) Pre press the shirt, with the heat press on medium to medium heavy pressure, for 10 to 15 seconds
- 3) If using a Spider Mini; the setting, for a t-shirt, a setting between 5 to 8 on an under based print, and 7 to 10 on non under based. (making sure you are using the brass spray tip on the Spider Mini). For the Wagner sprayer, apply a moderate amount for under based prints and a light amount on non under based prints (the amount of pre treat will vary based on the absorbency of the fabric – how well it seals the surface).
- 4) Spray the pre treat on to the garment
- 5) With the heat press hovering about $\frac{1}{4}$ to $\frac{1}{2}$ in above the garment, with nothing covering the surface, let the heat radiate on to the garment for 30 to 60 seconds – the surface needs to be almost dry (it will look about $\frac{1}{2}$ to $\frac{1}{3}$ with damp patches, and the rest of the surface should look dry). If that takes longer than 60 seconds, then so be it.

Pre treating & Drying Garments

- 6) Then place a sheet of release paper or a Teflon sheet on the garment, and press the shirt (on medium to medium heavy pressure) for 15 to 60 seconds, until the garment is dry. Again, if more time is needed to get to that point, then use more time.
- 7) When you remove the sheet, it should come away easily – you should not have to “peel” the sheet away.
- 8) That garment could be printed immediately or be stored for up to 1 month, provided the pre treated surface is not disturbed.

DRYING

- 9) **For drying a garment that has NO under base** – the heat press should just barely make contact with the cover sheet on the garment, it should still be at 340 degrees, and is dried for 1 minute.
 - a) Placing a piece of heavy weight cut away embroider backing, on top of the cover sheet, will help eliminate scorching
 - b) Another technique would be to dry the garment for 40 seconds, let the heat off, then dry for another 40 seconds.

Pre treating & Drying Garments

- 10) For drying garments WITH an under base** - Hover the heat press over the garment, with nothing on the surface of the garment, for 30 to 40 seconds. Then place the cover sheet on the surface of the garment (if you use release paper or a Teflon sheet you will get a slightly more gloss finish, and if you use Parchment paper, you will get a more flat finish), then dry the garment, with the heat press just making contact with the cover sheet, for two minutes.

These procedures supersede any others that you might see anywhere else in this presentation, as well as anything else that you might see in a video.

Printing on a Garment

- 1) Prepress the garment for 15 seconds
- 2) Pretreat the garment
 - 1) Pre press the garment
 - 2) Spray the garment with pretreat
 - 3) Roll the garment
 - 4) Dry the garment on the heat press, at 340°, using a Teflon sheet or release paper between the garment and the iron of the heat press. Be sure to use the hover and non hovering technique, as outlined in pretreat section of this document
- 3) Load the shirt onto the platen
 - 1) Be mindful NOT to brush the surface of the pretreated garment with your hand, to help flatten the garment. This will raise the fibers, thus ruining the nice, flat, prepared surface

Printing on a Garment (cont.)

- 4) Load the platen into the machine
 - A. Push the platen into the machine so that the height sensor will hit the front edge of the loaded platen (the leading edge of the platen with the garment on it – part going into the machine first - about ½ inch past the front cover)
 - B. Set the height using the “Up” button
 1. Make sure the Bed Up/Down light is green
 2. Hold the “Bed Up” button until the bed stops rising
 3. Then release the “Bed Up” button
 4. The bed will drop down slightly
 - C. Load the platen into the machine by pressing “Load”
 1. The bed load light will turn green when the machine recognizes that the platen is loaded
- 5) Choose a shirt color tab
- 6) Select a print queue
 - A. Ex: Black Quality - This queue is for printing on a black garment
- 7) Import the image file you wish to print
- 8) Once in preview area, click on the image

Printing on a Garment(cont.)

- 8) Set the size and the placement of the image (below preview area)
- 9) RIP the image by right clicking on the image name and then selecting “RIP Only”
 - A. The status will change from “Active” to “Holding (Job Spooled)” when it has finished processing
- 10) Then right mouse click on the file again and select “Print”
 - A. The machine will start printing
 - B. The machine will print the white under-base first, return, then print the color layer (for black and colored garments), or simply print the color ink (white or non under based prints)
 - 1) For under based prints. When the leading edge of the print (when doing a full front or back) is extended out of the machine, the white ink should be smooth, congealed, almost dry to the touch, and shiny. If it is wet, you have possibly over pretreated the garment.
- 11) Remove the shirt from the platen
 - A. Be sure to handle the garment very carefully, as it is WET and will smear

Printing on a Garment(cont.)

- 12) Dry the garment, on the heat press, at 340°
- A. If your heat press offers a hover feature, hover over the garment for 30 to 40 seconds with **nothing** covering the print. This allows the heat press to radiate heat directly onto the wet ink (**for under based garments ONLY**)
 - B. Then place your release paper, Teflon sheet, or parchment paper onto the surface of the garment
 - 1. Teflon sheets and release paper yield a slightly glossy print on under based prints, where parchment paper yields a slightly more flat finish (on under based prints). There is no difference in the finish, no matter what cover sheet you use, if the garment is not under based.
 - C. Dry the garment for 2 minutes (**for under based garments**), and 1 minute (**for non under based garments**), with the heat press just making contact with the surface of the garment (light pressure)
 - D. If you do NOT have a hover feature, dry the garment for 2 minutes, at light pressure (**for under based garments ONLY**)

Printing on a Garment(cont.)

13) Remove the finished garment

- To see a video on this process please visit: [Printing on a Dark Shirt \(With an Underbase\)](#)

Maintenance 2 – Daily Shut Down

1. When not in use, the print head sits on the capping station, sealing it
2. The rubber seal of the capping station must be kept clean, so there is no dried ink on it
3. The wiper blade hooks on the clips of the wiper assembly
4. The curl of the wiper blade always faces TOWARDS the capping station
5. The wiper blade must be kept clean so we don't drag any dry ink across the surface of the print head
6. NEVER TOUCH THE GOLD SURFACE OF THE PRINT HEAD, from which the ink is jetting out (you could dent it, thus misaligning the nozzles)
7. The side rails, front, and back of the print head get cleaned
8. Supplies for cleaning
 - A. DTG Cleaning solution
 - B. DTG Flushing solution

Maintenance 2 – Daily Shut Down(cont.)

- C. Syringe with a nozzle tip
 - D. Foam applicator brush (or cotton)
 - E. Clean cup on a bowl
 - F. Paper towels (clean rags and/or not treated cotton rounds)
 - G. Isopropyl alcohol
9. To clean the wiper and capping station area, we will use a head cleaning and the emergency stop to assist us
- A. Pour some flushing/cleaning solution into a cup or bowl
 - i. **This will prevent you from contaminating the overall contents of the flushing/cleaning solution bottle.**
 - B. Load the empty bed into the machine
 - C. Fill the syringe with 30 to 40 cc's of solution
 - D. Start a cleaning by holding the "Enter" button for 3-4 seconds
 - i. The machine will start doing a head cleaning
 - E. When the print head moves off the capping station, far enough where the capping station is partially exposed, squirt the surface of the capping station
 - i. Squirt fast enough to keep it full but no so fast that the liquid splashes

Maintenance 2 – Daily Shut Down(cont.)

- F. You will have two opportunities to squirt the capping station
- G. That cleaning cycle will end. When it does, start another head cleaning
- H. When the print head moves to the left about 2 inches (if you are facing the front of the machine), press the “emergency stop” button
 - i. This will ensure the wiper is extended (out- in the wiped position), so it is easier to get to
- I. Slide the print head out of your way
- J. With the remaining flushing/cleaning solution in your clean cup or bowl, dip the foam or cotton swab into the solution
 - i. if you need to dip the dirty foam applicator again, you would contaminate the entire contents of the bottle
- E. Very thoroughly clean the rubber seal of the capping station
 - i. Be sure to remove any pieces of debris, that may end up on the surface of the capping station. Be very careful not to poke divots into this surface, or it will create air pockets, allowing the print head to dry out
 - ii. Tip: if you clean this day to day, as recommended, you will find it easier to clean
- F. Blot excess ink and debris from the applicator, onto a rag or paper towel
- G. Repeat as needed

Maintenance 2 – Daily Shut Down(cont.)

H. Clean the wiper every day

- i. Wipe the wiper with a swab dipped in cleaning solution
 - a. You can use a stern force
 - b. Clean the front surface
 - c. Clean the top edge
 - d. Clean the back of the wiper blade as well as the white holder
 - e. When it is completely clean it will be a nice deep shiny black, with no hint of ink

I. Clean the spit pad every day

- i. Fill the syringe with about 30cc of flushing solution
- ii. Gently squirt this are until clean
 - a. This will clean the surface as well as the drain, so it does not clog
 - b. Replacement pads can be ordered through the support line
 - c. We do not want ink puddling up on the surface of this pad

10. Clean the ramps and the four edges of the print head daily

- A. Using a swab dipped in flushing or cleaning solution, wipe the angled pieces to the left and the right of the print head face (these are called ramps)
 - i. Keeping these clean will help the wiper clean, thus not dragging dried ink across the surface of the print head
- B. Very carefully clean the left and the right metal edges of the print head; avoid hitting the face of the print head
 - i. This can be done with a cloth (paper towel) dipped in cleaning or flushing solution
- C. Very carefully clean the front and the back edges of the print head

Maintenance 2 – Daily Shut Down(cont.)

11. Bring the print head back to the docked position, until you hear it lock in place
12. Reset the “emergency stop” button by turning it in the direction of the arrows (clockwise)
13. The machine may do a mini head cleaning upon start up, thus getting ink on the wiper
 - A. Once the start up is completed the control panel will read “cover open” or “print ready”
 - B. Push the release button on the head carriage to unlock the print head, so you can move it away from the capping station, to access the wiper
 - C. Wipe any ink, that is on the wiper, off with a foam applicator
 - i. Should be fairly easy, since the ink is wet
 - D. Now you are clean and ready for start-up tomorrow
14. Return the carriage to its docked (locked) position
 - A. Failing to do this will result in a clogged print head

Maintenance 2 – Weekly, Monthly, Annually

15. Clean the encoder strip once every 2 to 3 months

- A. The encoder strip is made up of vertical lines, that the sensor on the back of the print head carriage reads, so the machine knows where to lay down ink
- B. Using a paper towel, moistened with cleaning solution (or Windex – but the original, not the powerized), wrap it around the end coder strip, then gently squeeze and wipe the encoder strip
 - i. Press the head release button
 - ii. Slide the head to the other side of the machine, gently, by hand
 - a) This is so you can get to the other end of the end coder strip
 - iii. Wipe the encoder strip, two to three times
 - iv. Inspect the paper towel. If it is dirty, find a clean area (or acquire a clean one) and repeat until the paper towel remains clean
 - v. When done, re dock the print head

16. Clean under the spit pad

- A. Press the release button on the print head

Maintenance 2 – Weekly, Monthly, Annually (Cont.)

- B. Remove the pad
- C. Rinse out the pad with hot water or flushing solution
- D. Rinse the box out with flushing solution, using your syringe, making sure it drains freely
- E. Wipe out the area with a paper towel, to remove any large chunks of dried ink
- F. Then rinse the box again, with flushing solution, using your syringe
- G. Re install the spit pad
 - i. Make sure it is even and flat (all the way down), as not to hit the print head
- H. Re dock the print head

17. Change the WIMS filter MONTHLY, or about every liter of white ink

- A. Disconnect the power supply to the WIMS system (lit connection)

Maintenance 2 – Weekly, Monthly, Annually (Cont.)

- B. Using binder clips, clamp closed the tubing on either side of the filter
 - i. This will help prevent dripping
 - C. Make sure you look at the old filter, BEFORE you remove it, to identify the inlet side
 - D. Remove the filter by unscrewing it
 - E. Replace it with a new one
 - i. Check that the inlet is on the proper side
 - F. Remove the binder clips
 - G. Re connect the power to the WIMS system
18. Change out the white ink dampers yearly, or sooner if needed
19. Change out the color dampers about every 2 years, or sooner if needed

[Click here for End of Day, Monthly, and Annual Maintenance video](#)

Flushing

- A. Supplies to have on hand for flushing your M2
 - 1) Several liters of DTG flushing solution
 - 2) Paper towels or rags
 - 3) Waste container (this could be one of the empty flushing solution bottles)
 - 4) Clean, empty bottles for flushing solution
 - a) You can use the 4 empty bottles that originally came with the machine
- B. Fill the empty bottles with flushing solution
 - 1) The flushing solution is an alcohol based cleaner with a surfactant in it
 - a) To prevent evaporation
- C. Replace the color inks with the bottles of flushing solution
 - 1) Remove the lid
 - 2) Flick the tubing (carefully) against the sides of the bottle
 - a) This will remove some of the residual ink that is in the tubing
 - 3) Wipe off the inner part of the lid, as well as the tubing
 - 4) **TIP: Do not worry about the pressure sensor at this time**
 - 5) Place the bottle of flushing solution, in place of the ink bottle
 - 6) Repeat this process for all 4 bottles

Flushing (cont.)

- 7) Re pressurize the bottles by pressing the “pump restart” button on the ink pressure indicator
 - a) This is located on the left side of the machine, if you are facing the machine from the rear (back)
 - b) When done, the light will turn green

C. Drain the white ink (WIMS system)

- 1) Disconnect the “top” power connection – the one going to the stirrer motor
- 2) Disconnect, then re connect the WIMS power supply
 - a) This is the one that is lit
 - b) This will start the WIMS pump
- 3) Unscrew the lid from the white ink bottle
- 4) Lift the lid straight up, and observe which tube is the return side
 - a) The one that is dripping white ink
- 5) Disconnect the power supply to the WIMS system
- 6) Disconnect the “supply” white ink tube connection

Flushing

- 7) Reconnect the WIMS power supply
 - a) All of the white ink, in the lines, will return to the bottle
 - 8) Once you see continuous air bubbles, in the “return” ink tubing, disconnect the WIMS power supply
 - 9) Disconnect the “return” ink tubing connection
 - 10) Remove the entire WIMS (white ink) bottle
 - 11) Pour out any white ink, from the bottle (this ink should still be good)
 - 12) Thoroughly clean out, and dry, the bottle, the tubing, and the stirrer paddle
- D. Fill the white ink bottle with flushing solution
- E. Place the filled white ink bottle, back on the machine
- F. Reconnect the “supply” tubing connection
- G. Place the “return” tubing connection into a waste container

Flushing (cont.)

H. Connect the WIMS power supply

- 1) Keep running until the liquid returning to the waste container, is running clear (similar to the “clean” flushing solution)
 - a) A slight milkiness is ok

I. Disconnect the WIMS power supply

J. Reconnect the “return” tubing connection

K. Fill up, the white ink bottle, with flushing solution (top it off)

L. Reconnect the WIMS system power supply

- 1) This will circulate the flushing solution

Flushing (cont.)

M. Flush the system by doing ink charges

1) Load the machine

- a) The control panel says “Cover Open”
- b) The light, by the load/eject buttons, is red right now
- c) Press the “Load” button
 - 1) The machine will beep two times, then the bed will load towards the back of the machine
- d) The bed will stop, beep 5 times, then the load/eject light will turn green
 - 1) The control panel will say “Print Ready”

2) Press the “Menu” button

- a) The control panel will say “Test Print”

3) Press the “Next” button until the control panel says “Cleaning”(should be 4 times)

4) Press the “Enter” button

- a) The control panel will say “Short”

Flushing (cont.)

- 5) Press the “forward” button until control panel says “Longer”(should be once)
- 6) Press the “Enter” button
 - a) The display will say “Ink Refill 3 min”
 - 1) The machine will count down to 2 minutes then 1 minute, as it performs the long head cleaning
 - b) When done, the machine will stop and the display will say “Print Ready”
- 7) Repeat steps 1-6, until your ink lines are full of flushing solution, all the way to the print head, and the dampers are full

Flushing (cont.)

- N. Repeat step “M” until the liquid in the lines, and in the dampers, look like the original flushing solution
 - 1) Tip: Be sure to empty the waste bottle after every other ink charge
 - 2) Be sure to keep filling up the bottles, with the flushing solution
- O. To be sure you are flushed, empty the waste bottle. Rinse it out. Then do an ink charge. If the liquid is clear green, you are done. If it is milky, repeat steps “M” through “O”
- P. If you can’t get the residue out of the dampers, you should replace them, followed by a few ink charges of flushing solution
 - 1) This will prevent the residue from settling in the print head, possibly ruining it

Flushing (cont.)

Q. When you think you are done, it is a good idea to do 2 to 3 more ink charges, just to be sure

To see a video on this process please visit: <http://youtu.be/T3ywyJAtgY0>